

Neil Moriarty
383 Kent Street
Sydney
NSW 2000



11 January 2021

Dear Sir or Madam,

I am writing on behalf of the Institution of Mechanical Engineers (IMEchE) New South Wales (NSW) Panel. We are pleased to be able to provide a submission as part of the Design and Building Practitioners Regulation 2020 public consultation.

IMEchE has been working with the Engineering Council UK and other UK Professional Engineering Institutions to prepare a coordinated response to the material provided for review. On this basis the IMechE broadly supports the submission as provided by the Engineering Council UK and attached to this letter.

Sincerely,

Neil Moriarty FIMEchE
IMEchE NSW Panel Chair

Design and Building Practitioners Regulation 2020

Stakeholder Feedback Template Form

Your Name: Dr David Clark, International Affairs Manager

Organisation Name: Engineering Council UK

Date: 21/12/2020

About you

We are pleased to be able to provide a submission as part of the public consultation and material provided for consideration. As the UK regulator for the engineering profession, we are most interested to comment on the material that you have provided concerning the Registration of Professional Engineers. This response has been prepared in consultation with the UK Professional Engineering Institutions, including professionally active members in Australia.

The Engineering Council

The Engineering Council was incorporated by Royal Charter in 1981 to regulate the engineering profession in the UK. Our core purpose is to set and maintain the internationally recognised standards for the UK engineering profession. The Engineering Council holds the national register for the professional titles: Engineering Technician (EngTech), Incorporated Engineer (IEng), Chartered Engineer (CEng) and Information and Communication Technology Technician (ICTech). The titles are all protected by civil law under our Royal Charter and can only be used by individuals currently on the national register.

The Engineering Council grants licences to 40 UK Professional Engineering Institutions (PEIs), licensing them to assess candidates for recommendation for inclusion on the national register of professional engineers and technicians. All assessment is carried out by such licensed members (UK PEIs) under the rules set out in the Registration Code of Practice published by the Board of the Engineering Council. All candidates for registration must meet the same standards of competence and commitment that are set out in the UK Standard for Professional Engineering Competence and Commitment, ([UK-SPEC](#)) and in ICTech – The Standard (for technicians working in Information and Communications Technology), independent of academic, vocational and professional qualifications and

experience. This applies equally to candidates with qualifications from within, or outside of, the UK. Currently more than 230,000 engineers and technicians are registered, including more than 10,000 in Australia.

The Engineering Council's licensed members include: The Institution of Engineering and Technology (IET), The Institution of Civil Engineers (ICE), The Institution of Mechanical Engineers (IMechE), The Chartered Institution of Building Services Engineers (CIBSE) The Institution of Structural Engineers (IStructE) and The Institution of Fire Engineers (IFE).

The Engineering Council has chosen to respond to several specific questions from the consultation and aims to set out features of the UK system engineering regulation that will be of interest to the New South Wales Board. We hope that this will enable opportunities for closer collaboration and for UK Chartered Engineers to be recognised in the New South Wales registration process.

Registration of Professional Engineers (page 29)

11. Are there any other areas of engineering that should be captured for the purposes of designing or constructing a class 2 building, or a building containing a class 2 part?

The Engineering Council supports the proposal of registering professional engineers involved in the design and construction of class 2 buildings, especially in areas of engineering that are safety critical and require a high level of competence.

In the UK, following on from the enquiry into the Grenfell Tower fire in June 2017, the Engineering Council is working with relevant PEIs on the development of a new UK standard to set out the competence requirements of engineers working on High-Risk Residential Buildings (HRRBs). This comes following recommendations made by Dame Judith Hackitt after she was commissioned to chair a government-backed review into building regulations following the fire. The Hackitt review recommended the construction industry should create an overarching body to review competence of those working on HRRBs, and also proposed that the industry needs to take responsibility for ensuring workers are competent in their roles.

A new regulator, the Building Safety Regulator, will be responsible for implementing and enforcing a more stringent regulatory regime for HRRBs as well as providing a stronger oversight of safety and performance across all buildings and increasing the competence of professionals working on building safety.

The disciplines that are listed in the proposed regulations cover the main areas of engineering and consideration could also be given to Building Services Engineering, which is an important discipline that focuses on the safe and efficient function of buildings. The UK PEI that covers this discipline is the Chartered Institution of Building Services Engineering (CIBSE) [Link](#) . We also suggest that, with the increasing trend for smart buildings and integrated systems, all areas of engineering that are critical to the safe design, maintenance,

repair and operation of the building and infrastructure, such as software and telecommunications engineers, should be considered for inclusion.

Additionally, we would like to make particular reference to Part 2 where professional engineering registration through clause 6 (1) identifies the prescribed area of engineering as **fire safety engineering**. This term is prescribed in the PERB2019, however the Institution of Fire Engineers, a UK PEI licensed by the Engineering Council, defines the area of engineering as **fire engineering**, which is a slight difference of terminology. The suggestion is that the administrative and operational phase for the PERB2019, is to include (and to not exclude) areas of engineering with slight differences in terminology for the area of engineering. Fire engineering and fire safety engineering are undertaking the same professional engineering role in Australia and internationally, and we hope that through adherence to terminology, UK Chartered Engineers in this discipline would not be excluded from lawful practice on the basis of terminology differences. Ultimately, we do not object to the single defined term in legislation, but we ask that there is explanation given to the administrative procedures for Assessment Entities and their terminology.

12. Do you support a co-regulatory approach for the registration of engineers?

EngC supports the co-regulatory approach as outlined in Pathway 2 and would support the application of any UK PEI that wished to become an assessment body under this pathway. Several UK PEIs have operated successfully as assessment entities under the Queensland scheme and Pathway 2 would enable them build on this experience. The benefit of this approach is that it minimises the administrative burden on the NSW Board by providing a flow of highly competent engineers that have been previously assessed by expert bodies in their field. This approach also allows the NSW Board/NSW Fair Trading to have access to the widest possible supply of highly competent engineers, not just from the UK, but potentially from Europe, Asia and the Americas via similar assessment body agreements.

From a UK perspective, an ideal approach would be for the NSW Board/NSW Fair Trading to provide recognition of the UK Chartered Engineer (CEng) title for registration as Professional Engineer without further assessment, subject to applicants demonstrating knowledge of any local legislation required and subject to providing evidence of CPD and good standing, as specified. This recognition would take account of the fact that a UK Chartered Engineer has been rigorously assessed according to the standard of competence set out in UK-SPEC ([Link](#)), including a professional review interview with trained assessors from their PEI.

We also support the application of the Mutual Recognition Act 1992 that allows for other States and Territories registered Engineers to be recognised in NSW.

13. Pathway 1 will require an engineer to satisfy certain qualifications, skills, knowledge, and experience requirements. Are there any other eligibility criteria that engineers should meet before being registered?

We do not support the implementation of Pathway 1. Firstly, there is duplication of effort in re-assessing professional engineers who have already proven that they have met the standard in their home jurisdiction. In countries, for example the UK, where that standard

has been proven to be the equivalent of the standard in Australia (see the final paragraph of the response to question 15 concerning the International Professional Engineers Agreement), Pathway 2 would provide a more efficient and cost-effective route. Any additional country-specific requirements, such as knowledge of local regulations, could be checked prior to registration, but the bulk of the assessment would have already been done.

Secondly, as set out in the Regulatory Impact Statement (page 32), NSW Fair Trading does not have a track record in assessment of engineers, and it will take significant resource to build up this expertise.

Although we agree that the assessment of engineering knowledge is important, the criteria for Pathway 1 are based on prescriptive academic qualifications, combined with knowledge and skills. We would argue that the primary concern should be the current competence to practice in a specific discipline, regardless of the route to attaining that competence. Competence in a given discipline is, of course, underpinned by a thorough knowledge of the relevant engineering principles, coupled with a proven track-record of applying these principles in professional practice. UK Chartered Engineers have to prove that they have acquired engineering knowledge and understanding to Masters Level (Level 7 in the UK Regulated Qualifications Framework and Level 9 in the Australian Qualifications Framework). This can be acquired by a combination of formal academic study, self-study, in-work training and experiential learning. This Masters level requirement exceeds the learning outcomes prescribed by the Washington Accord. Given that UK Chartered Engineers have already been assessed to this level, there is no need for NSW Fair Trading, or its designated body to repeat this assessment.

14. The Regulation proposes recognition of Washington Accord accredited qualifications. Do you think this is appropriate? If not, what alternative approach do you suggest?

Following on from the previous response, we suggest that the emphasis on Washington Accord degrees may be somewhat restrictive and may limit the available supply of competent engineers. We propose that the most important indicator of an engineer's competence is the attainment of a relevant professional title.

Considering academic qualifications further, it is important to note that the Washington Accord does not play a significant role in the European Higher Education Area, which would rule out talented and competent engineers from countries such as France, Italy and Germany. Consideration should be given to defining 'equivalence' more broadly to include a wider range of degrees. This could include:

- European Accredited Engineering Degrees (Bologna First and Second Cycle), listed for example in the European Engineering Education Database (EEED), maintained by FEANI and ENAEE.
- Accredited Engineering Degrees in selected countries (for example in the UK: <https://www.engc.org.uk/education-skills/course-search/accredited-course-search/>)

We would also like to propose that, in order to access the widest possible pool of highly competent engineers, those with diverse academic backgrounds should also be considered. Engineering has always defied closed definitions – hence civil (i.e. non-military engineering) had already developed offshoots in the developing fields of electrical, mechanical and aeronautical engineering by the late 19th century. This process continues, and our own experience is that new specialisms continue to arise. Fire engineering is an example, but also lighting engineering, building services engineering, explosives engineering, environmental engineering and digital engineering.

While many of the leading practitioners have undertaken ‘conventional’ engineering degrees, others have been drawn from cognate disciplines such as physical sciences, but also from non-cognate disciplines such as architecture (façade engineering), theatre (lighting engineering) and public health (environmental management). They all have to satisfy the requirements for professional competence in order to be recognised as Chartered Engineers in the UK - sometimes needing to complete postgraduate degrees to do so. Additionally, some UK PEIs are required to assess competencies in new engineering disciplines that are rapidly evolving and changing. At present some of these disciplines are not taught at Universities, therefore there may be few, if any, accredited degree programmes that can be recognised under international agreements.

These PEIs have established assessment procedures to cater for the following:

- emerging disciplines,
- multi-disciplinary areas which are based on parts of existing disciplines and some new technologies, and
- rapidly changing disciplines such as Internet of Things, Cyber Engineering and Cyber Security.

The competence standard set out in UK-SPEC and the associated assessment processes for the above disciplines have been regularly externally peer-reviewed against international benchmarks, for example the International Professional Engineers Agreement (IPEA).

We note that one of the disciplines identified of interest to the NSW Board is Fire Engineering. This discipline is an excellent example of a specialisation where demonstration of competence is essential in establishing an engineer’s suitability for registration. This is because there are very few directly relevant degrees in Fire Engineering. Systems Engineering, Engineering Safety and System Integrations are further examples where competence is developed through experience and post- graduation training. Any registration system needs to be flexible enough to take account of these areas of specialism. We would therefore urge that the State adopts professional competence as the standard for recognising engineers and avoids over-specifying the academic disciplines that should underpin this.

15. Under Pathway 2 what criteria do you think the professional engineering body should satisfy to be eligible to perform their function?

The Professional Engineering Body should be able to ensure that each applicant for registration in NSW has proven that they are competent to practice to a high level in their

chosen area of engineering. They should also be able to ensure that each applicant already has a track record of maintaining and extending competence through relevant CPD and a commitment to maintain this in the future. They will also need to provide assurance of good standing, including a clean disciplinary record.

There are several principles underlying the assessment process that are important to ensure the integrity of the process. The first of these is the principle of peer-review. In the UK, to determine overall competence and commitment to the profession, all applicants for registration are assessed against the standard set out in UK-SPEC ([Link](#)) through a Professional Review, conducted by the PEI through which they are applying for registration. This includes an interview with at least two trained assessors from the same area of practice. The decision whether or not to accept an applicant for registration is made by the PEI's committee responsible for registration on the basis of the report from the Professional Review assessors.

As already mentioned, Engineering Council registrants make a commitment to maintain and enhance their professional competence through Continuing Professional Development (CPD). CPD will vary in relation to circumstances, needs and career progression. It can also take a variety of forms, including informal learning through the challenges and opportunities of working life, and interaction with others such as colleagues, customers, and suppliers, including professionals from other disciplines. This may be supplemented by structured activities such as courses, distance learning programmes, private study, preparation of papers and presentations, mentoring, involvement in professional body activities, or relevant voluntary work.

The requirements for overall competence set out in UK-SPEC also include the requirement to demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment. This includes complying with the code (or rules) of conduct of the PEI of which they are a member, working within all relevant legal and regulatory frameworks and ensuring that they are responsible for applying safe systems of work and for working safely. They must also abide by the guidance set out in the Engineering Council's statement of ethical principles ([Link](#)).

It is important to note that the competence standard set out in UK-SPEC and the associated assessment processes have been regularly externally peer-reviewed against international benchmarks, for example the International Professional Engineers Agreement (IPEA) overseen by the International Engineering Alliance (IEA). Membership of the IPEA includes organisations responsible for the registration/licensing of engineers from 16 countries, including Australia. This should give confidence that the UK CEng title is equivalent in standing, at least, to the corresponding Australian titles.

Another factor to consider is whether the business processes of the professional engineering body are subject to external quality control. For example, the Engineering Council operates a quality management system that is approved under ISO 9001:2015.

16. Would you be supportive of professional bodies developing a PSS for Pathway 3 to be available?

Based on the information given in the Regulatory Impact Statement on the concept of a PSS, we do not believe that this is necessary for the successful implementation of an engineering registration scheme. We are also concerned that the burden of becoming a PSS would be significant for assessment bodies and that the requirements to operate under Australian law would present difficulties for overseas bodies, who operate in compliance with their home legislation. If there was a requirement, for example, to operate an Australian/NSW legal entity in order to comply this would effectively rule out most overseas organisations.

17. Do you agree that Professional Engineers should be required to have 5 years of recent and relevant practical experience?

Although in the UK we do not prescribe a minimum duration of experience before registration, this seems reasonable.

18. Do you support the proposed generic list of skills and knowledge requirements for all classes of engineering (excluding fire safety)? If not, please outline what you think the specific skills and knowledge for each class of engineer should be.

The list of areas of knowledge and skills is reasonable, but we would propose that they are restated as areas of competence, which would then form the the primary criteria for registration. Generic areas that are used in UK-SPEC are:

- Knowledge and understanding
- Design and development of processes, systems, services and products
- Responsibility, management or leadership
- Communication and inter-personal skills
- Professional commitment

Professional commitment is an important area that is not represented in the Pathway 1 proposal and should be added. In UK-SPEC this includes a commitment to a code of conduct, safe and sustainable practice, a commitment to CPD and ethical practice.

Alternatively the International Engineering Alliance sets out a professional competency profile here (page 16): [Link](#). The list of countries whose own competency framework meets the IEA criteria is shown [here](#), and includes the UK and Australia.

Continuing professional development (CPD) (page 54)

19. Do you support the proposed CPD requirements for engineers under pathway 1?

We broadly support the proposal. Supporting engineers with many differing career paths is important. Options for competent engineers to become registered that are inclusive rather

than exclusive will ensure access to a wider pool of resources to support NSW infrastructure initiatives.

We would like to note that whilst the duration and format of the CPD can be specified, it is, in our view, more important that the CPD has a clear benefit in maintaining or developing competence relevant to the area of engineering practice. Individual registrants should take ownership of their personal development plan and must be able to reflect upon what they have learned and how this has enhanced their competence.

We would encourage the NSW Fair Trading to adopt an inclusive approach to CPD that includes informal learning gained from working life, and interaction with others such as colleagues, customers and suppliers, including professionals from other disciplines. This may be supplemented by structured activities such as courses, distance learning programmes, private study, preparation of papers and presentations, mentoring, involvement in professional body activities, or relevant voluntary work.

With respect to the proposal, an analysis of CPD records from practising UK engineers indicates that many registrants complete many more than the required hours of directly relevant CPD over a 3-year period, so the suggested minimum requirements would not be problematic.

20. Do you support the mandatory CPD topic areas? Why/why not? Please make any suggestions for amendments and explain why they are necessary.

This is a different approach to that operated in the UK, but we broadly support it providing that it does not restrict the ability of an engineer to plan and develop their career according to their needs (see above). We would want to ensure that mandatory CPD topics would not delay the introduction of new building methods and materials as well as the application of techniques from engineering disciplines that are new or rapidly evolving. This could adversely affect building design and construction.

Insurance (page 51)

29. Do you support the approach proposed for insurance requirements for Design Practitioners and Professional Engineers? Why or why not?

We do not support the proposed approach as it does not clearly distinguish where the liability should be levied with respect to employers of professional engineers. With regard to the requirements for insurance for design practitioners, it is important to recognise that insurance obligations tend to rest with Employers who contract to conduct undertakings such as design, build, manufacture, operate or maintain. As part of demonstrating fitness to undertake work, Employers would provide certificates of currency for Professional Indemnity, Public Liability or Work Cover and therefore, it is expected that the certificates of insurance and the requirements to have insurance would rest with the Employer. Those who are self-employed would themselves be the employer holding the insurances. Requirements to have individual insurance may be in conflict and incur an undue cost burden above and beyond those costs already incurred by the employer organisation.

Proposed Design and Building Practitioners Regulation 2020

Please use this section to provide feedback on the proposed Regulation. Headings have been included to assist you in providing feedback on particular topics covered in the Regulation.

1. **Part 5 – Recognition of professional bodies of engineers**

Applications and requirements for recognition or registration scheme

Please see the responses to questions 11 to 18 in the section on the registration of Professional Engineers. Similar comments apply on the importance of assessment of competence to practice via the proposed Pathway 2. It should be noted the relevant UK PEIs that operate under an Engineering Council license could assess candidates for all of the Design and Building Practitioner roles set out in the draft regulations. It is also worth noting that, as well as the Washington Accord and the International Professional Engineers Agreement, the Engineering Council is a signatory to the following IEA Accords and Agreements where these have been specified in the regulations:

- Sydney and Dublin Accords
- International Engineering Technologists Agreement (IETA)
- Agreement for International Engineering technicians (AIET)

2. **Schedule 2 – Qualifications, experience, knowledge and skills**

For building practitioners, design practitioners, principal design practitioners and professional engineers

Please see the response to question 18 in the Registration of Professional Engineers section. For roles that are aligned with technologist or technician categories the same generic set of competence areas can be used, but the requirements for each will be mostly different to those for a professional engineer, especially in the area of technical competence. Areas that will be very similar include competence in communication, inter-personal skills and professional commitment. For more detail see UK-SPEC and the IPEA professional competences matrix for Professional Engineer, Engineering Technologist and Engineering Technician.

3. **Schedule 3 – Continuing professional development**

CPD for prescribed practitioners and CPD for professional engineers

Please see the response to questions 19 and 20 in the Registration of Professional Engineers section.

4. **General feedback**

Any other comments you would like to make on the proposed Regulation.

In summary, we would like to further develop the opportunity to engage with New South Wales Fair Trading and to further develop options to provide access to an experienced and highly competent pool of Chartered Engineers on the Engineering Council UK register. We believe that the above clarifications, in relation to both professional competence and qualifications, are areas that you should reasonably expect an assessing body to be able to advise on.

This relationship with the Engineering Council and UK Professional Engineering Institutions would enable New South Wales to partner with an assessing body (or assessing bodies) highly experienced in ensuring an internationally benchmarked level of qualification, competence and continuous professional development, across a broad range of engineering disciplines. This would support the current growth and demand for high calibre engineers.