OccUpational Licensing

For safety-critIcal engineering

## Introduction

The Ministry of Business, Innovation and Employment and Engineering New Zealand share a common goal of public safety in all buildings and public infrastructure.

Engineering New Zealand supports the introduction of task-based licensing for all areas of safety-critical engineering design work where specialist knowledge and skills are required and high levels of technical and professional assurance are needed.

In 2014, driven by the Canterbury Earthquakes Royal Commission’s report, MBIE consulted on a proposal to introduce a system of task-based licensing for safety-critical engineering design work. In subsequent discussions, we reached significant agreement with officials.

The Kaikōura earthquake was a timely reminder of the urgency of this work.

## Why change is needed

* At present the Chartered Professional Engineers of New Zealand Act 2002 protects the title, but registration as a CPEng is not a statutory requirement to practice as an engineer.
* A Chartered Professional Engineer (CPEng) title provides general assurance of competence, but places a strong emphasis on the individual engineer to self-declare their competence. This does not provide the level of specific assurance of competence that is being sought by regulators. It can present a risk to public health and safety and to public trust and confidence in the engineering profession.
* People who are not suitably qualified and competent may undertake safety critical engineering work, including the design and certification of complex structures. This can occur, either because the engineer is not a CPEng, or a CPEng undertakes work beyond their competence.
* Catastrophic failures may occur if engineers act beyond their level of competence. For example, while failings associated with the design and construction of the CTV building occurred under a previous legislative regime, the current Act does not significantly mitigate the risk of a similar failure.
* The following Recommendations of the Canterbury Earthquakes Royal Commission have not been implemented:

**Recommendation 167:** *If the structure is determined to be complex, a Recognised Structural Engineer should be required to certify the structural integrity of the design.*

**Recommendation 181:** *Legislation should provide for Recognised Structural Engineers to be responsible for the certification of the design of complex buildings as described in Recommendations 162–168.*

**Recommendation 182.** *The MBIE should develop prescribed qualifications and competencies for “Recognised Structural Engineers” in consultation with the Chartered Professional Engineers Council, the Institution of Professional Engineers New Zealand, the Structural Engineering Society New Zealand and the New Zealand Society for Earthquake Engineering. These prescribed qualifications and competencies should be a more specific prescription of the qualifications and competencies of the role, and require more extensive design experience of the type required for the design of complex structures than that required for a Chartered Professional Engineer. These should be included in an appropriate regulation.*

## Engineering NEw Zealand’s response

We revised our complaints process. This enables the earlier resolution of many complaints. Members can no longer resign to avoid an investigation.

We updated our Code of Ethical Conduct and included obligations to report beaches of the code and any engineering matter that may have significant adverse consequences for public health and safety.

Our new Membership Pathway, which came into effect on 1 October 2017, is designed to complement the potential introduction of a task-based occupational licensing regime.

We introduced Chartered Membership with a requirement for continuous professional development and an annual re-commitment to the Code of Ethical conduct.

We strengthened the Chartered Professional Engineer assessment process for engineers. We updated the technical guidelines that we assess engineers against and introduced more targeted, specific assessment. We have also brought assessors in-house to ensure consistency.

To help MBIE transition to task-based licensing, we propose to introduce more specific assessments for CPEng engineers seeking to practice engineering in safety-critical engineering areas. We would do this by incorporating engineering Bodies of Knowledge and Skills (BOKS) into the assessment process.

BOKS are currently under development in conjunction with the Structural Engineering Society New Zealand and the New Zealand Geotechnical Society. This will be quickly followed by work with the Society of Fire Protection Engineers to develop the fire safety Body of Knowledge.

## Recommendations

* Engineering New Zealand is best placed as the professional body to assess engineers’ competence.
* We propose an occupational licensing regime for all engineers.
* The health sector provides a useful framework. The Health Practitioners Competence Assurance Act 2003 means that registered practitioners must not perform activities that fall outside the scope of practice for which they are registered, and creates specific powers for the regulator to manage risk.
* One legislative framework allows for consistent procedures and terminology across the professions. At present, if a building is not satisfactory multiple professional and regulatory bodies may be involved.
* An overarching role like the Health and Disability Commissioner can address the problem of dispersed accountability, systemic issues, and help complainants.
* We see the introduction of occupational licensing in the building and construction sector for the design of complex structures as an immediate priority. A licensing regime can be extended over time to other areas of safety-critical engineering work. For example, clean drinking water and dam safety.