



Consultation Regulation Impact Statement

Registration of Building Engineers in WA

July 2020



With the exception of any material protected by a trade mark and where otherwise noted, all material presented in this document is provided under a [Creative Commons Attribution 3.0 Australia license](#).

The Department of Mines, Industry Regulation and Safety has no objection to copying all or part of this document.

The details of the relevant license conditions are available on the Creative Commons website as is the full legal code for the [CC BY 3.0 AU license](#).

National Relay Service 133 677. This publication is available in alternative formats to assist people with special needs. Call 1300 489 099.

Disclaimer

This document has been released to seek feedback on reforms to the registration of building engineer practitioners and contractors in Western Australia and does not represent, or purport to represent legal advice or constitute Government policy.

All due care has been exercised in the preparation of this document. Notwithstanding, the State of Western Australia makes no statement, representation, or warranty about the accuracy or completeness of any information contained in this document. The State of Western Australia disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs any person might incur as a result of the information being inaccurate, or incomplete in any way for any reason.

Contents

GLOSSARY	4
1 EXECUTIVE SUMMARY	6
2 HOW TO HAVE YOUR SAY	7
3 INTRODUCTION.....	8
3.1 Scope and limitations.....	9
3.2 Purpose.....	9
4 BACKGROUND.....	9
4.1 Building legislation in WA	9
4.2 Building Confidence Report	10
4.3 Why register engineers?	10
4.4 National consistency and mutual recognition.....	12
4.5 Building industry registration in WA.....	12
4.6 Regulation of engineers in Australia	13
5 REFORM PROPOSALS TO REGISTER ENGINEERS	14
Proposal 1 – Register building engineers	14
Proposal 2 – Code of Conduct for registered engineers	25
Proposal 3 – Registered persons to work within their area of competence.....	26
6 COST BENEFIT ANALYSIS.....	27
6.1 Estimated number of building engineers.....	27
6.2 Regulatory costs	28
6.3 Benefits.....	30
7 IMPLEMENTATION.....	31
8 EVALUATION.....	32
BIBLIOGRAPHY	33
APPENDIX A: CODE OF CONDUCT	35
APPENDIX B: NCC BUILDING CLASSIFICATIONS.....	39
APPENDIX C: ABCB’S MODEL TO REGISTER BUILDING ENGINEERS	40

Glossary

The following is a list of acronyms and terms used in this document. The definitions listed apply, unless otherwise indicated.

ABCB	Australian Building Codes Board
BMF	Building Ministers' Forum
BSB	Building Services Board, established under section 65 of the BSR Act
BSCRA Act	<i>Building Services (Complaint Resolution and Administration) Act 2011 (WA)</i>
BSCRA Regulations	Building Services (Complaint Resolution and Administration) Regulations 2011 (WA)
BSR Act	<i>Building Services (Registration) Act 2011 (WA)</i>
BSR Regulations	Building Services (Registration) Regulations 2011 (WA)
builder	A person (natural or body corporate) registered under the BSR Act to contract for the carrying out of builder work
building	Any building or structure classified under one or more of the NCC building classifications (see Appendix B)
Building Act	<i>Building Act 2011 (WA)</i>
building engineer	An engineer undertaking building engineering work, as defined in Proposal 1 , for a building.
Building and Energy	Department of Mines, Industry Regulation and Safety – Building and Energy Division (merger of the former Building Commission and Office of Energy Safety)
Building Commissioner	Statutory office created under section 85 of the <i>Building Services (Complaint Resolution and Administration) Act 2011 (WA)</i>
Building Confidence Report	<i>Building Confidence: improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia</i> (Professor Peter Shergold AC and Bronwyn Weir, February 2018)
building surveyor	A person (natural or body corporate) registered under the BSR Act to contract to carry out building surveyor work
CEng	Chartered Engineer of CIBSE
CIBSE	Chartered Institution of Building Services Engineers
commercial buildings	Class 2-9 buildings, as defined by the NCC, including apartment, hotel, office, retail, warehouse, factory and public buildings
CPD	Continuing professional development

CPEng	Chartered Professional Engineer of Engineers Australia
CRIS	Consultation Regulatory Impact Statement (this document)
DRIS	Decision Regulatory Impact Statement
FTE	Full-time equivalent (the hours worked by one full-time employee)
NCC	National Construction Code, being volumes 1 and 2 (Building Code of Australia) and volume 3 (Plumbing Code of Australia)
NER	National Engineering Register
PA	Professionals Australia
permit authority	A permit authority for a building or incidental structure in WA as defined in section 6 of the Building Act, including all local government authorities and designated state government authorities
RPEng	Registered Professional Engineer of Professionals Australia
SBSE	Society for Building Services Engineers
WA	Western Australia
WA Government	The Government of Western Australia

1 Executive Summary

This Consultation Regulatory Impact Statement (CRIS) proposes to amend the Building Services (Registration) Regulations 2011 to require the following categories of engineers to be registered to carry out building engineering work:

- civil engineers;
- structural engineers;
- hydraulic engineers;
- mechanical engineers;
- geotechnical engineers; and
- fire safety engineers.

The proposals in this CRIS are in accordance with the national registration model being developed by the Australian Building Codes Board (ABCB).¹

This CRIS also proposes to introduce a code of conduct for registered engineers and a requirement for registered building service providers to work only within their area of competence. These proposals, in part, address recommendations 1 to 3 in the Building Confidence Report.² Registering engineers will also support the implementation of recommendations 13 to 19, which address improvements in building compliance.

The annual staffing cost to administer a registration scheme for engineers is estimated to be \$777,000 by the third year (see Table 1). This cost would be met by a registration fee. It is estimated that there are approximately 2,000 engineers to be registered, providing for an average annual registration fee in the order of \$388 per engineer.

Table 1: Estimated staffing costs for Building and Energy to manage registered engineers

Staff		Level	Year 1	Year 2	Year 3
Licensing staff	Licensing Officer	L2	\$63,000	\$65,000	\$66,000
	Licensing Officer	L3	\$72,000	\$74,000	\$76,000
	Licensing Officer	L3	\$72,000	\$74,000	\$76,000
Compliance staff	Structural engineer	SCL4	\$126,000	\$130,000	\$135,000
	Fire engineer	SCL4	\$126,000	\$130,000	\$135,000
	Technical officer	L6	\$103,000	\$106,000	\$110,000
On costs (30% of salaries)			\$169,000	\$174,000	\$179,000
Total			\$731,000	\$753,000	\$777,000

Notes:

1. Salary costs are sourced from the *Public Sector CSA Agreement 2019* per annum rate for 2020.³
2. Compliance staff are estimated to work 0.5FTE in the first year, 0.7FTE in the second year and 1.0FTE in the third year, as complaints lodged are likely to start slowly, then increase.

The primary benefits of registering engineers are improved public safety and consumer protection. Engineers Australia notes that registration “is not a silver bullet to all ills of industry”, rather “it creates a system to recognise people likely to perform competently, and a mechanism to exclude those found to be unsuitable to work as an engineer.”⁴

¹ Australian Building Codes Board, *Discussion paper: National registration framework for building practitioners*

² Peter Shergold and Bronwyn Weir, *Building confidence: improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia* (Australian Government, February 2018) p 15-19.

³ Western Australian Industrial Relations Commission *Public sector CSA agreement 2019*, p 95-97.

⁴ Engineers Australia, *Inquiry into regulation of building standards, building quality and building disputes – submission no 125* (NSW Legislative Council inquiry, Aug 2019) p 6.

2 How to have your say

2.1 Making a submission

When reading and commenting on this CRIS, please note that it is not expected that respondents will respond to all proposals and questions. Feel free to focus only on the proposals and/or questions that are relevant to you.

There is a submission template form available for download from Building and Energy's website: <https://www.commerce.wa.gov.au/building-and-energy/public-consultations-0>. Using this form will help us to analyse comments more efficiently. However, you are welcome to make submissions in other formats, including:

- respond specifically to questions included in the CRIS; or
- write a letter outlining your views.

You are welcome to suggest alternative options to address matters of concern to you. Please include the reasons for your suggestions as this will help the Government to understand your viewpoint and will assist in identifying the most suitable options for reform.

Submissions can be emailed to engineers@dmirs.wa.gov.au or posted to:

Submissions: Registration of Engineers
Building and Energy
Department of Mines, Industry Regulation and Safety
Locked Bag 100
EAST PERTH WA 6892

2.2 Who are you?

When making your submission please let us know what is your involvement in the building industry. For example, whether you are an engineer or other building design professional, builder, industry body, building owner or manager, etc.

2.3 Closing date

This CRIS is open for comment for five months, from **8 July to 3 December 2020**

2.4 How your input will be used?

Feedback in response to this CRIS will assist the Government in deciding how best to implement the recommendations in the Building Confidence Report. This CRIS is not intended to be a simple 'yes' or 'no' questionnaire.

Building and Energy will analyse all feedback submitted, and will produce a Decision Regulatory Impact Statement (DRIS) outlining its policy recommendation(s). The DRIS will analyse the impacts of the options and will be used by Government to guide its decisions.

2.5 Information provided may become public

Please note that any feedback submitted is part of a public consultation process. Responses received may be made available on Building and Energy's website and quoted in future publications. If you prefer your name to remain confidential, please indicate this in your submission. As submissions will be subject to freedom of information rules, please do not include any confidential information that you do not wish to become publicly available.

3 Introduction

The *Building Confidence: Improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia* report by Professor Peter Shergold AC and Ms Bronwyn Weir (Building Confidence Report), has prompted an in-depth review of building legislation in WA. The Australian Building Ministers' Forum (BMF), made up of building ministers from all Australian State and Territory Governments, is committed to improve the effectiveness of compliance and enforcement systems for the building and construction industry across Australia by implementing the recommendations in the Building Confidence Report.

The Building Confidence Report concluded that there are a number of significant, systemic deficiencies in Australia's building industry culture and governance arrangements, and made 24 recommendations for reform. The recommendations include registration requirements, powers of regulators and strategies to regulate building design and construction.

The WA Government supports the recommendations in the Building Confidence Report. It is committed to addressing the shortcomings identified in the regulation of the building and construction sector. Building and Energy is considering options to address shortcomings identified and implement the Building Confidence Report recommendations.

Since most of the Building Confidence Report recommendations will require legislative amendment, it is necessary to undertake regulatory impact assessments of all proposals for change. As a first step, public consultation is being undertaken. Two CRISs, to improve the building approvals process for residential and commercial buildings, were released for public comment in September and December 2019, respectively.

This CRIS addresses the first three recommendations in the Building Confidence Report, relating to registration requirements for building engineers.⁵ Registering building engineers will also support the implementation of recommendations 13 to 19, which include various measures to address building compliance throughout the design and construction process. This CRIS details proposals to implement a registration regime for building engineers under the Building Services (Registration) Regulations 2011. Building and Energy seeks feedback from industry and the broader community to inform government action in this area.

The BMF has tasked the ABCB to develop proposals to support nationally consistent implementation of the recommendations of the Building Confidence Report. As part of this work, the ABCB is developing a draft national model for each jurisdiction to register building related occupations, including engineers, recommended by the Building Confidence Report.⁶ This work is focused on defining the broad functions or scopes of work of the proposed categories while leaving it to each State and Territory to implement within their respective registration and building approval systems. The engineers' registration regime in Western Australia will align with this national model.

⁵ Shergold and Weir, op cit, p 15-19

⁶ Australian Building Codes Board, *Discussion paper: National registration framework for building practitioners*

3.1 Scope and limitations

This CRIS proposes reforms to register building engineers in accordance with recommendations 1 to 3 of the Building Confidence Report.

The reforms proposed in this CRIS will, in part, fulfill the WA Government's commitment to implement the recommendations in the Building Confidence Report. The remainder of the Building Confidence Report recommendations are the subject of concurrent reviews and consultation.

The reforms proposed in this CRIS relate to the registration of building engineers only. Registering building engineers has been prioritised for two reasons:

- The WA Government has committed to implementing the recommendations in the Building Confidence Report, which specifically recommends registering a number of categories of building engineers, to address compliance issues in building design and construction; and
- It can be implemented comparatively quickly, under the existing Building Services (Registration) Act 2011 and its associated regulations, and use existing administrative processes. Enacting new, dedicated legislation to register all engineers in WA is a lengthier and more complex process.

3.2 Purpose

This CRIS is designed to obtain feedback from the WA community and industry on proposals to address recommendations 1 to 3 of the Building Confidence Report by extending the current registration of building service providers to include building engineers.

This document asks questions that Building and Energy seeks comment on to help develop, implement and monitor the new requirements. Importantly, feedback is sought on the potential costs and benefits of the proposals presented in the CRIS, or those that may be suggested by stakeholders. Stakeholders are also welcome to suggest other options they consider appropriate.

The objects of the reform are to:

- deliver a registration regime for building engineers;
- improve compliance with building standards; and
- partially fulfil the Government's commitment to implement the recommendations of the Building Confidence Report.

4 Background

4.1 Building legislation in WA

The *Building Act 2011* (Building Act) and its subsidiary legislation commenced operation in April 2012. The Building Act is the primary piece of legislation governing the building approvals process in WA. The legislation assigns responsibilities to different parties, including registration, approval, compliance and enforcement roles. Under the *Building Services (Registration) Act 2011* (BSR Act) building service providers are registered to undertake defined building services, including builders, building surveyors and painters.

Government regulation of the building industry aims to protect the health, safety and sustainability of the community by ensuring that buildings meet prescribed minimum construction standards. The building regulatory framework in WA does this in two ways, by:

- registering building service providers to ensure a minimum level of competence, performance, character, insurance and financial capacity; and
- legislating a building approval process to ensure compliance with minimum standards.

The building industry in WA is regulated via a suite of Acts and their respective subsidiary regulations, including the Building Act, the BSR Act and the *Building Services (Complaint Resolution and Administration) Act 2011* (BSCRA Act).

The BSR Act provides a framework to register building service providers and establishes the Building Services Board. Classes of building service providers are prescribed under the Building Services (Registration) Regulations 2011 (BSR Regulations), and currently includes builders, building surveyors and painters.⁷ The BSR Regulations can prescribe:

- which type of building service provider can be registered;
- what service(s) must be undertaken by registered building service providers; and
- the requirements of registration such as the qualifications and experience applicants must have.

4.2 Building Confidence Report

The BMF commissioned Professor Peter Shergold AC and Ms Bronwyn Weir to assess the effectiveness of compliance and enforcement systems for the building and construction industry across Australia. The Building Confidence Report made 24 recommendations to improve building compliance with the National Construction Code (NCC). Buildings that do not comply with the NCC are more likely to have problems with building defects. Noncompliance with the NCC can also affect the safety, amenity and sustainability of the building and consequently undermine community confidence in both the industry and regulation of the industry.

Recommendation 1 in the Building Confidence Report addresses the registration of people involved in building design, construction and maintenance to improve accountability for building compliance. It recommends that a number of building industry participants should be registered, including civil, structural, hydraulic, mechanical, geotechnical and fire safety engineers. This CRIS addresses registration for building-related engineers.

On 18 July 2019, the BMF established an Implementation Team within the ABCB.⁸ The Implementation Team are developing a national registration model to provide a consistent framework for States and Territories to implement recommendation 1. Building and Energy will work with the ABCB to implement this model in WA.

4.3 Why register engineers?

Engineering is one of the few professions to remain unregulated. Members of other professions in Australia – including lawyers, doctors, nurses, accountants and teachers – are regulated via mandatory registration. Regulation by government is not undertaken lightly and is designed to either control the use of scarce resources or to protect an industry and consumers from unqualified or inexperienced participants in that industry. Registration

⁷ *Building Services (Registration) Act 2011* (WA) s9; Building Services (Registration) Regulations 2011 r6

⁸ Australian Building Codes Board, Building Confidence Report *implementation team* (not dated)

of engineers is strongly supported by members and peak bodies of the profession. A recent report prepared jointly by Professionals Australia, Engineers Australia and the Institute of Public Works Engineering Australasia argues for registration of engineers because:

- Australia's economic success is underpinned by the significant contribution made to the establishment and operation of industry by highly skilled engineering professionals. Similarly, the design and delivery of critical infrastructure and major nation building projects depends on the application of engineering skills of the highest calibre and on accountability for ethical and responsible behaviour. ...
- Changes in business practices that see more engineering work performed off-shore is one example of why traditional industry self-regulating processes are no longer sufficient. The standard of professionalism among engineers must be maintained at a safe level to ensure competent practice, ethical conduct, maximum economic benefit and most importantly, the safety of the Australian community.⁹

Engineers play an important role in the building and construction industry, applying scientific and mathematic principles and standards to develop solutions to technical problems. Engineers are integral in ensuring that buildings meet the NCC requirements, and may be the only qualified person to assess the compliance of the building elements they design. Building surveyors rely on engineers' expertise to certify a building's compliance.

The case to register engineers is based on the presence of building defects and the likelihood that benefits of regulation outweigh the costs that result from rectifying those defects. Problems associated with engineering work include:

- information asymmetry to evaluate the qualifications and competencies of engineers; and
- potentially significant negative effects on health and safety, and environmental and economic costs, of poor engineering decisions and/or practices.¹⁰

Building failures result in costs to remedy defective work, and increased risk to people living and working in non-compliant buildings. Recent Australian building engineering failures include Opal Tower in Sydney, Dec 2018,¹¹ and Catalyst apartments in Darwin, May 2019.¹²

Registration provides benchmarks for competence and experience, giving the public, employers and clients confidence in a registered person's skills. Registration ensures that registered people meet and maintain recognised minimum standards of qualifications, experience, continuing professional development (CPD), conduct and insurance.

Registration provides a mechanism to define work that must be undertaken by registered people and the standard of qualifications, experience and conduct that must be met by registered people. Registration also provides a mechanism to manage those operating in the industry that do not meet the defined standards. Registration of engineers can reduce the risk of building failure and the risk of professional misconduct, and increase levels of consumer protection and community confidence in the work that engineers undertake. The explanatory memorandum which supported the *Professional Engineers Registration Act 2019* (Vic) states that a registration scheme for engineers will:

⁹ Professionals Australia, Engineers Australia and Institute of Public Works Engineering Australasia *Western Australian government brief: a model for registration of professional engineers in Western Australia* (2019) p 4

¹⁰ ACIL Tasman, *The economic basis of the case for national registration of engineers in Australia* (2012) p x

¹¹ Hoffman, Mark, John Carter and Stephen Foster, *Opal Tower investigation* (NSW Government, Feb 2019)

¹² Jano Gibson, *200 homeowners caught up in Darwin's non-compliant building probe* (ABC News, 1/5/2019)

help to promote professional development within the engineering profession, reduce the risk of loss and harm to the public, and give consumers more confidence in procuring engineering services. It will also improve opportunities for the export of engineering services by Victorian engineers.¹³

Registration also establishes benchmarks to ensure that engineers who come to work in the WA building industry from overseas have appropriate qualifications and competencies to carry out work to the required standard.

Reforms are being proposed to introduce new prescribed roles for engineers, including requirements for documentation and inspections.¹⁴ The registration of engineers will be of key importance in implementing these changes.

4.4 National consistency and mutual recognition

Each Australian State and Territory is responsible for regulating occupations involved in the building industry, and administers and issues their own occupational licences. Jurisdictions differ in the occupations they license, the types of licences they issue and the competencies they require applicants to have in order to acquire a licence.

The *Mutual Recognition Act 1992* (Cwth) supports recognition of equivalent occupations across all Australian States and Territories, enabling people to obtain registration in more than one jurisdiction, without the need for further assessment of qualifications and experience. While mutual recognition supports a mobile workforce, there are challenges in that each jurisdiction has its own legislative framework governing various industries.

It is important that registration requirements for engineers in WA align as far as practicable with those in other jurisdictions. This is both to promote national consistency, and to ensure that engineers from other States and Territories can be recognised as equivalent to WA engineers. The Building Confidence Report notes the importance of having consistent registration requirements across all Australian jurisdictions. While the report acknowledges the difficulties in achieving national consistency,¹⁵ it found that inconsistencies in registration across jurisdictions contributes to a lack of accountability for people in the building and construction industry who are responsible for compliance with the NCC.¹⁶

Building and Energy is participating in developing the ABCB's national registration model, which aims to improve national consistency in registration schemes in Australia, including those for engineers. Building and Energy will continue to work with the ABCB to ensure that any reforms developed for WA remain consistent with the national model as it evolves.

4.5 Building industry registration in WA

Building industry participants currently required to be licensed or registered in WA include architects, builders, building surveyors, electricians, gas fitters, painters and plumbers.

¹³ Victorian Government, *Professional Engineers Registration Bill 2019 – Explanatory memorandum* (5/3/2019) p 1.

¹⁴ Department of Mines, Industry Regulation and Safety, *Consultation Regulatory Impact Statement - Reforms to the approval process for commercial buildings in Western Australia* (Government of Western Australia, Dec 2019) p 19-20

¹⁵ Shergold and Weir, op cit p 17

¹⁶ Shergold and Weir, op cit p 15

Builders, building surveyors and painters are registered under the BSR Act and it is proposed to register engineers under this Act. Architects, electrical contractors, plumbers and gas fitters are registered under separate pieces of legislation (see Table 2).

Table 2: Legislation governing the registration of building occupations in Western Australia

Occupation	Registration legislation	Other applicable legislation
Architects	<i>Architects Act 2004</i>	
Building service providers: <ul style="list-style-type: none"> • Builders • Building surveyors • Painters 	<i>Building Services (Registration) Act 2011</i>	<i>Building Act 2011</i> <i>Building Services (Complaint Resolution and Administration) Act 2011</i> <i>Home Building Contracts Act 1991</i>
Electrical contractors	<i>Electricity Act 1945</i>	<i>Energy Coordination Act 1994</i>
Gas fitters	<i>Gas Standards Act 1972</i>	
Plumbers	<i>Plumbers Licensing Act 1995</i>	

4.6 Regulation of engineers in Australia

Under the Australian Constitution, States and Territories regulate professional services within their respective jurisdictions. The ACT and WA are the only jurisdictions with no regulatory requirements for building-related engineers. All other jurisdictions regulate engineers in the building industry to varying degrees through building or occupational licensing legislation.

In Queensland the *Professional Engineers Act 2002* governs all engineers, requiring that anyone providing professional engineering services must be registered. As at 30 June 2019, the Board of Professional Engineers of Queensland registered 14,818 engineers¹⁷ under 26 different areas of engineering.¹⁸ These areas of engineering are defined by assessment schemes submitted by industry organisations, and authorised by the Minister.¹⁹ Approximately 70 per cent of these engineers operate in building-related areas of practice.

Victoria's *Professional Engineers Registration Act 2019* is modelled on Queensland's Act, and will register structural, civil, mechanical, electrical, fire safety and any other prescribed area of engineering.²⁰ The regulations in Victoria are currently under development.

Other jurisdictions, including NSW, NT and Tas, register only building engineers under their building legislation,²¹ and generally recognise registration in the relevant area of practice on the National Engineering Register as satisfying the qualification and experience requirements.²² A similar scheme is proposed for WA (see [Proposal 1](#)).

In SA, engineers are not required to be registered. However the *Planning, Development and Infrastructure ACT 2016* provides that registered certifiers may rely on advice from independent technical experts, including people with engineering qualifications.²³

¹⁷ Board of Professional Engineers of Queensland, *Annual Report 2018-19* (2019) p 18

¹⁸ Board of Professional Engineers of Queensland, *Areas of engineering* (not dated)

¹⁹ *Professional Engineers Act 2002* (Qld) s112B

²⁰ *Professional Engineers Registration Act 2019* (Vic) s 4

²¹ *Building Act 1993* (NT) s4A; Building and Development Certifiers Regulation 2019 (NSW) schedule 1, s2; Tasmanian Government *Occupational licensing (building services work) Determination 2019*;

²² Northern Territory Government, *Ministerial determination relating to building practitioners* Gazette No. G40 (2 October 2019)

²³ Planning, Development and Infrastructure (General) Regulations 2017 (SA) r 25(5) and (7)

5 Reform proposals to register engineers

Proposal 1 – Register building engineers

Proposal 1: Amend relevant Regulations to register building engineers in accordance with the Building Confidence Report.

Categories of engineers to be registered

The Building Confidence Report Recommendation 1 proposes the registration of the following categories:

- civil engineers;
- structural engineers;
- hydraulic engineers;
- mechanical engineers;
- geotechnical engineers; and
- fire safety engineers.²⁴

The Building Confidence Report also acknowledges that further consultation should be undertaken with industry on the additional disciplines to be considered for registration.²⁵

Fire engineers are listed in the Building Confidence Report under the heading of “Fire safety system installers”, and are defined as “Fire safety engineers” and “Fire protection system engineers”.²⁶ The other engineering categories referred to in the Building Confidence Report are well-defined and established disciplines. Fire engineering, however, is a comparatively new discipline, and the competencies, qualifications and responsibilities are not yet well-defined.²⁷ Establishing a definition is confused by inconsistent terminology: ‘fire safety engineering’ is used interchangeably with ‘fire engineering’ in Australia, while ‘fire protection engineering’ is used in the United States.²⁸ Building and Energy is seeking to register the engineering professionals who design, inspect and certify fire safety features in buildings to protect life, facilitate fire brigade intervention and prevent the spread of fire to other buildings.

Electrical engineers are not mentioned in the Building Confidence Report and are not included in proposals in this paper. Electrical work is already heavily regulated in WA, with licensing for electrical workers and contractors, and a comprehensive regime of inspections of electrical work.

Civil engineers are included in this CRIS, because they are included in the Building Confidence Report. Civil engineering work is not currently included in the ABCB’s proposed national registration model, although this may change as a result of industry consultation.

People contracting to do other types of engineering work will not be required to be registered. People with dual qualifications, undertaking work in multiple categories, will only be required to be registered for work done in the categories listed above.

²⁴ Shergold and Weir, op cit p 16

²⁵ Shergold and Weir, op cit p 16

²⁶ Shergold and Weir, op cit p 16

²⁷ The Warren Centre for Advanced Engineering Ltd, *Regulation, Control and Accreditation Report* p.11 (University of Sydney, February 2019)

²⁸ The Warren Centre for Advanced Engineering Ltd, op cit p 9

Questions

1. Do you support registration of the proposed categories of building-related engineers? Why, or why not?
2. Do you think people doing civil engineering work for buildings should be required to be registered? Why, or why not?
3. Are there any other categories of building engineering work that you think should be added, or deleted? If so, please specify.

Legislation

The categories of engineer recommended for registration by the Building Confidence Report are all building disciplines, and can therefore be registered under the BSR Act. A requirement to register engineers can likely be introduced relatively simply, by adding a new part to the BSR Regulations, similar to the existing parts governing the registration of builders, building surveyors and painters.²⁹

Accordingly, it is proposed to amend the BSR Regulations to define:

- the categories of engineering work for which registration as an engineer is required;
- the pathways by which people can demonstrate they have the required qualifications and experience to be registered;
- any other prescribed requirements to be registered; and
- make it an offence for a person to provide prescribed engineering services to another person in an area of engineering unless they are either:
 - registered as a building engineering contractor in that area; or
 - an employee of a registered building engineering contractor in that area.

This proposal fits within the legislative framework provided under the BSR Act.³⁰

The BSR Act provides a framework to manage registered building service providers, including a governing body: the Building Services Board (BSB). The BSR Act provides for the BSB to govern the registration of building service providers.³¹ The BSB includes two members for each occupation group registered, therefore registering engineers under the BSR Act will automatically confer a right to representation by two engineers on the BSB.

Amending the existing BSR Regulations is a comparatively quick means to register building engineers. Developing and enacting separate legislation would significantly delay the introduction of registration for engineers. However, registering building engineers under the BSR Regulations does not preclude future consideration of an Engineers Act. If, in the future, dedicated legislation is introduced for WA to register more categories of engineers, the registration requirements for building engineers in the BSR Regulations can readily be transferred into the new legislation.

Registering building engineers under the existing BSR Act will fulfil recommendation 1 in the Building Confidence Report.

²⁹ Building Services (Registration) Regulations 2011 (WA) parts 2, 3A and 3.

³⁰ *Building Services (Registration) Act 2011* (WA) s 10, 11, 17 and 18.

³¹ *Building Services (Registration) Act 2011* (WA) part 7.

Work is also underway at the national level to implement recommendations 2 and 3 which propose nationally consistent registration requirements and training on the NCC. The WA Government will consider how best to implement recommendations 2 and 3 in WA when this work is further progressed.

Registered function

Legislation will define the work which only registered engineering contractors may contract to undertake. Defining building engineering work for which registration is required is necessary to restrict unregistered people from contracting to undertake such work. The definition of building engineering work will operate similar to the definitions of 'builder work', 'building surveying work' and 'painter work'.³² The proposed definition for 'building engineering work' is:

building engineering work means engineering work that requires, or is based on, the application of engineering principles and data to a design relating to engineering for a building other than engineering work that is done only in accordance with a prescriptive standard.

This definition matches that proposed in the ABCB's national registration model.³³

The Board of Professional Engineers Queensland has published guidance on prescriptive standards to support the interpretation of this definition.³⁴ For example, *AS1684 – Timber Framing Code*, published by Standards Australia, is considered to be a prescriptive standard, because:

- it is a document;
- it states procedures or criteria;
- the procedures or criteria are for carrying out a design or a construction, production, operation or maintenance activity, relating to engineering, and the document explains how to apply those procedures or criteria to the particular task to which the document relates;
- the document leaves little to no room for personal choice or judgement in applying the procedures or criteria stated in the document; and
- applying the procedures or criteria stated in the document does not require advanced scientifically based calculations.

However most Australian Standards are not 'prescriptive standards' because they require the exercise of judgement or personal choice, and/or require advanced scientifically based calculations.

The ABCB's draft national registration model provides further definitions for structural, mechanical, geotechnical, hydraulic and fire safety professional engineering design work.³⁵ Further details of the ABCB's registration model for engineering work relevant to the proposals in this CRIS can be found in **Appendix C**. The ABCB's model also defines other categories for registration, which are outside the scope of this CRIS, including electrical and façade engineering.

³² Building Services (Registration) Regulations 2011 (WA) r 13(1); Building Services (Complaint Resolution and Administration) Regulations 2011 (WA) r 4A and 4.

³³ Australian Building Codes Board, *Discussion paper: National registration framework for building practitioners* p 22

³⁴ Board of Professional Engineers of Queensland, *Practice Note 4.6(2A) Prescriptive standards* (Aug 2018)

³⁵ Australian Building Codes Board, *Discussion paper: National registration framework for building practitioners* pp 23-24

Question

4. Do you support the proposed definition of 'building engineering work' for the purposes of registration?
5. Do you support the definitions for the engineering categories proposed in Appendix C? Please specify.

Pathways to registration

The requirements for registration as a building engineer are proposed to be:

- A minimum four-year full-time Bachelor or Master of Engineering from an accredited Australian institution, or an equivalent qualification as determined by the Board;
- 5 years of relevant building engineering industry experience in the past 7 years in their area(s) of practice; and
- 150 hours of continuing professional development in the previous 3 years.

The BSR Regulations specify pathways by which applicants may demonstrate that they have the required qualifications and experience to be registered. Four pathways are proposed by which building engineers may demonstrate their qualifications and experience to be registered, these are listed in table 3.

Applicants applying to register under Set 1 would require significant additional assessment by Building and Energy and require that this assessment work is contracted out to qualified third parties such as an industry associations. A higher application fee would need to be charged to assess the applicant's qualifications and experience.

Applicants applying to register under sets 2 to 4 would have their qualifications and experience assessed by a third-party industry organisation as a prerequisite for their eligibility for accreditation and registration/membership with that industry organisation, and would therefore be charged a lower application assessment fee.

Table 3: Pathways proposed to register building engineers.

	Qualifications	Experience
Set 1	A minimum four-year full-time Bachelor or Master of Engineering from an accredited Australian institution, or An equivalent qualification as determined by the Board.	5 years of relevant building engineering industry experience in the past 7 years in their area(s) of practice; and 150 hours of continuing professional development in the previous 3 years.
Set 2		Registered by Engineers Australia on the National Engineering Register (NER) as a professional engineer, or chartered professional engineer (CPEng), in the relevant area of practice.
Set 3		Registered by Professionals Australia as a Registered Professional Engineer (RPEng) in the relevant area of practice.
Set 4		Registered by the Chartered Institution of Building Services Engineer as a Chartered Engineer (CEng) in the relevant area of practice.

The proposed pathways, and associated fees, to register engineers in WA will strongly encourage engineers to have their qualifications, experience and CPD verified by industry organisations, being Engineers Australia, Professionals Australia and the Chartered Institution of Building Services Engineers (CIBSE). Applicants seeking to be registered to undertake professional engineering services in WA will be encouraged to obtain a recognised industry accreditation in the relevant area of practice.

The engineering profession is self-regulating and industry organisations have developed rigorous accreditation schemes. It makes sense for a mandatory registration scheme to build on this existing accreditation framework, rather than to set up a new framework. The primary purpose of the registration pathway described in Set 1 is to provide a benchmark against which to measure the rigor of industry accreditation schemes.

Therefore, industry organisations will (generally) assess qualifications, experience and CPD. Building and Energy will assess fitness and propriety and undertake compliance and disciplinary functions for the engineers it registers, including applying to SAT for negligent engineers to be fined, or their registration to be suspended or cancelled. Industry organisations would retain all their existing powers, including the power to discipline, suspend or expel members. The BSB would also be empowered to discipline engineers that it registers. The role of each party under this regulatory model is outlined in Table 4.

Table 4: Overview of distribution of functions under the proposed regulatory model to register engineers

Recognised Industry organisation	Building and Energy
<ul style="list-style-type: none"> • Assess qualifications. • Assess length and breadth of experience. • Manage CPD requirements. • Industry-based code of conduct (optional). 	<ul style="list-style-type: none"> • Fitness and propriety assessment, including police clearance. • Assess insurance requirements for contractors. • Establish a code of conduct, under BSCRA Act. • Monitor and audit registered engineers. • Receive and investigate complaints. • Disciplinary inquiries and action.

This differs from the other categories of building service provider registered under the BSR Act, for which most prescribed pathways to register are defined as being a relevant qualification *and* a prescribed length of experience required to be assessed by Building and Energy, even where industry accreditations are used to verify applicants' qualifications.

For example, one of the five pathways to register as a builder provides that applicants must demonstrate to the BSB that they are a registered architect *and* have at least five years full-time experience in supervising building construction.³⁶ To become a registered architect requires a minimum of *two* years' experience.³⁷ So while this pathway uses another registration scheme (architect) to assess applicants' qualifications to become a registered builder, Building and Energy still assesses applicants' experience separately.

³⁶ Building Services (Registration) Regulations 2011 (WA) r 16(1) set 2

³⁷ Architects Board of Western Australia, *Becoming a registered architect in Western Australia* (Oct 2019) p 3.

Questions

6. Do you support the pathways proposed in Table 3 to register building engineers?
7. Do you support using industry accreditation schemes – e.g. professional NER, CPEng, RPEng and CEng – to assess qualifications and experience, and manage CPD requirements of registered engineers?

Industry accreditation

Three industry-based accreditation schemes are proposed as pathways for registration as an engineer in WA. These are:

- Registered Professional Engineers (RPEng) registered by Professionals Australia;
- Professional and chartered engineers registered on Engineers Australia's National Engineering Register (NER); and
- Chartered Engineers (CEng) registered by the Chartered Institution of Building Services Engineers (CIBSE).

The registration requirements for these three accreditation schemes are outlined below.

The professional NER and RPEng both require applicants to demonstrate that they have:

- a relevant tertiary qualification recognised under the Washington Accord;
- at least five years relevant work experience;
- professional referees who can confirm the work experience claimed; and
- 150 hours CPD undertaken in the preceding three years.

In addition to the written application, applicants *and* their referees are interviewed by the assessor, before determining whether an applicant meets the requirements for registration.³⁸

CIBSE's CEng accreditation is more qualitative, requiring applicants to submit:

- evidence that they hold an accredited qualification;
- an engineering practice report that satisfies 17 objectives³⁹ under five competence criteria, being:
 - knowledge and understanding;
 - design and development of processes, systems, services and products;
 - responsibility, management or leadership;
 - communication and inter-personal skills; and
 - professional commitment;⁴⁰
- a curriculum vitae with full details of work experience within the field of building services engineering, including employer(s) and positions held;
- an organisation chart for their current employer, indicating their position within the corporate structure; and

³⁸ Engineers Australia, *National Engineering Register: application guidelines* (June 2017); Association of Professional Engineers Australia *Registered Professional Engineer of Professionals Australia (RPEng)* (2018)

³⁹ Chartered Institution of Building Services Engineers, *Competence criteria for member* (Jul 2015)

⁴⁰ Engineering Council, *UK standard for professional engineering competence* third edition (Jan 2014) p 6

- a development action plan identifying actions to meet short, medium and long term career goals.⁴¹

Applications for CEng registration must be signed and verified by an appropriately registered sponsor, and applicants are interviewed as part of the assessment process to determine whether the applicant meets the requirements for registration.⁴²

Accredited CEngs are bound by CIBSE's code of conduct,⁴³ and are required to undertake CPD in accordance with their identified learning and development needs. CPD is logged through CIBSE's online member accounts and is audited annually.⁴⁴

Engineers Australia has a mutual recognition agreement with CIBSE,⁴⁵ and recognises CIBSE's CEng accreditation as being equivalent to its own chartered professional engineer (CPEng) accreditation. CPEng is a higher-level accreditation than the professional NER accreditation, requiring a longer and more complex level of work experience.

Question

8. Are there any other industry accreditations that you think should be considered as appropriate pathways to register as an engineer in WA?

Practitioner and contractor registration

While the remainder of this proposal aligns with the legislative frameworks to register engineers in Queensland and Victoria, there is one significant difference in WA under the BSR Act. Unlike other states, WA's BSR Act registers two classes of building service provider: practitioners (individuals) and contractors (businesses).⁴⁶

1. **Building service practitioner** is a person registered as being qualified and experienced to undertake a prescribed building service.
2. **Building service contractor** is a business (individual, partnership or company) registered to provide a prescribed building service to the public. Contractors must either be a registered practitioner (individual) or have a nominated supervisor who is a registered practitioner (partnership or company) in the same class of building service, as well as meeting prescribed insurance, financial, managerial and supervisory capacity requirements to provide a prescribed building service.

The BSR Act and BSR Regulations therefore provide the legislative framework to register engineering practitioners and contractors. The BSR Regulations prescribe the classes of building service practitioner and contractor that may be registered,⁴⁷ which would be expanded to include the categories of engineers proposed to be registered. It is proposed to require individual engineers to obtain practitioner registration and for a business entity (individual, partnership or company) to obtain contractor registration.

⁴¹ Chartered Institution of Building Services Engineers, *Application guidance for member* (Jul 2015)

⁴² Chartered Institution of Building Services Engineers, *Application guidance for member* (Jul 2015)

⁴³ Chartered Institution of Building Services Engineers, *Code of professional conduct* (Mar 2019)

⁴⁴ Chartered Institution of Building Services Engineers, *CIBSE CPD guidance* (Mar 2017)

⁴⁵ Engineers Australia, *International affiliates* (2020)

⁴⁶ *Building Services (Registration) Act 2011* (WA) s 9-11

⁴⁷ *Building Services (Registration) Regulations 2011* r 6

While some details are yet to be determined, it is likely that individuals with multiple qualifications will be required to obtain a separate practitioners registration for each category/area of work they wish to undertake. However, companies that provide services in more than one category of building engineering will only require a single contractors registration. It will then be up to the contractor to ensure that it employs an appropriately registered practitioner to undertake any services it contracts to provide.

Fees

In WA, all businesses that contract to provide a registered building service must be registered contractors, which must employ at least one person registered as a practitioner in the relevant category. This may mean that both contractor and practitioner registration are required and fees for both must be paid.

Registered building service contractors are required to have at least one person registered as a practitioner in the relevant category, as the contractor's 'nominated supervisor'. This person is responsible for ensuring all building services carried out by the contractor are properly supervised. Registered building service contractors may also have a number of, but not necessarily all, employees registered as a building service practitioner.

Term of registration

All building service providers registered under the BSR Act are registered for a period of three years.⁴⁸ This period of registration would also be applied to registered building engineer practitioners and contractors.

Mutual recognition

Under this registration framework people who are licensed to carry out engineering work in other Australian jurisdictions will be eligible for registration in WA. However, mutual recognition only applies to people working in occupations that are *required* to be registered to work in WA. People registered as engineers in fields that are *not required* to be registered in WA are not required to register to work in WA. For example a person registered as a chemical engineer in Queensland does not require registration to work in that field in WA.

Engineers registered in other States and Territories who work in fields that are required to be registered in WA, can submit an application to register in WA under mutual recognition. Any licensing fees applicable to WA applicants will apply to mutual recognition applications. The engineer is then *deemed* to be registered to work in WA immediately.⁴⁹

Once registration is granted under mutual recognition, registrants are then subject to all registration requirements under WA legislation. For example, they would be required to provide the BSB with written notice of any change to their circumstances that affects their eligibility to remain registered, including any disciplinary action taken against them in other jurisdictions.⁵⁰ Loss of registration in another jurisdiction due to a disciplinary action will warrant investigation and may also result in deregistration in WA.

⁴⁸ Building Services (Registration) Regulations 2011 r 7(1)

⁴⁹ Department of Mines, Industry Regulation and Safety, *Mutual recognition* (Government of Western Australia, Oct 2019)

⁵⁰ *Building Services (Registration) Act 2011* (WA) s 33-36; Building Services (Registration) Regulations 2011 (WA) r 11

Mutual recognition of registered occupations only applies to practitioners, as contractor registration in WA is subject to legislative requirements that fall outside the scope of mutual recognition. Individual engineers wishing to contract to undertake building engineering work in WA, after first having been registered in another jurisdiction, will be required to obtain both practitioner and contractor registration. However, where a company has offices in multiple jurisdictions, and requires individual engineers based in other jurisdictions to undertake building engineering work on projects in WA, these engineers will only be required to obtain a practitioners registration, so long as their employer is a registered contractor in WA.

Financial requirements

The BSR Act provides for financial and insurance requirements to be set for registered building service contractors.⁵¹ The financial and insurance requirements for builders and building surveyors under the BSR Regulations are summarised below in Table 5.

Table 5: Financial and insurance requirements for builder and building surveyor contractors

Contractor category	Financial requirements	Insurance requirements
Builder	Must have the capacity to meet debts as and when they fall due.	None specified. However, builders must obtain home indemnity insurance, under the <i>Home Building Contracts Act 1991</i> , for each house contract valued over \$20,000.
Building surveyor	Not be an insolvent; or Must have the capacity to meet debts as and when they fall due.	Professional indemnity insurance of: <ul style="list-style-type: none"> • \$1,000,000 for any one claim, and • \$2,000,000 in aggregate during any one period of insurance

For engineering contractors, it is proposed to match the minimum financial requirements set for building surveyors, that is, to register as an engineering contractor the applicant must not be insolvent, or must have the capacity to meet debts as and when they fall due.⁵²

In addition, registered building surveyors in WA are required to hold a minimum level of professional indemnity insurance as detailed in Table 5 above.⁵³ Building and Energy seeks feedback on whether registered engineers should be required to hold professional indemnity insurance and, if so, what the minimum insured amount should be. In Victoria, legislation requires that registered engineers hold PI insurance similar to that of building surveyors.⁵⁴ However in Queensland, although the Board of Professional Engineers of Queensland “strongly recommends” that engineers hold PI insurance, there is no obligation to do so.⁵⁵

⁵¹ *Building Services (Registration) Act 2011* (WA) s 18(1)(b) and (c)

⁵² *Building Services (Registration) Regulations 2011* r 28E

⁵³ *Building Services (Registration) Regulations 2011* r 28F

⁵⁴ Victorian Government Gazette, *Building practitioners’ insurance ministerial order* (July 2019)

⁵⁵ Board of Professional Engineers of Queensland, *Newsletter issue 46* (Jun 2018) p 4

Questions

9. Do you support the proposed minimum financial requirements for engineering contractors? Why, or why not?
10. Do you think there should be mandatory minimum professional indemnity insurance requirements for engineering contractors? Why, or why not? And, if so, what do you think the minimum insured amount should be?

Continuing Professional Development (CPD)

It is proposed that CPD requirements be monitored and enforced by industry bodies, with the BSB retaining oversight including the power to mandate specific types of training, for example the NCC training currently being developed by the ABCB. All of the industry accreditation schemes proposed to be recognised as pathways to register as an engineer incorporate CPD requirements. For example, Engineers Australia subjects NER registrants to a practice review every five years, which includes a review of CPD records.⁵⁶

Applicants seeking to renew their registration to undertake professional engineering services in WA will be required to demonstrate that they have maintained their industry-based accreditation in the relevant area of practice. This will ensure that CPD is undertaken by registered engineers.

This aligns with Queensland's registration scheme, which requires that an assessment scheme "includes adequate continuing professional development requirements for professional engineers and an effective audit program to ensure continuing registration requirements are met".⁵⁷

Applicants seeking to renew their registration who do not hold one of the industry accreditations (as listed in Table 3) will be required, as part of their registration renewal, to attach evidence that they have undertaken 150 hours of relevant CPD in the preceding three years. It is likely a higher application fee will be charged to assess these applications.

Question

11. Do you support the proposed minimum CPD requirements for registered engineering practitioners? Why, or why not?

Transition

When implementing new registration requirements, Building and Energy will ensure that sufficient lead-in time is provided in the legislation to enable industry participants to obtain the necessary registration(s) while continuing to practice. For example: 12 months for each category of engineer to be registered, staged over 24 months in total.

Advantages

This proposal would:

- ensure registration of building engineers, in a relatively short time;
- make engineers more accountable for their input to a building project;

⁵⁶ Engineers Australia, *National Engineering Register: continuing professional development types and examples* (2016)

⁵⁷ *Professional Engineers Act 2002* (Qld) s 112B(f)

- increase the overall safety and health of the built environment; and
- implement the Building Confidence Report recommendation to register engineers.

Disadvantages

- This proposal may increase the cost to practice for engineers, by requiring them to be accredited and registered, which would likely be passed on to consumers.
- Some existing practitioners may fail to meet the minimum necessary requirements for registration in WA.

Questions

12. Do you support Proposal 1, to register building engineers, in whole or in part? Please specify.
13. Proposal 1 hinges on three main elements, being the:
 - (a) definition of 'building engineering work' that only registered engineers may undertake;
 - (b) categories of engineer required to be registered; and
 - (c) registration pathways that set out the qualifications and experience required to be registered.

Do you think these three elements, as proposed, are likely to adequately regulate all engineers working in the building and construction industry in WA? Is there anything that you would amend or add? Please specify.
14. Do you think Proposal 1 will facilitate mutual recognition of registered engineers in other States and Territories? Please specify.
15. Do you foresee any other costs or benefits to implementing this proposal?

Proposal 2 – Code of Conduct for registered engineers

Proposal 2: Introduce a Code of Conduct for registered engineers, based on the Code of Practice in place in Queensland.

The Building Commissioner is empowered to develop and enforce codes governing the conduct of any building service providers registered under the BSR Act.⁵⁸

Engineering professionals must have detailed technical and professional understanding and apply their understanding appropriately. A code of conduct for engineers sets out the minimum standard of professional conduct required to be met by registered engineers so that they can carry out all their roles with due integrity, care for the public, and competence.

It is proposed that a code of conduct for registered engineers in WA is modelled on Queensland's Code of Practice for Registered Professional Engineers. See Appendix A for the full, proposed draft code of conduct.

Advantages

This proposal would:

- codify a registered engineer's responsibilities to their clients, community and profession;
- assist the BSB in determining whether a registered engineer has behaved in a way that constitutes unsatisfactory professional conduct or practice; and
- promote greater consistency of conduct standards for engineers across different States and Territories.

Disadvantages

- This proposal may not be sufficiently rigorous to ensure that registered service providers act in consumers' and the community's best interests (see also Proposal 3).

Questions

16. Do you support the adoption of a code of conduct for registered engineers? Why, or why not?
17. Do you agree with the code of conduct proposed in Appendix A? What would you add or delete?
18. Do you foresee any advantages or disadvantages, or costs or benefits to implementing this proposal?

⁵⁸ *Building Services (Complaint Resolution and Administration) Act 2011* s 96(1)(b)

Proposal 3 – Registered persons to only work within their area of competence

Proposal 3: Amend the BSR Act to require that ALL registered building service providers must work within their area of competence.

Buildings vary significantly in scale and complexity, and the associated expertise required to design and construct them is equally varied. It is not possible, or desirable, for a registration scheme to assess someone's competence to design every possible building type before permitting them to be registered. This means that registered people must take responsibility for ensuring they are competent to undertake the work they accept.

It is proposed to amend the BSR Act to require that all registered building service providers must only undertake work that is within their area of competence.

This proposal aligns with requirements in Tasmania and Queensland. Tasmania's *Building Act 2016* requires that a person undertaking building design work must ensure that "he or she acts only within the area of his or her competence".⁵⁹ Queensland's Code of Practice for registered engineers, which is a statutory instrument,⁶⁰ requires that:

A registered professional engineer must:

- (a) undertake professional engineering services only within their area of competence;
- (b) not misrepresent their competence;
- (c) not knowingly permit those whose work they are responsible for to breach paragraph (a) or paragraph (b);
- (d) recognise where other professional advice is required and either seek it or recommend to an employer and/or client to seek such expert advice in appropriate areas.⁶¹

Advantages

This proposal would:

- clarify that a registered building service provider may not be competent to work on all buildings; and
- provide some assurance to insurers that professional risks are being managed.

Disadvantages

This proposal may:

- place a legal burden on registered people to prove their competence, in the event of a dispute; and
- take some time to implement, as amending the principal Act (BSR Act) is a longer process than amending regulations.

Questions

19. Do you support Proposal 3? Why, or why not?
20. Do you foresee any other costs or benefits to implementing this proposal?

⁵⁹ *Building Act 2016* (Tas) s 43.

⁶⁰ *Professional Engineers Act 2002* (Qld) s108(6)

⁶¹ Board of Professional Engineers of Queensland, *Code of practice for registered professional engineers* (Nov 2013) p 5.

6 Cost benefit analysis

6.1 Estimated number of building engineers

To estimate the cost of registering civil, structural, hydraulic, mechanical, geotechnical and fire safety engineers, it is necessary to estimate how many of these types of engineers are working in WA. Building and Energy has used data from industry organisations to estimate how many engineers in each category are working in WA, however this may not capture all engineers.

Engineers Australia has reported a recent increase in registration applications, which is believed to be due anticipation of the introduction of mandatory registration requirements.⁶² There are currently 1,877 engineers in WA registered with an industry association in the areas of practice proposed for registration as outlined in this CRIS:

- 18 engineers registered as RPEng through Professionals Australia (see Table 6);
- 1,841 professional engineers registered on the NER through Engineers Australia (see Table 7); and
- 18 engineers registered as CEng through CIBSE.

It is therefore estimated that there are approximately 2,000 engineers in total who will require registering in WA.

While there is currently no area of practice to specifically register hydraulic engineers, Professionals Australia states that hydraulic engineering is associated with a bachelor of civil engineering, and could also be considered for registration under building services engineering.

Table 6: Number of engineers registered by Professionals Australia in WA, by area of practice.⁶³ Areas that correspond to Building Confidence Report recommendation 1 are **bold**.

Discipline	RPEng
Civil	10
Electrical	9
Geotechnical	1
Information technology and telecommunications	2
Management	1
Mechanical	5
Structural	2
Total	30
Total – Building Confidence Report	18

⁶² Personal communication from Engineers Australia.

⁶³ Personal communication from Professionals Australia.

Table 7: Number of professional engineers registered by Engineers Australia in WA, by area of practice.⁶⁴
 Areas that correspond to Building Confidence Report recommendation 1 are **bold**.

Area of Practice	No of Registrants
Aerospace Engineering	4
Asset Management	13
Biomedical Engineering	5
Building Services Engineering	35
Chemical Engineering	84
Civil Engineering	838
Electrical Engineering	504
Environmental Engineering	51
Fire Safety Engineering	10
Geotechnical Engineering	14
Information, Telecommunications and Electronics Engineering	125
Leadership and Management	221
Mechanical Engineering	542
Naval Architecture	3
Oil and Gas Pipeline Engineering	1
Petroleum Engineering	13
Pressure Equipment Design Verification	8
Project Management	50
Structural Engineering	402
Subsea Engineering	1
Systems Engineering	2
Total	2,926
Total - Building Confidence Report	1,841

6.2 Regulatory costs

The cost for Building and Energy to administer the registration scheme, including monitoring, compliance and enforcement activities, is estimated to be \$777,000 per year once the scheme is established (see tables 8 and 9.) This cost is expected to be met through application and registration fees, with the average annual cost being approximately \$388 per engineer.

Set-up costs

Software setup costs to administer engineers' registration will be able to be met through existing operational and maintenance budgets. Licensing and compliance software programs to administer registered building service providers *will* require updating to accommodate registration for engineers. However, no additional resources are required to update the software to include new categories of practitioners and contractors.

⁶⁴ Personal communication from Engineers Australia.

Licensing costs

Building and Energy estimates that three additional licensing staff will be required to administer a registration scheme for engineers. (See Table 8) This estimate is based on an assumption of 2,000 engineers to be registered, and the assessment of qualifications, experience and CPD being undertaken by third-party accreditors. Building and Energy licensing staff will assess applicants' fitness and propriety, including police clearance, character and repute, and insurance.

Table 8: Estimated licensing staffing costs to administer registration for engineers annually.⁶⁵

Staff	Level	Year 1	Year 2	Year 3
Licensing Officer	L2	\$63,000	\$65,000	\$66,000
Licensing Officer	L3	\$72,000	\$74,000	\$76,000
Licensing Officer	L3	\$72,000	\$74,000	\$76,000
On costs (30% of salaries)		\$62,000	\$64,000	\$65,000
Total		\$269,000	\$277,000	\$283,000

Compliance costs

Engineering is a highly skilled and technical field. Regulating engineers therefore requires a high degree of expertise. Compliance activities to regulate engineers are estimated to require three additional staff: a structural engineer and a fire engineer to undertake investigations and auditing, and a technical officer to deal with disciplinary matters. It is estimated that these staff will initially work part time, gradually increasing to full time over the first three years of operation. Complaints lodged are anticipated to be minimal at first, then slowly increase as more people become aware of registration implications. Annual costs for these staff are estimated to be \$494,000 by the third year of operation (see Table 9).

Table 9: Estimated staffing costs to undertake compliance activities for registered engineers annually.⁶⁶

Staff	Level	Year 1	Year 2	Year 3
Structural engineer	SCL4	\$126,000	\$130,000	\$135,000
Fire engineer	SCL4	\$126,000	\$130,000	\$135,000
Technical officer	L6	\$103,000	\$106,000	\$110,000
On costs (30% of salaries)		\$107,000	\$110,000	\$114,000
Total		\$462,000	\$476,000	\$494,000

Building and Energy's compliance staff work as part of a larger team, and other compliance staff may also work on matters relating to registered engineers. The staff costs outlined in Table 9 are indicative of Building and Energy's additional costs required to undertake compliance and enforcement activities for registered engineers.

⁶⁵ Salary costs are sourced from Western Australian Industrial Relations Commission *Public sector CSA agreement 2019*, per annum rate for 2020 p 95.

⁶⁶ Salary costs are sourced from Western Australian Industrial Relations Commission *Public sector CSA agreement 2019*, per annum rate for 2020 p 95-97.

Overheads

Other costs associated with registering engineers include:

- two additional representatives on the BSB;
- additional administrative support required for the BSB; and
- additional enquiries fielded by front desk staff.

Registration fees

Engineers' application and registration fees are likely to be sufficient to meet Building and Energy's costs to administer the registration scheme. By the third year of operation, the annual licensing and compliance staffing costs are estimated to be \$777,000., an annual administration cost averaging \$388 per engineer is expected to meet the cost of administering the scheme. Note, however, that the term of registration would be for three years before renewal would be required, similar to other building service providers registered under the BSR Act.

The average annual cost of \$388 would be apportioned into separate application and registration fees, and would vary appropriately for practitioner, contractor, individual, partnership or company registration, similar to fees for other registered building service providers. In addition, as for other categories of registered building service provider, the application fee would only be charged once, at initial registration. Registration renewals would only accrue a registration fee.

Fees would be on a cost-recovery basis, determined and reviewed annually in accordance with Government requirements,⁶⁷ an in line with all departmental fees and charges.

Question

21. Do you think an estimated average annual cost of \$388 per engineer is a reasonable administrative cost for registered engineers? Why, or why not?

Sensitivity analysis

The main cost to register engineers is the staff required to undertake the associated work.

If there are around 2,000 engineers required to be registered, then Building and Energy estimates that six new staff members will be required to carry out the associated licensing and compliance work. If, however, there are significantly fewer than 2,000 engineers requiring registration, Building and Energy's staffing requirements may be proportionately lower.

This uncertainty will be managed through monitoring and recruiting new staff in stages during the transitional period of the registration scheme's implementation. Should the final number of registered engineers be significantly less than 2,000, Building and Energy will recruit fewer new staff to administer the registration scheme.

6.3 Benefits

The primary benefits of mandatory registration for engineers are improved public safety and consumer protection. Engineers Australia notes that registration "is not a silver bullet to all

⁶⁷ Department of the Premier and Cabinet, *Expenditure Review Committee – handbook* (Feb 2020)

ills of industry”, rather “it creates a system to recognise people likely to perform competently, and a mechanism to exclude those found to be unsuitable to work as an engineer.”⁶⁸

Engineers design some of the highest-risk building elements. Mandatory registration for engineers will ensure that people undertaking this work meet a minimum level of qualifications and experience, and that they update their knowledge by undertaking CPD. Registering engineers will increase consumer confidence in buildings and building industry professionals by ensuring that people undertaking engineering work are suitably qualified to do so. Further benefits of registering engineers are discussed in [section 4.3 \(Why register engineers?\)](#), above.

Registering engineers will enable Building and Energy to communicate directly with building engineering practitioners, for the purpose of information sharing and to provide guidance in the form of technical bulletins.

Registering engineers will also provide a pool of suitably qualified people to undertake third-party review and inspection work, as proposed in a separate consultation process currently being undertaken by Building and Energy called *Reforms to the approval process for commercial buildings in Western Australia*.⁶⁹ It is expected to reduce costs for Building and Energy to implement the reforms necessary to introduce third-party review of engineering design work, and mandatory inspections for construction work. Registration will make the process to identify suitably qualified people to undertake this work simpler and more robust.

7 Implementation

Implementing the proposed reforms would require amending existing legislation. Affected legislation may include the BSR Act, Building Act, and BSCRA Act, as well as subsidiary regulations. Amending existing regulations is a comparatively quick process. Amending an Act is a much lengthier and complex process, and enacting a new Bill is lengthier and more complex again.

It is therefore proposed to implement the reforms identified for adoption in this CRIS in two stages: firstly the reforms that require amending only regulations, followed by those that require an Act amendment. Enacting a dedicated new Bill to register all engineers may be considered separately by Government at some stage in the future.

Implementing registration and a code of conduct for engineers will likely be a relatively quick process, making amendments to the BSR Regulations and the BSCRA Regulations respectively. Any reforms which are identified for adoption that require Act amendments will be implemented afterwards, for example amending the BSR Act to require that registered people work within their area of competence.

Appropriate transitional periods will be provided to allow industry sufficient time to comply with any new requirements. It is anticipated that registration for building engineers will be implemented over 24 months, so that registration applications are staggered. This will

⁶⁸ Engineers Australia, Inquiry into regulation of building standards, building quality and building disputes – submission no 125 (NSW Legislative Council inquiry, Aug 2019) p 6

⁶⁹ Department of Mines, Industry Regulation and Safety, *Consultation Regulatory Impact Statement - Reforms to the approval process for commercial buildings in Western Australia* (Government of Western Australia, Dec 2019)

maintain a steadier workflow of applications and renewals for Building and Energy's licensing staff.

Question

22. Do you think 24 months' transition period is sufficient to allow industry participants to meet the proposed registration requirements?

8 Evaluation

The reforms proposed in this CRIS represent significant change for the building and construction industry, and will require time to adjust and implement. It is proposed to evaluate the effectiveness of all changes implemented within five years of operation. Evaluation will be undertaken through industry surveys, and feedback reported from permit authorities.

Question

23. Do you think online surveys are an appropriate way to obtain industry feedback on the operation of these reforms? If not, how do you think the reforms' effectiveness should be evaluated?

Bibliography

ACIL Tasman, *The economic basis of the case for national registration of engineers in Australia* (Jan 2012) viewed 29/11/2019 https://www.consultaustralia.com.au/docs/default-source/skills/ACIL_Tasman_CBA_full_report.pdf?sfvrsn=0

Architects Board of Western Australia, *Becoming a registered architect in Western Australia* (24 Oct 2019) viewed 16/12/19 <https://architectsboard.org.au/wp-content/uploads/2018/11/Info-Sheet-10-Becoming-a-Registered-Architect-in-WA-Oct-2019.pdf>

Association of Professional Engineers Australia *Registered Professional Engineer of Professionals Australia (RPEng)* (2018) viewed 4/11/2019 <http://www.professionalsaustralia.org.au/engineersdirect/wp-content/uploads/sites/68/2018/07/Registered-Professional-Engineer-of-Professionals-Australia-2018.pdf>

Australian Building Codes Board, *Discussion paper: National registration framework for building practitioners* (June 2020) viewed 1/7/2020 <https://consultation.abcb.gov.au/engagement/dp-national-registration-framework/>

Board of Professional Engineers of Queensland, *Annual Report 2018-19* (2019) viewed 10/1/20 <https://www.bpeq.qld.gov.au/wp-content/uploads/2019/10/Annual-Report-2018-19.pdf>

Board of Professional Engineers of Queensland, *Areas of engineering* (not dated) viewed 16/10/19 <https://www.bpeq.qld.gov.au/information-for-engineers/areas-of-engineering-definitions/>

Board of Professional Engineers of Queensland, *Code of practice for registered professional engineers* (Nov 2013) viewed 13/1/2020 <https://www.bpeq.qld.gov.au/wp-content/uploads/2019/05/180517-BPEQ-Code-of-Practice-131129-web.pdf>

Board of Professional Engineers of Queensland, *Newsletter issue 46* (Jun 2018) viewed 4/3/2020 <https://www.bpeq.qld.gov.au/wp-content/uploads/2019/06/BPEQ-e-news-June-2018.pdf>

Board of Professional Engineers of Queensland, *Practice Note 4.6(2A) Prescriptive standards* (Aug 2018) viewed 17/2/2020 <https://www.bpeq.qld.gov.au/practice-note-series-prescriptive-standards/>

Chartered Institution of Building Services Engineers, *Application guidance for member* (Jul 2015) viewed 15/1/2020 https://www.cibse.org/getmedia/163e8907-cfa8-4dbc-a495-d388a554850c/Factsheet-M20_Interactive.pdf.aspx

Chartered Institution of Building Services Engineers, *Code of professional conduct* (Mar 2019) viewed 15/1/2020 <https://www.cibse.org/getmedia/c6ae6ed8-63c7-462b-929a-7960255b7190/Code-of-Conduct-Updated-March-2019-Final-version.pdf.aspx>

Chartered Institution of Building Services Engineers, *Competence criteria for member* (Jul 2015) viewed 15/1/2020 <https://www.cibse.org/getmedia/7c84096b-6a31-439a-9551-2d0af0200023/Factsheet-M21.pdf.aspx>

Chartered Institution of Building Services Engineers, *CIBSE CPD guidance* (Mar 2017) viewed 15/1/2020 https://www.cibse.org/getmedia/874fe3a9-63ea-4421-861b-e9790d3953c6/9150%e2%80%a2CIBSE_CPD-guidance-booklet_29March_0930.pdf.aspx

Department of Mines, Industry Regulation and Safety, *Consultation Regulatory Impact Statement - Reforms to the approval process for commercial buildings in Western Australia* (Government of Western Australia, Dec 2019)

Department of Mines, Industry Regulation and Safety, *Mutual recognition* (Government of Western Australia, Oct 2019) viewed 9/3/2020 <https://www.dmirs.wa.gov.au/content/mutual-recognition>

Department of the Premier and Cabinet, *Expenditure Review Committee – handbook* (Feb 2020) viewed 6/3/2020 <https://www.wa.gov.au/sites/default/files/2020-02/ERC-Handbook-12-February-2020.pdf>

Engineers Australia, *International affiliates* (2020) viewed 15/1/2020 <https://www.engineersaustralia.org.au/About-Us/Industry-Partners/International-Affiliates>

Engineers Australia, *National Engineering Register: application guidelines* (June 2017) viewed 18/11/2019 <https://www.engineersaustralia.org.au/Engineering-Registers/National-Engineering-Register/NER-Info>

Engineers Australia, *National Engineering Register: continuing professional development types and examples* (2016) viewed 23/12/2019 https://www.engineersaustralia.org.au/sites/default/files/content-files/2016-12/cpd_types_and_conditions_20012016_final.pdf

Engineers Australia, *Inquiry into regulation of building standards, building quality and building disputes – submission 125* (NSW Legislative Council inquiry, Aug 2019) viewed 8/1/2020 <https://www.parliament.nsw.gov.au/lcdocs/submissions/64426/0125%20Engineers%20Australia.pdf>

Engineering Council, *UK standard for professional engineering competence* third edition (Jan 2014) viewed 15/1/2020 <https://www.engc.org.uk/ukspec.aspx>

Gibson, Jano, *200 homeowners caught up in Darwin's non-compliant building probe* (ABC News 1 May 2019) viewed 6/12/2019 <https://www.abc.net.au/news/2019-05-01/buildings-failing-creditation-darwin-200-affected-infrastructure/11062348>

Hoffman, Mark, John Carter and Stephen Foster, *Opal Tower investigation – final report* (NSW Government, 19 Feb 2019) viewed 8/3/2019 <https://www.planning.nsw.gov.au/News/2019/Final-Report-on-Opal-Tower-Released>

Northern Territory Government, *Ministerial determination relating to building practitioners* Gazette No. G40 (2 October 2019) viewed 9/3/2020 https://bpb.nt.gov.au/_data/assets/pdf_file/0005/480119/Ministers-Determination-23-september-2019.pdf#Ministerial%20Determination

Professionals Australia, Engineers Australia and Institute of Public Works Engineering Australasia *Western Australian government brief: a model for registration of professional engineers in Western Australia* (2019)

Shergold, Peter and Bronwyn Weir, *Building Confidence: improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia* (Australian Government, February 2018) viewed 11/11/2019 https://www.industry.gov.au/sites/default/files/July%202018/document/pdf/building_ministers_forum_expert_assessment_-_building_confidence.pdf

Tasmanian Government *Occupational licensing (building services work) Determination 2019* viewed 9/3/2020 https://www.cbos.tas.gov.au/_data/assets/pdf_file/0010/405010/Administrators-Determination-Occupational-Licensing-Building-services-work.pdf

The Warren Centre for Advanced Engineering, *Professional performance innovation and risk in Australian engineering practice* (University of Sydney, 2009) viewed 11/11/2019 <https://thewarrencentre.org.au/project/professional-performance-innovation-risk-ppir/>

Victorian Government, *Professional Engineers Registration Bill 2019 – Explanatory memorandum* (5/3/2019) viewed 30/10/2019 [http://www.legislation.vic.gov.au/domino/Web_Notes/LDMS/PubPDocs.nsf/ee665e366dcb6cb0ca256da400837f6b/294B464E14FE6430CA2583B4007B990D/\\$FILE/591021exi1.pdf](http://www.legislation.vic.gov.au/domino/Web_Notes/LDMS/PubPDocs.nsf/ee665e366dcb6cb0ca256da400837f6b/294B464E14FE6430CA2583B4007B990D/$FILE/591021exi1.pdf)

Victorian Government Gazette, *Building practitioners' insurance ministerial order* (July 2019) viewed 4/3/2020 https://www.vba.vic.gov.au/_data/assets/pdf_file/0004/99148/Building-Practitioners-Insurance-Ministerial-Order.pdf

Western Australian Industrial Relations Commission *Public sector CSA agreement 2019* (WAIRC 00787) viewed 18/12/2019 <http://forms.wairc.wa.gov.au/Agreements/Agmnt2019/PUB051.pdf>

Appendix A: Draft Code of Conduct – Registered building engineering practitioners and contractors

Head of Power

This Code is established under section 96(1)(b) of the *Building Services (Complaint Resolution and Administration Act 2011)* (the BSCRA Act).

Objectives

The objectives of this Code are to:

- provide registered engineering practitioners and contractors with guidance to fulfil their duties and obligations as registered building service providers under the *Building Services (Registration) Act 2011*;
- set out the minimum levels of conduct required to be met by registered engineering practitioners and contractors in Western Australia so that they can carry out all their roles within a framework of integrity, care for the public, and competency; and
- assist the Building Commissioner, Building Services Board and/or the State Administrative Tribunal to determine disciplinary matters in relation to registered engineering practitioners and contractors.

Principles

The following principles reflect the obligations that registered engineers carrying out engineering services in Western Australia have to society; clients and/or employers; and their profession.

1. Obligations to society

1.1. Social, environmental, economic and other possible consequences

Registered engineering practitioners and contractors must take reasonable steps to be informed, and to inform clients and employers, of the social, environmental, economic, and other possible consequences that might arise from delivering engineering services.

1.2. Honesty, integrity, fairness, and without discrimination

Registered engineering practitioners and contractors must act with honesty, integrity, fairness, without discrimination and with respect for the rights of others and the law.

1.3. Health, welfare, and community safety

Registered engineering practitioners and contractors must take reasonable steps to safeguard the health, welfare, and the safety of the community, including:

- identifying hazards;
- assessing risks;
- implementing appropriate controls to manage risks; and
- reporting unmanaged risks to the regulator.

1.4. Effects on the natural environment

Registered engineering practitioners and contractors must:

- consider reasonably foreseeable effects of engineering services on the natural environment; and
- take reasonable steps to reduce reasonably foreseeable adverse effects of the provision of engineering services on the natural environment.

2. Obligations to clients and/or employers

2.1. Truth and objectivity

Registered engineering practitioners and contractors must act truthfully and objectively, and not knowingly mislead clients, employers or the public in the provision of information, opinions, statements and evidence, nor knowingly misrepresent a situation.

2.2. Inform client or employer of consequences of disregarded advice

Registered engineering practitioners and contractors must take reasonable steps to make clients or employers aware of their professional concerns regarding particular actions and the likely consequences if engineering advice, decisions, or judgments are overruled or disregarded.

2.3. Disclose conflicts of interest

Registered engineering practitioners and contractors must disclose any conflict of interest to a client or employer upon discovery of that conflict of interest.

Conflicts of interest include any business association, financial interest or other circumstance that is likely to, or may be perceived to, affect the registered engineering practitioner or contractor's judgment on any engineering services carried out for that client or employer. Examples of conflict of interest situations include:

- accepting benefit from more than one party, for services on the same project, without disclosing the benefit to affected parties; or
- soliciting, accepting or receiving benefit from specifying certain material or equipment.

2.4. Not disclose or misuse confidential information

Registered engineering practitioners and contractors must not disclose confidential information of an employer or client without the agreement of that employer or client, unless:

- failure to disclose information would place the health or safety of people at significant or immediate risk; or
- the registered engineering practitioner and/or contractor is required or entitled by law to disclose that information.

Registered engineering practitioners and contractors who obtain another person's confidential information in connection with one purpose in the course of undertaking professional engineering services must not use that information for another purpose without the agreement of that person.

3. Professional obligations

3.1. Bring knowledge, skill, judgment and care to the task

Registered engineering practitioners and contractors must bring to engineering tasks knowledge, skill, judgment and care that are of a standard which might reasonably be expected by their professional peers or the public.

In considering the appropriate standards, registered engineering practitioners and contractors should have regard to industry and performance standards. One example is the Professional Performance, Innovation and Risk (PPIR) Protocol⁷⁰ which documents the essentials of performance for engineers acting in a professional capacity.

3.2. Not engage in professional misconduct, or fraudulent or dishonest behaviour

Registered engineering practitioners and contractors must not:

- engage in professional misconduct; or
- engage in fraudulent or dishonest behaviour in the practice of engineering.

3.3. Communicate with fairness, honesty, and adequate knowledge

Registered engineering practitioners and contractors must, both orally and in writing, express opinions, make statements, and give evidence with fairness, honesty, and only on the basis of adequate knowledge.

3.4. Not promise, accept, or give inducements

Registered engineering practitioners and contractors must not:

- promise to give or give to any person anything intended to improperly influence that person's decisions as they relate to the registered engineering practitioner and/or contractor's services or to secure work; or
- accept from any person anything intended to improperly influence the registered engineering practitioner and/or contractor's decisions.

3.5. Work within area of competence and not misrepresent competence

Registered engineering practitioners and contractors must:

- undertake engineering services only within their area of competence;
- not misrepresent their competence;
- not knowingly permit those whose work they are responsible for to breach paragraphs (a) or (b); and
- recognise where other professional advice is required and either seek it or recommend that an employer or client seek such advice in appropriate areas.

Examples of competence in an area of practice include:

- formal training in that area;
- previous experience in the type of work that has been supervised by a registered engineering practitioner or contractor;
- consultation with a person competent in the area to supervise the task; and

⁷⁰ The Warren Centre for Advanced Engineering Ltd, *Professional performance, innovation and risk in Australian engineering practice* (University of Sydney, 2009)

- activities considered to meet the competence or continuing professional development (CPD) requirements of registration.

Examples of not misrepresenting competence in an area of practice include:

- fully informing the client of any limitations or concerns that a registered engineering practitioner or contractor might have regarding their competence in relation to the client's specific project; and/or
- organising for a person competent in the area to provide supervision of, or advice to, the engineer undertaking the task.

3.6. Supervision

Registered engineering practitioners and contractors supervising a person in the carrying out of engineering services must:

- be competent in and have sufficient knowledge of the engineering services being carried out;
- retain sufficient control over any outputs of the engineering services to reasonably form the view that the standard of the professional engineering services is that to be expected of a registered engineering contractor; and
- take full professional responsibility for the professional engineering services provided by the supervised person.

3.7. Continue to develop knowledge, skills, and expertise

Registered engineering practitioners and contractors must:

- continue to develop relevant knowledge, skills, competence and expertise throughout their careers, especially in their area(s) of expertise;
- assist and encourage those with whom they are associated to do likewise; and
- document their CPD activities to verify that they meet the minimum level of CPD required as a condition of their registration.

3.8. Comply with the Code and support those who seek to uphold the Code

Registered engineering practitioners and contractors must:

- not assist in or induce failure to comply with this Code of Conduct; and
- support those who seek to uphold the Code if called upon, or in a position, to do so.

3.9. Report professional misconduct

Registered engineering practitioners and contractors must report instances of professional misconduct, including but not limited to behaviour by registered persons that is not in accordance with this Code of Conduct, to the regulator.

Appendix B: NCC building classifications

1a	A single dwelling including the following: <ul style="list-style-type: none"> a) A detached house. b) One of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit.
1b	<ul style="list-style-type: none"> a) A boarding house, guest house, hostel or the like that— <ul style="list-style-type: none"> i. would ordinarily accommodate not more than 12 people; and ii. have a total area of all floors not more than 300 m² (measured over the enclosing walls of the building or buildings); or b) four or more single dwellings located on one allotment and used for short-term holiday accommodation.
2	A building containing two or more separate sole-occupancy units.
3	A residential building providing long-term or transient accommodation for a number of unrelated persons, including: <ul style="list-style-type: none"> a) A boarding house, guest house, hostel, lodging house or backpacker accommodation. b) A residential part of a hotel or motel. c) A residential part of a school. d) Accommodation for the aged, children, or people with disability. e) A residential part of a health-care building which accommodates members of staff. f) A residential part of a detention centre. g) A residential care building.
4	A single dwelling in a Class 5, 6, 7, 8 or 9 building.
5	An office building used for professional or commercial purposes
6	A shop or other building used for the sale of goods by retail or the supply of services direct to the public, including— <ul style="list-style-type: none"> a) an eating room, café, restaurant, milk or soft-drink bar; or b) a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or d) a market or sale room, showroom, or service station.
7a	A carpark.
7b	A building that is used for storage, or display of goods or produce for sale by wholesale.
8	A process-type building that includes the following: <ul style="list-style-type: none"> a) A laboratory. b) A building in which the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce for sale takes place.
9a	A health-care building including any parts of the building set aside as laboratories, and includes a healthcare building used as a residential care building.
9b	A public assembly building, including a library, theatre, public hall or place of worship, school, nightclub, bar, cinema, stadium, or public transport station.
9c	A residential care building.
10a	A non-habitable building including a private garage, carport, shed or the like.
10b	A structure that is a fence, mast, antenna, retaining wall or free-standing wall or swimming pool or the like.
10c	A private bushfire shelter.

Appendix C: ABCB's proposed model to register building engineers⁷¹

Category	Definition	Permitted work	Qualifications	Experience
Geotechnical	<p>Geotechnical professional engineering design work means engineering work that requires, or is based on, the application of engineering principles and data to a design relating to geotechnical engineering for a building other than engineering work that is done only in accordance with a prescriptive standard .</p> <p>Engineering work includes documentation, checking, peer review and signing certificates of compliance.</p>	Geotechnical professional engineering design work, any NCC class or size, performance and DTS	<p>Degree in civil or geotechnical engineering, accredited to the Washington Accord, that includes approved NCC training; or</p> <p>Degree in civil or geotechnical engineering, accredited to the Washington Accord, plus approved NCC training</p>	5 yrs
Structural	<p>Structural professional engineering design work means engineering work that requires, or is based on, the application of engineering principles and data to a design relating to structural engineering for a building other than engineering work that is done only in accordance with a prescriptive standard</p> <p>Engineering work includes documentation, checking, peer review and signing certificates of compliance.</p>	Structural professional engineering design work, any NCC class or size, performance and DTS	<p>Degree in civil or structural engineering, accredited to the Washington Accord, that includes approved NCC training; or</p> <p>Degree in civil or structural engineering, accredited to the Washington Accord, plus approved NCC training</p>	5 yrs
Mechanical	<p>Mechanical professional engineering design work means engineering work that requires, or is based on, the application of engineering principles and data to a design relating to mechanical engineering for a building other than engineering work that is done only in accordance with a prescriptive standard.</p> <p>Engineering work includes documentation, checking, peer review and signing certificates of compliance.</p>	Mechanical professional engineering design work, any NCC class or size, performance and DTS	<p>Degree in mechanical engineering, accredited to the Washington Accord, that includes approved NCC training; or</p> <p>Degree in mechanical engineering, accredited to the Washington Accord, plus approved NCC training</p>	5 yrs

⁷¹ Australian Building Codes Board, *Discussion paper: National registration framework for building practitioners* pp 23-24

Category	Definition	Permitted work	Qualifications	Experience
Hydraulic	<p>Hydraulic professional engineering design work means engineering work that requires, or is based on, the application of engineering principles and data to a design relating to hydraulic engineering for a building other than engineering work that is done only in accordance with a prescriptive standard.</p> <p>Engineering work includes documentation, checking, peer review and signing certificates of compliance.</p>	Hydraulic professional engineering design work, any NCC class or size, performance and DTS	<p>Degree in civil, hydraulic or water services engineering, accredited to the Washington Accord, that includes approved NCC training; or</p> <p>Degree in civil, hydraulic or water services engineering, accredited to the Washington Accord, plus approved NCC training</p>	5 yrs
Fire Safety	<p>Fire safety professional engineering design work means engineering work that requires, or is based on, the application of engineering principles and data to a design relating to fire safety engineering for a building other than engineering work that is done only in accordance with a prescriptive standard</p> <p>Engineering work includes documentation, checking, peer review and signing certificates of compliance.</p>	Fire safety professional engineering design work, any NCC class or size, performance and DTS	<p>Degree in fire safety engineering that includes approved NCC training, accredited to the Washington Accord, or</p> <p>Degree in fire safety engineering accredited to the Washington Accord plus approved NCC training, or</p> <p>Degree in civil, mechanical or electrical engineering, accredited to the Washington Accord and an approved graduate certificate in performance-based building and fire codes, one of which includes approved NCC training</p>	5 yrs