

IPWEA (NSW Division)
L12, 447 Kent St
Sydney NSW 2000
Tel 02 8267 3001

22 July 2019

The Hon. Kevin Anderson, MP
Minister, Better Regulation and Innovation
Department of Finance, Services and Innovation (DFSI)
McKell Building
2-24 Rawson Place
Sydney NSW 2000

Dear Minister Anderson,

Submission on the Building Stronger Foundations Discussion Paper

The Institute of Public Works Engineering Australasia (NSW Division) fully supports the NSW Government's commitment to meaningful reforms in the building and construction sector through effective regulation, certification and enforcement.

IPWEA NSW also appreciates the invitation to make representation through this submission and would value the opportunity to provide further details on the issues raised. We also look forward to the opportunity to have ongoing involvement in this endeavour.

For further information in relation to this submission, please do not hesitate to contact the undersigned by telephone: 8267 3001 or email John.Roydhouse@ipweansw.org.

Yours truly,



Mr John Roydhouse
CEO



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Building Stronger Foundations: Discussion Paper
Implementing the NSW Government Response to the
Shergold Weir Building Confidence Report

Submission by

INSTITUTE OF PUBLIC WORKS ENGINEERING
AUSTRALASIA (NSW Division)

22 July 2019



Executive Summary

This submission has been prepared in response to the NSW Government's request for feedback to its recently released discussion paper entitled "Building Stronger Foundations" which seeks to progress the State Government's response to the "Building Confidence Report" authored by Professor Peter Shergold AC and Ms Bronwyn Weir. This submission will not answer every issue raised in the discussion paper but will succinctly argue that in order to realise any real policy reforms that will uplift and restore public confidence in the building and construction sector, the State must provide assurance that it is putting the welfare of the community in its forefront. This can only be achieved by ensuring that only appropriately qualified and competent individuals are allowed to provide engineering services across all sectors.

IPWEA along with other industry bodies have repeatedly called for a registration scheme for all types of engineers combined with a formal cadet engineering program to be introduced into NSW. The registration scheme also seeks to address, in the medium to long term, the ongoing and increasing skills shortage of engineers, not just in NSW, but across the nation as well as ensuring our standards of construction are met. The skills and capacity of Engineers and other public works professionals are key to maintain and build the committed record infrastructure spend. Over time, such a registration scheme will in fact produce a cost-benefit by ensuring compliance and safety needs are paramount considerations by professionals. Registration of Engineers needs to be a priority. This request has been strongly supported by industry bodies along with the broader community.

While we welcome the State Government's proposed legislation recommending that a Registration Scheme for practitioners who provide building designs and prepare plans based on those designs be put in place, we contend that the proposal is restrictive in the sense that it only seeks to cover "building designers" and "some categories of engineers"¹. What we propose is a comprehensive registration scheme that covers all disciplines of engineering that is consistent with the other states.

The State Government's response should not be limited to the let-downs of the building sector alone. It should also focus on reforming the other sectors of the construction industry. The establishment of a registration scheme that covers all disciplines of engineering, consistent with the other states will ensure that competent and properly qualified engineers are signing off on plans for major projects and community infrastructure. Every major engineering association in the country as well as the broader community support such a scheme.

We would also like to emphasise that the purpose of putting regulatory measures in place is not to add or create additional red tape but to ensure that public safety and consumer welfare are protected and given the highest priority. A well designed regulatory regime will ensure that technical standards are in place, competition is promoted, consumer protection is prioritised, and professionals are held accountable.

Improved engineering capability and capacity can assist the State Government in delivering community infrastructure projects and policy initiatives, while at the same time providing best-value investment in local community assets. This could be achieved through policy improvements to the regulatory framework within the building and construction sector, with even minor adjustments having far-reaching consequences. It is hoped that this submission contributes to advancing the debate on identifying the actions necessary in bringing about improved public infrastructure provision in New South Wales.

¹ NSW Government " Building Stronger Foundations Discussion Paper, June 2019



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Introduction

The Institute of Public Works Engineering Australasia NSW Division (IPWEA NSW) is the leading professional association representing Engineers and Public Works Officers engaged in public works and engineering, with the majority of members working in, or providing services to, Local Government (and the NSW Government).

IPWEA NSW is a charity with the purpose of advancing the public works excellence in Australia, particularly in NSW by:

- conducting and publishing research into improvements to the processes used in public works and services to enhance NSW Communities
- working with government at all levels to ensure that the interests of the community are represented in regard to the public decision-making process relating to public works and services, and
- providing a forum for all people engaged in the public works to discuss best practice and enhancing the future of NSW Communities

IPWEA NSW has made it a mission to enhance the quality of life of NSW communities through excellence in public works and services. This is achieved through our professional association that effectively informs, connects, represents and leads public works professionals for NSW.

IPWEA NSW is ideally placed to take a lead role in enhancing outcomes for communities across NSW by assisting practitioners within the local government sector.

IPWEA NSW notes the importance of public infrastructure as one of the pillars of economic and social development. Infrastructure enables trade, powers businesses, and creates employment opportunities. Infrastructure is considered as the backbone of a strong economy as evidenced by private investments in telecommunication systems, freight networks, energy projects as well as public spending on transportation, road networks, water, buildings and outdoor spaces.

Infrastructure also supports the labour sector providing millions of jobs each year in building and maintenance. The construction sector is the largest non-services sector in the Australian economy – contributing \$134.2 billion to the economy (8.1 per cent of GDP) in 2015-16 and employing 1.1 million people.²

IPWEA NSW, through this submission, seeks to provide feedback by responding to issues raised in the discussion paper particularly with regard to Registration of “building designers” and “some categories of engineers” and the relevant questions raised.

IPWEA NSW would like to thank the NSW Government for the opportunity to make a submission on the issues raised in the Building Stronger Foundations Discussion Paper.

² Lend Lease “What does the future hold for Australia’s construction industry?” [website] <https://www.lendlease.com/better-places/20171219-what-does-the-future-hold-for-australias-construction-industry/> (accessed 17 July 2019)



Background

In February 2018, Professor Peter Shergold AC and Ms. Bronwyn Weir presented their Building Confidence Report to the Building Ministers' Forum. The Shergold Weir Report calls for the registration of all building practitioners. The report argues that everyone involved in the construction process should be registered. This extends beyond engineers to architects, designers, draftspersons, and other professionals in the industry.

The NSW Government released its response to this report in February 2019 (NSW Response), confirming the NSW Government's support for a number of recommendations set out in the Building Confidence Report, and proposed four major reforms to be implemented in NSW.

These four key reform areas include:

- introducing a new registration scheme for "building designers";
- requiring building designers to declare that plans and performance solutions are compliant with the Building Code of Australia (BCA) and require builders to declare that buildings are constructed according to these declared plans;
- ensuring that an industry-wide duty of care is owed to building owners; and
- appointing a Building Commissioner to act as the consolidated regulator for building in NSW.

In June 2019, the State Government released a Discussion Paper "Building Stronger Foundations" which explores in detail the first three of those proposed reforms and is inviting interested organisations and individuals to provide a submission on the issues raised in the paper.

Following consultation on this paper, the NSW Government plans to table enabling legislation in NSW Parliament by the end of the year

Response to the Building Stronger Foundations Discussion Paper (June 2019)

1. Why Registration of Engineers should be a priority for NSW

In 2011, The National Engineering Registration Board (NERB) released a report entitled “The Regulation of Engineers: Finding the Right Approach for a National Economy” which examines the way engineers are currently regulated in Australia and presents the potential impacts that the existing regulatory system has on community safety as well as on the productivity of engineers.³

Currently, there is no formal regulatory regime that covers engineers in NSW. The existing registration system is ad hoc and largely voluntary. Engineers wishing to issue construction, occupation, subdivision, compliance and complying development certificates under the Environmental Planning and Assessment Act 1979 (NSW) must be accredited by the Building Professionals Board under the Building Professionals Act 2005 (NSW). Engineers who are registered on the NPER are taken to have satisfied all the specialty skills, specialty knowledge, specialty underpinning knowledge, specialty qualifications and experience requirements for the relevant accreditation statement and no further assessment of the applicant is required in relation to those requirements.

This accreditation is seen as limited and subordinates engineering accreditation under the largely building construction focussed Act, and does not deal with the wide range of engineering services which are on offer in the State apart from building construction.⁴

Moreover, under the current ad hoc and voluntary system, competency standards cannot be enforced. Engineers and others claiming engineering expertise cannot be prevented from providing services even where there is evidence of misconduct or incompetence. The opportunity exists to replace this patchwork system of accreditation and develop a nationally consistent, state-based registration system for professional engineers that can provide one port of call for the certification of engineers working in local government and in the wider profession.

Unlike many parts of Asia, the US and Europe, the term ‘engineer’, and the training, experience and proven professional competence it entails does not have national statutory protection in Australia.⁵ Professional engineers are one of the only professions that do not have a mandatory licensing or registration scheme unlike other leading professions in NSW, such as lawyers, doctors, nurses, architects and teachers, as well as many trades such as electricians and plumbers. It does not make sense that outside of the building industry, engineers who design the systems that these groups often work within, are not regulated.

³ National Engineering Registration Board, *The Regulation of Engineers: Finding the Right Approach for a National Economy*, 2011 available at www.aph.gov.au/DocumentStore.ashx?id=69e28553-40a9-4978-a603-37227795cc48

⁴ Ibid

⁵ Engineers Australia, “Engineers Registration Bill in Victoria will increase Public Confidence”, [website] <https://portal.engineersaustralia.org.au/news/engineers-registration-bill-victorian-parliament-will-increase-public-confidence> (accessed 15 July 2019)

Given the impact engineers can have on the state's economy and on public safety, including critical roles in our power and water systems, dams, roads and bridges, infrastructure plus manufacturing industries among others, as well as the infrastructure boom we are currently experiencing, it is only logical that regulation and accountability within the engineering profession is established.

IPWEA NSW believes that the NSW Government now has the opportunity to correct the current flawed system by introducing a registration scheme across the board that covers not only those involved in vertical infrastructure but as well as all types of horizontal infrastructure. At the moment, NSW runs the risk of being left behind in this regard and with a recent galaxy poll suggesting 93% of respondents favouring the registration of Engineers. Therefore, it is important we invest not only in the skills development of our current and future engineering capacity but ensuring our current practitioners are suitably qualified.

Engineer registration is an important issue, both for engineers and the wider public. It is a guarantee that an engineer has the right knowledge and qualifications to do the job. It also ensures that engineers are only working in areas for which they are appropriately skilled. That way, you can be sure the right engineer is doing the right job. The scheme ensures certain engineering services are provided by those who have a minimum level of qualification, experience and professional development. The scheme will enable the community and government to purchase engineering services with greater confidence.

The requirement for engineers in Queensland to be registered under RPEQ, a model which Victoria will soon adopt and Western Australia and the ACT are moving towards adopting, means an engineer from NSW cannot seek employment in States where there is no mutual recognition of qualifications. This restricts the capacity of our local engineers to move between states, creating regional divisions in a profession where mobility of skills and certifications is essential. Moreover, the decline in engineering skills currently being experienced has been costing local government and unfortunately the real extent of those costs will never be known. The only thing certain is that these hidden costs will escalate as less engineering skills become available.

Without high level engineering skills, it is certain that cost of new projects will spiral through every stage – scoping, design & documentation, compliance, purchase cost, contract management, construction and ongoing maintenance. Without the knowledge of how to optimise the timing of maintenance of assets, prepare cost effective asset plans, knowing the most cost effective maintenance techniques, the cost of maintenance will rise. A 2012 ACIL Tasman report on the economic case for registering engineers nationally, argued that \$207 million annually could be saved if one percent fewer engineering projects each year were "botched."⁶

IPWEA NSW believes that it is time to begin discussing the merits of this issue in order to establish ways by which we can ensure that we provide a medium to long term workforce with the skills and capacity to manage current and future public infrastructure needs. In consultations with the industry, there is widespread support for having a formal registration scheme in place. NSW is trailing behind Queensland, the first State to have a comprehensive registration scheme for engineers in place by virtue of the Professional Engineers Act 2002 and the Professional Engineers Regulation 2003. Victoria, on the other hand, is close to having

⁶ ACIL Tasman "The Economic Basis of the Case for National Registration of Engineers in Australia", 2012 available at https://www.consultaustralia.com.au/docs/defaultsource/skills/ACIL_Tasman_CBA_full_report.pdf?sfvrsn=0

its own registration scheme in place with the impending approval of the Professional Engineers Registration Bill 2019 by the Victorian State Parliament. Other states and territories are also committed to such schemes thereby leaving NSW exposed to risks of not having the appropriately qualified personnel to manage its infrastructure needs.

2. Which occupations or specific activities are involved in building design and should be in scope for the registration scheme?

IPWEA NSW believes that the proposed Registration scheme should be modelled after the Victorian Engineering Bill of 2019 and should extend to every individual who:

- Provides ‘professional engineering services’;
- where services fall within one of the five areas of engineering: civil, structural, fire safety, electrical or mechanical engineering;

That said, any individual providing professional engineering services should be registered. A “professional engineering service”, as defined in both the Queensland Legislation and Victoria’s Professional Engineers Registration Bill 2019, includes “an engineering service that requires, or is based on, the application of engineering principles and data: (a) to a design relating to engineering; or (b) to a construction, production, operation, or maintenance activity relating to engineering other than an engineering service that is provided only in accordance with a prescriptive standard. A prescriptive standard is a document which contains procedures or criteria for engineering services which do not require scientifically-based calculations.”⁷

Registration should not be limited to those in the business of building construction but should extend to all areas of engineering such as:

1. civil engineering;
2. mechanical engineering;
3. structural engineering;
4. electrical engineering; and
5. fire safety engineering.

We contend that the NSW Government’s Engineers Registration Scheme should be comprehensive to ensure it covers all engineers delivering an engineering service, similar to the Queensland scheme and the proposed Victorian scheme. We also echo Engineers Australia’s position with regard to adopting a co-regulatory framework utilising registers such as the NER, used by other schemes, to significantly reduce the burden and cost for engineers who also need to be registered in other jurisdictions.⁸

⁷ Victoria State Government, Frequently Asked Questions for the Engineers Registration Scheme, 2018 available at <https://www.dtf.vic.gov.au/professional-engineers-registration-bill-2019>

⁸Engineers Australia “Response to the Victorian Government’s Consultation Paper on a Statutory registration scheme for Victorian Engineers, 2016 Available at https://www.engineersaustralia.org.au/sites/default/files/content-files/2016-12/response_to_the_victorian_governments_consultation_paper_-_a_statutory_registration_scheme_for_victorian_engineers.pdf

A comprehensive all-encompassing scheme would ensure that registration applies to all or almost all practising engineers, regardless of the field of work being practised or industry employed in.

3. What should be the minimum requirements for a registration scheme?

IPWEA NSW concurs with Engineers Australia in its submission to the Victorian Government's "Consultation Paper on A statutory registration scheme for Victorian Engineers"⁹ which states that the minimum requirements for registration should be the same requirements mandated by the National Engineers Register (NER) and the Chartered Engineer process.

Engineers qualified for registration must possess:

- a four year Washington accord degree which is a 4 or 5 year undergraduate engineering degree;
- five years' relevant professional experience in each area of practice to be approved for registration and
- mandatory continuing professional development (CPD) in order to ensure that the practitioner providing engineering services is up to date in knowledge, skills, and innovation.

Managing Risks

The provision of engineering services carries with it a certain amount of risk – such as the risk of loss and harm to the public. These risks are magnified when engineering works are delivered by unqualified people. As with other professionals, engineering practitioners have a high degree of responsibility and liability imposed on them by courts and regulators. A registration scheme can regulate standards and has the effect of lowering risks and eliminating threats to public safety, health and welfare by preventing unqualified "engineers" from entering the system. Thus, it can avoid or at the very least, minimise the occurrence of engineering failures.

The greatest risks to the community result from engineering practitioners who attempt to carry out or deliver work without the proper skills or competencies required. The consequences can be both costly in financial terms and catastrophic in human terms.¹⁰ Risks to the purchasers of engineering services can include design and construction costs, litigation expenses, lost production and rectification costs. Furthermore, any deficiency in the engineering work completed may not become apparent for 10 or 20 years after the work has been performed.¹¹

The Opal Tower incident in 2018 as well as the recent Mascot Tower incident are two recent examples of how engineering failures can affect consumer safety and confidence. It is also

⁹ Ibid

¹⁰ Government of Western Australia and Engineers Australia, p.10. in National Engineering Registration Board, *The Regulation of Engineers: Finding the Right Approach for a National Economy*, 2011 available at www.aph.gov.au/DocumentStore.ashx?id=69e28553-40a9-4978-a603-37227795cc48

¹¹ Ibid

worth mentioning other incidents in the past that have all resulted from engineering failures such as the Thredbo landslide, Longford Plant explosion, Lane Cove Tunnel collapse and the Canberra Hospital implosion.¹²

These incidents show how a poorly regulated environment can cause operational inefficiencies for industry. The lack of oversight effectively allows developers to contract to the builder, the builder to contract to subcontractors and the subcontractors to contract to the next layer down.¹³ Accountability thus becomes lost as everyone tries to blame everybody else down the line once a problem becomes evident.

While engineering failures may be low-probability events, the consequences are high-value. Furthermore, problems become disasters when risks that are not properly managed result in significant physical damage to human life, ecosystems, and materials.

With statutory arrangements in place, appropriate standards of competence can be set and assessed, and those found to be incompetent can be removed from the system, thus affording the public some form of protection and a system for redress.¹⁴

The Role and Size of Local Government in public infrastructure delivery

As one of the main providers of public infrastructure, local government plays a crucial role in its delivery and maintenance. It is responsible for key community services such as the planning, developing, managing and maintaining of key infrastructure including local roads, bridges, footpaths, water and sewerage (in some states), drainage, waste disposal and public buildings. Local government also has responsibilities that affect the provision of these infrastructure, for instance rezoning of land, subdivision approval, town and environmental planning, development assessment and building regulation.

As such, local governments in Australia are responsible for wide range of land and fixed assets with a total value of approximately \$353 Billion including 650,000 km of local roads worth \$180 Billion¹⁵, which implies that local government is responsible for roughly one-third of all public infrastructure across Australia.

Compared to State or Commonwealth Governments, Local Governments in Australia account for a very small share of total public sector taxation revenue, recurrent spending, and public sector employment but for a much larger share of public assets, capital expenditures, and user charges¹⁶. 2016-17 government finance statistics show that property rates, which is its only tax base, accounts for approximately 3.6% of Australia's total taxation revenue. Other sources of revenue include user charges and grants from the Australian and

¹² Ibid.

¹³ Deborah Snow, Megan Gorrey and Laura Chung, "No effective oversight: Why the Opal Tower and Mascot Towers cases may be the tip of a very large iceberg" Sydney Morning Herald, 22 June 2019

¹⁴ Op. cit

¹⁵ ALGA, "2019 Local Government Roads and Transport Agenda" available at <https://alga.asn.au/2019-local-government-roads-and-transport-agenda/>

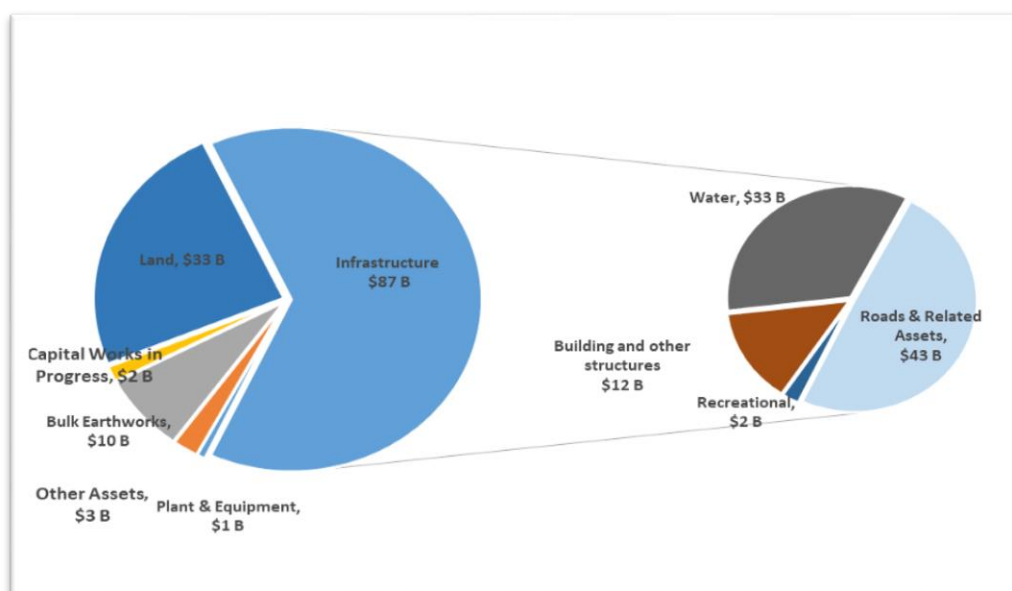
¹⁶ Eslake, S. "Local Government in the Macro-Economic Picture". Presentation to the 2017 Local Government Finance Summit, 2017, Available at: <https://www.lgnsw.org.au/files/imce-uploads/100/Saul%20Eslake%20-%20Local%20Government%20in%20the%20Macro%20Economic%20Picture.pdf>

And Productivity Commission (PC) 2017, "Local Government, Shifting the Dial: 5 year Productivity Review", Supporting Paper No. 16, Canberra.

State or Territory governments. The Local Government sector also accounts for approximately 5.4% or \$37 billion of total public sector spending. These expenditures were dominated by housing and community amenities, followed by transport and communication and then general public services. In terms of employment, the sector accounts for approximately 9.6% of total public sector employment with 189,500 people working for Local Government nationally.¹⁷

In NSW alone, Local government is considered to be a major industry, employing more than 50,000 people, with a total operating revenue of \$14 billion. Councils spend about \$11 billion each year and are responsible for physical infrastructure assets valued at \$136 billion, \$87 billion of which are infrastructure assets with roads and related assets representing 50% of total infrastructure assets. The State Government is committed to more efficient infrastructure management across NSW, however, it is clear that a strong local government will be a determining factor in its success. With an asset value of magnitudes to manage, local government needs adequate financial resources from the NSW Government to address the current and future infrastructure needs of communities in NSW.

NSW Local Government Assets structure as of 2016-17



Source: NSW Auditor-General's Report to Parliament, Report on Local Government 2017

Under the Local Government Act 1993 which was further amended in 2009, NSW Councils are charged with the responsibility to manage infrastructure maintenance and delivery in their communities. The financial sustainability of a council is closely linked to the management of infrastructure which represents the key expenditure item for Councils across NSW and thus remains a fundamental challenge for the sector. With an asset portfolio of \$136 billion, including 163,850km of roads and 10,067 bridges, managing this portfolio is the principal issue impacting Councils. Of the three levels of government, local government

¹⁷ Australian Bureau of Statistics (ABS) Government Finance Statistics, Australia, 2016-17, Cat. No. 5512.0, 26 April 2018

relatively faces the largest responsibility over its infrastructure in terms of asset management while accounting for the smallest revenue base. Therefore, the success or failure to get this balance right has significant consequences for the communities that they serve.

Councils are custodians to billions of dollars' worth of public assets built and acquired over many years and often with minimal or no long-term maintenance funding. The asset types vary greatly, from large infrastructure such as local roads, bridges, footpaths, buildings, waste facilities, pools and storm water pipes to local playgrounds, public art, and library books. However, the challenge for local government is that the financial resources required for service delivery are finite. Thus, Councils are perennially faced with funding challenges that are exacerbated by State government's current policy of rate-pegging. Rate-pegging has placed a significant burden on Councils' capacity to raise revenues necessary to sustain their communities' demand for services and amenities. Moreover, rate-pegging over many years has limited the funds available for Councils to invest in renewing infrastructure and consequently addressing deficiencies in function and capacity.

As it is also Council's responsibility to invest ratepayer money efficiently and effectively, State policies that restrict local government's ability to raise revenue such as rate pegging, have made the effectiveness of this investment even more important thereby pushing Councils to work harder to introduce increased efficiency measures that ensure optimum value and minimum risk, rather than rely upon rate increases. Local communities cannot afford wasteful or risky investment, as the backlog of infrastructure projects is already alarmingly large. With rate-pegging in place, reducing waste through more efficient investment is becoming more crucial if local government is to effectively meet community expectations.

Moreover, if the growing infrastructure backlog is to be addressed, efforts need to be made to ensure that local government has adequate engineering skills and capacity to deliver new and maintain existing infrastructure assets. Professionals Australia (2014)¹⁸ estimates that "governments are wasting \$6-7 billion each year on mismanaged infrastructure projects – simply because they don't have enough engineers to properly scope, design and deliver large scale projects."

Engineers make up an important part of local government being the experts responsible for the principal oversight of the management of the council's assets and infrastructure program. Reduced authority and lack of capacity can hinder the necessary oversight of local government infrastructure investment and maintenance. However, if steps are taken to ensure that capacity and capability are increased, local government will be able to reinvest savings into new projects and vital asset maintenance programs. This in turn will ensure that best value is provided to communities and Councils are well-informed about what they are purchasing, especially when purchasing infrastructure as they are considered significant purchasers of infrastructure, goods and services.

¹⁸ Government losing billions of dollars over mismanaged infrastructure: industry, ABC AM, 10 January 2014, Radio Available at: <http://www.professionalsaustralia.org.au/blog/governments-could-cut-billions-in-waste-by-employing-more-engineers/>

Increasing the Engineering Skills Capacity of Local Government

One of the fundamental issues that prohibit effective infrastructure investment across Australia is the continuing decline of adequate engineering capacity within local government. Both infrastructure projects and the management of infrastructure assets are inherently highly complex and require the involvement of skilled and experienced engineers from planning through to delivery. Within local government, engineers play a crucial role in prioritising projects, accurately scoping projects, designing projects overseeing private development and construction staff, working with private contractors, and delivering projects on budget, free from cost blowouts while minimising risk.

Engineers in local government are also crucial in developing maintenance programs to extend the useful life of community assets, minimise the risk to the community and the cost of asset management. Current state government policies have sought to encourage greater efficiency in local government investment and greater consideration of whole-of-life cycle costs. However, at present, resource limitations compromise the ability of local government to deliver on these. Greater autonomy over revenue for the purpose of funding infrastructure in a strengthened framework for infrastructure management and reporting will be required if councils are to deliver the savings and improvements that the State Government seeks and communities require.

Procuring and delivering infrastructure projects can be a complex and cumbersome process for Councils as there are many steps involved before a project can come to fruition - from project conceptualization to securing project funding, which in itself involves numerous steps and documentation. The following is an outline of the typical process that Councils undertake in the delivery of public works projects:

1. Project Concept - This is the initial stage that involves the conceptualization of the project
2. Preparation of Initial Project Plan/Drawings/Scope – This stage typically involves the process of identifying, validating and scoping a project. It is in this stage where the need for the project is determined. This stage allows the project team to outline the objectives and scope of the project.
3. Preparation of initial project costings/budget
4. Community consultations (if required)
5. In principle approval of project concept plan and budget
6. Identify funding sources following approval – Funds for capital works are not always from the same source and may be obtained internally or externally from one or more of the following sources:
 - General revenue
 - Loans
 - Reserves
 - Federal/State Grants
 - S94 developer contributions - Development contributions are payments made to Council to provide public facilities and services required as a consequence of development. Section 94 of the Environmental Planning & Assessment Act 1979 is the principal legislation allowing Council to levy these contributions.
 - Special Rate



- Special Rate Variation – Before Councils are allowed a special rate variation, they would need to go through a whole separate process of demonstrating to IPART that there is a community awareness of their plans, a demonstrated need for higher increases to charges; a reasonable impact on ratepayers; a sustainable financing strategy, and a history of well-documented council productivity improvements.
7. Prepare and submit required project approvals:
 - Environmental Planning and Assessment
 - Development Application
 8. Prepare detailed design
 - Structural
 - Hydraulic
 - Safety (if required)
 9. Prepare specification for works
 10. Call tenders/quotations for the project
 11. Prepare tender evaluation report
 12. Let tender and programme works

Throughout each step, technical expertise by appropriately qualified professionals is required. IPWEA NSW maintains that in order to establish, increase, and preserve the required level of skill throughout local government, improvements in workforce capacity and capability must occur within each council. This can be achieved if a registration scheme that ensures that NSW Public Infrastructure, community assets and public safety are managed by suitably qualified people.

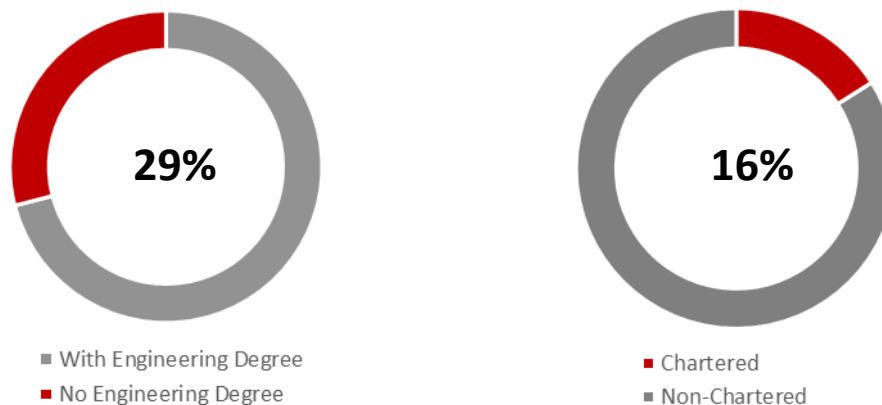
Recognition of Engineers, the retention of technical knowledge and addressing skills shortage remains a central focus for IPWEA NSW, including encouraging diversity and sustainability in the sector.

With record expenditure in public infrastructure spending and the need to continue to invest in infrastructure, it is important to invest in the skills and workforce capacity required to design, build and maintain the growing public infrastructure portfolio.

IPWEA NSW is mindful of the perceived impost on those small regional councils that may suggest they are least able to afford skilled personnel. IPWEA NSW has recently undertaken a skills audit across the state with some encouraging and surprising results. The key messages from the audit suggest that Local Government in NSW is able to afford to employ a qualified Engineer and in fact all councils, including the small regional councils, currently do have an Engineer on staff.

Whilst the depth or quantum of Engineers is harder to measure and anecdotal evidence suggests attraction in regional areas remains problematic, it is of concern that 29% are not degree qualified and considerably less (16%) are able to be chartered or certified. This is the gap that needs to be filled.

NSW Councils Surveyed



Source: IPWEA (NSW) 2018 Audit of Skills Capacity in NSW Local Government

It is of utmost importance that civil engineers in local authorities are given the opportunity to acquire the qualifications, skills, and experience necessary to manage existing challenges and as well as uncertainties brought about by increasingly rapid technological change and demographic shifts.

Having the capability to maintain infrastructure is just as important for local government as being able to deliver new infrastructure to the community. This situation adds to compliance costs for the profession as a whole, and by extension local government, by hindering mobility of trade, adding to skills shortages, and posing serious risks in relation to consumer protection and public safety. Engineering failures can be devastating and are almost always attributed to a lack of competency. Under the current ad hoc and voluntary system of registration, competency standards cannot be enforced. Engineers and others claiming engineering expertise cannot be prevented from providing services even where there is evidence of misconduct or incompetence. The opportunity exists to replace this patchwork system of accreditation and develop a nationally consistent, state-based registration system for professional engineers that can provide one port of call for the certification of engineers working in local government and in the wider profession.

A mandatory registration regime would lead the engineering skills upgrade process by allowing the engineering profession to identify the necessary training programs that can assist in providing the required competencies. Moreover, mandatory registration of engineers will not only give recognition to the profession, but will also ensure that projects are up to standards and associated risks are minimised. As mentioned previously, registration of engineers is already required in Queensland and very soon in Victoria with the ACT set to follow suit. The West Australian Premier has also committed to investigating models for engineer registration.

The NSW Parliament has the opportunity to address this crucial issue with a comprehensive Notice of Motion passed in the previous Parliament.



That this House:

- (1) Recognises the importance of qualified engineers and calls on the government, in consultation with key industry groups, to implement on a transitional phase in basis, a requirement for all local government authorities to have a suitably qualified engineer.*
- (2) Calls on the Government to recognise engineers as a profession, through a state and national registration scheme, similar to Queensland and as raised at Council of Australian Governments in 2011-12.*
- (3) Supports cadetships for civil engineering across all Government projects, in order to ensure the long-term workforce capabilities*

This motion was originally moved on 12th August 2017 by Mr John Sidoti MP, Member for Drummoyne. The identical Notice was also moved on November 14th 2017 by Mr Greg Warren MP, Member for Campbelltown, on March 15th 2018 by Ms Tamara Smith, Member for Ballina and again on May 2018 by Mr Philip Donato, Member for Orange.

We note, however, this motion would need to be reintroduced in the current Parliament as the validity has already lapsed. We also note the strong bi-partisan political support that this motion has gathered as well as the widespread support from industry bodies and the broader community.

We would also like to emphasise that the purpose of putting regulatory measures in place is not to add or create additional red tape but to ensure that public safety and consumer welfare are protected and given the highest priority. A well designed regulatory regime will ensure that technical standards are in place, competition is promoted, consumer protection is prioritised, and professionals are held accountable.

Conclusion

IPWEA NSW supports the State Government's efforts in ensuring that public confidence is restored in the building construction sector. One way of achieving this by having a formal registration scheme for engineers in place. Registration should be comprehensive and across the board and inclusive to all types of individuals performing engineering services similar to the Queensland Professional Engineers Act 2002 and the Victorian Professional Engineers Bill 2019.

The State Government's response should not be restricted to the let-downs of the building sector alone. It should also focus on reforming the other sectors of the construction industry. NSW needs a registration scheme that covers all disciplines of engineering, consistent with the other states. Registration ensures that competent and properly qualified engineers are approving plans for major projects and community infrastructure. This will not only guarantee safety but will also help protect the taxpayer from having to shoulder the consequences brought about by inadequate project scoping and waste.

A mandatory registration regime would also lead the engineering skills upgrade process by allowing the engineering profession to identify the necessary training programs that can assist in providing the required competencies. Moreover, mandatory registration will not only give recognition to the profession, but will also ensure that projects are up to standards and associated risks are minimised.

We note that to introduce such recognition will take time. Therefore, it is imperative that the process is commenced urgently to ensure that there is an adequate phase-in period. A phase-in period will allow our Engineers the opportunity to up-skill or complete certification if necessary. This is crucial to ensure New South Wales remains the Premier State in terms of career opportunities, infrastructure investment and economic and social development. Improved engineering capability and capacity can assist the State Government in delivering community infrastructure projects and policy initiatives, while at the same time providing best-value investment in local community assets.

Again, we would like to extend our appreciation to the State Government for this opportunity to make representations and present our views through this submission. It is hoped that this submission will contribute to advancing the debate on identifying the actions necessary in bringing about improved public infrastructure provision in New South Wales.

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