



VICTORIAN LABOR JOBS & INVESTMENT PLAN

SUBMISSION

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Jonathan Cartledge
Zeina Nehme

*Director of Policy
State Manager Victoria*

Consult Australia Victoria
Level 6, 1 Southbank Boulevard
Southbank, VIC 3006
P. 03 8699 7700
F. 03 8699 7550
E. vic@consultaaustralia.com.au
W. www.consultaaustralia.com.au

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ABOUT CONSULT AUSTRALIA

Consult Australia is the association for professional services firms within the built and natural environment; influencing policy, creating value and promoting excellence. As an association, our primary focus is on improving the commercial environment for our members and raising standards across the industry.

Our member firm services include, but are not limited to: design; architecture; technology; engineering; planning; landscape architecture; surveying; cost consulting (quantity surveyors); project management; and management solutions. We represent some of the industry’s biggest players in this space with our member firms collectively employing more than 60,000 staff.

Consult Australia is a member of the Australian Sustainable Built Environment Council (ASBEC), the Australian Construction Industry Forum (ACIF), the Australian Chamber of Commerce and Industry (ACCI) and the Australian Services Roundtable (ASR). Consult Australia is a host organisation for the annual Built Environment Meets Parliament (BEMP) summit.

EXECUTIVE SUMMARY

Consult Australia welcomes the opportunity to submit to Victorian Labor's call for feedback as part of the development of a Victorian jobs and investment plan. The development of this plan is an important step supporting long-term policy development for a more productive and sustainable Victoria.

A successful future built on infrastructure excellence

Victoria has enjoyed considerable economic success over recent decades. Melbourne is recognised as one of the world's most liveable cities, its port is the country's busiest and it is renowned for its cultural and sporting events.

The Victorian education sector includes some of the country's best-regarded universities and research facilities. These, like the Australian Synchrotron and the Parkville medical cluster, have established the city as a centre for world leading research.

In rural Victoria, the state has begun to meet the challenge of climate change with innovative water management schemes and renewable power generation schemes.

All these successes are due, in some measure, to ability of the state's built environment professionals – architects, engineers, project managers, urban designers, cost managers and the like – to deliver world class infrastructure.

The challenge and opportunity ahead

Today the state is faced with a set of challenges unlike any it has faced in recent times. Global financial turmoil has presented challenges to many of the manufacturing industries that have traditionally been Victoria's economic engine room. Increasing this pressure is Victoria's reliance on power generated from brown coal, creating further economic and infrastructure challenges for initiatives seeking to reduce CO₂ emissions.

The state is not well placed to share in the mining boom that has buoyed state economies in the north and west of the country, and the high Australian dollar resulting from mineral-related investment further disadvantages the manufacturing sector. Finally, other states are actively pursuing sporting, cultural and urban development initiatives that advance upon the pioneering ideas that transformed Victoria towards the end of the last century.

Consult Australia believes that these challenges also represent significant opportunities for the state and our industry. Our history of success in the design and management of built environment projects, together with the strength of our education institutions and the proven capability and capacity of the consultants designing and delivering our state's infrastructure, should be exploited for the benefit of all Victorians.

If exploited, this capability will provide more jobs and income in the State's economy, provide a knowledge driven export opportunity, and contribute to greater economic growth and productivity.

Realising the potential

Consult Australia has developed three principles that underpin our recommendations supporting jobs and investment in Victoria's built environment consulting sector:

- Develop the state as a producer of outstanding built-environment professionals
- Make the state a great place to be in the built environment design industry
- Sell our built environment skills nationally and internationally

These principles are supported by a series of practical steps that we believe industry, government and key stakeholders working together can implement. This will serve to make the vision of built environment design and delivery services as a substantial part of Victoria's economy a reality.

RECOMMENDATIONS

Governance reform – Providing the foundations of success

1. Infrastructure Victoria (modelled on Infrastructure New South Wales, Infrastructure Queensland, and Infrastructure Australia) to independently develop and oversee a long-term pipeline of coordinated infrastructure projects that will act as the foundation for the next phase of the state's economic growth.

Skills development – Developing our future practitioners

2. Increasing the number of students studying higher level maths and science at school is vital and should be a core focus of primary and secondary education spending.
3. Greater emphasis must be placed on teachers' abilities to provide informed career guidance to students. This may include funding to enable headmasters to employ extra careers advisors and to facilitate professional development programs to enhance teachers' links with industry.
4. Government funding programs for industry-led training should be made available for all levels of education and training.

Procurement – Promoting best practice at home

5. Standard fair contract terms (for example Australian Standard AS4122-2010 General Conditions for Contract for consultants) including limitations on liability to provide the most efficient and effective risk allocation across projects.
6. Support for national proportionate liability reform through the council of Australian Governments, explicitly prohibiting 'opting-out' of proportionate liability preserving the long-term integrity of national insurance markets.
7. Shared training with procurement officers and industry to bridge knowledge gaps, share language and improve understanding; supporting the selection and application of the most appropriate procurement processes for public sector projects across Victoria.
8. A Victorian Procurement Coordinator within the Department of Treasury and Finance, supported by dedicated resources to: bring together procurement expertise across government in both construction and on-construction procurement; improve business consultation and engagement; and administer and enforce standard contracts, guidelines and training for agency procurement coordinators
9. Reinvigorate public sector recruitment of engineering graduates and qualified engineers at all levels;
10. An audit of procurement expertise, capability and skills across government agencies to scope the current state of play and opportunities for intervention;
11. Formal training, support and continued professional development should be provided for any public servants who are moving into procurement and project management. This is particularly important when they are involved in high risk or high value projects;

12. Government should support the work of the Australasian Procurement Construction Council (APCC) and their “Building Government Procurement Capabilities” standard.

Urban policy – Building on our most liveable status

13. A continuing commitment to best practice urban design, including transit oriented development, user pays infrastructure, higher densification, and integrated strategic planning supporting more productive, liveable, sustainable cities.
14. An Integrated Design Commission (as in operation in South Australia) to promote Victorian design excellence, collaboration and policy internationally and domestically.

INDUSTRY OVERVIEW

Consulting services in the built and natural environment¹

Industry size

There are some 48,000 professional services firms consulting in the built and natural environment, characterised by a large number of very small firms; some 93 per cent of consulting engineering businesses are small firms, employing fewer than 20 people.

The latest count by the Australian Bureau of Statistics (ABS) draws not only on its own survey results but also on information from the Australian Taxation Office.² That information reveals large numbers of very small firms including some 23,600 sole practitioners.

Even among the employing firms—those employing fewer than 20 dominate the numbers—accounting for 93 per cent of the total. As Table 1.1 shows, there are fewer than 1,500 medium-sized firms and only 78 large ones with 200 or more employees.

We estimate that the industry employs about 221,600 people and generates revenues of around \$40 billion a year.

TABLE 1.1: NUMBER AND SIZE OF FIRMS AT JUNE 2011

Size of firm	Non employing	Small	Medium	Large	Total
Employees	0	1-19	20-199	200+	
Services:					
Consulting engineering	14,707	15,176	1,034	70	30,987
Architectural	7,313	6,356	308	23	14,000
Surveying	1,524	1,899	220	6	3,649
Total	23,544	23,431	1,562	99	48,636

Source: ABS 8165.0

Because of the multi-disciplinary nature of many of the large firms, it is difficult to categorise them precisely. Nevertheless, 66 per cent of the medium-sized and large firms describe themselves as providing mainly engineering design and consulting services, 20 per cent as providing mainly architectural services (including landscape architecture), and 14 per cent as delivering mainly surveying services.

As a result of strong growth in the market and considerable merger and acquisition activity, the number of large firms—those employing 200 or more—has grown rapidly in recent years. The biggest 15 of these large firms rank among the largest 1000 enterprises in Australia; and the biggest of all ranges in the top 50.

Even if the non-employing architects are excluded, the number of firms still looks large; but this category includes landscape architects and perhaps many garden designers who describe themselves as such.

¹ Consult Australia. 2012. *Forecast*. www.consultaustralia.com.au

² ABS Cat. No. 8165.0, *Counts of Australian Businesses*

Drivers for Consulting Services in the built and natural environment

Six major drivers of the demand for consulting services in the built and natural environment are: private sector spending on non-residential building; engineering construction; new housing; mining; manufacturing; and the service industries.

Most of the work done on non-residential building— especially on shops, factories and offices— is done by private-sector builders for private-sector owners. In recent years only about 20 per cent of non-residential work is for governments. Most of this work is also undertaken by private builders. As private builders generally rely heavily on consultants for design and supervision services, all non-residential building is a major source of work.

Engineering construction work carried out by private contractors for private clients is another significant source of work: this includes work on mines and heavy industrial plants; increasingly work for private operators in telecommunications; freeway construction; electricity and water supply.

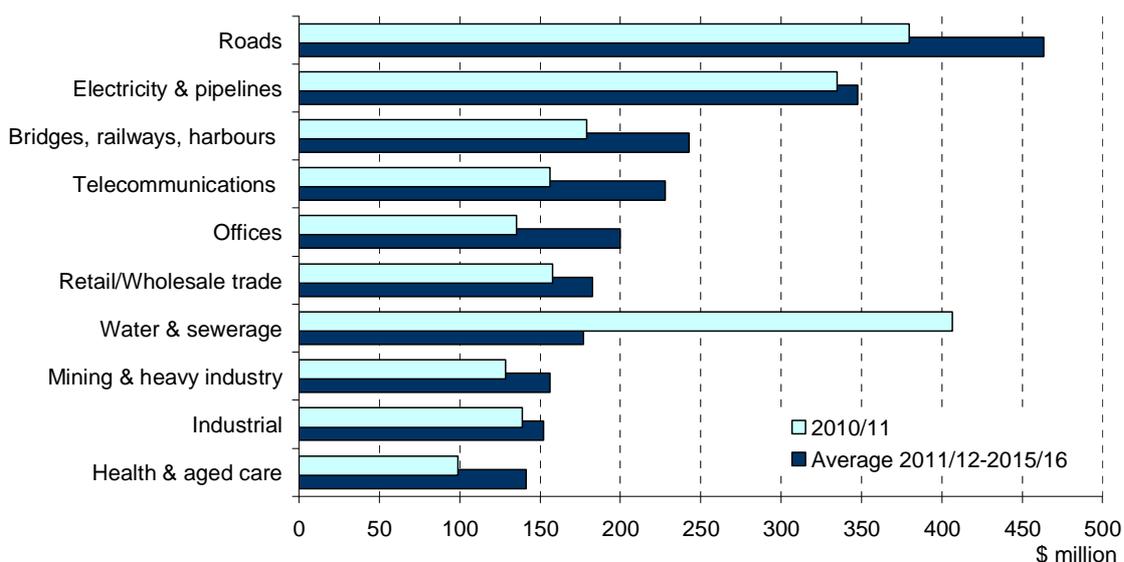
Much construction work—recently about 36 per cent—is done for governments, which, traditionally, often undertake their own design and construction rather than letting it out to private contractors. Since the late 1990s, however, there has been a significant trend towards contracting out. Budget constraints, and both commonwealth and state level, will curtail the growth of public spending in the year ahead, although we expect a high level of activity to be sustained. Public stimulus spending on housing, on the other hand is likely to have peaked in 2011/12 and to fall sharply in the year ahead.

Major markets for consulting services in Victoria

In Victoria the importance of road works is evident as a source of revenue. Roads rank first in New South Wales, Victoria and South Australia and second in the national market. Construction of electricity generation, transmission and distribution facilities is the third biggest national market and a major market in all states.

TEN MAJOR MARKETS FOR CONSULTING, VIC

Estimated consulting engineering fees earned



International trade

Many of Australia's large builders and construction-related consulting firms operate overseas offices, and some win significant work on overseas projects from their Australian offices.

Table 1.2 shows the extent to which construction and construction-related consulting services have been exported over the past six years, in total and in relation to all exports of services.

TABLE 1.2: EXPORTS OF CONSTRUCTION AND RELATED SERVICES

Exports \$ million	2005-06	2006-07	2007-08	2008-09	2009-10	2010/11
Construction	42	21	22	103	128	68
Construction-related services						
Architectural	74	82	98	117	102	86
Engineering	986	1,191	1,447	1,216	1,316	1,635
Surveying	15	35	43	57	53	52
Total related services	1,075	1,308	1,588	1,390	1,471	1,773
All services	41,641	45,956	50,105	52,948	52,011	50,859
Construction-related services % all services	2.6	2.8	3.2	2.6	2.8	3.5

Source: ABS 5368.0

Over the past six years:

- Exports of construction services have averaged \$64 million a year.
- Despite strong local demand, exports of construction-related services have averaged \$1.43 billion a year, of which 91 per cent were consulting engineering, 6 per cent architectural, and 3 per cent surveying.
- Construction-related exports accounted for 2.9 per cent of Australia's total service exports.

As Table 1.3 shows, the industry has also been subject to competition from abroad. Over the past six years, imports of construction-related services have averaged \$1.27 billion a year, and last year rose sharply to exceed \$2.3 billion. The great bulk of these imports – 93 per cent over the six years – has been of engineering services.

As the net exports section of the table shows, over the three years to 2007/08, exports of construction-related services exceeded imports. In the latest three years, however, a strong Australian dollar has made exporting more difficult; and the growing importance of major oil and gas developments, for which much work is sourced abroad, has increased import competition.

In 2010/11, net imports of construction-related services rose to \$541 million; and in the first half of 2011/12, that negative balance increased to an annual rate of \$774 million.

The exports measured here include only the supply of services from the territory of one country into the territory of another. They do not include the supply of services abroad from wholly- or partly-owned subsidiary or associated companies, or from Australian consultants working abroad on overseas projects.

Although aggregate statistics on these overseas earnings are not available, they are known to be substantial.

Past surveys of engineering consulting members have found that:

- About a third of the large firms perform some overseas work.
- The larger the firm the more likely it was to undertake overseas work.
- Exports generated 5.5 per cent of the fees earned from the Australian activities of the 15 large firms surveyed in 2010/11; and fees earned from their overseas offices were equal to 11.3 per cent of the fees earned from Australian activities. These large firms thus earned some 18 per cent of their total revenues from overseas markets.

TABLE 1.3: IMPORTS AND NET EXPORTS OF CONSTRUCTION AND RELATED SERVICES

Imports \$ million	2005-06	2006-07	2007-08	2008-09	2009-10	2010/11
Construction	0	0	0	0	0	0
Construction-related services						
Architectural	9	11	14	19	99	19
Engineering	337	340	1,289	1,348	1,514	2,238
Surveying	16	23	88	145	38	57
Total related services	362	374	1,391	1,512	1,651	2,314
All services	41,519	44,897	53,055	56,328	53,388	57,173
Net Exports \$ million						
Construction	42	21	22	103	128	68
Construction-related services						
Architectural	65	71	84	98	3	67
Engineering	649	851	158	-132	-198	-603
Surveying	-1	12	-45	-88	15	-5
Total related services	713	934	197	-122	-180	-541
All services	122	1,059	-2,950	-3,380	-1,377	-6,314

Source: ABS 5368.0

GOVERNANCE REFORM – PROVIDING THE FOUNDATIONS OF SUCCESS

Infrastructure provision has lagged population growth in Australia for three decades. If we are to seize an advantage in what is the fastest growing region of the world's economy, obstacles to the development and delivery of infrastructure must be overcome.

Since 2004, Australia's strong economy, supported by the mining boom and AusLink investments, together with an increase in private financing has seen some improvements in the delivery of infrastructure projects that have helped to manage congestion costs and supply constraints. The benefits of this investment to our productivity are clear. However, while positive, these improvements are against a growing infrastructure deficit that puts at risk our ability to maintain economic prosperity in the longer term.

Increased infrastructure investment that improves economic capacity and productivity must be the first policy response to the challenges of increasing congestion and declining quality of life in Australian cities, and will have the added benefit of easing pressure on migration policy and achieving a more sustainable future.

A clear and transparent, long term approach to the prioritisation of infrastructure delivery in Victoria is essential. Many infrastructure projects are prioritised through clear and rational assessment, but in some cases decision making risks being misconstrued, and may appear to be driven by political exigency where no clear process or guidelines for assessment have been developed. When communities are competing for dollars spent, clear processes are essential to assess, rank and prioritise infrastructure delivery. These must be robust and stand the test of changing political and economic circumstances.

Recent uncertainties associated with infrastructure funding, planning and governance for major infrastructure projects have negatively impacted those industries supporting the infrastructure pipeline. In an increasingly competitive labour market, the implications for industry and the wider economy are significant where resource planning, forecasting and delivery estimates demand certainty. An emphasis on the development of more robust infrastructure plans is commendable towards identifying needs, but does not in itself go far enough to provide secure funding over the medium to long-term.

Effective governance combined with a long-term funding framework supporting a strong pipeline of infrastructure projects at all levels of government is vital, and will support associated industries.

Realising Infrastructure Victoria

Victoria requires a robust, independent and transparent process and governance model for the evaluation, prioritisation and decision-making supporting infrastructure delivery.

Recommendation 1:

- Infrastructure Victoria (modelled on Infrastructure Australia) to independently develop and oversee a long-term pipeline of coordinated infrastructure projects that will act as the foundation for the next phase of the state's economic growth.

Infrastructure Victoria will:

- Create certainty supporting longer-term investment in infrastructure in Victoria;
- Deliver an integrated strategic plan for the short, medium, and long-term that is secure across electoral cycles;
- Support value for money outcomes for the tax-payer;
- Provide confidence for those industries supporting the infrastructure pipeline to invest and maintain staff in Victoria; and
- Support a more transparent and a-political interface with Infrastructure Australia.

Membership of Infrastructure Victoria should provide an authoritative source of independent advice drawing on expert representatives from across government, business, construction, consulting, property, finance, legal, and local government sectors.

Ministers and their governments should be transparently held accountable to the independent advice provided by Infrastructure Victoria, through the publication of an annual ministerial response; detailing the rationale informing subsequent infrastructure prioritisation and funding by government.

Calling for Infrastructure Victoria

Consult Australia is not alone in calling for an independent expert body to provide advice on Victoria's infrastructure priorities.

Engineers Australia has recommended an:

*'advisory body made up of members with the appropriate range and level of professional expertise, nominated by relevant industry, professional or community bodies, be established to advise on effective long-term and state-wide policy and planning for Victoria's infrastructure, and to oversee the planning and quality control of specific major projects.'*³

Similarly the Committee for Melbourne suggests the establishment of:

*'a permanent statutory body reporting to Parliament – a Victorian Infrastructure Commission – with the aim of providing assurance on the condition and performance of Victoria's infrastructure and long-term planning for future infrastructure needs, in line with defined economic, environmental and social objectives.'*⁴

In the July 2012 report to COAG, Infrastructure Australia welcomed the creation of Infrastructure NSW and the Tasmanian Infrastructure Advisory Council. IA observed that these bodies brought additional due diligence and 'a critical eye' to sub-national or regional infrastructure projects as well as nationally significant projects in their jurisdictions:

*'This work increases the level of attention on individual projects, as well as providing better transparency for the community. The work of these state-based advisory bodies, together with infrastructure planning at the local government level, improves Australia's ability to identify a clear pipeline of integrated infrastructure projects and reforms.'*⁵

These benefits are similarly reflected in arrangements established through the Western Australian Infrastructure Coordinating Committee, and most recently with the announcement of Infrastructure Queensland and Major Projects Queensland (see a more detailed summary of these governance arrangements in Appendix A). Victoria is notable for the absence of any equivalent body.

³ The Institution of Engineers, Victoria Division. *An Agenda for Advancing Victoria's Infrastructure*. Page 2. www.engineersaustralia.org.au

⁴ Committee for Melbourne. October 2010. *Melbourne Beyond 5 Million: Getting better as we get bigger. Volume 3. Physical Infrastructure and Connectivity*. Page 11 www.melbourne.org.au

⁵ Infrastructure Australia. June 2012. *Australian Infrastructure Progress and Action: A Report to the Council of Australian Governments*. Page 19

SKILLS DEVELOPMENT – DEVELOPING OUR FUTURE PRACTITIONERS

Engineering skills shortages continue to constrain Australia's growth and limit innovation. While the issues are complex and information incomplete, it is widely accepted that national and international labour markets for engineering services are not operating to meet current and emerging demand.

Skills Australia has designated engineering as an occupation requiring market interventions while employers report long delays and cost blowouts on projects as a direct consequence of undersupply. The Consult Australia 2011 Skills Shortage Survey shows that shortages are most acute for construction project managers and engineering managers, and for nine engineering disciplines: Civil, Electrical, Environmental, Geotechnical, Mining, Rail, Traffic and transport, Tunnel, and Water.⁶

Although most firms have no trouble finding graduate recruits, they do believe that there is competition from other industries for their talents, and 50 per cent do not think that there are enough female graduates. Other issues contributing to the problem include low levels of suitably qualified secondary students; increased international competition for talent; peculiar labour market distortions (in the resources sector for instance), poor retention rates within the engineering profession and a lack of suitable pathways to transition employment between disciplines and regions.

Competition between sectors for scarce engineering resources risks amplifying these problems while the situation in general threatens to undermine the productivity benefits of increased investment in national infrastructure. More broadly, this means that projects cost more and take longer to deliver. This is a poor outcome for Governments at all levels; for asset owners; is a disincentive for private investors; and results in delayed benefits for the public consumer.

For example, local and state governments that need engineers to deliver community infrastructure maintenance and repair work are one victim of the skills shortage. This was highlighted by the damage caused by floods and cyclones in QLD during 2011 and the large amount of public infrastructure repair works required.

In early 2011 the Association of Professional Engineers, Scientists and Managers, Australia (APESMA) warned that the shortfall of engineers could lead to a 20 per cent blowout in the flood repair bill because of a lack of project scoping expertise. APESMA Chief Executive, Chris Walton, warned that the shortage could threaten funding from the Commonwealth under the National Disaster Relief and Recovery Arrangement because there were not enough engineers to do the necessary work.⁷

The number of Australian engineers graduating from our universities has remained almost stagnant over the past 12 years and a significant number of engineers have reached or will soon be reaching retirement age. About 40 per cent of commencing engineering students do not complete their studies while only 17 per cent of graduates are women. Overseas students were 40 per cent of all graduates from Australian universities in 2005. Interestingly, overall graduate intake has not deviated with the onset of the global recession. The consulting engineering industry recognises that securing skills for the future is paramount to long term viability and growth.

⁶ Consult Australia, *The Consult Australia 2011 Skills Survey: An analysis of skills in the consulting industry for the built and natural environment*, (2011) p 4

⁷ Caldwell, A, *Engineering shortage in Queensland hampers flood recovery*, The Courier Mail, 28 March 2011.

Increasing students studying maths and science

The nation-wide number of domestic students graduating with a three or four year bachelor's degree in engineering and related technology courses has remained largely static at about 6,000 each year between 2001 and 2009.⁸

The introduction of student demand driven university funding should, at first glance, see an increase in engineering graduate numbers. However, at present, universities are already taking as many people as meet entry requirements.⁹ Universities are in this respect operating at capacity. It should be noted that non-completion rates for engineering courses are not the leading concern.

As untapped resources are school leavers, there is a need to motivate more school students to take an interest in technical careers and to highlight the importance of maths and science as essential preparatory subjects. Figures from Engineers Australia illustrate¹⁰ that in 2009 just 10.2 per cent of Australian year 12 students studied advanced maths, 20.2 per cent studied intermediate maths, and 49 per cent studied maths at other levels unsuitable as a mathematical foundation for tertiary studies.

Physics and chemistry are also both important preparatory subjects for engineering courses. In 1976, 27.5 per cent of year 12 students studied physics, compared with just 16.5 per cent in 2001 and 14.6 per cent in 2007. For chemistry, the numbers are 28.6 per cent, down to 17.8 per cent in 2001 and 18 per cent in 2007.

A 2012 report by Universities Australia identified some of the reasons for the drop in popularity of science and maths. It found that "an unpopular image, perceptions of irrelevancy to everyday life and some uninspiring teaching are causing students to question the purpose of science and mathematics on the classroom, with less than half of those sampled totally agreeing that science is central to maintaining Australia's way of life". Universities Australia CEO, Dr Glenn Withers, said "This trend should be setting off alarm bells as it poses a risk to Australia's future as an innovative nation and an international leader in research."¹¹

Recommendation 2:

- Increasing the number of students studying higher level maths and science at school is vital and should be a core focus of primary and secondary education spending.

Promoting engineering: Career advice and promotion for school leavers

Current careers advice support for secondary school students is well below what student require. A large factor in this is the low number of careers advisors at secondary schools. Furthermore, careers advisors cannot be expected to fully comprehend and appreciate every career path available, let alone one so specialised as engineering in all its forms.

Consult Australia believes that classroom teachers must be engaged in delivering careers advice to students. Classroom teachers have a significant impact on students due to high levels of interaction in classes and a consequent understanding of individual students. This includes an understanding of students' strengths, weaknesses and interests, enabling them to provide targeted guidance.

⁸ Kaspura, A, *The Engineering Profession: A Statistical Overview*, Eighth Edition, Engineers Australia, (2011), p 43

⁹ Skills Australia, *Engineering Pathways Seminar: A summary of the outcomes* (December 2011), p 5

¹⁰ Kaspura, A, *The Engineering Profession: A Statistical Overview*, Eighth Edition, Engineers Australia, (2011), p 28

¹¹ Universities Australia, Media Release No. 01/12: *Generation Why? Students question point of science and maths*, (Friday, 20 January 2012).

There is universal support for encouraging more people to study to become teachers. The budget should also provide enough funding to the education sector to enable teachers to retain links with industry and careers related to their area of academic expertise once working as teachers. One model is to facilitate industry groups communicating with classroom teachers to provide insight into the industry's ever changing and evolving workforce.

When considering the engineering industry for example, historically there were five different types of standard engineer occupations; now over one hundred different types of engineering and related roles can be classified. Classroom teachers would not be expected to know this, but using very simple methods like industry group meetings or giving teachers access to industry newsletter would improve their knowledge. Formal industry outreach programs could become part of teachers' Key Performance Indicators and teachers could be rewarded for electing to use their professional development time to proactively enhance their general teaching skills, knowledge and understanding of career paths available for students who enjoy maths and science.

This will result in up-to-date and student-specific careers advice being delivered through the classroom to motivate more young people to study maths and science and use them as the foundation for rewarding careers in engineering.

Recommendation 3:

- Greater emphasis must be placed on teachers' abilities to provide informed career guidance to students. This may include funding to enable headmasters to employ extra careers advisors and to facilitate professional development programs to enhance teachers' links with industry.

Funding for further education

The Australian Government has provided significant funds for industry-led training initiatives. The most recent of these is the National Workforce Development Fund (NWDF). This and other similar funding programs that have been announced in recent years are suitable for those undergoing Vocational Education and Training (VET) level education, but eligibility criteria exclude those wishing to undertake higher education courses.

For engineering associates and technologists to progress to the level of professional engineer, higher education qualifications are essential. Without access to the NWDF (or similar), the cost is prohibitive, especially as many are likely to be mature-aged students with families, mortgages and other commitments that draw on finances.

As professional engineers develop their careers, the need for further training at the Graduate Certificate, Masters or Doctoral level is necessary. Business degrees for those who move into engineering management roles and specialist masters programs for engineers building their skills in a particular field enable the growth of the profession. The time and course costs can however be prohibitive without funding assistance.

Human Resources managers in the Consult Australia Skills Roundtable, a forum of HR representatives of member firms, report that many of those engineers not working as engineers are keen to re-enter the workforce as engineers, but the time and money required to re-gain currency are prohibitive. Funding streams such as the NWDF would be ideal for such people if eligibility criteria did not lock them out.

Rather than limiting funding streams for industry-led training to particular levels of education and training, employers and employees should be given the flexibility to use funding for the training most appropriate to their needs.

Recommendation 4:

- Government funding programs for industry-led training should be made available for all levels of education and training.

PROCUREMENT - PROMOTING BEST PRACTICE AT HOME

Risk Management

Current government procurement practices associated with professional services in the built environment either unnecessarily add to the cost of doing business, or run counter to government policy aimed at delivering best-practice procurement and facilitating insurance markets. For example, the lack of standardisation of fair and efficient contract terms, procurement guidelines and risk allocation across governments and agencies sees gross inefficiencies, increased costs and lost time to negotiation and disputation across all parties.

There is no more significant issue affecting the outcomes of procurement in relation to the built environment than the allocation of risk between parties. Liability in procurement must be managed equitably, with regard to good risk management and the limitations of professional indemnity insurance.

Consult Australia is opposed to requirements of excessive or unlimited liability contract clauses on the basis that these requirements promote the acceptance of risks which are beyond the control of the consulting engineering firm. Such practices threaten the sustainability of our industry, produce uncertainty and higher costs for clients and do not promote good risk management.

The imposition of clauses demanding unlimited liability of consulting firms, and the contracting out of proportional liability legislation in contracts with these firms, puts at risk the affordability and availability of professional indemnity (PI) insurance covering services provided by professionals and providing protection to the consumers of those services.

Such practices ignore good risk management and forces the parties responsible to accept unknown risks where insurance is not available to cover the liabilities sought. Such behaviours distort the terms on which firms compete for work, and expose all parties to the possibility of project failure, unforeseen costs and poor value for money outcomes.

Despite the insurance crisis of the early 2000s and the consequent passage of Proportionate Liability (PL), and Professional Standards Legislation (PSL) by Australian governments, it has taken time for government procurement practices to reflect the policy intent of these reforms.

Better procurement capabilities and risk management practices

Consult Australia believes that professional liability management involves a review of contractual, project and service risks that results in an agreement between the contractual parties on the extent to which liability can be accepted for these risks. However, in the experience of our members there is a distinct lack of support and education for procurement officers to properly and effectively manage liabilities. This in turn leads to a risk-averse approach to liability management that sees the transfer of all risk to consulting firms.

There is a clear need for robust liability and risk assessment guidelines to assist procurement officers when engaging the services of the private sector. These guidelines should provide information on the recommended standard agreements and the procedure for sign-off of any variation of the standard terms. Consult Australia believes that the standard should not be varied without a robust review procedure to confirm that this is necessary.

Consult Australia notes that the Federal Government, after identifying that there was a clear need to provide assistance to procurement officers in the liability stage of risk assessment, developed the "Liability Risk Assessment Guide for FMA Act Agencies". Consult Australia recommends that the Victorian Government should develop similar guidance for its procurement officers that is complimented by education and training to ensure proper liability management.

Consult Australia also endorses the Australasian Procurement Construction Council developed "Professional Indemnity Insurance Guidelines" and asks that the Victorian Government also endorse these guidelines for use by procurement officers. The Guidelines acknowledge that the availability and affordability of Professional Indemnity Insurance to support project procurement is no longer guaranteed given the condition of insurance markets around the world. These Guidelines are intended to assist Government clients to identify an appropriate level of insurance to be held by consultants.

AS4122-2010 General Conditions of Contract for Consultants

Current contracting practices in the Australian building and construction industry are driving poor risk management behaviours which are exposing parties to the possibility of project failure and unforeseen costs. The lack of standardisation of contractual terms across both the public and private sector has created a need for repeated negotiations of what should constitute core contractual terms, resulting in increased costs and lost time.

In recognising the need for an up to date, contemporary, and relevant standard agreement, Consult Australia made an application to Standards Australia for AS4122-2000 to be redrafted. Consult Australia along with Association of Consulting Architects Australia, Australasian Procurement and Construction Council, Australian Constructors Association, Australian Institute of Architects, and Master Builders Australia Ltd re-drafted AS4122 to meet the needs of the building and construction industry and governments through the fair and proportionate allocation of risk in line with current industry best practice.

AS4122-2010 will:

- Reduce the time and resources spent negotiating contractual terms and conditions of engagement;
- Reduce the need for external legal advice;
- Streamline the process for the engagement of consultants;
- Improve clarity and certainty of contractual terms and conditions between consultants and clients;
and
- Reduce disputes between clients and consultants based on contractual terms.

Consult Australia endorses AS4122-2010 and believes that the commercial terms are fair and reasonable and will be widely utilised by both private and public sectors.

It is important that AS4122-2010 be used by both private and public sector industries for the benefits to be felt by the building and construction industry more broadly.

The Australian building and construction industry stands to benefit greatly through having greater access to a standard form of contract. Under AS4122-2010, both purchasers and providers of services now have a contract that is both fair, reasonable and in line with current industry practice.

Consult Australia submits that there is merit in the Victorian Government adopting greater consistency in the selection of general and special conditions of contracts. It is equally important that the general and special conditions of contract be fair, clear and equitable for both government and consulting firms.

Consult Australia is of the view that the Victorian Government stands to benefit from the adoption of standard agreements with contractual terms that are:

- Aligned with the standard of care and duties of a professional consultant under common law;
- Consistent with government policy and the intent of relevant legislation;
- Consistent with sharing risk between client and consultant;
- Based on the principle that each party in a project remains responsible for its own actions;
- Consistent with the terms of professional indemnity insurance readily available in the marketplace;
- Inclusive of a monetary limit on the liability of the consultant.

Consult Australia believes that the adoption of contractual terms that are based on the factors above would deliver benefits to government such as:

- A stronger focus on real risk management instead of illusory liability allocation;
- An overall reduction in adverse risk outcomes;
- Reduced dependency on insurance to treat project risk;
- Reduction in commercial loss claims against consultants;
- Reduction in the cost and amount of disputation between contractors and consultants;
- A positive impact of the availability of insurance cover;
- Broader field of consultants able to compete for government work;
- A more equitable basis for tender submission and evaluation by government;
- Better, more informed, project decision making;
- Increased transparency during the negotiation process;
- Encouraging the use of industry accepted tools and standards;
- Setting good practice benchmarks recognised by clients and industry;
- Limiting the negative impact of excessive or imprudent risk taking;
- Achieve a better project outcome for all parties.

AS4122-2010 is designed to deliver fair and proportionate allocation of risk in line with current industry best practice while also meeting government requirements.

Consult Australia acknowledges that AS4122-2010 will not be appropriate in every situation, but recommends that it should be the standard agreement used by the Victorian Government when engaging consultants. A bespoke contract should only be used in situations where there are project specific special needs that necessitate it.

Recommendation 5:

- Standard fair contract terms (for example Australian Standard AS4122-2010 General Conditions for Contract for consultants) including limitations on liability to provide the most efficient and effective risk allocation across projects.

Recommendation 6:

- Support for national proportionate liability reform through the council of Australian Governments, explicitly prohibiting 'opting-out' of proportionate liability preserving the long-term integrity of national insurance markets.

Recommendation 7:

- Shared training with procurement officers and industry to bridge knowledge gaps, share language and improve understanding; supporting the selection and application of the most appropriate procurement processes for public sector projects across Victoria.

Recommendation 8:

- A Victorian Procurement Coordinator within the Department of Treasury and Finance, supported by dedicated resources to: bring together procurement expertise across government in both construction and on-construction procurement; improve business consultation and engagement; and administer and enforce standard contracts, guidelines and training for agency procurement coordinators.

Privatisation of engineering services & the procurement skills shortage

Privatisation of the public sector across all jurisdictions accelerated in the 1990s. By the end of that decade, Australia had one of the largest programs of privatization among Organisation for Economic Co-operation and Development (OECD) countries, ranked second to Britain in terms of value, and second to New Zealand relative to Gross Domestic Product (GDP).¹²

As early as 2002, the then Department of Education, Science and Training identified privatisation as a cause of the skills shortage for engineering. It noted, "On the supply side, privatisation of public utilities has reduced the traditional training ground and supply of skilled labour for engineering trades, and large companies are typically more focused on training for their own skill requirements".¹³

Consult Australia is a member of the Australian National Engineering Taskforce (ANET). In its report, "Scoping the future",¹⁴ the impact of privatisation was highlighted as a key factor to the existing skill shortage. It noted that "public sector engineers are increasingly affected as work is outsourced to contractors and the overall capacity of the public service is reduced. Structural changes have significantly changed the way that engineers work across the public sector."

¹² *Privatisation in Australia*, Reserve Bank of Australian Bulletin, (December 1997), p8

¹³ *Nature and causes of skills shortages: Reflections from the Commonwealth National Industry Skills Initiative Working Groups*, Australian Government Department of Education, Science and Training (November 2002), p8

¹⁴ Pearce, A, Flavell, K, Dao-Cheng, N, *Scoping our future: addressing Australia's engineering skills shortage*, Australian National Engineering Taskforce, (October 2011), p 15

The loss of institutional engineering expertise has ramifications for the efficiency and effectiveness of public works and infrastructure development. As government agencies lose their engineering workforce, they lose the ability to be a well-informed purchaser.

Tender processes are less efficient and procurement officers are less able to assess tenders on engineering merit. The true requirements of government become evident as the project progresses, rather than at the project scoping stage. This leads to re-engineering and contract amendments. Cost blow outs are inevitable because of extensions in project delivery time and wages, the cost of re-engineering, changes to hardware requirements and the loss of public reputation due to late delivery of essential services.

A 2008 Blake Dawson survey of organisations responsible for construction and civil infrastructure projects found that 52 per cent felt their projects were not sufficiently or accurately scoped prior to going to market. Inexperience and insufficient level of competence of those preparing the scope documents are the most significant contributors to inadequate scoping. The skilled people identified as most difficult to find were: project managers (61 per cent), engineers (53 per cent), other designers (48 per cent).¹⁵

The report *Getting It Right: The First Time* which was published in 2005 by the Queensland Division of Engineers Australia highlights the declining standards in project design documentation within the Australian Building and Construction Industries. Consult Australia was pleased to participate in this study which was strongly supported by all areas of the building and construction industries and associated professional bodies as well as state and local government construction agencies. The conclusions from the study remain relevant today, in particular finding that:

- Poor documentation is contributing an additional 10-15 per cent to project costs in Australia.
- The annual cost of poor documentation is estimated at \$12 billion per year across Australia.

The report finds increased safety risks where declining standards of documentation lead to inadequate structural design documentation being issued to contractors for use in construction. Declining standards are noted in the report, including:

- Inadequate project briefs based on unrealistic estimates of time and cost;
- Lack of integration along the supply chain linking the parties and between project phases;
- Devaluing of professional ethics and standards of business practice;
- Lowest bid selection strategy rather than value for money;
- Poor understanding and skilling in risk assessment and (risk) management processes;
- Absence of an experienced client-appointed, overall Design Manager/Coordinator;
- Poor understanding of optimized and properly documented designs;
- Inadequate availability of, and recruitment of, skilled and experienced people;
- Inadequate/ineffective use of technology in design and documentation (e.g. poor application of CAD techniques: technical specifications drawn from an organisation's database but not tailored to the particular project); and
- Lack of appreciation of the benefits of effective communication.

It was also found that poor documentation has led to:

- An inefficient, non-competitive industry;
- Cost over-runs, rework, extensions of time;
- High stress levels, loss of morale, reduced personal output;
- Adversarial behaviour, diminished reputations;
- 60 per cent to 90 per cent of all variations are due to poor project documentation;
- One price variation results from every three Requests For Information (RFI);
- Estimated Cost of Variations generated by poor documentation = 12 per cent to 15.2 per cent of project value (PV), based on actual cost of variation works, plus extra administration costs (1.1 per cent of PV), extensions of time (2.1 per cent of PV).

¹⁵ Wise, S, et al, *Engineering Skills Capacity in the Road and Rail Industries*, Australian National Engineering Taskforce, (April 2011), p 80-81

The solutions to this are clear: recruit more professional engineers to key public agencies; treat government procurement officers as skilled professionals and train them to operate as such; foster a more open, cooperative relationship between government and private sector providers of engineering services.

The Australasian Procurement and Construction Council (APCC) as part of their guide: *Developing the Procurement Professional*, acknowledge that:

"Until now, procurement professionalism in Australia has not been clearly recognised or defined. Public procurement too often is undertaken without professional support which result in sub-optimal Value for money decisions and unnecessary high prices being paid for goods and services."

The guide aims to raise the profile of procurement. It sets out the three main pathways to becoming a procurement professional and describes the characteristics of such a professional based on four levels of progression. Consult Australia believes that the guide is a useful tool in raising awareness about procurement in terms of it being a career within the public service.

Recommendation 9:

- Reinvigorate public sector recruitment of engineering graduates and qualified engineers at all levels.

Recommendation 10:

- An audit of procurement expertise, capability and skills across government agencies to scope the current state of play and opportunities for intervention.

Recommendation 11:

- Formal training, support and continued professional development should be provided for any public servants who are moving into procurement and project management. This is particularly important when they are involved in high risk or high value projects.

Recommendation 12:

- Government should support the work of the Australasian Procurement Construction Council (APCC) and their "Building Government Procurement Capabilities" standard.

URBAN POLICY – BUILDING ON OUR MOST LIVEABLE STATUS

Consult Australia believes good planning provides the potential to achieve integrated, sustainable outcomes more efficiently and provides a robust framework to guide funding, project development and delivery over a long period. The spatial planning at state and local levels of government that follows provide a powerful means of understanding and resolving the effective integration of social, economic and environmental functions within the urban system.

Strategic planning should be undertaken for a horizon appropriate to the rate of evolution of (and investment in) the urban system i.e. in the order of 20 to 50 years. While it would be developed with a long-term view, it would be reviewed (and potentially revised) regularly. It would always constitute the highest order of planning for the urban system.

The productivity benefits of clustering, agglomeration and co-location that come with great urban developments are well-documented as are the accompanying challenges. Cities provide the opportunity for firms to co-locate, but with co-location comes congestion caused by employees, customers and others competing for access to key areas at peak times of the day and week. The challenge for cities is to ensure that congestion is managed, access is maintained and businesses can continue to co-locate and function efficiently for maximum productivity.

Policy to support growth in business co-location is important because city economic density—output per unit of land area (the outcome of business co-location)—is increasingly recognised as an important source of productivity growth. As economies become more advanced, and as the services sector becomes a more important engine of economic growth, the economies of scale that cities provide are becoming increasingly important. This is all well demonstrated through the benefits achieved by: easier labour market recruitment; face-to-face access to suppliers and customers; and the knowledge transfers between businesses—all critical to innovation. Australian central business districts comprise a relatively small share of metropolitan employment relative to global benchmarks, yet our metropolitan areas are not especially large in world terms.

These two facts together suggest that there is or should be substantial scope to increase the economic density of our central business districts, which would in turn boost national productivity performance. Growing economic density depends on improving accessibility—by road transport and especially, given the constrained geography of many city employment nodes, by public transport—so that more people can be transported quickly and reliably without an increase in congestion. However, access in many parts of our cities is widely recognised as being often inadequate. In opinion surveys undertaken by the University of Sydney's Institute of Transport and Logistics Studies, public transport is consistently seen as the most important transport issue in every state of Australia. Both the economic opportunity from improving access in our cities and the challenges that it presents are clear.

Recommendation 13:

- A continuing commitment to best practice urban design, including transit oriented development, user pays infrastructure, higher densification, and integrated strategic planning supporting more productive, liveable, sustainable cities.

Recommendation 14:

- An Integrated Design Commission (as in operation in South Australia) to promote Victorian design excellence, collaboration and policy internationally and domestically.

APPENDIX A: INFRASTRUCTURE GOVERNANCE ACROSS AUSTRALIA

Infrastructure Australia

Infrastructure Australia is a statutory body, established to provide independent advice to governments, investors and infrastructure owners on a wide range of issues. These include:

- Australia's current and future infrastructure needs
- mechanisms for financing infrastructure investments, and
- policy, pricing and regulation and their impacts on investment and on the efficiency of the delivery, operation and use of national infrastructure networks.

Infrastructure Australia's focus is on assisting Australian governments to develop a strategic blueprint for unlocking infrastructure bottlenecks and to modernise the nation's economic infrastructure.

Infrastructure Australia reports regularly to the Council of Australian Governments through the Federal Minister for Infrastructure and Transport.

www.infrastructureaustralia.gov.au

Infrastructure New South Wales (INSW)

Infrastructure NSW (INSW) was established in July 2011 to assist the NSW Government in identifying and prioritising the delivery of critical public infrastructure for NSW. INSW is a statutory body, independently chaired, that provides strategic policy direction and oversight for infrastructure planning and delivery to the NSW Government.

INSW's focus is to improve major infrastructure networks such as transport, water, energy and communications to increase productivity, support the growth of the economy and, ultimately, make a difference to the daily lives of the people of NSW.

INSW is currently developing a 20-year State Infrastructure Strategy, which will identify major infrastructure requirements. The strategy will also identify the barriers to projects being successful and identify how to activate both public and private resources to deliver them.

The final strategy will be delivered to the NSW Government in September 2012. It will be the first time an integrated infrastructure strategy has been delivered for this state.

In addition, INSW is:

- evaluating submissions by agencies for projects greater than \$100 million
- preparing infrastructure statements regarding particular sectors or precincts such as a review of the Port Botany - Sydney Airport precinct
- reviewing unsolicited infrastructure proposals from the private sector
- providing advice to the Premier on funding models
- assessing public private partnership proposals being considered by agencies
- coordinating NSW infrastructure funding submissions to the Commonwealth.

INSW is also managing the delivery of the new Sydney International Convention, Exhibition and Entertainment precinct at Darling Harbour.

www.infrastructure.nsw.gov.au

Infrastructure Queensland & Projects Queensland

Infrastructure Queensland (IQ) was established in June 2012 to provide advice to the Queensland Government on infrastructure priorities and long-term planning.

Infrastructure Queensland is chaired by the Deputy Premier Jeff Seeney and met for the first time on 28 June 2012. The group is made up of private sector representatives and heads of key government departments that will drive the Queensland Government's infrastructure projects.

Projects Queensland

Alongside the announcement of IQ, Projects Queensland was established as a standalone unit aimed at fostering investment partnerships for infrastructure development. Projects Queensland's key responsibilities will be:

- Preparation, evaluation and management of public-private partnership projects;
- Active engagement with the private sector to develop funding models to encourage private investment in infrastructure;
- Preparation of business cases and contract negotiations for government financed infrastructure where the expected cost is greater than \$100 million;
- Acting in an advisory role assisting line agencies in the delivery of projects with an estimated capital cost below \$100 million; and
- Review and maintenance of the government's key infrastructure policies

www.dsdip.qld.gov.au

Western Australia Infrastructure Coordinating Committee

The Western Australia Infrastructure Coordinating Committee (ICC) advises the Western Australian Planning Commission (WAPC) on planning for the provision of physical and community infrastructure throughout the state.

The WAPC is the statutory authority with state-wide responsibilities for urban, rural and regional land use planning and land development matters. The WAPC responds to the strategic direction of government and is responsible for the strategic planning of the State.

ICC members include representatives from departments with responsibility for land development, housing, commerce, the environment, state development, energy, minerals and petroleum, water, health, education and transport (among other areas). It also includes representatives from the WA State Treasury and Department of Premier and Cabinet. It advises the WAPC on plans for the provision of infrastructure and promotes inter-agency cooperation in decisions related to urban development. It has the power to coordinate the Urban Development Program and the provision of infrastructure for land development.

www.planning.wa.gov.au

Tasmanian Infrastructure Advisory Council

The Tasmanian Infrastructure Advisory Council is an initiative of the Tasmanian Infrastructure Strategy. The Infrastructure Strategy was launched by the Premier of Tasmania in February 2010.

The Council's early focus has been on developing a strategic focus for the Council and reviewing current and future infrastructure priorities.

Highlights include:

- The affiliation of key infrastructure bodies into one group working towards a common objective;
- Establishment of key drivers for the Council's activities;

- Comprehensive consultations with all levels of Government and the private sector; and
- Establishment of reference groups to examine funding and NBN rollout issues.

In 2012-13, the Council will continue to focus on enhancing coordination between economic infrastructure sectors, exploring opportunities to enhance infrastructure funding and the provision of strategic advice on emerging infrastructure priorities and issues.

www.infrastructure.tas.gov.au