Committee Secretary

Senate Education, Employment and workplace Relations Committee

PO Box 6100

Parliament House

CANBERRA

ACT 2600

AUSTRALIA

Dear Secretary

Re: Senate inquiry into the shortage of engineering and related employment skills

I have pleasure in submitting my paper to the senate addressing some of the issues raised in your terms of reference.

I am a professional civil engineer practicing in the area of road and bridge engineering. I have been a member of the Institution of Engineers Australia since 1989 and am also a registered professional engineer Queensland, RPEQ. I also hold a masters degree in highway Engineering and am a member of the Institution of civil engineers, UK.

My work experience spans 35 years built entirely in the areas of road and bridge engineering. My entire career has been built within the public sector environment and so the insight I bring into this submission is influenced largely by my position I hold as a public service engineer.

Effect of long term outsourcing of engineering activities on skills development and retention

Long term outsourcing of engineering works and high dollar engineering projects to in-house consultants and to the private sector has led to a situation where the department/government engineers in some cases have been left out with only small scale projects which gives them limited knowledge and confidence and yields low level experience and responsibilities. It is my belief that the exodus of engineers from the government to the private sector is due not only to a lack of good remuneration but also inspired to some extend by the need to look for high level engineering projects to gain experience; these projects were once managed and delivered by the government departments.

Options for infrastructure delivery using alternative procurement models

It is time we rethink the concept of work/home balance in a greater depth and more realistically. The next decade, I believe, will see engineers wanting to have a very rewarding work life but also a very comfortable family life. How do we achieve this? Let me give an example;

- When a consulting firm puts in a bid for some consultancy work or when an engineering department formulates a project team to plan/design/construct a project, why not say in the project team hierarchy that engineers A, B and C will be working full time or part-time from home and engineers D, E and F will be working full time from office. After doing that, we need to educate our clients that the bid submitted should not be turned down on the basis of the 'work from home' condition attached to it. We need to demonstrate to our clients that the job can be done for the same price and quality as our competitors but with a much more satisfied workforce and a client at the end of the job. We should change the culture of the workplace and think broadly on new ways of delivering our projects effectively and not think narrowly on the same old delivery methods used in the past.

Alternative procurement models to achieve effective community outcomes

Society looks at engineering as being boring, logical, analytical, cannot see beyond the box, soulless, non communicative, and cannot see the big picture and so on We need to break away from this stereotype. How do we do this? Let me give an example;

- When we build a bridge in a remote town or a small village, why not we invite the local school teachers and the senior students to the site, subject to site safety, to show what bridge construction looks like; or why not the project team visit the school and talk to them about bridges or why not the project manager, if he is a good singer, take part in the local Christmas party celebrations or the concert or why not invite the local community to the site for a free BBQ on Anzac day; why not build a community hall, a class room or purchase a petrol car for the local police before you leave the town after the job is done. These initiatives can be funded very easily for a fraction of the project cost but will reap benefits that will linger in the minds of the community for decades to come. Think big, think outside the box, become part of the community, become more human!

Migrant intake – an excellent/successful procurement strategy

The migrant intake program is one of the most successful procurement strategies developed by successive governments; but there are a few issues with it that need addressing. Let me explain: the migrant engineers who work in Australia, are highly qualified in their specialities, many holding post graduate qualifications. Their special, technical knowledge often exceeds the levels exhibited by their Australian counterparts. Their performance is well above average which fact can be confirmed by speaking to their supervisors. And yet they, particularly those coming from non-English speaking backgrounds, get stagnated in their promotions, particularly into the higher managerial levels. This leads to frustration among their ranks and loss of productivity. The apparent inability by some senior managers to inspire them to greater heights and harness their full potential to the country's benefit is not only causing frustration but also contributes to low levels of national productivity. One of the main reasons given for the lack of recognition to promote them is the "perceived' view that they lack communication skills. This is often true with some migrant engineers but

there are also migrant engineers whose written and verbal communication skills exceed the average performance levels. Besides they bring into the job a whole set of soft skills like, hard work, listening skills, understanding, resilience, friendliness, empathy etc which are very important to perform well in a project delivery environment but unfortunately often these skills are ignored and not considered in the assessment of their promotional prospects to higher management levels. It will be a worthwhile exercise for the government to undertake, to determine how many highly qualified and experienced migrant engineers (and indeed some non-migrant engineers), work in government departments who are being stagnated at their current low to middle level positions without a promotional prospect in sight. Most migrant engineers work at the cold face of project delivery; and it is not an exaggeration to state that the efficiency with which engineering organisations have delivered their projects is largely due to the hardworking nature of these migrants and to their dedication, commitment and enthusiasm.

We need to immediately stop this under utilisation of migrant engineers and to develop strategies to recognise their full potential and to harness their skills to the benefit of the country and to receive due payments/promotions to match their skills.

Alternative procurement models to achieve staff retention

Many organisations now have a policy of promoting their junior engineers rapidly through the ranks to higher positions to undertake higher duties and responsibilities early in their careers so that when they are in their 40s they are well equipped and sufficiently matured to be promoted to executive and other leading positions. This is good policy but what about the senior staff who have been ignored or left behind in this race to the top. We need to develop methods on how we can use their (senior engineers) knowledge, experience and the wisdom to the benefit of the engineering profession; I give below one of a few possibilities:

- Release the senior staff from their permanent positions in the departments on a full time or part time basis and incorporate them into a national skills data base where they can be placed 'on call' to undertake special assignments in any department, consultancy, contractor, training or educational institute where they can be employed meaningfully. This process should be operated in a very efficient manner so that nobody loses money by staying on the 'waiting list' for long and the opportunities must arise quickly to earn a wage equal to or better than what they would be earning had they remained in permanent employment. The system will not work if it is unattractive to the senior engineers.

Other related matters

Asia, Africa and China are going to become the economic giants of the future. Engineering departments and firms in the developed world must venture out to establish a foothold in these countries. Engineering departments must send out their specialist staff to these regions to share and transfer knowledge and also to invite their staff to our countries to see how we do business here. We need to think big, think 'international' and pitch our camp where the action is happening.

The de-engineering of the engineer's profession by the influx of other disciplines like project management, technical engineering has led to frustration among engineers as well as the loss of a purely engineering based career, framework and a structure within which they could build their engineering careers. Whilst understanding that modern day engineering

projects are no longer purely engineering projects but rather a complexity of many disciplines, it is important to realise that the engineer is given his rightful place within this complex project management environment so that he does not feel alienated/isolated or feel that his position as a professional engineer is being eroded and undervalued in terms of recognition, remuneration and promotional prospects. One proposed solution is to create a separate salary structure for Chartered engineers that will be equal to the salary structure of the executives and the senior managers. This will ensure that the migration of engineers to the more lucrative managerial/executive positions in an organisation will not become as attractive as it is now.

Yours sincerely,