IPWEA QUEENSLAND FOUNDATION FELLOWSHIP

Skills Shortage, Information Sharing, Succession Planning & Climate Change

International Study Tour 2007

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Introduction

Five engineers, 25 days, 3 countries, what a way to see how the rest of the world goes about public works. A once in a lifetime opportunity, an experience that will never be forgotten, an investment in the future.

The opportunity to see what the rest of the world is doing in regard to local government engineering (public works) was fantastic. To venture beyond South East Queensland and Queensland as a state is an eye opening experience. Sometimes the world in local government engineering can seem so small, so local. However once your eyes have been opened your really realise you are not alone. There are people and resources all over the world dealing with the same day to day issues in a variety of different ways, but how can this experience best be shared?

Personal Focus

The main areas of interest for me on this tour were; the skills shortage, information sharing between local government authorities and succession planning. My plans were to talk to my “low level” or should I say “grass roots” counterparts to try to gain a ground up view of the way local authorities work and to compare their methods with my own experiences. In practice this was not exactly what happened, however enough information and experiences were gained to help me produce the following observations. In writing this report I made the conscious decision to add my own young person flavour. While it may not be along the lines of previous reports I felt I had to tell my story in my own way. In reporting on the information and experiences that I gained while on the study tour I will also relate back to my own experiences that I have had working in local government in Queensland. Having only been in local government for a short period, and having only worked for one Council may make some of my views appear not as rounded as they should be. However if anything, this experience has opened my eyes to the fact that issues at home are issues effecting local authorities all over the world.
As an aside one of the main topics for the group as a whole was climate change. While as a younger person a lot of these issues seem to be “pie in the sky” thinking from a local government point of view I will attempt to give a brief overview of some of my findings.

**Councils visited & APWA Conference**

The 2007 study tour visited the local authorities of; The city of New Rochell on the outskirts of New York, Birmingham City Council and Woking Borough Council. A short visit to a waste disposal facility in Mainz, Germany concluded the tour.

The official start of the tour was the 2007 APWA (American Public Works Association) Congress in San Antonio, Texas. As will all things Texas, bigger is better! What an eye opening show, world class keynote speakers, excellent technical papers and enjoyable Texan entertainment were the highlights.

It was an amazing production, the sheer size of the venue, the numbers of delegates, papers and exhibitors was extraordinary. However given its size I found that overall quality of the congress was on par with our local events. It was good to see how it was done in the United States and good to see while it was not as big, the IPWEAQ conferences are just as good.

It was an experience to see the differences between local authorities from the US and Europe. The City of New Rochelle was an interesting place to visit. With no engineers on staff, it was left up to the general manager and town planner to show us around. When asked why they didn’t have an engineer the response was “they can earn more money in the private sector”. It came as quite a shock that the city only spent $800,000 pa on road rehabilitation but had garbage services nearly everyday of the week.

A short flight across the Atlantic and a very different picture emerged. The Woking Borough Council are tackling the climate change issue head on. Birmingham is tackling the skills and labour shortage issues they are facing and it generally came across that the level of professionalism of these organisations was very high.

The final visit was to a waste disposal facility turning household waste into electricity in Mainz, Germany.

**Information Sharing**

In looking at the way local governments overseas share information it became quite clear that most countries are all not doing this as well as they could. It is my personal opinion that local governments in Queensland don’t share
information and resources as readily as they should. I think the problem has a number of areas that can be improved.

- Intellectual Property is a big issue. Can this be overcome by ensuring the person who owns the IP gets the kudos for their work but lets other councils benefit from their investment and knowledge?
- Information that is shared is not aimed at the area that could most benefit from sharing. Generally most sharing of information comes from the networking that occurs at conferences and other forums. Usually it is the directors / managers who attend these functions and share information, “Can I get a copy of your asset management plan for roads?” etc. However the people who gather the data to help produce the asset management plan rarely get to talk to their counterpart. I therefore see an increased need for networking of operational staff to discuss operational issues as an area where large gains can be achieved through information sharing.

When the experiences from the study tour are examined it would seem that the same problems exist all over the world. Many of the councils reported that they don’t share information or even talk with their neighbouring local authorities. There are a few avenues for information sharing and as with Australia very few younger/operational staff seem to attend the conferences. It is quite obvious that local factors do influence the way various local governments undertake their various engineering functions, however a lot of the theory is all the same. Why is it then that local government do not help each other? Why do we re-invent the wheel?

Learnings from the American experience would suggest that some efforts are being made from the “accreditation” processes and also some public works benchmarking projects. Accreditation is similar to the Quality Assurance ideas that we have here in Australia. However instead of organisations such as QDMR setting the goals, the APWA & LGA’s set the service delivery goals. The APWA accreditation scheme encourages the sharing of information between LGA’s to save the ‘reinvention of the wheel’.

Another interesting project undertaken by APWA members in Arizona, was the Arizona benchmarking project. This project was mainly aimed at benchmarking the “soft costs” of projects from the various counties in the area. Using a simple email based group communication and meeting from time to time, the group reported that communication and information sharing had improved as a result. The project was conducted on the “who shares wins” philosophy and all results seemed very positive. There was also a benchmarking project undertaken in California that had reported good results.

When we look back to what we are doing in Australia it would appear that forums such as “Ask Your Mates” and “Asset Mates” are world leaders in
information sharing. Dedicated resources such as the “Queensland Water Directorate” are at the forefront of information sharing avenues. However the APWA does have resources and staff dedicated to facilitating the sharing of information between local governments.

Skills Shortage

It is well documented that the skills shortage is a global issue, and local government agencies all over the world are experiencing the same trouble in attracting and retaining professional engineers.

A closer look at the United States and United Kingdom reveals a large amount of similarities to the Australian problem. An article from the Metro (London) newspaper claimed that “Ignorance is killing UK’s Engineering”. It details that many people do not know what engineers do and that just one in five people have a good knowledge of engineering as a profession. It is reported that fifty percent of the UK’s engineers will retire the next 20 years.

The baby boomers and builders are moving towards retirement leaving a large hole in the workforce. Skilled labourers and professionals are departing making it much harder to attract the x and y generations to local government engineering. It is also getting harder to retain staff.

The APWA had a very low percentage of under 35’s at the congress which is reflects back to the IPWEA Cairns conference. The younger people did stand out as most of them were part of the APWA mentoring program. All of them were wearing a different name tag so they stood out, had their mentor by their side at most times to introduce them to other delegates and also had a question form to fill out that encouraged them to get around and meet other delegates. (One requirement was to obtain a signature from an international delegate). There were also future leader programs specifically designed to encourage networking and workshopping of ideas.

Attraction

The main message that came across when looking at all the papers and visits was that organisations must be seen as an employer of choice. Organisations that are seen as innovative and cutting edge will have people wanting to work for them.

In the local government arena awareness seems to be the big issue let alone being an employer of choice. One organization that is tackling this issue head on is Birmingham City Council. While the Birmingham City Council’s effort is focused across all areas of council operations (includes cooks, social workers, and cleaners) much can be learnt from their innovative approach. Recognising a national skills shortage, a strategic and proactive program was established to take away the “faceless” image of Council and brand the Council as an employer of choice.
Birmingham City Council has used the following methods to achieve its attraction goals:
- Recruitment open days
- Discovery days
- Monthly recruitment events
- Pre-employment courses
- Apprenticeships
- Partnerships with local universities

Another avenue being used to increase the profile of local government areas is the “Public Service Compact”. The Compact brings together employers (currently 30 workers) from across the public works sector to form a collaborative approach towards recruitment retentions and skill development. Key initiatives of the Compact include:
- Development of management and leadership diplomas
- Development of the public service administration apprenticeships
- Mentor training
- Raising awareness of areas in the public service sector attracting young people
- Pre-employment programs
- Facilitating cross sector plants and work shadowing.
- Creating resource pools.

One finding that surprised me was the generally low levels of remuneration for engineering graduates in the UK. The engineers at Woking Council reported that graduate engineers in rural Councils could be paid as little as 20,000 pounds. While this may equate to the graduate wage in Australia the cost of living in the United Kingdom means the 20,000 pounds is not much more than $20,000 Australian. The graduate engineers at Woking Council are on at least $40,000 pounds meaning there is a greater variance in local government wages than we see in Australia. It should be noted than in an effort to ensure that engineers were available to Woking Council the Council purchased Thameswey Limited, an engineering consulting firm. Thameswey operates relatively independently to the Council and provides them with all the engineering services they require. Thameswey also still consults to external customers, however by making this move the Council can effectively pay their engineers at consultants rates, which they see as value for money. They also benefit from any profit made by Thameswey undertaking external work.

Opportunities

I see the following as opportunities for local government in Australia:
- Look at offering engineers in the rural areas of the United Kingdom an opportunity to travel and earn more money working in Australia
- Continue to develop resource pools (IPWEAQ is doing this informally)
- Offer bursaries to APWA members to come and work in Australia. IPWQA could talk to councils prior to the study tour and sell jobs and opportunities at the APWA congress.
Retention

Even if an employer is seen to be an employer of choice they need to be able to retain their good staff. In most organisations when people leave it’s the case of “It’s sad to see you go, you will be a loss”. No one is responsible to ensure staff are retained. A paper by Greg Smith suggests that all employers should aim to have a retention strategy and that managers should have in their position descriptions that they are responsible for the retention of their good staff. Greg also highlighted that good staff attract more good staff, further increasing the benefit of a retention strategy. Encouraging staff feedback and interaction, providing peer recognition incentives and creating a positive work environment are key to a successful retention strategy. The same presentation highlighted the fact that the cost to replace staff can cost as much as 2 years salary.

Succession Planning

A presentation by Gary Stack and George Haines discussed the benefits of mentoring and looked at how an effective mentoring program can improve succession planning. The example of ‘Scouts’ was used to demonstrate how having one good mentor early in ones life or career can have a profound impact on a persons success. Mentoring provides a enormous opportunity to transfer knowledge and prepares younger people for their future rolls. Mentoring allows the organisation to identify candidates for new jobs, and can ensure that when key staff leave, the functions of the organization will continue as core skills have been transferred.

Climate Change

One of the main study areas for the group as a whole was climate change. It was good to visit a variety of different councils and see how each approach this growing issue. The city of New Rochelle has simply signed up to a climate change forum, more a political move than anything else. The major outcome
of this process to date was that it deemed too expensive to convert a diesel garbage compactor to hybrid power.

The European visits were in stark contrast to the American experience. As Europeans are leading the world in regard to emission control and standards, it was no surprise to find that local authorities have also jumped in the deep end in regard to climate change issues.

Woking Borough Council had by far the most advanced ideas and practices in regard to climate change. Similar to ‘asset management strategies’ that help councils make decisions based on whole of life cost and other asset management principles, Woking Borough Council’s Climate Change Strategy helps the Council make clear decision in regard to climate change. The strategy uses the following themes to help the Council adapt to climate change.

1- Planning and Regulation
2- Energy Services
3- Waste
4- Transport
5- Procurement
6- Education and Promotion
7- Management of Natural Habitats
8- Adapting to Climate Change

The strategy was adopted in 2002 and is reported to one of the most comprehensive in the UK. It provides good explanations of the causes and issues associated with climate change and then provides further detail on the Councils position on the abovementioned themes.

**Combined Heat and Power Plant (CHP)**

In Woking the local swimming pool / gymnasium and also the Council building are powered by separate CHP plants. The plants use natural gas out of the cities gas supply to heat the buildings and also provide electricity for the buildings. Excess electricity is sold onto the public electricity grid. There is
both a cost and environmental gain from these plants coming from lower fuel costs and reduced CO$_2$ emissions. Figure 1 gives an explanation of how the system works.

![Diagram of Combined Heat & Power (CHP) process](image)

**Figure 1 Explanation of CHP Process (Woking Borough Council)**

**Waste Disposal – Mainz, Germany**

The visit to a waste disposal plant in Mainz, Germany was an eye opening experience. As the Germans have very strict environmental protection laws they are required to dispose of their waste at plants that produce only minimal emissions. The plant burns household waste at 1200 degrees and produces
steam to create electricity. The only by products are steam, furnace slag and a very small amount of toxic dust. The two chimney stacks release only steam and emit no odour. The slag is used as fill and the small amount of toxic material is buried in old mines. The cost to dispose of waste was quiet expensive when compared to landfill, however as Australian regulations increase to the European standards, this technology will become vitally important.

**INSERT IMAGE**

**Bringing it all back, keeping it day to day**

I think the biggest personal gain of this experience came from the friendships made with the fellow tour participants, the networking with overseas counterparts and the opportunity to look outside the box. I will definitely be encouraging members to pursue opportunities such as this fellowship as I see it as a great way to really ignite the passion for public works. The challenge for me now is to keep using this experience to better my day to day work. This will no doubt be happening on a subconscious level but as with all experiences like this (eg training courses etc) really using it is the hard part. For me I will continue my work with IPWEAQ and will look to improve the place where I work by incorporating ideas and philosophies from the other side of the world. I will endeavour to keep in touch with my fellow tour delegates and also the friends made overseas.

**Thanks**

This once is a lifetime experience and would not have happened without the support to the following people. I would like to thank them all.

- The Queensland Foundation Trustees for providing this wonderful opportunity.
- Suzanna Barnes-Gillard, for your help support and encouragement, not only through this experience but during my whole time in local government. (This wonderful woman deserves a medal! )
- My fellow tour mates; Dave Abbott, Chris Champion, Craig Wilson and Greg Moran.
- Laidley Shire Council for their support
- Gerry Franzmann and Mike Butcher, two of the best bosses a bloke could ask for. Thanks for your support and wisdom.
- Keith Reester./ Thanks for your time and support, your monthly management tips are great, keep them coming.
- And finally thanks to my family and my fiancée Rene’, for your love and support.
Photos

To add some colour I’ve included some photos from the study tour. While not all directly related to my study topics I am sure Local Government Engineers will appreciate them.

INSERT IMAGE

Road Failures in the Big Apple

INSERT IMAGE

One of the many Steel Bridges in the US which are in need of attention. We should be pushing NAMS in the US.

INSERT IMAGE
Footpath hazards in Los Angeles

INSERT IMAGE

Traffic Counters in Birmingham – I tell the young blokes at work that it’s not only them who have to put them out.

INSERT IMAGE

Solar Panels on a Council Owned Retirement Village (excess power sold back to grid)

INSERT IMAGE

Solar and Wind Powered street lights - Woking

INSERT IMAGE

The wonderful crew. Greg, Chris, Craig, Dave.