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Fit for purpose design led to award winning water p.14

ENGINEERING FOR PUBLIC WORKS

COLLABORATIVE ENGINEERING
IPWEAQ CONFERENCE 2016
Brisbane Convention & Exhibition Centre
8-10 November 2016

ISSUE No.2
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EDITOR’S NOTE:

Welcome to the second issue of IPWEAQ’s quarterly e-journal, Engineering for Public Works (EPW). Our first issue achieved almost 1,000 reads and over 20,000 digital impressions and we’re expecting these statistics to grow exponentially with each issue.

A lot has happened since our last issue: we’ve held two branch conferences in Noosa and Emerald, we launched the Public Works Technical Subscription (PWTS), updated the Supervisor’s Handbook, created a new look for all marketing material and welcomed two new team members: Craig Moss and Erin Knudsen. Learn more about Craig and Erin and the rest of the IPWEAQ team on page 9 and the QWD team on page 13.

The theme for this issue is Connecting Queensland: with roads, bridges, technology, connecting people and connecting communities. We have a number of excellent articles on the range of issues facing our leaders with infrastructure planning across the state and federally. Our feature article is from the Hon Jackie Trad MP on the recently launched State Infrastructure Plan (SIP).

We hope you enjoy the second issue of Engineering for Public Works and we again invite feedback by completing the online form on our website. Happy reading!

Sharon Wright
Editor, EPW
Director, Marketing and Events
Sharon.Wright@ipweaq.com
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» MEMBERSHIP RENEWALS

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Your annual IPWEAQ membership subscription is due by 1 July 2016. Pay before 30 June to claim as a tax deduction this financial year. If your employer is an IPWEAQ Supporter you will receive 10% discount on your annual subscription.

IPWEAQ members receive preferential rates for attendance at conferences, professional development, branch events, RPEQ assessments, publications, technical products.

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It has been a busy few months since my last report to you. In particular, local government elections resulted in a significant change to our political leadership. With this change, we can expect new directions as our new leaders seek to understand why we do what we do. And typically, we in the engineering fraternity will offer a wealth of information that supports decisions and with technical data that explains the intricacies of a project, even a small one. Unfortunately though, when communicating with a non-engineering audience, we sometimes fail to deliver a strong story for that audience. The key message is lost and our stakeholder is unable to buy into what we need them to understand.

There is a risk then that we might blame this result on change itself rather than how we connected with our audience and how we communicated our project. If your key message is not being heard, perhaps change the way you say it until the recipient understands.

It’s a good lesson for us to learn and practice in our day to day lives and at work. While getting distracted by the maths in a calculation we’re not focussing on the people who are working on the sums. But when we do this instead, concentrating on the people involved, the maths seem to add up more easily. For example, if the numbers say to close a bridge, how does that impact on the motorists who use that bridge and the communities on either side. How much less time does a motorist have with his family given the extent of the detour? We’re still looking at numbers but with a people focus.

At our conference in Brisbane, 8-10 November 2016, we will be including a presentation and other sessions on presentation and communication skills so we hope you will join us for that.

I will be attending our CQ Branch conference in Emerald this month hosted by the Central Highlands Shire Council. I also attended our joint SEQ and SWQ branch conference in Noosa late April and I’d like to thank Allan Hull and the team at Noosa Council for delivering another excellent IPWEAQ event. And don’t forget the NQ Branch conference in beautiful Lucinda, 17-19 August 2016. Lucinda will mark the first in our 2016-2017 IPWEAQ Conference Grand Slam (five regional and state conferences).

I also attended a number of other events including the QUT Future Cities summit, the National Thought Leadership series, Strengthening Australia’s Creaking Infrastructure (an IPWEA initiative) and a TMR workshop on their modelling for autonomous vehicles. All of these topics serve to remind us of the changing face of public works in Australia. The introduction of autonomous vehicles will completely change...
our road infrastructure which will need to communicate with the traditional road user and with vehicles directly in the future. The technology is already here and we’ll likely see it as soon as five years from now. This pace of change applies also to data usage, data collection and data automation and how we will perform our jobs going forward. Keeping abreast of change is not usually essential or relevant to what we’re doing right now so I’ll be sure to keep abreast of the changes coming for our space and report to you each quarter.

And speaking of change, I attended my final National Asset Management Strategy (NAMS) Council meeting in Melbourne last month and now hand IPWEAQ representation on NAMS to the capable Steve Hegedus, our SEQ Branch President and IPWEAQ board member. Steve has proven experience as an asset management practitioner and he is keen to improve asset management practices across Queensland.

During my involvement on the NAMS Council, I witnessed the rewrite of IIMM and AIFMM to incorporate ISO55000 terminology. We also updated and added new Practice Notes including Levels of Service and Community Engagement, Roads Pavement and Towards More Sustainable Street Lighting. The objective of the NAMS Council is to deliver consistency and continuity in the practice of asset management and this will be a focus for both Steve and IPWEAQ. If you would like to be involved in NAMS Queensland, please feel free to contact Steve directly.

So in closing, please take the time to check your key messages and how people respond to you. Try to draw out what’s important in the message – yours and theirs – and spend less time on the maths behind a calculation. Concentrate your energy on the way your project impacts the community you serve and if you are courageous, seek feedback on your communication style and how your messages are being received. I look forward to seeing you in Brisbane, 8-10 November when we can discuss this subject in person with our colleagues.

Joe Bannan
President
Manager Asset Management
Brisbane Infrastructure
Brisbane City Council

Each of our presidents nominate a charity for IPWEAQ to support during their term. Joe Bannan has chosen the Cancer Council Queensland.

We raise funds for the President’s Charity at our conferences, branch and other functions and with donations from our partners.

If you would like to make a donation please go to:
http://www.ipweaq.com/president-s-charity
It has been nine months. I joined IPWEAQ 31 August last year and it has been a wonderful time; crazy busy but I consider myself very lucky how it all panned out. If my husband had not decided to sail around the world in a yacht race, I would not be here. But the planets aligned and this position became available at the moment I decided to return to Brisbane to be closer to family and to establish a new life. The primary deterrent at the time was the concept of winter having lived without one for 12 years while in Singapore. Seven days into winter and so far it is not hurting too much.

It is also my first State of Origin on home ground and it is a lot less stressful than being in the expat community in Singapore where team rivalries were divided quite evenly and no one liked to lose. Fortunately I didn’t have to experience this much over the past decade and long may it continue.

The Queensland spirit witnessed during Origin though, exists throughout the year and is particularly evident in the public works sector. I have been surprised by the strength of the community spirit and the sense of belonging to something unique and valued. It is most evident when I have the good fortune to meet members and our Partners at our branch and state conferences. It is also fortuitous that so far gatherings of members have been held in Noosa at our joint SEQ/SWQ branch conference, in Emerald this week where it is currently 28 degrees (in winter) and then in Lucinda in August where I believe there will also be no sign of winter.

I also recently joined our colleagues at the Board of Professional Engineers Queensland (BPEQ) for a visit and presentation to the Townsville City Council (TCC) and Burdekin Shire Council (BSC) and would like to thank Neil Allen (TCC), Dawson Wilkie (BPEQ Chair) and Kevin Byers (BSC) and their teams for welcoming us. And the weather there was also excellent.

Later this month, we will be delivering our revised 2-day Supervisor’s workshop for TCC after a 2-day course in Charleville this week. The accompanying publication, The Supervisor’s Handbook for the Construction and Maintenance of Infrastructure has also been substantively revised however we will continue to review the handbook to ensure it remains relevant and addresses current practices on works projects across Queensland. The handbook cover features the Kirrama Range Road restoration project courtesy of the Cassowary Coast Regional Council. This project won the IPWEAQ excellence award in 2015 for projects $5 million to $10 million. And please note that nominations for the 2016 awards program are now open. Carlie is waiting to hear from you.

You will notice that we will regularly feature our award-winning projects on IPWEAQ publications for example, the Toowoomba outer circulating road project on our June journal cover and journal banner and thank you to the Cairns Regional Council for the new cover for Complete Streets featuring the bridge over Saltwater Creek which is part of the CBD to Aeroglen link.

Finally, we would like to welcome Erin Knudsen and Craig Moss to our team. Craig takes on the role of Director Professional & Career Development and will be ably assisted by Erin, our Office Manager & PD Coordinator. It should be evident from this that we plan to have a strong focus on your professional and career development going forward as we also plan to ensure Queensland has the strongest pool of public works engineering professionals available to deliver infrastructure projects for our state for the next decade and beyond.

Leigh Cunningham
CEO, IPWEAQ
Leigh.Cunningham@ipweaq.com

Leigh Cunningham is a lawyer with a career as a senior executive for a number of public companies in Australia and global companies headquartered in Singapore where she lived for 12 years.
**MEET THE TEAM**

**CARLIE SARGENT | Director, Member Services**  
*Carlie.Sargent@ipweaq.com*  
Carlie manages the IPWEAQ Excellence Awards, Member Services and the RPEQ Assessment Scheme. Carlie has held a number of roles in professional associations, most recently with CPA Australia as the Queensland Director and Corporate Social Responsibility Manager and was previously the Manager of the Institute of Management Consultants.

**ROSS GUPPY | Director, Technical Products**  
*Ross.Guppy@ipweaq.com*  
Ross has over 30 years' experience in the road and transport infrastructure sector, including 28 years with the Queensland Department of Transport and Main Roads (TMR). During Ross's time with TMR, he held various specialised engineering and senior executive roles, and was accountable for managing the Technical Documents Program.

**JEANETTE SAEZ | Director, Finance and Administration**  
*Jeanette.Saez@ipweaq.com*  
Jeannette has over 26 years bookkeeping/finance experience in both the private & government sectors. In 2000 she launched her own finance and administration consultancy which services a range of clients including IPWEAQ, Marling Group and Muir Marine Qld to name a few.

**CRAIG MOSS | Director, Professional and Career Development**  
*Craig.Moss@ipweaq.com*  
Craig has worked in the civil infrastructure industry since 1985, including senior roles in the government and private sectors. He combines 19 years' practice as a technical professional with 12 years' experience as a learning and development specialist to assist in the enhancement of practical knowledge and skills that benefit the individual and the employer.

**SHARON WRIGHT | Director, Marketing and Events**  
*Sharon.Wright@ipweaq.com*  
Sharon is a public relations and communications professional with extensive experience in the corporate and social enterprise sectors. She was a founding member of Jamie Oliver’s Fifteen Foundation, London and most recently, the Assistant Editor for IN Noosa Magazine.

**ERIN KNUDSEN | Office Manager and Professional Development Coordinator**  
*Erin.Knudsen@ipweaq.com*  
Erin has worked in the training industry for the past 14 years for both private and government organisations. She has held a unique combination of experience in teaching, management, administration, training development, compliance and consulting. She has successfully implemented innovative professional development and certification programs. Erin will work closely with our new Director Professional & Career Development, Craig Moss to develop and implement IPWEAQ’s new program.
The SIP clearly spells out the short and long term infrastructure priorities...

Over the past 12 months, we have been transforming the way Queensland approaches infrastructure, with a focus on taking the politics out of the planning process.

The first plank in this reform was establishing Building Queensland as an independent adviser to government to ensure infrastructure projects are prioritised based on rigorous business cases, including cost-benefit analysis and community benefits.

Secondly, we opened the door to Market Led proposals to encourage new private sector investment. Already four major projects have progressed to Stage 2 of the assessment process – a new Cruise Ship Terminal at the mouth of the Brisbane River, a new aquarium development in South Brisbane, an RACQ driver training facility at Mount Cotton and the Logan Motorway Enhancement Project.

And in March, I released Queensland’s first State Infrastructure Plan (SIP) in more than three years.

As John Daley at the Grattan Institute observed: Infrastructure can certainly provide economic, social and cultural benefits, but only if it is the right infrastructure, in the right place, built at the right time for the right price.
The SIP clearly spells out the short and long-term infrastructure priorities that our state needs: increasing the capacity and resilience of South East Queensland’s transport system; adapting new technologies in the energy sector; improving regional connectivity and freight market access; and focussing on better preservation and utilisation of public assets.

Yes elections will come and go and commitments will be made, but with this Plan Queenslanders have a prioritised pipeline of projects that have been independently assessed and will know these are the projects their government should be investing in.

Importantly, this Plan is also backed by the establishment of a new State Infrastructure Fund, with an initial investment of $500 million. This Fund builds on Queensland’s existing capital budget of $35 billion over four years and will help fast-track a number of crucial projects and support the jobs our state needs right now.

Through this investment, our state is now moving to deliver six of the 12 Queensland specific projects highlighted on the Infrastructure Australia Priority list, released just a few months ago.

We’re continuing to push for a fairer share from Canberra and through our State Infrastructure Plan, we’re exploring new and innovative ways to fund and deliver infrastructure.

I’ve set up a value capture office within my department to investigate private sector partnerships and innovation including for Cross River Rail. These partnerships are critical to delivering our State Infrastructure Plan. Value capture, wherein the Government recovers some or all of the value that public infrastructure generates for private landowners, is a key option the Palaszczuk Government is considering for funding priority infrastructure moving forward.

We want to think outside of the box and explore new ideas. One of the key concepts that we are exploring are “City Deals”, a model that has worked successfully in the United Kingdom. These deals bring Federal, State and Local Government together, so that the right infrastructure is prioritised and beneficial microeconomic reforms (like better planning principles) can be delivered.

The Deals can last for up to 10 years, and provide a long-term blueprint to transform cities and regions into more productive, knowledgeable and sustainable places to live and work.

There’s no doubt Queensland faces significant change and growth over the coming decades and it will need both the public and private sectors to connect to ensure the infrastructure needs of all Queenslanders are met.

Our Government is committed to embracing innovation and delivering the best infrastructure outcomes for Queensland as we grow. Through investing in forward-thinking solutions we’re turning Queensland’s infrastructure ‘wish-list’ into reality.
Celebrating the *qldwater* Technical Reference Group

I am pleased to announce that Steve Gray from Townsville City Council and Dick Went from City of Gold Coast have been elected as the new *qldwater* Technical Reference Group (TRG) Chair and Deputy Chair respectively, commencing soon.

The TRG is made up of Water Managers, Chief Engineers, Chief Executive Officers and Water Operators representing nearly 20 small, medium and large service providers from across the state. They currently meet at least four times per year, overseeing the *qldwater* work program, providing invaluable advice and a strong support network. The group hosts our Innovation Forum, and more often than not, are individually responsible for hosting our other events. Importantly, the group is actively sought out by other levels of government as the place to get a common sense and largely consistent view on issues impacting the sector. We are keen to welcome new members, especially from smaller councils, but if you can’t be directly involved, remember that the group always welcomes the opportunity to attempt to address concerns raised by any member.

It’s important to say something about our outgoing Chair and Deputy Chair, even though John is still around for a while.

John Bett’s first TRG meeting was in 2007. Since then, he’s served as SWIM Steering Committee Chair, a *qldwater* Management Committee representative for AWA, and TRG Deputy Chair and Chair. He’s participated in countless project planning initiatives and reviews and more often than not has played the perfect devil’s advocate keeping our approaches balanced and achievable. John retires in August to tackle a significant job list his wife has been preparing.

Dave Brooker joined TRG in 2010. He is a true innovator and has always been motivated to go beyond his daily role in council to promote, and deliver, a broad range of business improvement initiatives in the sector. He has had a hand in more of our programs than I can count. Dave leaves Mackay Regional Council in May to join the private sector, although we hope he can find some time within his new role to keep collaborating with *qldwater*.

On behalf of our staff and broader membership – our sincere thanks for your efforts gentlemen.

Dave Cameron
CEO *qldwater*  
dcameron@qldwater.com.au

*Qldwater* commenced with *qldwater* in 2008 and formally took on the CEO role in 2015 after an extended acting period. Dave oversees all *qldwater* programs with a focus on managing the advocacy agenda. Dave has over twenty years’ experience in various business management, HR and Finance positions in various Government departments and private organisations.
MEET THE TEAM

ROB FEARON | Director, Innovation Partnerships
rfearon@qldwater.com.au
Rob commenced with qldwater in 2006 as CEO and is currently the Director, Innovation Partnerships. Rob’s current major project focus is the Queensland Water Regional Alliances Program and he has also recently undertaken significant work on the industry led Code of Practice for Pumping Stations and Networks. Rob has over eighteen years of experience in water industry roles across Local, State and Commonwealth Governments.

MICHELLE HILL | Manager, Skills and Strategy
mhill@qldwater.com.au
Michelle commenced with qldwater in 2010 and is responsible for managing the Queensland Water Skills Partnership program and industry capacity building projects as well as other strategic projects that emerge. Prior to her role at qldwater Michelle held a number of roles in Business Systems, Training and Industrial Relations in the non-profit sector.

DAVID SCHELTINGA | Manager, SWIM
dscheltinga@qldwater.com.au
David commenced with qldwater in 2011 and is responsible for managing the State-wide Water Information Management (SWIM) program. David has worked on indicators and assessment frameworks at local, State and national levels for over 15 years and has vast experience with running training sessions and workshops. He currently works remotely from Hervey Bay.

DESIRE GRALTON | Manager, Communications
dgralton@qldwater.com.au
Desiré has over fifteen years’ experience in Public Relations and Communications with a particular focus on community engagement and corporate publications. Desiré commenced with qldwater in 2011 and works part-time managing qldwater’s website, communications such as newsletters and promotional materials and assisting with event planning and other projects.

HEATHER GOLD | Project Assistant
hgold@qldwater.com.au
Heather manages qldwater Member Services and stakeholder engagement. She also coordinates conferences and manages events and industry communications including website management. Heather comes from a background in hotel management and project management in real estate and has been with the Queensland Water Directorate since 2006.

TOM BROOKE | Administrative Assistant
Tom.Brooke@ipweaq.com
Tom recently joined the IPWEAQ team as Administrative Assistant after graduating from Brisbane Grammar School in 2015. He is currently studying a Bachelor of Business and Journalism at the University of Queensland and is a keen footballer both as a player and junior coach. Tom will be assisting the qldwater team while Heather takes a well-earned holiday to Europe.
Desire Gralton, Communications Manager qldwater, explains how two regional towns overcame high Manganese levels to produce award-winning water.

Two regional Queensland towns with seemingly similar raw water issues found two very different treatment processes to deliver award-winning water solutions for their regions.

Georgetown is a small town situated in the Gulf Savannah on the banks of the Etheridge River. Water for the town is drawn from beneath the sands of the Etheridge River bed which provides some degree of natural sand filtration. In the dry season iron and manganese are prevalent and in the wet season the fast flows of water stir up sediments resulting in dirty water.

Richmond, one of Australia’s richest fossil grounds, sources its water from the Great Artesian Basin via two bores which contain high metal concentrations of iron and manganese causing staining and a notable odour not appreciated by residents or visitors.

Through regional collaboration, Etheridge and Richmond Shire Councils engaged water and wastewater treatment specialists Aeramix to undertake extensive field based laboratory and pilot trials to assess process configurations and identify the minimum process requirements for the Georgetown and Richmond water treatment plants.

Although the primary objectives at the two sites were similar in that both raw water supplies contained iron and manganese which led to staining throughout the reticulation system, the investigations identified quite different treatment needs for the two water supplies.

At Richmond it was found that iron could be precipitated to below ADWG limits via aeration alone, however the removal of manganese required small additions of chlorine in the form of sodium hypochlorite.

According to Aeramix Manager Technical Services and Innovation, Mark Samblebe, the aeration phase utilised at Richmond also served to assist with the gassing off of sulphide odours, and when combined with the addition of small amounts of chlorine, Manganese was also dramatically reduced.

“Our research demonstrated that the addition of chlorine dramatically improved iron precipitation and this observation was also made with respect to manganese,” Mark said.

In comparison to Richmond, the Georgetown water supply proved far more difficult to treat. Although iron was readily removed with chemical oxidation using chlorine, the elevated Manganese was far more difficult to remove.

Numerous combinations of oxidants were tested, and
additional process steps to improve oxidation such as pH manipulation were also trialled without success. Despite achieving significant manganese removal rates (60-70%) final treated water was still above the ADWG aesthetic limit and well above the 0.05mg/L threshold for preventing staining.

The initial Manganese concentration at Georgetown was significantly higher than that of Richmond, hovering around the 1-1.1mg/L mark for much of the trial period with historical records indicating levels as high as 1.5mg/L. Removal rates using all forms of oxidation and combinations of oxidation and pH manipulation could not consistently remove manganese to below 0.2mg/L, still above the ADWG aesthetic guideline.

Results of a range of oxidation-flocculation and filtration methods for the Georgetown raw water showed mixed success leading the Aeramix TSI team to investigate the use of catalytic filter media. As can be seen in Figure 1, the catalytic media was superior to any other method of removal for manganese from the Georgetown water supply.

![Image 1. Manganese residual in a pipe from the Georgetown pipework (left) and a sample of town water during a dirty water event caused by manganese staining (right).](image1)

**Figure 1:** Treated water manganese concentration under various oxidation and filtration methods at Georgetown.
Mark says the challenges and results of the two investigations highlight the importance of performing on site assessment of process options and chemical configurations.

“In theory one would expect that traditional oxidation, coagulation and filtration would be sufficient for both supplies however the test work clearly showed this was not the case and that the Georgetown supply required a different process configuration to achieve the required outcomes.”

“The value of on-site testing and assessment was proven in both cases where significant savings in capital cost were gained in Richmond where a relatively simple process was identified, while for Georgetown, it identified that the composition of the raw water was prohibitive to the oxidation process and an alternative was required.”

“The on site assessment is even more important when working with oxidation processes, where if samples are collected and transported to an off-site laboratory, significant oxidation can occur prior to the assessments being made. Up to 90% of the iron in the Richmond supply was oxidised by aeration alone, a phenomenon which would occur in the transport and handling of bulk samples for analysis at an off-site laboratory resulting in misleading process performance results.

Table 1 identifies the key process steps developed and implemented for the two supplies:

<table>
<thead>
<tr>
<th>Process Step and Description - Richmond</th>
<th>Process step and description - Georgetown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical oxidation/aeration for removal of sulphides and aid iron precipitation</td>
<td>Coagulation/flocculation - combining turbidity into large particles for removal via filtration</td>
</tr>
<tr>
<td>Chemical oxidation via chlorine - Manganese precipitation</td>
<td>Primary filtration - Dual media Granular activated carbon and sand - Solids and organics removal to reduce chlorine demand for metals precipitation.</td>
</tr>
<tr>
<td>Oxidation tanks - precipitation of iron and manganese</td>
<td>Chemical oxidation via chlorine</td>
</tr>
<tr>
<td>Coagulation/flocculation - combining precipitated metals into large particles for removal via filtration</td>
<td>Secondary catalytic media filtration for precipitation and removal of iron and manganese</td>
</tr>
<tr>
<td>Direct filtration - Dual media granular activated carbon and sand, solids, iron, manganese, taste and odour removal</td>
<td>Post filtration chlorine top up for disinfection (optional - usually sufficient chlorine added in oxidation step to provide residual for distribution)</td>
</tr>
<tr>
<td>Disinfection - Sodium Hypochlorite</td>
<td>Water storage - chlorine contact and sterilisation</td>
</tr>
<tr>
<td>Water storage - Chlorine contact</td>
<td>Distribution</td>
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Richmond Shire Council Mayor John Warton says the project has delivered exceptional outcomes, with the previously odorous supply being awarded best tasting water in the qldwater Best of the Best Queensland Water Taste Test 2014 followed by winning the WIOA Water of Origin Taste Test against NSW winner Orange in 2015.

“Now people living in Richmond can drink straight from the tap, and good water means a very positive future for Richmond.”

According to Etheridge Shire Council CEO Michael Kitzelmann, the provision of pure water from highly degraded water sources is a challenge for many small and remote Councils.

“While the initial concept was to develop an emergent response to a critical failure in the town’s water supply through a temporary stop-gap system, the project has instead delivered a high quality permanent system. With the assistance of Richmond Shire Council and Aeramix, Etheridge has been positioned to provide a water treatment system that is not merely achieving, but exceeding the anticipated quality of outcomes.”

Through the re-use of excess equipment at the new Richmond Shire water treatment plant the team from Aeramix designed and implemented a permanent solution to the water treatment issues for a total budget of $387,000.”

Both Councils have observed positive flow-on effects of these projects including

• compliments instead of complaints from the community,
• reduced costs in infrastructure replacements,
• reduced water consumption as Council no longer needs to regularly flush the water mains, and
• reduced use of chemicals to remove rust stains.

The projects have also highlighted the effectiveness of regional collaboration and private-public partnerships. Aeramix key personnel continue to provide remote access and support to upskill Council staff to ensure that the plant can operate without external support in future.

Richmond Mayor John Wharton says the project has provided many learnings for his team and water services operations staff who now have a much improved understanding and respect for the complexities involved in managing and maintaining the water supply and treatment system.

“Council has identified and approved the need for a more specialized skill set within the team to provide an ongoing and improved level of service in this area.”

Both projects were 2015 IPWEAQ Award winners, with the Georgetown and Richmond projects taking out the Water Projects under $1million and the Water Projects $1 million to $5 million categories respectively.

qldwater is the central advisory and advocacy body within Queensland’s urban water industry.
qldwater represents members from Local Government and other water and sewerage service providers across Queensland.
qldwater works to strengthen the water industry through leadership, support, development and representation of our members and to position and promote the achievements of the industry.

Our aim is to support our members to deliver safer, healthy and sustainable urban water services to their communities.
The SWQ and SEQ joint Branch Conference, kindly hosted by Noosa Council, was highly successful with over 150 delegates and sponsors in attendance at The J theatre, Noosa, 28-29 April.

The theme Coast and Country United was well-represented throughout the program with papers presented by members from Somerset Regional Council, Noosa Council, Toowoomba Regional Council, Redland City Council, Ipswich City Council, Brisbane City Council and Redland City Council.

We would like to thank our presenters for delivering an engaging program and in particular, our thanks to our keynote speaker, Noosa Council CEO Brett de Chastel for an excellent presentation, Lessons learnt from de-amalgamation. The conference ‘Best Paper’ was awarded to Allan Hull, Manager Civil Operations Noosa Council, for his presentation Soil nailing and wire mesh landslip repairs: a case study. We would also like to thank Allan and the team at The J for their efforts to make this a memorable event.

A huge thanks to our sponsors Complete Urban for hosting the conference dinner held at the RACV Noosa Resort, and to GenEng Solutions and Shepherd Services for hosting morning and afternoon teas. Our conference lunch was sponsored by Engeny Water Management and Projex Partners kindly sponsored our conference lanyards. All delegates appreciated the coffee cart sponsored by LO-GO Appointments especially Friday morning after the Complete Urban dinner the previous evening.

The trade exhibition at The J was made more interesting this year being set over two levels with delegates making the most of the opportunity to move around the venue during breaks to interact with our exhibitors. Thank you to our loyal, dedicated Partners and Exhibitors for their valued ongoing support of IPWEAQ.

The feedback from delegates was very positive and we thank all of you for attending the inaugural joint SWQ & SEQ Branch Conference and for taking the time to complete the feedback form. As always, we have taken your feedback on board and have enacted most of it already including utilising LinkedIn more effectively to communicate and share with you.

Again, thank you to all who attended, presented, exhibited and sponsored the joint SWQ & SEQ Branch Conference, Noosa 2016. We look forward to seeing you all at the state conference in Brisbane, 9-10 November and Lucinda from 17-19 August 2016.

Murray Erbs
SEQ BRANCH PRESIDENT
SOIL NAILING & WIRE MESH LANDSLIP REPAIRS: A CASE STUDY

Client: Noosa Council
Principal Contractor: Sunstate Group Qld
Specialist Sub-Contractor: The Rix Group
Geotechnical Engineer: GA Geotechnical
Funding: Commonwealth & Qld Govt (NDRRA), Noosa Council

BACKGROUND
An extensive slip occurred on Cooroy Belli Creek Road, Cooroy, during Ex Tropical Cyclone Marcia in February 2015. Following the event, Council commissioned a geotechnical investigation and considered several options for the repair work with the method of soil nailing and wire mesh considered the most appropriate.

LANDSLIP MECHANISM
The landslip investigation & remediation design was completed by a local geotechnical consultant, Grinceri & Associates Geotechnical. The geotechnical investigation identified the probable causes of the landslips to be:

1. Uphill Slips:
   a. Foliation & jointing in the rock material;
   b. Infiltration of water into jointing mobilising movement & erosion of soil on slope due to overtopping due to blockage in the crest drain.

2. Downhill Slips:
   a. The fill batter being too steep & poorly compacted;
   b. Water cascading over the soil face;
   c. Saturation through the road formation & downhill batter slope resulting in gradually developing slips with tension cracks/slumping appearing over time.

DESIGN
Options for downhill slope stabilisation considered were: rockfill buttress, gabion buttress, reinforced earth buttress, soil nails combined with wire mesh. The buttress solutions all required access to the toe of the slope and removal of the slump material; this was an issue due to the instability of the site and weakness of the soil.

A soil nail solution allowed for the slump material to remain in place and works to be completed from the top of the batter. The final design uses a proprietary mesh (Tecco), nail plate and cable anchor system supplied by Geobrugg Australia Pty Ltd. The main advantage of this system is that the high tensile wire (yield strength 1700MPa) Tecco Mesh can be pretensioned across slope which reduces the number of soil nails.

Although the mesh itself is expensive the cost is offset through the increase in soil nail spacing and which also reduces construction time. Corrosion protection is provided through a new generation Zn-Al alloy “Supercoating” which results in a significantly longer life than an equivalent hot dipped galvanized mesh.

One of the benefits for Council from this project is that the design and specification of the project incorporated learnings that the geotechnical engineer gained through his involvement with landslip repair program for the Department of Transport and Main Roads in North Queensland for example; the project was designed with the top row of nails buried as protruding soil nails can damage slasher heads, vehicles that pull of onto the road shoulder and are a safety hazard for workers.

PROJECT DELIVERY
Allan’s presentation at the conference covered details of the project delivery including drilling, soil nail and mesh installation, specification requirements and quality assurance. The total timeframe all civil works associated with the project was 6 weeks including approximately 3 weeks construction timeframe for soil nail & mesh.

Allan has 30 years experience in local government and is Civil Operations Manager for Noosa Council.
THE BLANK SHEET COUNCIL

FEATURE ARTICLE

Brett de Chastel, CEO Noosa Council shares his experiences of setting up a new council from scratch post-de-amalgamation.

CHANGE, CHANCE AND Choice

For those of us who have worked in Queensland local government for quite a while, change has become the norm. Restructures, service reviews, legislative reform, amalgamations, industrial relations changes...the list goes on. I have experienced all of these changes in the last 25 years of working in local government but none of these compared to the ultimate change management process – establishing a new Council from scratch as part of a de-amalgamation process.

On 1 January 2014, Noosa Shire Council de-amalgamated from the Sunshine Coast Regional Council. I was appointed as the inaugural CEO of the new Noosa Council and had the challenging task of steering our new Council through the start up phase to become a local government. There is a lot of precedent across local government in Australia for how to amalgamate Councils as we have seen a steady pattern of mergers across all states with NSW currently going through a similar experience to that of Queensland in 2008. However, starting a Council from scratch is a more unique challenge and provided an interesting professional experience. The process also provided some important lessons in change management.

In no particular order, I would like to share seven change management experiences that I have learnt from the process of establishing a new Council.

LESSON 1 – You have a blank piece of paper.

Imagine, if you would, what you would do in your own organisation if someone gave you a magic wand and you could start from scratch. You aren’t bound by what already exists. You can create your perfect work scenario. What would you do if you had a blank sheet?

Why don’t you do it now?

Having a blank piece of paper to design your own Council or work area gives a completely different mindset from normal change. You aren’t changing what exists. You can create your ideal scenario. As examples, in our Council’s case, we didn’t have any IT networks. Our blank piece of paper approach meant that we put all of our data in the cloud, the first major Council in Australia to do so. We weren’t bound by what existed and could jump straight to the ultimate solution. Another example was our approach to developing our first budget. Imagine doing your annual budget with no financial history or previous figures. Zero based budgeting means starting from scratch and working out what is really needed to deliver services. Zero based budgeting resulted in over $2M of operational savings for our Council as we built our budgets with a blank piece of paper rather than simply reviewing a previous year’s figures.

LESSON 2 – One size does not fit all.

Structural reform has been touted...
by many State governments as a panacea for a myriad of local government problems. But of course, the problems faced by local governments are many and varied. In some cases, structural reform is a good option particularly where contiguous areas are merging into each other. In other cases, better financial management, political leadership or asset management practices might be the answer. Structural reform as a standard solution for reform does not in itself work. Different problems need different solutions.

LESSON 3 – Start with the principles.

The more complex and difficult a change management process, the more important it is that a clear set of principles apply to the change process. When the going gets tough, referring back to those principles helps with navigating a path forward. As examples, at Noosa we adopted a series of “plain English” principles that help guide us through the change process. “No Secrets” – every staff member gets access to Executive Team minutes and our new Council does all Council business in open Council session. “Every dollar counts” – keeping costs down as we went through our establishment phase encouraged every staff member to find simple savings to help our community keep rates down. “Be brave, not stupid” – it is ok to take risks but use some common sense judgement when doing so.

LESSON 4 – Learn from the private sector.

In the private sector, corporations merge and de-merge all the time. Change is dealt with differently from the public sector. Things move more quickly and the proposed benefits of corporate structural reform are pursued more vigorously. “Cut hard, cut early and cut deep” is the private sector mantra to reduce costs which is often the purpose of corporate structural reform. While more difficult for staff in the short term, in the longer term the change process is resolved more quickly and a state of normality (if such a thing exists) is achieved more quickly. By following this approach, our Noosa de-amalgamation was effectively completed in about 18 months.

LESSON 5 – Clear priorities.

With major change, not everything can be done at once. Trying to do 100 things means that none are done properly. Setting priorities is critical in this process. A short but simple roadmap helps staff and elected members understand what needs to be done first and what can wait. This helps manage unrealistic expectations (particularly at an elected member level) and focuses the mind. In the case of establishing a new Council, it was also important to get the right mix between establishing a functional organisation (essentially an internal focus) and continuing to meeting some key community expectations (an external
focus). Often in major change processes in local government, we somewhat facetiously hope that those pesky customers will go away until we get our organisational arrangements in order. The danger of becoming too introspective during major change is a real one and a road map with external priorities ensures the Council does not lose that focus.

LESSON 6 – Symbolism is important.

In major change, people look for symbolism as a way of judging the effectiveness of change. This applies both for the community and for staff. In our case, the Noosa community pined for a much loved kerbside collection service. It was relatively easy to reintroduce at a low cost but with high visibility and sent a strong message to the community that we listened to community expectations. Internal symbolism is also important. When aiming to reduce costs, a commitment from our Mayor, Councillors, CEO and Directors not to have Council cars sends a strong message that the reduction of costs is being taken seriously.

LESSON 7 – Understanding the importance of “voice” in communities.

At its heart, local government enables local people to have a local say on local issues. The recent trend to regionalism has lost sight of that fact. Our communities want to be heard on issues that are important to them. Community engagement needs to be an integral part of day to day operations. In Noosa, 82% of the community voted in favour of the de-amalgamation proceeding and most voted that way on that premise – an opportunity to influence the future of their community. A failure to recognise the importance of that desire would be fatal to the future success of any Council.

And finally, in any change management process, as professional staff we need to reflect and learn from the experience. A de-amalgamation was a truly unique management experience. In the words of Nelson Mandela – “Education is the great engine of personal development. It is through education that the daughter of a peasant can become a doctor, that a son of a mineworker can become the head of the mine, that a child of farm workers can become the president of a great nation. It is what we make out of what we have, not what we are given, that separates one person from another.”

Treat major change as a learning experience and it will be enjoyable!

Brett de Chastel is the inaugural CEO of Noosa Council and has over 25 years experience in local government. In his down time, Brett can be found staying fit by paddling on the Noosa River or patrolling Laguna Bay.
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Having a large fleet of stabilisation equipment and experienced engineering staff, SPA is well suited to provide sustainable and cost effective pavement stabilisation solutions. Although based throughout Australia, having two key office /depot locations in Townsville and Brisbane, we are able to serve local authorities across Queensland effectively, and have worked in all council areas at some time or other, whether it is in the remote western outback or in the middle of cities like Townsville, Brisbane or the Gold Coast.

SPA are not just an equipment hire company, but offer the full range of services from part service stabilisation to full service construction (having R2 Prequalification), profiling and bitumen sealing. These works can be tailor made to suit the client’s resources or requirements.

Local government engineers are increasingly becoming aware of the value in insitu stabilisation and the opportunity to deliver significant cost savings (30-50%) in comparison to other pavement construction types and treatments. In addition to conventional cementitious options, foamed bitumen stabilisation is delivering huge benefits and cost savings on heavily trafficked pavements as an alternative to deeplift asphalt or full depth reconstruction.

Lime stabilisation of Subgrades is also becoming more widely used, where providing improved strength has the advantage of...
reducing overlaying pavement thickness resulting in an obvious cost reduction.

SPA has been a long time corporate partner of IPWEA and strong supporter of local government throughout Queensland. We are invested in maintaining existing relationships and continuing to build others throughout Queensland and will continue to develop and refine insitu stabilisation best practice for the future.

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With the Federal election in full swing, we’re making it very clear what parties need to do to help our cause – and in turn, their own cause – in Queensland, where there are several marginal seats.

Our 10 point election policy plan was prepared with input from Queensland’s 77 councils and spells out the 10 highest priorities in full detail. Candidates who read this document will not be left wondering what our state needs.

We live in a geographically vast and diverse state. To effectively connect communities – socially and economically – smart, significant investment must be made in roads, bridges, telecommunications and other critical infrastructure.

Funding to improve vital freight roads is high on local government’s list of priorities. While we welcome the Federal Government’s recent funding for roads and infrastructure, we are still worried that the return on this investment is limited unless “first and last mile” access restrictions are addressed.

Many freight journeys start and finish on local roads; unless high productivity vehicles (HPVs) can travel the full distance, we’re not getting the most bang for our buck and our supply chain become unproductive. We believe $200 million a year for five years, nationally, would go a long way to fixing “first and last mile” access issues. A permanent Roads to Recovery program of at least $700 million a year nationally is also critical in keeping our roads and bridges open and connecting our communities, especially in the wake of extreme weather events.

We need more money to improve telecommunications services in the bush. Rural and remote councils desperately want to take advantage of the digital economy so they can deliver innovative services but they are hamstrung by reception and connection that are patchy at best, absent at worst. Ten council administration centres do not have access to...
quality networks.

The LGAQ is calling for $70 million for telecommunications infrastructure in Cape York and Torres Strait communities which have, for far too long, tolerated appalling or non-existent services. It goes without saying the Federal Government also needs to continue funding to address mobile black spots across Queensland, of which there are plenty.

Our plan also includes funding for communities to increase their resilience in the face of natural disasters and potential climate change hazards. We’re calling for fairer and more logical federal funding models. Regions, including North Queensland, are crying out for more investment and infrastructure and indigenous councils, of which there are 17, deserve more recognition and increased support to help achieve “closing the gap” targets.

Why should aspiring Federal MPs listen to us? To put our sector in perspective, Queensland’s 77 councils collectively manage $108 billion in community assets and employ almost 40,000 people. Local governments are partners in government in helping drive job creation and significant local economic activity.

We believe we have set out a vital and achievable policy platform that political parties can adopt in the lead-up to the 2 July election. In the heat of the federal election battle, political parties must not forget basic priorities of the communities they are aspiring to serve.

Greg Hallam is the CEO of LGAQ.
FOLLOW THE PIPELINE FROM AUBURN TO THE ISA

VINIDEX IS AUSTRALIA’S leading manufacturer and supplier of complete PVC, polyethylene and polypropylene piping systems for the transportation of fluid, data and energy. With state-of-the-art manufacturing and distribution facilities around Australia, our experience and reputation for the highest quality products and exceptional service means Vinidex will continue to lead the industry in development, manufacture and delivery of pipeline systems.

Vinidex pipe and fittings systems are used in a broad cross-section of markets such as plumbing, water supply, sewerage and wastewater, stormwater drainage, mining, industrial, rural, irrigation, electrical, telecommunications and gas.

It all started in 1960, in a small factory in Auburn, Sydney with a handful of resourceful people. Beginning with second-hand equipment and offcuts from PVC raincoats, the first product manufactured by Vinidex was flexible PVC conduit. Rigid conduit followed. Vinidex’s first major conduit order was for the lighting in the Cahill Expressway tunnel. It’s still there today and still working!

Since then, Vinidex has built an enviable reputation based on product quality, customer service, innovation and performance, and employs over 600 staff at 11 sites across Australia. In 2014 Vinidex became part of the Aliaxis Group, a global leader in the manufacture of plastics pipes and fittings systems. Aliaxis operates in over 40 countries, has more than 100 manufacturing and commercial entities and employs 15,700 people.

Our brands include Supermain PVC-O pressure pipe, StormPRO and SewerPRO twin-wall polypropylene non-pressure pipe, Draincoil corrugated polyethylene sub-soil drainage
pipe, Philmac compression fittings, FRIATEC electrofusion fittings and Superlink ductile iron fittings.

Vinidex values customer support and is genuinely committed to meeting customer needs reliably and efficiently. Comprehensive sales, marketing and technical support is available through our experienced personnel as well as product literature, website and technical data.

A commitment to using the highest standards of raw materials and the latest manufacturing technologies has earned Vinidex a reputation as a quality supplier, with quality endorsed systems. Vinidex has a long association with the IPWEAQ and we look forward to continuing to provide support to the membership’s critical role in providing public works infrastructure and services to the local community.
By the time you receive the June issue of Engineering for Public Works, the CQ Branch will have delivered our annual conference, held this year in Emerald and hosted by the Central Highlands Regional Council (CHRC).

CHRC mayor, Councillor Kerry Hayes opened the conference which featured 10 technical papers including flood mitigation strategies for Emerald (Bill Wilkinson, CHRC), the Winton Geothermal project (Daniel Westall, LGIS), the Moores Creek Trunk Sewer Bridge and the Dysart Water Treatment Plant upgrades.

Graeme Wills of George Bourne and Associates shared his procurement lessons learnt from the Natural Disaster Relief and Recovery Arrangements (NDRRA) and IPWEAQ President and Brisbane City Council Manager of Asset Services, Joe Bannan delivered the keynote address on asset management. Ken Robinson from Wagners presented a case study on sustainable plastics i.e. Fibre-Reinforced Polymer (FRP) materials.

The technical tour took delegates to the East Nogoa Water Treatment Plant which delivers potable water to East Emerald and provides for future growth of the township. The project was nominated for an IPWEAQ Excellence Award in 2015 and reflects the conference theme, ‘Sustainable Regions’.

Best Paper was awarded to Chris Shields of Calibre Consulting for his presentation on Moore’s Creek Trunk Sewer Bridge.

This two-day event in Emerald brought together delegates from local and state government, consulting engineers and contractors and trade suppliers. We celebrated our gathering at the Welcome Function on Thursday night and conference dinner at The Capricornian Restaurant on Friday night.

Thank you to all who attended and a special thanks to our hosts CHRC and our valued sponsors and partners for your continued support of IPWEAQ.

The CQ Branch committee will not have much time to relax after the conclusion of the Emerald conference as we start preparations for our next conference 23-25 March 2017 to be held in Yeppoon so please mark your diaries to be sure you can attend the third conference in the IPWEAQ 2016-2017 Conference Grand Slam.

I will keep you posted during the year ahead and announce other CQ Branch initiatives via Connect, IPWEAQ’s fortnightly e-news service.

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CQ Branch President
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Dial Before You Dig is the free national referral service for information on underground infrastructure. It directs the enquiries of excavators to underground asset owners who are Members of the Dial Before You Dig service. Excavators should always ensure that a Dial Before You Dig enquiry is lodged before any excavation work is carried out.

What type of information is provided?

Underground location plans are sent by asset owners and they generally provide information on the presence of underground assets rather than the exact location. Utilities provide contact details and other information to assist with working safely around their infrastructure. On site locators should also be organised if necessary.

Why should I use the service before I begin excavation?

We all need to do our best to ensure we do not damage Australia’s underground infrastructure. Underground pipes and cables carry vital services such as water, electricity, communications and gas. Damaging these can potentially cause widespread service disruption, personal injury and the risk of incurring significant financial penalties.

What else can I do to prevent damage to underground infrastructure?

Once you have lodged your enquiry with Dial Before You Dig and have received the plans, you should also ensure that you work safely once on site. This should include potholing and looking for clues that underground infrastructure is present - such as marker posts, water meters, pits, inspection points and warning signs.

Dial Before You Dig is the essential first step. Lodge your enquiry, receive the plans, and follow safe work procedures on site. These procedures include engaging a Dial Before You Dig Certified Locator “The Essential Second Step” go to www.dbydlocator.com

For more information on excavating safely please visit www.1100.com.au.

How does the service work?

Free Dial Before You Dig enquiries can be lodged online at www.1100.com.au (mobile device compatible), by downloading our iPhone app or by ringing our national call centre on 1100 during business hours.

After lodging your enquiry, Dial Before You Dig send you a confirmation sheet which provides details of the asset owners affected and enables you to ensure the recorded dig site is correct. The asset owners will then send you information (generally plans) detailing the location of their underground infrastructure within the vicinity of your dig site.

What else can I do to prevent damage to underground infrastructure?

Dial Before You Dig is a quick and free service so it makes sense to lodge an enquiry each time you are planning any kind of work that involves digging.
The Essential First Step.

STAY INFORMED AND PROTECT YOUR INFRASTRUCTURE

Many Councils around Australia are Members of Dial Before You Dig, using the service to protect their infrastructure and to monitor excavator behaviour around Council property. Membership benefits include:

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- Assist with reinstatement issues

PROTECT YOUR TEAM

Councils should use Dial Before You Dig as excavators as well. Any excavation work by Council employees or contractors should not be commenced until a free Dial Before You Dig enquiry has been lodged.

Enquiries can be lodged online at www.1100.com.au. Contact us at email cpease@1100.com.au for more information on the benefits of Dial Before You Dig Membership.

www.1100.com.au
Ashleigh Tomkins is the 2015 IPWEAQ Young Engineer award winner. Ashleigh shares the highlights of his career to date and the value of being an IPWEAQ member.

For the past seven years Ashleigh has worked for Gladstone Regional Council in a number of different roles. He started work with Council as an Infrastructure Planning Engineer after graduating from the University of Queensland with a Bachelor of Engineering majoring in mechanical engineering.

As an infrastructure planning engineer he was responsible for developing water and sewer strategic plans as well as providing guidance when these were implemented both through Council capital works and developments. From this he transitioned into the role of Engineer - Development which combined infrastructure planning with development and operational works assessment for all infrastructure types and requirements. This role also included providing technical guidance in the development of Gladstone Regional Council’s Local Government Infrastructure Plan (LGIP).

During this time Ashleigh has also had the opportunity to lead the design and development teams through seconded positions. He recently started in the role of Senior Engineer - Asset Management, this role involves development of procedures, business rules relating to asset management as well as leveraging Council’s asset data to optimise and ground truth future works programs.

My most significant career highlight to date is the technical input I had into Gladstone Regional Council’s Local Government Infrastructure Plan (LGIP) and the supporting strategic plans. This project gave me the opportunity to utilise both my infrastructure computer modelling experience and my understanding of planning schemes and concepts. I feel that my input helped to ensure that the LGIP not only reflects local conditions and likely development but is also trusted to guide Council’s upgrade strategy for water, sewer, and roads networks.

The best thing about working as an engineer in public works is the ability to undertake a wide range of tasks. Through my career I’ve had the opportunity to work within a number of different areas of public works engineering and have...
been presented numerous challenges both technical and interpersonal to meet. Being constantly presented with new, interesting and varied situations has helped me grow as an engineer immensely.

As the Recipient of our Young Engineer Award for 2015, are there any challenges specific to young people who work in public works engineering roles?

Over the past few years there has been significant progress made in the capabilities of computer based modelling of infrastructure networks. As young engineers we are quite often at the forefront of advocating for the utilisation of these capabilities to ensure efficient delivery of services. A key challenge facing Young Engineers is finding a balance between these new tools and existing methods and also the physical constraints that these models may not pick up.

What would be the one piece of advice you would give to other young people beginning their career in engineering and public works?

I would advise them to take a hold of any opportunity presented to them. If it appears to be difficult, don’t view it as a burden but rather an opportunity for them to grow and improve their capabilities.

What are the key benefits of your IPWEAQ membership?

The key benefits of IPWEAQ membership to me are;

• the availability of conferences close to our Council area;

• the ability to meet and network with colleagues facing similar situations and challenges; and

• access to other member’s experience.

For more information on the benefits of becoming an IPWEAQ member please contact:

Carlie Sargent
Director, Member Services
Carlie.Sargent@ipweaq.com
Direct: 07 3682 3601

Ashleigh receiving his award for Young Engineer 2015 from Ged Brennan.
As we, unbelievably, approach the half way mark of 2016 and the end of another financial year, it is an ideal time to check in on our professional and personal goals for the year.

The local government sector seems busier than ever so it’s easy to be caught up in our day to day routines and lose sight of the goals we set for ourselves way back at the beginning of 2016. For a lot of us, we strive each year to achieve a manageable balance between our work and personal lives. It’s reasonable for our families to expect our undivided attention for certain hours of the day. For the other hours, it’s not just about getting the work done but our profession requires of us, a commitment to continuous professional development. As a board member of IPWEAQ, I’m pleased that we are able to offer a comprehensive program of courses and workshops for all levels of local government operations with a number of new courses recently added. IPWEAQ is also an assessment entity for the RPEQ and we invite non-registered engineers to download our logbook and competency framework to identify any gaps that might need to be addressed before applying for RPEQ.

One way to achieve your 150 hours of CPD is to contribute articles to our journal, Engineering for Public Works and to attend our state and branch conferences. The SWQ and SEQ branches recently delivered a joint conference in Noosa and I would again like to thank delegates, exhibitors and sponsors for making the Noosa conference the success it was.

We will join together with our eastern colleagues in another two years.

Another way to achieve your CPD hours, is to contribute to the engineering profession for example being involved with IPWEAQ or one of its working groups or strategic reference groups. I recently attended my first National Assets Management Strategy (NAMS) council meeting representing IPWEAQ and taking over the reins from our esteemed president, Joe Bannan. They will not be easy shoes to fill but I am looking forward to the challenge.

We will make announcements of forthcoming SWQ branch events via Connect, IPWEAQ’s fortnightly e-news service.

Stephen Hegedus
SWQ BRANCH PRESIDENT

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Queensland

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SOUTH WEST QUEENSLAND BRANCH
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> Innovation in public works
> Road Safety
> Design and/or construction of water, waste water, sewerage and drought management projects (proudly sponsored by qldwater)
> Innovation in water, waste water, sewerage and drought management (proudly sponsored by qldwater)

PEOPLE AWARDS

> Engineer of the Year
> Young Engineer
> Technical Officer
> Works Supervisor
> Woman in Engineering

For more information contact Carlie Sargent
> 3632 6801
> carlie.sargent@ipweaq.com
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✔ One table for 10 people at our excellence awards gala ceremony and dinner (9 November 2016)

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*Due to the size of some regional venues, it may not be possible to accommodate a trade display for all Partners at each event.
If we are unable to provide a trade display for you at a branch conference, we will ensure you have a presence at the conference eg as sponsor of a paper or session.
Priority will be given to Principal Partners then Partners before non-Partner exhibitors.
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<th>Number of Opportunities</th>
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<th>Branch Conference (per conference) (All prices plus GST)</th>
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Supervisor’s Handbook updated

**Technical Focus**

*IPWEAQ Technical Products Director, Ross Guppy, outlines the changes to the updated Supervisor’s Handbook*

The new 2016 edition of the Supervisor’s Handbook is now available in print or PDF with live links.

The first edition of the handbook was developed from a New South Wales prototype in the early eighties but has been extensively modified to accommodate numerous changes to regulations, practices and procedures and of course varying state legislation.

The purpose of the handbook is to offer guidance for supervisors and works staff in preparing, organising, managing, undertaking and completing works projects. It includes methodologies with reference to the legislation and regulations applicable for each task.

New sections have been added on cultural heritage, the California Bearing Ratio, nuclear gauges, bitumen sealing, asphalt and geotextile reinforced seals.

Content has also been updated in the following sections: Work Health & Safety, confined spaces, modern survey techniques, pipe laying and bedding material, traffic management and CCA treated timber.

The legislation section has also undergone significant change with a number of new legislation, regulations and policies added including the Queensland Industry Participation Policy.

The handbook is now published in A4 format (previously A5) for easier readability of the content and numerous diagrams and formulae. The PDF version has live links to websites referred to in the References section and from the Table of Contents to the relevant chapter.

While the 2006 edition of the Supervisor’s Handbook has undergone substantive change, we will continue to review and revise the handbook to ensure it remains relevant and addresses current practices on works projects across Queensland.

We would like to thank the Cassowary Coast Regional Council for permission to use the cover image of the award-winning Kirrama Range Road restoration project. This project won the IPWEAQ excellence award in 2015 for projects $5 million to $10 million.

The Supervisor’s Handbook may be purchased via our website.

Ross Guppy
Director, Technical Products

**For more information on IPWEAQ’s extensive range of technical products, please contact Ross:**

Ross.Guppy@ipweaq.com
SUPERVISOR’S HANDBOOK FOR THE
CONSTRUCTION AND MAINTENANCE OF INFRASTRUCTURE

MANUAL FOR THE TRAINING OF PRACTITIONERS AND A GUIDE TO WORK PRACTICES

SECOND EDITION 2016.
Dwayne Honor, Manager of Design for Bundaberg Regional Council is the proud recipient of the Churchill Fellowship for his work with extreme storm surge.

Dwayne Honor of Bundaberg, Queensland, is one of Australia’s Churchill Fellows researching lessons learnt from extreme storm surge, and his passion for promoting flood resilient communities is taking him international.

Dwayne is one of 109 people across Australia who has been announced as a recipient of a Churchill Fellowship, awarded by the Winston Churchill Memorial Trust, who are now celebrating their 50th Year.

As a Churchill Fellow, Dwayne hopes to gather key lessons on building community resilience to storm tide by researching abroad. He is also sponsored by the Queensland Government Department of the Premier and Cabinet towards evidence based policy to support the growing state.

Dwayne will investigate best practice internationally, by travelling to the Philippines and USA later this month, with the ultimate aim of learning methods to best prepare, adapt and transform coastal communities to the risks of extreme storm surge.

“My goal is to work with a number of government and not for profit organisations who are implementing community based resilience strategies learnt from Typhoon Haiyan, Hurricane Sandy and Katrina and transfer these to an Australian context,” Dwayne Honor said.

“Over 6,000 people died in 2013 from the impacts of Typhoon Haiyan in the Philippines and over 1,800 from Hurricane Katrina that struck New Orleans back in 2005. There is stark contrast in response, recovery and adaptation between the 2 countries, but at the heart of each are devastated communities that hold the key to future solutions”

Dwayne Honor, Manager of Design for Bundaberg Regional Council is the proud recipient of the Churchill Fellowship for his work with extreme storm surge.

Mr. Paul Tys CEO of the Winston Churchill Memorial Trust said that the Fellowship “The Churchill Fellowships were established to enable emerging specialists to bring knowledge back to Australia in order to benefit the wider community – and Dwayne’s project is the epitome of this”

The Winston Churchill Memorial Trust and the Churchill Fellowships were established after Sir Winston Churchill’s death in 1965, allowing Fellows to become his living legacy and inspire extraordinary thinking.

Since its inception 50 years ago, the Churchill Trust has supported more than 4,000 Australians in identifying projects where overseas research will allow them to bring back vital networks and skills.

For more information about the Churchill Trust, including the work of Fellows, see www.churchilltrust.com.au
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- Complimentary subscription to the Lower Order Road Design Guidelines (LORDG) (value $200-$500 each year)
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- Free job advertisements in ‘Connect’ our fortnightly e-news service (value $200 per advertisement)
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- Opportunity to include notices in ‘Connect’ our fortnightly e-news service
- Opportunity to publish articles in our quarterly e-journal ‘Engineering for Public Works’

$4,000
(plus GST)
The NQ Branch committee is busy planning for our annual conference to be held in Lucinda 17-19 August 2016. The theme for this year’s conference is Tropical Engineering – we do things differently up north! which will showcase local projects and activities.

Our Wednesday night function will feature unforgettable local seafood and of course, a few refreshing beverages. The conference program will commence Thursday morning through to lunch on Friday to allow delegates time to travel home that afternoon.

The conference dinner on Thursday Night will be ‘progressive’ with delegates transported to several locations to experience local culture and sample more local produce. Details announced shortly with the launch of the conference program and registrations. We are grateful to our hosts, Hinchinbrook Shire Council for their efforts compiling an exciting program.

The NQ Branch committee is also keen to hear from members on activities and services you would like the branch to deliver in the future.

To assist us, please take a few minutes to complete a short survey at http://www.ipweaq.com/lucinda. We look forward to your suggestions.

NQ Branch members will receive further updates on branch activities via Connect (IPWEAQ’s fortnightly e-News service) however please do not hesitate to contact me or one of the committee members if you have any queries.

We look forward to welcoming you to Lucinda on 17 August 2016.

Bruce Gardiner
NQ Branch President
Plan your PD and save!

Book your next IPWEAQ professional development course or workshop before 30 June 2016 to receive the discounted 1-day rate of $7,000 plus GST (usually $8,750 plus GST per day) for up to 20 delegates.

View our courses and register your interest online. A minimum of 5 CPD hours per course is available and courses can be tailored for your organisation's needs.

Contact Erin Knudsen on 07 3632 6800 for more information or to discuss course options.

NQ Branch Conference
17-19 August
Hinchinbrook Marine Cove Resort

Tropical Engineering—We do things differently up North!
Cairns has established itself as a leader in sustainable transport with an ever growing network of pathways linking suburbs and providing cycling and walking options for commuters and recreationists alike.

With the support of the State Government, Cairns Regional Council has added three major cycling and walking connections to its network over the past five years including the Southern Cycleway, extension of the Aeroglen to Freshwater Cycleway, and the award-winning Redlynch Connection Path. Each of these connections link key activity centres within Cairns and were highlighted as priorities within the Council’s Cycling and Walking Strategy 2010-2030.

Importantly, the Strategy details the community’s needs for off-road and on-road cycling and walking network throughout the entire region. It provides Council with strategic direction for the delivery of paths and bikeways into 2030 and will help the region be even more bicycle and pedestrian-friendly.

One of the latest additions to the Cairns cycling and walking network connects the populous Redlynch Valley with Brinsmead via a five kilometre link through rainforest, alongside a natural, clear freshwater creek, cane-fields and through the much-loved Goomboora Park.

Cairns Regional Council Chief Executive Officer Tabulo said the award was hard earned and well deserved for the organization’s efforts in promoting sustainable transport options.

The popular connection pathway was awarded the Institute of Public Works Engineering Australasia Queensland (IPWEAQ) Excellence Award for design and construction of a local government project ($1 million to $5 million).

Award judges commended Council on the strong community involvement in the project and the innovative land swap with local farmers to secure the corridor preferred by local residents.

Cairns Regional Council’s award winning Redlynch Connection Path blazes a trail toward sustainability.
deserved by Council staff.

“This project had a strong community commitment and involvement from word go and our officers worked tirelessly to incorporate feedback into the final design and delivery, limit disruptions and provide a great community resource in a sustainable way,” he said.

“The local community was very involved in this project with many visiting the site on a daily basis to check on the progress made in the last 24 hours, offering lots of encouragement and advice for the construction crew.”

Brinsmead and Redlynch Valley are large suburban areas in Cairns that are close to each other in proximity, but suffered from a lack of safe, direct pedestrian/cycling linkages, resulting in significant and unnecessary traffic congestion during peak hour commuting and school drop-off/pick-up times.

Mr Tabulo said the Redlynch Connection link provides children with a safer, more convenient route to two of Cairns’ largest schools as it avoids a busy B-Double Route along Redlynch Intake Road. Since completion, the path has become highly popular with commuters and recreation users, as well as allowing healthy, active school travel for students within one of the largest school catchment areas in Cairns.

“Before this path was built, Brinsmead and Redlynch Valley had traffic congestion during peak hours as well as limited options for a walk or a ride with the family,” Mr Tabulo said.

“Now, locals not only have increased options for their daily commute, but also a safe, scenic travel option for social and recreational use.

“Providing key links in the cycling and walking network delivers alternative transport options for the community. Transport networks that encourage active travel, recreational and incidental exercise, social interaction and enjoyment of the natural environment also contribute to a number of public health objectives.
Mr Tabulo said it was imperative that future walk and cycle networks continue to be relevant, realistic and reflect the community’s diverse needs - whether it’s a trip for fun, fitness, training, travel to work or school, or to visit a local park.

“Cairns, by the nature of its linear area and flat landscape, lends itself perfectly to being a city which can be explored easily by both walking and cycling. Many of our larger satellite suburbs are within an easy 15 minute cycle of schools, business hubs and major recreation facilities,” Mr Tabulo said.

“We want to provide our visitors and residents with an environment and infrastructure that supports cycling and walking as a real transport choice.”

The Redlynch Connection Path was open for use just in time for Christmas 2014, with nearly 700 people recorded as attending the opening celebration day in May 2015. During this community event, around 120 participants took part in a family-friendly bike ride along the new path. The day’s celebrations also included live music, free bike checks, a BMX demonstration and healthy refreshments after the bike ride.

“Counts and surveys show that this new pathway has proved particularly popular. It has not only become an extremely popular transport and recreational route, but also a great venue for community events such as running and cycling competitions,” Mr Tabulo said.

Since completion, there has been a combination of competitive cross country running events, cycling events and numerous unofficial running events held on the path. Counters installed along the path indicate the total number of cyclists and walkers using the Redlynch Connection Path on a weekly basis was initially just over 4000 people when the path first opened in 2014. This increased to just over 5000 plus people within two months. These results indicate an ever increasing trend due in part to more Cairns residents becoming aware of it and its growing popularity with the locals.
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IPWEAQ members receive preferential rates for attendance at conferences, professional development, branch events, RPEQ assessments, publications, technical products.

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LOCAL GOVERNMENT: CHAIN of Responsibility Act

Environmental clean-up costs can now rest with ‘significant’ financial beneficiaries of a project, even where they don’t have site access or an influence over the activities. They can rest with someone who in the past two years has been in a position to influence environmental compliance, and they can climb the corporate tree.

Local Governments are affected directly, where contractor-run projects now may trigger Council liability, and indirectly for example, where Council is at its wits end attempting to enforce an environmental standard at a site.

Local Government environmental health and compliance officers, commercial managers, contract managers and executive officers should be aware of the changes.

This webinar discusses the Environmental Protection (Chain of Responsibility) Amendment Act 2016 (Qld) and generates ideas on what Council needs to do to protect themselves from liability and enforce environmental compliance within its area.

Listen to webinar recording here:
https://www.youtube.com/watch?v=1diDk285ziU&feature=youtu.be

Environmental Protection (Chain of Responsibility) Amendment Bill 2016

Tim Hanmore
Partner

Melanie Simmonds
Special Counsel

Tegun Middleton
Lawyer
5 KEYS TO ‘EFFECTIVE STAKEHOLDER AND COMMUNITY ENGAGEMENT FOR LOCAL GOVERNMENT’

Session Descriptions

Session 1
Changing community expectations. The community and key stakeholders have become better educated, connected and more diverse and encouraged to seek greater participation.

Session 2
Legislative requirements. What is current legislation saying about levels of engagement? What do we know about local government legislation clauses that detail when, how and with whom engagement is to be carried out?

Session 3
Organisational history, culture and willingness to engage. Organisational culture, history as well as staff and councillors play a critical role in how community engagement is understood and carried out. How do you create an environment whereby staff and elected representatives are willing, eager and ready to engage with stakeholders?

Session 4
Understand what, why, who, when and how of community and stakeholder engagement. How do you decide when and when not to engage? What is ‘sustainable decision making’? How to write effective engagement and communication goals and objectives.

Session 5
Explore a variety of approaches and techniques to inform and collect feedback and bring people together.

Session 6
How to identify the issues and challenges and ensure that harder to reach communities are included in the process. Where to from here?

Course overview
Effective community and stakeholder engagement enables organisations such as Councils, Agencies and Not for Profit organisations to make better informed decisions. By engaging with communities and key stakeholders input is received from diverse perspectives and a variety of solutions are presented. Every Council wants to have the reputation of being transparent, accountable and willing to listen. Opening up the communications between Council and the community will also enhance the communities understanding of the role of Local Government and promotes a sense of belonging within a vibrant community.

Communities and influential stakeholders are becoming better educated and connected and know how to get their voices heard. Being proactive rather than reactive can avert delays, reduce costs and build more resilient relationships with the community.

Topics covered:
- Legislative requirements
- Changing community expectations
- Organisational history, culture and willingness to engage
- What is and what is not engagement
- Sustainable decision making
- Emerging approaches and techniques for engagement
- Strategies for addressing issues
- Engaging with hard to reach communities

Designed for
People who should attend this workshop include Engineers, finance personnel, councillors, planners and project managers.

Presenter

John is also a highly sought-after trainer across a range of academic, management and communications-related fields. He is a licensed trainer for the International Association for Public Participation (IAP2).

He specialises in Community Engagement, IAP2 training, Strategic Partnering, Alliancing, Coaching and Mentoring and a range of other activities. He has particular expertise in getting people to accept the ‘hard’ decisions that organisations need to make.

John has consulted on organisational change with a key focus on strategic planning, organisation development, conflict resolution and team development. He has worked with large and small organisations reviewing their existing community consultation policies and guidelines and customising capacity building at all levels with their organisations. This ensures that they have the best possible chance to achieve positive and effective outcomes.

He has also worked with the community at all levels to resolve issues that arise from organisational complexities as well as projects and achieved positive legacy outcomes. He is the Director of the Alliancing Group. www.alliancinggroup.com

For more information, please contact IPWEAQ via email Erin.Knudsen@ipweaq.com or phone 07 3632 6802
Australia finally has a robust compliance scheme in place providing third party certification of fabricated structural steelwork similar to that operating in many developed countries providing engineers with a better way to mitigate risk when specifying structural steel.

The new National Structural Steelwork Compliance Scheme (NSSCS) is a risk-based fit-for-purpose approach to steelwork compliance based on similar approaches adopted in Europe, where ‘CE Marking’ is utilised. New Zealand is in parallel introducing a similar compliance program later this year based on the same technical Standard and approach as in Australia.

The creation of the Scheme followed research in Europe/UK, the US and Canada showing that industry association-led compliance schemes have provided long-term benefits and are fully supported by their fabricator members and the supply chain. For these countries, this approach has variously achieved:

1. Quality fabricators being rewarded for their skills.
2. Creation of a pathway for fabricators to advance through the risk-based ‘construction categories’.
3. Minimisation of substandard, non-compliant or fraudulent product, irrespective of where the product is sourced.
4. Minimisation of ‘backyard’ fabricators with non-compliant processes or procedures.
5. Constructors efficiently producing compliant structures with reduced rework, safety instances and cost and time overruns.

The NSSCS provides a number of tools for practising engineers to assure what they have designed is actually what gets built:

- The first Australian Standard for fabrication and erection of structural steelwork, AS/ NZS 5131, currently in the final stage of development, which was recently released for public comment. AS/NZS 5131 was based on the ASI Structural Steelwork Fabrication and Erection Code of Practice (COP) which is a technical reference establishing best practice.

- Definition of ‘Construction Categories’ which are a risk-based approach to structure categorisation largely aligned to Building Code of Australia (BCA) building Importance Levels.

- A mechanism for certifying fabricators to a nominated Construction Category, from CC1 to CC4, in order of increasing level of risk.

- Implementation guidance

Queensland has been the first state to embrace the new approach, with Knight Consulting Engineers becoming the first engineering practice to
specify to one of the risk-based construction categories for the steelwork in early 2015 for a Toowoomba waste management facility development.

For public works, the NSW, Victorian and South Australian governments have already commenced building compliance with the NSSCS framework into their development specification processes and the Scheme has also garnered widespread support federally.

The auditing authority to ensure that a fabricator has the compliance capability for the required construction category, Steelwork Compliance Australia (SCA) was recently established and Brisbane-based Brezac Constructions was the first steel fabricator to be certified.

Support from fabricators has been high with 40 already certified, in progress or expressing strong interest. Queensland steel fabricators alone represent half of those already certified. Apart from Brezac, the others are Cairns Steel Fabrication, Compliant Steel, Idec Solutions, Network Steel, PPW Steel Fabrication & Welding and Steel Fabrications Australia.

Engineers can freely access a list of certified fabricators and information on the certification process via the SCA website at http://www.scacompliance.com.au/.

RESPONDING TO RISKS

The Scheme responds to widespread concern across the building and construction sector over the increasingly unpredictable quality of building products, especially as Australia becomes more exposed to global supply chains.

Of concern to all designers is evidence from the recent Federal Government sponsored Australian Industry Group (AiG) survey that indicated up to 50 percent of Australian building construction products to be non-compliant.

The Australasian Procurement Construction Council (APCC) had observed that: “There is a lack of credible and accurate information available in Australia to assist all stakeholders involved in construction projects to verify construction product conformance and performance. This has the potential to create significant constraints and risks to a construction project.” Both the AiG and APCC reports can be freely downloaded from their respective websites.

Distinct from safety aspects, the building and construction industry is becoming aware of the cost of rework, disruption and commercial risk associated with non-compliance. As has been found with many construction products, the traditional regime of self-inspection and certification for structural steelwork (self-certification) demonstrably does not work. The Australian Steel Institute (ASI) as the peak body for the complete steel supply chain and the body behind the creation of the NSSCS is aware that non-compliant construction products have caused the collapse of steel structures, affected the integrity of glass panels and windows and through fraudulent supply, delamination of engineered timber. This is of concern to the safety of the structures that engineers design, and an important consideration for engineers to ensure they have carried out their ‘duty of care’ under the Workplace Health and Safety (WHS) Act and regulations. In fact, the ASI has established a strong link between product compliance and the WHS Act.

The gravity of the issue prompting a national Senate Inquiry into non-confirming building products due to report back soon, which the ASI has helped to inform.

TOUCH POINTS FOR engineers

Nominate the ‘construction category’ for a particular structure or component. In most instances, this will be obvious and already established through industry best practice and guidance from the ASI and/or other professional bodies.

Ensure the construction specification has suitable wording to reference the Standard and
the necessary project-specific detail selections. In most cases, the scope already covered in the Standard will allow project specifications to be much simpler and ‘standardised’.

Where contracted to do so, check the submittals for materials and fabrication to confirm conformity on a project specific basis. With the use of certified fabricators, much of this is already configured.

Provide project specific certification as required by the builder.

Notes should be placed on all engineering drawings that specify the ‘service category’ reflecting the loads which the structure and its parts are likely to be exposed, the ‘fabrication category’ reflecting the complexity of the steelwork task and the ‘construction category’ selected for the structure or its parts.


For further information contact Dr Peter Key on peterk@steel.org.au or visit: http://steel.org.au/key-issues/compliance

ABOUT THE AUTHOR

Dr Peter Key previously worked for more than 20 years in the design and construct arena, specialising in large span steel structures. He has been involved in projects in Australia, America, Asia and the Middle East, balancing design responsibilities with on-site review and construction guidance. He is a member of a number of Standards Australia Committees dealing with steel, composite and bridge structures and is on the Engineers Australia NSW Civil and Structural Panel.
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Practical civil engineering solutions for regional councils
IPWEAQ is the peak body representing those working in the public works sector in Queensland. Our mission is to create a vibrant, vital, supportive community of professionals which serves to enhance the quality of life for all Queensland communities.

Our members take great pride in the projects they deliver because they know they’re making a difference. And in delivering projects for their communities, our members rely on the expertise and resources of a number of valued suppliers and consultants. IPWEAQ continues to attract industry leaders as our partners and supporters who assist us in growing our networks and staying on the cutting edge of best practice.

In addition to our strong sense of community and proactive branch network, our leading-edge technical products are widely-adopted. IPWEAQ’s comprehensive, innovative professional development program exceeds the needs of members and industry and our excellence awards are highly sought after. We continue to advocate on behalf of our members to government and industry.
Publication dates & themes

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is the primary professional publication for the public works and civil engineering community in Queensland.

**Distribution:** online journal sent to over 5,000 IPWEAQ members, partners, supporters, mayors and council CEOs.

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**Content:** Each issue features a major project, technical articles, case studies, academic and legal articles, a member profile, article from LGAQ and a local council feature plus reports from our state and branch presidents, CEO and our subsidiary, the Queensland Water Directorate (QWD).

**Readership:** engineers and those actively involved in public works projects including technical officers and supervisors, procurement personnel, asset and fleet managers, mayors, council CEOs, consultants and those supplying equipment, products and services to the public works sector.