

PROJECT OF THE YEAR



LOGAN'S WATER QUALITY SOLUTION

Logan's new project combines solar power, commercial battery storage and electro-chlorination technologies to maintain water quality. p.10

IWD FEATURE



INTERNATIONAL WOMEN'S DAY

An infographic provides an interesting sector snapshot and women who have found success in engineering are celebrated in our IWD feature. p.22

MEMBER NEWS



MEMBER PROFILE: NATASHA MURRAY

Introducing Senior Transport Engineer at Cairns Regional Council and IPWEAQ's 2018 Woman in Engineering, Natasha Murray. p.30

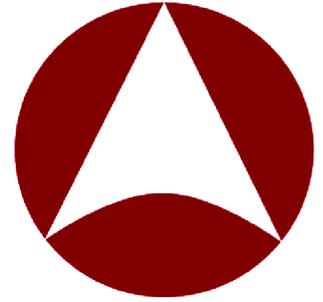
CASE STUDY



NHVR ASSESSMENT TOOL

The Restricted Access Vehicle Route Assessment Tool (RAVRAT) aiding local governments to assess road suitability for heavy vehicles. p.54

ENGINEERING FOR PUBLIC WORKS





NEXT GENERATION BENJAMIN ASH

MEMBER PROFILE

Benjamin Ash is a Civil Engineer with George Bourne & Associates and is based at Barcaldine. We're pleased to introduce Ben as our new IPWEAQ Ambassador and CQ Branch Committee member. Ben recently spoke to *Engineering for Public Works (EPW)* about his pathway to public works engineering and his experience working as a remote and regional public works engineer.

EPW: Please tell us briefly about yourself, where you're from, your interests are and what makes you tick.

Benjamin Ash: I am 23 years old and grew up on the Gold Coast. I graduated from Griffith University at the end of 2017 and moved to Barcaldine in Central Queensland immediately after.

Throughout school I loved mathematics and science, so much so that I often helped my classmates and younger students with their math. Back in grade 10, I originally wanted to become a pilot, but I was advised I would most likely have to go to Canberra to pursue that goal. At the time I could not imagine leaving the Gold Coast, family, friends and lifestyle for a career. So instead, I decided to put my desire to solve complex problems to use and



become an engineer. Fast forward to today, I have been living in central Queensland for over a year now for my career. Pretty ironic if you asked me.

I originally moved to Barcaldine because I knew it would be a great opportunity to gain a wide range of experience in multiple fields of engineering. This was especially appealing to me as I didn't know what field of engineering I wanted to specialise in. My favourite part of living in the outback is the drastic change in lifestyle, moving from a city of nearly 600,000 people to a small country town of 1,500. Although I have given up my long time hobby of surfing, I have picked up some of my old

interests like cricket, touch football and basketball.

EPW: Please summarise your career to date.

BA: In my final semester of university, I completed my work experience at the City of Gold Coast in the City Assets sector. During my time at council, I wrote my thesis on the effects of climate change on revetment walls and stormwater outlet pipes and the proposed asset management plan. From this I was able to experience what it would be like to work in the public sector. From my short time at the council, I knew I would like to work kick start my career in the public sector. Towards the



end of my time at council, I began applying to some council jobs. However, one stood out more than the rest, a graduate engineer position at George Bourne & Associates (GBA) in Barcaldine. After flying out for my interview, I was fortunate enough to get offered the position.

My role at GBA has been to design, deliver and project manage a range of projects for rural councils such as the Barcaldine Regional Council, Longreach Regional Council and the Blackall-Tambo Regional Council. I have been involved in a range of projects, from local line marking to multi hundred thousand dollar projects such as the restoration/reconstruction of concrete floodways. I am glad I made the choice to move out to the outback, because I feel it has already given me such a wide range of experience in many fields of engineering. I am looking forward to gaining the most I can from

my time in Central Queensland and look forward to its future challenges.

EPW: Why or how did you choose a career as an engineer in public works?

BA: Throughout my university studies, asset management was unfortunately never touched on, and it wasn't until after working at council I understood how essential asset management was for the community. From this I knew I wanted to pursue a career in public works to help contribute with providing the local community with quality infrastructure, facilities and other assets. Through my short time in Central Queensland, I have been able to see firsthand the difference I have made to its residents. Maintaining and improving the safety of assets after events such as a flood is important to me, as the safety of our close community is something I feel strongly about.

EPW: What are you looking to achieve in your role?

BA: For the same reason I decided to work in the public sector, I strive to maintain and construct new infrastructure for the community. The main goal I am aiming to achieve in my role is to help benefit rural councils with advice and project management them to provide the best resources/facilities possible for their small populations. For example, as we all know North Queensland has recently experienced devastating floods, these floods have also affected the regional shires of Longreach and Winton. The team at GBA including myself will be heading out to pick up flood damage when safe to do so. From this, it is my responsibility to collect as much damage as possible, then claim for the appropriate treatment through DRFA (Disaster Recovery Funding Arrangements) funding. It brings me a great sense of achievement when these roads and assets such

as floodways have been repaired back to its pre-disaster condition.

EPW: What's been your most significant career highlight to date?

BA: Over my short time as an engineer, I have a few career highlights. Firstly, one highlight would have to be getting a substantial amount of funding from the DRFA for Longreach Regional Council last year. I have been able to talk to property owners first hand to hear their concerns and then later down the line, know I have helped rebuild these roads which are essential to these property owners and their industry.

Secondly, my first project as an engineer was to project manage a multi-hundred thousand dollar project to restore several large floodways across the Barcardine region. This gave me firsthand experience into contract

management and has provided the building blocks for myself to create other AS2124 and AS4300 contracts.

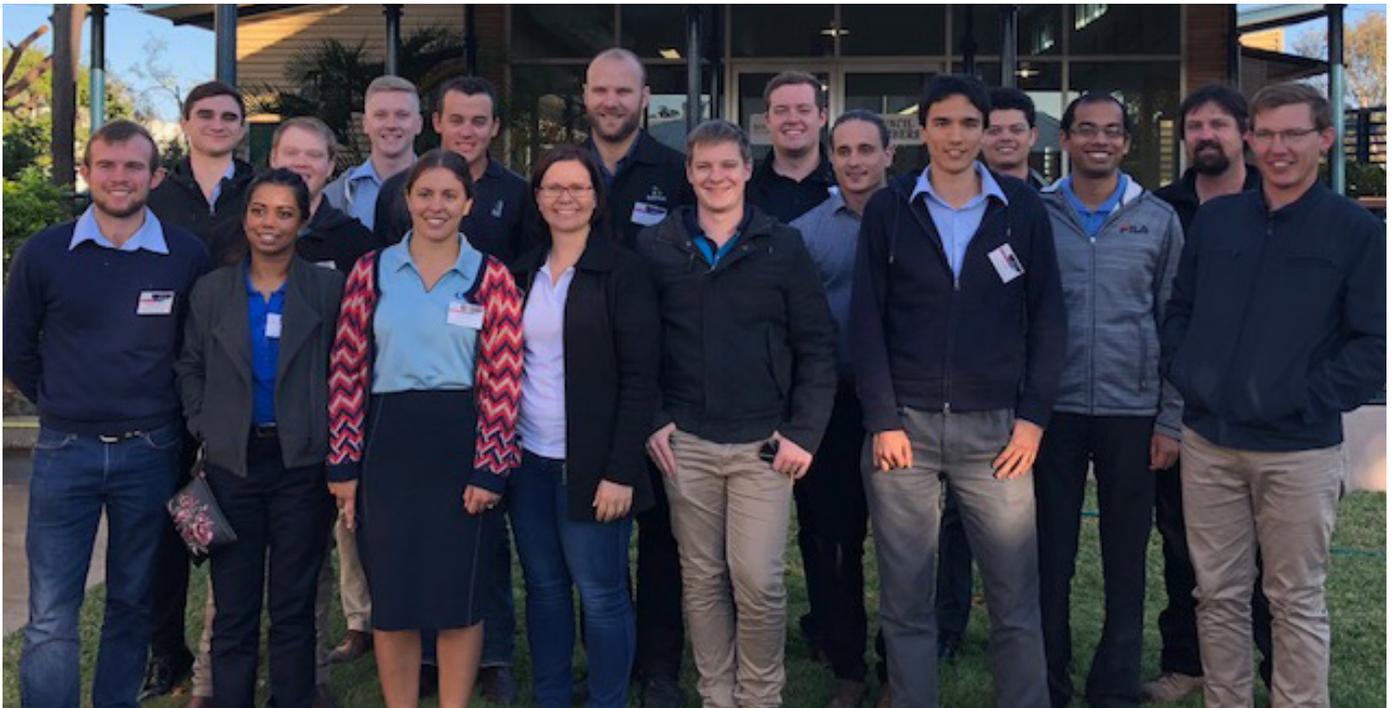
Finally, a new highlight for me which is still in progress is project managing the design and construction of the new waste facility in Barcardine. This has been a project that has had a few speed bumps in order to get it going such as the environmental side of it, and the actual design of the waste transfer station. I was able to provide design ideas to make it more practical and affordable for the Barcardine Regional Council. I am looking forward to finally seeing this projects completion at the end of the year.

EPW: How has being a Young IPWEAQ member helped you in your career?

BA: Being an IPWEAQ member has helped my career by being able to engage and meet many other

young engineers in Queensland from the conferences I have attended. It is great being able to make new connections with other engineers as it helps build connections within the public works community. I look forward to reading the quarterly EPW journal to keep up to date with projects and innovative ideas across Queensland. This year I am looking to further improve my asset management knowledge and skills with one of the many IPWEAQ programs that are made available to all its members.

However, I think being an IPWEAQ member will help me even more in the future, compared to what being a member has already done for my career. I look forward to the challenges and opportunities that will be presented to me by accepting the role of Ambassador for IPWEAQ, as I know it will give me opportunities to help other young engineers and promote



Ben (back left) with his YIPWEAQ colleagues at the 2018 CQ Branch Conference in Barcardine..



Ben participating in the 'best paper' vote at the #IPWEAQ18 conference.

engineering in the public works sector.

EPW: What do you appreciate most about your involvement with IPWEAQ?

BA: There are many things I appreciate from my involvement with IPWEAQ such as the online discussion groups, the quarterly EPW and all its further education programs. However, the thing I appreciate most is the conferences held throughout the year. I loved the conference held here in Barcaldine but was blown away from the Gold Coast conference. I cannot stress enough how helpful and informative it is to hear what is going on in the public works sector across Queensland. I am looking forward to attending this year's conference in Brisbane.

EPW: Please tell us about your experience at the IPWEAQ annual conference.

BA: I had a fantastic time at last year's Gold Coast conference at the Marriott hotel in Surfers Paradise. Not only was I able to come back home for a brief few days but I was also lucky enough to meet up with all the staff from the City of Gold Coast that

I worked with during my work experience.

My favourite part of the Gold Coast conference was the presentation given by the two founders from Orange Sky Laundry. It was amazing to hear the story of how two young men were able to improve the lives of many homeless people not just in Australia, but now in New Zealand as well.

Another one of my personal highlights was the presentation on the 'Use of Waste Recycled Glass in Concrete as a Partial Cement and Fine Aggregate Replacement' by Josh Flanders from Cairns Regional Council. At the time, I didn't know was also an IPWEAQ Ambassador. I found this presentation quite interesting as I love innovative ideas that have the potential to find a use of waste and use it as a resource in order to help protect the environment.

EPW: Are there any specific challenges for young people in this sector and what do you think could be done to address those?

BA: The biggest challenge for me was adjusting to what I thought

being a young engineer would be like during university, compared to actually being a young engineer. I am fortunate enough to get firsthand experience at GBA, as there is a lot of responsibility put on your shoulders from the get go. There is a lot of senior experience at GBA, so you aren't left in the dark. I know a fair few graduate engineers that are in a similar job but aren't given big projects or even different kinds of projects. I think it is important for councils and companies involved in the public sector to allow young engineers to take on more responsibility and a variety of projects in the early stages of their career.

EPW: What would be the one piece of advice you would give to other young people considering a career in engineering and public works?

BA: My advice is based from the slogan from Nike, 'just do it'. It is something I have committed to and will never look back on. Being able to see your projects go from concept to completion is a great feeling. But it is even better knowing the services you have provided to the community, that most people just take for granted. I encourage young people who are considering studying or currently studying engineering, to apply for those undergraduate positions in engineering and public works as soon as possible to help further grasp which way they would like to steer their career. I was very fortunate to be able to work at the City of Gold Coast during my work experience and wish I could have stayed for longer before I graduated. However, it gave me a taste of what it would be like to continue my career in this sector and I feel privileged in the direction it took my career.



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