Issue 63 2020

JANUARY E-NEWS

BOARD OF PROFESSIONAL ENGINEERS OF QUEENSLAND

Protecting the public and setting the standard of engineering.

CELEBRATING 90 YEARS 1930 - 2020

A WORD FROM THE REGISTRAR

With the new year and a new decade well and truly underway let me take the opportunity to wish you all a Happy New Year.

This year marks 90 years since the establishment of the Board of Professional Engineers of Queensland (***BPEQ***). In 2020, BPEQ will be celebrating the achievements, projects, innovations, discoveries and stories of RPEQs past and present. If you worked with a RPEQ who deserves recognition, perhaps you were once employed with renowned Queensland engineering company or worked on a project yourself that has contributed positively to Queensland, share it with us.

> "...determined to continue to lead in promoting standards of engineering..."

Board members are determined to continue to lead in promoting standards of engineering and are considering several major changes to improve its operations and better meet the objectives of the *Professional Engineers Act 2002* (***PE Act***). One change that has already taken effect is the introduction of Penalty Infringements Notices (***PINs***). PINs will be issued for lower-level offences against the PE Act, such as misuse of the protected title of RPEQ and other names and words in the legislation. It is important that BPEQ protects the status and standing of professional engineers who practice competently and have earned the right to call themselves a RPEQ.

PINs provide an efficient disciplinary option to BPEQ for lower-level offences, but as the regulator, BPEQ must remain vigilant to the risk of major engineering faults. Our duty to the public and the engineering profession is aided by RPEQs standing up for their profession and informing BPEQ about breaches of PE Act, or the Code of Practice. I would encourage RPEQs to familiarise themselves with BPEQ's complaints and investigation process and to recognise the important part they have in protecting the public and setting the standard of engineering.

If we can provide further information or assistance, please contact BPEQ at admin@bpeq.qld.gov.au or call 07 3210 3100.

KAINE BARTON
A/g Registrar

BPEQ 90th ANNIVERSARY

CELEBRATING RPEQS AND THEIR ACHIEVEMENTS

Pictured: Cathie Barton

In 2020, BPEQ turns 90. To celebrate this milestone BPEQ is acknowledging the achievements, projects, innovations, discoveries and stories of RPEQs past and present.

RPEQ Cathie Barton's colleagues view her as a role model; someone who does their best to support and guide her peers without expecting plaudit. Cathie is the team leader of BMT's Brisbane flood team and a technical leader in her own right. While she is an 'unsung hero', she has had a positive and lasting effect on those that work with her.

Cathie spoke with BPEQ about her career, her achievements and challenges.

What attracted you to a career in engineering?

I really enjoyed maths and science at school and thought I would enjoy a career that combined the two in a practical way. I didn't know any real-life engineers and had a limited understanding about what engineering actually was, so it was a bit of a leap into the unknown. As my career progressed, I found myself just as engaged by the 'people' aspects of the role as the technical challenges. Certainly not something I considered as a young graduate!

> "This was a dream job..."

First job in engineering?

My first job after graduation was in the Coastal Protection Unit of the old Queensland Department of Environment and Heritage. This was a dream job for a surfing-obsessed graduate from northern NSW!

What were the challenges you faced during study or in the early stages of your career?

The freedom of university life causing a drop in grades compared to school! There were also a few challenges associated with being a woman in an extremely male-dominated industry (and even more so when I first started), but I was lucky that this did not impact on my career. As an undergraduate, I did a water resources placement in a very small regional town. During my six-week stint, I only once met the sole engineer in the office – I later found out that he had announced he wasn't going to "waste time with a girl"! Luckily the rest of the office were much more supportive and took me under their wings. I had a great experience and learned a huge amount despite the engineer's attitude.

> "...a women in an extremely male-dominated industry..."

Your peers have spoken about the work you do to support young engineers. Did you have a mentor when you started out in engineering? How did they help you?

I didn't have a formal mentor but I did work with a bunch of good people who were passionate about the work they did and supportive of the development of others. Although I'm not part of a formal mentoring program at present, BMT has a great team culture of supporting and guiding each other. Importantly, that support isn't one-directional with just seniors mentoring juniors; there is a real matrix of support

from all directions. I am constantly learning from everyone in my team and I'm inspired by their work and what they achieve.

What are some memorable projects that you have worked on and why?

So many! The projects that are most memorable for me are those in which I felt the work had the greatest positive impact on the community or environment. This sounds a bit cliched, but it's true. In my early years I worked on the southern Gold Coast beach nourishment project at a time when the beaches were suffering substantial erosion, and communities and properties were badly impacted. The work we undertook led to the Tweed River Sand Bypassing Project, which significantly improved the natural function of the beaches and protected livelihoods and properties. I have also worked on many floodplain management studies and particularly enjoy those in smaller communities where I meet the people who will be impacted and protected by the study outcomes. One of my favourite environmental projects was in the Northern Territory's Daly River, which is a perennial river supporting a unique and fragile ecosystem. We developed models and tools to ensure that the Northern Territory water managers were able to balance the competing demands (agriculture, mining and the environment) on the limited water resources in that region. Most recently, I was project coordinator for the Brisbane River Catchment Flood Study, the most complex flood study ever undertaken in Australia. It was a very challenging project, but extremely rewarding to work on issues that affect my home town and push myself to develop cutting-edge approaches to the study of very complex flood behaviour. That study ultimately won the RJ Hawken Award; the top Australian Engineering Excellence Award in Queensland.

Women are still underrepresented in engineering - how can the profession attract and keep more women in engineering?

This is quite a complex issue! In my experience, I've found that more women will be *attracted* to engineering if they see/hear/talk to women *doing* engineering and loving it. However, a very big part of 'attraction' is the 'keeping'. So, we should also think about how we *keep* women in engineering.

One of the biggest challenges I faced in my career was having children. I have worked part-time since then and was the first engineer to do this in my company. BMT were extremely supportive of part-time work and remain so to this day. However, sometimes my clients were not as supportive, and this made part-time work stressful and challenging. I was not able to openly state to all clients that I worked part-time for fear of complaint. Times have changed and now most companies support flexible work and clients have (mostly) become more understanding. This shift has been of benefit to men as well - my team has both male and female part-time members and others that work flexibly. I hope attitudes will continue to change as more senior men openly request flexibility for family reasons.

Now that we have greater acceptance of part-time work the next challenge is to support these people in honouring their part-time hours. That is, not expecting them to do a full-time workload. This is difficult in the engineering profession due to the nature of the work and the traditionally longer hours worked. My team support each other to achieve a work-life balance and I feel we are more successful than most.

Finally, I believe that to keep women in engineering we need to do more than just include them in a business, we need to listen and value them for the diversity in thought they bring.

> "The projects that are most memorable for me are those in which I felt the work had the greatest positive impact on the community or environment."

What other challenges face the profession?

All professions that are required to be competitive on price, face the challenge of balancing quality with cost. Costs are typically the primary driver unless the Client can afford to be more discerning on quality. As such, to continue to be competitive, the Australian engineering profession is beginning to off-shore technical work to reduce labour costs. We haven't experienced this issue much in the flood engineering sector, but I understand that a quality outcome is sometimes difficult to achieve due to reduced supervision and guidance given to those off-shore engineers doing the work.

Queensland's RPEQ system has been around since 1929. Do you believe registration is beneficial?

Registration is beneficial for clients and customers as it provides assurance that the engineer is qualified and experienced to undertake the work for which they are engaged. Although my team's work is not typical 'design and construct' engineering, we do provide advice in the engineering space, and our clients value the assurance that comes with RPEQ certification.

What changes do you anticipate in your area of engineering in the next 10 years?

On the technology front, there will continue to be a lot of change in methodologies and processes as software functionality and computing power continue to increase. More broadly, we are dealing with an increasingly variable climate where both drought and flood will become more common. This can make it hard to secure funding beyond the immediate crisis and to implement genuine, long-term flood management approaches.

What new or refined skills will engineers need in the future?

Good communication skills are increasingly important as is the ability to think outside the box. Engineers have always needed good attention to detail and this has not changed. We'll also need to integrate more readily with affiliated professions to ensure that the full benefits of our work are understood and implemented in the community. For flooding, this can include land use planners, disaster managers, natural resources officers etc.

With the benefit of hindsight, what advice would you give your younger self at the start of your study and career?

Don't be worried about asking silly questions … or to put it another way, ask as many questions as you can without worrying that people will think you're silly! Most people like to share their knowledge and understand that a junior person is still learning. Live it up while you can!

This year is a celebration of the achievements, projects, innovations, discoveries and stories of RPEQs past and present. BPEQ encourages RPEQs to share their thoughts –

- What are some of Queensland's great engineering feats?
- Who was the RPEQ/s who helped deliver the project?
- Are there unsung heroes in the profession?

To have your say contact BPEQ at admin@bpeq.qld.gov.au.

CASE NOTE:

BOARD DISCIPLINES UNREGISTERED ENGINEER

RESPONDENT

The engineer (**E**) had more than 15 years' experience as a civil engineer; E had previously been registered with the Board of Professional Engineers of Queensland (***Board***) as a Registered Professional Engineer of Queensland (***RPEQ***) but had allowed their registration to lapse.

BACKGROUND OF NOTIFICATION

In January 2019, the Board received by way of a notification, information that E, whilst working for an engineering firm, had performed professional engineering services in Queensland whilst not holding current registration as a RPEQ.

CONDUCT OF E

E approved approximately 20 drawings in July 2018 relating to a development proposal in Queensland; these drawings were signed by E and displayed the title 'RPEQ' and included their registration number.

The drawings signed by E were then submitted to a Queensland department as part of an approval process. In carrying out due diligence, the department checked the Board's register of Professional Engineers and could not locate E as holding a current registration. E's registration had lapsed on 30 June 2018 and had not been restored at the time the Board received the notification.

The department contacted the engineering firm to advise that the plans could not be approved until they had been signed by a RPEQ holding current registration with the Board.

The engineering firm notified E of the issue; upon receiving this information, E promptly applied to the Board for his registration to be restored. The Board restored E's registration several days after the notification had been received.

In a submission to the Board, E acknowledged and agreed that they:

- undertook professional engineering services as defined by the *Professional Engineers Act 2002* (***Act***);
- were unregistered at the time of signing/approving the drawings; and
- had received three separate registration renewal reminders between May and June 2018;

E also apologised and accepted full responsibility for the conduct.

ISSUE

Whether the information contained in the notification to the Board was sufficient for the Board to be satisfied that a 'reasonable suspicion' existed that E had committed offences under the *Act*. The relevant offences under sections 113, 114 and 115 of the *Act* were that when carrying out professional engineering services E:

- signed and approved engineering drawings/plans,
- used a protected title; and
- held or allowed themselves to be held out as a RPEQ whilst not being registered at the time.

BOARD'S DECISION

The Board took the practice of undertaking professional engineering services while unregistered very seriously and the potential for the conduct to have continued had the Board not been notified of the oversight. In all the circumstances the Board decided to issue a caution under 75(2)(c).

In issuing a caution in this matter, the Board accepted the following:

- E not being registered was an oversight rather than a deliberate act of non-compliance;
- Consideration was given to the fact that the professional engineering service did not raise issues of inappropriate conduct or misconduct;
- Even though offences under the *Act* could be proven against E to the requisite standard, it would not be in the public interest in this instance to pursue a prosecution.

LESSONS FOR THE PROFESSION

- An oversight in not renewing registration promptly, while continuing to practice, will still be treated as practicing unregistered;
- If you fail to renew on time, restoration of your registration is not always guaranteed which would leave an engineer running the risk of having practiced unregistered;
- The Board will, depending on the circumstances, consider prosecuting registered professional engineers if they are found to be ambivalent in the registration renewal process.

AVOIDING COMPLAINTS TRIGGERED BY POOR COMMUNICATION

Project clients regularly make assumptions about the role of the RPEQ within a broad and integrated project. They often do not know what the RPEQ is supposed to do, or critically, what they are not responsible for and are not going to do. Consistent with the nature of assumptions, while the RPEQ's role may be limited to, for instance, design or inspection, the client may believe that the RPEQ has a supervisory role.

Of course, none of this presents any real problem until there is a problem. When, for whatever reason, a project goes wrong, the client's focus may shift from the RPEQ being a distant figure, to being the focus of complaint about the project as a whole.

In some cases, the RPEQ's conduct will legitimately be subject to scrutiny and assessment. For RPEQs, the best defence against this is diligent and responsible practice in the first instance.

> "BPEQ has a statutory function of receiving and processing complaints against RPEQs..."

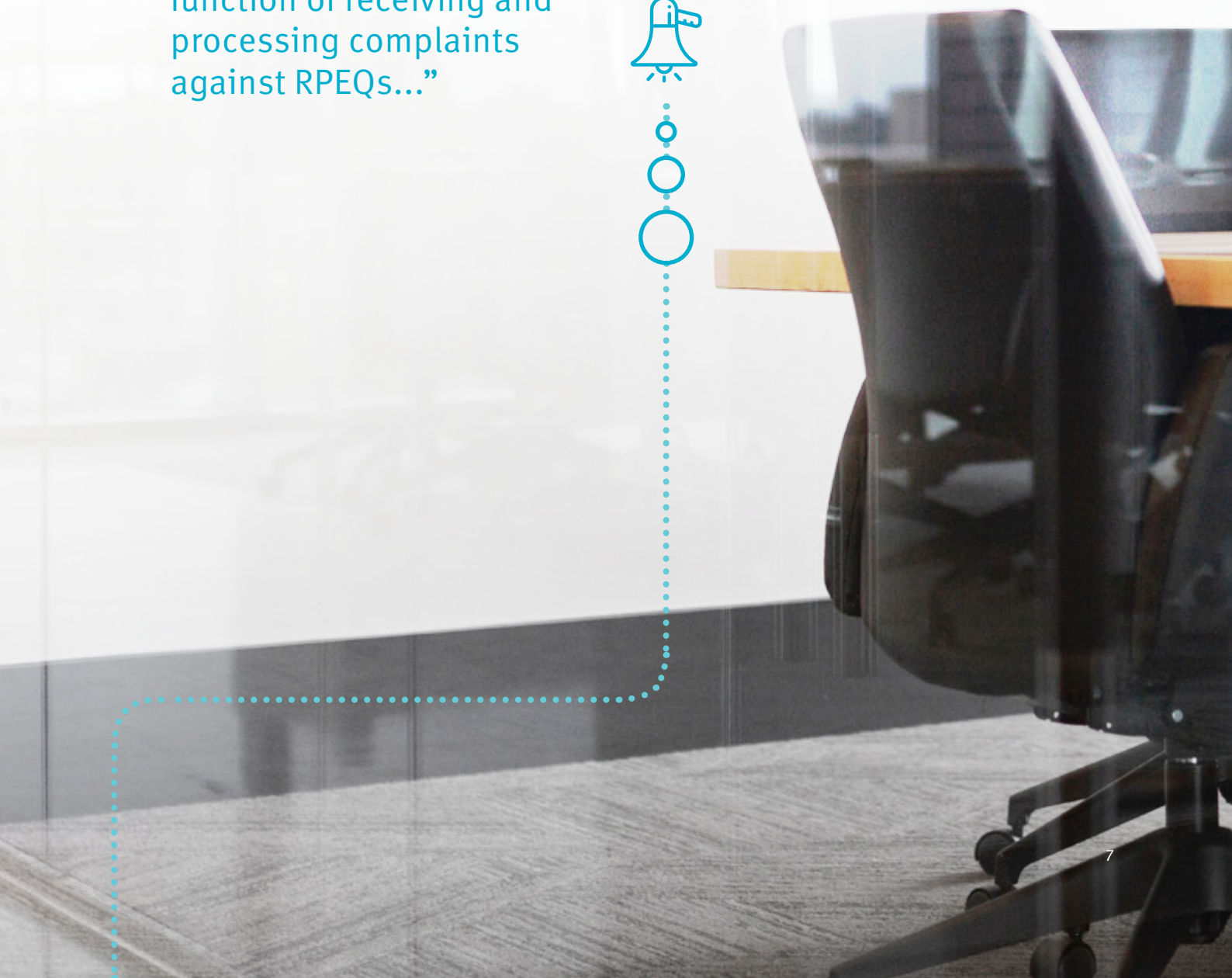
As the regulator, BPEQ has a statutory function of receiving and processing complaints against RPEQs and notifications about other persons who are unlawfully carrying out professional engineering services or using the protected RPEQ title or being held out as such.

In assessing complaints against RPEQs, one of the first steps is to identify the scope of the RPEQ's responsibilities from the complainant, other relevant persons and the subject RPEQ.

In many cases, this process is routine and identifies that the complaint squarely relates to the issue for which the RPEQ was responsible. This falls into the legitimate category outlined above.

However, this process often reveals that there is a significant difference between what client's believe that the RPEQ was doing or responsible for doing and what the RPEQ is actually responsible for doing or has done.

Continue reading on next page.



While in some cases, this is a matter of poor scoping, in other cases it comes down to a misunderstanding of the RPEQ's role and responsibilities within a project. At the most basic level, the RPEQ is actually doing 'X' but the client believes that they are also doing 'Y' and 'Z'. It takes little imagination to predict that when any problem about 'X', 'Y' or 'Z' arises, the RPEQ may be subject to complaint.

> "...it comes down to a misunderstanding of the RPEQ's role and responsibilities within a project."

While it is not possible to guarantee clients understand a RPEQ's role, it is advisable for all parties to communicate the nature, scope and exclusions of a RPEQ's involvement and establish dispute resolution steps. Communication, particularly early communication, is the single best step that can be undertaken to prevent or resolve disputes at the lowest level.

Ideally, communication would occur at the time of engagement. This is contemplated by paragraph 2.3 of the Code of Practice.

Time invested in communicating and contextualising scope from the outset may provide certainty for RPEQ's about their role, be a reference point for future communications and provide relevant information to clients about what the RPEQ is going to do and not going to do.

A simple example where communication may be beneficial is that if an engagement is for design only, that unless there are further engagements, the RPEQ will have no involvement in the construction. Another example is where a RPEQ inspects a project and (if satisfied) issues a Form 16. In this case, it may be beneficial to communicate such engagement does not involve supervision, which may be (wrongly) assumed by the client.

If a client wants a RPEQ to provide construction or supervision a broader scope of engagement will need to be discussed and agreed upon.

If pro-active communication is not practical, it may still be advantageous to communicate at the first opportunity if the client raises concerns or issues. The earlier communication occurs, the more likely an issue will be identified and resolved before escalation. However inconvenient this may appear, it will be much more time efficient than dealing with the same issue as part of a formal disciplinary complaint process through BPEQ, particularly if the complaint is wrongly targeted due to a client's assumption.

Conversely, if a client perceives that a RPEQ is refusing to communicate with them about a material issue, this may lead to escalation including a complaint to BPEQ, which may have been avoidable through communication.

The Code of Practice creates obligations on RPEQs to advise clients of their name and contact details and to communicate with fairness, honesty and based on adequate knowledge.

While these are the minimum requirements, there are sound reasons for RPEQs to extend their communication with clients to inform about their professional role. Not only is it professional conduct, it may prevent or de-escalate complaints. Additionally, it will almost certainly enhance your reputation and relationship with clients, many of whom will appreciate the effort in a competitive market.

Click here for more information on the Code of Practice or here for BPEQ's complaints and investigation process.

> "...to communicate with fairness, honesty and based on adequate knowledge."

UPCOMING CPD COURSES AND CONFERENCES

AIRAH

Smoke Control and Fire Dampers
Brisbane: 13 February 2020

Essential Safety Measures
Brisbane: 14 February 2020

BPEQ

Central Highlands Roadshow
Emerald & Middlemount: 10 - 12 February 2020

IPWEAQ

Road Safety Audit
Brisbane: 11-12 February 2020

Road Safety Audit Refresher
Brisbane: 13 February 2020

Sprayed Bitumen
Dalby: 12 February 2020

Native Title and Cultural Heritage
Cairns: 19 February 2020

Introduction to Asset Management
Brisbane: 3 March 2020
Cairns: 26 March 2020

Stakeholder Engagement
Mackay: 25 February 2020

QUDM
Brisbane: 10 March 2020

Bridge Inspection Level 1 & 2
Brisbane: 18 - 20 February 2020

QUEENSLAND'S GREATEST ENGINEERING FEAT

As part of its 90th Anniversary BPEQ is recognising engineering projects designed, built or operated from 1930 until now that have left a mark on Queensland.

We want your vote to come up with the top Queensland engineering feat. You can vote from our list of projects or suggest your own.

- **Brisbane City Hall**
- **Burdekin Falls Dam**
- **Burnett River Bridge**
- **Fairbairn Dam**
- **Hornibrook Highway Bridge**
- **Kuranda Scenic Railway**
- **Mount Isa Mine**
- **Mount Morgan Mine**
- **Old Museum (Brisbane)**
- **Q1 (Gold Coast)**
- **Sir Leo Hielscher Bridges (Gateway)**
- **St John's Cathedral (Brisbane)**
- **Story Bridge**
- **St Stephen's Cathedral (Brisbane)**
- **Toowoomba Second Range Crossing**
- **Weipa Mine**

Click below to vote on the top nine Queensland engineering feats

VOTE

QUEENSLAND WOMEN IN STEM PRIZE APPLICATIONS OPEN

Know any outstanding Queensland women working in STEM?

The **2020 Queensland Women in STEM Prize** is now open for applications.

This state-wide competition is open to early to mid-career women working in STEM careers in Queensland with three cash prizes of $5,000 available to support professional development opportunities. The prize categories are:

- **Jury Award** - for the most meritorious applicant as determined by the judges
- **Aboriginal and Torres Strait Islander Jury Award** - for the most meritorious Aboriginal and Torres Strait Islander applicant chosen by the judges
- **People's Choice Award** - for the applicant with the highest number of public votes.

PhD and Masters students or women who have been in a STEM profession for less than 12 years are eligible to apply.

To apply, applicants must provide a written submission along with a two-minute video detailing their work, benefits for Queensland and their STEM engagement by 4 February 2020. Click here for more details.

WELCOME
TO OUR NEWEST RPEQS

BPEQ extends a warm welcome to the following engineers who recently became registered:

09900	Zdravko	PAVLIC-SAHIN	Civil
23434	Ozcar Jr	CALLOS	Building Services, Mechanical
11914	Tatjana	STEFANOVIC	Chemical
12829	Diane	HINSON	Chemical
15238	Farshad	ZAMIRI	Chemical
16548	Mou	WANG	Structural
17233	Michael	JIMMIESON	Structural
17962	Brendyn	RHEINBERGER	Civil
23442	He	WANG	Civil
23455	Danai	ABBOTT	Electrical
23492	Steven	SCHMIED	Aerospace, Management, Mechanical
23441	Fai	CHAN	Civil
23445	George	DAVIS	Management
23444	James	PARSLOW	Mechanical
23443	Wail	AHMED	Chemical
23448	Khalid Mohammed	KABIL	Civil
23440	Tarquin	DEVEREAUX	Civil
23446	Wellington	DIYA	Structural
23447	Gwion	SCHIAVONE	Civil
23449	Eranga	PARANAGAMA	Electrical
23439	Pedro	ARRONDO	Management, Mechanical
23433	Chun	YIP	Structural
23432	Travers	WOOD	Mechanical
23450	Christopher	JONES	Electrical
23438	Marek	KARCZ	Structural
23464	Andrew	MILLAR	Metallurgical
23437	Scott	MILESTONE	Civil
23436	Geoffrey	SISLEY	Mechanical
23435	Aaron	WOODS	Civil
23467	Daniel	LO	Management
23454	Nicholas	BLOXSOM	Geotechnical
23453	Julian	VIVOLI	Civil
23452	Owen	FLEMMING	Management, Mechanical
23451	Dylan	WILLIAMS	Structural
23461	Tyrell	CHANDRA	Aerospace
23465	Nicholas	HENDRY	Mechanical

23458	Tristan	WADD	Mechanical, Structural
23459	Junyi	HUANG	Civil
23457	Duc Thai Duong	NGUYEN	Civil
23463	Troy	HOWARTH	Civil
23462	Wayne	HALL	Management, Mechanical, Structural
23473	Onuma	CARMODY	Management
23460	Mathew	WALKER	Mechanical
23456	Thanh	NGUYEN	Structural
23474	Amr	IBRAHIM	Mechanical
23466	Lidia	NOVOSELTSEVA	Petroleum
23472	Ben	STANIFORD	Civil
23471	Didier	LASSUS	Structural
23477	Dominic	CARRIGAN	Civil
23468	Robert	MULLER	Information Technology and Telecommunications
23470	Mufrat	NOOR	Civil
23479	Ian	MCKEE	Electrical
23469	Roozbeh	VAZIRZADEH	Electrical, Information Telecommunications & Electronics
23484	Syed	JUNED LAIQ	Civil
23481	Vaimiti	RIGAL	Management, Structural
23485	Ning	MA	Electrical
23478	Muhammad Adeel	ABID	Civil
23475	Dominic	PETERS	Chemical
23476	Matthew	MORICONI	Electrical
23482	Cameron	JESSUP	Civil, Management
23483	Adrian	BURNS	Electrical
23491	Manjinder	PHULL	Aeronautical
23487	Alistair	KELLY	Civil
23480	Amie-Lee	DAVIES	Civil
23488	Inga	MCKELLAR	Civil
23489	Andrew	SMITH	Mechanical
23490	Chuan Jin	QUAH	Electrical, Building Services
23486	Ahmed	ABDELGHANY	Information Telecommunications & Electronics
23493	David	FULTON	Civil
23494	Lance	ROGERS	Structural
23135	Adam	SCHOLEM	Building Services, Electrical
23153	Don	SENADEERA	Information Telecommunications & Electronics
23214	Peter	SHEPPARD	Electrical, Management
23172	Boyuan	SHI	Building Services, Mechanical
23177	Saqib	SIDDIQUE	Civil, Structural
23151	Karamdeep	SIDHU	Electrical
23163	Jaya	SOCKALINGAM	Electrical, Management
23216	Sascha	STEGEN	Electrical
10839	Christophe	STEINBACH	Civil
23184	Jing	SUN	Aerospace
23161	Quoc	TANG	Civil, Structural
23211	Mei Ling	TEOH	Civil, Structural

23208	Diana	TODOR	Civil
23201	Douglas	TOMPSITT	Chemical, Management
23117	Rebecca	TOPP	Civil
23118	Duc	TRINH	Civil, Structural
23155	Thomas	TRIPP	Mechanical
23199	Jordan	TSANG	Structural
23365	Barbara	VAN HEERDEN	Civil, Management
23121	Tanmay	VEGAD	Structural
23143	Jake	VERLIN	Civil
23119	Lei	WANG	Electrical, Information Telecommunications & Electronics
23131	Raymond	YAU	Civil
23213	Emad	YOUSSEF	Mechanical
23138	Di	ZHANG	Aerospace
23204	Yi Cheng	ZHAO	Mechanical
23200	Vadim	ZHULAEV	Mechanical
23159	Hassan	ZOLFAGHARI	Civil

THANK YOU

Best wishes to the following RPEQs who have retired or resigned:

Peter	FAULKNER
Bryan	HARRIS
David	MCGOLDRICK
Gordon	MILLER
David	STEWART

Protecting the public and setting the standard of engineering.

CONNECT WITH BPEQ ON LINKEDIN AND TWITTER

Don't forget BPEQ is on LinkedIn and Twitter. To keep up to date with the latest news and events from BPEQ or to start a discussion on registration or engineering issues generally, click **FOLLOW.**

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