

Manufacturing in NZ

Is it a sob story, job story or FOB story?

Who has time to innovate?

Why innovation in your business isn't about a lack of time - but a lack of priority.

Addressing the skills-gap

The top ten tips you need to attract and retain talented female staff.

Men's health week

A challenge to the tone of our industry to be proactive when it comes to their health.

MetalBase

June 2018

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Cover:

Views from the top - a shot from our Executive member and WSP Opus Corrosion & Asset Integrity Consultant Raed El Sarraf who was working on the Auckland Harbour Bridge.

Overleaf:

Images taken at our Innovation READY program which launched this month.



From our CEO, Troy Coyle

This month HERA communications have focused on two of our favourite topics!

1. Profiling women in engineering; and
2. Innovation readiness.

We certainly believe engineering is a great career for both men and women. That's why it been so great having our Manager Marketing and Communications Kim Nugent put the spotlight on some amazing women to celebrate International Women in Engineering Day, 23 June 2018.

She's profiled some fantastic female role-models for aspiring engineers and leaders in engineering. They come from a broad range of backgrounds from engineering through to HR, Science and Marketing. The commonality being they all found their careers focusing around engineering in our metals industry.

These inspiring women include:

- Charlotte Hatlauf, ANZ Group Employment Relations Manager with Fletcher Building Group;
- Grace Schaefer, Business Development Manager with McConnell Dowell;
- Jacqui Brady, Customer Services Manager with Steltech;
- Katrin Schunemann, Product Launch Manager with NZ Steel;
- Laura Coffey, Key Account Manager with Pacific Steel;
- Mae Rose Billanes, Senior Structural Engineer with Modern Construction;
- Mikaela Keir, Graduate Process Engineer with NZ Steel;
- Natalia Uran, Group Manager Bridges and Structures for WSP Opus;
- Pam Roa, MD of Longveld; and
- Reem Soliman, QS Estimator and QA Assistant at Modern Construction;

Our Innovation Ready program, being co-ordinated by our General Manager Industry Development Dr Boaz Habib commenced on 29 June.

Participants are representing:

- Composite Floors and Decks Ltd;

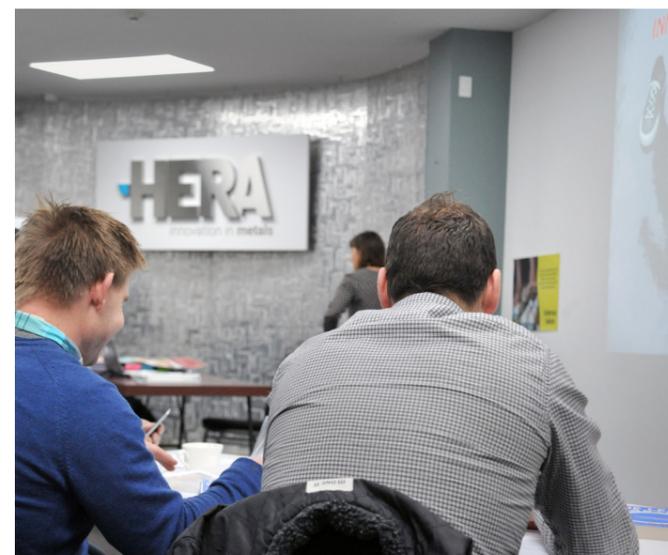
- Crown Sheetmetal;
- Genesis Energy;
- Kernohan Engineering;
- Longveld;
- Lowes Industries;
- MB Century;
- NDA Group;
- Page & Macrae Engineering;
- Steel and Tube; and
- Steltech.

This first workshop was focused on "creating the innovation mindset" and included international presenter, Pia Williams from 6th Sense in Australia and local innovation expert, Adrian Packer from IMS Projects.

Engagement in the session was excellent and participant feedback said - "it has given me a fresh motivation for innovation" and it was "inspiration that leads to more awareness of innovation."

Our next workshop will focus on the "innovation process".

This month, we also concluded our membership survey. The results have given us some key insights into the state-of-play of our membership and what their key challenges are for innovation in our industry. Our lead team is using this information to guide our services and strategic planning.



Guess who's on YouTube!

Yes HERA! It's only early days for us with two video's uploaded so far... but we're excited for the possibilities of what we can share here.

If you're a user of this forum, be sure to subscribe so you're aware of new content... and while you're at it - follow us on Twitter and LinkedIn as well!

If you don't have a social media presence, we urge you to consider improving your communication game. Join the conversation - the power to connect is achievable with a click of a button.



ThinkTank

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Manufacturing R&D in NZ - a sob story, job story or FOB story?

That was the provocative title of my Keynote at MAD2018: A Collaborative Future for NZ Manufacturing and Design.

It's a question that is well worth considering. Though, I'm not sure the answer is one that we all want to hear.

Manufacturing BERD looks great. GERD not so much.

According to Statistics NZ R&D Survey 2016 data (see table below), manufacturing is the nation's biggest spender on R&D. So much so, that the manufacturing business expenditure on R&D (BERD) makes manufacturing number one in terms of New Zealand's total expenditure on R&D. In contrast, the Government has focused on supporting the primary industries sector much more significantly (more than double what it spends on manufacturing) despite the primary industries businesses spending almost half of what manufacturing businesses are spending on R&D.

Manufacturing plays a significant role in the NZ economy

MBIE's 2018 Manufacturing Report states that the Manufacturing BERD represents 42% of the national BERD. This makes manufacturing firms twice as more likely to invest in R&D as the national average firm.

In addition, manufacturing salaries are 15% higher than the national average and manufacturing is NZ's largest exporter.

An interesting finding was that low and medium-low technology manufacturing consistently contributes over 80% of NZ's manufacturing output in terms of GDP. Interesting in that the Callaghan Growth Grants effectively eliminated this sector of the manufacturing industry from being able to apply because of its criterion to be spending at least 1.5% of revenue of R&D. A significant policy failure that I am glad the new Government is addressing.



Our CEO Dr Troy Coyle after her opening keynote at #MAD2018.

Research overseas has shown that:

- most growth and employment in OECD countries emanated from low to medium tech industries; and
- growth is primarily based **not** on the creation of new sectors but on the internal transformation of sectors that already exist.

This research, along with the data for NZ, shows that the low-medium tech sector does need more consideration in terms of public policy.

Where do we stand in relation to the rest of the world? I'm afraid to report it's not great.

Currently, our gross expenditure on R&D as a percentage of GDP is 1.28%, the US is at 2.79%, Israel is at 4.25% and the OECD average is 2.38% (based on 2016 data). If we look at the BERD component, NZ is at 0.64% whereas the OECD average is 1.65%.

This is a historical issue and the new [Government has announced a 2% target within ten years for New Zealand's gross expenditure on R&D as a percentage of GDP](#). However, this is clearly not enough when we benchmark what the international targets are: 3% for Australia and 4% for the OECD average. Moving forward, we are only going to be running on the spot unless we increase that 2% target.

In addition, many countries have developed roadmaps for their manufacturing industries. For example,

Germany's "Industrie 4.0", France's "Industrie du Futur", and China's "Made in China 2025". Closer to home, the [Australian Commonwealth Government has recently announced a large pool of funding for its manufacturing sector](#).

Why is having a healthy manufacturing industry important for NZ?

International research has shown that there are three main advantages of having a large manufacturing industry:

- it's a source of productivity growth;
- it's an engine for R&D and innovation; and
- it stimulates trade and internationalisation.

So have we answered the 'story' question?

Is manufacturing R&D in NZ a sob story? Yes and no – it's not benchmarking well internationally but it's certainly the star national performer.

Is it a job story? Absolutely – it's a strong employer with high salaries. However, it needs to continue to invest in R&D to ensure job growth and stability.

Is it a FOB story (FOB is a publishing term referring to front of book – its better to be a feature story)? Manufacturing certainly needs to improve its public face. The data exists to demonstrate it's the key industry for New Zealand. Unless that story is sold to the public and to Government, our manufacturing industry will be left behind in the global competition

for a strong manufacturing industry.

NZ manufacturing needs greater support because of its contribution to exports, salaries and BERD. As well as what other Governments are doing internationally. The Manufacturing BERD is contributing almost half of our Total Expenditure on R&D. It would be perilous to ignore that in public policy and R&D administration. Perilous for NZ manufacturing but also perilous for the NZ economy.

We endorse the incoming Government's creation of an R&D Tax Incentive and have submitted our views on the Discussion Paper. However, we'd also like to see a specific funding allocation to support manufacturing R&D that is open to all manufacturing firms regardless of % revenue spend on R&D or sector.

We also identify a need to develop a national roadmap for the manufacturing industry and the role that Government will play in ensuring it transforms to meet future challenges. This includes specific consideration of low to medium tech firms. These firms contribute the bulk of manufacturing's contribution to NZ GDP and are therefore strategically very important.

Manufacturing certainly needs to market itself better and the facts are there to support that.

The MBIE 2018 Manufacturing Report has some great data to show the significant contribution that manufacturing makes to the NZ economy. We hope that our members will make use of this data in promoting the significant contribution that manufacturing makes to the NZ economy.

| 2016 \$ million | BERD | GERD | HEERD | Total | % |
|-------------------------------|-------|------|-------|-------|-----|
| Manufacturing | 478 | 93 | 63 | 635 | 20 |
| Primary Industries | 266 | 214 | 58 | 538 | 17 |
| Health | 139 | 37 | 187 | 362 | 12 |
| Information and Communication | 258 | C | C | 326 | 10 |
| Environment | 19 | 223 | 66 | 308 | 10 |
| Total of all research | 1,602 | 654 | 877 | 3,133 | 100 |

Innovate

Jun 11 2018 **Who has time to innovate?**

Finding time to think about the future of your business or keeping an eye open for new opportunities can be difficult. Particularly amidst demanding business pressures.

In fact, according to our recent member surveys – most find ‘lack of time and resources’ and ‘retaining talent’ the most challenging factors to create an innovative business. So, if this is you, know you aren’t alone and that there’s something you can do. All it takes is to change the way you look at a situation – make it an opportunity not a problem.

Perhaps this is the time when you need to review your business from a holistic perspective and be open to new ideas and feedback. Why is it hard to employ good staff? What are others doing that you’re not or vice versa? How do others see your business?

Answering these simple questions can reveal a world of possibilities, but of course aren’t always the high priority over other jobs like answering phone calls or emails, shipping orders or meeting deadlines.

Firefighting is great but ‘forward fighting’ is essential and another way of saying ‘innovation matters for my future’.

Innovation: It’s not lack of time, but lack of priority

Innovation can be a low business priority for several reasons.

- Even though management say “Innovation is the number one priority”, it isn’t demonstrated to employees. Until that happens, few bother with active creative thinking.
- Being creative often doesn’t look like work
- Creativity and innovation sound like fuzzy concepts. We find most employees are clear on preparing financial projections, responding to customer query’s or filing report because their employers actively engage in training them in

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delivering these tasks with clear rules. So why aren’t they equally engaged in training their staff to explore unknowns and inspiring creativity and innovation?

What can organisations do to fix this?

At the end of the day – it’s about demonstrating to your team that innovation is a priority. So get out there and start sharing stories about ideas people have had, how they were developed and the results of seeing it through. Equally – don’t be afraid to share the stories of failures too. They’re important learnings for future iterations!

Consider investing in creativity or innovation training that gives people tools and techniques for being creative. It shows you’re serious and starts a precedence of recognising and rewarding creative thinking and innovative action within your business.

At HERA, we strongly believe that this is an important step in changing mindsets toward innovation in organisations. That’s why we’ve invested in creating an innovation course specifically designed to make it easier for our members to take this step for their future sustainability.

This opportunity will maximise your business to deliver greater value through streamlining processes, procedures and policies in your day to day business. We started Friday 29 June with an international line up of speakers who are experts in their field of innovation culture, customer discovery and preparing your own innovation strategy. And, registrations are still open for the remaining modules so it’s not too late!

How does it work?

We know finding time can be difficult to invest in training around a concept that seems out of your comfort zone. But that’s exactly why it’s important you engage – so you do get comfortable with it!

To address concerns around having your resources away from the business for extended periods of time we’ve ensured this five day course is delivered over five months (one day per month).

If cost is the factor stopping you from exploring this training further – please don’t let it be. Talk to our General Manager Industry Development Dr Boaz Habib on how we can support you further.

#InnovationREADY #LinkedIn #Speakers #Attendees #Innovation #LeanStartUp

Heavy Engineering Research Association
528 followers
2w

Listen up members – because now is your chance to connect with the guru of [TeachingEntrepreneurship.org Justin Wilcox](#), because we’ve added him to our highly reputable international speaker line up for our Innovation Ready-Set-Go program!

Heading our way from the States, Justin is a self-professed failed start up founder with an inspiring turnaround story. His practical application of lean start up and customer development theories will take your business to another level and give you a scalable and experimental learning experience – register while you can, time is running out! <http://bit.ly/inovcourse>



Call for interest - Get your business ahead of the pack!
hera.org.nz

2 Likes · 1 Comment

Heavy Engineering Research Association
528 followers
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We’re so excited to kick off our Innovation READY program on Thursday 29 June 2018! It’s been such an inspiring journey to find and connect with the forward thinking companies of our membership. [Page Macrae Engineering](#) being one such company who’ve committed to sending not one, but two of their team members along!

On his attendance, Business Development Manager [Peter Swan](#) said “You can get really busy working in your day to day business, and forget to work outside that bubble - but its important someone finds the time to do just that.” “Attending HERA’s Innovation course will allow me to get the education to understand what’s out there, whats available, and more so how innovation could be applicable to our business. What problem are we trying to solve? How can we add value? This is where innovation is key. This is how we’ll get things done.”

We certainly hope so Peter! If you want to find out more about the course click here: <http://bit.ly/inovcourse> - it’s not too late to register!



Call for interest - Get your business ahead of the pack!
hera.org.nz

12 Likes



People

How to attract and retain female talent

The International Women in Engineering Day was on 23 June 2018. Inspired by this, and the fact that almost all member companies we visit state attracting and retaining talent is a key issue for them - we thought we'd share some ideas!

The aim – to provide some insight on how to broaden the talent pool by making your business more attractive to female employees.

We haven't focused on the big picture items that everyone already knows, like providing flexible work hours or mentoring programs. Instead, we're focusing on the basics. Mainly relating to culture, that probably get overlooked because they're so basic.

Ten tips to attract and retain talented female staff

01 Language drives communication and communication drives culture.

Think about how your business language is driving your culture.

- Are your job advertisements attracting diverse applicants?
- Do your policies and procedures model diversity? For example, do you use the terms "he, his, him" generically?
- Do you use gender biased terms such as "manpower", "manning", "Chairman"? Or masculine terms like "ambitious, hierarchical, strong, workforce"?

It may seem like a small thing. However, language is the basis of communication and our communication says a lot about our business culture and how we envisage the role of women in it.

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Think about your recruiting processes. Gendered wording of job advertisements signal who belongs and who doesn't. Here's a link to a very interesting study (of which there are many that exist out there) that shows masculine worded advertisements reduce perceived belongingness, which in turn lead to less job appeal for women.

02 Facilities can be inviting or off-putting.

Do you have suitable female bathrooms? This is a basic that many companies haven't considered.

Does your PPE fit well on women? There are many options now for clothing that have been designed with women in mind.

Are there posters, calendars or similar hung up around your workshop or staff rooms that objectify women? I hesitate to add this one as it's a very controversial topic but let me explain my perspective. It can be hard to be taken seriously as a woman on the plant floor. It feels a lot more difficult when you see evidence that women are being sexualised. Of course, some people are OK with this, but often there are others who aren't – and may feel uncomfortable to raise it as an issue. In these cases, I think it's best to err on the side of caution.

But hey, it is 2018, the 125th anniversary of women's suffrage in New Zealand, time to burn (or recycle) the calendars now.

PS – this legitimately applies to similar pictures of men too!

03 Show the career path.

This is a tricky one as people usually aspire to be what they can see. If you don't have a plethora of female leaders as role models, you'll need to make it clear to newcomers that your company supports progressing women.

You may need to follow this up with actions that show this to be true too.

04 Accept diverse leadership styles.

Almost all of us have an unconscious bias towards leaders with a certain presence. Volume or pitch of voice, mannerisms, stance, stature, hobbies, and many other attributes impact this.

However, other than appealing to our unconscious bias, none of these inherently indicate leadership success. It's worth remembering this and accepting that authentic leadership comes when people are supported to be their authentic selves.

05 Engaging pleasantries.

Shake everyone's hand. Make eye contact with everyone. Take an interest in everyone. Even when they aren't like you.

Make sure everyone follows this rule so that no one feels unimportant. If you're in a meeting and everyone's hand gets shaken except your female colleague – make a point of introducing her and ensure this courtesy is extended to her also. Proactively help to change the culture.

06 Instead of shooting the messenger, encourage the courier.

Sometimes it is hard to speak up. Accusations of being sensitive, a stick-in-the-mud, lacking a sense of humour, and being a feminist all create a culture where women are made to feel uncomfortable about giving true feedback about workplace culture and why they would stay or leave a business.

Also, best not to get defensive and say *"I'd say the same to you if you were a man."* If you have to justify it – it's probably not true, and certainly won't come across as genuine.

07 The four 'ships'.

Think about offering internships, returnships,

cadetships, and scholarships that will support women to see the positive and attractive aspects of working in this industry and your business in particular.

08 Affirmative action and merit based appointments are not mutually exclusive.

Implementing processes that positively encourage the appointment or promotion of women does not mean that you will be employing the wrong person for the job. It just means you are acknowledging and addressing some of the inhibitors. The right man for the job may actually be a woman who may not otherwise "shine" in your recruitment or promotions process.

09 Benchmark yourself.

If you want to recruit the best talent, have a look at where the talent is currently going. See what is working elsewhere. The talent pool only gets smaller each time your competitor takes someone out of the pool.

10 Make your pitch to prospective employees truly inspirational.

If you want to find and keep the best person for the job, consider all of the above and implement change.

Make your business an inspiring and motivating place to work for all. Consider investing in innovation in your HR department, as much as your product development department.

We want to help our members with their concerns around attracting talent.

But we appreciate we're obviously not HR experts! What we do know is that innovation doesn't just relate to products and services – it relates to people too.

The competition for suitable employees is something that impacts our members significantly. We'll be seeking to get some guest commentary from HR experts on what the latest innovations in this space are. So stay tuned.

In the meantime, feel free to contact us if you have any insights that you'd like us to share with our members and key stakeholders. You can do so by contacting our Manager Marketing and Communications [Kim Nugent](#).

#WomenInEngineering #INWED18 #RaisingTheBar #diversity #equality



Charlotte Hatlauf

Fletcher Building ANZ Group Employment Relations Manager

Charlotte is an in-house employment lawyer at Fletcher Building where her focus is split broadly over three areas.

- Insourcing transactional work that would otherwise be briefed out to external employment lawyers,
- Training their people and performance community in employment relations matters, and
- Overseeing industrial relations.

Fletcher Building is mainly a building products company. Although, its construction division is a high profile and historic part of the company. Today, they employ over 20,000 people across the globe. The pure scale of it being what Charlotte loves most about her role!

“I personally feel inspired by women like Dr Michelle Dickinson who promotes diversity in STEM.

We need more role models like her. We need to start praising female scientists and inventors. We need to share the stories of women who broke gender barriers and norms in their career and life choices. We need to do these things, so other females have something to be inspired by!”



Grace Schaefer

McConnell Dowell Business Development Manager

Grace is responsible for setting the strategy to grow McConnell Dowell. She is also Chair of the Auckland branch of the Women's Infrastructure Network.

McConnell Dowell's core capabilities cover three waters, transportation, marine, industrial, power and resources. The company delivers their expertise within New Zealand and the Pacific, and across Australia, SE Asia and the Middle East through their wider group.

It's this scope that has seen Grace humbled to work in an industry that builds massive feats of infrastructure.

“I'm fortunate to have had mentors that saw potential in me. It's got me to where I am today.

I love the variety of my role. Especially being part of exciting developments happening around the country. If that infrastructure is iconic and involves complex engineering, that makes it all the more memorable as well!

It's also gratifying to know that our projects have real tangible benefits to people's wellbeing. An example being in Kiribati. Here we rehabilitated 28km of the main road. It had a huge impact on the local community – reducing noise, dust, travel times and increasing passing bays to improve safety.



Jacqui Brady

Steltech Customer Services Manager

Jacqui manages the processing of welded beams to feed into a fabricator's erection program for Steltech.

Often overseeing more than 20 projects at a time – many of which are split into bite size phases. Her services range from the ordering of steel plate, through to the planning of the welding of each beam and the delivery of them in the right order so building frames can be put up as scheduled.

Steltech Structural delivers to two key elements for their clients. Firstly, the design of commercial buildings for the construction industry where they specialise in optimised portal framed buildings (warehouses). Secondly, working with the fabrication industry by manufacturing and supplying the raw steel three plate welded beams for a wide range of construction projects throughout New Zealand.

“In engineering, being able to think on your feet and come up with alternative solutions is a must. It's therefore important to continuously look ahead for potential barriers to success.

Building rapport with customers to earn their trust and confidence is also key.”

Katrin Schüenemann

New Zealand Steel Product Launch Manager - Roofing & Cladding

Katrin looks after innovations and product developments in the roofing and cladding sector.

Working predominantly under New Zealand Steel's COLORSTEEL® brand to explore product improvements that can offer market differentiation. A prime example of this being their new COLORSTEEL® DRIDEX® product.

It offers an anti-condensation solution that features a layer of fleece to collect, store and release moisture for drier healthier infrastructure. So far, it's been Katrin's most memorable project. Allowing her to better understand markets the products are being sold into, and the challenges associated with it. For her it's been a busy but rewarding project full of positive market feedback!

New Zealand Steel is the sole producer of flat rolled steel products for the building, construction, manufacturing and agricultural industries in NZ. Using locally sourced ironsand to produce around 650,000 tonnes of steel a year.

“There's no such job where only men or woman can participate. Both genders are the right fit if they have similar skills.



Laura Coffey

Pacific Steel Market Development and Key Account Manager

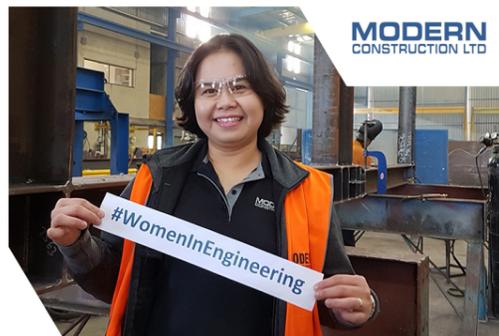
Laura's role is a mix of marketing and sales. Where she's responsible for elevating core product brands for Pacific Steel such as Seismic® and Wiremark®.

Laura's enjoyment of building and construction made it a perfect industry to apply her skills to. She's responsible for ensuring brand awareness and loyalty are maintained and grow over time within Pacific Steel's marketplace. From a sales perspective she also looks after several key accounts throughout New Zealand.

Pacific Steel is New Zealand's only manufacturer of wire rod, reinforcing bar and coil products. Their Auckland based manufacturing facility produces around 250,000 tonnes of manufactured steel per year.

They have several target industries for their products and sell into a range of market sectors, from construction through to agriculture.

“I chose the manufacturing industry after graduating from the University of Auckland. I liked the idea of working for a company who produced a product used in every facet of modern society.



Mae Rose Billanes

Modern Construction Senior Structural Steel Detailer

Mae is responsible for producing detailed 3D modelling and drawings for steel fabricators and erectors.

She applies these skills to certain projects of Modern Construction. Giving deeper understanding of columns, beams, bracing, trusses and more for use in the construction of various types of infrastructure. Mae is also a Coping Machine Applications Programmer. This sees her prepare and edit NC files to create nesting files for the copying machine.

Working closely with key stakeholders such as architects, engineers, contractors and fabricators she helps to provide them with her company's technical and manufacturing expertise to deliver their projects.

Modern Construction is based in Hamilton and is well known for their custom manufacturing products and design and construction services that have evolved since its inception in 1960.

“At first, my family was a little reluctant towards this career path for me because they perceived it as a male field - but an offer within a structural detailing company changed all of that.

It allowed me to gain exposure to a role totally different to my education (B.S in Architecture), and for my parents to see my passion for the construction industry.

To me, structural detailing is a critical process of structural engineering and I love the challenge every project I handle brings!”



Mikaela Keir

New Zealand Steel Graduate Process Engineer

Mikaela is a process engineer at New Zealand Steel. Looking after the process variables to produce molten steel to various specifications.

New Zealand Steel is the sole producer of steel in New Zealand and the only in the world to make steel solely from iron sand.

Their process is unlike any other in the world meaning a lot of in-house research and findings.

Mikaela's job is to improve efficiency and quality and reduce cost in this part of the operations. Her most memorable project to date being when her team was able to increase the yield of their vanadium oxide by-product.

By using a non-profitable by-product to increase its yield. It was a small project, but allowed Mikaela to see how a small change can have great impacts on overall processes.

“We should be encouraging from a young age that anyone can do anything.

If we can create better gender balance and diversity in early school years, this will carry through to later life. It'll also break down a big barrier which is family mindset and support.

It's something I was lucky enough not to have to face - but I'm sure there are many who do. This is where school programs can bridge the gap and help those doubting their ability to pursue engineering careers based on their gender or other reasons.”

#INWED18 Tweets

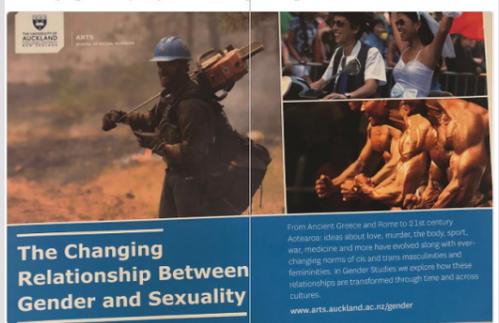
NZHERA @NZHERA - Jun 12
This is a shout out to all of the ladies in our metals-based industry - @LiquidLearning is running the 2nd Women in #construction #infrastructure #engineering leadership summit this Sep 19-20 in Auckland - HERA members also get 10% discount so book today! bit.ly/WIEsummit



NZHERA @NZHERA - Jun 18
Today's the start of our quest to shine the light on #womenengineering in lead up to #INWED18 this 23 June. What better way to do that, than an article from our @DrTroyCoyle on how to attract & retain female talent in our industry? #RaisingTheBar bit.ly/wie-tc



NZHERA @NZHERA - Jun 20
How refreshing to see how educational facilities such as @AucklandUni are raising awareness around gender through study. A very timely discovery of this poster on a recent visit to their facilities given this 23 June is #INWED18! #diversity #genderequality #womenengineering



NZHERA @NZHERA - Jun 23
To all of the #womenengineering & #WomenInSTEM we wish you Happy #INWED18 - you make an amazing contribution to your companies & communities. Here's to diverse thinking in workplaces, #RaisingTheBar and celebrating the value you bring! bit.ly/inwed18



Pam Roa

Longveld Managing Director

Pam has been in the industry for 29 years, using her skills and experience to lead a team of 87.

Longveld is a specialist stainless steel fabricator of primary processing machinery, systems and equipment, predominantly for the Australasian dairy industry.

The business was founded in 1992 by Pam and her husband Les, after the couple met through the dairy industry and decided to branch out and start their own business servicing this sector. Pam had a strong background in science, chemical technology, engineering and experience working in dairy processing while Les brought his fitter/turner/welder skills and entrepreneurial bent. It was a perfect match.

Since then Longveld has gone from strength to strength in building a sustainable business with a focus on creating a diverse and highly skilled team, with proactive apprentice training and work placement programs to help address industry skills shortages.

“The futurist Alvin Tofler has said the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.

Traditional qualifications will become irrelevant. We all need to embrace rapid change.

I'm a future optimist, and I anticipate artificial super intelligence will occur in my lifetime. To me thinking about reaching this technological singularity is exciting, and that's what drives me to prepare my business for disruption.”



Reem Soliman

Modern Construction QS Estimator and QA Assistant

Reem is responsible for assessing quantities and pricing for tenders and cross-checking material certificates for standards compliance.

A role which is far from where her career path started – quite literally!

Originally from Syria, Reem decided to study Civil Engineering. A decision driven by a natural interest and its popularity as a career for women in her home country. This took her to Abu Dhabi UAE for 16 years before immigrating to New Zealand to start a new life with her family in 2016!

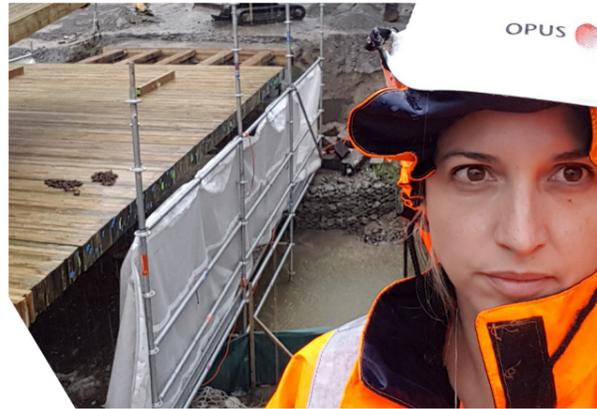
When she arrived in New Zealand she knew it would be challenging – but for her, that was part of the excitement.

“One of my most memorable projects has been the Al Wahda City / Grand Millennium Hotel. Its scale was huge and had many special architectural and structural design aspects to it.

With a contract value of approximately NZD\$400m – it was an amazing experience being able to deliver to a high standard of FF&E works.

To me, engineering is a creative job with many options and specialties to pursue. And, at the end of the day - we all need work.

Whether female or male, if you have a genuine interest in engineering then you should push yourself to follow your goal. Don't be limited by other peoples perceptions.



Natalia Uran

WSP Opus Work Group Manager Bridges & Structures

Based in Napier, Natalia manages her team to provide infrastructure asset management consulting services for WSP Opus clients.

She's focused mainly on bridges and highways structures, with an aim to ensure they're fit for purpose and well maintained. All while utilising available resources in an economic and cost-effective manner.

Natalia has been exposed to many projects that she's enjoyed being part of. Whether because of the team, technical challenges, social implications, innovations, scale or other. Her most recent one standing out, where she was involved in the bridge strengthening and deck replacement for a local authority bridge.

The bridge had insufficient capacity, was very narrow and in bad alignment. Involved from the start, she provided several bespoke options tailored to her client budgets and needs. After several iterations, helping them to choose a final option which is currently being constructed.

[Find out more about what makes Natalia tick...](#)

What made you want to be an engineer Natalia?

There were a few factors contributing to this decision!

My Dad is an engineer and I still remember our chats when I was a child about engineering problems.

I particularly recall him taking me to a construction site when I was roughly 8 years old. The contractor was preparing the foundations for a very big shopping mall and it was the moment I got hooked into civil engineering. We went back every week to check on

progress – it was fascinating seeing the changes in front of my eyes.

While my Dad was fully convinced this was the right career choice for me, my mum wanted me to explore other options. I considered medicine and physiotherapy with the help of my mum's insight and family friends. However, in the end it helped me to be even more certain that civil engineering was for me!

What do you think makes a good civil engineer?

In terms of skills I think the main ones are:

- **Strong organisational skills.** You need to be able to optimise and prioritise conflicting demands in a busy environment, to achieve deadlines and see responsibilities through to completion.
- **Good interpersonal and communication skills.** This includes oral and written communication. Particularly the ability to present ideas, information and advice in a way that is understandable by a range of audiences, and
- **Strong leadership skills.** The ability to clearly and succinctly explain to your team everything from organisational goals to specific tasks is very important.

Engineering qualifications are just as essential. The main aspect for me is a strong sound knowledge of engineering first principles. These are the fundamental concepts about an engineering discipline. They help to understand the codes, but also provide the background theory to solve problems. Especially when the solutions aren't straight forward or potentially don't even get covered in existing codes or standards!

How do you find the day to day environment that you work in?

I love my job and the ability it gives me to solve problems. The problems aren't always of a technical nature – and can also be financial/budget, people related and more. It's a great challenge.

I guess for me, I've been very lucky throughout my professional career. I'm likely the exception to the rule as I've never personally felt unsupported in what I do. However, I do believe that gender imbalance is certainly real.

There are plenty of statistics that prove this is the case. An easy one to refer to is the gender pay gap. Women were being paid 9.4% less than males as of September 2017.

Thankfully, I do believe times are changing. We're more

aware of the problem and there are more efforts in place to balance the situation.

Would you like to see more women in engineering with you?

Yes of course! Engineering benefits from diversity. I can see how every member of my team has a slightly different angle or proposal to solve a problem. I fully believe the best innovation comes from a diverse team who contributes different perspectives to the solution.

That's why I certainly encourage and support different programs that create more diverse workforces in organisations.

However, I also believe we need to recruit the right person for the job – independent of whether that person comes from a minority or not.

Bearing this in mind, we need to start with a diverse pool of applicants to achieve a diverse workforce. This isn't currently the case. Data from 2015 shows female graduates were only about 20% of the total number of graduates for civil engineering for example. This is what we need to fix.

So how can we increase the number of ladies in STEM?

Achieving a more balanced workforce requires us to focus our energy and target our programs to school age girls. Ideally Year 10 and under.

Barriers come early. Girls are rarely encouraged to study math or science and there is this general deep-rooted bias that boys are better at those subjects. Even if they manage to overcome this first obstacle, they can then be daunted by being the only girl pursuing a STEM career or concerned about possible discrimination. That's why we need female role models or mentors that can help young women navigate and ultimately overcome any concerns about pursuing a STEM career. While this approach doesn't offer any short-term gains, it should mean a more diverse pool of graduates in less than a decade.

“At the end of the day, if you're passionate about engineering – then don't let stereotypes stop you from pursuing this awesome career!”

There's loads of opportunities out there. We have a huge shortage of engineers, so it doesn't matter if you're male or female. Only that you're a qualified engineer!



Disruption - the path to resilience

From 20 - 22 June we were excited to have our Executive member and WSP Opus Corrosion & Asset Integrity Consultant Raed El Sarraf head to Rotorua for the IPWEA's 'Disruption the path to resilience conference.'

Attendees explored the challenges and demands of disruption. And more importantly – how they could help communities build for the future, be accepting of likely changes and embrace them as opportunities for greater resilience.

Approximately 350 people were in attendance to hear from a range of national and international keynote speakers. Gaining exposure to a wide perspective of industry disruption, as well as revolutionary developments expected to bring change to our infrastructure in the future.

Raed was awarded runner Up for the [Hynds Paper competition](#) as one of three finalists. Receiving a Air New Zealand weekend as his prize! His paper was co-authored with **WSP Opus Work Group Manager Bridges and Structures Natalia Uran and NZTA Principal Structures Engineer Liam Coleman.**

Titled 'Saving money by extending the life of New Zealand heritage bridges.' It broke down assumptions that a bridge needed to be replaced at the end of its 100-year design life. Providing examples from around New Zealand where bridge asset life has been extended while maintaining or improving levels of service and resilience.

Of the whole experience Raed said "It was an honour to present this paper. It allowed us to showcase how we can not only save these bridges but also realise millions of dollars in savings."

"This is achieved through the combination of the principals of corrosion management, structural engineering and asset management – from which we developed an optimal structure specific maintenance program over the extended life of the structure, while minimising disruption to users," he said.



Scholarship project develops internationally peer reviewed design rules for CFSTs in fire

HERA Foundation is focused on delivering research for the betterment of our industry. And a key avenue they use to achieve this is through the award of postgraduate scholarships.

A great example of this is University of Auckland's Department of Civil and Environmental Engineering Student Kingsley Ukanwa. Who was charged with the task of understanding composite CFST (concrete filled steel tubular) columns under severe fire conditions, and the development of a new design procedure for their use in multi-storey buildings.

A subject that in 2015 became a high research priority through the HERA Steel Research Panel as despite their growing use in construction, most designers found it difficult to determine the adequacy of these columns in the fire limit state where they're subjected to combined axial compression and bending.

This project involved a combination of experimental testing and numerical modelling. With 22 full scale laboratory experiments on concrete filled steel tubular columns loaded either concentrically (compression) or eccentrically (compression + bending) in severe fire conditions. This was executed at IIT Roorkee, India, through their generous contribution of facilities and expertise, and was followed by numerical modelling of the tested columns.

This culminated in the development of a design procedure for concrete filled CHS, SHS and RHS sections based on over 230 tests undertaken worldwide. To date, this procedure has been refined to

its current form and has been applied to a significant building project – the Auckland International Airport Phase 4 Pier B Extension. Here it will be used to validate the axial capacity of CFST columns.

Reflecting on his scholarship opportunity Kingsley said "This has been a life changing experience for me – and I'd like to thank the HERA Foundation board, partners and my Industrial Supervisor & PhD advisor Dr Stephen Hicks for their support and contributions during my research."

"Because of HERA Foundation funding I've been able to gain strong technical mentorship through my supervisors Associate Professors Charles Clifton, James Lim and Umesh Sharma, attend two international conferences to present my research work, and publish four international peer-reviewed journal papers – with a fifth currently under its second round of review."

HERA Foundation is certainly proud of Kingsley and the valuable work he has delivered to assist our industry in taking advantage of CFST's high strength, stiffness and ease of construction in future projects. To date, they've been used in many structural applications including high-rise buildings, bridges and offshore structures. A core result of their outstanding mechanical performance such as high axial load capacity, ductility performance, energy absorption capacity and low strength degradation.

For building projects, significant periods of fire resistance can be obtained without the need for external applied protection – reducing costs and making CFSTs an attractive structural solution for our members.

HERA's General Manager Structural Systems Dr Stephen Hicks saying "Kingsley has been truly dedicated to his PhD studies – completing it under three years which is a major achievement."

"His work to understand the behaviour of CFST composite columns in fire conditions has filled a

critical knowledge gap. This very efficient composite member has not been fully exploited in New Zealand and is particularly suited to high-rise multi-storey buildings." he said.

"Working with Kingsley has certainly been a pleasure. He's a conscientious researcher who through his papers has provided confidence in his outcomes. I wish him all the best in his current role as a structural engineer, and his active research as a supervisor of master's degree students and part 4 project students at the University of Auckland."

What next?

As a lead disseminator, HERA will be using Kingsley's work to form the basis of new design rules which will

be included in our publications and potentially national standards. Our next steps will be to present the findings to the committee responsible for the first joint composite design standard AS/NZ 2327 – to explore the potential of including within future editions.



Prof. Pingsha Dong presents: "Design for joint strength, fatigue and fracture resistances in welded connections."

Join us for this exclusive full day seminar with world renowned expert University of Michigan Prof. Pingsha Dong as he speaks on welded connections.

Prof. Dong is the inventor of an advanced Master S-N Curve Fatigue Assessment Method adopted by the 2007 ASME Div 2 and API 579/ASME FFS-1 Codes and Standards which is mandated by over 50 countries worldwide. And, over the past 10 years, has taught courses in fatigue design, fracture control, residual stress/distortion control around the globe.

Overview

Proper design and cost-effective construction of welded connections require considerations of some of the unique issues associated with welding, in addition to specific loading environment.

These are weld in-situ strength, residual stresses, and geometric discontinuities, each of which plays a different role in contributing resultant joint strength, and fatigue/fracture resistances under different loading conditions, particularly seismic loading.

Delivered in two core parts

Part one will start with some of the recent developments in supporting national and international codes and standards relevant to design and construction of civil steel structures. These topics include fitness-for-service based quantitative weld defect acceptance criteria; fillet weld sizing criteria,

weld residual stress consideration in fracture control, and fatigue (both high-cycle and low-cycle fatigue) evaluation procedures, e.g., the one stipulated by ASME Div 2 since 2007.

Part two will discuss how new developments can be taken advantage of for supporting the use and making an appropriate interpretation of existing design and analysis methods given by various codes and standards for achieving joint strengths, and fatigue/fracture resistances required of civil steel structures through a series of case studies. These include assessment of load capacity of full penetration butt welds versus partial penetration and fillet welds; low cycle fatigue and unstable fracture evaluation for seismic loading conditions; recommended weld repair procedures and rationales.

The sessions covering New Zealand steel product conformity and fabrication quality aspects will be presented by HERA General Manager Welding Centre Michail Karpenko.

[Click on below locations to register.](#)

Auckland: Tuesday 10 July 2018

Wellington: Wednesday 11 July 2018

Christchurch: Thursday 12 July 2018

#SocialStreamJune

NZHERA @NZHERA · Jun 7

We came across this #shorts in the #Build166 magazine interviewing Gordon Barrat of #NASH - it was a great surprise & even better to see mention of our joint project providing design solutions for building steel framed buildings up to 6 storeys high! bit.ly/2Jh0SzC



NZHERA @NZHERA · Jun 14

Last month we ran a survey to help better understand our membership so we could deliver more value. Responses were overwhelming & will go a long way in informing our strategic focus in FY18/19. Big congratulations to #ModernConstruction who won one of the cameras up for grabs!



NZHERA @NZHERA · Jun 7

Don't miss your chance to attend the 'designing for durability in the built environment' one day seminar in Auckland, 5 July. It'll help design engineers & architects meet city council expectations, understand standards and see case study examples on how! bit.ly/2xS1aYq



NZHERA @NZHERA · Jun 17

How can robots help your business? Stop wondering & find out! @callaghanz is offering a free one month trial of their Universal UR5 robot to eligible businesses in their commitment to help manufacturers embrace digital revolution! #Industry40 #innovation bit.ly/2Jkd1jp



Trial a collaborative robot in your workplace to validate digital manufacturing as an R&D tool for your business

MBIE Conformance Review Survey.

The Ministry of Business, Innovation and Employment is inviting assessment service users and providers to participate in a 10 minute online survey:

<https://www.research.net/r/MBIEConformanceReview>

It will be used to inform and shape their Conformance Policy and Infrastructure review - and is open until 10 July 2018. Conformity assessment services include inspections, certification, testing, calibration and systems auditing. They give independent assurance that products and services meet standards or regulations. They support businesses to meet customer needs. They enable businesses to demonstrate quality, safety and added value.

Send us your project photo's

It's that time of year when we ask for photo's from our members to display in our annual report.

If you're interested to contribute please send to kim.nugent@hera.org.nz with the project name, and brief description of what you were contracted to do for your client.

External events of interest:

FMANZ / Beca Group - Non structural seismic restraints: why is it an important issue and what approaches can be taken?

Thursday 5 July, Wellington.

<http://bit.ly/2KDm7vE>

EMA - Learnings from the use of Industry 4.0 in US Manufacturing forum.

Wednesday 11 July, Auckland

<http://bit.ly/2KIVoV3>

It will be used to inform and shape their Conformance Policy and Infrastructure review - and is open until 10 July 2018.

Conformity assessment services include

Get qualified to become a Welding Supervisor!

If you aspire to take your career to the next level - why not book in to our 'Welding Supervisor and Welding Inspection Part 1' course in August!

Designed for those already working in the industry it delivers the learnings necessary for you to upskill and broaden your understanding of your current supervisory role.

It's also perfect for those wanting to progress to a role like this, by providing an in-depth understanding of quality management systems for structural steel welding and its associated standards.

Course overview

During your time with our training centre you'll learn about a wide scope of welding supervision activities, including:

- The role and responsibilities of the welding supervisor
- Welding processes
- Welding procedure qualification
- Welding metallurgy
- Construction and design
- Fabrication engineering
- Seismic welding
- Compliance with relevant welding standards as well as quality management such as AS/NZS ISO 3834.

Find out more

We're holding two sessions during August:

- Auckland - 20 to 24 August, full day
- Christchurch - 27 to 31 August, full day

Book at www.hera.org.nz/events/



H&S+Environment

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#MensHealthWeek

The month of June saw us celebrate Men's Health Week / Te Wiki Hauora Tane from 11-17 June.

And given that a huge proportion of our industry is tane, we knew we had to get behind it. That's why we sent out a challenge to our members to get proactive when it comes to health and get a health check.



Day 1 - be honest, not staunch.

With the shocking statistic that every three hours one Kiwi man dies from a preventable disease... I think it's time we make some positive changes to fix this. Don't you?

This challenge wasn't just for the men - it was to the women also. Regular check-ups are just as important for everyone. And, the lady's have a part to play in challenging the men in their life to be vigilant about their health! You never know what you could prevent from happening!

Day 2 - start your day by eating healthy

NZHERA @NZHERA · Jun 12
To all of our NZ metals industry care of re-post from @menshealthwkznz - who started the day with a healthy breakfast?
#menshealthwkznz #menshealthweeknz #menshealthweek #menshealth #whatsyourscore #fitness #wellbeing #eatingwell #healthymen #NewZealand



Day 3 - small steps to big change: diabetes

Did you know that diabetes is New Zealand's fastest-growing health crisis, affecting a quarter of a million people? Statistics show we have 40 new diabetes diagnoses every day.

Everyone is at risk of diabetes and one in four New Zealander's is believed to have pre-diabetes. That's more than a million people, who in many cases, could prevent or delay the onset of type 2 diabetes with a healthy lifestyle of nutritional eating and regular exercise.

Taking your mens health check and visiting a health professional is a great way to assess your risk for this.

NZHERA @NZHERA · Jun 13
Diabetes is NZ's fastest-growing health crisis with 40 new diabetes diagnoses every day. Everyone is at risk of diabetes, despite the fact that in many cases it could be prevented or delayed with a healthy lifestyle #eatwell #regularexercise. #whatsyourscore #MensHealthWeek2018



Day 4 - heart health is important

Did you know that every 90 minutes one New Zealander dies of heart disease? In fact, heart disease is the biggest killer in NZ, and accounts for one third of all deaths each year.

Latest research shows that men are at greater risk of stroke than women, and that in general, New Zealand men live on average four years less than women - yet remain much less likely to talk to a GP about their health.

The New Zealand Heart Foundation has a simple message:

A heart attack is a life-threatening medical emergency. Be aware of the symptoms and call 111 immediately.

Symptoms can include:

- chest discomfort lasting 10 minutes or more;
- pain that spreads to the jaw, shoulders or back;
- excessive sweating;
- shortness of breath; and
- nausea.

Anyone who thinks they're having a heart attack should immediately stop what they're doing and call 111 for an ambulance or ask someone to do it for them. Any delay in calling an ambulance can increase the risk of death or permanent damage to the heart.

Staunching it out won't cure you. The moral of the story? Get proactive - visit a GP, check your blood pressure, eat well & exercise!

NZHERA @NZHERA · Jun 14
Heart disease is the biggest killer in NZ & accounts for 1/3 of all deaths each y. Blood pressure & high cholesterol can be a key indicator for poor heart health other issues. So get proactive. Check your blood pressure & talk to your GP ab your health! @menshealthwkznz



Day 5 - don't be afraid to ask for help: mental health

Everyone experiences strong feelings of tension, fear, or sadness at times. However a mental illness is present when these feelings become so disturbing and overwhelming that people have great difficulty coping with day-to-day activities such as work, enjoying leisure time and maintaining relationships.

Depression

1 in 8 New Zealand men experience serious depression during their lifetime. Reduce risk by staying fit & healthy, reducing alcohol intake, getting enough sleep, balancing life and work and developing your problem solving and communication skills. Visit www.depression.org.nz for more information

Anxiety

Often people with depression also find they worry about things more than usual. This is known as anxiety. It can cause physical symptoms like pain, a pounding heart or stomach cramps and may be constant or come and go. Either way it's important to recognise anxiety when it occurs and seek help.

Suicide

In New Zealand the suicide rate for men is 3 times that of women. Suicide and suicidal tendencies are still some of hardest issues to talk about socially.

Those aged between 15-24 have the highest rate of suicide, and Maori suicide rates are significantly higher than non-Maori suicide rates.

For more information or to talk to someone about any difficulties that you or someone close to you might be having in their life, please contact LIFELINE on 0800 543 354 or at www.lifeline.co.nz.

NZHERA @NZHERA · Jun 15
Jobs in the metal industry can be stressful - so while mental health is something men are getting better at talking about, it's still important to keep sharing - as it affects how you feel, think, behave & interact with others. @menshealthwkznz #Mentalhealth #stress #depression





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