

## Four global trends you should know about

Understanding the fourth industrial age

## Seismic research delivers confidence in steel

Delving deeper into Kaikoura earthquake and steel construction performance

## Examining key welding standard changes

Guidance on using new standard changes to your advantage!

**MetalBase**

February 2018

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### Cover:

A large gear in our member company Bay of Plenty Gear Cutters workshop for repair. Image snapped by our General Manager Industry Development who visited owner Bill Ross in Mt Maunganui to discuss business growth & needs, and innovation interests.



## From our CEO, Troy Coyle

### It has been a busy start to the year for the HERA team.

#### Key highlights include:

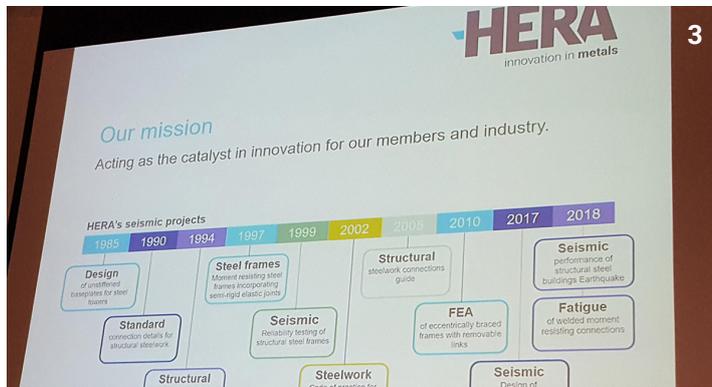
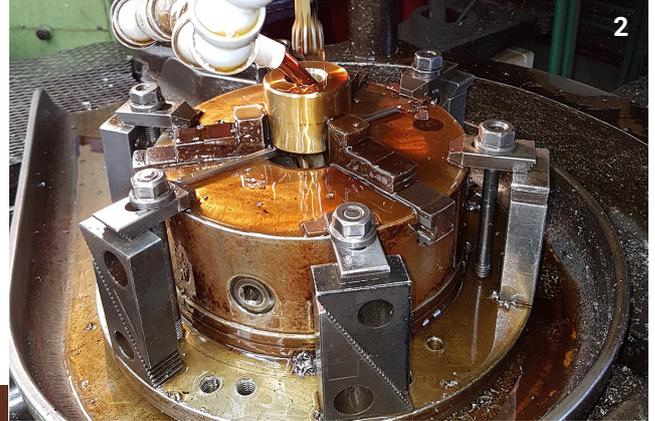
- a keynote from Stephen at the International Conference on Steel, Space and Composite Structures;
- papers presented at the 2018 Steel Structure in Seismic Areas Conference;
- Holger attained his International Welding Engineer qualification;
- Kim and Brian have launched the new HERA website;
- Stephen, Michael and I have had strategic planning sessions with the Welding Technology Institute of Australia and Australian Steel Institute;
- we have held most of our annual research panel meetings, and
- we've released our investigation into structural steel building performance in the Kaikoura earthquake.

We've had some really high quality project proposals coming through our panels this round. Thank you to everyone who submitted an idea. We will announce the projects we intend to work on once we have final Board approval.

One of the really noticeable aspects of attending all the panel meetings is just how committed and engaged our members are in HERA's research activities. The discussions are lively and show how well we are able to work together as an industry when it comes to identifying our applied research and innovation priorities. Having so many perspectives and backgrounds represented could go awry but the healthy discussions lead to compromises for the common good. Collaboration and respect for diverse views means we get on with setting the research agenda that will work best for us holistically as an industry. This is not to be taken for granted as many industries would wish for such cohesiveness and cooperation.

# Shots out & about

**| 1 |** Our HERA Foundation Scholarship Recipient Hafez Taheri presenting at #STESSA18 **| 2 |** Gear cutting in progress at Bay of Plenty Gear Cutters **| 3 |** Dr Michail Karpenko's opening session presentation on HERA's history in seismic projects **| 4 |** Outside MB Century's offices in Rotorua visiting Industry Development Advisory Panel member Graeme Warren and Staff Richard Adams **| 5 |** Boilers in reserve at ABS, Hamilton **| 6 |** On-site checking our Materials Test Rig at Ohaaki Thermal Kilns **| 7 |** Stopping in to see TiDa Staff Dr Aamir Mukhtar and CEO Dr Mike Fry to discuss disruptive innovations **| 8 |** Ross Engineering's cast iron test bed for turbine testing and balancing machine



# Innovation

## Kaikoura Earthquake challenges met by steel construction

### Post-Kaikoura earthquake, little was mentioned about systemic failures in steel construction.

While this gave confidence that our structures performed well, we had to make sure. Taking an opportunity to learn if there could be any potential issues now, and in the future by commissioning research to pinpoint any weaknesses.

The research outcomes described in HERA Report R4-150:2017 now confirm that there were no serious problems. Follow up on recommendations made as part of the research will also further improve steel construction performance in severe earthquake events.

#### Kaikoura Earthquake and its impact

The magnitude 7.8 Kaikoura Earthquake struck the North-Eastern region of the South Island on 14 November 2016. It was the largest earthquake in New Zealand since 1855. Involving the rupture of over six faults with a rupture zone extending 200km – the closest point to Wellington only 60km away.

The ground shaking resulted in between 80,000 and 100,000 landslides which blocked the coastal road and rail route to Kaikoura. There were also two fatalities attributed to this event.

No site-specific information has been obtained to determine if any structural steel buildings were subject to seismic demands in excess of design levels. As there was no immediate significant damage observable no disaster event was declared for Wellington. This meant there was no formal official government run investigation.

HERA Report No R4-150:2017 - The seismic performance of structural steel buildings in the 2016 Kaikoura Earthquake

This coupled with a reluctance from parties associated with damaged steel buildings to reveal insight due to commercial sensitivity and legal liability – left us quite in the dark around how steel performed.



However, the understanding is that the level of demand was in excess of the ultimate limit state (ULS) force based elastic design level for many buildings and damage expected.

Best known are the significant failures of concrete framed buildings with pre-cast floor systems in Wellington. Leading to some early decisions to demolish buildings such as Statistics House, with many more currently on the investigation list.

#### Committing to learning from events like these is crucial

You only have to look back on our history to see that New Zealand is a country prone to earthquakes. That's why at HERA, we believe understanding how our industry's structures truly perform in these types of events is key if we're to continue keeping our communities safe during seismic activity.

Not surprisingly, the lack of information on the performance of structural steel buildings post Kaikoura Earthquake was

of concern to us. So much so, that we commission research from Tangent Consultant Structural Engineer Alistair Fussell to inform us better.

The investigation consisted of field observations and data collected from building officials, structural engineers, steel fabricators, academics and from a literature review of media, technical publications and websites.

### What did we discover?

Our study found that structural steel buildings in the Wellington region performed well during the earthquake, with one notable exception – the Queensgate cinema and car parking complex.

Additionally, four examples of damage to steel buildings were noted, one being the vulnerability of gusset plate connections to a sway mode of behavior.

Overall, our research indicated there are no deficiencies in New Zealand seismic design practice for steel building structures at this time.

### Moving forward

What continues to ring true is the importance of following established procedures and avoiding the use of details with known poor seismic performance – such as eccentric cleats in compression of seismic resisting systems.

One of our key recommendations coming from this investigation is to consider the feasibility of a confidential

industry reporting mechanism for design and construction problems – similar to the SCOSS/CROSS initiative in the UK to facilitate learning from such incidents.

Recommendations have also been made to prepare practice notes for design engineers to promote good detailing practice with respect to tension only braces.

There's also a need to consider out-of-plan actions when designing gusset plate connections in seismic load resisting braced frames are concerned. Further research is suggested as there's currently no recognised procedure in New Zealand that appropriately accounts for this mode of failure.

### Be confident in steel construction

Our research confirms that steel construction in the Kaikoura earthquake performed equally to that positively documented in the Royal Commission Reports for the Christchurch earthquakes.

It's a message which needs to be spread by everyone involved!

However, as an industry we can't rest on our laurels. We have to address the pinpointed areas for improvement – including educating and learning about best design practice.

We also ask those involved in remedying steel construction building failures to let us know of any further issues which our research may have overlooked by contacting our General Manager Structural Systems Dr Stephen Hicks.

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### Free resource download available.

HERA Report No.R4-150:2017 - the seismic performance of structural steel buildings in the 2016 Kaikoura Earthquake is freely downloadable from our website at:

[www.hera.org.nz/kaikoura-earthquake-challenges-met-steel-construction/](http://www.hera.org.nz/kaikoura-earthquake-challenges-met-steel-construction/)

.....  
This report was delivered in collaboration with Tangent Consultant Structural Engineer Alistair Fussell.

# Thinktank

## Four global trends you need to know about

**We're now standing at the cliff edge of the much-talked about fourth industrial age. Now more than ever, we need to know what's coming down the pipeline – after all, forewarned is forearmed.**

The problem is, some of our members tell us they're confused about which emerging technologies to investigate further. So how do we overcome this?

“Just as the internet has been an equalising and globalising force for education, entertainment, communications and business, so too can Industry 4.0.

It represents a fresh chance to catch up with our competitors and deliver transformational growth in productivity. Around the world – we're already starting to see this come to fruition.

### **Robots will revolutionise the workplace**

In New Zealand 40% of our jobs won't exist in 40 years. The advent of artificial intelligence, business bots, autonomous robots and other technology advances replacing them at an ever-increasing pace.

In the transport and petroleum industries we're seeing autonomous and electric vehicles become more common, with mining companies now using driver-less trucks. For the bottom line this translates to savings in salaries, training, insurance, medical and liability costs. In fact, in the next five years driver-less cars, buses and trucks are lined up for mass deployment worldwide.

One of the next waves earmarked is soft robotics – a disruption not limited to traditional blue-collar jobs. Leading global law firm Herbert Smith Freehills in Australia creating a global Alternative Legal Services (ALT) business. The first of its kind to be opened and operated to combine legal expertise and technology solutions for high-volume work efficiencies. Last year processing a staggering 63 million

documents and reviewing over three million documents and 5,000 property leases.

For our industry, the same model could also apply to estimators, CNC operators, contract and tender evaluators, inspectors or similar.

### **Bricks and mortar will survive – but only some!**

Brick and mortar businesses offering products without context or expertise will find it difficult to compete. Particularly those without a fully formed online presence. Those likely to succeed will have a 'phygital' presence – where the physical meets the digital. Enabling them to provide fast, easy and personalised experiences.

Going forward, your clients will expect a complete end-to-end solution. To address this, think about how your customers engage with you – especially the younger generations. One thing for certain is you'll need to invest in your digital presence, as well as review whether you have a good spread of tools and processes for capturing and responding to enquires. Take time to also assess your website navigation and ease of ordering online as well as your social media marketing strategies to reach future target audiences.

### **An on-demand workforce will create the 'gig' economy**

The stereotypical image of a staff member wasting time filing their nails or surfing the net rather than working, is an answer to why many people are outsourcing their work and creation of the 'gig' economy.

On-demand Personal Assistant Monique Eddy saying “Why pay people when they're not actually working? My clients pay me an hourly rate for specific tasks. They love it because they only pay for what they get, and they get high-quality work without any of the staffing or contractual issues.”

Today, freelancers can select from a range of temporary projects or jobs – and employers can hire the best individuals from a large pool of workers for specific tasks. Think Uber or Air BnB.

Imagine how this model can morph your own organization – by transitioning your 1000 full time staff down to 100 with an 'on-call' workforce of 5,000 (many of whom will be part of the gig economy, or working for other organisations). This type of fluid workforce could cause conflicts of interest or IP protection – but also be very effective for bringing much-

needed experience and flexibility to your business.

THE GIG ECONOMY



**Drone usage will expand dramatically**

Get used to seeing the skies filled with connected drones that can scan vast distances to collect data. Defence forces have used them in combat zones for years, and Australia Post, Domino's Pizza and Amazon have been testing extensively to see how they could be used to deliver parcels.

Last November, Dr Jan Polzer presented to our members on several examples of drone use in an Industry 4.0 context in the European steel industry. They're low-cost and increasingly the safe option for many activities – allowing us to see angles not previously seen for inspecting work. Drones will be a game changer for many.



**Key takeaways**

At HERA, we believe this revolution, when it hits our shores, has the potential to radically improve efficiency levels, quality, safety and environmental impacts. It could be the answer to achieving a level playing field in the face of competitively-priced imports.

Moving forward, we'd like to share four key takeaways to help our members prepare for Industry 4.0 trends and disruptions most likely to impact on our industry. So start equipping yourselves adequately to catch the next wave –

Be prepared. Change is coming. There's no going back so embrace change as the new norm and move forward. This is Industry 4.0 or the fourth industrial revolution.

Keep abreast of the trends. It's easy to do. Just Google – "Trends in [insert your industry name here] industry" – and see what thought leaders in this space are saying. Take it one step further by commenting or following them on social platforms to stay connected with their latest shared expertise. It's a quick, easy and valuable so try it out!

Get comfortable using technology. If technology intimidates you, upskill so that it doesn't. Libraries and councils offer great, cost-effective short courses on a range of tech topics. Even better, if you have a child around the house ask them to show you! You'll quickly discover why Gen Z are poised to take over the world!

Connect with experts. At HERA, we're committed to facilitating events that bring thought leaders to you. Our session at the 2017 Metals Industry Conference in Christchurch the beginning of what we have planned to spread awareness of these trends.

Our teams are also seeking key direction for delivery of value to our members where the newly created Business Research Panels are exploring pathways our members can undertake to help engage with new trends and technologies.

You can also take advantage of your membership benefits to access expert consultation as well as external platforms like LinkedIn to connect with professional networks and expertise.

**What now?**

The greatest message we want to leave you with is to be prepared for change. Our industry simply can't afford to ignore the many technology disruptions that are coming our way if we're to remain competitive.

In support of this, we're looking to host an innovation seminar later in the year through our Industry Development team. We'd be interested to hear what Industry 4.0 challenges you'd like to understand more about to inform our program and key speakers.

Get in touch with our General Manager Industry Development Dr Boaz Habib on [boaz.habib@hera.org.nz](mailto:boaz.habib@hera.org.nz)

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Source: Strategic Membership Solutions (SMS) is Australasia's leading consultancy specialising in sponsorship, membership and training for associations, charities and other not-for-profits.

# How are you innovating your business?

## Traveling across the country visiting our members has allowed me to better learn about your business operations and strategies.

I've been impressed with the degree of on-site innovations – which clearly aren't as uncommon as perceived to be! But, what I can say is we still have work to do in making innovation part of our daily operations versus something that just happens.

### The current state of play

Heavy engineering is perceived as a 'traditional and low – medium tech industry,' with undertones of being rigid and slow to adapt. In a world that is rapidly changing and increasingly embracing technology to achieve efficiencies, it's easy to see that such perceptions are damaging.

During my visits I found many of our SME membership displayed a mind-set that they're limited in their ability to carry out in-house innovation. Core challenges being finance, a lack of resources, and an operational strategy set on meeting daily deliverables rather than future growth. While understandable, we need only look to last year's closure of A&G Price and Amtec to see what happens to even well-established companies that fail to innovate.

### Business innovation is key

At HERA, we believe the first and most important step for our members is to understand that there is a need to continuously innovate. Followed by a commitment to graft it into business strategies as a priority.

Simply put, it's about changing any aspect of your business to get greater value from it. That may range from adopting a lean business model for greater operational efficiency to inventing a new product for a niche market to increase sales.

There is actually many examples seen across our membership doing just this. Be it creating a new geothermal well assessment tool, a business model for leasing boilers, a rotary steam engine prototype or a desktop 3D printer try out. For these companies the innovation engine hasn't run dry and they'll attest it's because they want to thrive in their market space.

### Three simple steps to innovation success

Listen to potential and existing clients. Responding positively is a risk worth taking and most times ends in great results. Where it doesn't impact the target customer, it often

generates a new customer segment because a working example is worth much more than a product customers can't see!

Take a leap of faith. It's a difficult conundrum because innovation asks us to pave roads that don't exist – but it's necessary for success. This isn't about taking crazy risks, rather informed ones backed by research and expertise.

### How can HERA help?

I've seen a lot of resilience in our members visited so far. And I appreciate that there's general acknowledgment for innovation out there, but that many are time-pressed to execute it. To this I say: consider taking even one step towards thinking about innovation.

One way to do this is meet HERA representatives if given an opportunity or attend innovation courses. That's why we're focused on hosting such an event later this year to assist our members in this space. We're also developing a business research program which addresses many of the barriers stopping companies from implementing innovation strategies in their business. And from a funding perspective, Callaghan Innovation is a means to explore.

### If you want to thrive... innovate.

If you'd like to know more about how to innovate in your business, or are interested about our innovation course or business research program, please contact our General Manager Industry Development Dr Boaz Habib at [boaz.habib@hera.org.nz](mailto:boaz.habib@hera.org.nz).

We'd also love to hear your innovation stories. If you're open to sharing them, please contact our Manager Marketing & Communications Kim Nugent at [kim.nugent@hera.org.nz](mailto:kim.nugent@hera.org.nz)

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# People

## IWE qualified and ready to deliver value to our members!

### Having spent the last 14 weeks cramped behind a school desk in Germany, join our Research Engineer Holger Heinzl he shares his experience.

After some intensive study I now join the ranks of our General Manager Welding Centre Dr Michail Karpenko and Director Emeritus Dr Wolfgang Scholz who are amongst only a handful of people in New Zealand with this IWE qualification.

Held at the Welding Research and Education Institute (SLV) in Munich, the course covered welding materials and processes in detail. It provides a solid understanding of the engineering process required to achieve reliable and cost-effective welded connections.

Their skills I'm certainly excited to put to practice by assisting our local fabricators in their quest to succeed.

#### My welding career pathway

While working on various research projects at HERA – most recently AGGAT, I've always been closely related to the activities of our Welding Centre. So, when the opportunity came up last year to join this team, I was pleased to take-up the offer! However, having graduated as a mechanical engineer from the University of Stuttgart a while back, I knew my knowledge of welding needed a bit of a shakeup to fulfill the high demands of the role.

Based on the positive experiences of Wolfgang and Michail within the German education system and my own family links there, I was fortunate enough to attend the full-time SLV course. It's underwritten by the International Institute of Welding (IIW) – the same organisation that endorses our own welding supervisor and inspector qualifications here at HERA.

This level of qualification is required by many international standards as a mandatory key piece of a welding fabricator's quality assurance system such as ISO 14371, ISO 3834, EN 1090, and European Pressure Equipment Directive 2014/68/



EU. So not surprisingly, I was one of about 25 other budding welding engineers taking this journey. Where we were taught everything there is to know about the art of welding.

With written exams taking place every two to three weeks there wasn't much time left to take in the attractions of the city. After the final oral exam, winter had come and snow was covering the South of Germany. Making a perfect setting for a glass of hot mulled wine at a Christmas market to celebrate a job well-done! Now that I'm back, I'm looking forward to bringing this technical expertise to our metals-industry to better inform projects.

#### How does this help our membership?

At HERA, we believe keeping our team up to date with the latest in welding techniques, standards and quality assurance programs is essential, especially when it comes to upskilling our next generation of welding professionals.

Our General Manager Welding Centre, Michail Karpenko, noting Holger has worked extremely hard on his training.

"Holger's spent a long time away from his family and studied hard for this intensive program."

"It's a real credit to his determination and commitment to service our industry, and I know he's keen to start applying what he's learnt while it's fresh in his mind!" he said.

#### Put these newly gained skills to use!

Holger can't wait to turn theory into practice, share his experiences about the Welding Engineering diploma, and pass on his knowledge at our welding supervisor and inspector courses. If you'd like to know more about any of these contact him at [holger.heinzl@hera.org.nz](mailto:holger.heinzl@hera.org.nz)

# HERA sponsors STESSA18 to drive understanding in steel structure seismic performance

**Ensuring we build on our seismic research capabilities has never been more important to us. Which is why sponsoring STESSA18 made sense.**

To represent our commitment, we were proud to have our General Manager Welding Centre Michail Karpenko, Finite Element Analyst Nandor Mago and HERA Foundation Scholarship Recipient Hafez Taheri attend the STESSA18 – SCNZ conference in Christchurch last week.

Attended by approximately 150 representatives from across 20 countries it was a fantastic opportunity to gain exposure to the latest research and seismic applications under the theme ‘behaviour of steel structures in seismic areas.’

To cover the diverse range of papers being showcased from around the world, three streams were run simultaneously. Covering topics from performance based design through to behaviour of connections, numerical modelling, passive control, buckling restraint braces and more.

Its ability to attract top tier specialists from around the world working in steel structures provided a great forum to inspire delegates both nationally and abroad and to showcase New Zealand case studies in design and construction.

As part of our sponsorship Michail spoke in the opening sessions. Giving an overview of our steel research role. Later, also presenting on his own technical paper on the seismic requirements for the welding and inspection of the k area in hot rolled products to AS/NZS 3679. Day one also saw Nandor present. Sharing his expertise on his FEA works on eccentrically braced frames with removable links. Both presentations gave us an important opportunity to talk to our research in informing seismic performance of our steel structures.

Reflecting on the conference Nandor said “The keynote speeches were exceptionally good and well-tailored to the conference topic and current pressing issues.”

“I particularly enjoyed the Steltech sponsored technical walking tour which showed the practical application of seismic research, design and strengthening in the central business district.”

HERA Foundation Scholar Hafez also presented on seismic tests of welded moment resisting connections made of

laser-welded stainless steel sections. Discussing his latest findings from several experimental tests.

“Meeting experts face to face and being given the chance to experience this unique combination of networking and advanced learning for my personal development is something I’m very grateful for,” he said.

## Author

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From top: STESSA conference | Our GM Welding Centre Dr Michail Karpenko in opening session | Key note speakers Prof. Greg MacRae & Prof. Charles Clifton | Our Finite Element Analyst Nandor Mago

# #SocialStreamFeb

**NZHERA @NZHERA · Feb 2** ▼  
 Great to have our team at #SS18 in Perth! In particular we're excited to have our @shicks0 be a keynote speaker & #jingcao present on his works. They'll be sharing our research works towards helping our members remain competitive in a global market! goo.gl/bqqBJs



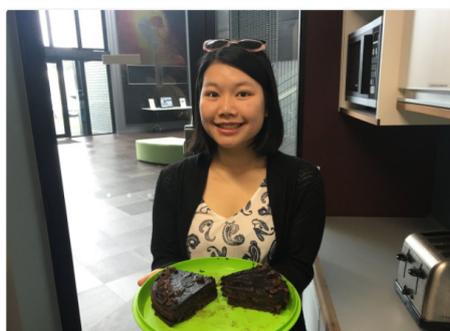
**NZHERA @NZHERA · Feb 8** ▼  
 Great to have our CEO Troy Coyle & GM Welding Centre Michail Karpenko over in Australia to attend joint strategic planning with #WTIA - we're keen to foster future collaborations in #research #standards & #advocacy for our NZ metals industry & members!



**NZHERA @NZHERA · Feb 13**  
 Our CEO #TroyCoyle & Director Emeritus @WolfgangScholz1 have been in Wellington today attending the announcement of the #PMscienceprizes - bumping in to Peter Barrowclough from @LincolnAgritech & fellow member of #IRANZ while there!



**NZHERA @NZHERA · Feb 20** ▼  
 Today we wanted to recognise the great work our student intern Bethany Low delivered while here. She's been integral in our works to streamline our membership database & transition our publications to our new digital platform. We also adored her farewell! #vegan #chocolatecake



**NZHERA @NZHERA · Feb 22** ▼  
 Great to have our GM Structural Steel @shicks0 re-elected to serve on the #SESOC Management Committee for another year! It's a great opportunity for us to deliver value to our members & connect to industry movements. #StructuralEngineering #



**NZHERA @NZHERA · Feb 23** ▼  
 Yesterday our Welding Centre panel approved a number of projects for the coming year in line with our strategic plans & hopes to support our membership. We also proudly awarded Phil Stacey from #FitroyEngineering his IIW #Welding #inspector diplomas - rounding off a great day!



**NZHERA @NZHERA · 4h** ▼  
 Our @BoazHabib is in Wellington meeting up with key stakeholders. Top left: @MarineEnergyNZ Chair's Charlotte & Simon. Top right: member company visit to RealSteel. Bottom left: visiting @callaghannz 3D printing facility. Bottom right: catch up with Former GM INDEV Nick Inskip



# Notices

## Clinker plant member opportunity - ripe for exploring

### HERA is well known for our research collaborations but maybe not so well for our role as a catalyst for collaboration amongst our members.

This is supported by our **"About us"** page on our website which states "HERA creates value through collaboration and being the industry stimulus for research, innovation and development. Delivering a trusted national centre for design, manufacturing technology and quality assurance." It's a role we take very seriously as a member driven association.

That's why I'm happy to share the news that I was given the opportunity to meet with New Zealand Trade and Enterprise (NZTE) and Boral in Sydney on 22 February 2018. The meeting's purpose is to discuss NZ participation in construction of a clinker plant in Geelong.

I've worked with Boral previously, with my Page Macrae hat on. This time, I was wearing my HERA one to promote our member companies' capabilities more broadly which I hope will lead to greater collaboration between our member companies and Australian firms too.

#### Clinker plant project in a snapshot

Boral has applied to the Australian Environment Protection Authority for works approval to build a new clinker (rough part-made cement) grinding facility at North Shore, Geelong. The plant will produce up to 1.3 million tonnes each year. Clinker will be unloaded from ships and delivered to the site via covered belt conveyors from Lascelles Wharf.

The plant will also include the following facilities and equipment:

- Gypsum storage
- Limestone storage
- Slag storage
- Hoppers
- Dosing bins
- Conveyors

- Bucket elevator
- Dust collection
- Slag dryer system
- Screw conveyor
- Ball milling 3800- 4500kw (100tph cement production)
- Grinding circuit
- Filters
- Enclosed conveyors
- Dust mitigation and/or filtration systems built into the clinker grinding technology
- Water re-circulation
- Truck washdown area
- Rolls press
- Water treatment and fire storage tanks
- 6 x 3500 tonne loadout silos

#### What does this mean for our membership?

It's a substantial project – with a lot of opportunity and scope for the successful bidder/s. HERA members have internationally competitive capabilities.

**“But if we're to win work on a global stage we need to work together to present a compelling offer to large project owners.**

That's why I was proud to providing confidence to the Boral Project Manager that our member companies have the right skills and capabilities to deliver some of the key components for this project - particularly in fabricated components. I hope to share an update on how the trip went - so stay tuned.

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## Our website is finally over the line!

I'm excited to let you know that HERA's new website [www.hera.org.nz](http://www.hera.org.nz) is live – and full of content aimed at addressing the areas you've voiced an interest in.

It's a key milestone in our mission to deliver you more value – and we believe it'll provide a user friendly platform that you can rely on for the latest in:

- **HERA & industry news,**
- **Our thoughts,**
- **Innovations,**
- **People and their expertise,**
- **Industry projects, and**
- **Notices, updates & opportunities.**

This was all sparked by your valuable feedback which told us we had to rethink the way we delivered information. And, while there is still work to do - we hope you'll enjoy our new look and feel, as well as our more genuine and conversational approach to connect with you.

Our next step will be to deliver the 'members' only' section of our website. This will look to achieve a greater engagement level between industry so collaboratively we can strengthen our ability to advocate for steel and compete on a global stage. This will also look to show case your capabilities and better connect you with our library resources by transforming this offering to the digital space.

### How can I help you?

Within my new role as Manager Marketing and Communications – I'm focused on making positive changes for the better of our industry. That's why I'd love to hear your feedback on our new website – particularly if there is room for improvement!

I also envision this new website as a collaborative space that enables you to have a greater voice. Which is why I'd also like to encourage anyone with an interest to showcase their projects, latest innovations, industry thoughts or similar to get in touch with me. It's a great opportunity to reach not only our industry, but our external audience as well – so seize it!

### Author

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## Call for interest: KOTRA subsidised business trip to Korea

**If you're interested in exploring the purchase of new manufacturing technology for your business – this should interest you.**

Through our international connections with the Korea Trade Commission (KOTRA) our members have been offered the opportunity to apply for a subsidised trip to Gwangju, South Korea to attend the International Technology Exhibition being held 25-27 April 2018.

Attendees will be exposed to the latest technology in welding, materials technology, heat & surface treatment and more. You'll also learn how the latest trends in smart factories and Industry 4.0 are impacting Korean companies. Giving you valuable insight into what the future of our industry in New Zealand may look like and how we can prepare for these disruptions.



### The KOTRA offer

As an interested buyer, you'll need to submit an application to attend under this subsidised program. If successful, KOTRA will cover 50% of your airfare (economy class, up to a value of US \$650 – returned at end of the event). As well as complimentary domestic transfers once in Korea and three nights' accommodation including breakfast.

In return, you'll have to attend compulsory one on one business meetings on 25 and 26 April.

**For more information, please contact the Korea Trade Commission – Auckland Marketing & Investment Team Leader, Kelly Kim on [kelly@kotra.or.kr](mailto:kelly@kotra.or.kr)**

**Applications close 30 March.**

# We're on a quest to find our new Information Officer!

## Do you know someone suitable to take the lead as we transition to a digital environment for our resources?

The role is diverse, calling for skills in cataloging and acquisitions, knowledge management, interloans, sale of publications, customer service and editorial work, and occasionally front desk and event management.

Tasks include taking charge of managing our in-house library catalogue by describing, classifying and organising resources according to international standards, national consortia and the Library Management System (LMS).

It'll require the successful candidate to build good subject knowledge of the collection, as well as take control of our online library service upload and management as well.

Assisting with sourcing and acquisition, processing accounts, and filling resource gaps identified. We'll need their keen mind and eye for detail to provide research support to our staff who'll rely on them to seek out information for their work. This will also require administrative assistance including proofreading, document formatting and printing. As such, strong MS Word skills are important for this role.

Reporting to our CEO and Member Services & Support Manager, it's a full-time position (37.5 hours/ week).

### To secure this role they'll need:

- Past library experience
- Strong knowledge of MS Office and relevant library software
- Sound customer service and communication skills
- An ability to work both effectively within a team and unsupervised
- Problem solving skills and attention to detail
- Legal status for employment in New Zealand

And while not a must – we'd be interested to field applications from those with a background or training in health & safety and/or skills in Adobe software such as InDesign.

### Interested candidates should apply by:

Sending their CV to [brian.low@hera.org.nz](mailto:brian.low@hera.org.nz) before **8 March 2018**. From here, shortlisted candidates will be contacted.

# Resources so you can learn more, see more, and succeed more.

NZHERA @NZHERA · Feb 9

Our Manager Industry Development @BoazHabib is focused on helping our members understand the importance of #innovation & #Industry40 in their manufacturing businesses. And the upcoming @AucklandUni #TechTuesday is a great way to find out more! Book now. [goo.gl/QhP8uT](http://goo.gl/QhP8uT)



NZHERA @NZHERA · Feb 13

We'd like to let our members know about #AIM2018 - an international conference on advanced intelligent #mechatronics being held in Auckland, 9-12 July. If this is of interest to your business consider attending! @AucklandUni [goo.gl/EGcCVq](http://goo.gl/EGcCVq)



Welcome to IEEE/ASME AIM 2018!

NZHERA @NZHERA · Feb 13

This is a great read from @theNZstory we recommend our members have a look at. Particularly if you're trying to break into the Japanese export market! It's certainly food for thought when it comes to how you position yourself. [goo.gl/VAz8pK](http://goo.gl/VAz8pK)



# Events

## Welding qualification standard ISO 9606.1:2012 now adopted as AS/NZS ISO 9606.1:2017

### The publication of AS/NZS ISO 9606.1:2017 Qualification testing of welders – Fusion welding – Part 1: Steels is seen as a move towards international best practice.

And is a standard of significance, because it forms the basis of the next revision of AS/NZS 2980 expected to be published late February.

For the many users of AS/NZS 2980:2007 it'll mean changes when it comes to their certificate renewals. Existing qualifications to the 2007 edition will remain current until the end of its period of validity and then will have to be "revalidated" according to the range of qualification provided in the 2018 edition. Note that the term "revalidation" (the requalification or extension of the certificate when it's up for renewal) replaces the term "prolongation".

#### Options for revalidation now include:

1. Retesting every 3 years i.e. the welding of another test plate.
2. Every 2 years revalidation for a further 2 years is possible where there are records of two tests by radiographic or ultra-sonic testing on the welder's production welds in the previous 6 months.

#### AS/NZS ISO 9606.1:2017 includes a provision not available in AS/NZS 2980:2007 that allows the certificate to remain valid indefinitely provided that:

- the welder is working for the same manufacturer (fabricator) who confirms the certificate every 6 months,
- the manufacturer (fabricator) has a verified ISO 3834 quality programme,
- the manufacturer (fabricator) documents that the welder has produced compliant welds based on the NDT reports.

Qualifying welders to AS/NZS ISO 9606.1 can offer advantages to fabricators and welders as it's referenced in AS/NZS 1554.1, AS/NZS 3992, ASME, EN and other standards. While AS/NZS 2980 is a structural welding standard, AS/NZS ISO 9606.1 is applicable to a wider range of work including for example pressure equipment and the marine industry. That's why we believe AS/NZS ISO 9606.1 should become a first choice qualification for welders in New Zealand.



### Spaces in seminar available.

Attend our upcoming seminar to improve your understanding of these key welding standards!

Book at [www.hera.org.nz/events/](http://www.hera.org.nz/events/)

We're holding Welding Standards Update Seminar's across New Zealand to give you greater insight into how you can utilise standards to your advantage in your design, fabrication or inspection activities.

#### Covering:

- AS/NZS 5131 – the overarching structural steelwork standard for fabrication and erection
- AS/NZS 1554.1 – our most widely specified structural welding standard
- AS/NZS 2980:2018 – welder qualification standard superseding the 2007 edition
- AS/NZS ISO 9606.1 – now the basis of AS/NZS 2980:2018

The seminar allows you to directly tap into the expertise of our HERA staff who are actively involved in the process of developing and revising AS/NZS welding standards, and their effective implementation in fabrication/welding quality management systems.

#### Dates

- Auckland - 27 March, 1245pm - 430pm
- Hamilton - 28 March, 1245pm - 430pm
- Christchurch - 4 April, 1245pm - 430pm
- Queenstown - 5 April, 10am - 230pm
- New Plymouth - 11 April, 8am - 12pm
- Palmerston North - 12 April, 10am - 230pm

## 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 March!

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 March:

- Auckland - 5 to 9 March, full day
- Christchurch - 19 to 23 March, full day

Book at [www.hera.org.nz/events/](http://www.hera.org.nz/events/)



## Free - next generation PMI using LIBS technology workshop!

### If you want to learn more about Laser Induced Breakdown Spectroscopy (LIBS) then this is the workshop for you!

This workshop is designed to allow you to learn how the technology works to positively identify metals and materials, it's similarities to Spark OES and traditional techniques, and strategies to ensure the highest levels of accuracy.

You can even bring in your own samples to try on the day!



#### What is LIBS?

LIBS is a new technique that allows engineers and technicians to determine accurately and comprehensively the chemical composition of anything from metals and alloys to soils and geological samples.

It's the only field portable technique that enables you to measure the entire periodic table including light elements (Li, Be, Mg, Al etc.) as well as carbon allowing you to distinguish low carbon stainless steel from their higher carbon relatives e.g. 316L from 316 stainless steel.

#### RSVP to attend today!

The workshop is being held **Friday 9 March from 1pm to 330pm at HERA House, 17-19 Gladding Place, Manukau.**

RSVP by sending an email to [seminars@axt.com.au](mailto:seminars@axt.com.au).

More information is available at [www.hera.org.nz/events/](http://www.hera.org.nz/events/)

# H&S + Environment

## HERA is committed to placing health, safety and environment as a key priority in 2018.

**And to support this stance, we've decided to highlight a key theme each month that our staff can take steps to address. Perhaps inspiring you along the way.**

It's only early days yet, but the key point is that we're taking positive steps in the right direction to make sure we lead by example for our team and you as our members.

Last month was all about recycling and the conscious choices we can make to reduce our footprint. Introducing a 'food waste' bin to our staff room and brainstorming ideas on where we can choose products that have less wastage attached.

### February has been all about ergonomics.

No matter the size of your business, safety should be seen as part of your company value versus 'a task to do' - and so too ergonomics.

I know many people deem this type of safety as wishy and not applicable to them. But actually, if you scratch deeper you'll find ergonomics is the key to making your job easier, and your workforce safer.

It's a relatively new branch of science - based on research carried out across engineering, physiology and psychology. Originating in America during World War II, scientists became aware that their advanced new systems and products weren't working because they hadn't taken into account human and environmental factors.

Fast forward to today, and ergonomics plays a key role in the way in which a person 'fits' their job or interacts with their work. It's aim - to achieve the best match between tasks, equipment, information, environment and worker to minimise risk of accident or injury, improve productivity and overall reduce compensation costs.

### Where does ergonomics come into play?

What ever your role - whether desk bound, working in the workshop, driver or other - your comfort level within your workspace is vital.

An ergonomic assessment should be considered to avoid issues such back injury, repetitive strain injury or even stress.

This can be done via quantitative risk assessments to general observations and interviews. Consider the tasks being carried out, any current discomfort experienced, a review of your injury statistics to see if there are any trends and assessment of attendance records and staff turnover to identify any workplace dissatisfaction. .

### Simple changes you can make

Ergonomics isn't rocket science. Optimising the work environment could come down to simply:

- encouraging staff to stand, walk around, or stretch if they've been sat at their desk for a period of time,
- locating switches and buttons in accessible places
- Implement appropriate controls and teach staff in areas like correct posture, stance, lifting techniques or safety using computers
- reduce repetitive or prolonged actions by replacing mechanical tools with automated, electric or speciality tools. Break work into smaller segments, rotate workers and vary tasks during a shift.
- correct lighting to avoid eye strain, and
- create a work environment where your staff feel comfortable about raising any safety issues when it comes to their ability to work in their environment





HERA House, 17-19 Gladding Place  
PO Box 76-134 Manukau, Auckland 2241  
New Zealand

[www.hera.org.nz](http://www.hera.org.nz)