Future Forward

Smarter systems.
Sustainable Design.
Connected industry.

2025

ANNUAL REPORT | HERA | PŪRONGO Ā-TAU

Mihi

Kia hiwa rā, kia hiwa rā, e āku whatukura, e āku māreikura, anei ngā kōrero a te tira o HERA me te kī: Tūrangawaewae, mō te ao katoa, auatanga hei whakapīkia te rangatiratanga, anei ngā kai a ngā pūkenga, kia noho kotahi i ngā mātauranga e whātoro atu i ngā māngai, i ngā ringa e hiahia ana.
Mā koutou, mā tātou ēnei kōrero, hīnana ki uta, hīnana ki tai, kia tau!

Be alert, be alert, noble men and women: These are the words and aspirations of the HERA collective. They are a foundation and signify a rightful place where HERA provides for innovation, and the spirit of ingenuity that defines our work and strengthens leadership and authority. Here are the contributions of those with deep technical expertise, professionalism, and mastery of heavy engineering, united through shared knowledge. The report speaks not of one, but of many, working together in pursuit of a shared vision.

These words are for you, for everyone, rising from the land, rising from the tides, a statement of where we've been, and a guide to where we're going.
May they settle with purpose.

Whakamihi

HERA would like to acknowledge Diane Menzies (Rongowhakaata, Aitanga a Māhaki) for the koha (gift) of our mihi in this annual report. Diane contributes to HERA's Industry 4.0 kaupapa through her role in the Knowledge Transfer rōpū within our Endeavour Funded research programme, the Ngākopa Construction 4.0 hub. We are grateful for her thoughtful guidance and support.

Throughout this report, we have used te reo Māori intentionally – guided by the Waikato-Tainui meta (dialect) to honour our location in the rohe of Manukau, Tāmaki Makaurau (Auckland). This reflects our ongoing commitment to Vision Mātauranga and our aspiration to embed te ao Māori in meaningful and respectful ways across our mahi (work).

This report includes contributions drafted or supported using generative AI tools under the direction of our communications team. All content has been reviewed, edited, and approved by the relevant subject matter experts and contributors, with Māori content guided by our advisors and partners in alignment with Māori Data Sovereignty. The use of AI is part of our ongoing exploration of digital tools to enhance clarity, efficiency, and inclusivity in our communications.

Content

4.0 Our Foundation

People, Purpose, Foundation for progress.

Mā mua ka kite a muri, mā muri ka ora a mua.
Those who lead give sight to those who follow, those who follow give life to those who lead.

Our foundation is impact- led research; where strategy meets people. It's the place where bold ideas are backed by action, and where leadership is grounded in collective strength. From our Board and CEO to our kaimahi (employees), collaborators and research whānau (family) - our people, priorities and impact-led research shapes a smarter, more sustainable future for heavy engineering in construction and manufacturing.

4.0 Our Formula

Strategy, Action, Formula for success.

Matakitenga | Vision

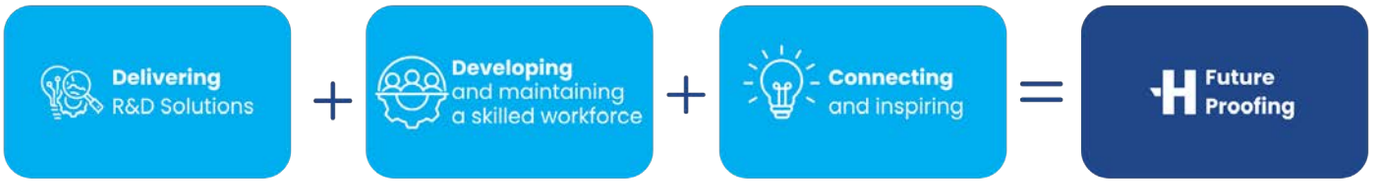
Securing tomorrow's industry by innovating today.

Ko te haumaru i te ahumahi ō āpōpō, mā te whakaauaha ināianei tonu.
Realising tomorrow's potential requires meaningful inspiration and education today. With pragmatic, forward-thinking rangahau (research) and valuable training we deliver world-leading insight and results.

Whakatakanga | Mission

To build a passionate tribe of metalminds who innovate successfully.

Whakatipu i tetahi kāhui ihomatua maitai e autaia nei ki te whakaauaha
We want to empower and inspire the smart thinking of Aotearoa New Zealand's heavy engineering, construction, and manufacturing sectors.
Aotearoa is a relatively small place with exponentially huge potential. We will continue to stoke passion and forge whanaungatanga (connections), ensuring this potential can be realised by a heavy engineering industry that is innovative, collaborative, and at all times effective.



Putting it all into action: Casting our eyes to the future to forge a path.

Ko tā mātou tātai angitū.

By delivering innovative R&D solutions and developing and maintaining a skilled workforce we connect, inspire, and future-proof Aotearoa.

This means our members are supported in technical excellence and knowledge transfer, have the right skills for their needs, and are a community engaged and united.

4.0 Voices at The Forefront

Focus, Impact,The Forefront of Innovation

Troy Cole
CEO

Craig Stevenson
HERA Chair

FY2025 was a year of resilience, innovation, and strategic progress for both HERA and the broader industry.

Despite the challenges posed by declining steel demand due to a slowdown in construction activity, HERA remained steadfast in its commitment to delivering industry-led solutions. Our forward-thinking approach to diversifying income streams and expanding levy revenue enabled us to not only meet our yearly objectives but also embark on groundbreaking new initiatives that will shape the future of our industry.

A Vision for the Future

Throughout FY2025, we stayed focused on delivering high-impact research and development projects prioritised by our expert panels in welding and steel innovation. Among the key achievements:

Low-Carbon Circular Design Guidance
we launched comprehensive guidance for low-rise buildings, partially supported by the Building Research Levy administered by BRANZ, setting a new benchmark for sustainable construction.

Seismic resilience advancements
our Seismic Research Programme introduced new weld sizing criteria for seismic allocations, significantly improving the efficiency and resilience of welded connections. These recommendations are now included in the draft NZS 3404:2024.

Railway bridge standardisation
in a pioneering collaboration with KiwiRail, AUT, the University of Regensburg, and the University of Michigan, we initiated a major research program to optimize and standardise Aotearoa New Zealand's railway bridges. This initiative leverages digital twins, excitation frequency simulations, and advanced fatigue analysis to enhance long-term performance.

Automation & robotics readiness
partnering with the Australian Centre for Robotics, we assessed technical barriers to automation across seven member companies as part of the Australian Composite Manufacturing Projects (ACM CRC).

AI & Compliance Innovation
we are pursuing a number of research projects in this area, and are currently exploring patenting of this research so cannot yet publish too much information; and

Sustainable steel solutions
our "How to Specify Low-Carbon Structural Steel" guidance was launched, equipping the industry with the knowledge to make informed, environmentally responsible material choices.

Financial Performance: A Sustainable Growth Strategy

While steel volumes saw a significant downturn, HERA's strategic foresight ensured we remained on course. By prudently building financial reserves, we sustained full project delivery while preparing for the launch of the Innovation Centre in FY26. The previous levy increase from $10/t to $20/t, coupled with diversified income from training, grants, and consulting, played a crucial role in maintaining financial stability and ensuring continued investment in our industry's future.

Strengthening Our Team

Investing in talent is key to driving industry transformation. In FY2025, we welcomed Conn Roux as Senior Welding Engineer. With over 13 years of experience and multiple international certifications, Conn brings deep expertise in welding optimisation, quality assurance, and

technical training. His leadership in innovation and efficiency will enhance our certification, training, and advisory services.

CEO Outlook

Training

Focus on developing new training focus for structural systems team.

Sustainability beyond carbon

Expanding beyond low-carbon design, we will integrate cost assessments and planetary accounting frameworks to evaluate the broader environmental impact of design choices. Further development of the Circular Design 4.0 objective of HERA's Endeavour project will be undertaken to integrate structural optimisation work with the multi-design making tool and the library of standard connection details. We will also commence our building research levy supported project to develop a digital steel passport. This will include a traceability project being conducted through the Building 4.0 CRC in Australia. It will also connect to the circular design project by exploring the link between the digital design passport and the digital library of connection standards for circular design.

Strengthening SFC support

We continue to work alongside SCNZ and HERA Cert to expand the auditing requirements of the Steel Fabrication Certification (SFC) scheme, ensuring enhanced industry standards.

Next-generation training

The structural systems team will introduce new training programs, including a modernised version of the highly requested DCBs guidelines.

Structural fire engineering

In partnership with the University of Canterbury, we are advancing research in this critical area while exploring further growth opportunities. This will include a focus on structural fire experimental research, including use of the newly built fire testing facility at BRANZ. We will also explore further development of structural fire and seismic optimisation of circular design systems. We will also investigate structural fire (as well as seismic, constructability and affordability) of steel-timber hybrid flooring systems.

Structural health monitoring and digital twin

Preparations are underway for Tabs4.0Lab, a cornerstone of the HERA Foundation's Innovation Centre. Investments in real-time sensing technologies and analytical tools are already in motion. We will start to investigate the application of Holistic System Analysis using digital twins to optimise steel structures subject to high-cycle fatigue for optimal service life, resilience, inspections, and sustainability- in preparation for the Innovation Centre build (this will be a multi-year process).

Global collaboration

Strengthening ties with leading international experts remains a key priority, ensuring we remain at the cutting edge of industry advancement.

Design guides and tools

We are aiming to develop structural fire performance-based design, further develop FaST software (Fire Engineering design tool), and windows executive composite design software.

Innovation Centre: A 6-Star Green Star Build

Approved before COVID-19, this project is now set to proceed. Scheduled for completion in FY27,
it will be a hub for Construction 4.0 services, showcasing smart, sustainable, and digitally enabled construction technologies.

Ngā mihi to our tribe of engaged metalminds that continued to support us through FY25.

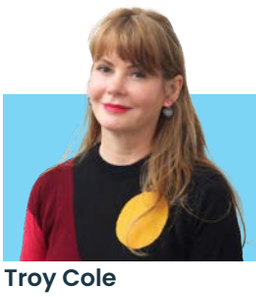
Craig Stevenson, HERA Chair

Troy Cole, CEO

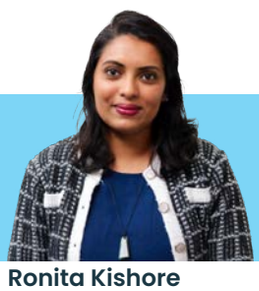
4.0 Our Force

Skilled minds, Bold ideas, A force for change.

Meet our team - the 4.0rce behind HERA!
We're a rōpu of sharp thinkers, skilled specialists, and passionate changemakers shaping the future of Aotearoa New Zealand's heavy engineering industry with impact-led research and outputs.



Troy Cole
CEO



Ronita Kishore
Finance Manager

Kim Nugent
GM Comms 4.0

Aayuush Bhalla
ICT Manager

Rebecca van Eyysen
Manager Customer Experience

Caitlin Symonds
Digital Experience Coordinator

Kaveh Andisheh
GM Structural Systems

Mayank Shrivastava
Senior Structural Fire Engineer

Maryam Hasanali
Structural Research Engineer

Nándor Magó
Finite Element Analyst

Patrick Fenemor
Senior Welding Engineer

Michail Karpenko
GM Fabrication 4.0 | Welding Centre

Hafez Taheri
Lead Research Engineer

Özgür Erdem
Senior Welding Engineer

Volkan Yakut
Principal Welding Engineer

Alan McClintock
Senior Welding Engineer

Conn Roux
Senior Welding Engineer

We acknowledge the following *kaimahi* (workers) who left during FY25

Marie-Salomé Duval-Chanéac
Sustainability and Circular Economy Engineer

Robert Ryan
Welding Engineer

4.0 Our Bold Moves

Shared vision, Collective effort, Bold outcomes.

HERA Wins

Seismic Design Breakthrough

New weld sizing recommendations adopted into the draft NZS 3404:2024

Railway Bridge Innovation

Launched major international research to optimise and standardise NZ railway bridges using digital twins, fatigue analysis, and vibration modelling.

Partners: KiwiRail, AUT, University of Michigan, University of Regensburg.

Unlocking Automation Barriers

We assessed **7** NZ companies to identify key technical barriers to robotics and automation

Partner ACM CRC, Australian Centre for Robotics.

Circular thinking in seismic design

progress made in modelling reusable EBFs in construction.

Smart monitoring in action

Implemented real-time structural monitoring for smarter maintenance and asset management in multi-storey buildings.

Impactful Research Published

8 high-impact papers and reports across seismic design, weld performance, additive manufacturing, and standards development released.

Digital tools & design guides
Released 1 digital tool and 4 guides to improve productivity and compliance in structural steel design

Fire safety advancements
Completed first phase of experimental programme, generating key data for resilient fire design.

Knowledge transfer

11 Seminars to 400+ people
Including seismic diaphragm and low-carbon design training across four cities.

7K **Increased engagement**
Followers on LinkedIn and growing

Integration & automation
launched a new CRM system for better UX

New look and feel
launched HERA's new website

Cultural connection
Developed our first brand indentity that intersects with kaupapa Māori

Partners: Construction 4.0 Mātauranga Māori team, HERA, & Maui Studios

New worlds in social
launched the HERA Tiktok account

HERA

4.0 Our Foresight.

Strategic thinkers, Industry-led, Governing with foresight.

Our Board brings clarity, independence, and strategic vision to HERA's Kaupapa (philosophy). Guiding our waka with foresight and experience, they ensure we remain future-focused, impact-led, and grounded in the needs of Aotearoa New Zealand's heavy engineering industry.

Craig Stevenson
HERA Chair
Technical Director Built Environment, Aurecon

Jeremy Smith
HERA Deputy Chair
Head of Product Applications & Development, New Zealand Steel

Brad Luke
Director, Peddlethorp

Brendan Smith
National Manager – Carbon Steel Products
Steel & Tube Ltd

Dave Anderson
HERA Previous Past Chair
Technical Director
John Jones Steel

David Moore
Managing Director
Grayson Engineering Limited

Malcolm Hammond
Managing Director
MJH Engineering

Raed El Sarraf
Technical Principal – Materials & Corrosion
WSP New Zealand

Sally Henderson
Chief Financial Officer
Farra Engineering

Wayne Carson
Managing Director
D&H Steel Construction Ltd

Yvonne Chan Cashmore
Director of External Engagement
Auckland University of Technology

Darren O'Riley
General Manager Steel Construction New Zealand (SCNZ)

We acknowledge the following Board member who served for three months of FY25

4.0 Delivering Solutions

Smart support, Industry support, Knowlege transfer

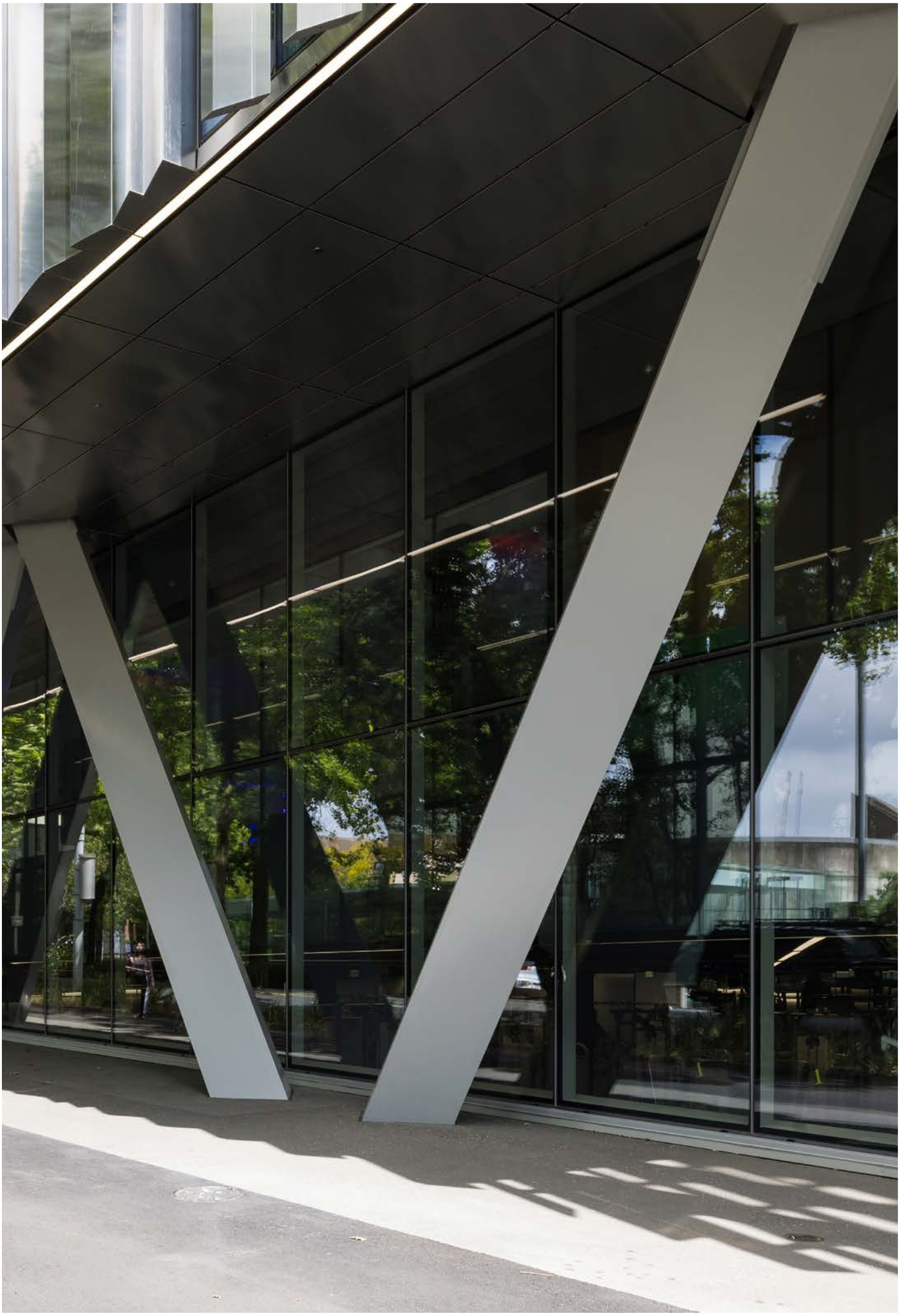
Mā mua ka kite a muri, mā muri ka ora a mua. Mā te rongo, ka mōhio; mā te mōhio, ka mārama; mā te mārama, ka mātau; mā te mātau, ka ora.
Through listening comes knowledge, through knowledge comes understanding, through understanding comes wisdom, through wisdom comes wellbeing.

Delivering solutions is where research meets real-world impact. It's how we turn our technical excellence and bold thinking into tangible tools, frameworks, and guidance for industry. By combining steel expertise, innovation, and knowledge transfer, we're helping the construction and manufacturing sectors move smarter, work cleaner, and build better.

Industry 4.0 & Research

Digital by design, Data-driven, Transforming industry with 4.0 impact.

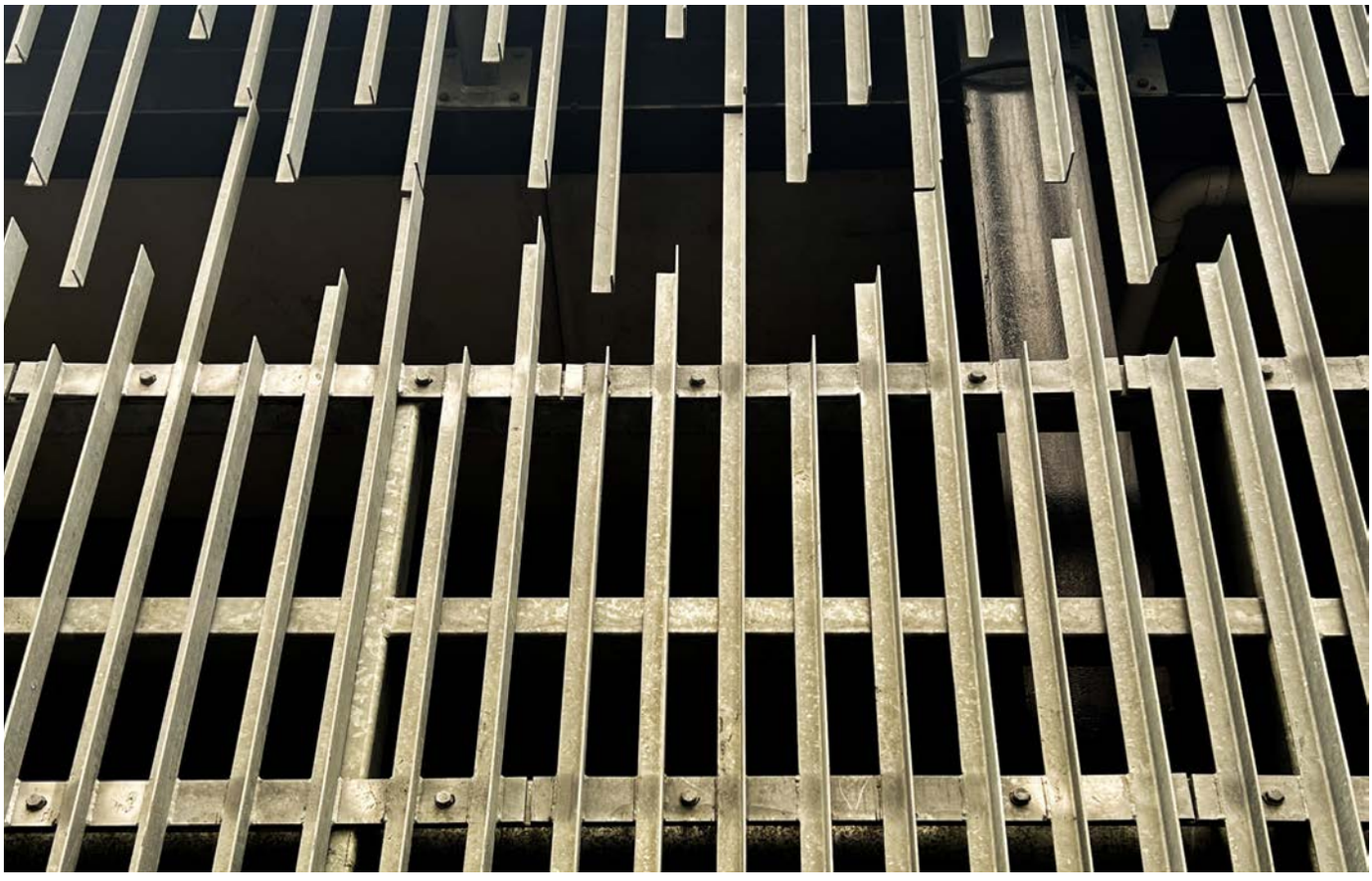
Driven by impact-led research, our mahi ensures that innovation isn't just theoretical — it's practical, measurable, and delivering real-world outcomes for industry. By embedding automation, data connectivity, and digital systems into the heart of Aotearoa New Zealand's construction and manufacturing sectors we enable faster decisions, stronger performance, and smarter ways of working.



Construction 4.0 - Endeavour Research Fund

In FY23 we were proud to announce that we were successful in the prestigious Endeavour Fund 2022 round and awarded close to $10.3m to support a four year Construction 4.0 research project to transform the construction sector in Aotearoa New Zealand using Construction 4.0 approaches. With a focus to improve productivity for the construction sector more broadly, key outcomes include better economic performance, building and infrastructure affordability, and a larger workforce which is more skilled, innovative, and digitally literate.

FY24 saw us solidify connections, direction and approaches. In FY25 our HERA team worked to expand our research capabilities in core areas of circular design and monitoring 4.0 - collaborating with our project partners to inform and interface with the other project themes in data standardisation & connectivity, smart construction, mātauranga Māori, sustainable futures, technology transfer and emerging technologies.



Monitoring 4.0

Monitoring 4.0 integrates real-time data with advanced numerical modelling to assess structural performance, identify potential damage, and support predictive maintenance. This smart approach significantly improves safety, extends asset life, and reduces maintenance costs by enabling interventions based on actual need rather than fixed schedules. By embedding digital technologies such as IoT-enabled sensors, artificial intelligence, and data analytics into structural systems, we are transforming how buildings and infrastructure are monitored, maintained, and designed.

FY24 saw us solidify connections, direction and approaches. In FY25 our HERA team worked to expand our research capabilities in core areas of circular design and monitoring 4.0 - collaborating with our project partners to inform and interface with the other project themes in data standardisation & connectivity, smart construction, mātauranga Māori, sustainable futures, technology transfer and emerging technologies.

Transforming structural insight

As Aotearoa (New Zealand) transitions towards a more digitally enabled construction sector, we're spearheading innovation through Monitoring 4.0 - an integral part of our Endeavour Research programme that reflects the broader principles of Construction 4.0.

In FY25, we expanded our capability with the acquisition of acceleration sensor technology and launched real-time monitoring on selected multi-storey buildings in high seismic zones. These buildings serve as full-scale case studies to better understand dynamic structural behaviour and validate digital twin models.

This work supports improved seismic performance predictions, robust model updating techniques, and smarter post-disaster assessments - contributing directly to climate resilience and public safety.

Aligned with our strategy, this focus also responds to Government priorities including economic growth, infrastructure resilience, productivity, and workforce development by advancing the field of earthquake engineering and also laying the foundation for a construction industry that is more connected, responsive, and future-ready.

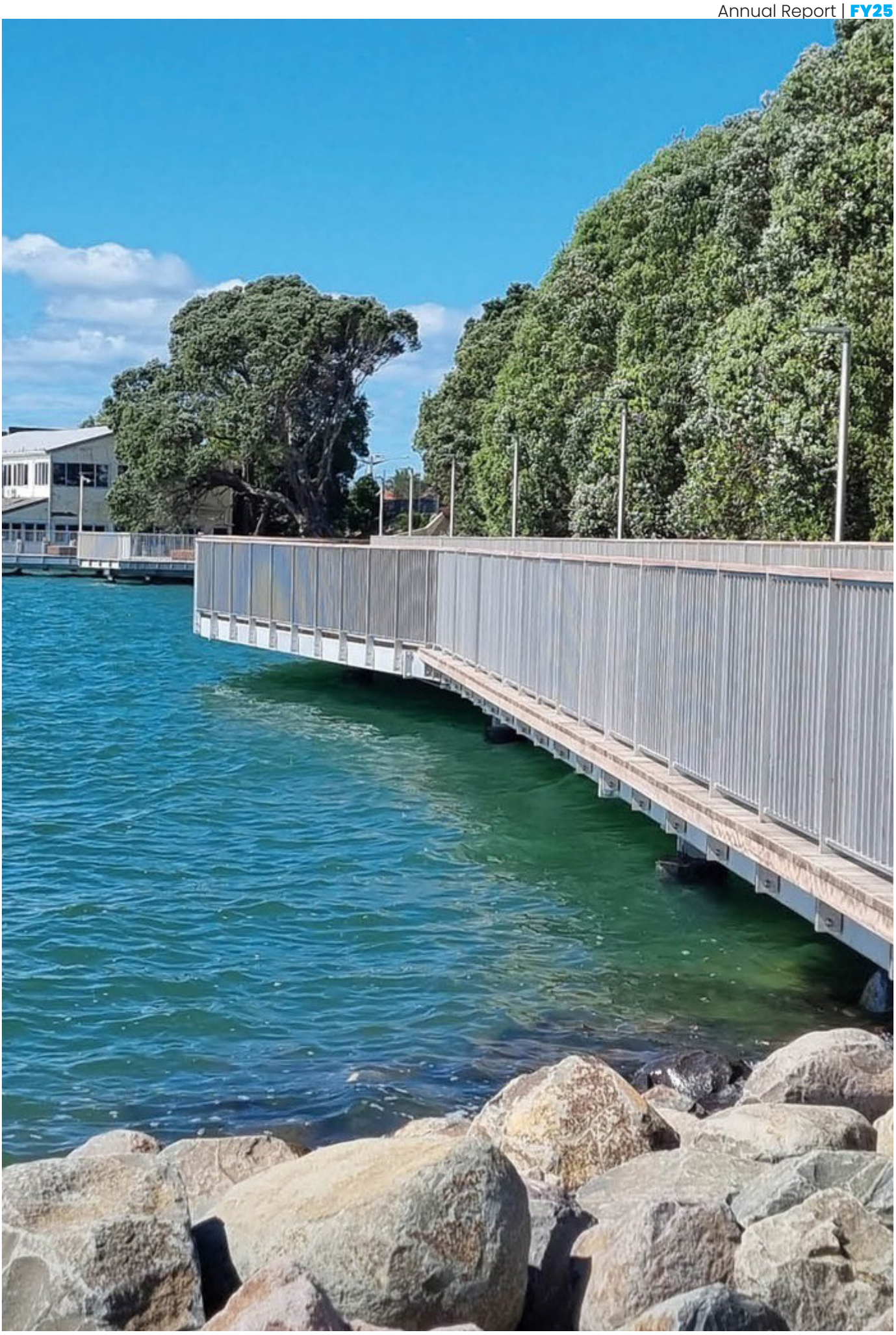
Circular design 4.0

Reusable EBF system

We're progressing the development of a reusable Eccentrically Braced Frame (EBF) system — a low-damage seismic solution designed for disassembly, repair, and reuse. This work supports national goals for resilience, productivity, and emissions reduction by enabling key structural components such as braces and shear links to be repurposed across multiple projects, reducing embodied carbon, waste, and post-earthquake downtime.

Throughout FY25, we've refined critical design details based on preliminary seismic assessments, using optimisation techniques, numerical simulations, and parametric studies to evaluate system performance under lateral loading. This mahi includes an 8-storey EBF test case, which assesses seismic resilience, cost-effectiveness, and environmental impact. A displacement-based seismic design approach is being used to improve performance predictability in high-seismic zones, and a multi-criteria decision-making (MCDM) tool is under development to support sustainability-led design choices, as well as structural fire performance evaluations to ensure the system meets multi-hazard design requirements.

To make circular thinking practical for engineers, we've created a weld sizing framework with user-friendly selection tables and are compiling a demo library of standardised structural connection details. Collectively, these initiatives deliver real-world tools that enable safer, more sustainable, and repeatable designs — supporting the transition to circular construction in Aotearoa.



Take a 4.0 deep dive

Listen to our podcast kōrero.

EP 105 Bridging tech and tikanga | Mātauranga Māori team
Guests: Saul Roberts, Fleur Palmer & Patricia Te Whatu

EP 107 The 'smart' shift in construction | Smart construction team
Guests: Dr Alice Chang-Richards, Dr Yuqian Lu & Dr Yang Zou, University of Auckland

EP 109 The untold story of BIM | Emerging technology team
Guest: Professor Robert Amor, University of Auckland

EP 111 Sustainability 'beyond the build' | Sustainable futures team
Guest: Professor Sarah McLaren, Massey University

Episodes capturing the ideas, people and progress behind Ngākopa Construction 4.0 in FY25.

Explore how Māori knowledge systems and tikanga are being meaningfully integrated into modern construction practice and how embedding Māori values fosters more inclusive built environments.

Explore how Construction 4.0 technologies like BIM, AI, robotics, and VR are transforming Aotearoa's construction sector – with a focus on SMEs, sustainability, and mātauranga Māori.

A deep dive into how digital twins, data standards, and BIM can reduce complexity and streamline construction - helping industry move from fragmentation to clarity.

Explore how dynamic life cycle assessment (LCA) is transforming the way we approach sustainable design and empowering better decisions in the early stages of construction projects.

EP 113 A circular rethink for construction | Circular design team
Guests: Kaveh Andisheh & Michail Karpenko, HERA

EP 114 Wired for data success | Data connectivity & standardisation team
Guest: Professor Xun Xu, University of Auckland

EP 115 Construction's knowledge currency | Technology transfer team
Guest: Professor Kenneth Husted, University of Auckland

EP 117 Real-time insights for safer structures | Monitoring 4.0 team
Guest: Dr Kaveh Andisheh, HERA

Discover how seismic systems and steel construction are being reimagined through reusable components and circular thinking to reduce waste and carbon.

A conversation on the critical role of data connectivity and interoperability in future-ready construction and how digital infrastructure sets the foundation for innovation.

Explore how tech transfer is being reimagined through co-creation, collaboration, and cultural context to help Construction 4.0 tools gain traction across Aotearoa New Zealand's building sector.

Learn how embedded sensors, AI, and real-time data are transforming structural monitoring—making buildings safer, smarter, and more sustainable across Aotearoa.

4.0 Takarangi framework

Cultural grounding, Systems thinking, Innovation with integrity.

At the heart of our Construction 4.0 programme is the Takarangi framework — a mātauranga Māori-informed approach that reimagines innovation through Māori knowledge systems. It provides a values-based guide for weaving together circular design, sustainability, and digital transformation, by centering cultural principles in engineering practice

In focus: Takarangi framework

The Takarangi Framework, being developed by A/Prof Fleur Palmer (Te Rarawa, Te Aupōuri) , is a uniquely Aotearoa response to integrating cultural values, ecological responsibility, and indigenous knowledge into the built environment. Developed as part of the Ngākopa Construction 4.0 research, this framework will serve as a culturally grounded tool for guiding low-carbon, circular construction strategies that honour Māori atua (deities, personification of the natural environment) and protect the mauri (lifeforce) of whenua (land), waterways, and ecosystems.

The diagram takes inspiration from the traditional takarangi spiral, often seen carved into whare whakairo (carved meeting houses) and the prows of waka. It symbolises the cosmological origins of life, with the two interlocking spirals representing Papatūānuku (Earth Mother) and Ranginui (Sky Father), and the spaces between them embodying the emergence from Te Pō (darkness) to Te Ao Mārama (light). Their children – other atua relevant to Construction 4.0 like Tūmatauenga (critical thinking), Tawhirimātea (wind), Tāne Mahuta (forests), and Tangaroa (oceans) – form the connective threads between the spirals, all of whom play critical roles in shaping, influencing, and nurturing the natural world.

Within the Takarangi Framework, the takarangi is not just symbolic. It maps a whakapapa (geneaology) of decision-making where people (māna tangata) are viewed as custodians of the built environment. This includes everyone from designers, planners, and legislators to manufacturers, contractors, and material suppliers – all with a responsibility to understand the cultural and ecological whakapapa of materials, places, and people impacted by construction.

The framework recognises that every structural material, system, and building leaves a trace. Extraction and manufacturing have long-term implications for biodiversity, air and water quality, cultural identity, and the hauora (wellbeing) of iwi, hapū, and future generations. The Takarangi Framework encourages decision-makers to evaluate whether their actions enhance or diminish the mauri of the ecosystems and communities they interact with.

This includes gathering information on the whakapapa of materials, understanding how land use affects mana whenua and atua, and embedding these insights into digital tools like BIM, GIS, LCA, and digital twins.

What sets the Framework apart is its commitment to relationality. By aligning environmental data with whakapapa and tikanga, it enables a truly holistic sustainability lens that values not just carbon but cultural impact, not just output but interconnection. It promotes a future where circular design

is not just efficient, but culturally and spiritually connected to Aotearoa new Zealand's people and places.

In doing so, the Takarangi Framework offers a path forward – where innovation and cultural respect walk hand-in-hand, and Construction 4.0 becomes a force for restoration, not just efficiency.

Mana tangata

NGĀK

Mauritanga

We recognise mauritanga, that each being, and entity has an essential lifeforce or vitality. This extends to inanimate objects, individuals, ecosystems and social groups in which this essence is located. With this knowledge, we appreciate that Ngākopa Construction 4.0 involves a complex relationship between peoples, land, materials, technologies and systems that have an inherent vitality. Our aim considers how the intersection between mātauranga Māori and western scientific methods and frameworks measures and reduces harm in the way we create built environments by protecting, maintaining or enhancing mauri to support long-term health and well-being.

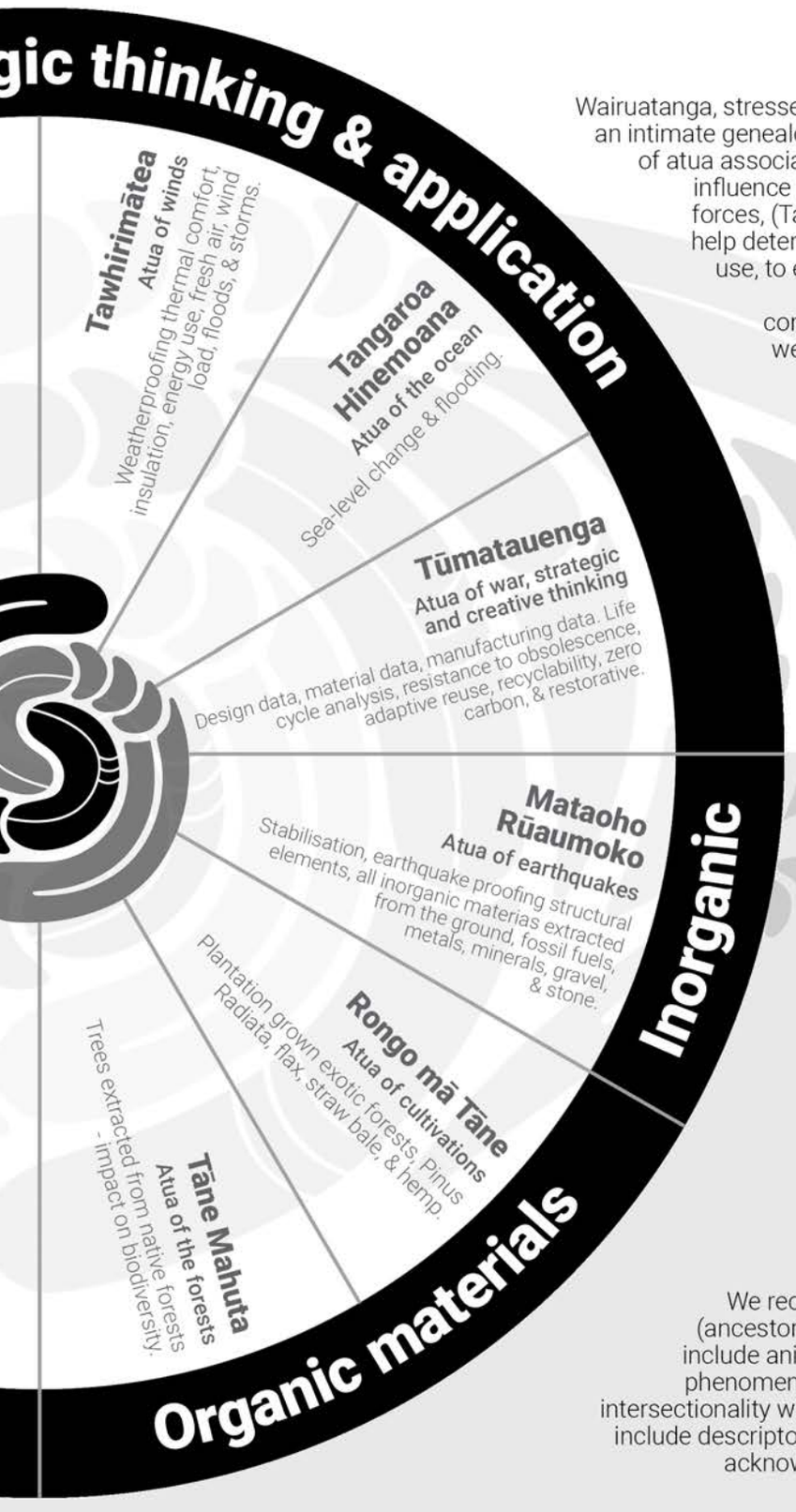
Ranginui | Sky father

Kaitiakitanga

Ngākopa transformation of the Construction Industry 4.0 supports holistic decision-making and strategies to care and protect the environment by considering the interconnected relationship of Māori to their atua, kaitiakitanga, the responsibilities they might have to protect them, alongside interdependencies between various data sets aimed at reducing harm. The intension is to consider our intergenerational legacy.

AKOPA
construction 4.0 hub

Ira atua



Wairuatanga

Wairuatanga, stresses the importance Maori place on maintaining an intimate genealogical connection to an interconnected family of atua associated with the natural environment. These atua influence how we build things to resist their destructive forces, (Tawhirimātea, Tangaroa, Mataoho), and to also help determine what materials or processes are best to use, to ensure their vitality and fundamental rights as taonga (treasures) and living entities is not compromised by our decision making in the way we design and manufacture built environments. By promoting an awaremess of how the different atua influence strategic decision making to develop better design and material systems to protect both them and us, Ngākopa Construction 4.0 mines relevant data drawn from Western science and mātauranga Māori to focus on ways to reduce harm to the many living entities associated with Māori atua and network of living and non-living things they support .

Papatūānuku | Earth mother

Whakapapa

We recognise lineages connecting us to our tupuna (ancestors), including ngā ira atua. These connections include animate and inanimate objects, plants, animals, phenomena and ways of thinking. Our aim is to find the intersectionality where Ngākopa - Construction 4.0 approaches include descriptors and taxonomies to reflect whakapapa and acknowledge the origin of where things come from.

4.0 ACM CRC

(Australian Composites Manufacturing Cooperative Research Centre)

In FY25 we've initiated a range of collaborative projects under the banner of "Circular Design 4.0 – AI-based Quality Control and Manufacturing," as part of the Australian ACM CRC programme led by the University of Sydney (USYD). These projects leverage advanced technologies such as artificial intelligence and novel fabrication methods to drive innovation in manufacturing, and span across six core sub-projects.

AI powered quality control and inspection

Collaborating with A/Prof. Cao Hung Pham, Dr. Ali Hadigheh, and PhD student Van Thu Huynh (USYD), the objective of this project is to develop an AI-based compliance monitoring system that can be implemented through our certification services to streamline quality control processes, potentially boost productivity for fabricators and ensuring higher compliance with standards across the industry.

Moving forward, the goal is to refine this into a practical tool for the manufacturing industry, which would inform HERA Cert's AI integration roadmap.

By partnering internationally, we ensure Aotearoa New Zealand stays at the cutting edge of research and benefits from shared expertise.

Optimal inspection levels and NDT for new welds

PhD student Abila Hena joined this ACM CRC research team in October 2024 and is supervised by Dr. Mike Bambach and Dr. Ali Amin (USYD). Abila's focus is to define optimal quality assurance and non-destructive testing (NDT) requirements for fillet and partial-penetration welds. These weld types could replace more costly full-penetration butt welds in certain seismic and bridge applications if proven reliable.

By determining the right level of inspection needed to guarantee safety (for example, ensuring proper weld penetration profiles) while avoiding over-inspection, this sub-project aims to maintain structural integrity and safety while improving fabrication efficiency. Such outcomes will help industry adopt more efficient welding practices without compromising quality, aligning with our mission to deliver practical solutions and productivity improvements in construction.

Structural optimisation for hybrid circular design

Working with Prof. Luming Shen and A/Prof. Daniel Dias-da-Costa at USYD, and PhD student Hao (Dex) Chang, this research will optimise connection details between structural steel beams and composite timber floors in hybrid steel-timber buildings.

After completing a detailed literature review, the team is now focusing on designing and testing improved steel-to-timber connections. We believe that by enabling the use of hybrid materials efficiently, we'll be able to help industry create buildings that combine the strength of steel with the sustainability of timber. The optimised connection designs will also make construction more efficient and reusable, supporting infrastructure enhancement through innovative design and contributing to climate resilience by encouraging low-carbon construction techniques.

Innovative metal composites

This sub-project is focused on additive friction stir deposition (AFSD) of aluminium/steel and is overseen by Prof. Anna Paradowska and Prof. Gwénaëlle Proust (USYD). AFSD is an innovative "cold" additive manufacturing technique (a form of 3D printing using friction deposition) in which we have explored for bonding aluminium and steel to enable new composite metal components and repair techniques that preserve material properties.

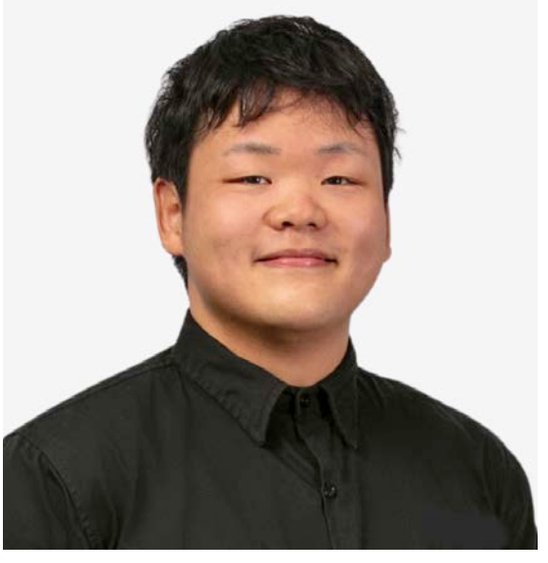
In Focus

Get to know our scholarship recipients

Meet our HERA Foundation PhD scholars working on our seismic research program.

Abila Hena Anayet, University of Sydney

Abila's research explores how artificial intelligence can enhance quality assurance in structural steel fabrication by improving the efficiency and accuracy of non-destructive testing (NDT). Through advanced data analytics, finite element modelling, and experimental validation, her work aims to develop AI-assisted tools that optimise inspection requirements for high-risk applications such as moment-resisting connections and bridge components.



Hao (Dex) Chang, University of Sydney

Dex's research focuses on integrating AI, virtual reality, and digital twin technologies to support sustainable design and construction practices. His work investigates how big data and machine learning can optimise the assembly and disassembly of structural components, enabling the reuse of steel elements and reducing construction waste. By advancing digital modelling tools and performance forecasting, his mahi contributes to a more efficient, circular approach to infrastructure development.

Welding 4.0

Robotic automation in composite manufacturing

As part of our collaboration with the University of Sydney's Australian Centre for Robotics, in FY25 we examined the scientific and technical barriers to adopting robotics and automation in composite manufacturing.

In November 2024, inviting Prof. Ian Manchester (Director of the Australian Centre for Robotics) and his team to spend a week visiting a selected seven member companies across Auckland, Hamilton, Christchurch, Dunedin, and Whangārei. These assessments looked at a broad range of automation aspects, from production control systems and sensors to the use of AI tools and robotic machinery on the shop floor – to identify the key hurdles companies face in implementing Industry 4.0 technologies.

This collaboration exemplifies the importance of the close industry relationships that HERA holds and our important role in facilitating research impact.

By identifying these challenges, this review is helping us chart a course for our members to increase automation in their operations. In turn, overcoming these barriers will improve manufacturing efficiency and throughput, while accelerating technological adoption and productivity as key drivers of economic growth.

Advancing automation in manufacturing

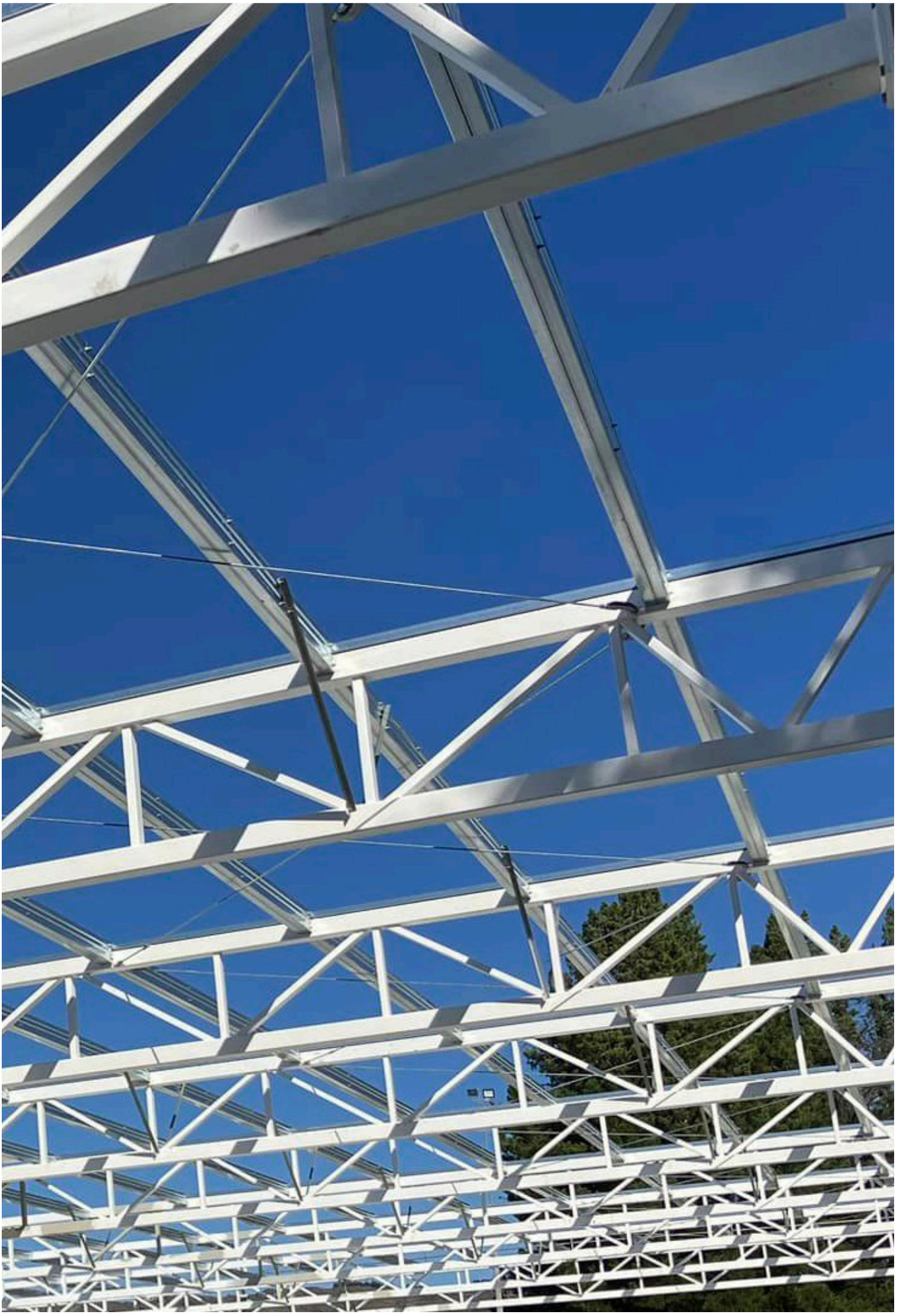
Find out more about Prof. Ian Manchesters visit to Aotearoa New Zealand!

4.0

Sustainable Steel

Circular economy, Low-carbon design, Future ready steel.

Steel is the backbone of our built environment — and its future must be both strong and sustainable. Our research is focused on reducing embodied carbon, optimising material use, and designing with circularity in mind. Through low-damage systems, digital tools, and design guidance grounded in life cycle thinking, we're helping shape a construction sector that builds smarter, wastes less, and leaves a lighter footprint for generations to come.



Low carbon design

A transformational framework for the built environment

As Aotearoa New Zealand moves towards a low-carbon economy, the building and construction sector (responsible for 15–20% of the nation's carbon emissions) must take bold steps forward. In response, we've present three groundbreaking publications enabling low-carbon, circular design in our built environment.

These pivotal resources were developed as part of our $772,000 MBIE-supported project, "Circular Design for a Changing Environment," with $150,000 in funding also received from BRANZ through the Building Research Levy. The project directly addresses the sector's pressing need for guidance, tools, and capability uplift in sustainable design.

We see this mahi as a way of reducing design complexity and accelerating adoption of low-carbon principles, helping firms respond to regulatory changes from the Building for Climate Change programme, improving productivity and reducing material waste through circularity-led decision-making, enabling compliance with future carbon disclosure requirements, and enhancing economic growth through innovation in sustainable infrastructure.

Together, they serve as a strategic roadmap for achieving climate resilience, supporting workforce development, and unlocking productivity gains.

Over 50% carbon reduction.
Evidence-based research, smarter design and specification.

1. Low carbon design guidance framework

This is an evidence-based framework that supports design professionals in applying circular economy principles and reducing embodied carbon across the full building life cycle (Modules A–D of EN 15978:2011).

Its key innovations include:

- the HERA Low-Carbon Circular Design Hierarchy – a visual, user-friendly decision-making tool to support design across all building typologies and material systems;
- simplified Life Cycle Assessment (LCA) and circularity overviews – making complex topics more accessible; and
- a comprehensive design toolkit – offering actionable strategies and a template to guide project-specific low-carbon circular design outcomes.

This framework helps stakeholders reduce design time, avoid redundancies, and integrate circular and carbon-reduction strategies from the outset - enabling better economic and environmental outcomes. It also sets the foundation for future advancements such as dynamic LCA and AI-supported design systems.

2. Low-carbon circular design guide for steel and steel-hybrid low rise commercial buildings

Our strategy focus to develop and maintain a skilled workforce is reflected in the real-world application of this design guide which is tailored to steel and steel-hybrid low-rise commercial buildings.

It provides:

- case studies demonstrating carbon reductions of over 50% through informed design and material choices;
- strategies for longevity, adaptability, and disassembly – supporting future-proofed, modular, and reusable buildings; and
- operational carbon insights – including thermal bridging, insulation techniques, and heat pump integration to optimise performance.

This takes our guidance beyond the theoretical - providing a practical manual for engineers, architects, consultants, and specifiers looking to adopt global best practices in their mahi today.

3. Research gaps and future directions for low-carbon circular design

This resource identifies the critical knowledge gaps and future research directions essential to advancing low-carbon construction. It consolidates insights from industry engagement, literature review, and peer feedback to offer:

- research and innovation priorities – guiding BRANZ and sector stakeholders on next-stage development;
- opportunities for collaboration – supporting cross-sectoral engagement between researchers, practitioners, and policymakers; and
- emerging pathways – focusing on new materials, methods, and digital design tools.

This is really intended as a way to connect and inspire through research-driven leadership and build a resilient, knowledge-led sector that is fit for the future.

HERA

Low Carbon Circular Design Heirarchy

New building circular design (4D's) Greenfield site

D1

Design to prevent the premature end-of-life of structures, enabling them to exceed their minimum design lifespan through maintenance, repair. or refurbishment without compromising structural integrity. This approach involves using durable materials and incorporating design principles such as seismic and fire resilience

D2

Design that ensures buildings can be easily repurposed to meet future needs by anticipating changes in use and incorporating adaptability to new functions, thereby extending their useful life and reducing the need for new construction. This approach accommodates potential alterations within the building's design life for different purposes.

D3

Design that enables the non-destructive dismantling of buildings at the end of their life allowing for the reclamation of components and materials. It prioritises mechanical connections (e.g., bolts, screws) over permanent bonds (e.g., glues, welds) and facilitates the easy replacement or upgrade of components, working in synergy with design for adaptability.

D4

It focuses on using non-virgin sources like reclaimed materials or those with high recycled content. For virgin materials, it emphasises choosing those that are both reusable and recyclable to reduce waste at the end of life. It 2so nohahts the imrorance at leine matenale with EPDs for full lifecycle transparency and matenal nassoors Tortaceabl!!

D1: Design For Longevity

Bridge through construct 4.0

D2: Design For Adaptability

L2: Lower Co Intensit

Through utilising lo materials and ther to reduce operatio

D3: Design For disassembly

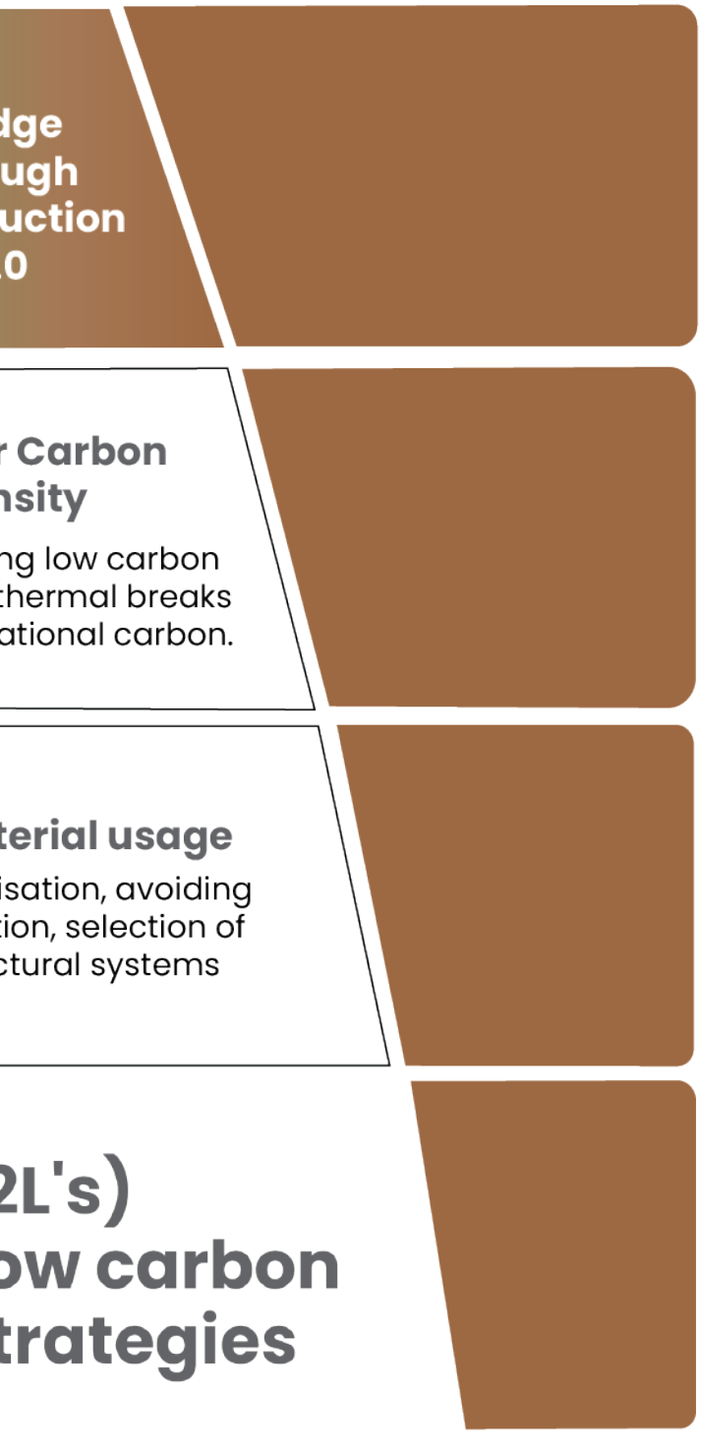
L1: Less materi

Through optimisati over specification, efficient structur

D4: Design with circular materials

(2L Low stro

Existing building reuse (4R's)
Brownfield site



R1

Extending the life of an existing building through restoration, refinishing, and future-proofing while minimising unnecessary major replacements. Most of the building's fabric is preserved, allowing for partial or full refurbishment for its current use. This process may include retrofitting-adding new technology or features to enhance carbon efficiency.

R2

Extending the life of an existing building through significant alterations or substantial refurbishment, transforming spaces by renovating, replacing, and updating components with shorter lifespans to meet diverse needs. Examples include converting industrial or commercial areas into residentiall spaces, or vice versa.

R3

Selectively and non-destructively deconstructing an existing building according to a disassembly plan, cleaning and repairing components, and aiming to minimise reprocessing or remanufacturing. This approach facilitates material reclamation for future use, with a preference for on-site reuse before considering off-site options,

R4

When other options are infeasible and demolition is necessary, recycling becomes essential. his process recovers recyclable and reusable materials through careful sorting, minimising landfill waste and down-cycling. Recycling reprocesses end-of-life materials no new products or suostalkees, vallellel lon their original or alternative purposes.

4.0 Smarter specification

Low-carbon specification, Clear benchmarks, Big impact.

Specifying low-carbon steel isn't about compromise — it's about clarity, leadership, and results. Our latest guidance empowers engineers, architects, and procurement teams with the tools to reduce embodied carbon from the outset. Built on verified data and aligned with global standards, this mahi ensures that smarter choices today deliver a stronger, more sustainable Aotearoa tomorrow.

In Focus

How to specify low-carbon structural steel in Aotearoa New Zealand

The transition to a low-emissions economy requires coordinated, industry-led action. Recognising that structural steel is a cornerstone of Aotearoa New Zealand's infrastructure, our publication "How to Specify Low-Carbon Structural Steel" provides critical guidance to reduce embodied carbon in buildings and infrastructure projects across the motu (country).

This mahi helps futureproof our infrastructure, supports New Zealand's net zero ambitions, and continues our mission to secure tomorrow's industry by innovating today.

Practical guidance for carbon reduction
This document offers a technically robust, real-world framework to define, benchmark, and specify low-carbon structural steel.

Using global best practice and locally relevant data, it establishes emissions baselines for various structural steel products such as hot rolled sections, hollow sections, plates, and welded components - and recommends annual reduction targets starting from 2025.

Why does this work matter?

It is all about proactive emissions reduction at both the product and project level. It:

- improves supply chain transparency through documentation requirements tied to third-party verified EPDs;
- encourages market innovation, especially through guidance on carbon offset certifications such as HERA's Carbon Conscious and Zero Carbon Steel programmes; and
- enhances design efficiency by integrating strategies such as high-strength steel use and steel reuse—resulting in lighter structures with lower carbon footprints.

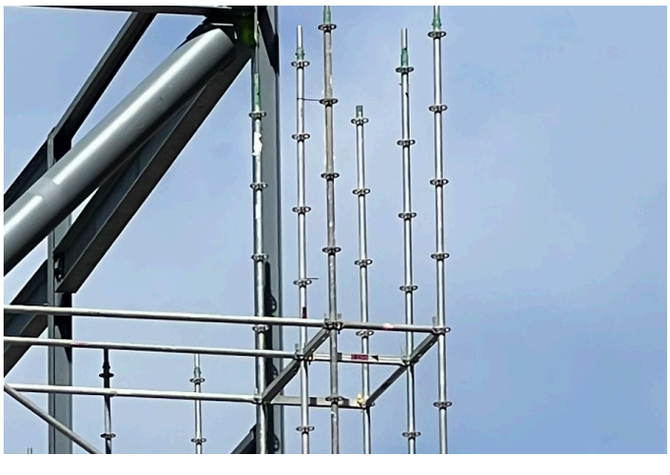
Those benefiting from this resource include specifiers, engineers, quantity surveyors, procurement managers, developers, and ultimately, our communities who will inhabit cleaner, more resilient buildings.

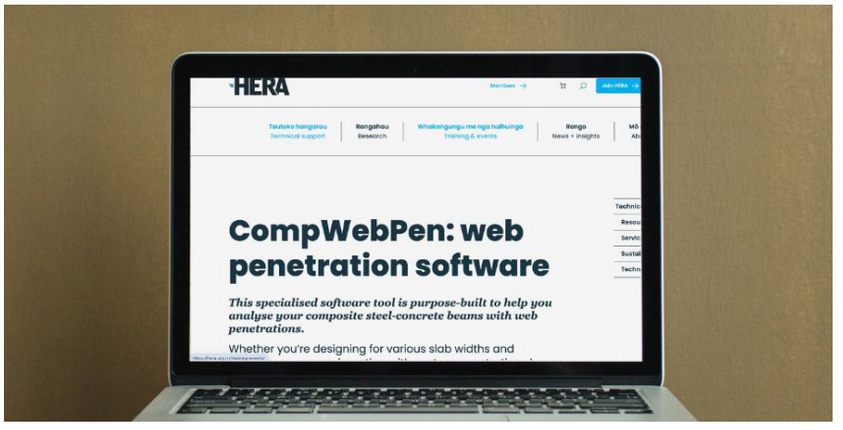
For us, this is all about achieving infrastructure delivery with lower environmental impact, creating climate resilience through reduced lifecycle emissions, productivity uplift by integrating higher- strength materials and reuse practices and workforce development through better design understanding and procurement strategies.

From concept to construction

Across FY25 this guidance has been applied in real projects, such as our own low carbon projects and **case studies published by SCNZ and Beca.** In these scenario's, supporting project teams to specify and document carbon reduction strategies during early project planning, procurement, and detailed design stages.

Now, engineers can specify average carbon benchmarks per steel type and track compliance through product EPDs - ensuring accountability across the construction lifecycle. In addition, this guidance has also encouraged high-strength steel (Grades 350–600) and reuse of steel wherever possible - both of which are key to reducing demand for new material production and improving structural efficiency.





CompWebPen

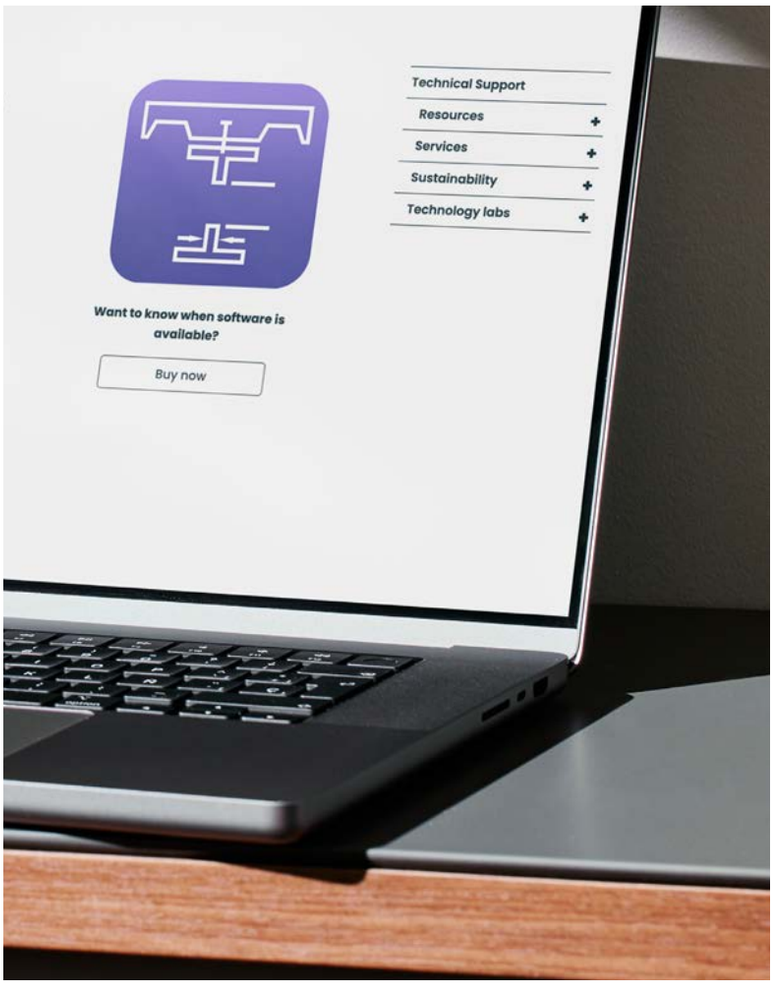
New digital tool launched to drive smart, sustainable design

In FY25, we officially launched HERA-CompWebPen - a powerful design tool simplifying the analysis and design of composite steel-concrete beams with web openings. Developed to support engineers with precision and efficiency, the software is fully compliant with AS/NZS 2327:2017 Amd1:2020 and streamlines the complex process of designing beams with variable slab configurations and diverse web penetration geometries.

Key features include:

- versatile design configurations, including rectangular, circular, and elongated openings—isolated or closely spaced—with or without stiffeners;
- seamless integration with our existing composite beam design software using XML data imports and exports;
- transparency and compliance with built-in clauses and equations from AS/NZS 2327; and
- a user-friendly interface for efficient input, editing, and output of results.

This supports our strategic goal of delivering practical, cost-effective solutions to industry, and we hope will make high-quality engineering accessible to industry and promote greater uptake of steel in the built environment.



4.0 Circular Design

Advancing the digital steel passport

The construction industry is under increasing pressure to transition from linear material use to circular economy models that support reuse, recycling, and extended material life cycles. In response, we've continued to lead vital research into enabling circular practices in the steel sector through the development of a Digital Steel Circularity Passport, or "Steel Passport (SP)".

This rangahau (research) aims to unlock barriers to implementing a steel circular economy in Aotearoa by developing a digital tool that supports the identification, tracking, reuse, and recycling of structural steel elements - and combines sustainability data, digital technologies, and contextual insights tailored to New Zealand's regulatory and environmental landscape.

In FY25, we received confirmation of $75,000 in funding from BRANZ to support the next phase of development for the SP, with contract negotiations currently underway.

Digital transformation for steel reuse

The pilot version of the SP will be iteratively refined based on user engagement, ensuring the platform is practical, accessible, and aligned with industry workflows. Once fully developed, the SP will provide a robust mechanism for evaluating the reuse potential of building components across their life cycle - laying the foundation for smarter, lower-emission design and construction practices.

This initiative supports knowledge development around digital construction practices, sustainable material use, and design for disassembly - core competencies essential for engineers, architects, quantity surveyors, and construction professionals operating in a decarbonising economy.

By enabling traceability of material properties, certification, and reuse history, the Steel Passport will also enhance transparency, accountability, and efficiency in material procurement and end-of-life decision-making to pave the way for scalable industry adoption of circular design principles.

This project reflects a priority to increase climate resilience by reducing demand for virgin steel and associated emissions; supporting infrastructure and economic growth through more sustainable building delivery; increasing productivity by reducing waste and simplifying asset lifecycle management; and workforce development with digital tools that build future-ready skills and supply chain capability.

From material to marketplace

In practice, the SP will allow asset owners and project teams to digitally tag steel components used in buildings - capturing their grade, fabrication history, and reuse potential. At project completion or deconstruction, these tagged components can be easily evaluated for reuse or resale, supporting the concept of buildings as “steel banks” where materials retain economic and environmental value beyond a single use.

Through its development and eventual rollout, the SP will catalyse circular practices in both new builds and retrofits, while providing clear economic and carbon-reduction benefits to stakeholders.

Reduce - zero carbon steel

With the launch of our carbon offsetting program for steel - the Zero Carbon Steel Program – Hōtaka Whakakore Puhanga Waro in FY23, we continue to work with thinkstep-anz to review and update the database of EPDs applicable to our zero carbon steel program to ensure it remains driven by the latest applicable data.

In FY25 we focused on digital tool improvements to incorporate user feedback and improve functionality and user experience.

The first major project was migrating the EPD library from a static Excel format to a more dynamic, searchable database. This enables users to filter and access relevant data more easily and efficiently.

The second, was to transition the calculator aspect of this program to a more user friendly digital platform which will be managed internally, rather than via Ekos. This change will allow users a more streamlined user-centric application process for carbon offsetting when inputting their data and enable industry to access a wider range of offsetting options while promoting transparency and accountability in carbon reporting.

A new certification tier “Carbon Conscious” will be enabled – which acknowledges projects achieving at least a 30% carbon offset. This is a certification which was not possible to achieve under the current service provider Ekos.

With most of development completed and going through final reviews, we can expect both offerings to be available early FY26.

Want to know more?

Find out how to transition to a circular economy

End of life carbon and beyond

Understanding LCA

4.0

Global excellence in sustainability

ConstructSteel Awards, Reuse in action, Global impact.

The ConstructSteel Awards are an international initiative led by World Steel to recognise excellence in steel construction. Member organisationsare able to nominate standout local projects on behalf of industry for the regions they represent. HERA is the nominating organization for Aotearoa New Zealand providing a pathway for Aotearoa-based innovations to gain global recognition. In 2024, we were proud to share that our member company Steelworks NZ's project "Hinuera Shed" earned international recognition at the ConstructSteel Awards, taking out the Excellence in Sustainability category.

This humble rural shed stood tall on the global stage — proving that circular thinking, carbon- smart choices, and clever collaboration can deliver impact. It's also a reminder that world-leading solutions don't need to be flashy — and that Aotearoa has a voice in leading the way in sustainable design.

In Focus

Reimagining the humble shed

Fabricator: Steelworks NZ Client: SH29 Limited

Design & build: Sabre Construction Year: 2023

Project timeline: 3 months

Material used: 380 tons of structural steel, including nearly 200 tons of recycled fabricated beam

Purlins: 11.5km in total

The Hinuera Sheds began with a bold vision by Steelworks NZ's client Pete Barker of SH29 Limited, who saw potential in a large portside building originally built in the 1990s at the Port of Tauranga that was being demolished. Barker acquired the fabricated beams, seeing an opportunity to give them a new lease of life. Engaging

Sabre Construction and Steelworks NZ, to embark on a project that would reimagine this industrial structure into an eco-conscious storage facility in the rural heart of Waikato.

Reduce - zero carbon steel

This project did more than repurpose a steel frame—it bridged industrial origins with rural simplicity, aligning with Aotearoa New Zealand's vernacular tradition of understated, purposeful design. The nearly 200 tons of salvaged Steltech beams that once supported a portside facility now form the backbone of the Hinuera Sheds, a relocation that speaks to the adaptability and resilience of steel. In their new rural setting, these beams represent more than structural support; they carry a legacy of New Zealand's working heritage, adapted for a new purpose.

As the fabricator, Steelworks collaborated closely with Sabre Construction to transform the structure while maintaining the integrity of its original materials. Through meticulous inspection and restoration, each beam was adapted to meet modern safety standards, preserving its original strength and historical value. Using Ultrasonic Testing (UT) on the original welds, the team identified and repaired all existing welds, removing non-compliant welds and old connections and replacing before carrying out final UT inspection to ensure compliance with NZ standards.

> There's a lot of talk about the recycling and reuse of steel, rather than turning it into scrap metal - but the perceived barriers have stopped many from trying. Committing to making this a reality has proven it is not only possible, but it has huge benefits from reducing the carbon footprint to embracing a circular economy and showcasing the role of steel in Aotearoa New Zealand's sustainability story. It has been a very rewarding experience!
>
> ***Grier Fuller, Director at Steelworks.***

Jill and Grier Fuller of Steelworks NZ accepting their award at the constructsteel Awards on 23 October 2024 in Charlotte North Carolina, USA.

Reusing

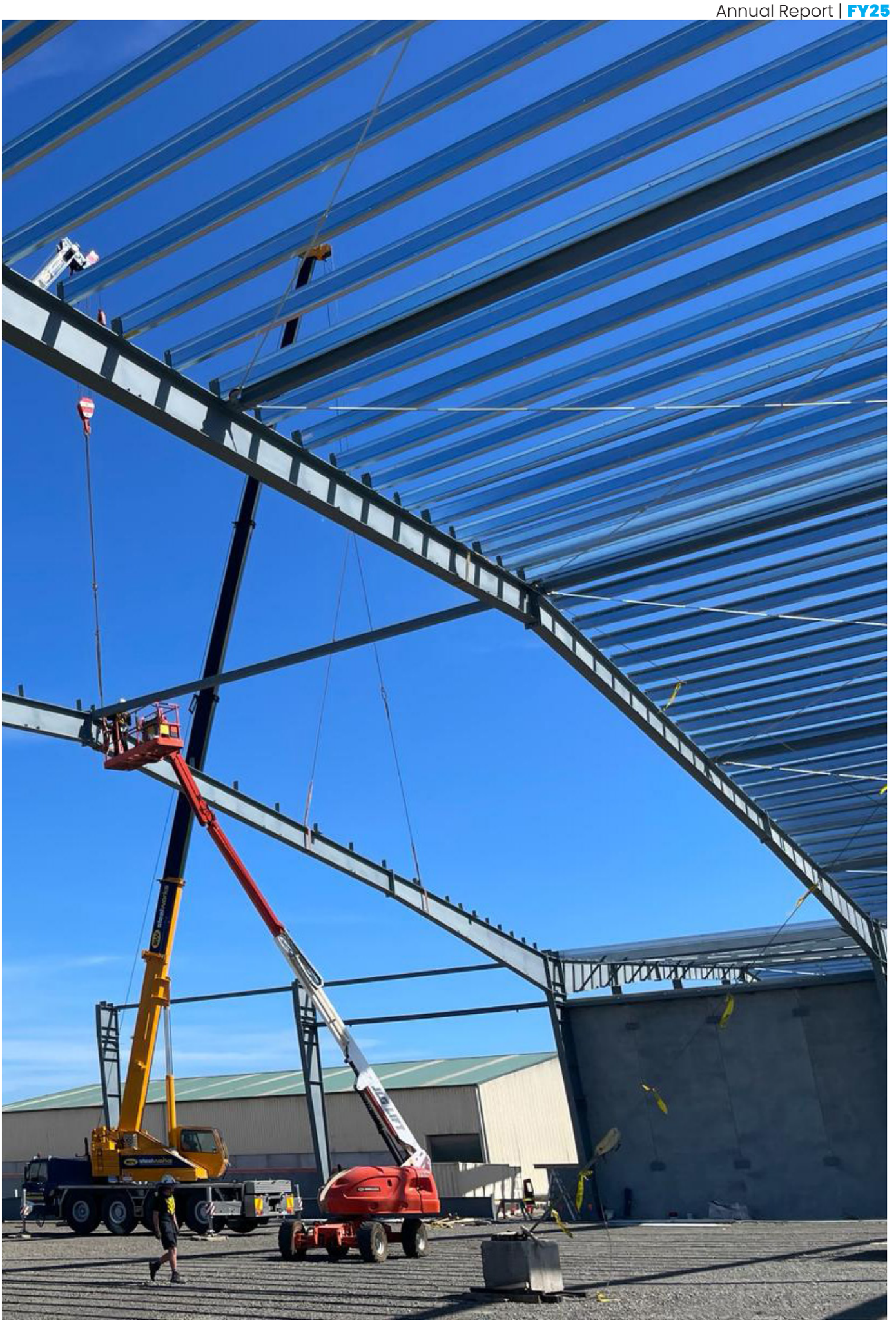
Adjustments involved bespoke shortening and modifying of each piece to fit the new design requirements - all while celebrating the shed's history.

Beyond the material reuse, the Hinuera Sheds embody sustainable architecture. Through planned logistics, each transportation leg was optimised, reducing the need for empty return trips, cutting the project's carbon footprint. Here, the reclaimed beams were efficiently transported between Hinuera and Steelworks for fabrication and finishing, ensuring a continuous flow of materials. This thoughtful approach not only maintained project timelines but also minimised transportation costs and environmental impact, embodying a commitment to sustainable construction practices.

Rethinking

Solar panels and a rainwater collection system for firefighting also support the facility's ecofriendly design, while thousands of native trees planted around the site strengthen the connection between the sheds and the local environment. The team is also planning a shift to electric-powered machinery, further enhancing the project's sustainable operations and reducing its long-term carbon footprint.

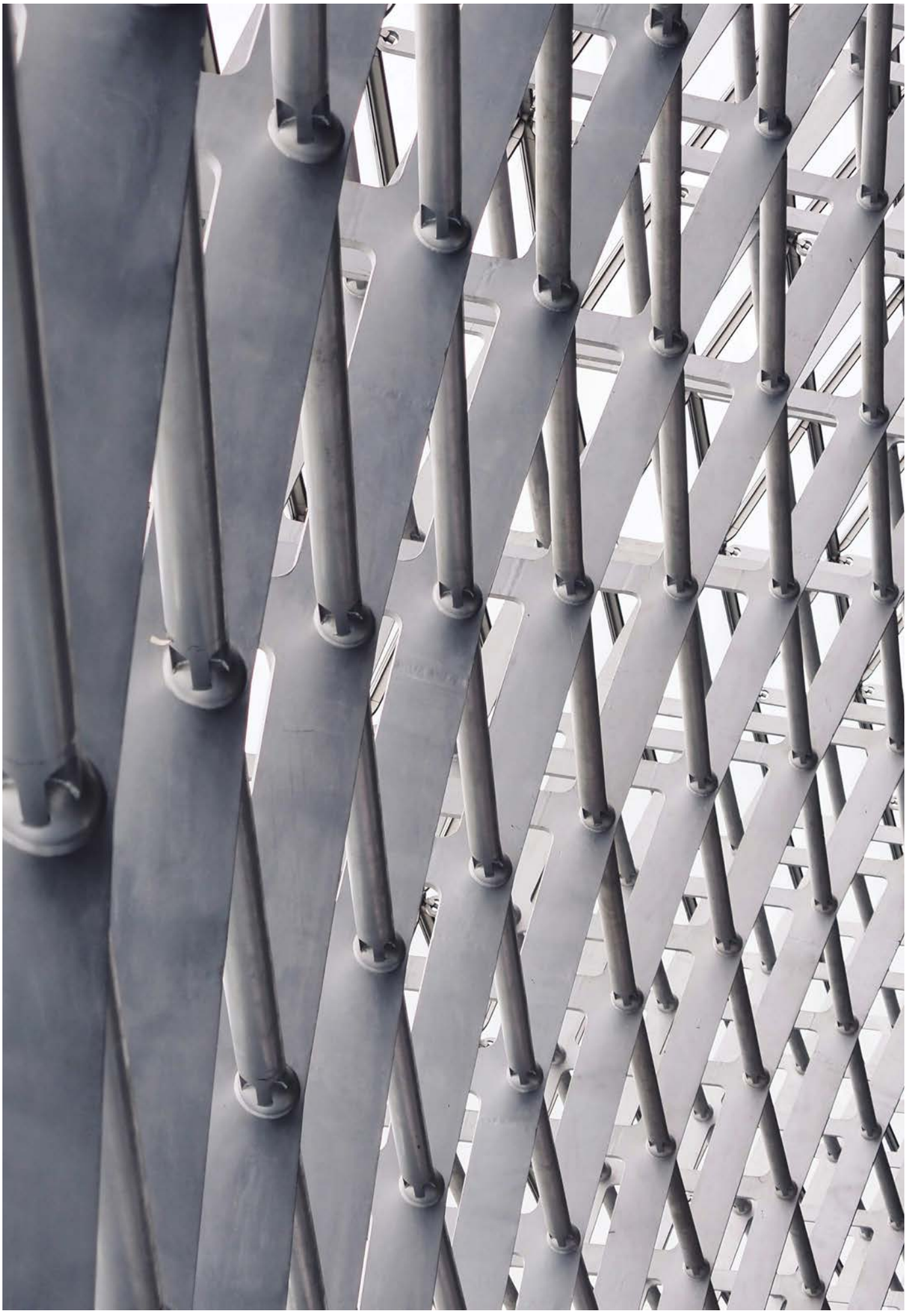
The Hinuera Sheds aren't just a functional facility—they're a testament to the architectural possibilities of adaptive reuse. This humble shed tells the story of simple design choices, thoughtful finishing for durability, logistical efficiency and structural integrity. These sheds add a new chapter to the legacy of New Zealand's rural architecture, celebrating the shed form as a symbol of ingenuity and sustainability. By honoring the material lifecycle and blending industrial aesthetics with rural simplicity, this project sets a precedent for the architectural community to consider the lifecycle of structures, cultural heritage, and environmental responsibility in their designs.



4.0 Structural resilience

Built to withstand, Designed to adapt, Structural durability.

Durability and resilience are key considerations in modern steel design - supporting longer service life, resource efficiency, and alignment with circular and low-carbon strategies. Building on this foundation, our collaborative research, advanced modelling, and practical experimentation are setting thebenchmark for structural resilience in Aotearoa New Zealand. This mahi (work) strengthens national design standards, informs next-generation engineering practice, and ensures our built environment is smarter, safer, and future-ready.



Seismic design

Our seismic research is focused on enhancing the resilience, economy, and sustainability of steel structures. By fostering international collaboration and knowledge exchange, we aim to drive innovation and ensure the safety and resilience of steel structures in seismic-prone regions.

Seismic research program

Weld testing for seismic connections

This research focuses on full-scale seismic weld testing and advanced Finite Element modelling of welded connections using traction stress methods. Carried out by HERA Foundation PhD scholars Ahmad Sayadi and Dinesh Lakshmanan, the project is a collaboration involving the University of Waikato, University of Auckland, Auckland University of Technology, and the University of Michigan.

The goal? To strengthen Aotearoa New Zealand's seismic design standards, including updates to NZS 3404. This will lead to more resilient structures and safer infrastructure across the motu (country), and aligns with our focus on delivering technical and practical solutions, and the Government's commit- ment to infrastructure resilience.

In Focus

Get to know our scholarship recipients

Meet our HERA Foundation PhD scholars working on our seismic research program.

Ahmad Sayadi,
University of Waikato

Ahmad's research focus looks at optimising weld sizes and joint details to enhance the structural performance of welded connections under cyclic loading. Through experimental testing and advanced FEA modelling, his work identifies how incomplete penetration, weld asymmetry, and material properties impact the safety and reliability of joints critical to seismic design.

Dinesh Lakshman,
University of Waikato

Dinesh is investigating how fabrication imperfections - like misalignment, root gaps, and weld access hole geometry, affect the seismic performance of welded steel joints. His research uses experimental testing and simulation to inform improved design practices that strengthen structural resilience.

Construction 4.0 – circular design

Low-damage seismic solutions - EBF's

Though this mahi sits within the research in our Construction 4.0 program, our reusable EBF system rangahau (research) interconnects with our seismic resilience focus - demonstrating the reach and integration of our rangahau (research) — connecting data, design, and durability to create long-lasting impact for the construction sector.

The development of a reusable eccentrically braced frame (EBF) system — supports national goals for resilience, productivity, and emissions reduction by enabling key structural components such as braces and shear links to be repurposed across multiple projects, reducing embodied carbon, waste, and post-earthquake downtime.

HERA Report updated: seismic design of moment resisting steel frames

In FY25, we we're proud to release the newly revised HERA R4-156 Design Guide for Seismic Design of Moment Resisting Steel Frames (MRSF) – a vital resource for engineers involved in the design and construction of seismic-resistant steel structures for more safer, resilient structures in earthquake-prone areas.

This update reflects feedback from industry professionals, aligning with our commitment to continuous improvement and collaboration across the sector to ensure the guide remains relevant and practical for real-world applications. Key changes include:

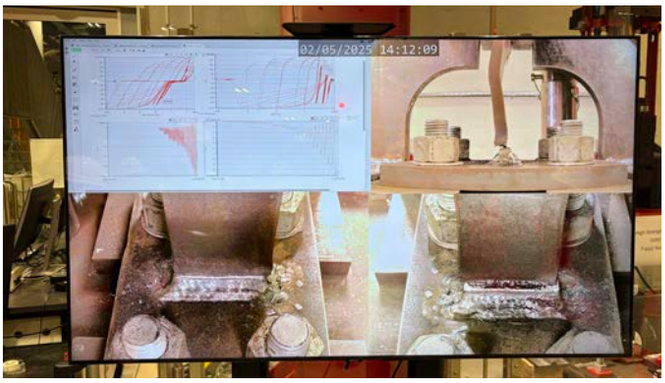
clearer clauses and commentary - making the guide easier to use and understand across all experience levels so it is accessible and actionable;

incorporation of the latest global research - ensuring recommendations stay current with global best practices to enhance the safety and reliability of steel frames in seismic events;

integration with our other design guides - to support a holistic and comprehensive approach to steel design for seismic resilience across your project; and

worked example includes connection detailing - to help engineers better understand the practical application of seismic design principles, particularly when designing and detailing steel connections in moment-resisting frames.

Welded connections



Properly designed and constructed welded connections are essential for the safety and performance of steel structures in particular joint's strength and resistance to fatigue and fracture. Our research focuses on optimising these welded connections to make fabrication more cost- effective while ensuring they meet performance standards in service. This includes exploring alternatives like partial penetration butt welds and investigating the use of high-strength bolts and appropriate lubrication methods to enhance overall connection reliability.

KiwiRail bridge optimisation project

In FY25 we continued our mahi with KiwiRail to optimise the design of their standardised railway bridges. So far, this collaboration has yielded two sub-projects focusing on cost-effective weld details for KiwiRail's steel plate girder bridges, and a Construction 4.0 circular design approach to bridge engineering (involving holistic design analysis, predictive maintenance strategies, and structural optimisation of bridge systems).

Both sub-projects involve international partners (the University of Michigan (UM) and the University of Regensburg (UR)) alongside the University of Auckland(UoA) and Auckland University of Technology (AUT). Together, these initiatives aim to enhance the efficiency and longevity of Aotearoa New Zealand's rail infrastructure.

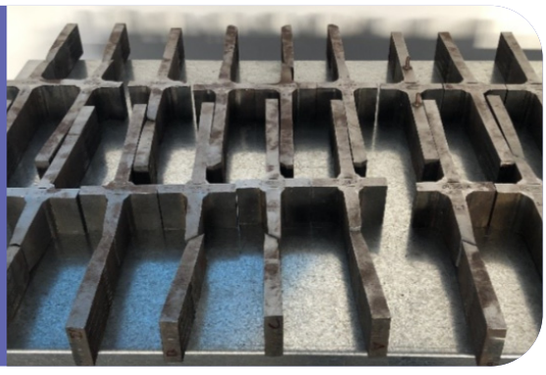
By refining connection details and including advanced digital design techniques, we are reducing material costs and improving durability, directly supporting Government priorities in infrastructure enhancement and productivity.

KiwiRail has also approved a scholarship for a PhD student, Alireza Houshmand, who will conduct bridge component testing at AUT under the supervision of A/Prof. Shahab Ramhormozian and Prof. Charles Clifton (UoA). The project is further supported by Prof. Pingsha Dong (UM), and Prof. Carsten Schulz (UR).

Beyond the technical outcomes, this partnership is building capability by developing a future expert in Alireza, and strengthening international knowledge exchange and our hopes to deliver technical and practical solutions for infrastructure while also fostering a future-ready workforce.

Courtesy of Kiwi Rail

New research enhances understanding of welded joint integrity



In FY25, rangahau (research) carried out by our PhD student Bikram Paul, Te Whare Wānanga o Waikato (the University of Waikato) - as part of our seismic research program uncovered how seemingly small misalignments in welded joints could lead to major vulnerabilities, especially in earthquake-prone regions. His innovative analysis using finite element models shed new light on the critical role fabrication tolerances play in ensuring structural integrity.

Background understanding

Welded joints, such as fillet welded cruciform joints, are widely used in steel structures, especially in critical areas that must withstand seismic forces. However, misalignments during fabrication are common and can significantly impact the performance of these joints. Bikram's study focuses on the effects of such misalignments, particularly how they influence stress concentrations that can lead to joint failure.

Steel structures are designed to NZS 3404 and fabricated to the requirements of the construction category (CC) of AS/NZS 5131 specified for the structure. It includes essential and functional tolerances defined as permitted deviations including straightness, misalignment, length, width and similar. Some of the geometrical tolerances can have a significant impact on the performance of the welded connections in-service.

Bikram explored how axial misalignments in welded joints can affect structural integrity under static loading. His findings providing important insights that will inform future revisions of standards including AS/NZS 5131.

What was found?

Bikram analysed over 100 models with varying plate thicknesses, weld sizes, and degrees of misalignment. His rangahau identified that even small misalignments can dramatically increase stress at specific points, making joints more susceptible to failure. These findings are particularly relevant for structures located in earthquake-prone areas, where reliable joint performance is critical for safety.

A key outcome of this rangahau is the development of a predictive equation that enables engineers to assess the effects of misalignment on stress distribution around the welds, leading to improved design of welded joints. This rangahau also highlights the importance of complying with fabrication tolerances of AS/NZS 5131. The reliability of this model needs to be confirmed through extensive testing as the next step, emphasising its potential to enhance the safety of structures.

The study is a testament to the ongoing efforts within the engineering community to enhance safety and performance in structural design, especially in rohe (regions) subject to seismic risks. It also highlights the importance of continuous rangahau (research) and innovation in addressing the evolving needs of modern infrastructure.

FY25 technical know-how in structural guidance

Setting the standard for smarter splice

Providing clear, standard-aligned guidance is a cornerstone of our technical mahi. In response to recurring industry queries, our technical team developed a practitioner-focused technical notice on optimal splice placement in structural steel frames.

Splices - the connection points where steel members are joined - are critical for the strength, safety, and seismic resilience of steel buildings. When poorly located, they can introduce stress concentrations or compromise performance under load. Our Lead Research Engineer, Hafez Taheri provided commentary on NZS 3404 and international standards (like AISC 341) to provide uderstanding and direction on how and where to place splices in columns, beams, and brace members — especially in high-seismic or performance-critical environments.

His analysis outlined:
why column splices should typically be placed in the middle third of the storey height to reduce bending moments;

- how beam and brace splice placement should avoid yielding regions to preserve ductility and energy dissipation during seismic events; and
- the implications for fabrication and cost when these placements are not observed.

This guidance directly supported designers and engineers specifying safe and compliant connections, SMEs and fabricators navigating complex standards, and Government priorities around infrastructure resilience and seismic safety.

Corrosion

Metals are often exposed to corrosion over the life of a structure, often occurring in well-hidden, difficult to access locations in steel structures as a result of the environment in which it is exposed to. Our rangahau (research)is focused on ensuring this risk is reduced and managed for the long- term durability of the structure.

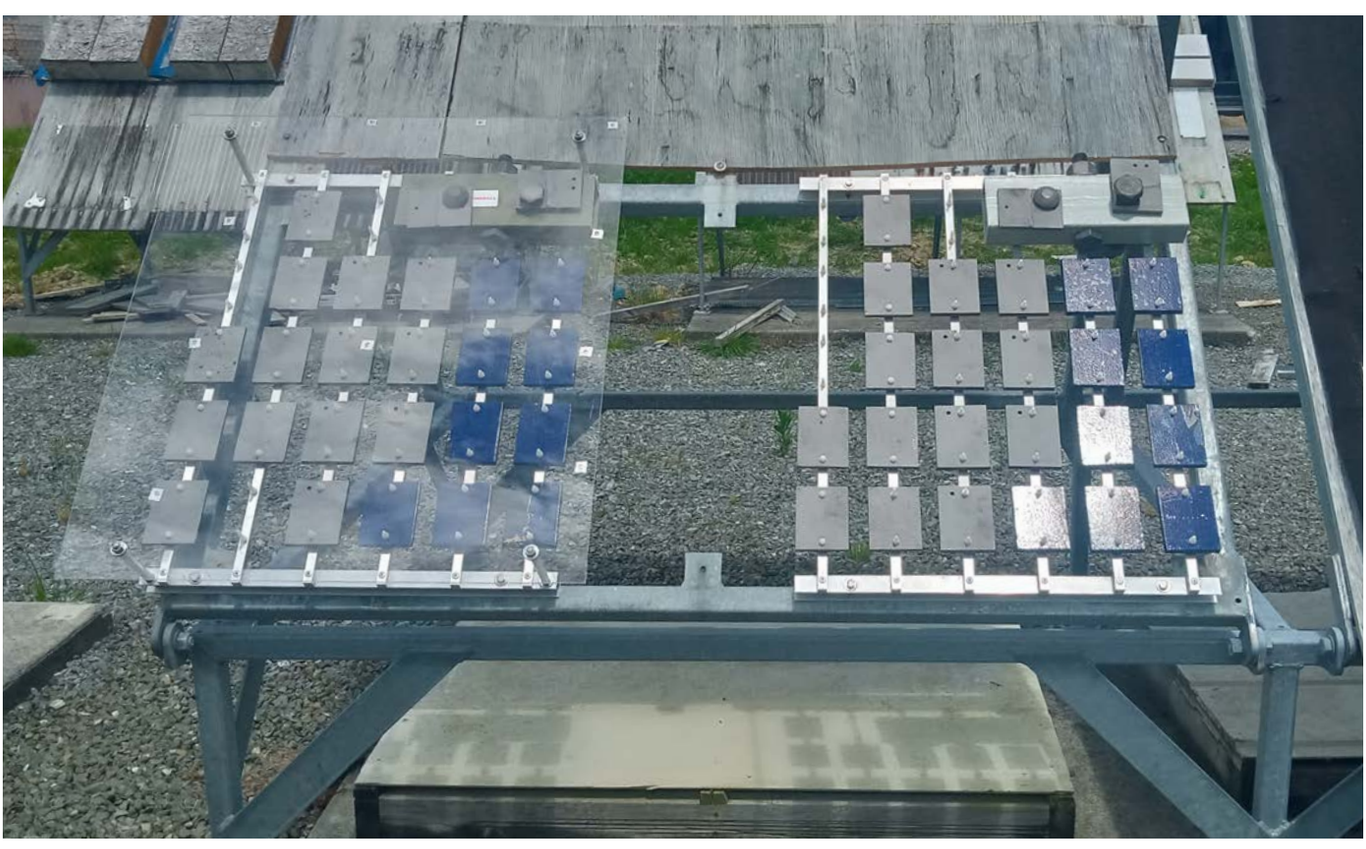
Performance of coastal weathering steels

Our rangahau into the performance of weathering steels in Aotearoa New Zealand's coastal environments progressed significantly. The first set of steel samples exposed at three marine test sites has been retrieved and evaluated by BRANZ.

This interim evaluation will form part of a larger publication to be released after three years of exposure data are collected.

The knowledge gained will provide local evidence on how weathering steel performance in coastal conditions, guiding engineers and asset owners on material choices for bridges and structures in these areas.

Ultimately, this work will help infrastructure owners enhance durability and reduce long-term maintenance costs for coastal projects – a contribution to infrastructure resilience under evolving climate conditions.



Enhancing durability with corrosion protection guidance

In FY25, we released an updated guide on corrosion protection for structural steel for public comment, aimed at improving durability outcomes across the sector. This guidance reflects the latest research, evolving best practice, and recent updates to New Zealand standards -– providing designers, engineers, asset owners, and contractors with the information needed to make informed, consistent decisions.

Authored by Dr Raed El-Sarraf, Willie Mandeno, and Hanieh Ghominejad from WSP, alongside our GM Structural Systems, Dr Kaveh Andisheh - this updated guide brings fresh, practical updates that integrate the latest research, best practices, and regulatory developments to keep New Zealand's steel industry at the forefront of corrosion protection and durability. It delivers:

alignment with the latest New Zealand standards for durability design of structural steel, including SNZ TS 3404;

dvancements in protective coatings and steelwork protection to help engineers, asset owners, and contractors make informed decisions to extend the service life of steel structures;

guidance on fire resistance of galvanised structural systems and how galvanised coatings interact with fire protection systems for structural fire design; and

proposed amendments to SNZ TS 3404 to ensure corrosion protection measures continue to evolve in response to real-world challenges and advancements in materials science.

Durability is essential to reducing environmental impact and advancing circular design, and so, by extending service life and reducing the need for early replacement or intensive maintenance, improved corrosion strategies also help lower lifecycle emissions and resource demand. While system performance depends on factors like environment, maintenance, and workmanship, this guide also offers a robust foundation to support better design and specification outcomes.

An overview – industrial coating to AS/NZS 5131

When it comes to protecting structural steel from the harshest environments, the right industrial coating can mean the difference between long-lasting performance and costly failure. Understanding AS/NZS 5131 compliance can ensure your projects stand the test of time.

Industrial coatings play a vital role in protecting materials from corrosion across diverse environments, while also offering additional benefits such as aesthetics, passive fire protection, abrasion resistance, luminescence, and marine fouling prevention. Compliance with standards like AS/NZS 5131, which governs the fabrication and erection of structural steel, is crucial to ensuring the durability and performance of coatings for structural steelwork.

Sections 9 (Surface Treatment and Corrosion Protection) and Section 13 (Inspection, Testing, and Correction) of AS/NZS 5131 emphasise that protective coatings for structural steel should meet defined performance standards. These coatings are typically applied to safeguard steel structures from environmental conditions, including exposure to moisture, salts, chemicals, and pollutants.

Coating systems are selected based on the steel's exposure classification, as outlined in AS/ NZS 2312, to ensure appropriate durability. Standards for cleaning, surface preparation, coating application, and inspection—as well as galvanizing requirements—are also referenced within AS/ NZS 5131.

Performance of coastal weathering steels

For coatings to maintain their protective qualities over time, comprehensive surface preparation— such as cleaning and abrasive blasting to achieve the defined surface profile—is essential. Improper preparation accounts for nearly 70% of premature coating failures. Surface-tolerant paint systems can be an option when ideal surface preparation is not feasible, though stakeholders should carefully weigh the cost-benefit ratio in these cases.

Industrial coatings can be applied through various methods, including spraying, brushing, or rolling, each offering specific advantages depending on the project. High-performance coatings—used in applications such as bridges, industrial plants, and offshore structures—are often applied using plural component pumps. For rapid-curing products with a short pot life, precise application techniques are critical to achieving consistent results.

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Inspection and innovation in coating technology

Like the welding process, coating inspection is also critical in ensuring that the coating process adheres to specifications, as improper application or curing can lead to premature failure. Coating inspections typically follow a multi-stage approach: pre-application checks, ongoing monitoring during application, and post-application assessments and further tests, and are necessary to ensure long-term durability is achieved.

In FY25 we were excited to share, that our Principal Welding Engineer, Volkan Yakut earned his AMPP Certified Coating Inspector qualification, enabling us to expand our technical expertise to better anticipate potential issues and ensure compliance with standards like AS/NZS 5131 and deeper insights into coating systems, inspections, and standards compliance to better support our members and their projects.

Structural fire performance

Our structural fire research is focused on assisting design engineers to understand how structures behave during fire events so they can improve structural resilience. We also leverage performance- based fire design using tools like advanced finite element analysis (FEA) to enhance the overall safety of buildings to protect our communities.

H.I.T: optimising fire protection for smarter specification

To address rising costs of intumescent coatings and improve steel's competitiveness, we've developed the HERA Intumescent Optimisation Tool (H.I.T.). This intuitive software assists engineers, specifiers, and architects in selecting the most cost-effective fire protection strategies without compromising performance.

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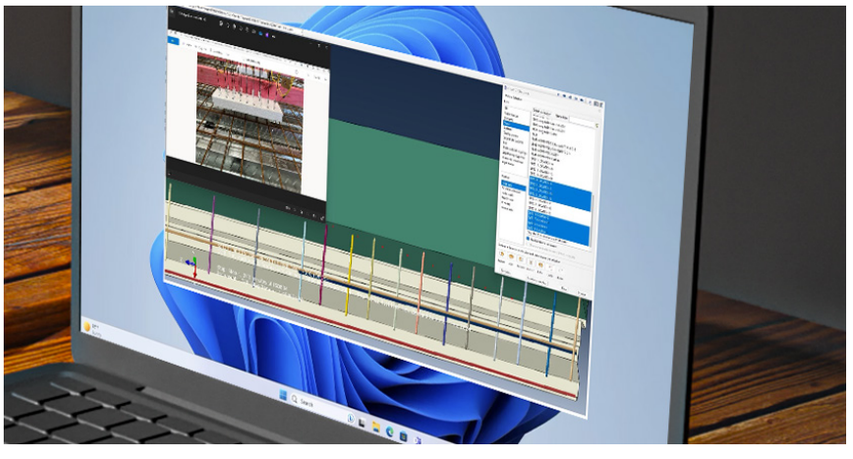
By comparing steel sections and calculating required intumescent thicknesses, HIT helps:

- reduce project costs while maintaining safety and performance;
- support circular design through smarter material selection; and
- lower embodied carbon associated with fire protection systems.

As fire resistance requirements increase, savings scale up - making this tool especially valuable for large-scale developments. Not only does this digital tool support infrastructure resilience, but it also leads to cost-effective design, and improved sustainability metrics - enhancing decision- making across project teams and empowering industry to optimise resources for long-term competitiveness.

Finite element analysis for 'in-fire' scenarios

In FY25, we advanced our fire modelling research by applying finite element analysis (FE) to additional composite slab configurations using profiled steel decking — a critical element in multi-storey construction.



Using highly detailed digital models, we investigated two deck profiles, each in two different thicknesses, to understand how they respond under fire exposure. These simulations pushed the boundaries of available computing power, with some models requiring over a month of continuous processing time due to their complexity — more than 12 million degrees of freedom were analysed in each scenario!

Despite these technical constraints, the results provided valuable insights into how slab thickness affects sagging and structural deformation during fire. This work not only informs safer design but also supports the development of fire-resilient construction solutions aligned with future building code and performance-based design approaches.

Rethinking minimum dimensions for CFST columns

Current standards in AS/NZS 2327:2017 prescribe a minimum SHS160 section for composite- filled steel tube (CFST) columns to achieve a 30-minute fire resistance rating. However, earlier experimental evidence suggests that SHS150 sections can perform to higher fire ratings.

To investigate, we've completed a three-phase study involving analytical calculations, literature review, and detailed finite element simulations. The findings support a reassessment of current dimension requirements, potentially enabling more efficient use of materials without compromising safety—a clear benefit for engineers, developers, and policy makers.

Improving guidance for steel columns in fire-separating walls

While load-bearing elements in one-way fire walls are well-documented, two-way fire-separating wall systems lack clarity, particularly when steel posts are embedded within them. Our study in this space applies numerical and analytical techniques to evaluate these systems, with outcomes set to inform improved design guidance.

This mahi (work) has immediate practical value for engineers navigating building code compliance in fire safety design.

Experimental performance of steel connections in fire

In collaboration with the University of Canterbury, Fire and Emergency New Zealand (FENZ), and BRANZ, we're leading a research programme on the fire performance of seismically detailed steel connections.

This experimental study - using both isolated stub tests and full-scale frame setups - evaluates connection performance under elevated temperatures, catenary action, bolt and weld failure, and post-fire cooling.

The outcomes will support more nuanced, performance-based fire design guidance, and investigate whether seismic detailing enhances fire resistance, potentially reducing the need for additional protection.

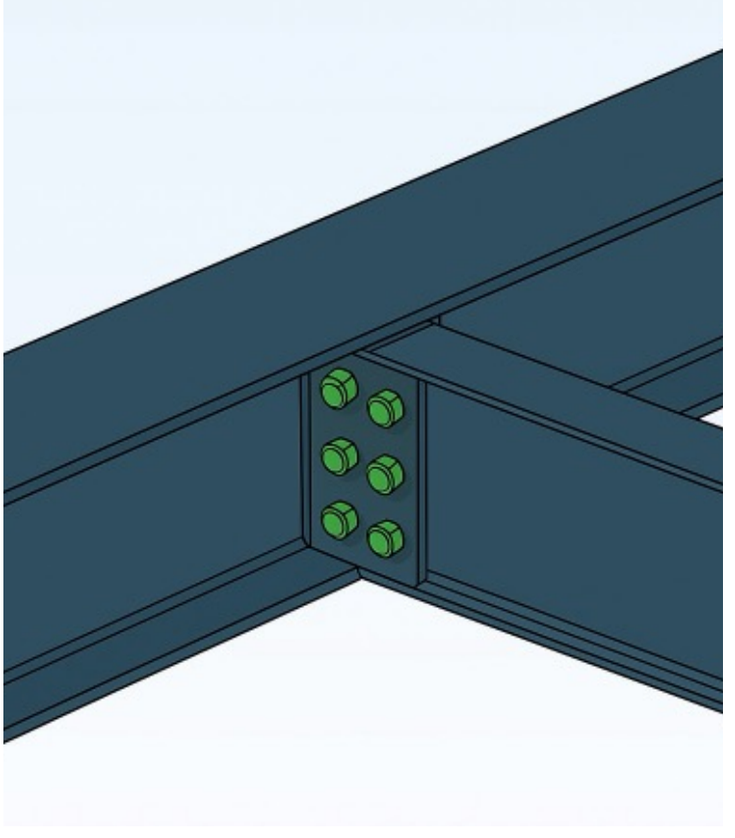
Optimising fire design in lateral and gravity systems

By exploring the inherent fire resistance of structural steel, we're developing strategies to reduce reliance on passive protection systems in lateral and gravity load-resisting frames. The study includes comparative analysis of fire design scenarios, supporting performance-based approaches that reduce material use, carbon emissions, and cost - while maintaining safety and compliance.

Performance based structural fire design guidance

To help industry shift beyond prescriptive design, we're co-developing a two-part guidance document with the University of Canterbury and the University of Auckland. Phase one will address beams and slabs, while phase two will focus on columns and connections.

Each phase will include practical examples, such as applications for steel-concrete composite buildings - to demonstrate the application of performance-based mwethods in real-world contexts.



4.0

Expertise That Counts

Specialist support, Trusted solutions, Skills that count.

Our commitment to technical excellence is embedded in every solution we deliver — from support for SMEs to advanced software tools, national standards development, and knowledge sharing. In FY25, our team provided free technical advice to industry, contributed to key board and advisory groups, and developed resources that empower engineers and fabricators with practical, evidence-based guidance.


HERA HOUSE
HERA
ation in metals

Technical excellence

We continue to play a leading role in shaping the future of steel standards across Aotearoa and Australasia. Our contribution to standards development ensures that our members, and the wider construction sector, are equipped with modern, evidence-based frameworks that support safety, efficiency, and sustainability in the built environment.

In FY25, we made significant progress across multiple key standards, reflecting our technical leadership and collaborative engagement with national and trans-Tasman committees. Our staff were members of the following standards committees, boards and advisory groups:

- Sustainable Steel Council (Director);
- Hanga-Aro-Rau, Workforce Development Council for Manufacturing, Engineering and Logistics (Co-Chair);
- Steel Construction New Zealand (Director);
- MBIE's Building Advisory Panel (Member);
- MBIE's Embodied Carbon Technical Advisory Group (Member);
- Auckland University of Technology (AUT) Engineering Industry Advisory Group (Member);

Technical advice

We support the toughest projects through technical support and services. In FY25 our team provided technical support to a wide range of needs from the interpretation or application of standards, to technical enquiries requiring in-depth technical knowledge and judgement, technology assistance and implementation, design guide queries and more.

- This financial year we delivered value in:
- retrofit repair of two bridges;
- project based QA monitoring;
- weldability issues;
- brittle fracture;
- design of welded joints;
- quality management;
- welding procedures and qualifications;
- compliance;
- welding of reinforcing steel;
- finite element analysis;
- simulations;
- corrosion and durability design;
- corroded structures;
- composite structures and composite design;
- seismic design of steel and metal composite structures;
- low-damage seismic solutions for steel buildings;
- structural earthquake engineering for steel and composite structures
- structural fire engineering;
- and more.

We responded to

120

Requests

For free technical advice

New calibration guide available

In FY25 our Fabrication 4.0 team released a new technical guide on calibration protocols for devices and equipment to support quality steel construction.

The intent of this technical report? To give commentary on calibration and validation approaches to comply with quality requirements of AS/NZS 5131, in particular, on two critical technical aspects frequently overlooked – the concept of measurement uncertainty and recognising the cumulative effect of tolerances.

Background for this technical report

Calibration and validation processes are important aspects of the steel construction industry. Whether ensuring the proper thickness of steel components, the correct alignment of structural elements, tensioning of bolts, and checking of welding parameters, calibration is required to ensure that critical measurements and inspections are executed with required consistency.

Calibration is the process of fine-tuning and adjusting measurement equipment to a known standard or reference to ensure its accuracy and reliability. It ensures that the equipment consistently produces measurements that are traceable to a recognised standard.

It is essential to emphasise two critical technical aspects frequently overlooked: understanding the concept of measurement uncertainty and recognising the cumulative effect of tolerances. Measurement uncertainty recognises that no measurement is entirely error-free; there is always some degree of inherent imprecision in any measurement process. Tolerance accumulation may become significant for multiple measurements and adjustments made throughout the fabrication processes. Each measurement of fabrication and erection processes is assessed for its own tolerances, and when these are combined, they can lead to a noticeable deviation in the final dimensions of a structure.

Why is this technical report important for steel fabricators?

Standards related to calibration and validation in the steel structure industry may vary depending on the context and the aspect of the industry referring to and can cover various aspects of construction and engineering, including materials, design, fabrication, and quality.

Whilst AS/NZS 5131 does not solely focus on calibration and validation, it defines quality requirements, which means adequate calibration and validation practices are required to achieve compliance.

Details about calibration protocols can be found in HERA Technical Report R8-44 2024: Commentary on Calibration and Validation of Instruments Used in Steel Construction to AS/NZS 5131.

In FY 2025 *we released*

16 Technical Papers, reports

3 Design guides

1 Digital software tool

Publications & reports

Our impact-led research teams and collaborators published a number of papers and reports in FY25, reflecting our commitment to knowledge sharing and thought leadership. These publications disseminate our findings to the broader engineering community and ensure that our work informs standards and practice both in New Zealand and internationally. Notable publications this year include:

- Alizadeh, S., McRae, G. A., Andisheh, K., & Bull, D. (2024). Advances in seismic design of diaphragm for steel buildings. Proceedings of the 18th WCEE, Milan, Italy.
- Andisheh, K. (2024). Development of steel circularity passport: Literature review, research gaps, and program rules in New Zealand. Waste Management Bulletin, 2(3), 11-27.
- Andisheh, K. (2024). Steel reuse for the transition of the construction industry to a circular economy. Proceedings of the 20th FIB Symposium, Christchurch, New Zealand.
- Andisheh, K., El Sarraf, R., ShahMohammadi, A., Coyle, T., Balador, Z., Ellis, G., Grindley, J., & Stevenson, C. (2024). Towards proposing and piloting a framework for low carbon design: An introduction. SESOC Journal, 37(2), 38–56.
- Andisheh, K., Hasanali, M., Mago, N., Taheri, H., ShahMohammadi, A., Karpenko, M., Jármai, K., Dong, P., Clifton, G.C., & MacRae G.A. (2024). Evaluating seismic response of innovative reusable eccentric braced frames (EBF). Proceedings of the 18th WCEE, Milan, Italy.
- Andisheh, K., Hasanali, M., Mago, N., Taheri, H., ShahMohammadi, A., Karpenko, M., Jármai, K., Dong, P., Clifton, G.C., & MacRae G.A. (2024). Seismic response of sustainable, resilient eccentrically braced frames. Proceedings of the NZSEE 2024 Conference, Wellington, New Zealand.
- Dani, A.A., Roy, K., Owen, M., Palmer, F., & Coyle, T. (2025). Potential integration of mātauranga Māori in sustainable Construction 4.0 adoption. Sustain Sci, 20, 993–1016.
- El Sarraf, R., Karpenko, M., & Danis, R. (2024). Updating the Weathering Steel Guide for Australian Bridges. Proceedings of the 12th Australian Small Bridges Conference, Queensland, Australia.
- Hobbacher, A.F., Karpenko, M., & Fussell, A. (2024). Fracture behavior of a spiral weld in the welded API5L structural column under seismic load. International Institute of Welding (IIW) document IIW C-X 2064-2024.
- Jármai, K., Hasanali, M., & Andisheh, K. (2024). Structural optimisation of a reusable seismic frame active link. China Welding, 33(3), 1-7.
- Jármai, K., Hasanali, M., Andisheh, K., & Karpenko, M. (2024). Structural optimisation of a welded
- and bolted reusable frame. Proceedings of the 77th IIW Annual Assembly and International Conference, Rhodes, Greece.
- Paul, B., Fang, Z., Roy, K., Taheri, H., Karpenko, M., & Lim, J.B.P. (2024). Effect of Axial Misalignments in Fillet Welded Cruciform Joint Under Static Loading. International Journal of Steel Structures, 24, 231-245.

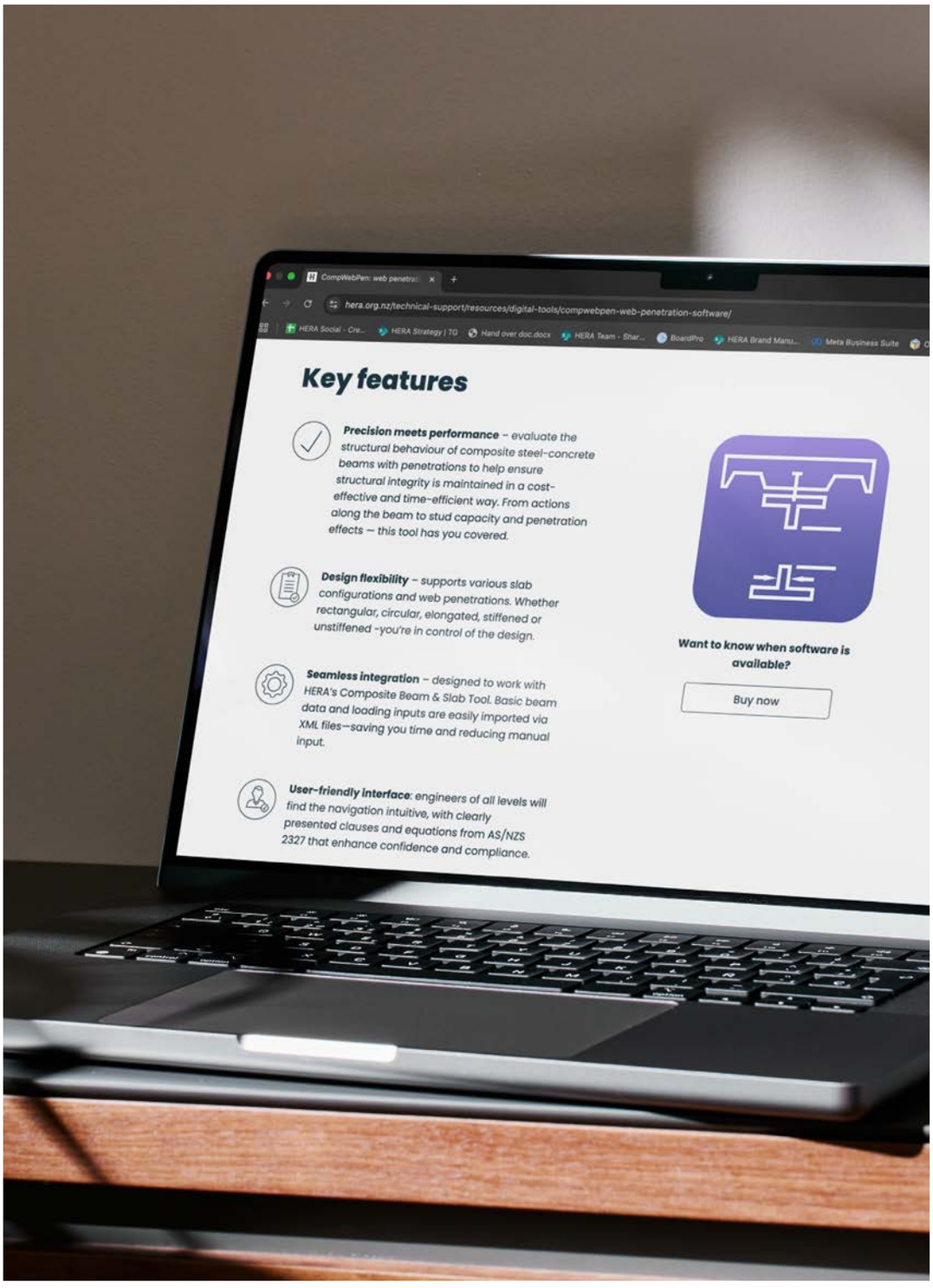
- ShahMohammadi, A., Andisheh, K., & Coyle, T. (2025). HERA R4-164: Low-carbon Circular Building Design Guidance Framework for Building designers. ShahMohammadi, A. (2025). HERA R4-165: Research gaps in low-carbon circular design guidance framework.
- Taheri, H., Karpenko, M., Clifton, G.C., Lim, J.B.P., Ramhormozian, S., Dong, P., Fang, Z., & Roy, K. (2024). Comparison between weld sizing methods included in steel structure standards. Proceedings of the NZSEE 2024 Conference, Wellington, New Zealand.
- Yakut, V. (2024). HERA R8-44: Commentary on calibration and validation of instruments used in steel construction to AS/NZS 5131.
- Ramhormozian, S., Zhang, M., Clifton, G.C., Karpenko, M., Taheri, H., Chen, Z., & Dong, P. (2024). Experimental Study of Transversely Loaded Fillet Welds for Seismic Actions. Proceedings of the 11th International Conference on the Behaviour of Steel Structures in Seismic Areas. Lecture Notes in Civil Engineering, 519, 601-606. Springer, Cham.
- Yakubov, V., Ostergaard, H., Hughes, J., Yasa, E., Karpenko, M., Proust, G., & Paradowska, A.M. (2024). Evolution of Material Properties and Residual Stress with Increasing Number of Passes in Aluminium Structure Printed via Additive Friction Stir Deposition. Materials, 17(14), 3457.

Design guides

- Clifton, G.C., Andisheh, K., & Hamid, Z. (2025). HERA R4-156: Seismic design of moment resisting steel frames.
- Coyle, T., & Andisheh, K. (2025). How to specify low-carbon structural steel.
- El-Sarraf, R., Mandeno, W., Ghominejad, H., & Andisheh, K. (2025). HERA R4-133: New Zealand Steelwork Corrosion and Coating Guide.
- Shahmohammadi, A., Andisheh, K., Coyle, T., El Sarraf, R., Balador, Z., Black-Roberts, A., Ellis, G., Grindley, J., McCluskey, Z., Riley-Smith, H., & Stevenson, C. (2025). HERA R4-166: Low-carbon design guide for steel and hybrid low-rise buildings.

Software

- HERA-CompWebPen - web penetration software.



FY25 technical know-how in structural guidance

Setting the standard for smarter splice placement

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- how beam and brace splice placement should avoid yielding regions to preserve ductility and energy dissipation during seismic events; and
- the implications for fabrication and cost when these placements are not observed.

This guidance directly supported designers and engineers specifying safe and compliant connections, SMEs and fabricators navigating complex standards, and Government priorities around infrastructure resilience and seismic safety.

It also reflects how our technical team are able to translate complex structural standards into practical, high-impact support — helping ensure Aotearoa New Zealand's buildings are built not just to code, but to last.

> “Smart splice placement supports safer, more resilient builds.
> - Hafez Taheri

Circular hollow section (CHS) column splices (photo courtesy of D&H Steel Construction Ltd.).

Structural consultancy services

We continue to support our members and professionals in Aotearoa New Zealand's steel industry by delivering solutions to complex structural engineering challenges. Our work includes advanced simulations using general-purpose Abaqus software to model realistic structural behaviour, as well as incorporating the latest research and development to enhance engineering best practices and guidelines.

This year, we successfully delivered several key consultancy projects, including:
Development of a weathering steel design guide for bridges in Australia
Investigation into the structural fire performance of steel–concrete composite flooring systems, including assessments of new products
These projects reflect our ongoing commitment to combining applied research with practical engineering expertise to create valuable outcomes for industry.

HERA Bridge Group

The HERA Bridge Group meets quarterly and brings together representatives from HERA fabricator members, consulting engineering firms, Waka Kotahi NZ Transport Agency, KiwiRail, and HERA team. The Group plays a strategic role in advancing the use of steel in bridge construction across New Zealand. Its key objectives include identifying opportunities to enhance and expand steel application in bridge projects, advising on priority activities for HERA to address critical issues such as technical challenges, sustainability, and training needs, and recommending practical solutions to overcome these challenges. The Group's collaborative approach ensures industry-relevant insights inform HERA's efforts to support a more resilient and efficient transport infrastructure.

Standards and compliance

Our Fabrication 4.0 and Structural Systems divisions represent industry on a number of standards committees and work closely with SCNZ, MBIE, NZ Standards and more. In FY25 contributing to the following committees and standards updates:

AS/NZS 5100.6:2017 Amd 1 – Bridge design, Part 6: Steel and composite construction
This work ensures harmonisation with other design standards and addresses feedback from the public consultation phaseand will improve composite and steel bridge design outcomes. The revised amendment and its accompanying commentary are currently under review.

AS/NZS 2327 – Composite Structures: Composite Steel-Concrete Construction in Buildings
This standard is undergoing a major revision, and our in-house experts have made significant contributions, particularly in:

- identifying and resolving technical errors in Appendix C (related to the design of composite beams with large web penetrations); and
- supporting the addition of a new chapter on steel-concrete composite wall systems, expanding the application of the standard to new structural typologies and building performance objectives.

TS1170.5 – Structural design actions: Earthquake actions – New Zealand
The major revision of NZS 1170.5 and its commentary continues, with working group recommendations currently under development. This revision is essential for incorporating the latest seismic research and ensuring the robustness of New Zealand's earthquake design provisions.

NZS 3404 (P3404) – Structural steel design standard
A major revision of NZS 3404 is well underway, with several chapters finalised, and the remaining sections currently being drafted to bring the standard in line with contemporary design methods, sustainability considerations, and international best practice. This revision reflects growing emphasis on resilience, low-carbon design, and digital construction.

AS/NZS 1594 – Hot-rolled steel flat products
Following the completion of a major revision, committee voting has been finalised, and the draft has been submitted to Standards Australia. The updated standard will better reflect advances in manufacturing, material performance, and sustainability expectations.

AS/NZS 1170.2 – Structural design actions: Wind actions
A major revision based on newly accepted proposals is actively in progress and includes updates to reflect modern wind engineering research, regional climatic considerations, and performance-based design approaches that will improve both safety and buildability.

AS/NZS 1170.0 & AS/NZS 1170.1 – Structural design actions: General principles and permanent/ imposed actions
Scoping documents for both parts have been developed, outlining the intended direction for future updates. These revisions will integrate harmonised safety factors, sustainability considerations, and cross-disciplinary design coordination.

4.0 In Focus: HERA Cert

Independent certification, Trusted auditing, Ensuring quality.

Through rigorous certification and continuous improvement, HERA Cert is lifting the bar for steel construction in Aotearoa. By verifying fabricator and erector capabilities, we're building a stronger, safer construction sector – one that's aligned with industry best practice, government productivity goals, and our mission to enable smarter, more efficient infrastructure delivery.

Raising the industry standard through certifications

HERA Certification Ltd and its independent certification services play a critical role in lifting the quality and reliability of steel construction in Aotearoa New Zealand.

By certifying fabricators and endorsing steel erectors, we ensure that industry participants meet stringent standards – a key factor in building safe infrastructure and driving productivity by "doing it right the first time."

In FY25, we implemented a significant change - with all new holders of the Steel Fabricator Certification (SFC) now required to obtain the Certified Erector Endorsement within 12 months of their initial certification. To facilitate this, Erector Endorsement audits have been integrated into the routine annual surveillance audits for SFC, allowing assessors to cover both fabricator and erector criteria in one visit.

Our assessors have been conducting these combined audits smoothly, and the final step – a professional interview for the Erector Endorsement – has been successfully completed with support from industry peers.

We'd like to acknowledge and thank HERA member companies D&H Steel Construction, Grayson Engineering, John Jones Steel, MJH Engineering, VIP Steel and Jensen Steel Fabricators who provided voluntary assistance by serving as technical experts for HERA Cert and our shared commitment for excellence.

In the reporting year FY25, the HERA team performed a total of 73 audits as contractors to HERA Certifications LtdCert.

The certifications issued by HERA Cert were as follows:

- SFC CC4 Certified Fabricators (Complexity Category 4, with AS/NZS ISO 3834.2 quality certification): 5 companies
- SFC CC3 Certified Fabricators (with AS/NZS ISO 3834.2): 55 companies
- SFC CC2 Certified Fabricators: 12 companies
- Certified Erector Endorsements (issued to date): 35
- AS/NZS ISO 3834.2-only Certifications: 2 companies

Michail Karpenko
HERA Cert Manager

73 total audits performed

5 Companies *achieved SFC CC4 Certified Fabricators*
Complexity Category 4, with AS/NZS ISO 3834.2) quality certification

55 Companies *achieved SFC CC3 Certified Fabricators*
(with AS/NZS ISO 3834.2)

12 Companies *achieved SFC CC2 Certified Fabricators*

35 Companies *were issued Certified Erector Endorsements*

2 Companies *obtained AS/NZS ISO 3834.2 - only certifications*

4.0 Developing & maintaining

Creating a skilled workforce: capability, competence, and career

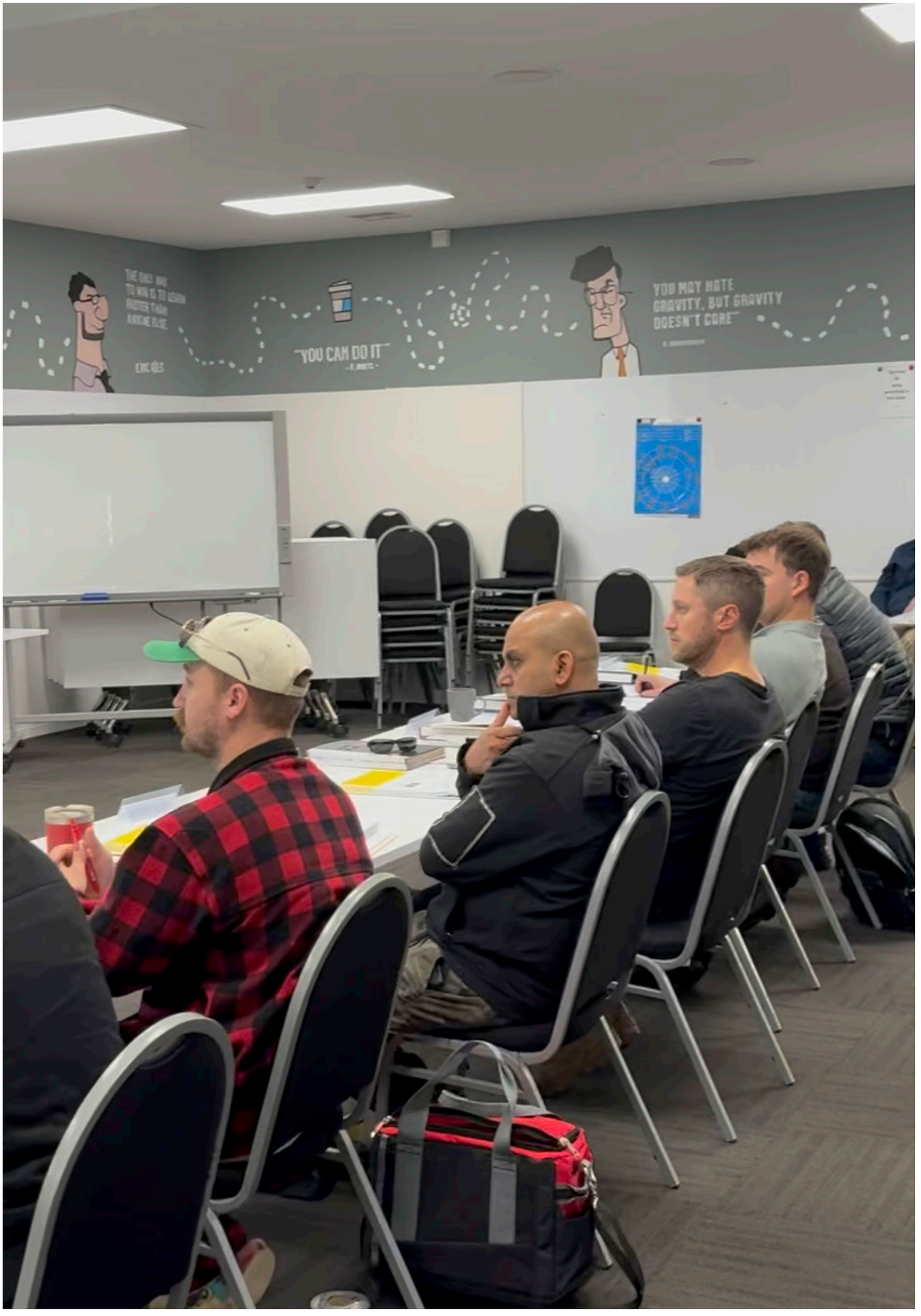
Mā te huruhuru, ka rere te manu.
With feathers, the bird will fly.

We're committed to developing a future-ready workforce. We champion vocational and university education and focus on capability-building, long-term continuity, and meaningful career pathways. Our mahi (work) supports the growth of an industry grounded in knowledge, equity, and opportunity. By aligning education with real-world needs, we're helping to shape a workforce equipped to drive Aotearoa New Zealand's future.

4.0 Our Training

Vocational pathways: progression, potential and purpose

In FY25, we continued to build and support a skilled, future-ready workforce through education, training, and qualification programmes, aligning with both our strategic goals and the Government's emphasis on workforce development - equipping participants with practical knowledge and technical strategies aligned with our industry's transition to more resilient, sustainable, and efficient practices.


"YOU CAN DO IT"
YOU MAY HATE GRAVITY, BUT GRAVITY DOESN'T CARE"

In-person training

Our training is delivered by our in-house experts not only at HERA House, but across Aotearoa New Zealand - in close collaboration with industry partners. From formal training programmes to seminars, workshops, and conference presentations, we engage across multiple platforms to transfer knowledge. These outreach efforts help connect and inspire the wider industry — building collective capability and driving innovation. Highlights from FY25 include:

Qualification and examination

The competency of personnel involved in structural steelwork fabrication is a critical determinant of the quality, safety, and compliance of the finished product.

Proper training, qualifications, and experience across all levels are essential to meet the requirements of AS/NZS 5131: Structural Steelwork – Fabrication and Erection to deliver reliable, high-quality steel structures. We provide education and training for those who have responsibility for the supervision and inspection of steel fabrication. While the AS 2214 welding supervisor qualification is well established due to its alignment with the nation's structural steelwork standards and the Steel Fabricator Certification (SFC) programme, the welding inspector qualification has historically been less well defined under the AS/NZS 5131 framework.

This gap has now been addressed with the publication of AS 2214.1:2024 – Structural Steelwork – Qualification of Personnel Part 1: Welding Supervisors and Inspectors. This new standard specifies the pre-examination qualifications and scope of examination required to grant certificates of qualification to welding supervisors, who oversee welders involved in steel structure fabrication, and welding inspectors who are responsible for inspecting structural steel welding. HERA's Welding Supervisor and Inspector courses have been fully aligned with the requirements of the revised standard. 150 professionals have completed HERA's Welding Supervisor course in the reporting year. Two welding inspection courses have been held in the reporting year to a total of 19 attendees, which were followed by the required examinations for certification.

Welding Inspector:
Level One

We had
21 attendees

100%
pass rate
including 2
successful resits

Welding Supervisor

We had
90 *attendees*

pass rate
including
14 resits
82%

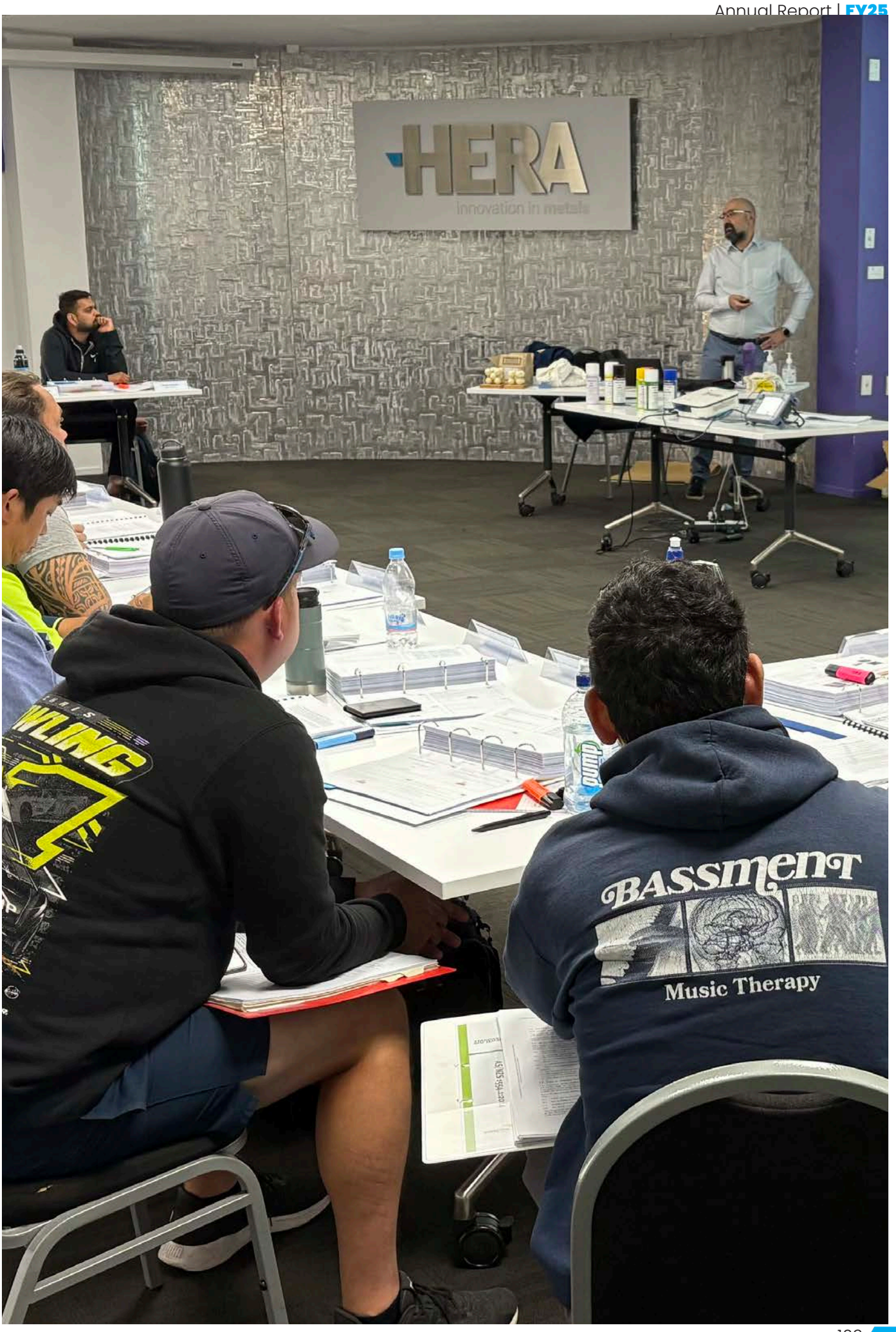
SFC CC2 workshop

We co-hosted a Construction Category 2 (CC2) workshop with SCNZ in Christchurch on 24 May 2024. This workshop provided guidance on fabrication and quality requirements for CC2-level structural steel projects - addressing common questions from fabricators and engineers. A recorded 23 professionals attended.

Procurement training – materials traceability

We contributed to SCNZ's procurement training seminars by delivering two sessions on welding consumables and material traceability in Christchurch on 10 May 2024 with 24 professionals in attendance. Ensuring proper traceability is crucial for compliance with AS/NZS standards, and this training helps procurement specialists enforce quality right from the sourcing stage.

Workshops & Training


HERA
innovation in metals
BASSMENT
Music Therapy

Construction 4.0 conference

Innovation in motion, Shared kōrero, The future: 4.0 defined.

This conference was designed to inspire — turning research into real-world possibility by showcasing the tools, ideas, and cultural insights shaping the future of construction. Attendees explored how smart technologies, sustainability, and mātauranga Māori can be embedded into practice, empowering them to lead the transformation toward a more connected, resilient, and innovative industry.

Construction 4.0 Conference: Building the Future, Together

The inaugural Construction 4.0 Conference, hosted by HERA at the Fletcher Pavilion in Tāmaki Makaurau, brought together leading minds in design, engineering, and construction to explore how Aotearoa can revolutionise its built environment. Positioned as more than just another industry event, the conference was a call to action – inviting attendees to join a movement grounded in collaboration, culture, and cutting-edge technology.

With a jam-packed agenda, the day featured keynote speakers, expert panels, tech displays, and research showcases across AI, sustainability, digital twins, robotics, BIM, and more. Crucially, it offered a distinctly Aotearoa perspective on innovation by embedding mātauranga Māori and circular design thinking throughout the program.

Highlights from the day

A powerful karakia timatanga (opening karakia) and mihi whakatau set the tone for the day, with Saul Roberts (TOA Architects) and Val Panui (Fletcher Construction) grounding attendees in tikanga (Māori protocols) and whakawhanaungatanga (the process of building relationships).

Global expert and keynote speaker Professor Ian Manchester (Australian Centre for Field Robotics) inspired attendees with insights into how robotics and AI are transforming sectors like agriculture, mining and transport - prompting reflections on what's possible for construction in Aotearoa New Zealand.

Saul Roberts

Ian Manchester

NGĀKOPA
construction 4.0 **hub**

The Ngākopa Takarangi Framework presented by A/Prof Fleur Palmer (AUT) introduced a mātauranga Māori-inspired model to guide Construction 4.0. The takarangi (interlocking spirals, symbolising the creation of sky and Earth) representing knowledge, growth, and interconnectedness with ngā atua of the natural environment – positioning mātauranga Māori not as an add-on, but as a powerful framework for future-focused innovation. Practical example or incorporating mātuaranga Māori's included Peddelethorp's. Room 2 Rūma case study (presented by Richard Goldie's). This Revit tool translates room names into te reo Māori – demonstrated how cultural revitalisation can be woven into everyday design tools and workflows.

Yugian Lu

Kōrero (discussion) on implementation challenges were a key part of the day with Dr Yuqian Lu (University of Auckland), moderating a standout panel session including Dr Alayna Pakinui Rā (WSP NZ), Brendan Attewell (Fletcher Construction), and Warren McLuckie (FRAMECAD) who shared bold insights on sustainable design, innovation, and cold-formed steel technologies – each offering a unique perspective on how Construction 4.0 can reshape the sector. Their kōrero underscored the power of integrating Indigenous knowledge, digital innovation, and future-ready systems.

This was followed by an equally powerful panel that tackled BIM adoption, regulatory barriers, data protocols, and system fragmentation – with insights from Brent Tassell (Fletcher Construction), University of Auckland, and University of Waikato showcased powerful early-stage research into Construction 4.0 themes, from carbon budgeting and AI to lifecycle assessment and data connectivity.

Dr Diane Menzies (Landcult), and Mark Thomas (Nextspace), facilitated by Prof. Robert Amor (University of Auckland). Future-focused rangatahi (youth) also took to stage, with students from Massey University, University of Auckland, and University of Waikato showcased powerful early-stage research into Construction 4.0 themes, from carbon budgeting and AI to lifecycle assessment and data connectivity.

What set this conference apart?

This was more than a conference – it was a gathering of people. It was an opportunity to embed culture and sustainability as core to how we build, not just add-ons.

By convening kairangahau (researchers), engineers, cultural advisors, students, industry representatives and digital experts, we created a platform for connection that spanned both upstream and downstream parts of the sector. The energy in the room confirmed what we've known all along – that Construction 4.0 is here, and Aotearoa has the talent, drive and tikanga to lead it.

Our thanks to our host Fletcher Construction, and all the speakers, sponsors, and supporters who helped make the day such a success.

Fletcher

NGĀKOPA
construction 4.0 **hub**


CONFERENCE 2024
NGĀKOPA
construction 4.0 hub
innovation in metals

HERA x SESOC seminar series

Strength in structures: Technical, Practical, Nationwide.

This national seminar series was designed to equip structural engineers with advanced, code- aligned knowledge on diaphragm design — a critical element of structural performance during seismic events. Through expert-led sessions, practical design walkthroughs, and in-depth exploration of current standards (NZS 3404 and beyond), attendees gained insights into in-plane behaviour, load path detailing, and stability considerations essential to steel-framed structures.

Seminar series: Advances in diaphragm design in steel frame structures

As part of our technical education programme, we delivered a nationwide seminar series on advanced diaphragm design - an essential aspect of structural steel performance.

Held in collaboration with SESOC, the sessions provided in-depth guidance on in-plane diaphragm demands and calculation methods, with a focus on the pros and cons of different modelling and analysis techniques.

With strong participation from the engineering community, attendees explored strength and stability assessments, load path considerations (including shear studs and beam-column connections), and detailing requirements - all brought to life through a step-by-step design example to support practical application.

Key speakers

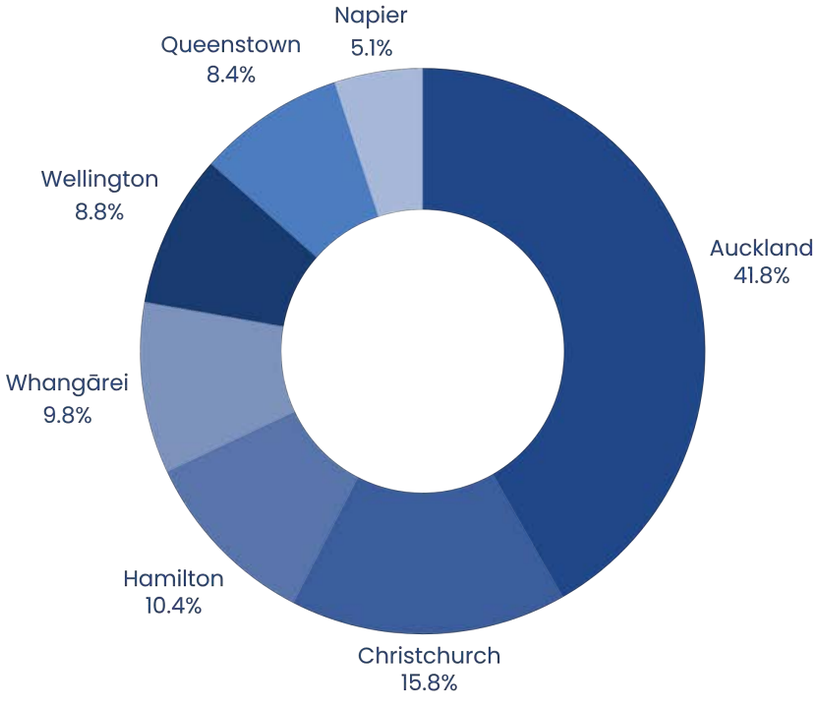
Dr Kaveh Andisheh
General Manager – Structural Systems, HERA
Kaveh leads our strategic research and consulting activities in structural systems, ensuring alignment with industry needs and government priorities. A Chartered Professional Engineer (CPEng, IntPE), he holds a PhD in Structural Earthquake Engineering from the University of Canterbury and brings over two decades of engineering and research experience. He is an active contributor to standards development in both New Zealand and Australia, and a Chartered Member of the Institute of Directors.

Dr Saeid Alizadeh
Senior Structural Engineer, HERA
Dr Alizadeh is a Chartered Structural Engineer with over 13 years of experience in seismic assessment, structural design, and strengthening of buildings and bridges. He completed his PhD at the University of Canterbury, specialising in diaphragm design in steel structures. As the author of HERA's Diaphragm Design Guide, he provides expert insight into seismic resilience strategies and advanced design principles

HERA X SESOC
Seminar Series

297 Professionals

7 Cities



More than 290 professionals joined us across Aotearoa — Auckland led the way.


Load path to VLFR system
Shear stud & composite beam design
Lateral force resistance of shear studs
SOC
HERA


Load path to VLFR system
Shear stud & composite beam design
SOC

50%+ carbon gone – just like that!

Leading change for a low carbon future: Circular, Practical, Actionable.

This nationwide seminar series helped engineers, designers, and sustainability professionals understand how to dramatically cut embodied carbon in buildings - no gimmicks, just data-backed clever design strategies. From life cycle assessments to material reuse, it provided the practical tools needed to lead Aotearoa New Zealand's transition to low-carbon construction.

Tactics to achieve low carbon design (steel & steel hybrid commercial buildings)

This four-city event was delivered in September 2024 and was created to provide targeted knowledge on reducing embodied carbon in steel and steel-hybrid commercial buildings to improve productivity, economic growth, climate resilience, and infrastructure decarbonisation, and encourage sector innovation with tangible tools and upskilling to meet growing carbon requirements

Designed to provide engineers, architects, builders, and sustainability professionals with clear, actionable guidance, the seminar series explored how to achieve up to 50% (and more) reductions in embodied carbon through practical, evidence-based strategies.

Attendees explored circular design principles, low-carbon specification practices, and life cycle assessment frameworks tailored to the local construction context.

This seminar supported our sustainability and circular economy objectives by exploring pathways to reduce embodied carbon in structural steel and hybrid buildings. Key themes included material selection, reuse strategies, and design practices to meet New Zealand's low-carbon construction targets.

Building capability in four cities

105

professionals

- Ōtautahi, Christchurch - 42
- Tāmaki Makaurau, Auckland - 41
- Kirikiriroa, Hamilton - 14
- Te Whanganui-a-Tara, Wellington - 8

Circular. Practical. Actionable.

Highlights from the series

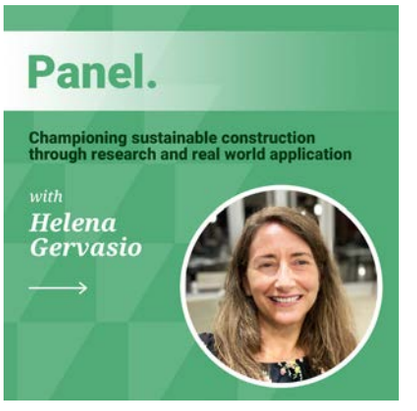
Across four cities, keynote speaker Associate Professor Helena Gervasio (University of Coimbra, Portugal) shared international insights on how lifecycle assessment (LCA) and sustainability frameworks are transforming construction. Her global lens gave local practitioners powerful context to rethink materials, methods, and the metrics that matter.

Our GM Structural Systems, Dr Kaveh Andisheh complemented this with design strategies for Aotearoa New Zealands unique built environment - introducing new guidance on circular steel design and walking attendees through a case study demonstrating how clever design choices can reduce embodied carbon by up to 50%.

Local panel discussions were headed by Helena Gervasio and Dr Kaveh Andisheh and brought the conversation home - tackling regional challenges and context to the low carbon design conversation with local experts from each rohe. These sessions explored everything from supply chain transparency and digital passports to regulatory alignment and practical reuse strategies.

The event helped deepen understanding of low-carbon design hierarchies, circularity principles, and life cycle assessment standards, and gave attendees access to advanced thinking and practical frameworks tailored for low-rise steel and hybrid structures.

Moderated by:



Panels in Tāmaki Makaurau, Auckland & Kirikiriroa, Hamilton

Moderated by:

Panels in Te Whanganui-a-Tara, Wellington & Ōtautahi, Christchurch:

What made this series stand out?

Attendees left not just with inspiration – but with a toolkit. It introduced them to the future-facing frameworks that will underpin a low-carbon construction sector – building the knowledge base to drive meaningful climate outcomes.

The event series also served as a launch platform for our broader low carbon initiatives including the:

- Low Carbon Circular Design Framework (R4-164)
- Design Guide for Steel and Steel-Hybrid Low-Rise Buildings (R4-166)
- Digital Steel Passport Pilot

Extending the learning journey

The success of the "Tactics to Achieve Low Carbon Design" series reflects a growing appetite for credible, practical pathways to sustainability. By empowering professionals across Aotearoa to adopt carbon-reduction strategies now, HERA is helping build a future where resilience, innovation, and sustainability are designed in from the start.

To ensure this important kōrero continues, we're developing an on-demand digital version of the seminar series to allow professionals across Aotearoa to access the insights and tools shared, regardless of location or timing.

We are also looking to develop an online course which will feature two key modules:

Sustainability of the construction sector - led by A/Prof Helena Gervasio, this module will explore key drivers and barriers to sustainable building, introduce LCA principles, and identify how the sector can lead circular economy transitions.

Circular low carbon design strategies - presented by Dr Kaveh Andisheh, this session will focus on practical frameworks for sustainable design using steel, composite, and hybrid systems - supported by a real-world case study achieving up to 50% embodied carbon reduction.

Together, these modules will support industry upskilling and make our climate-focused mahi accessible to a wider audience.

> "The success of the "Tactics to Achieve Low Carbon Design" series reflects a growing appetite for credible, practical pathways to sustainability
> Dr. Kaveh Andhisheh

A record of over

629

professionals

took part in our technical courses, workshops, and webinars in

FY24

Courses

Welding Inspector **19** attendees

148 attendees *Welding Supervisor*

Conferences & Seminars

60 attendees *Construction 4.0 Conference*

Advances in diaphragm design in steel frame structures Inspector **297** attendees

105 attendees *Tactics to Achieve Low Carbon Design*

Insight

Strengthening vocational education through industry voice

Advocating for alignment. Enabling workforce readiness. Supporting economic productivity.

The vocational education system in Aotearoa New Zealand is undergoing major transformation, and FY25 has been a pivotal year in shaping its future. During this time, we have remained a strong advocate for a vocational system that reflects the real needs of industry - especially those in engineering, manufacturing, and construction - and delivers the skilled workforce required to build a resilient, productive nation.

Following earlier consultation on vocational education reforms, Minister Penny Simmonds announced that Industry Skills Boards (ISBs) will be established from 1 January 2026, forming the cornerstone of an industry-led, work-based learning model. This marks a shift away from Te Pūkenga's centralised model and opens a new chapter in how industry engages with vocational training. Importantly, ISBs will initially incorporate the work-based learning divisions of Te Pūkenga (such as Careerforce) as separate divisions for up to two years, providing time for industry consultation and transition planning.

Why this matters

At HERA, we welcome the move toward a system that recognises industry leadership in shaping the workforce of tomorrow. However, we remain vigilant about ensuring that industry voice is not diluted in the process. In September 2024, we raised concerns about the lack of transparency around changes to Workforce Development Councils (WDCs) and the need for clearer rationales supporting the reform.

This concern is grounded in deep experience, with our CEO, Dr Troy Coyle, serving as Co-Chair of Hanga-Aro-Rau, the WDC for Manufacturing, Engineering, and Logistics. Through this role, she has provided leadership to ensure that training priorities were aligned with sector needs and that the system uplifted both learners and employers. Her continued involvement reinforces our ability to influence this next phase of reform.

In FY26 the new ISB structure will take shape, with the Tertiary Education Commission (TEC) launching consultation on ISB coverage, and nominations for industry representatives to help establish the ISBs. We will be strongly encouraging our members and sector partners to engage in this process to ensure that engineering and manufacturing are appropriately represented in these new structures.

Our commitment

We remain actively involved in this transition and continue to support our members by:

- preparing submissions and working collaboratively with cross-sector organisations;
- facilitating access to information about the reforms and opportunities for input;
- advocating for strong, well-resourced ISBs that *preserve the work-based learning strengths* of the current system; and
- supporting the inclusion of engineering-specific needs and standards in future vocational training structures.

The shift toward an industry-led system is a positive step - but it will only succeed if those with real-world knowledge and workforce experience are part of shaping what comes next. We are committed to ensuring our industry's voice is heard - because vocational education must deliver for learners, employers, and the wider economy.

Online training

Alongside in-person delivery, our team has shared knowledge through live webinars and on-demand training. By making this series accessible online, we've enabled regional participation and helped reduce barriers to upskilling across Aotearoa when it comes to the latest research and best practice. Highlights from FY25 include:

Webinar
What every engineer should know about welding!

Now in ongoing delivery, this popular 11-part webinar series continues to upskill engineers in the fundamentals of welding design, processes, and quality, with 17 attendees recorded across the year. Originally launched in FY23 as a nine-part series, it was expanded in FY25 with two additional modules to address evolving industry needs.

Delivered annually in response to strong demand, the series equips engineers with the critical knowledge required to ensure welded components are safe, compliant, and fit for purpose. Topics include welding procedures, material weldability, applicable standards, inspection protocols, and the responsibilities of all parties across the fabrication process.

Webinar
Welding updates

In FY25, we launched a 10-part online refresher webinar series to support welding supervisors — key professionals responsible for compliance with structural steel standards such as AS/NZS 5131, NZS 3404, and AS/NZS ISO 3834. The series provides targeted professional development to help supervisors stay up to date with changes to welding procedures, material standards, inspection requirements, and quality management systems.

Following strong demand, with 81 attending in FY25, the series will now run annually - providing welding supervisors with the right technical understanding for ensuring steel components are fabricated and erected to specification - lifting industry capability, improving construction quality, and reducing risk across the project lifecycle.

Online and In-person Series
Welding for heavy vehicle certifying engineers (HVCE) course

Working with Engineers NZ we began the development of a training course for NZTA Welding Engineering for Heavy Vehicle Certifiers in FY24 - creating the training materials, presentation and student notes with Engineers NZ and the HVCE expert Panel to meet sector needs.

In FY25 these courses were rolled out as part of Waka Kotahi NZTA's Heavy Vehicle Specialist Certification programme from September to November 2024 and March–April 2025.

This course consisted of eight online lectures plus a hands-on practical day (a practical training day is also scheduled for FY26 May 2025). With a recorded 10 professionals in attendance, this flexible delivery allowing working professionals across New Zealand to participate and become certified in heavy vehicle welding inspection.

By training heavy vehicle certifiers in welding engineering, this initiative helps improve the safety and reliability of heavy transport vehicles, directly benefiting public safety and industry compliance.

Webinar
Health and safety in welding

In March 2025, we launched a new three-part webinar series focused on welding health and safety with 62 industry professionals attending this pilot programme. The programme was designed to raise awareness of the key risks present in welding and fabrication workplaces, while supporting employers and workers to understand their responsibilities under New Zealand's health and safety legislation.

The first session focused on the regulatory framework, including the role of WorkSafe and available resources to guide safer practices—targeted at managers, safety officers, and those responsible for maintaining workplace standards.

The remaining sessions took a deeper dive into practical risk controls, covering fume extraction, personal protective equipment (PPE), and safe work methods. These were aimed at individuals across all levels of fabrication environments—especially those regularly exposed to welding risks. By sharing practical solutions and reinforcing legal obligations, this series plays an important role in supporting safer workplaces and helping industry meet compliance expectations.

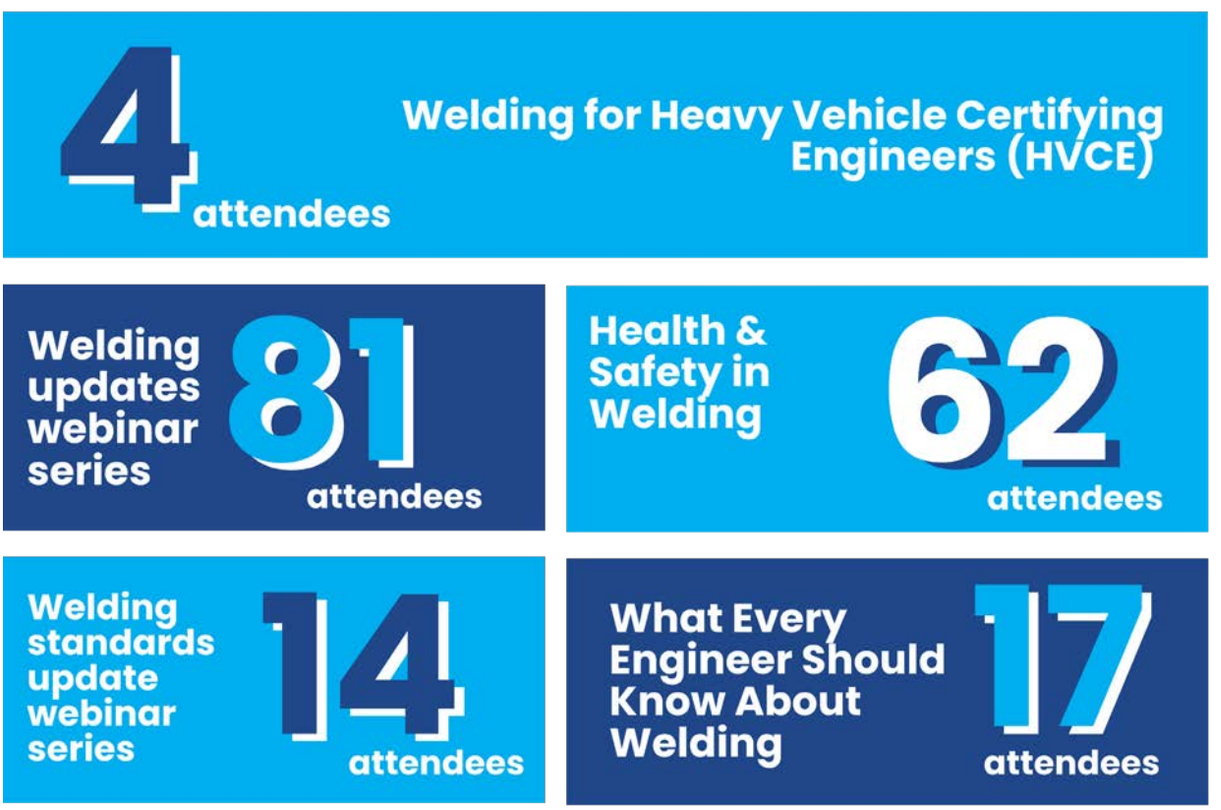
Patrick Fenemor

Webinar

Optimised fire protection for structural steel

Held on March 2025, this live webinar introduced our new Intumescent Optimisation Tool (H.I.T.) which is set to launch in FY26, and demonstrated strategies to reduce fire protection costs while maintaining safety and performance.

The session emphasised the alignment between cost-effective fire protection and embodied carbon reduction, with 41 professionals attending.



Forging global careers through vocational education in welding

From Turkiye to Aotearoa — a journey of skills, standards, and success

At HERA, we believe vocational education isn't just a training tool — it's a launchpad for global careers, economic uplift, and industry transformation. Few stories exemplify this better than that of our own welding expert, Özgür Erdem.

For him - what began as a two-year welding technology diploma in Turkiye became a 25-year career spanning international mega-projects across Europe, the Middle East, and Asia. From coal plants to nuclear builds, Özgür's journey has taken him from supervisor to international training manager - a testament to the mobility and opportunity vocational pathways can provide.

In FY25, HERA continued to support this journey for others through advanced welding training, including in-person supervisor and inspector courses aligned to the latest standards like AS/ NZS 5131 and AS 2214. These programs help ensure Aotearoa's welding workforce is qualified, competent, and globally recognised — meeting demand across construction, infrastructure, shipbuilding, and power generation sectors.

With New Zealand facing an ongoing shortage of skilled welders and inspectors, our focus on vocational upskilling supports both local workforce needs and national productivity goals.

As Özgür puts it, "Each project is like a school — helping me adapt quickly and stay at the forefront of the field."

Read the full article on Özgür's journey!

4.0 Our metalminds

The people behind every innovation: Collaboration, Capability, Culture.

FY25 saw us strengthen our workforce, celebrate new talent, and adapt through change — all while staying grounded in our values. Whether through recruitment, team development, or collaborative mahi across the motu, our people continue to be the foundation of everything we do.


WHATIRI
PARAWHANGAI
KAHUIKA
KUAHINE
HINETITAMA

Our team

FY25 has been a year of dynamic change and growth for our team — welcoming fresh talent, farewelling colleagues, and continuing our shared journey to uplift Aotearoa New Zealand's construction and manufacturing sectors through people-powered impact

We were excited to welcome several new faces to HERA

- Mayank Shrivastava, Structural Fire Engineer who's technical skills were a much needed addition to asist with our growing focus on structural fire performance research;
- Conn Roux, Senior Welding Engineer, who allowed us to increase our capacity in fabrication productivity assessments and welding fabrication, SFC support, and training delivery; and
- Patrick Fenemor, Senior Welding Engineer, who has brought a strong focus to health, safety, and training in welding.
- Within FY25, we also had Marie-Salomé Duval-Chanéac join us in the capacity of Sustainability and Circular Economy Engineer for a three month period to support low carbon design initiatives.

We farewelled Caitlin Symonds, our Digital Administrator,2025 and Robert Ryan, our Welding Engineer.

Across FY25, team connection remained a priority - with highlights including a Christmas escape room challenge that tested our collaboration (and patience!) in the best way. We have also taken the time to travel around the motu (country) to meet with our members, a highlight being to holding our last Executive Board meeting in Ōtepoti (Dunedin) at company Farra Engineering to close out the year.

More formally, we continued to invest in building team capability across a range of areas, with professional development that reflects both emerging trends and foundational skills.

This included training in:

- AI and governance with the Institute of Directors;
- AI strategy and application through a workshop led by Matt Ensor;
- Māori Data Sovereignty with Auraki Group;
- Planetary Accounting and LCA alignment with the Planetary Accounting Network;
- Being your best self at work with People Group;
- Basic workplace first aid to keep our team safe and ready;
- Executive coaching for select team members; and
- NZ Institute of Management Leadership training across parts of the team.

These collective efforts reflect our belief that our strength lies in our people. By building capability, connection, and shared purpose, we're not just developing our team - we're futureproofing the sectors we serve.

We also made targeted investments in leadership development. Our GM Fabrication 4.0 attended the SCNZ Procurement Training and Steel Structures Technical Forum, while our GM Structural Systems participated in the Melbourne Business School's leadership training.

Dave Anderson, Mayank & Kaveh

Kaveh & Wayne Carson at D&H Steel.

AI and governance, IoD -attended by HERA team, board and Construction 4.0 kairangahau and IAG members

AI strategy and appplication workshop - Troy, Matt Ensor, HERA Chair, Craig Stevenson

Our whanaungatanga.

Connecting through kaupapa: Partnership, Presence, Purpose.

FY25 was a year of deeper connection — forging stronger relationships, showing up in the spaces that matter, and amplifying our collective voice. Whether through wānanga, conferences, seminars, hui, or strategic partnerships, our team worked across the motu (country) and beyond to uplift the industry and embed shared solutions. These moments of engagement aren't just events - they're part of our commitment to Kotahitanga (unity) and driving transformation together.

Industry presentations

As part of our commitment to thought leadership and sector upskilling, our team delivered a range of lectures and presentations throughout Aotearoa and internationally. From guest lectures in universities to keynote contributions at major conferences, these events helped amplify HERA's mahi (work) and extend the impact of our research and technical expertise. This year presenting

Industry 4.0, Construction 4.0 and Fabrication 4.0

SOREC Summit, Dunedin | Dr Michail Karpenko | April 2024

A strategic overview of how digital transformation is reshaping construction and manufacturing — from connected systems to smarter steel solutions.

Evaluating seismic response of innovative reusable eccentrically braced frames

World Conference on Earthquake Engineering (WCEE) | Dr Kaveh Andisheh | July 2024

Structural optimisation of a welded and bolted reusable frame

77th IIW Annual Assembly, Greece | Jármai, Karpenko, Hasanali, Andisheh | July 2024

A collaborative international presentation showcasing design advancements in reusable seismic framing systems.

Advances in diaphragm design in steel frame structures

WCEE | Dr Kaveh Andisheh | July 2024

Metals-based industry, tech trends and case studies

University of Auckland | Dr Michail Karpenko | August 2024

A forward-looking presentation introducing chemical and materials engineering students to the

Welding of stainless steel: How critical is it to your business

NZSSDA AGM, Hamilton | Dr Michail Karpenko | August 2024

Attended by over 60 professionals, this presentation addressed the unique challenges of welding stainless steel and its implications for performance.

Low-carbon and circular building design

University of Waikato | Dr Kaveh Andisheh | September 2024

This guest lecture showcased how circular economy principles can be practically integrated into steel and hybrid design strategies. possibilities of Industry 4.0 in metal-based manufacturing.

Basics of welding design

University of Waikato | Dr Hafez Taheri | October 2024

Delivered as an introductory session to engineering students, this guest lecture provided foundational knowledge on welding design principles relevant to structural steel fabrication. possibilities of Industry 4.0 in metal-based manufacturing.

Execution requirements for structural steel – weld details and quality systems

University of Waikato | Dr Michail Karpenko | October 2024

This session outlined key quality assurance practices and standards for structural welding, bridging theory and application for future engineers.

Updating the weathering steel guide for Australian bridges

12th Australian Small Bridges Conference | Hasanali, Karpenko et al. | October 2024

Steel reuse for the transition of the construction industry to a circular economy

fib Symposium | Dr Kaveh Andisheh | November 2024

Focused on circular construction and practical reuse applications for structural steel. possibilities of Industry 4.0 in metal-based manufacturing.

Carbon basics

In-house training for D&H Steel, John Jones Steel and MJH Engineering | Dr Troy Coyle

Focused on steel's decarbonisation pathway, LCA and EPD basics.

Brightstar 'Comms & PR' conference

panel discussion on 'diversity and inclusion in communications | Kim Nugent on Panel discussion | June 2024

Built on trust? AI's role in design & consenting

DigiComm25 | Dr Troy Coyle | March 2025

Celebrating an industry great

Prof. Charles Clifton

In FY24 we were privileged to have many of our staff and industry representatives attend Prof. Charles Clifton's inaugural professorial lecture – a major accomplishment in a remarkable career.

In FY25, we were proud to celebrate another milestone in his career - selection as a Fellow of the Royal Society Te Apārangi. This prestigious recognition honours Charles' enduring contributions to structural engineering in Aotearoa New Zealand, particularly his pioneering work in seismic and fire resilience of steel structures.

Charles has long been a driving force in advancing steel design for safety and performance, and he is deeply woven into HERA's whakapapa - having founded our Structural Systems division in 1983, being an early recipient of the HERA Foundation's Keith Smith Memorial Award, and his continued support in our mahi today through ongoing research collaboration and mentorship.

We mihi to Charles for this well-deserved accolade. His legacy continues to inspire excellence and innovation in our sector.

In June 2024, our Finite Element Analyst, Nándor Magó attended the 13th International Conference on Structures in Fire (SiF), hosted at the University of Coimbra in Portugal. This prestigious three- day event brought together global leaders in structural fire engineering to share the latest research, innovations, and applications shaping fire-safe construction practices

With sessions spanning topics such as material performance in fire, advanced numerical modelling, and experimental testing, the conference offered critical insights into how structural systems—steel, concrete, timber, and masonry—can be better designed to withstand fire events.

Leading the way in structural fire research

At HERA, we continue to lead through advanced structural fire simulations that support members across Aotearoa and beyond. Using state-of-the-art finite element modelling (FEM), we simulate how heat transfers and affects performance in key systems such as steel–concrete composite slabs, light gauge steel floors, and concrete-filled columns. These simulations enable us to predict critical deformation, strain, and failure points - giving our industry partners the data they need to make informed, fire-safe design decisions.

Read the full insight now!

Global learning, local impact

Nandor's participation in SiF 2024 deepened our international connections and technical benchmarking in this highly specialised field. Engaging directly with fellow experts allowed for robust discussions around simulation methodologies and future research trends. These insights will directly inform our research direction, ensuring we continue to provide leading-edge FEA and structural fire performance expertise that aligns with the evolving needs of Aotearoa New Zealand's construction sector.

> In the end, it's all about building confidence - confidence that the structures we design and build will protect people and property when it matters most.
> - Nándor Magó, HERA

Courtesy of Universedade Coimbra

Weld design considerations to NZS 3404

University of Waikato, Hamilton | Hamid Taheri | November 2024

Delivered as a guest lecture, this session covered key requirements for weld sizing and design in compliance with NZS 3404, tailored to support student learning and industry application.

Circular design 4.0

HERA–USYD–ANSTO Workshop, Sydney | Michail Karpenko | March 2025

This project presentation explored how circularity principles are being embedded into steel design and fabrication, highlighting HERA's collaborative mahi with Australian research partners.

HERA Low Carbon Semiar Series, Christchurch

Industry events, partnerships and conferences

Participation in industry events is a key part of how we stay informed, engaged, and at the forefront of sector developments. In FY25, our team attended and contributed to a range of events across Aotearoa and internationally — strengthening partnerships, benchmarking best practice, and building relationships that support our mission to advance construction and manufacturing through innovation. In addition to the already mentioned conferences and events that our team has presented at, we also had presence at:

- July 2024: SimuAbaqus Lunch & Learn – Auckland;
- August 2024: SCNZ Steel Structures Technical Forum – Auckland;
- August 2024: SCNZ Excellence in Steel Awards – Auckland;
- October 2024: Steel Industry Forum (SIF) Conference – Wellington.

Across the year our team attended regular wananga and hui to tautoko (support) our research

- Construction 4.0 wānanga;
- IAG hui for Construction 4.0 and low-carbon design; and
- BRANZxHERA stakeholder hui.

HERA hosted events at HERA House

- June 2024: Launch ceremony for Tohu App and Ngākopa branding;
- October 2024: Pūhoro STEMM Academy student training;
- June 2025: Annual General Meeting at HERA House; and
- January 2025: The Rotary National Science and Technology students at HERA House.

HERA on the world stage

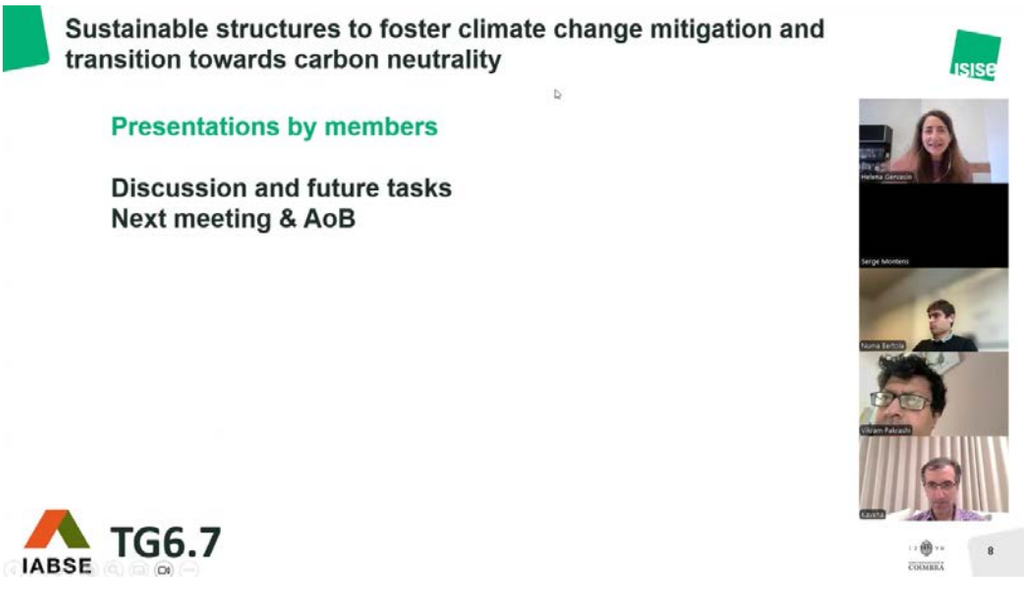
Leading global conversations on low-carbon design

In FY25, HERA was proud to strengthen its global impact through active involvement in the newly launched IABSE Task Group 6.7: Sustainable Structures to Foster Climate Change Mitigation and Transition Towards Carbon Neutrality.

This international task group is chaired by Professor Helena Gervasio (Portugal), who many will re- call as a keynote speaker at our Tactics for Low Carbon Design seminar series. Our General Manager of Structural Systems, Dr Kaveh Andisheh, has been appointed as Vice Chair - further cementing our leadership in sustainable structural engineering and our commitment to low-carbon futures.

Why it matters

The built environment is responsible for a significant portion of global greenhouse gas emissions. As engineers and designers, we sit at a pivotal intersection — where our choices and innovations can directly contribute to climate change mitigation. This task group is focused on harnessing that potential by creating practical solutions and advancing international knowledge-sharing.



Courtesy of IABSE

What the task group will deliver

Between January 2025 and December 2027, the task group will undertake a robust work pro- gramme aimed at supporting the global transition to carbon-neutral construction. Deliverables include:

- strategies for low-carbon construction and design approaches tailored to real-world application;
- Best practice frameworks and benchmarks for sustainability in civil engineering structures;
- guidance on material innovation and systems-level thinking for carbon reduction;
- a global case study database to showcase successful projects and inspire replication; and
- the publication of an SED (Structural Engineering Document) book and accompanying seminar to disseminate findings across industry and academia

This work complements our existing research and advocacy in sustainability, particularly in our Zero Carbon Steel and Construction 4.0 programmes. Our involvement ensures that the needs, values, and opportunities of Aotearoa New Zealand are reflected on the world stage - and that we are learning from and contributing to global leadership in this space.

Who's involved?

The task group is composed of world-leading experts in structural engineering and sustainability, including:

- Professor Mitsuyoshi Akiyama – Japan
- Professor Tânia Feiri – Technische Universität Dortmund, Germany
  Professor Vikram Pakrashi – Ireland
- Dr Numa Bertola – Luxembourg Dr Ramesh Nayaka – India
- Dr Julio Ortiz – New Zealand
- Dr Constança Rigueiro – Portugal

Together, this group represents a powerful network of knowledge and influence - and we're proud to have a seat at the table.

Looking ahead

This partnership is a significant milestone in our international engagement and sustainability strategy. As the mahi progresses, we look forward to sharing insights, resources, and practical tools that support a low-carbon built environment in Aotearoa and beyond.

4.0 Connecting & inspiring.

Smarter connections: Digital-first, Industry-focused, Action-led.

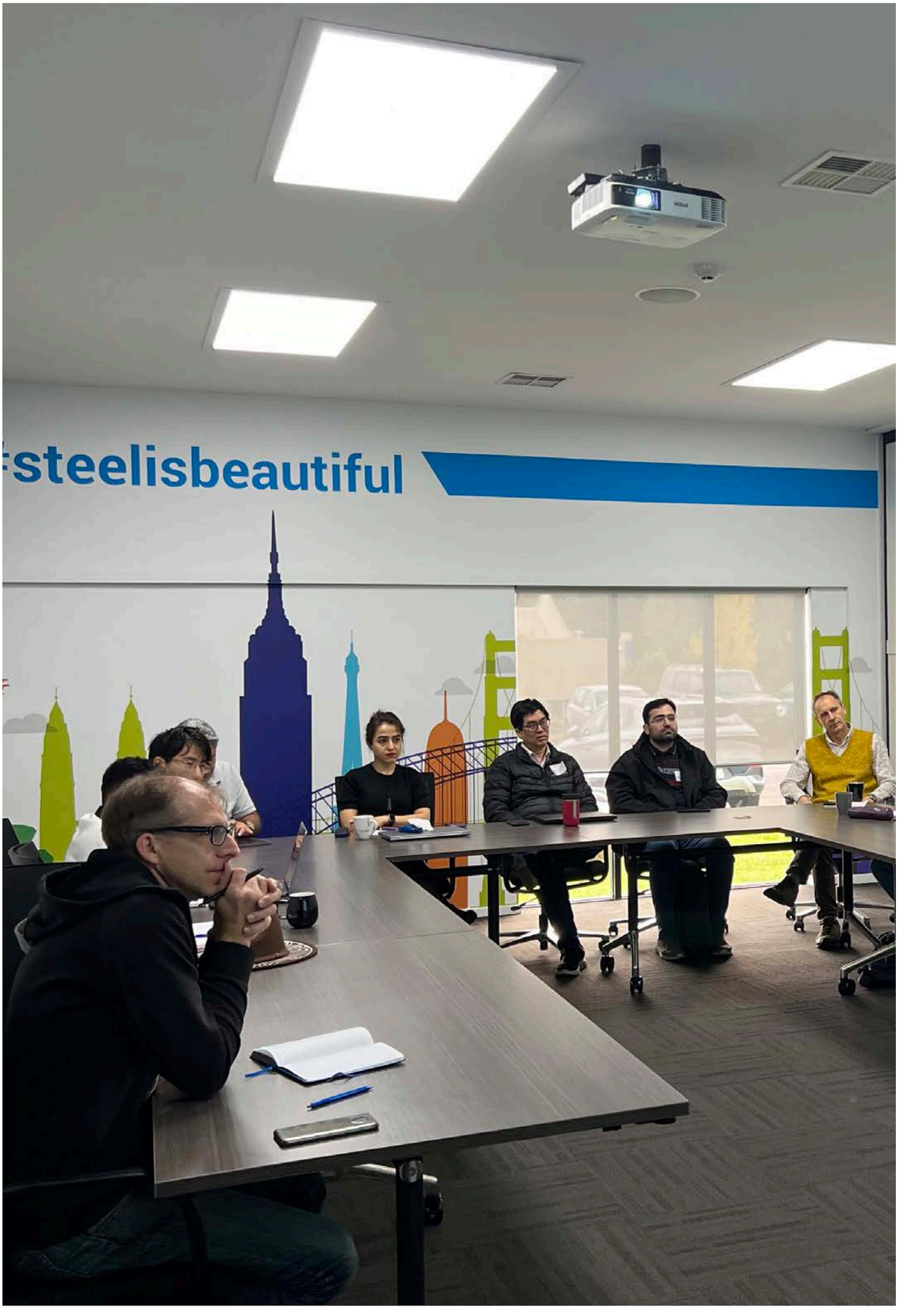
Nāu te rourou, nāku te rourou, ka ora ai te iwi.
With your food basket and my food basket, the people will thrive.

We're focused on creating meaningful connections — between people, ideas, and opportunity. This year, our efforts have spanned the development of our Innovation Centre, continued support of mātauranga Māori initiatives, stronger student engagement, and refreshed digital and membership touchpoints. Whether through storytelling, events, or collaborative projects, we've worked to amplify diverse voices, strengthen industry bonds, and lay the foundation for a more inclusive and future- ready construction sector.

4.0 Comms

Vocational pathways: Progression, Potential, Purpose.

We're investing in digital touchpoints, meaningful engagement, and responsive communications to better serve our members, the wider industry and partners in heavy engineering for the manufacturing and construction sectors. By aligning our outreach with industry needs, we're strengthening our network, sharing our stories, and creating platforms that inspire participation and collaboration. This mahi supports a sector that is not only well-informed - but also empowered to shape the future, together.


steelisbeautiful

Digital mahi

In FY25, HERA was proud to strengthen its global impact through active involvement in the newly launched IABSE Task Group 6.7: Sustainable Structures to Foster Climate Change Mitigation and Transition Towards Carbon Neutrality.
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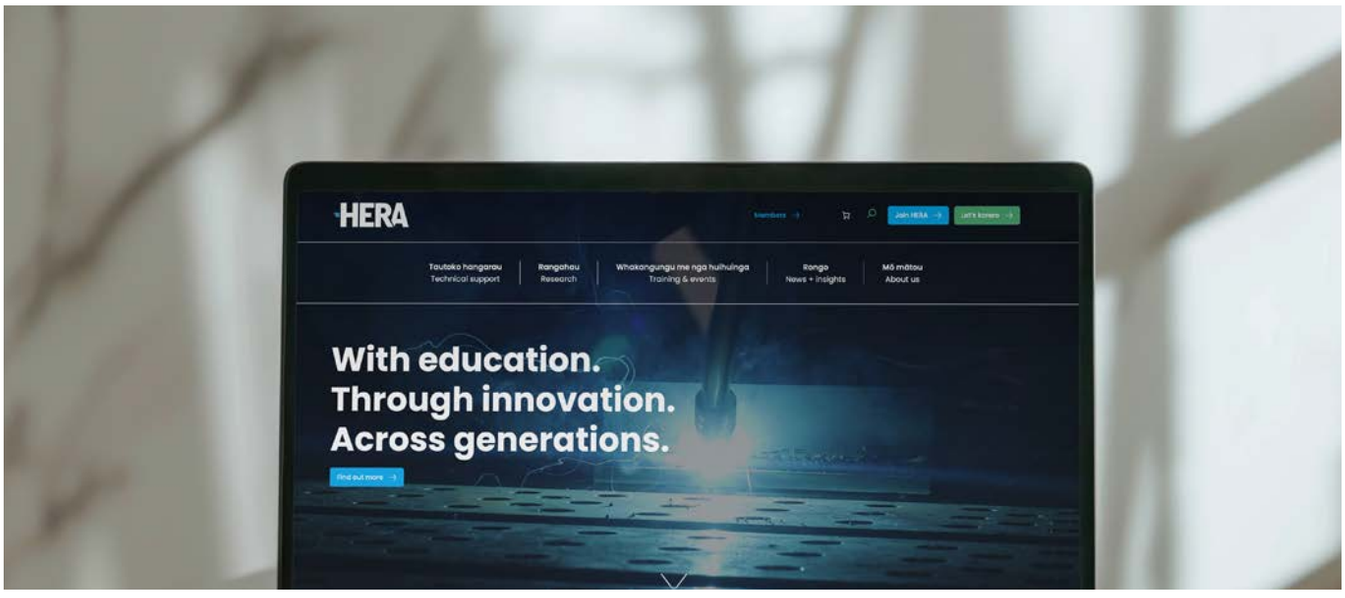
Website mahi
HERA

In FY25, we proudly launched our new HERA website - a major milestone in modernising how we engage online. Going live in December 2024, the new site was the culmination of a strategic redevelopment project that began in FY24, in partnership with Glue Creative (website developer).

This overhaul focused on improving usability, increasing site speed, reducing backend bloat, and embedding Industry 4.0 principles — including AI use and capability in the future, automation, and streamlined navigation.

Through extensive audience profiling, wireframe development, and content restructuring, we built a platform that puts our research outputs, sustainability mahi, Industry 4.0 leadership, and technical support front and centre.

With a new look and feel that introduces updated brand typography, an expanded colour palette, and bold imagery - we hope this evolution creates a more inspiring and intuitive digital experience for our users. The platform also supports a growing suite of digital tools and resources - giving members easy access to training offerings, downloadable materials, and seamless CRM integration for personalised experiences.



CRM and membership systems

Behind the scenes, our digital investment continued with enhancements to our CRM and membership systems - designed to enable more efficient workflows and deeper connection with our members.

This year, we focused on automating and optimising our key training offerings, including the Welding Supervisor and Welding Inspector programs. These upgrades included integration with the LearnWorlds learning platform, live invigilation for exams, and enhanced participant tracking to better support the learner journey and streamline certification.

We also extended CRM functionality to support two major digital tools aligned with our sustainability work:

- the Environmental Product Declarations (EPD) library migration from static Excel files into a dynamic, searchable database - making it easier for users to access and filter relevant data; and
- our Zero Carbon Steel carbon calculator transitioning to our CRM platform for in-house management flows to improve user experience with a more intuitive application process and automate the backend reporting to support certification issuance and insights via HERA Cert.

Both of these tools have been developed and tested, and are now in approval phase for launch in early FY26.

HERA Foundation

This year we continued to manage the HERA Foundation website and hosting via Glue Creative, ensuring consistency across our web services. While only minor updates occurred in FY25, we're looking to lay the groundwork for a more comprehensive refresh in FY26 and beyond - to align with our broader Industry 4.0 digital strategy and improve storytelling of the Foundation's impact.

HERA Cert

Strengthening the independence of HERA Cert remains a key strategic focus. In FY25, we made strong progress toward developing a stand-alone website, including the approval of its wireframe design and foundational content. This initiative supports our long-term goal to reinforce the autonomy and brand identity of HERA Cert.

We're taking a phased approach to delivery - with a basic site set to go live in FY26, and more advanced functionality (including CRM integration) planned for FY27. This roadmap supports scalability and future service offerings aligned with the Fabrication 4.0 strategy.

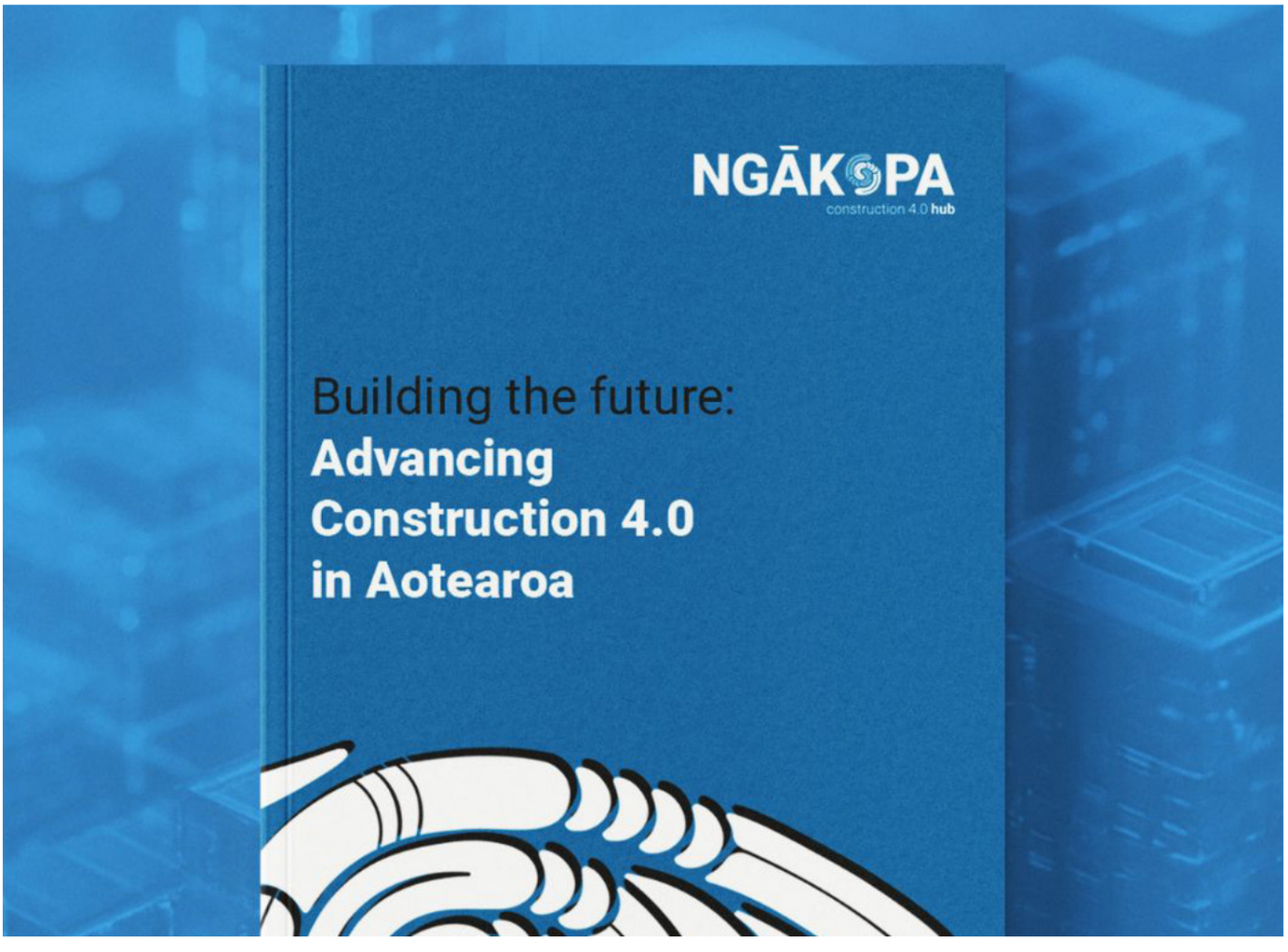
Ngākopa Construction 4.0

As a central platform for sharing the impact of our Endeavour Fund research program, the Ngākopa website is another major digital build underway in FY25. Work included full brand development and sign-off, web framework design, and collaborative content creation.

From a branding perspective, the development of this site has been shaped by our strong collaboration with the Mātauranga Māori rōpū and Māui Studios. This intentional co-design process has brought rich tikanga and te ao Māori perspectives into a contemporary digital space - embodying the kaupapa of the program.

While this has meant a slightly longer delivery timeline, we believe the result will be a unique, values-led platform that reflects the depth of this research. We anticipate the website going live in early FY26.

Together, these digital projects are transforming how we operate, how we connect, and how we support our members. They are not just about upgrading systems — they're about creating better experiences, delivering smarter services, and enabling our work to scale for the future.



From content to connection

Reimaging our influence: People-first, Strategy-led, Digital.

In FY25, HERA undertook a transformative shift in how we communicate with our members, stakeholders, and the broader Aotearoa New Zealandconstruction ecosystem. In partnership with creative agency Topham Guerin (TG), we redefined our communications strategy to be audience-led, digitally optimised, and video-forward.

Partnering with TG

In FY24 we had identified a need to pivot our PR agency service providers. Having seen the great work that TG has done in the social media space with the National Party and Hanga-Aro-Rau WDC, we were keen to draw on their expertise. In FY25, we started working with them to develop tailored strategies across multiple content streams for our target audiences.

Why the pivot?

Our previous communications approach was technically credible - but not always visible, relatable or inspiring. Despite growing content production (especially podcasts and articles), our reach and engagement levels tracked low. TG has helped us reimagine the path forward - focusing on creating high-impact, platform-native content that meets people where they are rather than quantity.

This shift wasn't cosmetic — it was very much strategic. It responded to changes in how people consume content, where conversations are happening, and what cuts through in a crowded digital landscape. More importantly, it reinforced our positioning as a forward-thinking voice in heavy engineering, sustainability, and Construction 4.0.

To support this transition the decision was made to pause our podcasts for a two month period, and has also seen a reduction on external media outreach while we co-developed a new set of blueprints for strategic engagement:

- a comms strategy that clearly defines what we say, how we say it, and where it lands;
- a podcast format with refresh designed around short-form, dynamic video highlights;
- a case study storytelling framework to spotlight our members and mahi in ways that resonate; and
- an events content strategy that ensures we don't just host great events - but amplify them.

What's changed?

This strategy is being rolled out in stages - but some shifts are already underway:.

Clear messaging frameworks: Our CEO Troy Coyle facilitated core strategy sessions with our Board and Lead team. Our GM Comms 4.0 Kim Nugent refined our brand voice into one that's bold, credible, and grounded in the Aotearoa New Zealand context - with a tone that feels relevant to architects and specifiers, engineers, designers, policymakers, and industry changemakers.

Video-first delivery: From the Ngākopa Construction 4.0 hub to low-carbon steel design guides, our research and industry leadership will increasingly be showcased through short, sharp videos designed for platforms like LinkedIn, TikTok, YouTube Shorts, and Reels.

Digital content planning: Our new framework ensures consistent storytelling across platforms, with content tied to sector priorities and key moments in the industry calendar.

Ready-to-run playbooks: We now have plug-and-play assets for podcast episodes, event coverage, and technical releases - streamlining production and ensuring consistent impact.

Outcomes and what's next

This pivot marks a cultural shift as much as a comms one. It's about positioning HERA not just as a thought leader - but a thought leader with reach. The kind whose ideas cut through the noise, inspire action, and start fresh conversations across the sector - not just within our membership bubble.

In FY25, we laid the foundation for this new era by:

- launching a refreshed podcast series designed for video-first delivery, optimised for social sharing and greater accessibility;
- establishing a presence on TikTok to engage with early-career professionals, apprentices, and the future workforce;
- growing our YouTube presence with more consistent and discoverable content;
- creating wraparound content strategies that integrate our events, standards, and training into a connected digital narrative - using our 'Tactics to achieve low carbon design' seminar series as the testbed ; and
- piloting a new case study template and strategy, starting with our ConstructSteel 'Excellence in Sustainability' award feature on the Hinuera Shed by Steelworks NZ — demonstrating how technical innovation and great storytelling can go hand in hand.

> Engineering doesn't have to be dry. Our new approach is all about cutting through the noise - making complex mahi feel human, relatable, and worth paying attention to.
> - Kim Nugent, HERA

These actions are aimed at reaching beyond our core membership to include:

- young and emerging professionals entering the construction and engineering workforce;
- policy influencers and decision-makers interested in industry impact and innovation;
- design and architecture professionals to influence specification of steel materials and sutainability alignment; and
- a broader public curious about the future of our built environment and the people shaping it.

Progress in FY25 has been constrained by resourcing gaps — so moving into FY26 to deliver on this strategy, we're taking two key steps:

- teaming up with TG to test the new social media strategy in a three-month rollout. This will allow us to train internal staff with our new video approach, refine our voice, and build momentum through a reset of our digital delivery; and
- expanding capacity by restructuring our team — separating the role of the departing Digital Administrator in March 2025 to two seperate roles: a Digital Experience Coordinator to lead content delivery and digital strategy implementation, and a Business Support Assistant focused on member engagement, customer service, and admin delivery.

Our kōrero (conversations)

Over FY25, our website attracted 117,000 page views and logged over 300,000 user interactions, including 35,000 new visitors. These results reflect strong organic reach and growing awareness of our digital content.

Content related to training, research, and technical resources drove the most engagement. Our Welding Supervisor Course and Innovation in Steel pages were particularly popular, signaling a high demand for upskilling and thought leadership. Return visits remained healthy, with around 1 in 3 visitors returning weekly, demonstrating consistent interest in our digital resources and updates.

In FY25, HERA published 42 thought leadership articles directly on our own website - continuing our efforts to build community, thought leadership, and visibility through the expertise of our people.
Engagement remained steady across the year, with notable spikes in January and March reflecting the launch of new content and promotion of our training programmes.

These pieces were promoted via our digital channels, particularly LinkedIn, to ensure they reached our target audiences: engineers, designers, fabricators, specifiers, and policy influencers across Aotearoa and beyond. This allowed us to shape the narrative around topics that matter to us - Construction 4.0, sustainability, resilience, vocational education, and mātauranga Māori.

Content shared

Industry 4.0

- Advancing automation in manufacturing: Holger Heinzel
- Got a yearning to understand machine learning & AI?: Troy Cole
- Unpacking decision support tools for smarter construction: Troy Cole
- Integrating mātauranga Māori into Construction 4.0: Troy Cole
- 2024 Nobel Prize for Physics and how our research relies upon this work: Troy Cole
- Beyond the blueprint – the power of digital: Michail Karpenko
- Embracing Industry 4.0 and digital transformation in manufacturing: Holger Heinzel
- The future of building – reusable frames that cut costs and carbon: Maryam Hasanali
- Bridging the gap – how data is changing the future of building safety and resilience: Stefan Fuchs

Sustainability

- Groundbreaking low-carbon circular design guidance now here! Kaveh Andisheh Resource: How to specify low-carbon steel, Kaveh Andisheh
- End of life carbon and beyond – transitioning to a circular economy, Troy Cole
- Cut your carbon in half with clever design! Troy Cole
- Understanding LCA – measuring environmental impact in design, Troy Cole

Technical excellence

- New research enhances understanding of welded joint integrity, Hafez Taheri An overview – Industrial coating to AS/NZS 5131, Volkan Yakut
- Update: HERA R4-156 – Seismic design of moment resisting steel frames, Kaveh Andisheh Notice: Laser welding safety, Volkan Yakut
- Notice: New standard for welding supervisors and inspectors AS 2214.1. published, Özgür Erdem
- Visual inspection of welds – acute vision test considerations, Volkan Yakut
- Notice: Location of splices in structural steel frames, Hafez Taheri
- Update: Technical note on longitudinal shear resistance calculation, Maryam Hasanali
- Resource: New calibration guide available R8-44, Volkan Yakut
- Event: Seismic design of diaphragm, Kaveh Andisheh

Vocational education

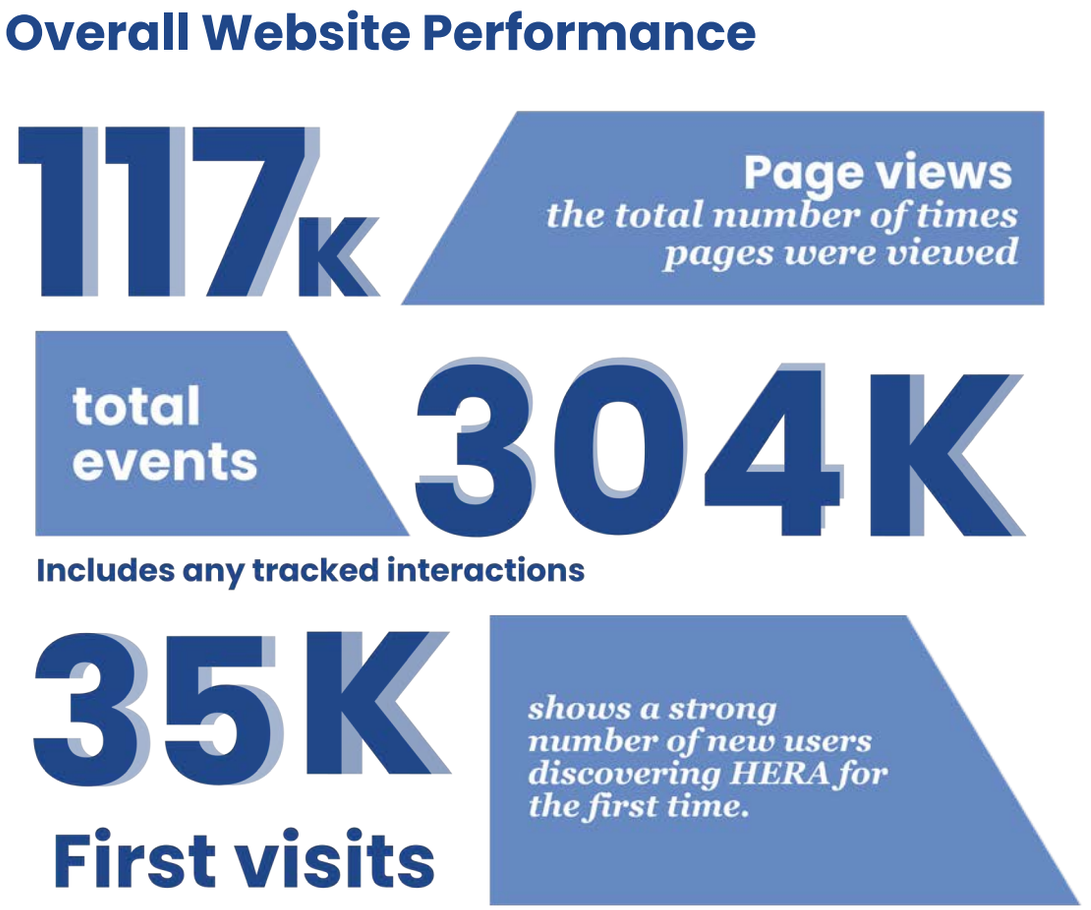
- Sparking your career – the role of vocational education in welding, Özgür Erdem
- Building a customer-centric culture, Maryam Hasanali & Ronita Kishore
- Call for comment: Lets ensure that industry voice shapes vocational education! Troy Coyle
- New welding expertise joins HERA! - Patrick Fenemor, Kim Nugent
- Catching up with Caitlin Symonds, Rebecca Symonds
- Igniting innovation – insights from the 2024 SiF conference, Nándor Magó
- Comms 4.0 – are you ready for the future of communications? Kim Nugent

Matauranga Māori

- Pioneering change – HERA launches two new kaupapa Māori initiatives, Kim Nugent
- The Tohu App – how cultural mapping can boost industry growth! Troy Cole
- Meet 2023 Whanake Scholar, Tom Tamaira, Kim Nugent
- Learning the ropes – Lydia's internship! Rebecca Symonds
- Lighting the fire – Lydia's summer internship with HERA, Mayank Shrivastava

Future engineers

- UoA HERA Prize 2024 – 3D printed sandcasting moulds, Rebecca Symonds
- Meet Hao Chang – ACM CRC PhD Scholar, Kim Nugent
- Meet Dr. Vladislav Yakubov, Kim Nugent
- Wlla Abbad – Winner of the Women in STEM HERA/ACM CRC Scholarship! Kim Nugent
- Meet PhD Scholarship Recipient Abila Hena Anayet, Kim Nugent



Most Viewed Pages

9.8 k *views*

Home Page
Top entry point to the site.

My account
High engagement with training/tools.
5.9 k *views*

5.9 k *views*

Innovation in steel
Strong interest in research thought leadership & reports.

Resources
Value placed on technical materials.
2.3 k *views*

Welding supervisor course
popular training and support for vocational education.

2.0 k *views*

User stickiness 'repeat engagement' is around 7.4% of monthly users visit daily. Nearly 1 in 3 users return weekly

Our podcast

From kōrero to cut-through

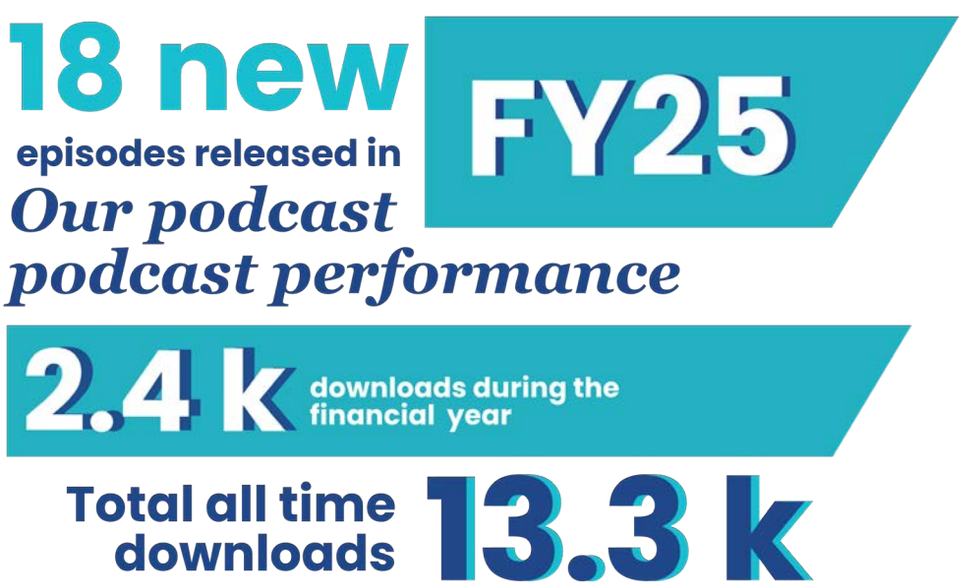
In FY25, Stirring the Pot underwent a strategic refresh to cement its role as a core communications asset for HERA. With the rise of video-led engagement, we transitioned from an audio-only format to a fully visual experience - launching long form video-recorded episodes and spinning out bite-sized content predominantly across TikTok and YouTube Shorts (from July 2024).

This pivot wasn't just aesthetic - it was tactical. This move allowed us to maximise value from each core episode and optimise our lean communications capacity. Every podcast became a multi- platform content opportunity, repurposed into:

- long-form interviews on YouTube;
- podcast shorts optimised for TikTok;
- audio episodes on all major streaming services; and
- visual snippets for LinkedIn and Instagram.

To enable this transition, we paused podcast releases across April and May 2024, missing four scheduled drops to recalibrate strategy and production. The podcast officially resumed on 5 June 2024 with a fortnightly schedule.

The result? Greater reach, stronger engagement, and richer conversations.



Our Podcast Performance

The value of lifecycle assessment **286** Downloads

256 Downloads The future of manufacturing in Aotearoa

Top all time episodes

Engineering a change of culture **242** Downloads

Top Five Episodes *Season 6*

96 Downloads

The untold story of BIM

A deep dive into the unrealised potential of Building Information Modelling in Aotearoa.

84 Downloads

Skill set reset – vocational education at a crossroad

Why the future of vocational training needs bold reform.

79 Downloads

Real-time insights for safer structures

How monitoring tech can support structural safety in real time.

78 Downloads

From old school to next gen

A kōrero with Naomi Manu on empowering rangatahi.

75 Downloads

Tactics to achieve low carbon design

Practical strategies to reduce embodied carbon in design.

Looking forward

This shift brought fresh energy into the studio. Recording for video has created a more dynamic, relatable, and human tone - and in FY26, we plan to build on this by revamping our studio into a relaxed, lounge-style space designed to spark deeper kōrero.

The greatest success? Seeing our podcast content fuel two-way conversations, sparking online dialogue and commentary. One learning has been the need to proactively manage criticism and ensure clarity on our stance — especially as our visibility increases.

> It's not just about being informative – it's about being engaging and relatable. Our podcast refresh brings HERA's voice to the forefront in a way that resonates, inspires, and invites conversation.
> - Kim Nugent, HERA

In memory of Rowan Larsen

Podcast Episode 8, Season 1

How to attract & retain top staff |
Released 11 June 2019

This year, we were saddened to learn of the passing of Rowan Larsen, Founder and Director of The Human Resources Project. Rowan first joined us on Stirring the Pot back in 2019 for a kōrero that still resonates today - on attracting and retaining top talent in the heavy engineering sector. That episode marked the start of an ongoing relationship where Rowan generously shared his expertise, insights, and passion for creating people-first workplaces with us.

He helped shape some of our own HR practices and brought such warmth, enthusiasm, and authen- ticity to every conversation. His legacy in HR innovation lives on through the many lives he impacted - ours included.

E te rangatira, moe mai rā.
Much aroha to his whānau, friends, and all those who knew and loved him

Ep. 105 | Bridging tech and tikanga ngākopa MM team

Ep. 106 | From old school to next gen naomi manu

Ep. 107 | 'The smart shift' in construction ngākopa smart construction team

Ep. 108 | Skill set reset, vocational education at a crossroad hanga-aro-rau

Ep. 109 | The untold story of BIM ngākopa emerging technologies

Ep. 110 | Designing for well-being – the role of interactive healing environments Yvonne

Ep. 111 | Sustainability 'beyond the build' ngākopa sustainable futures team

Ep. 112 | Tactics to achieve low carbon design low carbon design mahi

Ep. 113 | A circular rethink for construction ngākopa circular design

Ep. 114 | Wired for data success ngākopa data connectivity

Ep. 115 | Construction's knowledge currency ngākopa technology transfer

Ep. 116 | From shed to spotlight constructsteel hinuera

Ep. 117 | Real-time insights for safer structures ngākopa monitoring 4.0

Ep. 118 | From carbon-heavy to carbon-zero sustainable steel council mahi

Ep. 119 | Fireproofing the future with HIT structural fire, Mayank

Ep. 120 | Welding hazards and how to stay safe welding safety, Patrick

Ep. 121 | Busting through constructed barriers women & welding louise jordaan

Ep. 122 | Sparking a passion for structural fire Lydia, whanake, structural fire

Are we ready for the future of communication?

Leading the kōrero on inclusive comms

In FY25 our General Manager Comm 4.0 was invited to speak on a panel at the Brightstar Comms & PR Conference, sharing insights on diversity and inclusion in communications alongside Courtney Ross from Auckland Council and Moumita Das Roy - a marketer and social impact advocate. The panel explored how inclusive communication practices can support more equitable outcomes - especially in sectors like engineering and construction where underrepresentation remains an issue.

By centring real-life examples - such as our work to amplify wahine and Māori in engineering- the kōrero showed how communication can be a lever for both social impact and workforce development.

Insights from across the sector

The conference also featured powerful conversations from industry leaders:

- **Heather Claycomb, Chair of PRINZ**, reminded us that strong storytelling and human connection still matter—even as AI reshapes how we work.
- **Julian Thompson of Mosh Social Media** made the case for digital agility, with 92% of New Zealanders active on social media and a rising appetite for authentic, low-fi video content.
- **Sarah Bellett and Rochelle West** showed how smart, transparent communications are critical to internal culture and community engagement.

The greatest success? Seeing our podcast content fuel two-way conversations, sparking online dialogue and commentary. One learning has been the need to proactively manage criticism and ensure clarity on our stance — especially as our visibility increases.

Stepping into our own Comms 4.0 journey

This year, we took those insights and applied them to our own mahi:

- trialing short-form video and launching a new TikTok account to reach younger and more diverse audiences;
- rethinking how we connect with our members - whether through strategic email, storytelling-led campaigns, or uplifting others in our ecosystem;

reviewing our comms strategy to ensure we're aligned with our mission, values, and the audiences we serve; and looking at our communications to see if it was fit for purpose through a Māori lens.

By embracing Comms 4.0, we're not just broadcasting messages - we're building relationships.

Kim Nugent, HERA

Heather Claycomb, Chair of PRINZ,

Social media

This year, our digital and social platforms continued to deliver strong engagement, with targeted improvements driven by our content strategy pivot and a greater focus on video-based storytelling. Our approach to channel performance centred on maintaining consistency on high-value platforms, exiting low-performing ones, and extracting more value from each piece of content.

	FY24	FY25
Platform LinkedIn	5,934 followers	7,031 followers 508,640 views
Facebook	522 followers	547 followers
Instagram	638 followers	645 followers
Twitter	277 followers	Ceased
YouTube	92 subscribers 923 views	107 subscribers 7,215 views
TikTok	Not active	40,933 views 31,722 reached
Podcast	10,000 downloads all time views	13,324 downloads all time views
Website	129K visits	117K visits

The standout performer this year has been YouTube, which saw a dramatic increase in total views and watch time thanks to our pivot to video podcasting. Likewise, TikTok emerged as a powerful new platform for bite-sized storytelling, helping us reach younger and more diverse audiences. Our podcast also benefitted from this multimedia distribution strategy, seeing its biggest annual gain in downloads to date

While website visits dipped slightly during redevelopment, this is in line with expectations and we anticipate stronger performance in FY26 with improved UX and SEO.

Our strategy to cease activity on Twitter/X and redirect efforts to channels delivering more tangible results has proven wise, allowing us to concentrate capacity where it counts.

Media influence

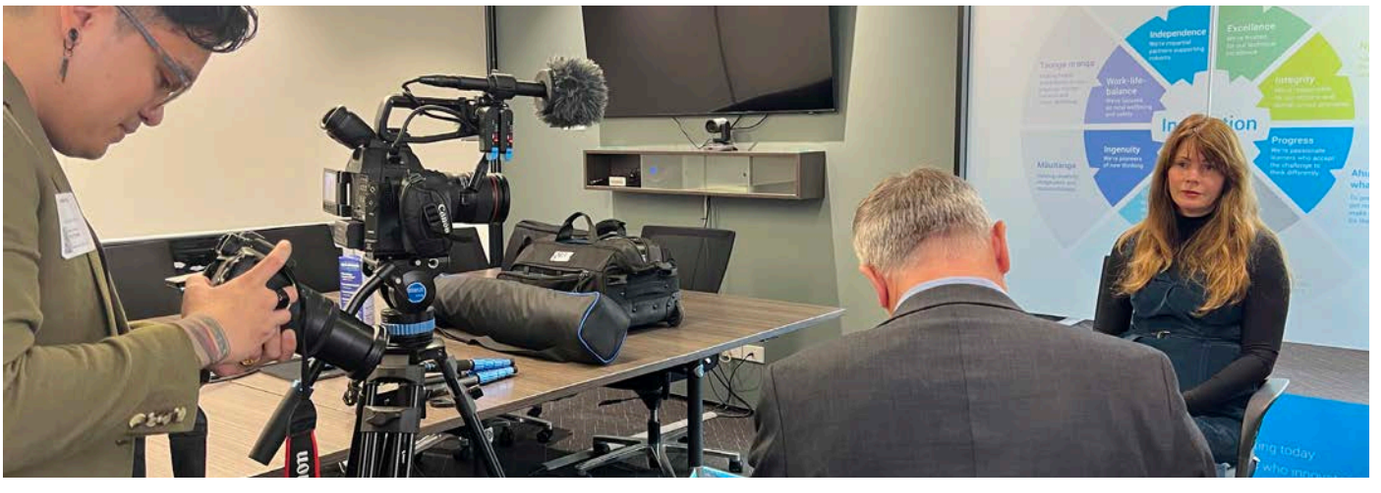
Maintaining momentum in a transitional year

This year represented a period of media continuitywith a focus on maintaining visibility across industry platforms rather than scaling media outreach efforts.

We sustained a consistent presence across sector-relevant publications, including NZ Manufacturer, Builders & Contractors, NZ Infrastructure Review, Xpress Engineer, Engineering EQ, and BRANZ Build - many of which are cornerstone channels for Aorearoa New Zealand's engineering and construction sectors. Our coverage also extended to influential newsletters like IRANZ Connections, ConstructSteel, International Institute of Welding, ACM CRC and BusinessDesk, helping HERA's voice remain active in both nationally and abroad.

Topics covered across this year's media mentions reflected the breadth of our mahi — from low carbon design, BIM, and fire safety, to Māori data sovereignty, advanced manufacturing, vocational education, and Construction 4.0. Notably, our projects and CEO's thought leadership around circular design, seismic performance, and sustainability were frequently featured.

In total, we contributed to over 40 articles and mentions across FY25, achieving an estimated editorial value of $131,850 and a known reach of at least 57,500. While much of this coverage was in specialist or trade media, it played a vital role in reinforcing our credibility and advancing our thought leadership around the future of construction and engineering in Aotearoa.



As we refine our internal processes and strengthen content workflows, we're laying the groundwork for a more proactive and impactful media engagement strategy in FY26. We are hopeful the maintained foundation in FY25 will allow us to amplify our voice more intentionally - with a renewed focus on broader visibility, high-impact storytelling, and stronger alignment to national conversations.

In focus

Leading with impact on the national stage

> The real shift comes when we stop asking 'which material is better?' and start asking 'how can we design better?' That's when we unlock real innovation and climate action.
> — Dr Troy Coyle, CEO, HERA

In FY25, HERA's low carbon design research continued to gain national recognition - and at the forefront of this visibility was our CEO, Dr Troy Coyle. A standout moment in July 2024, when Troy was interviewed by the National Business Review (NBR) in a behind-the-scenes feature that brought a spotlight to our mission for a sustainable built environment.

The conversation, centered around one of the most hotly debated topics in construction: materials selection and sustainability. As timber continues to dominate sustainability headlines for its carbon- zero credentials, Troy brought nuance and clarity to the kōrero, reminding the industry that all materials have their place, circular design is key and whole-of-life assessment is vital when comparing materials.

She advocated for hybrid solutions that combine the strengths of timber, steel, and concrete - recognising that a balanced, systems-based design approach can deliver far greater carbon savings than single-material solutions. This aligns with findings from our ongoing research into low carbon and circular design frameworks, which show emissions reductions of over 50% are already possible through clever, informed design and material choice.

This position is supported by our research, funded through the Building Research Levy (via BRANZ) and Heavy Engineering Research Levy (via HERA) that developed a practical low-carbon circular design hierarchy, aimed at helping designers, engineers, and specifiers reimagine material selection and emissions reductions from the ground up.

4.0 Innovation.

HERA Innovation Centre: Sustainable, Strategic, Sector-shaping.

In FY25, we continued to lay the foundations for a bold new chapter at HERA House - working with the HERA Foundation to progress plans for our purpose-built Innovation Centre, set to become a global hub for steel-based research, testing, and transformation.

This facility will enable our members and research partners to explore Construction 4.0 technologies, trial advanced technologies, and accelerate innovation
through experimentation and workforce development. It's a tangible step toward futureproofing the sector - not just with tools, but with spaces designed to support new ways of thinking.

This centre will be a hub of global excellence in Fabrication 4.0, Construction 4.0, training, research and prototyping - showcasing emerging technologies such as AI, digital fabrication, building health monitoring, and digital twinning. It will also extend our international partnerships, such as our collaboration with the Australian Composites Manufacturing CRC on quality systems and AI, and our Construction 4.0 research programme which works with a range of universities both in Aotearoa and across the world.

Much of the mahi this year has focused on navigating the regulatory and consenting process, ensuring alignment with our ambitious sustainability aspirations. The Innovation Centre is being designed to achieve a 6 Green Star – Design & As Built rating from the New Zealand Green Building Council. This benchmark reflects our commitment to environmental performance and occupant wellbeing, and sets a new precedent for what's possible in industrial building design.

As our CEO Dr Troy Coyle puts it: "this isn't just a building — it's a signal to the world that Aotearoa new Zealand is ready to lead."

"We're investing in a space that empowers industry-led innovation for impact-led outcomes. Whether it's testing new fire-resistant materials, trialing smart manufacturing systems, or showcasing new digital technologies - the HERA Innovation Centre will be where it all happens."

Looking ahead to FY26

We will be focused on catalysing momentum: seeking in-kind contributions, naming-rights sponsorships, and finalising plans to break ground on construction. We'll be calling on industry leaders to help bring this vision to life - shaping a future where collaboration, technology, and sustainability converge.

Find out more!

Innovation in unexpected places

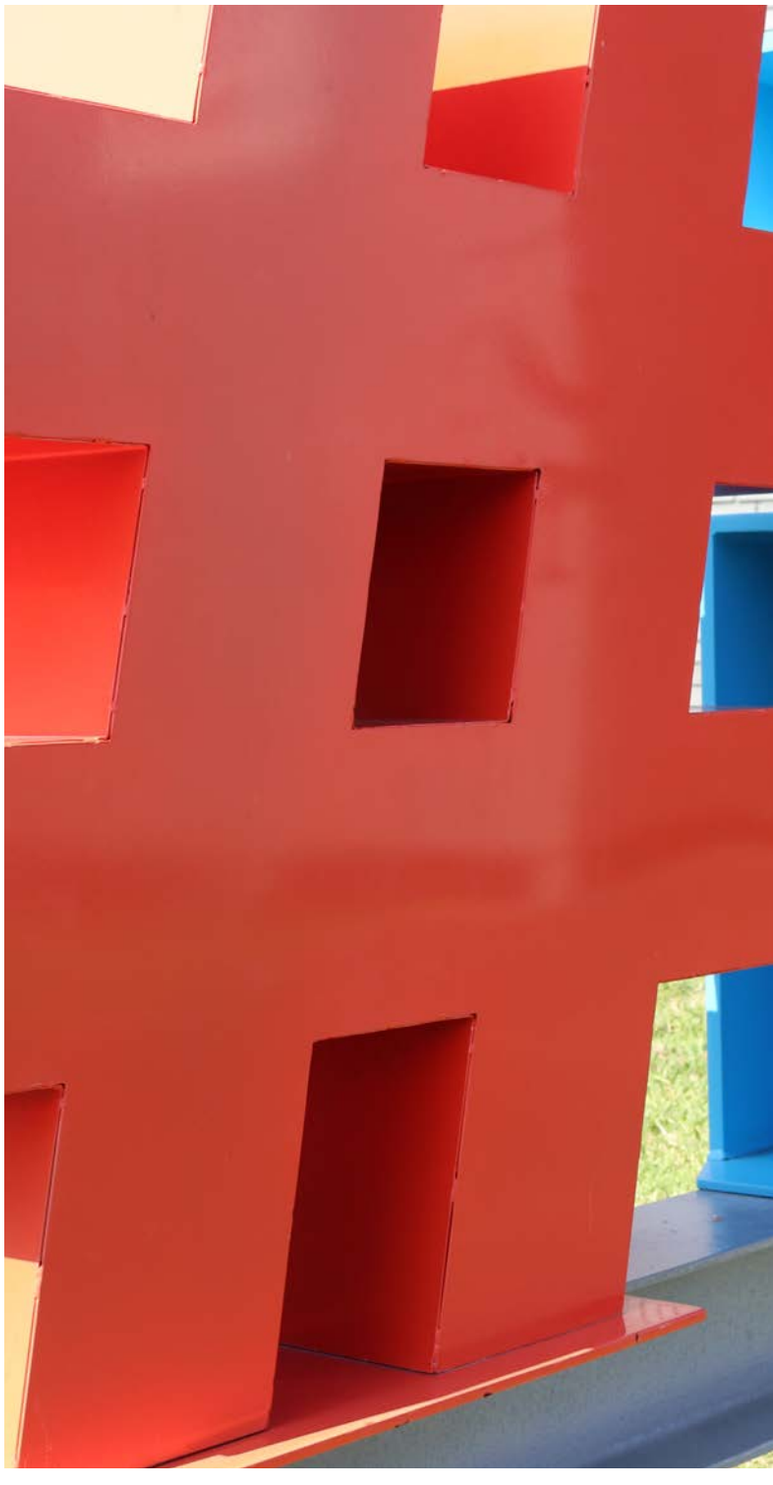
When the digital world gives you Pikachu... you embrace the moment.

In FY25, our #innov8 artwork installation outside HERA House unexpectedly became a local hotspot - not just for engineers, but for gamers. Thanks to Pokémon Go, our premises found itself listed as a destination in the augmented reality universe, proving innovation attracts attention in more ways than one!

While we joked that Pikachu might have sensed the cutting-edge mahi going on inside, this quirky moment was also a reminder of just how far augmented reality has come. Back in 2016, we wrote an article exploring the implications of Pokémon Go for heavy engineering - speculating that AR could one day support project visualisation and site navigation.

What was once far-fetched now seems within reach.

With the upcoming HERA Innovation Centre aiming to integrate advanced digital tools like AR, AI and digital twinning, it's fitting that even the gaming world is paying us a visit.



4.0

Mātauranga Māori.

Technology and tikanga: authentic, purposeful and transformational.

In FY25, we continued our commitment to embedding te ao Māori into our mahi as an integrated strand of who we are as an association in Aotearoa. From facilitating the development of kaupapa Māori tools and support mechanisms, to scholarships and launching branded initiatives grounded in tikanga - our focus was on creating space for Māori knowledge, voices, and values to thrive in the engineering and construction sectors.

Embedding Mātauranga Māori in our mahi

This kaupapa continues to shape our mahi and sector influence – ensuring our work supports a more inclusive, values-led, and future-focused Aotearoa.

Embedding Mātauranga Māori in our mahi

A major milestone this year was the official launch of the Ngākopa Construction 4.0 brand - which is tied to our research program funded by the MBIE Endeavour Fund. Ngākopa comes from a karakia gifted by Saul Roberts (Te Waiohua (Ngāti Te Ata, Ngāti Te Rori), Waikato-Tainui) and speaks to kōrero tuku iho (ancient knowledge) and innovation deeply rooted in whakapapa. More than just a name, it anchors the project in te ao Māori and reflects our commitment to create change by honouring te ao Māori.

The branding system developed for Ngākopa works to normalise te reo Māori in technical conversations and the construction sector and is guided by mātauranga Māori principles. Every design element carries symbolic meaning - from colour palettes linked to atua Māori, to motif-based visuals representing the interconnectedness of people, whenua, and technology within the realm of Ngākopa. This work will help establish Ngākopa as a uniquely Aotearoa-centred identity within the global Construction 4.0 conversation.

NGĀKOPA

construction 4.0 **hub**

Tohu App: Mapping values to future careers

Another breakthrough this year was the launch of the Tohu App branding, developed in partnership with Auraki Group. Designed to support Māori youth (rangatahi), the Tohu App is a web-based platform that will help users identify their values and match them to STEMM (Science, Technology, Engineering, Mathematics, Mātauranga Māori) career pathways - based on cultural identity (not just academic performance).

Through a series of pātai (questions), rangatahi are guided to discover their alignment with atua such as Papatūānuku, Māui or Rūaumoko, identify their core kaupapa Māori values, and explore career paths that resonate. The result is a culturally anchored career-matching journey that helps bridge the gap between our industries and the diverse workforce we need to thrive.

Tohu is one of the first tools of its kind in Aotearoa - and represents a bold shift towards culturally responsive engagement in vocational education. It aligns with our broader efforts under Vision Mātauranga, and while it looks to attract Māori into STEMM careers more widely - does feed into our heavy engineering and construction sectors as part of this.

Some developer issues have delayed its wider launch in FY25, and it is hopeful this will be resolved in early FY26, with plans to roll out more widely and also add more atua Māori and worldview components.

In focus: Pioneering kaupapa Māori initiatives at HERA House

Celebrating identity, Empowering rangatahi, Embedding mātaurana Māori.

In FY25, we took a major step forward in embedding mātauranga Māori into the heart of our organisation – officially launching two transformational kaupapa Māori initiatives that reflect our commitment to Vision Mātauranga and inclusive workforce development.

Held under the theme Ka rongo te pō! Ka rongo te ao! ("The night hears! The world hears!"), the launch ceremony at HERA House was a moment of reconnection, reflection and renewal.

Honouring tradition through ceremony

To set the tone, we began with a dawn blessing ceremony to spiritually open HERA House in alignment with tikanga Māori - a step that had not occurred during the original HERA House opening. This was followed by a pōwhiri, warmly welcoming iwi, students, and representatives across engineering, construction, manufacturing, research, and education sectors into the space.

Introducing two major kaupapa

1. The Tohu App – career mapping with cultural purpose

In partnership with Auraki Group, we launched the Tohu App: a digital kaupapa Māori tool designed to guide rangatahi into STEMM careers by aligning with their values and cultural identity.

Through a series of interactive questionnaires, the app helps users discover their alignment to atua, uncover their strengths and interests, and explore STEMM career pathways in a way that honours kaupapa Māori principles.

We were proud to have Naomi Manu (Rangitāne, Ngāti Kahungunu, Ngāti Raukawa) share her powerful insights as co-founder of Auraki Group, reinforcing the app's role in enabling Māori youth to thrive in future-focused industries.

2. Ngākopa Construction 4.0 Hub – a digital whare for Māori-led innovation

The ceremony also marked the unveiling of Ngākopa – the gifted identity and karakia for our Construction 4.0 digital hub, part of our MBIE Endeavour Funded research "Developing a Construction 4.0 transformation of the Aotearoa New Zealand construction sector."

The branding and spiritual foundation for this initiative were gifted by Saul Roberts (Waiohua, Waikato-Tainui, Ngāpuhi), our IAG Chair and Mātauranga Māori team member, who led the development of Ngākopa and it's wairua with the support of our Mātauranga Māori rōpū.

Looking ahead

As we move forward, we remain dedicated to honouring the rich heritage of mātauranga Māori and integrating it into the mahi we do to ensure that our work is not only technically advanced but also culturally enriching.

We'd like to extend our heartfelt gratitude to all who attended and supported this event to make it the success that it was. In particular Saul Roberts who played a hugely significant role in guiding us through the day to ensure we carried this launch ceremony out with integrity.

Find out more about the day

Supporting rangatahi: Whanake Scholars and internships

In FY25, we proudlycontinued to support seven Whanake scholarship recipients:

- Brock Colson;
- Lily Sanson (completed in FY25);
- Lydia Frater;
- Sarah Lewis (completed in FY25);
- Patricia Te Whatu (completed in FY25);;
- Taine Naera; and
- Tom Tamaira.

This initiative has helped us not only attract, but nurture tauira Māori (Māori students) - ensuring that rangatahi (youth) are seen, heard, and supported on their journeys through our sector.

We were especially pleased to support Lydia through an internship opportunity on our structural fire engineering research over the summer period — and even prouder to see her step up as a role model for other young wāhine Māori. This year, she spoke on the national stage to 1NewsNZ about construction workforce challenges in Aotearoa, highlighting the need for stronger sector pipelines and more consistent project work to help retain skilled professionals here at home.

It's also been fantastic to see Lily advocating for wāhine Māori in engineering — featuring in the Women in Engineering project by Engineering NZ, a powerful storytelling initiative that celebrates wāhine in the profession through oral histories and written narratives. Her inclusion highlights the vital role Māori women play in shaping the future of engineering in Aotearoa.We are also very pleased to see her join HERA member, Aurecon, as a Graduate Civil Engineer.

Toolbox update: Practical resources for transformation

We also continued development on our Mātauranga Māori toolbox, designed to support industry in weaving te ao Māori into everyday business functions. This includes tools across HR, marketing, operations, and governance - alongside benchmarks to self-assess and improve over time.

Access to the toolbox is gated by completion of Te Tiriti o Waitangi training to ensure understanding and context for users of the resource. In FY25, a number of early resources were refined with input from users, and we also were able to create a digital minimal viable product on LearnWorlds with some developed modules. We hope to complete at least ten modules for testing with industry partners in FY26 before we look to roll out wider.

Data sovereignty and cultural capability uplift

In August 2024, we were proud to host a wānanga on Māori Data Sovereignty at HERA House, facilitated by Naomi Manu of Auraki Group.

This session offered valuable insights into how Māori knowledge and data should be managed in culturally appropriate ways, reinforcing the importance of strengthening partnerships with iwi and promoting ethical innovation aligned with te ao Māori values.

As part of a broader cultural capability uplift across our team and research partnerships, the training deepened our understanding of how to responsibly interpret and apply data through a kaupapa Māori lens — a critical foundation for our Construction 4.0 research, where respectful interaction with mātauranga Māori is essential. This mahi helps ensure that we honour not just what we do, but how we do it.

Celebrating te reo and cultural expression

We were happy to tautoko Te Wiki o te Reo Māori in September 2024 releasing bilingual video content, incorporating reo Māori into our workplace and digital comms, and showcasing new Māori-inspired artwork installations at HERA House—including 'Tere Tere' by River Jayden. These taonga offer a visual representation of our journey and our respect for the whakapapa of place and purpose.

Through these initiatives, we hope we are building a future where cultural inclusion isn't an afterthought - but instead embedded across our operations, partnerships, and research to actively transform the sector to better reflect and serve all people in Aotearoa.

Watch Lydia's kōrero

Read Lily's contribution

In focus: Mātauranga Māori in decision-making

Inspiring smarter choices through the Mauri Model

A powerful kōrero from Dr Kēpa Morgan DistFEngNZ (Ngāti Pikiao, Te Arawa) in FY25 reminded us how Māori knowledge can shape the future of construction.

His Mauri Model is a decision-making framework grounded in te ao Māori. It uses mauri (life force) as a measure of sustainability across four dimensions: environmental, cultural, social, and econom- ic. This approach allows multiple worldviews to inform and influence project direction.

At HERA, we've drawn on this whakaaro to guide our Circular Design research theme in the Ngāko- pa Construction 4.0 programme. The result is a more holistic, culturally inclusive, and future-ready approach to engineering decisions.

This influence can be seen in the research of University of Waikato PhD Student, Parsa Yazdi, who explores how mauri-based thinking can shape artificial intelligence tools for design optimisation — ensuring they embed cultural intelligence from the outset.This is part of our Ngākopa Construction 4.0 project.

> By honouring te ao Māori in our design logic, we can build structures that don't just perform well — they hold meaning and mana, too.
> Dr Kēpa Morgan

Find out more about the mauri model

Mātauranga Māori in Construction 4.0

As previously mentioned, as part of our strategy to deliver solutions we successfully held our Ngākopa Construction 4.0 Conference. Though the focus of this event was very much around construction and technology – we of course took the opportunity to embed mātauranga Māori into the day as well. This is because one thing we've found in our journey is that small, incremental changes can collectively make a big impact, so part of our conference was about sharing those learnings to guide attendees with practical ways to do the same.

Grounding in tikanga

we opened the day with karakia timatanga and a mihi whakatau, led by Saul Roberts (Waikato-Tainui, Te Waiohua – Ngāti Te Ata / Ngāti Te Rori) and Val Panui (Ngāti Rangi, Te Āti Haunui-a-Pāpārangi). This honoured mana whenua, acknowledged our shared kaupapa, and set an inclusive tone for the day ahead. It's heartening to see this practice becoming increasingly normalised across the motu.

Mātauranga Māori as a pathway to innovation

a highlight was the introduction of the Ngākopa Construction 4.0 Takarangi Diagram by Fleur Palmer (Te Rarawa, Te Aupōuri), offering a culturally grounded framework for sustainable, innovative practice. Developed as part of our Construction
4.0 research, this model integrates Māori values with modern systems thinking to support transformation across the built environment.

Additional Māori perspectives featured throughout the day included:

- **Alayna Pakinui Rā (Kāi Tahu ki Puketeraki),** Indigenous Design Director at WSP NZ, who spoke about designing landscapes that reflect cultural, environmental, and economic interconnectedness; and
- **Dr Diane Menzies ONZM (Rongowhakaata, Aitanga a Mahaki)**, Director at Landcult, who explored how culturally aligned data protocols and regulatory frameworks can support progress in Construction 4.0.

Room 2 Rūma: Design with reo

we were fortunate to hear from Richard Goldie of Peddlethorp, who shared the kaupapa behind Room 2 Rūma - a groundbreaking Autodesk REVIT plug-in that translates room names into te reo Māori. This tool is revitalising te reo in the design process and embedding cultural respect into our built environments from the earliest concept stages.

Holding space for rangatahi and future leaders

as kaitiaki of our sector's future, we also held dedicated space for the voices of tauira (students). Scholars from our research whānau presented their mahi that blends technical innovation with Māori worldviews:

- **James Halliday (Ngāti Porou, Te Āti Haunui-a-Pāpārangi)** shared his research on life cycle assessment through a mātauranga Māori-led lens; and
- **Parsa Yazdi** spoke on the application of AI and optimisation using indigenous models, including the Mauri Model developed by Dr Kepa Morgan.

> "When we embed te ao Māori authentically, we unlock new ways of thinking, designing, and working. It's about transformation - not just for Māori, but for everyone."
> — Dr Troy Coyle, CEO

We are proud of the work we are doing in this space and we are excited to continue this journey, working collaboratively with our partners, members and wider industry stakeholders to create a brighter, more sustainable future embracing mātauranga Māori.

Pūhoro STEMM Academy

Wayfinding futures with Pūhoro

In FY25, our relationship with Pūhoro STEMM Academy has continued to flourish. As tenants at HERA House, the Pūhoro team have become an integral part of our whare (house), and we're proud to support their Kaupapa (philosophy) - strengthening Māori participation in science, technology, engineering, mathematics, and mātauranga (STEMM).

Every week, our staff have the privilege of participating in kaupapa Māori wānanga led by the Pūhoro team - offering us deeper insights into te ao Māori, te reo Māori and tikanga Māori to help us better align our mahi with authentic, culturally grounded perspectives.

This year, we were also thrilled to support the next generation of tauira (students) directly - opening the doors of HERA House as part of Pūhoro STEMM Academy's Te Urunga Tū - High School Support Programme to give tautoko to students ahead of their exams.

We also had our Senior Welding Engineer Özgür Erdem give a tour of our Fab4.0Lab as part of their day. The energy and curiosity the rangatahi brought with them was inspiring, and a clear sign of the bold future leadership emerging from this programme.

At the heart of Pūhoro lies the spirit of wayfinding - navigating from the known to the unknown. Just as their ancestors explored the vast oceans, today's Māori youth are exploring the frontiers of STEMM. They are charting new courses in innovation, grounded in culture, and driven by purpose.

The work at Pūhoro is helping to cultivate a community of future Māori technologists, engineers, scientists, and innovators - rangatahi (youth) who can walk confidently in both worlds and lead Aotearoa New Zealand into a more inclusive, values-driven future.


WARNING
WELDING AREA

Art with whakapapa

Elevating mātauranga Māori through storytelling in steel

We believe that the spaces we work in should reflect the values and stories we uphold. In FY25 we proudly welcomed new artworks into HERA House that honour te ao Māori, anchoring our work- place in a sense of cultural connection and deeper meaning.

Teretere – the whakapapa of tīra (steel)

Commissioned by HERA and brought to life by emerging Māori artist River Jayden (Ngāti Tahu - Ngāti Whaoa, Ngāti Tūwharetoa), Teretere is a stunning digital artwork now installed along the stair- case of HERA House.

At its core, Teretere explores the whakapapa (geneaology) of steel in Aotearoa. It draws upon the pūrākau (story- telling) of Rūaumoko (atua of volcanic energy) and Tangaroa (atua of the ocean) to trace the journey of black iron sand — ejected from the depths of Pukeonaki (Taranaki Maunga) by Rūaumoko, carried by Tangaroa's tides to Karioitahi o Waiuku, and transformed into tīra (steel).

River's work challenges us to reframe how we view steel – not just as a material, but as a taonga with deep cultural lineage and mauri (life force). The collaboration with River, whose own iwi trace back to the lands connected to this narrative, allowed for an authentic interpretation of this kōrero.

Watch the artwork come to life in River's own words and movement

Light at the end of the tunnel – rail, resistance, and reflection

Alongside Teretere, we also acquired two significant works by New Zealand artist John Horner, part of his series 'Light at the End of the Tunnel.' Installed in our Fab4.0 Lab and welding team offices, these striking acrylic paintings examine the relationship between industrial progress and its impacts on Māori.

Inspired by Te Kooti and his prophetic warning to beware "the whistling god of the Pākehā" - a refer- ence to British railway expansion - Horner's pieces depict the railway as both a symbol of development and a disruption to land and life.

These works remind us that engineering and construction have always had a societal context. They also reflect our commitment to ensuring our workplace reflects a uniquely Aotearoa New Zealand context.

4.0 Our Members.

A heavy engineering association: Trusted, Data-led, Evolving.

In FY25, our members remained a core focus for our support - build capability and creating value across heavy engineering in manufacturing and construction sectors — supporting structural, welding, and fabrication excellence while also leading sector-wide transformation.

From research and development to consultancy, training, and advocacy – our work delivered real outcomes. Whether it was supporting decarbonisation, digitisation, or diversification, we leaned into the complex challenges and opportunities that mattered to our members and the wider industry.

We were especially proud to enhance our offerings through new tools, future-focused resources, and collaborative research outcomes – ensuring we were not only keeping pace with change, but shaping it.

Our members continue to be a big part of our why. Their trust in us drives our ambition to their most valued partner – and the catalyst for a more resilient, innovative, and inclusive engineering future.

Our membership structure is designed to reflect the diverse ways our industry engages with us – from foundational involvement to specialist access. Whether they're deeply embedded in heavy engineering or just beginning their connection to the sector, there's a tier that suits the needs of eligible companies.

Platinum members are our most engaged tier for companies paying the Heavy Engineering Research Levy or Welding Consumables Levy. They receive full access to our range of services and benefits, including voting rights, governance representation, and eligibility for leadership roles on the HERA Board.

Gold members are typically levy payers who aren't currently using HERA's broader services but want to remain in the loop and access support when needed.

Whanaunga affiliate members are organisations or individuals not covered by the levy – including suppliers, tertiary institutions, overseas-based companies, and other professionals wanting access to our insights, training, and industry updates.

Across the motu

Mapping connection - understanding place and people

As part of our continued commitment to embedding mātauranga Māori into the workplace, we've taken steps to better understand our membership through a cultural lens – exploring where our members sit within the rohe (regions) of ngā iwi o Aotearoa.

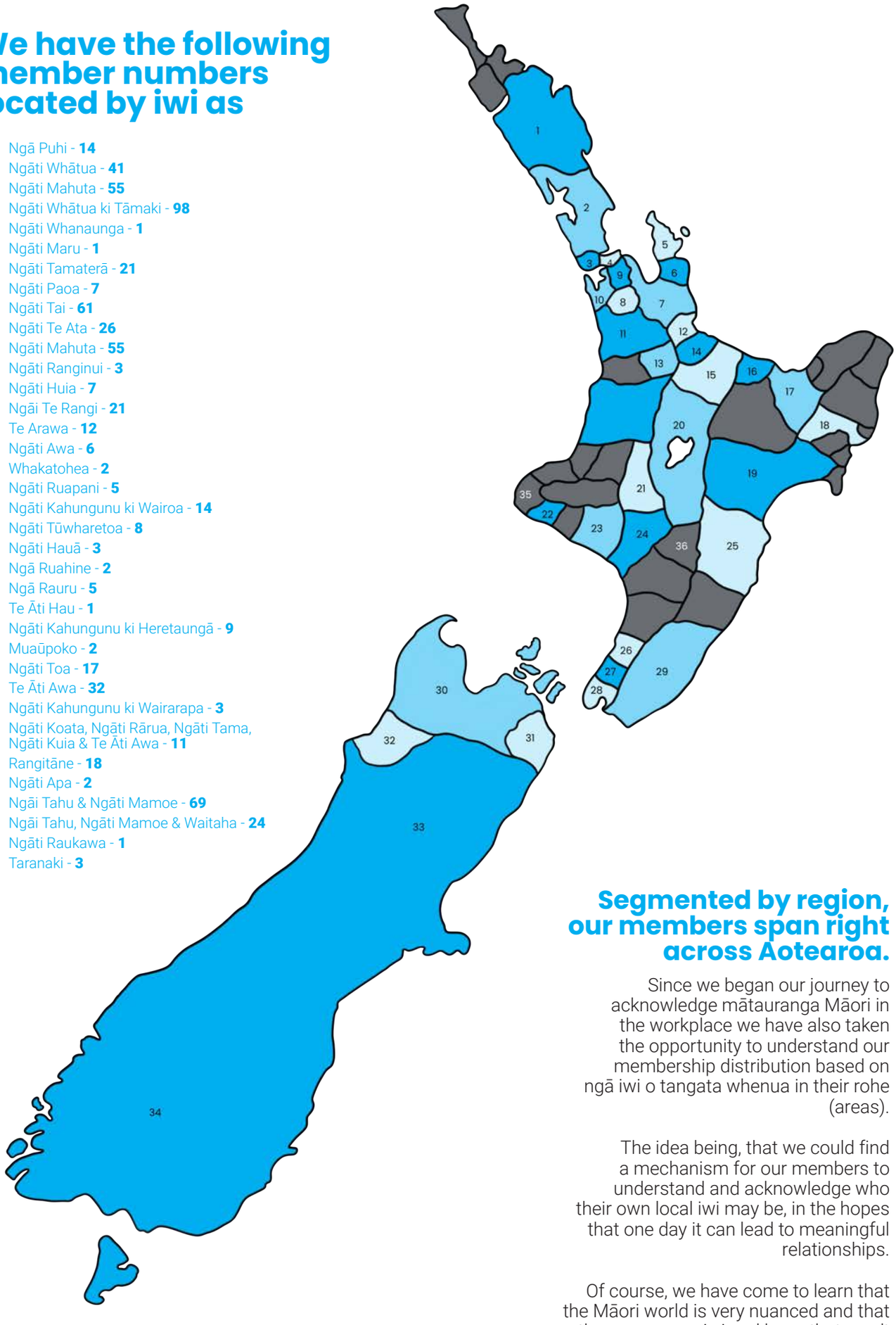
Our aim is to spark awareness and encourage members to recognise the mana whenua of the areas they operate in – opening the door to more meaningful connections and, in time, authentic relationships with iwi and hapū.

We acknowledge that the Māori world is deeply nuanced – and that iwi boundaries and affiliations are complex, interwoven, and at times not easily captured by maps. Still, this is a small but purposeful step towards honouring place-based knowledge, identity, and relationships in the engineering and construction sectors.

We have the following member numbers located by iwi as follows:

We have the following member numbers located by iwi as

1. Ngā Puhi - **14**
2. Ngāti Whātua - **41**
3. Ngāti Mahuta - **55**
4. Ngāti Whātua ki Tāmaki - **98**
5. Ngāti Whanaunga - **1**
6. Ngāti Maru - **1**
7. Ngāti Tamaterā - **21**
8. Ngāti Paoa - **7**
9. Ngāti Tai - **61**
10. Ngāti Te Ata - **26**
11. Ngāti Mahuta - **55**
12. Ngāti Ranginui - **3**
13. Ngāti Huia - **7**
14. Ngāi Te Rangi - **21**
15. Te Arawa - **12**
16. Ngāti Awa - **6**
17. Whakatohea - **2**
18. Ngāti Ruapani - **5**
19. Ngāti Kahungunu ki Wairoa - **14**
20. Ngāti Tūwharetoa - **8**
21. Ngāti Hauā - **3**
22. Ngā Ruahine - **2**
23. Ngā Rauru - **5**
24. Te Āti Hau - **1**
25. Ngāti Kahungunu ki Heretaungā - **9**
26. Muaūpoko - **2**
27. Ngāti Toa - **17**
28. Te Āti Awa - **32**
29. Ngāti Kahungunu ki Wairarapa - **3**
30. Ngāti Koata, Ngāti Rārua, Ngāti Tama, Ngāti Kuia & Te Āti Awa - **11**
31. Rangitāne - **18**
32. Ngāti Apa - **2**
33. Ngāi Tahu & Ngāti Mamoe - **69**
34. Ngāi Tahu, Ngāti Mamoe & Waitaha - **24**
35. Ngāti Raukawa - **1**
36. Taranaki - **3**



Segmented by region, our members span right across Aotearoa.

Since we began our journey to acknowledge mātauranga Māori in the workplace we have also taken the opportunity to understand our membership distribution based on ngā iwi o tangata whenua in their rohe (areas).

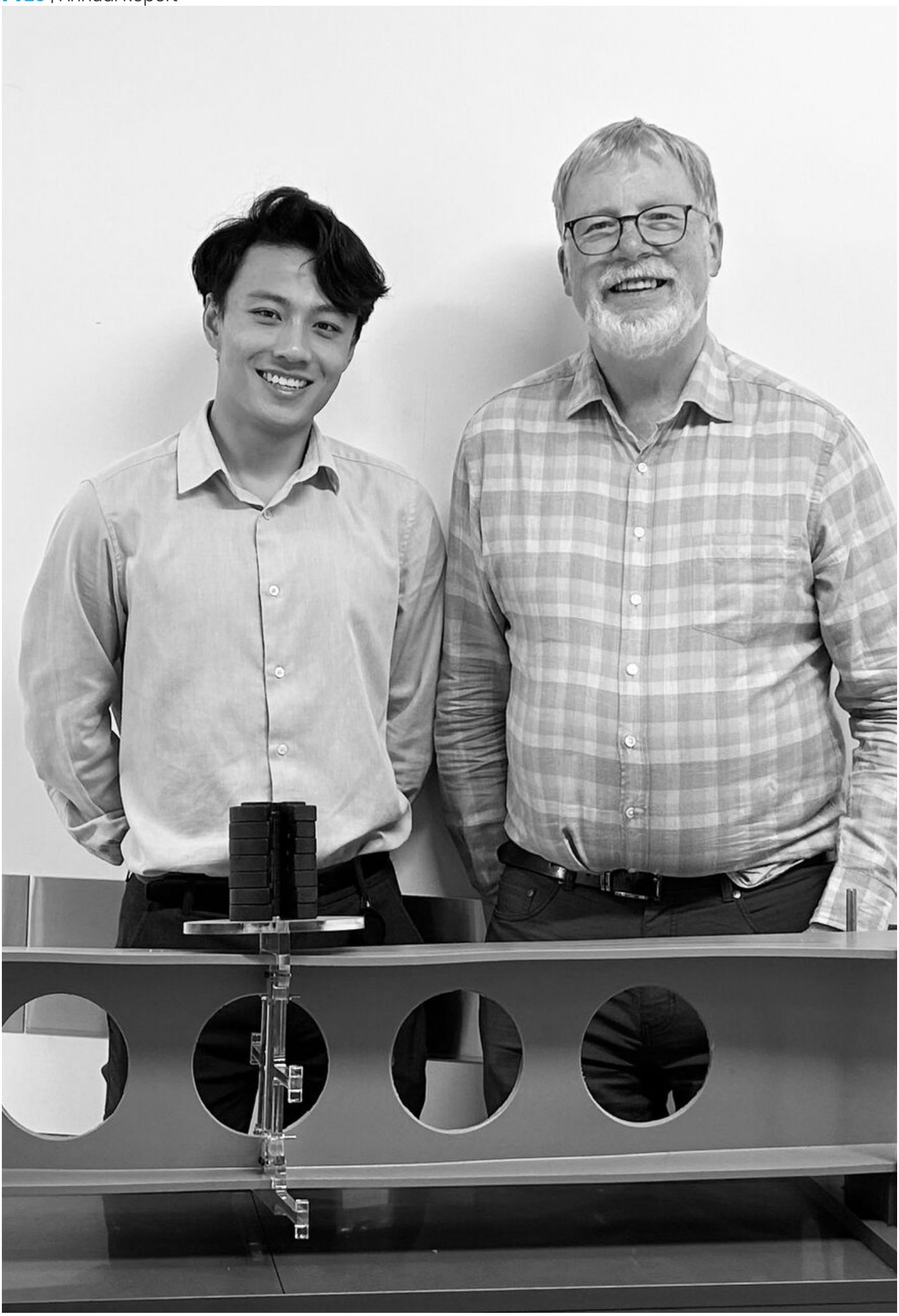
The idea being, that we could find a mechanism for our members to understand and acknowledge who their own local iwi may be, in the hopes that one day it can lead to meaningful relationships.

Of course, we have come to learn that the Māori world is very nuanced and that there are many iwi and hapu that aren't so easily captured in this way.

4.0 Learners to leaders.

Creating meaningful impact: Students, Industry, The future.

In FY25, we deepened our commitment to empowering the next generation of engineers and innovators. Through strategic student engagement, targeted scholarships, and hands-on research opportunities, we focused on creating clear, supported pathways into the heavy engineering and construction sectors. From internships and final-year project prizes to ongoing collaboration with tertiary institutions, we're investing in capability-building that connects rangatahi with real-world opportunities.



Koru student membership

Creating connections early to grow future talent

Our koru membership is designed for the next generation of engineers, innovators, and leaders.
It offers rangatahi and tertiary learners direct access to our latest research, events, and thought leadership – helping them stay ahead of industry trends while building meaningful pathways into the sector.

We work actively to connect our student members with internship and scholarship opportunities, offering wraparound support in both technical and soft skills to prepare them for long-term success in the industry.

To be eligible, students must be enrolled at a tertiary institution with a research focus on heavy engineering. This membership also allows them to submit their final year projects for consideration in our annual HERA Best Final Year Project Award.

Total number of student members in FY25

201

Student support

Rotary forum - connecting with the next generation

In January 2025, we proudly continued our annual tradition of hosting the Rotary National Science and Technology Forum cohort at HERA House. This initiative remains a key way for us to give back and also connect with the next generation of engineers to spark their interest in heavy engineering.

This year's visit welcomed 24 students eager to explore future career pathways in engineering and innovation. The day offered them a deep dive into what a future in our sector could look like - showcasing the breadth of opportunities through hands-on tech demos, real-world applications, and meaningful conversations with some of our technical team.

To be eligible, students must be enrolled at a tertiary institution with a research focus on heavy engineering. This membership also allows them to submit their final year projects for consideration in our annual HERA Best Final Year Project Award.

Lighting the fire

Lydia's journey with structural steel

When passion meets opportunity, sparks fly!

That's certainly been the case for Lydia Frater, a standout Whanake Scholarship recipient who has steadily built her connection with Aotearoa New Zealand's structural engineering sector - first through hands-on experience at John Jones Steel, and in FY25 her summer internship at HERA.

A student at the University of Canterbury majoring in structural engineering, Lydia has demonstrated a deep commitment to the field. Her recent internship with our Structural Systems team saw her work under the guidance of Senior Structural Fire Engineer Mayank Shrivastava, with oversight from General Manager Kaveh Andisheh. Her mahi centred around advancing fire engineering research and tool development - critical to improving the safety, performance, and sustainability of steel structures.

"This summer, I had the incredible opportunity to work on three projects," Lydia shares. "I contributed to optimising fire protection through the HERA Intumescent Tool (H.I.T.), validating performance of concrete-filled steel tubular columns, and exploring the behaviour of steel posts in fire-rated walls.
It's been an exciting, challenging, and rewarding experience."

Her work contributed to the future release of the H.I.T. tool and involved detailed analysis on fire behaviour in steel, helping us push forward our research in structural fire safety.

From the workshop floor to the research lab

Lydia's previous summer internship with our member company John Jones Steel gave her valuable insight into the real-world application of engineering principles. From learning welding and fabrication processes to shadowing quality assurance roles and spending time in drafting offices and site inspections, she gained an expansive view of the sector's moving parts.

> "Lydia was a good assistant and a fast learner. She understood how to interpret structural steel drawings and applied that knowledge quickly - she's definitely got a bright future." John Jones Steel QA Orlee Onilongo.

HERA internship

John Jones Steel internship

Listen to our podcast with Lydia

Project awards

University of Auckland
In FY25 we were proud to recognise student innovation at the University of Auckland's (UoA) final- year display day with our HERA Prize to Sara Renall and Sebastian Webb, who were recognised for their project, 3D printed sand-casting moulds.

Their project explored integrating binder jetting 3D printing technology into sand-casting workflows - a significant step toward flexible manufacturing in heavy engineering. They identified and optimised materials, printing parameters, and post-processing techniques, producing sample molds and cast parts that offer valuable insights for the industry.

Under the guidance of Olaf Diegel, their research highlighted how additive manufacturing can complement traditional casting methods, addressing current and future challenges in heavy engineering. We acknowledge their dedication and contributions in helping to advance the sector.

Research Scholarships

Our scholarship support continues to grow, this year supporting students across HERA Foundation,

HERA Foundation
Ahmad Sayadi, University of Waikato
Dinesh Lakshmanan Chandramohan, University of Waikato

Ngākopa Construction 4.0
Deao Xing, University of Auckland
Hooman Shrizadi, Tufts University USA
Hugo Phibbs, University of Auckland
James Halliday, Massey University
Li Xu, University of Auckland
Md Armanul Hoda, University of New Hampshire USA
Parsa Yazdi, University of Waikato
Patricia Te Whatu, Auckland University of Technology
Sachini Weerasinghe, Massey University
Saul Roberts, Auckland University of Technology
Summer Xia, University of Auckland
Vikram Arunkumar Dhotre, University of Auckland
Yuning Zhang, University of Michigan USA
Romani Katoa, Auckland University of Technology
Yuqian Lu, University of Auckland
Shengjia Wu, UMich
Hēmi Edwards, University of Auckland

With additional students given the opportunity to participate in this mahi (work):
Aflah Dani, University of Waikato
Chase Hennessey, University of Waikato Dávid Bodnár University of Miskolc Hungary Shengjia Wu, University of Michigan USA Stefan Fuchs, University of Auckland

ACM CRC - Australian Composites Manufacturing
Abila Hena Anayet, University of Sydney
Hao (Dex) Chang, University of Sydney
Van Thu HUYNH, University of Sydney
Vladislav Yakubov, University of Sydney
Wlla Abbad, University of Sydney

KiwiRail Scholarship
Alireza Houshmand Sarvestani, Auckland University of Technology

Meet
Alireza Houshmand Sarvestani

Exploring fatigue performance in New Zealand's railway bridges

Alireza Houshmand Sarvestani is a PhD candidate at Auckland University of Technology specialising in structural engineering. His research is tackling a critical question for Aotearoa New Zealand's infrastructure around how we can improve the durability and cost-efficiency of welded connections in KiwiRail steel railway bridges.

Funded by KiwiRail, and supported by HERA - Alireza's project focuses on evaluating the high-cycle fatigue (HCF) performance of welded joints – specifically, the type and configuration of fillet welds. The aim, being to replace traditional bolted connections with cost-effective welded alternatives that don't compromise structural integrity under repetitive loads.

Supervised by Associate Professor Shahab Ramhormozian, his work combines experimental testing, finite element modelling, and stress analysis, with an emphasis on real-world applicability. Alireza's research targets critical connection points like stiffener-to-web and web-to-flange, assessing their performance under long-term service conditions to align with AS/NZS standards.

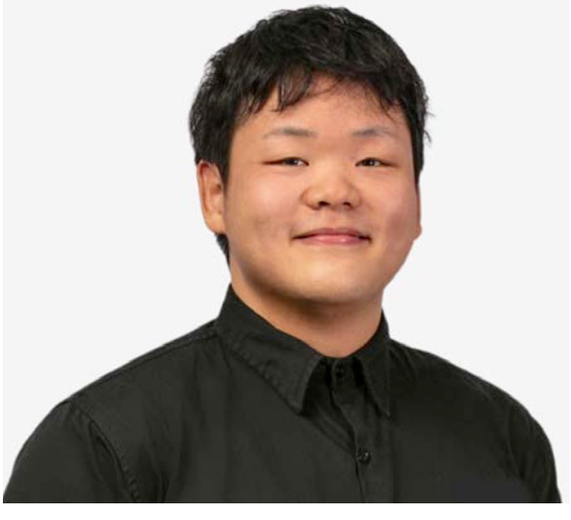
Alireza brings with him a strong technical background, holding both Bachelor's and Master's degrees in Structural Engineering from institutions in Iran. His previous experience in industrial design and structural inspection using tools such as ETABS, SAFE, and ABAQUS enriches the practical insights he brings to this project.

His mahi is expected to have significant impact not only for KiwiRail but for the wider engineering sector—offering pathways to modernise bridge fabrication methods, reduce maintenance costs, and extend infrastructure life in a sustainable way. We're proud to support and follow his research journey as he contributes to the future of New Zealand's heavy engineering and transport infrastructure.

In the spotlight: ACM CRC

Shaping the future of sustainable composites

In FY25, HERA proudly welcomed four talented scholars and researchers to our ACM CRC (Advanced Composite Materials Cooperative Research Centre) research program—an international initiative focused on the future of composite steel innovation, sustainability, and circular design. These rising stars are playing a pivotal role in advancing next-gen solutions for structural steel and metal composites.



Hao Chang – Circular Design 4.0 PhD Scholar

Hao Chang - better known as Dex - brings a unique blend of academic and practical expertise. Dex's current work is focused on designing efficient connection systems for timber-steel hybrid structures. Leveraging Circular Design 4.0 principles, his research aims to reduce material waste and increase reusability through smarter structural assemblies. Under the guidance of Prof. Luming Shen and A/Prof. Daniel Dias-da-Costa, Dex is helping to unlock sustainable new pathways for infrastructure design.

Dr. Vladislav Yakubov – Postdoctoral Research Associate

Dr. Yakubov is an expert in additive manufacturing and novel material characterisation techniques, and holds a PhD in Mechanical Engineering. As part of our ACM CRC team, he is leading Sub-project 4, which explores the potential of Additive Friction Stir Deposition (AFSD) for aluminium/steel recycling and reuse. Splitting his time between the University of Sydney and ANSTO, Dr. Yakubov is developing next-gen methods for re-manufacturing metal composites, reducing waste and enabling smarter resource cycles.

Wlla Abbad – Women in STEM HERA/ACM CRC Scholar

Wlla Abbad is the recipient of the Women in STEM HERA/ACM CRC Scholarship. Her PhD research focuses on AFSD of aluminium and steel, tackling material reuse, repair, and recycling challenges head-on. Her work represents the perfect synergy of innovation and impact - aligning with circular economy goals and sustainable design. With a background in industrial engineering and a commitment to environmentally responsible practices, Wlla is helping reshape how we think about material life cycles in construction.

Abila Hena Anayet – AI for Steel Fabrication PhD Scholar

Abila is driving the intersection of AI and fabrication quality control. Her PhD project centres on developing AI-driven tools to optimise non-destructive testing (NDT) for structural steel, minimising fabrication defects and ensuring compliance with AS/NZS 5131 standards. With prior research in CO_2 sequestration and sustainable construction materials, Abila brings deep expertise in environmental engineering. Her project—supervised by Dr. Mike Bambach and Dr. Ali Amin - will analyse large NDT datasets, conduct finite element modelling, and deliver data-driven guidelines for smarter steel inspection.

Why this matters

These scholarships are part of the wider $250 million ACM CRC initiative, uniting 30+ partners over 10 years to unlock advanced, sustainable composite steel applications. Our role includes leading research to embed Circular Design 4.0 thinking, enabling AI-based monitoring systems, in-service health diagnostics, and sustainable manufacturing solutions aligned with real-world construction needs.

By investing in talent and capability through these scholarships, we're building a future-ready workforce that can drive meaningful transformation in heavy engineering. These scholars are not only contributing technical knowledge - they're helping us explore new paradigms in reuse, recycling, and intelligent design.

> "Together, we're not just solving challenges. We're reshaping what's possible. Michail Karpenko

Student projects

We've continued to engage with universities to spur innovation and develop future talent.
Two undergraduate research projects were completed this year in collaboration with students from the University of Auckland and Auckland University of Technology:

Smart workshop equipment monitoring (UoA)

This project developed a proof-of-concept system to accurately identify and monitor equipment usage in noisy fabrication workshop environments using audio signals and machine learning. The student team demonstrated that unique sound signatures from welding, cutting, and other processes can be detected and distinguished even against background noise. Such a system could help fabricators track machine utilisation and idle time automatically, leading to better scheduling and maintenance decisions.

AI-driven material compliance assistant (AUT)

In this project, students created an AI-powered assistant to automate the verification of steel material certificates and datasheets. The prototype software uses machine learning algorithms to extract key properties from a material's datasheet and then compares them against the requirements of relevant standards (such as grade or strength specifications). The team also built a user-friendly web interface where engineers can upload a datasheet, see the analysis results, and even query the data through a chatbot interface. This directly supports our technical and practical solutions pillar by introducing practical digital tools to the industry, and it reinforces workforce development as engineers learn to leverage AI in their workflows, echoing Government priorities around digital skills development.

4.0

Future-proofing industry.

Driving innovation and resilience,Technology, Strategy, People

He waka eke noa..
We're all in this together.

In a time of rapid change, futureproofing our sector is not a luxury – it's a necessity. Our focus is on embedding forward-thinking strategies that embrace new technologies, anticipate disruption, and uphold our commitments to people and environment. From digital transformation to circular design, we're building an industry that's not only prepared for the future, but leading it. Together with our members, we're shaping a sector that's adaptive, innovative, and resilient – one that cares for people and planet, and is ready to meet the challenges of tomorrow.

Our commitments.

The foundations we stand on: Trusted, Responsible, Future-focused.

In FY25, our commitments continued to shape the way we serve our members and contribute to the wider Aotearoa community. As the voice of heavy engineering, we've focused on delivering value, building capability, and driving transformation across the construction and manufacturing sectors.

At the heart of everything we do is a deep responsibility to act with purpose - not just for industry, but for the people and places we impact. Our commitment to te taiao (the environment), ngā tangata (the people), and sector-wide innovation reflects our belief that engineering is more than just infrastructure - it's legacy.

Whether it's advancing low-carbon design, supporting workforce equity, or embedding mātauranga Māori into our mahi, our commitments aren't just words. They are actions, policies, and behaviours we live by - and they guide every decision we make as we help shape the future of Aotearoa New Zealand's heavy engineering landscape.

Our values

Every-day action, Every-day impact.

The same values, now with deeper connections

The team at HERA don't just speak our values - we live them. Internally, our we use our 'values gear' to break our value pillars down into everyday behaviours and actions. This helps us align our internal practices with our external promises, and ensures our mahi reflects our values at every level.

In FY25, we took the opportunity to reflect on our values through a te ao Māori lens – acknowledging the partnership that exists between tangata Tiriti and tangata whenua. members and wider industry.

This approach helps us stay true to who we are, while making our values more accessible, authentic, and connected to Aotearoa.

This mahi was supported through the expertise and tautoko of Dr Joesph Te Rito (Rongomaiwahine, Ngāti Kahungunu, Rangitāne) - Ako Aotearoa Deputy Director, Māori & Kaihautū Mātauranga Māori and demonstrates how the intersection of te ao Māori and te ao Pākeha can exist.

As enthusiastic partners - innovation is at the core of everything we do.

Vision: Securing tomorrow's industry by innovating today
Mission: Build a passionate tribe of metal minds who innovate successfully

Simplifying the 'values' message

Internally, our values guide our team well - but with the refresh of our website, we recognised that for those outside of HERA, they weren't always easy to remember or connect with. So in FY25, we also took the opportunity to reframe our values through the eyes of our members and wider industry.

The result? Five simplified yet powerful principles that capture the heart of what we stand for - making our values more accessible, relatable, and reflective of the mahi we do together every day.

We measure up

Progress & empowerment | *Hiranga me te whakamana*

Change is constant, but navigating it doesn't have to feel uncertain. At HERA, we act as a catalyst for positive transformation - empowering our members to stay ahead of the curve. By analysing data, challenging assumptions, and pushing beyond the status quo, we provide clarity and confidence to help our sector evolve.

We engineer ideas

Ingenuity & innovation | *Pukenga me te auahatanga*

New challenges require fresh thinking. At HERA, we honour the past while imagining the future. We pioneer new ideas, encourage bold experimentation, and support innovation that repositions our industry as a global leader.

We weld together

Collaboration & community | *Mahitahitanga me te hapori*

Our strength lies in unity. From our diverse team to our wide-reaching membership, we believe inclusive collaboration generates better outcomes. We respect all voices and bring people together to shape a thriving, innovative industry.

We build perspectives

Respect & wellbeing | *Whakaute me te taunga* oranga

Wellbeing is a priority. A supported team is a strong team - ready to deliver meaningful mahi with purpose. When we centre respect and hauora in our work, we create better results and a culture people want to be part of.

We forge ahead

Excellence, integrity, independence | *Hiranga, ngākau pono me te motuhaketanga*

We hold ourselves to the highest standards. Independent, impartial, and driven by data, our work is grounded in technical excellence and transparency. When our members face challenges, they know we'll show up with no hidden agendas or undue influence.

Diversity, equity and inclusion

Seeing the world through a variety of lenses helps us to focus on a stronger future for Aotearoa. Embracing diversity does not mean compromising on skills, experience, or professional qualifications. It is about appointing people on merit while understanding that considering diversity of thought and perspective ultimately helps drive better outcomes. Aotearoa has so much potential to improve and evolve our heavy engineering industry. If we are to truly realise this potential, we must acknowledge and tautoko all voices and experiences.

Women in engineering

An Aotearoa New Zealand where women are

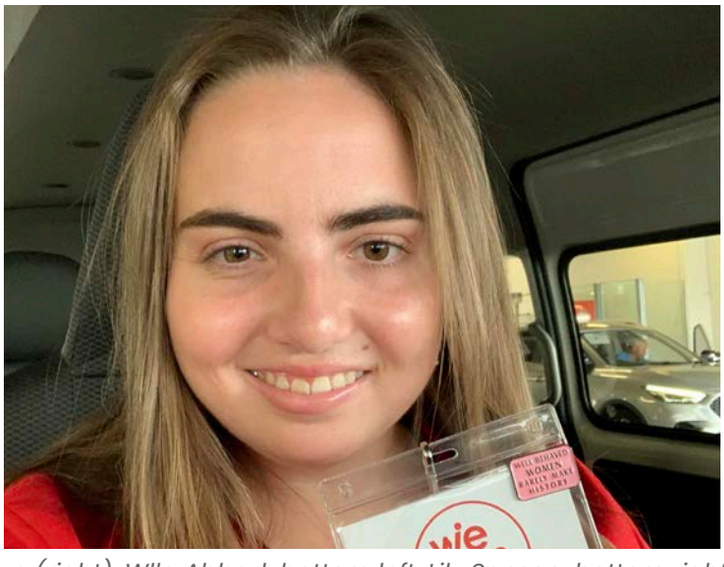
It's no secret that our CEO is a woman, and that she comes with a personal drive to see female representation in engineering roles increase! The good news is, that our team is 100% behind her giving tautoko (support) to this mission. In fact, across FY25 - women are fast evening up the numbers within our own team too!

By fostering an environment where wahine Māori and all women feel valued and supported, we are building a stronger, more dynamic engineering sector for the future. Our approach is about action. Through initiatives like the Whanake Māori Scholarship (with a strong focus on wāhine recipients), internship opportunities, student awards, and ongoing thought leadership, we are actively creating space for women to enter, grow, and lead in engineering and construction.

In FY25 we proudly had our CEO Troy Coyle participate in key events, such as the 'We Belong – Women Pioneering the Future in Construction' panel for Suffrage Day 2024. Events like these give voice to those paving the way and inspire the next generation to see themselves in our industry.

In the lead-up to International Women's Day 2025, we also launched a week-long spotlight series, "Women Breaking Barriers," showcasing wāhine across our industry and within our own team.
Through carousels, podcasts, and video content, we shared real stories. Each kōrero challenging stereotypes, celebrating impact, and calling for continued progress. We highlighted the need for:

- more visible role models and mentorship networks;
- inclusive workplace policies;
- equity in leadership pathways; and
- real conversations about confidence and bias in the industry.



Diane Menzies: above (left), Abila: above (right), Wlla Abbad; bottom left, Lily Sanson; bottom right

Rangatahi (youth) in engineering

Giving tautoko to tauira (students) is a focus we work hard to foster. We are committed to providing scholarships to aspiring engineers and fund a range of student awards for final year projects with key universities such as AUT, University of Auckland, University of Canterbury and the University of Waikato. We also have a student membership category to connect with our future engineers and tautoko them in their early career pathway.

We also proudly sponsor a range of MECHA events such as their speed interviews to help students practise and prepare for real life interview scenario's and their wellness day which advocates for mental health awareness during exams. We also host the Rotary forum on a yearly basis as a way to help inspire science and technology students.

In conjunction with this mahi, we strategically sponsor key initiatives to push this commitment forward

Fostering curiosity early with the House of Science

We kicked off 2025 on a high note by reaffirming our sponsorship of the 'A Load of Rubbish / He Putunga Para' science resource kit, supporting both Auckland branches of House of Science NZ (Te Whare Pūtaiao).

Designed for ākonga in years 0–8, this bilingual kit delivers hands-on activities that teach tamariki about recycling, materials science, and circular economy principles - aligning perfectly with our mission to build a more sustainable future through smarter engineering and systems thinking.

For us, supporting this kaupapa is about creating early awareness around sustainable steel, material properties, remanufacturing, and reduction and reuse. These are all core concepts our sector must embrace to enable a truly circular economy.

We've seen the impact of this kit first-hand - at the end of 2024 having our CEO Troy Coyle visit her son's classroom where the kit was in use, supporting over 60 curious young minds and their kaiako to experiment and explore. The students were captivated as they sorted materials, learned about plastic types, and tested magnetic properties of metals. It's this kind of tactile learning that stays with them - and may just plant the seed for a future career in heavy engineering!

This kit continues to be one of the most in-demand in the House of Science library - booked out most terms. We're proud to keep backing it, helping tamariki become the innovative problem-solvers of tomorrow.

Sparking STEMM futures with the Wonder Project

In FY25, we proudly joined forces with Engineering New Zealand to support the Wonder Project – a nationwide initiative that brings science, technology, engineering, mathematics and mātauranga (STEMM) to life in classrooms across Aotearoa.

Through this sponsorship, we're investing in the future of our industry by inspiring tamariki to explore and play with ideas - nurturing the natural curiosity that lies at the heart of engineering innovation. The Wonder Project uses fun, hands-on challenges to encourage students to think critically, solve problems, and see themselves as future innovators.

Having already committed to supporting other organisations in the space of STEMM learning in rangatahi, this was an additional strategic step in building a future-ready workforce. We know the importance of strengthening our talent pipeline, and that begins with sparking interest early.
By supporting the Wonder Project, we're helping to address future skills and labour shortages by cultivating the next generation of engineers, creators, and thinkers.

Whether they go on to build bridges, design robotics, or solve climate challenges through circular design and sustainable steel - these young dreamers are our sector's tomorrow - and we're proud to back them, every step of the way.

Andrea Lun from House of Science.

Leading with purpose

Insights, Influence, Inspiration.

Leadership at HERA isn't just about strategic direction - it's about walking the talk, empowering others, and shaping the narrative of what our industry can become.

In FY25, our CEO Dr. Troy Coyle continued to champion these principles on and off the stage. A standout example where age has no divide - was her featured kōrero on leadership with Arvin Alipour – a driven high school student with an impressive leadership track record and a passion for business, entrepreneurship, and technology.

Arvin's curiosity and ambition has led him to interview leaders from across Aotearoa, including Troy, to better understand what makes great leadership - and we love that!

> "Leadership isn't just about making decisions – it's about empowering others and setting a vision that inspires.
> — Dr. Troy Coyle

Māori in engineering

Bringing mātauranga Māori into the every day.

Our team continues our journey to deepen our understanding of mātauranga Māori and build a genuine relationship with Māori which honours our commitments to Te Tiriti o Waitangi.

We've partnered with the PUhoro STEMM Academy to deliver weekly te reo Maori and tikanga Maori lessons to strengthen our understanding so we can lead by example in fostering te ao Māori in engineering. Where we can, we sprinkle Māori into our everyday communications such as email signatures, our website and of course our annual report!

A key focus of our communications has been to raise the mana of mātauranga Māori as a science and advocate for increased diversity through more Māori in engineering. We of course, have committed to driving

Sustainability

We're committed to ensuring the well-being of future generations by acting with purpose today. Caring for te taiao (the environment) and our communities is at the heart of this committment. Whether it's enabling the heavy engineering industry to adopt more sustainable practices, or making intentional shifts in our own operations, our focus is on creating a net zero future.

We know innovation and responsibility must go hand in hand. That's why our sustainability mahi is about more than just compliance - it's about leadership. Leadership that supports people, protects our natural world, and sets a strong foundation for an Aotearoa where industry and environment thrive together - because when we take care of the world around us, we're also taking care of those who will inherit it.

To achieve this, we have become members and affiliates with key organisations such as LCANZ - the Life Cycle Association of New Zealand, NZGBC Te Kaunihera Hanganga Tautaiao - the New Zealand Green Building Council, Responsible Steel - standards and certifications and the Sustainable Steel Council. We also work collaboratively with thinkstep.anz with our zero carbon steel program and Ekos with our carbon footprint and offsetting of HERA operations.

Tracking our carbon footprint

To lead the way in sustainable practices we know it is important to practice what we preach. This commitment led us to identify our carbon footprint and take meaningful steps towards carbon neutrality. Partnering with thinkstep.anz for a rigorous and independent assessment, we calculated our emissions and collaborated with Ekos to offset them.

Our approach to offsetting supports indigenous forest restoration and regeneration, a win-win solution that addresses the complex relationships between climate, forests, and ecosystems, while considering the impacts on local communities.

In Aotearoa, restoring native forests presents a significant opportunity for sequestering carbon, creating jobs, and protecting our biodiversity. With only 24% of our original indigenous forests remaining, it's crucial to act now to reverse biodiversity loss and safeguard our natural heritage for future generations.

This is our second year in tracking our carbon footprint, with our most recent review held January 2025. Certification confirmed 100% total offset of the total gross GHG emissions of 138.18 tonnes CO2e from 1 April 2023 to 31 March 2024, comparative to previous year of confirmed total offset of total gross GHG emissions of 99.41 tonnes CO2e.

An SSC member

Advancing the sustainability of our operations

We want to ensure that every decision we make is positively serving our environment and communities well. Our commitment to SSC certification ensures we not only achieve this, but continually challenge ourselves to improve by getting independent verified proof that we're making positive strides in the natural, financial, social and human capitals of the Treasury's Living Standards Framework and relevant Sustainable Development Goals.

We are proud to report that we have received Gold Certification from the Sustainable Steel Council certifying that we have passed the audit process and are certified to the Sustainable Steel Charter, with next review due October 2025.

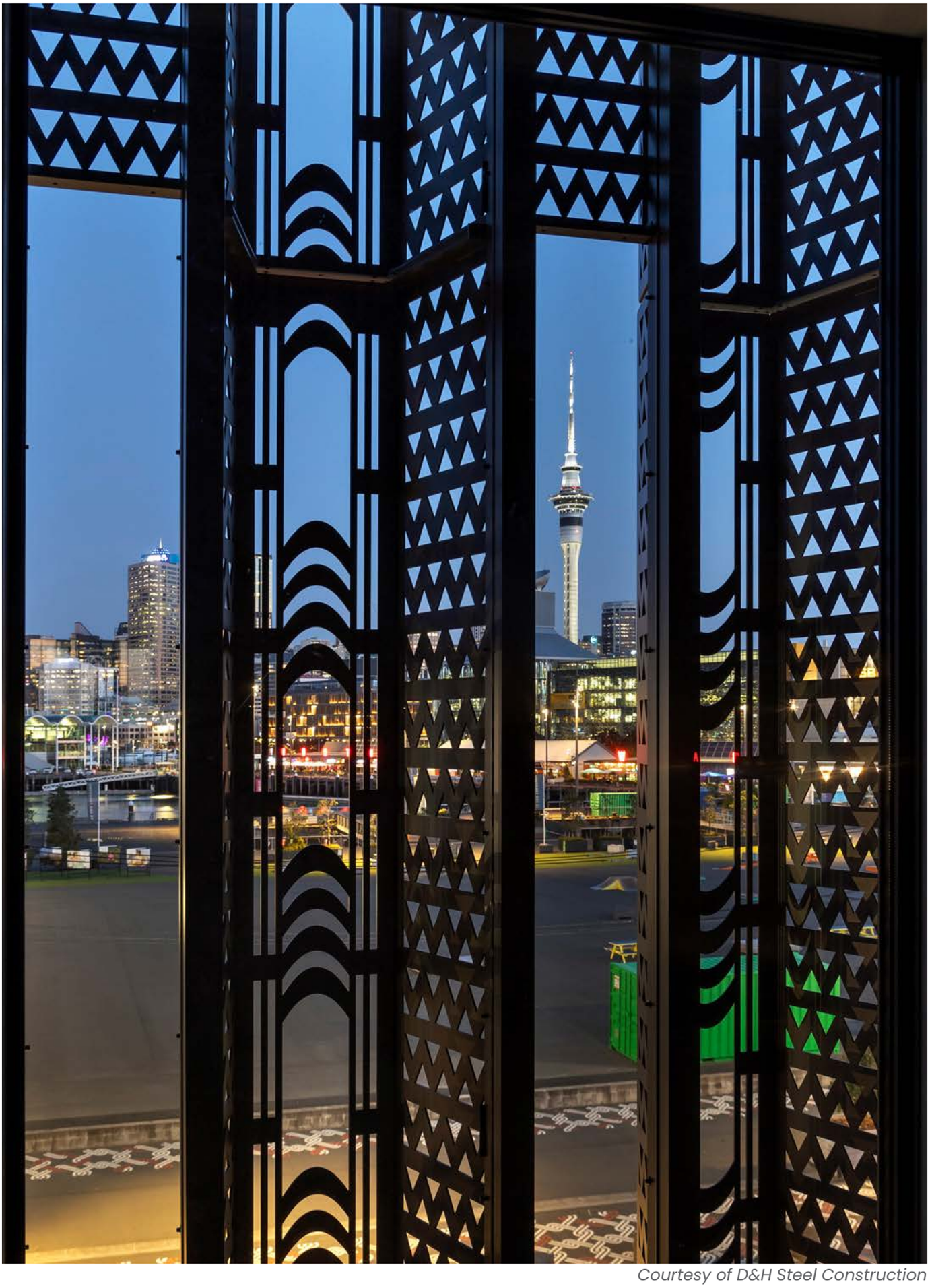
4.0 Looking forward.

The path ahead: Impact-led, Data-driven, Bold.

In FY26, we'll continue to build on the strong foundations laid in FY25 - taking the insights, relationships, and innovations we've developed, and turning them into action.

As we move into FY26, HERA will remain focused on advancing New Zealand's steel industry through high-impact research, capability-building, and technological integration. Our mission is to support members to futureproof their businesses - driven by sustainability, resilience, and innovation.

FY26 marks a period of acceleration, not just in project delivery, but in shaping a more connected, circular and carbon-conscious construction and manufacturing sector. Our efforts span multiple areas of technical advancement and sector leadership.



Courtesy of D&H Steel Construction

Smart Systems & Structural Innovation

The Structural Systems team will push forward a range of initiatives including:

- **Monitoring 4.0** – expanding the use of real-time sensor data and digital monitoring tools to enhance structural health tracking and decision-making;
- **Circular Design 4.0** – embedding circular economy principles into building workflows to support design for disassembly and material reuse;
- **low-carbon design** – advancing whole-of-life carbon reductions through updated benchmarks, expanded EPDs and new specification tools;
- **steel passport & traceability tools** – piloting digital traceability solutions to enhance compliance and transparency;
- **steel under fire** – launching experimental testing to understand the performance of steel systems in severe fire conditions;
- **design guides & software** – developing tools for engineers to practically apply the latest research; and
- **training & stakeholder engagement** – offering learning platforms, workshops and resources to ensure industry readiness.

Welding & advanced manufacturing

Our Welding and Automation team continues to lead the charge in innovation through:

- **composite manufacturing automation** – building on our collaboration with the University of Sydney and the Australian Centre for Robotics, we're co-developing roadmaps with member companies to overcome barriers to automation and increase productivity;
- **digital twins & lifecycle optimisation** – applying holistic system analysis to railway bridge design (in partnership with KiwiRail and AUT), using digital twins to improve resilience and reduce material waste; and
- **AI and data-driven design** – integrating machine learning and simulation-based techniques into quality control and design processes.

These research-led initiatives are practical, targeted and built to support both day-to-day operations and long-term infrastructure resilience.

Communications 4.0 & digital innovation

Our Comms 4.0 team will continue evolving how we connect, communicate, and create value through:

- **reimagining the podcast studio** for relaxed, video-led kōrero, with a strategy to support monetisation and wider engagement;
- **digital tools for sustainability** - live launch of the Zero Carbon Steel calculator and EPD Library – online tool to enhance user access and filter functionality;
- **website & platform upgrades** - launch of Ngākopa Construction 4.0 and HERA Cert; as well as strategy for HERA Foundation website moving forward;
- **team restructure** – split of Digital Administrator into two new roles to support greater capacity both in administration and membership services and digital design, content delivery and strategy;
- **Mātauranga Māori toolbox (LearnWorlds)** - ten module development, test bedding early access with industry partners planned before wider launch;
- **AI upskilling** – integrating tools for trend tracking, content optimisation, and engagement analysis;
- **automation** - streamlining team operations to improve delivery and internal efficiency;
- **media strategy** – more visible, timely, and intentional media voice through third party platforms;
- **membership engagement** – rollout of refreshed strategy for tailored member engagement and better data insights; and
- **enhanced value** – direct invites, targeted updates, and more frequent engagement opportunities

4.0 Financial report.

Resilience in numbers, Transparent, Responsible, Accountable.

Mā te wāhi mahi e mōhiotia ai te kaimahi.
A worker is known by their work.

FY2025 was a year of economic contrast — levy activity slowed, particularly in steel imports, yet HERA remained financially resilient and strategically focused. Through deliberate planning and disciplined execution, we preserved operational delivery, strengthened reserves, and positioned the organisation for long-term impact.

Key Highlights

Levy adjustment and revenue stability

Despite declining levied steel volumes, the increase in the Schedule 2 levy applied from $10/t to $20/t (Dec 2023) ensured continued funding stability. Revenue diversification through training, consulting, certification, and grant-funded research and development offset market softness and underpinned full project delivery.

Reserve growth for strategic investment

We strategically built a surplus to extend our reserves and fund the FY26–27 loan to the HERA Foundation for the Innovation Centre, ensuring capital is deployed for long-term, mission-aligned outcomes — with a financial return above bank rate.

Levy improvements

Legislative approval has been secured to extend levy coverage to include prefabricated items such as structures (excluding prefabricated buildings) and parts of structures made of iron or steel (e.g., bridges, bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frame-works, doors, windows and their frames, thresholds for doors, shutters, balustrades, pillars, and columns), as well as iron or steel components prepared for structural use (e.g., plates, rods, angles, shapes, sections, tubes and the like), as well as bridges and bridge sections, channels, joists, girders, beams and columns). This change takes effect from FY26 and will provide improved revenue certainty and enhance cash flow predictability for future planning.

Application of PBE FRS 48: Service Performance Reporting

As a Tier 2 Public Benefit Entity, we prepare our financial statements in accordance with New Zealand Generally Accepted Accounting Practice (NZ GAAP), applying the PBE Standards issued by the External Reporting Board (XRB) under the Financial Reporting Act 2013.

From 1 January 2024, we have adopted PBE FRS 48: Service Performance Reporting, which is now a mandatory standard for Tier 1 and Tier 2 PBEs. This standard sets out requirements for reporting on what we do, why we do it, and how we measure our impact.

This aligns closely with our strategic focus on delivering measurable value to New Zealand's heavy engineering sector through research, innovation, education, and thought leadership. By adopting PBE FRS 48, we are strengthening our commitment to transparency, accountability, and evidence-based reporting on how our activities contribute to industry outcomes.

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

CONSOLIDATED FINANCIAL REPORT
FOR THE YEAR ENDED 31 MARCH 2025

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

Consolidated Financial Report
FOR THE YEAR ENDED 31 MARCH 2025

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NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

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Registered office	HERA House 17-19 Gladding Place Manukau City Auckland
Number	218280
Nature of business	Research Association
HERA Board Members	Dr Troy Coyle (HERA CEO) Craig Stevenson (HERA Chair, Technical Director, Aurecon) David Moore (Managing Director, Grayson Engineering Ltd) Brad Luke (Director, Peddlethorp Architects - co-opted October 2024) Brendan Smith (National Manager - Carbon, Steel Products, Steel & Tube Ltd) Darren O'Riley (General Manager - Steel Construction New Zealand - term completed AGM June 2024) Jeremy Smith (HERA Deputy Chair, Head of Product Applications & Development, New Zealand Steel) Sally Henderson (Chief Financial Officer, Farra Engineering) Wayne Carson (Managing Director, D&H Steel Construction Ltd) Yvonne Chan Cashmore (Associate Dean and Director of External Engagement at the Faculty of Design and Creative Technologies, Auckland University of Technology)
HERA Certifications Limited Board Members	Wayne Carson (Chair, Managing Director, D&H Steel Construction Ltd) Andrew Boyd - (Independent Consultant) David Moore (HERA Executive, Managing Director, Grayson Engineering Ltd) Kevin Cowie (Steel Construction New Zealand Inc) Malcolm Hammond (Managing Director, MJH Engineering) Simon Williamson (Commercial Manager, Phoenix Steel Limited) Dr Troy Coyle (HERA CEO)
Independent auditor	William Buck Level 4, 21 Queen Street Auckland CBD, 1010
Bankers	Bank of New Zealand
Solicitor	Gaze Burt Auckland

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

Board's Report and Statement of Responsibility
FOR THE YEAR ENDED 31 MARCH 2025

Board Members' Report

The Board of New Zealand Heavy Engineering Research Association Incorporated present this Annual Report, being the consolidated financial statements of the Association for the financial year ended 31 March 2025, and the independent auditor's report thereon.

Statement of Responsibility

The Board is responsible for the maintenance of adequate accounting records and the preparation and integrity of the financial statements and related information.

The independent external auditors, William Buck, have audited the consolidated financial statements and their report appears on pages 3 to 4.

The Board is also responsible for the systems of internal control. These are designed to provide reasonable but not absolute assurance as to the reliability of the financial statements, and to adequately safeguard, verify and maintain accountability for assets, and to prevent and detect material misstatements.

Appropriate systems of internal control have been employed to ensure that all transactions have been executed in accordance with authority and correctly processed and accounted for in the financial records. The systems are implemented and monitored by suitably trained personnel with an appropriate segregation of authority and duties. Nothing has come to the attention of the Board to indicate that any material breakdown in the functioning of these controls, procedures and systems has occurred during the year under review.

The consolidated financial statements are prepared on a going concern basis. Nothing has come to the attention of the Board to indicate that the group will not remain a going concern in the foreseeable future.

In the opinion of the Board:

- The consolidated statement of comprehensive revenue and expense is drawn up so as to present fairly, in all material respects, the results of the group for the financial year ended 31 March 2025;

- The consolidated statement of financial position is drawn up so as to present fairly, in all material respects, the state of affairs of the group as at 31 March 2025;

The consolidated statement of cash flows is drawn up so as to present fairly, in all material respects, the state of cash flows of the group for the financial year ended 31 March 2025.

- There are reasonable grounds to believe that the group will be able to pay its debts as and when they fall due.

For and on behalf of the Board:

Chairman — 25 June 2025
Date

CEO — 25 June 2025
Date

William Buck
ACCOUNTANTS & ADVISORS

Independent auditor's report to the Members of New Zealand Heavy Engineering Research Association Incorporated

Report on the audit of the consolidated financial statements

Our opinion on the consolidated financial statements

In our opinion, the accompanying consolidated financial statements of New Zealand Heavy Engineering Research Association Incorporated & subsidiary (the Group), presents fairly, in all material respects:

- The consolidated financial position of the Group as at 31 March 2025;
- Its consolidated financial performance and its cash flows for the year then ended; and

in accordance with the reporting requirements for Public Benefit Entity International Public Sector Accounting Standards Reduced Disclosure Regime (IPSAS RDR).

What was audited?

We have audited the consolidated financial statements of the Group, which comprises:

- the consolidated statement of comprehensive revenue and expense for the year then ended,
- the consolidated statement of financial position as at 31 March 2025,
- the consolidated statement of cash flows for the year then ended,
- the statement of accounting policies, and
- notes to the consolidated financial statements.

Basis for opinion

We conducted our audit of the consolidated statement of comprehensive revenue and expense, consolidated statement of financial position, consolidated statement of cash flows, consolidated statement of accounting policies and notes to the consolidated financial statements in accordance with International Standards on Auditing (New Zealand) (ISAs (NZ)).

Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of our report.

We are independent of the Group in accordance with Professional and Ethical Standard 1 *International Code of Ethics for Assurance Practitioners (including International Independence Standards) (New Zealand)* issued by the New Zealand Auditing and Assurance Standards Board, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other than in our capacity as auditor we have no relationship with, or interests in, the Group.

William Buck
ACCOUNTANTS & ADVISORS

The Board's responsibilities for the consolidated financial statements

The Board is responsible for:

- the preparation, and fair presentation of the consolidated financial statements in accordance with International Public Sector Accounting Standards Reduced Disclosure Regime (IPSAS RDR), and
- such internal control as the Board determines is necessary to enable the preparation of the consolidated financial statements that is free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board are responsible on behalf of the Group for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board either intends to liquidate the Group or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (NZ) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial statements.

A further description of our responsibilities for the audit of the financial statements is located at the External Reporting Board's website:

https://www.xrb.govt.nz/standards/assurance-standards/auditors-responsibilities/

This description forms part of our auditor's report.

Restriction on distribution and use

This independent auditor's report is made solely to the Members, as a body. Our audit work has been undertaken so that we might state to the Members those matters which we are required to state to them in the independent auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Members, as a body, for our audit work, this independent auditor's report, or for the opinions we have formed.

William Buck

William Buck Audit (NZ) Limited
Auckland, 26 June 2025

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

Consolidated Statement of Comprehensive Revenue and Expense
FOR THE YEAR ENDED 31 MARCH 2025

	Notes	2025	2024
		$	$
Revenue from non-exchange transactions	11	3,901,503	3,062,623
Revenue from exchange transactions	11	1,589,218	1,446,755
Total revenue		**5,490,721**	**4,509,378**
Expenses			
Employee salaries and benefits		2,424,267	2,330,865
Member services		191,449	110,307
Seminar expenses		42,889	62,474
Consulting expenses		393,826	330,276
External research		222,491	331,545
HERA House expenses		156,210	100,119
Conference expense		3,600	47,336
Depreciation expense	8	139,830	164,856
Rent expenses		357,828	357,828
Office expenditure		22,212	51,067
IT Expenses		145,071	120,130
Other expenses	12	365,371	342,906
Total expenses		**4,465,045**	**4,329,518**
Finance income		94,243	110,440
Net finance income		**94,243**	**110,440**
Net surplus before tax		**1,119,919**	**290,300**
Income tax expense	17	-	6,350
Net surplus for the year / period		**1,119,919**	**283,950**
Other comprehensive revenue and expense		-	-
Total comprehensive revenue and expense for the year		**1,119,919**	**283,950**

The above financial statements should be read in conjunction with the notes to the financial statements.

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

Consolidated Statement of Financial Position
As at 31 March 2025

	Notes	2025 $	2024 $
ASSETS			
Current assets			
Cash and cash equivalents	5	1,923,230	1,421,277
Receivables from exchange transactions	6	319,370	164,284
Receivables from non-exchange transactions	6	353,029	260,651
Investments- term deposits	9	1,546,964	1,506,445
Prepayment		-	-
GST Receivables		46,977	19,358
Income tax receivable	17	6,355	
		4,195,926	3,372,014
Non-current assets			
Property, plant and equipment	8	616,162	696,621
		616,162	696,621
TOTAL ASSETS		**4,812,087**	**4,068,634**
LIABILITIES			
Current liabilities			
Payables (from exchange transactions)	10	37,635	562,035
Payables (from non- exchange transactions)	10	475,510	327,265
Income tax payable	17	-	312
		513,145	**889,612**
TOTAL LIABILITIES		**513,145**	**889,612**
TOTAL NET ASSETS		**4,298,942**	**3,179,023**
EQUITY			
Retained Earnings		4,298,942	3,179,023
TOTAL EQUITY		**4,298,942**	**3,179,023**

For and on behalf of the Board:

Chairperson — 25 June 2025 **Date**

CEO — 25 June 2025 **Date**

The above financial statements should be read in conjunction with the notes to the financial statements.

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

Consolidated Statement of Changes in Net Assets/Equity
FOR THE YEAR ENDED 31 MARCH 2025

	Accumulated comprehensive revenue and expense	Total
	$	$
Closing equity 31 March 2023	2,895,073	2,895,073
Total comprehensive revenue and expense for the year	283,950	283,950
Closing equity 31 March 2024	**3,179,023**	**3,179,023**
Total comprehensive revenue and expense for the year	1,119,919	1,119,919
Closing equity 31 March 2025	**4,298,942**	**4,298,942**

The above financial statements should be read in conjunction with the notes to the financial statements.

NEW ZEALAND HEAVY ENGINEERING RESEARCH ASSOCIATION INCORPORATED

Statement of Cash Flows
FOR THE YEAR ENDED 31 MARCH 2025

	Notes	2025	2024
		$	$
CASH FLOWS FROM OPERATING ACTIVITIES			
Receipts from members/customers		4,518,818	3,764,933
Interest received		94,243	110,440
Receipts from MBIE		160,560	433,124
Receipts from IRD		32,809	47,018
Cash paid to suppliers and employees		(4,204,591)	(4,213,832)
Net cash inflow from operating activities		**601,839**	**141,683**
CASH FLOWS FROM INVESTING ACTIVITIES			
Sales/(Purchases) of term deposits		(40,519)	(65,174)
Purchase of property, plant and equipment	8	(59,368)	(184,377)
Sale of property, plant and equipment		-	-
Net cash outflow from investing activities		**(99,886)**	**(249,551)**
Net increase in cash and cash equivalents		501,953	(107,868)
Cash and cash equivalents at 1 April		1,421,277	1,529,145
Cash and cash equivalents at 31 March	5	**1,923,230**	**1,421,277**

The above financial statements should be read in conjunction with the notes to the financial statements.

Notes to the Consolidated Financial Statements
For the Year Ended 31 March 2025

1. REPORTING ENTITY

The Group consists of the New Zealand Heavy Engineering Research Association Incorporated (the "group") which is an Incorporated group established under the Incorporated group Act 1908 on the 30th day of August 1978 and HERA Certifications Limited is 100% owned by the society and incorporated and domiciled in New Zealand. The consolidated financial statements comprise the society and its wholly owned subsidiary.

These financial statements were authorised for issue by the Board on the date indicated on page **2.**

2. BASIS OF PREPARATION

a) Statement of compliance
The society is a public benefit entity for the purpose of financial reporting and the consolidated financial statements comply with Public Benefit Entity Standards Reduced Disclosure Regime ("PBE Standards RDR"). For the purposes of complying with NZ GAAP, the society is a public benefit not-for-profit entity and is eligible to apply PBE Standards RDR on the basis that it does not have public accountability and it is not defined as large. All reduced disclosure regime exemptions have been adopted.

b) Measurement basis
The financial statements have been prepared on the historical cost basis.

c) Functional and presentation currency
The financial statements are presented in New Zealand Dollars ($), which is the functional and presentation currency, rounded to the nearest dollar.

There has been no change in the functional currency of the group during the year.

d) Basis of consolidation
The Group financial statements are prepared by adding together like items of assets, liabilities, equity, revenue, expenses and cash flows on a line-by-line basis. All significant intra-group transactions, revenue and expenses are eliminated in full on consolidation.

Subsidiaries
The Society consolidates in the Group financial statements all entities where the Society has the capacity to control the financial and operating policies of an entity so as to obtain benefits from the activities of the entity

e) Changes in accounting policy

During the year, the Group adopted the following new standards for the first time:
(i) PBE IPSAS - Financial Instruments. There was no material effect on the current or prior periods from the adoption of this standard.

(ii) IAS 1: Service Performance Reporting. PBE FRS 48 is effective for annual periods beginning on or after 1 January 2024 and was adopted by the Group on that date. This standard establishes principles and requirements for presenting service performance information useful for accountability and decision-making

3. SIGNIFICANT JUDGEMENTS AND ESTIMATES

The preparation of the group's financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the accompanying disclosures, and the disclosure of contingent liabilities. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

a) Judgements:
In the process of applying the group's accounting policies, management has made the following judgements, which have the most significant effect on the amounts recognised in the financial statements:

- Revenue recognition: the recognition of non-exchange revenue (conditions vs restrictions);
- Classification of non-financial assets as cash generating or non-cash generating assets for the purposes of assessing impairment indicators and impairment testing.

The majority of property, plant and equipment held by the group is classified as non-cash generating assets.

Notes to the Consolidated Financial Statements
For the Year Ended 31 March 2025

3. SIGNIFICANT JUDGEMENTS AND ESTIMATES (CONT'D)

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below. The group based its assumptions and estimates on parameters available when the financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the group. Such changes are reflected in the assumptions when they occur.

b) Assumptions and estimation uncertainties (cont'd)
Useful lives and residual values
The useful lives and residual values of assets are assessed using the following indicators to inform potential future use and value from disposal:

- The condition of the asset based on the assessment of experts employed by the group;
- The nature of the asset, its susceptibility and adaptability to changes in technology and processes.
- The nature of the processes in which the asset is deployed
- Availability of funding to replace the asset
- Changes in the market in relation to the asset

Changes in accounting estimates
There have been no changes in the accounting estimates for the current reporting period.

4. SIGNIFICANT ACCOUNTING POLICIES

a) Revenue
Revenue is recognised to the extent that it is probable that the economic benefits or service potential will flow to the group and the revenue can be reliably measured, regardless of when the payment is being made. Revenue is measured at the fair value of the consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes or duty.

The specific recognition criteria described below must also be met before revenue is recognised.

i) Revenue from exchange transactions

Revenue from the sale of goods
Revenue from the sale of goods in the course of ordinary activities is measured at the fair value of the consideration received or receivable, net of returns, trade discounts and volume rebates.

Revenue is recognised when the significant risks and rewards of ownership have been transferred to the customer, recovery of the consideration is probable, the associated costs and possible return of goods can be estimated reliably, there is no continuing management involvement with the goods, and the amount of revenue can be measured reliably.

Rendering of services
Revenue is measured at the fair value of the consideration received or receivable under the contract or agreement.

Where the outcome of a transaction involving the rendering of services can be estimated reliably, revenue is recognised by reference to the stage of completion based on the progress of work performed.

Interest received
Interest income is recorded using the effective interest rate. Effective interest rate is the rate that exactly discounts the estimated future cash payments or receipts over the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or liability.

Interest income is included in finance income in the statement of comprehensive revenue and expense.

Notes to the Consolidated Financial Statements
For the Year Ended 31 March 2025

SIGNIFICANT ACCOUNTING POLICIES(CONT'D)

ii) Revenue from non-exchange transactions

Non-exchange transactions are those where the group receives an inflow of resources ((i.e. cash and other tangible or intangible items) but provides no (or nominal) direct consideration in return.

With the exception of services-in-kind, inflows of resources from non-exchange transactions are only recognised as assets where both:

- It is probable that the associated future economic benefit or service potential will flow to the group, and
- Fair value is reliably measurable.

Inflows of resources from non-exchange transactions that are recognised as assets are recognised as non exchange revenue, to the extent that a liability is not recognised in respect to the same inflow.

Liabilities are recognised in relation to inflows of resources from non-exchange transactions when there is a resulting present obligation as a result of the non-exchange transactions, where both:

- It is probable that an outflow of resources embodying future economic benefit or service potential will be required to settle the obligation, and
- The amount of the obligation can be reliably estimated.

The following specific recognition criteria in relation to the group's non-exchange transaction revenue streams must also be met before revenue is recognised.

Grants, Donations, Legacies and bequests

The recognition of non-exchange revenue from Grants, Donations, Legacies and bequests depends on the nature of any stipulations attached to the inflow of resources received, and whether this creates a liability (i.e. present obligation) rather than the recognition of revenue.

Stipulations that are 'conditions' specifically require the group to return the inflow of resources received if they are not utilised in the way stipulated, resulting in the recognition of a non-exchange liability that is subsequently recognised as non-exchange revenue as and when the 'conditions' are satisfied.

Stipulations that are 'restrictions' do not specifically require the group to return the inflow of resources received if they are not utilised in the way stipulated, and therefore do not result in the recognition of a non-exchange liability, which results in the immediate recognition of non-exchange revenue.

b) Employee benefits

i) Short term employee benefits

Short-term employee benefit liabilities are recognised when the group has a legal or constructive obligation to remunerate employees for services provided with 12 months of reporting date, and is measured on an undiscounted basis and expensed in the period in which employment services are provided.

c) Finance income

Finance income comprises interest income on financial assets. Interest income is recognised as it accrues in surplus or deficit, using the effective interest method.

d) Financial instruments

Financial assets and financial liabilities are recognised when the group becomes a party to the contractual provisions of the financial instrument.

i) Financial assets at amortised cost

Financial assets at amortised cost are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Such assets are carried at amortised cost using effective interest method.

Cash and cash equivalents in the consolidated statement of financial position comprise cash at bank and in hand and short-term deposits with an original maturity of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

For the purposes of the consolidated statement of cash flows, cash and cash equivalents consist of cash and cash equivalents as defined above.

ii) Financial liabilities at amortised cost

Financial liabilities classified as at amortised cost are non-derivative financial liabilities that are not classified as fair value through surplus or deficit financial liabilities.

Financial liabilities classified as amortised cost are subsequently measured at amortised cost using the effective interest method.

Financial liabilities classified as amortised cost comprise payables.

Notes to the Consolidated Financial Statements
For the Year Ended 31 March 2025

SIGNIFICANT ACCOUNTING POLICIES(CONT'D)

e) Impairment of financial assets

Short-term receivables are recorded at the amount due, less an allowance for expected credit losses (ECL). This allowance is calculated based on lifetime ECL. In measuring ECL, short-term receivables have been assessed on a collective basis where they possess shared credit risk characteristics. They have been grouped based on the days past due. Where a short-term receivable does not possess these similar characteristics, its ECL is individually assessed.Short-term receivables are written off when there is no reasonable expectation of recovery.

Previous accounting policy for impairment of receivables under PBE IPSAS 29 for comparative information:A financial asset not subsequently measured at fair value through surplus of deficit is assessed at each reporting date to determine whether there is objective evidence that it is impaired. A financial asset is impaired if there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset, and that the loss event(s) had an impact on the estimated future cash flows of that asset that can be estimated reliably.

f) Property, plant and equipment

i) Recognition and measurement

Items of property, plant and equipment are initially measured at cost, except those acquired through non exchange transactions which are instead measured at fair value as their deemed cost at initial recognition.

Items of property, plant and equipment are subsequently measured at cost less accumulated depreciation and accumulated impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment (calculated as the difference between the net proceeds from disposal and the carrying amount of the item) is recognised in surplus or deficit.

Upon disposal of revalued items of property, plant and equipment, any associated gain or losses on revaluation to that item are transferred from the revaluation surplus to accumulated surplus.

ii) Subsequent expenditure

Subsequent expenditure is capitalised only when it is probable that the future economic benefits associated with the expenditure will flow to the group. Ongoing repairs and maintenance is expensed as incurred.

iii) Depreciation

For property, plant and equipment, depreciation is based on the cost of an asset less its residual value and for buildings is based on the revalued amount less its residual value.

Significant components of individual assets that have a useful life that is different from the remainder of those assets, those components are depreciated separately.

Depreciation is recognised in surplus or deficit on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment.

The estimated useful lives are:

Office Equipment	10%-40%
Office Furniture	15%
Fixture & Fittings	15%
Training Centre	10%-20%
Motor Vehicles	20%
House Refurbishment	10%

Depreciation methods, useful lives, and residual values are reviewed at reporting date and adjusted if appropriate.

g) Impairment of non-financial assets

The carrying amounts of the group's non-financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the future remaining service potential (for non-cash-generating assets) is discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU.

Impairment losses are recognised in surplus or deficit. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

Notes to the Consolidated Financial Statements
For the Year Ended 31 March 2025

4. SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

h) Equity

Accumulated comprehensive revenue and expense
Accumulated comprehensive revenue and expense is the group's accumulated surplus or deficit since the formation of the group adjusted for transfers to/from specific reserves.

i) Goods and services tax
All amounts are shown exclusive of goods and services tax (GST), except for receivables and payables that are stated inclusive of GST.

j) Leases

i) Classification and treatment
Leases in terms of which the group assumes substantially all the risks and rewards of ownership are classified as finance leases.

Upon initial recognition the leased asset is measured at an amount equal to the lower of its fair value and the present value of the minimum lease payments. Subsequent to initial recognition, the asset is accounted for in accordance with the accounting policy applicable to that asset.

The group does not have finance leases.

Operating leases are leases that do not transfer substantially all the risks and benefits incidental to ownership of the leased item to the group Operating lease payments are recognised as an operating expense in surplus or deficit on a straight-line basis over the lease term.

Notes to the Consolidated Financial Statements
FOR THE YEAR ENDED 31 MARCH 2025

5. CASH AND CASH EQUIVALENTS

	2025 $	2024 $
Cash and cash equivalents include the following components:		
Current Account	1,632,977	1,138,122
Call Account	290,253	283,154
	1,923,230	1,421,277

The Association has a Visa credit card facility with Bank of New Zealand. The total limit of all credit cards is $30,000 (2022: $30,000).

6. RECEIVABLES

	2025 $	2024 $
Receivables from exchange transactions		
Accounts receivable	319,370	164,284
	319,370	**164,284**
Receivables from non-exchange transactions		
Accrued income - steel and welding levies and FBT to be refunded	353,029	260,651
	353,029	**260,651**

At 31 March, the ageing analysis of receivables from exchange transactions is as follows:

	Total	< 30 days	30-60 days	61-90 days	>90 days
	$	$	$	$	$
2025	**672,400**	631,026	9,927	6,418	25,028
2024	**424,935**	395,653	16,463	11,523	1,296

7. RELATED PARTY TRANSACTIONS AND BALANCES

There were no related party transactions during the year (2024: Nil)
Please refer to separate comments below on HERA Foundation.

Key management personnel compensation
The total remuneration paid to key management personnel for the year was $839,717 (2024: $796,218). The total number of key management personnel was 4 (2024: 4).

There were no other material related party transactions as at balance date, and there are no other material balances outstanding regarding transactions with

HERA Foundation
HERA Foundation is a Charitable Trust Board established in 1992 by a Trust Deed between the Society and the Foundation's first trustees. Two of the five trustees of the Foundation are also on the governing body of the Society, however the governance and management of the two entities are seperate and there is no economic dependency on the Society by the Foundation. As such, it is not considered a related party under PBE IPSAS 20.

The Society had the following related party transactions with HERA Foundation during the year as follows:
- rental expenses on buildings of $ 357,828 (2024: $357,828)
- administration services of $9,750 (2024: $9,750)

8. PROPERTY, PLANT AND EQUIPMENT

Reconciliation of property, plant and equipment for the year ended 31 March 2025

	Opening balance	Additions	Disposals	Depreciation	Closing balance
Office Furniture	11,177		-	2,220	8,957
Fixtures & Fittings	88,461	26,479	-	26,335	88,605
HERA House refurb (Pūtātara and Fab4.0Lab)	122,900		-	23,574	99,327
Motor Vehicles	53,492		-	13,022	40,469
Office Equipment	50,544	42,877	6,844	25,244	61,333
Training & Research Equipment	370,048		3,145	49,431	317,472
	696,622	69,356	9,989	139,826	616,162

	2025			2024		
	Cost	Accumulated depreciation	Carrying value	Cost	Accumulated depreciation	Carrying value
	$	$	$	$	$	$
Office Furniture	235,387	226,430	8,957	235,387	224,210	11,177
Fixtures & Fittings	188,792	100,187	88,605	162,313	73,852	88,461
HERA House refurb (Pūtātara and Fab4.0Lab)	304,750	205,423	99,327	304,750	181,850	122,900
Motor Vehicles	132,882	92,413	40,469	132,882	79,391	53,492
Office Equipment	386,983	325,650	61,333	375,498	324,954	50,544
Training Equipment	581,078	263,606	317,472	587,063	217,015	370,048
	1,829,872	1,213,709	616,162	1,797,895	1,101,271	696,622

Notes to the Consolidated Financial Statements
FOR THE YEAR ENDED 31 MARCH 2025

9. FINANCIAL INSTRUMENTS

The table below shows the carrying amounts of the Society's financial assets and financial liabilities.

i. Classification of financial instruments

	Financial Assets	Financial Liabilities
	At Amortised cost	At Amortised cost
31 March 2025	$	$
Cash and cash equivalents	1,923,230	-
Term deposit - 3 to 12 months	1,546,964	-
Receivables	672,400	-
Payables	-	336,745
Grants from MBIE - Subcontractor payable	-	36,635
	4,142,593	373,380
31 March 2024		
Cash and cash equivalents	1,421,277	-
Term deposit - 3 to 12 months	1,506,445	-
Receivables	424,935	-
Payables	-	84,178
Grants from MBIE - Subcontractor payable	-	561,035
	3,352,656	645,213

10. PAYABLES

	2025	2024
	$	$
Exchange transactions		
Accounts Payable	336,745	84,178
Employee Benefits	73,099	104,559
Other Payables	65,666	138,529
	475,510	327,265
Non-Exchange transactions		
Endeavour Payables	36,635	561,035
Income in advance	1,000	1,000
	37,635	562,036

The Endeavour payables balance includes amounts owed to subcontractors and advisory groups involved in the Endeavour

11. REVENUE

	2025	2024
	$	$
Revenue from non-exchange transactions		
Steel & Welding Levies	3,177,062	2,298,105
Grants from HERA Foundation	-	8,500
R&D Tax Credits	39,481	65,741
Grants from MBIE - HERA portion	684,960	690,277
	3,901,503	3,062,623
Revenue from exchange transactions		
Membership Subscriptions	178,001	178,074
Conference income	-	17,075
Consulting & Industry Projects	306,863	96,926
Research Administration	107,027	209,132
Publication	3,872	8,574
Rent	192,795	154,500
Seminar & Courses	328,378	420,591
SFC Audits for HERA Certification	436,667	320,830
Profit on sale of assets	-	-
Other Income	35,614	41,053
	1,589,218	1,446,755

12. OTHER EXPENSES

	2025	2024
	$	$
Other expenses includes:		
Metals NZ	-	1,196
Recruitment	10,353	1,950
Accounting and Auditor Services	18,378	29,380
Administrative Expenses	15,000	11,548
Executive	53,712	36,542
Insurance	52,991	46,945
Membership	22,168	14,468
NZ Customs Services	20,578	12,845
Other Projects Expenses	49,510	46,238
Relationship Development	15,809	9,110
Scholarship/Sponsorship	86,277	43,604
Sustainable Steel Council	-	50,000
Vehicles	3,330	18,889
	348,105	322,715

Notes to the Consolidated Financial Statements
FOR THE YEAR ENDED 31 MARCH 2025

13. CAPITAL COMMITMENTS

There are no capital commitments at the reporting date (2024: Nil).

14. CONTINGENT ASSETS AND LIABILITIES

There are no contingent assets and liabilities at the reporting date

15. EVENTS AFTER THE REPORTING DATE

There are no events which require disclosure or any adjustment in the financial statements.

16. OPERATING LEASE COMMITMENTS

The Society has entered into contractual agreement for building lease and photocopier lease with the outstanding commitments as follows:

Future minimum rentals payable under non-cancellable operating leases are as follows:

	2025	2024
	$	$
Within one year	357,828	357,828
After one year but not more than five years	1,431,312	357,828
More than five years	10,287,555	
	12,076,695	715,656

17. INCOME TAX EXPENSE

HERA is a research society established mainly to promote and encourage scientific or industrial research and it has applied the income tax exemption in section CW 49 of the Income Tax Act. The tax exemption treats all income as exempt and it applies where the association is approved by the Royal Society of New Zealand and where none of its funds are used or available to be used for the private pecuniary profit of a member, proprietor, shareholder or associate. The New Zealand Inland Revenue has approved HERA's status under section CW 49 of the Act. HERA has also received an approval from the Royal Society of New Zealand on 2 October 2018 confirming that HERA meets the criteria required to promote/encourage scientific or industrial research under section CW49 of the Income Tax Act 2007.

HERA Certifications Limited is a registered NZ Limited Company. The New Zealand Inland Revenue Department reactivated the company on 22 July 2022. The company is required to file income tax and imputation returns for each year, resuming the 31 March 2023 income year.

HERA Certifications Limited generated a net loss of $13,696

18. GOING CONCERN

These financial statements have been prepared on a going concern basis. The Board believes that the entity will be able to meet its financial and regulatory obligations for the foreseeable future and that the going concern assumption adopted in the preparation of these financial statements is appropriate.

19. Subsequent Events

There were no subsequent events to report post balance date.

Consolidated Statement of Service Performance

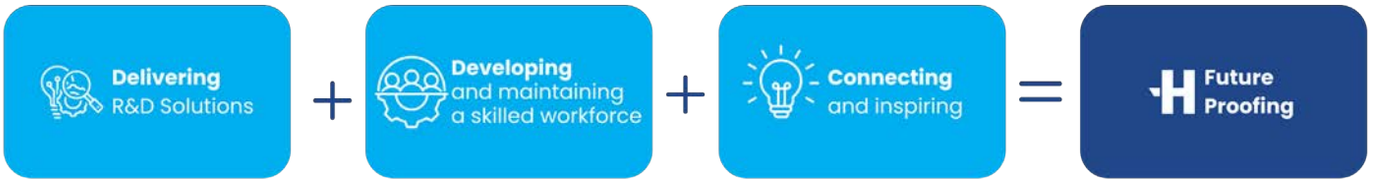
for the year ended 31st March 2025.

Our Vision

Our vision is to secure tomorrow's industry through today's innovation, driven by a passionate tribe of metalminds.

We provide members with technical expertise and tools, support skills development through targeted training and qualifications, and strengthen industry collaboration through communications, networks, and thought leadership.

Our Strategy



HERA - STRATEGY		
	FY 25	FY 24
Delivering R&D Solutions		
Indicators:		
Proposals for funding	6	1
Technical papers & reports published	19	11
SFC audits conducted	73	63
Design guidelines & software published	4	2
Developing & Maintaining a Skilled Workforce		
Indicators:		
Technical courses hosted	8	4
Technical workshops hosted	0	1
Webinars hosted/participated in (online)	7	5
External lectures & presentations (kanohi ki te kanohi)	12	8
SFC assistance packages	2	1
Connecting & Inspiring		
Indicators:		
Stirring the Pot podcasts	21	17
Metalbase newsletter editions	6	10

This financial year, we delivered meaningful progress towards our vision and mission — enhancing technical capability, growing workforce skills, and fostering stronger industry collaboration through targeted and impactful strategic initiatives. Our strategic positioning has resulted in the following outcomes:

Delivering R&D solutions

Funding Proposals
This financial year, we significantly increased our research funding efforts, submitting 6 funding proposals, compared to just 1 in FY24.
These proposals reflect our commitment to advancing innovation, sustainability, and resilience within Aotearoa New Zealand's steel and construction sectors. Proposed projects included: the development of a digital Steel Passport (SP) to integrate advanced technologies and sustainability data; creation of a digital steel circularity passport to enable reuse of steel in a circular economy; expansion of the circular low-carbon design framework for diverse building typologies; experimental investigations into innovative reusable eccentric braced frame (EBF) systems under fire conditions; further research into EBF seismic performance under quasi-static cyclic loading — all proposed for funding through the BRANZ building research levy. Additionally, a proposal was submitted to MBIE for the AI Verify and Comply project, aiming to develop world-leading agent-based AI systems to transform building consenting processes.

Technical Papers, Reports and Design Guides
This financial year, we published **a total of 19 technical reports and papers,** a notable increase from 11 in FY24. In addition, **4 design guides / software were released,** compared to 2 in the previous year.

SFC Audits
A total of 73 audits were conducted during the year, up from 63 audits in FY24, reflecting continued focus on compliance and quality assurance across certified operations.

Developing and maintaining a skilled workforce

Training and Knowledge Sharing
Training and knowledge dissemination remained a key focus this year. A total of 8 technical courses were hosted, doubling the number from 4 in FY24, alongside 7 webinars, up from 5 previously. In addition, we delivered 12 external lectures and face-to-face presentations, compared to 8 in FY24, demonstrating strong engagement toward industry and stakeholder upskilling. While no technical workshops were hosted this year (compared to 1 in FY24), the overall increase in activities reflects our commitment to upskilling and sharing expertise across the sector.

SFC Assistance Packages
This year, 2 SFC assistance packages were offered, up from 1 in FY24, reflecting our ongoing commitment to supporting members in meeting certification requirements and strengthening industry capability.

Connecting & inspiring

Our efforts to engage and inspire our sectors continued strongly this year. We produced 21 episodes of the Stirring the Pot podcast, up from 17 in FY24, helping to share expert insights and provoke industry discussions. Meanwhile, 6 editions of the Metalbase newsletter were published, compared to 10 in FY24, continuing to provide valuable updates and thought leadership to our members and stakeholders.


HERA