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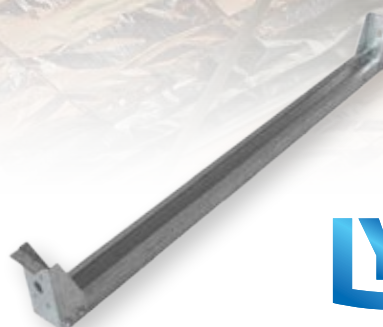
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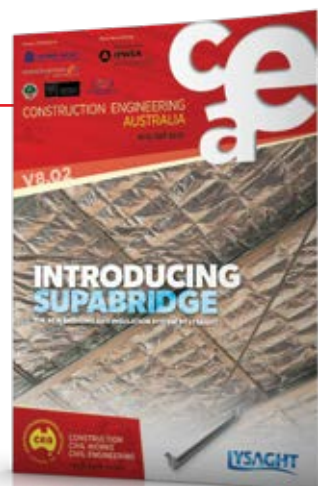
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About the Cover

Replacing traditional purlin bridging, new LYSAGHT SUPABRIDGE® is an integrated bridging and roof insulation system for commercial and industrial buildings which delivers both thermal benefits and cost efficiencies by accommodating the safety wire and uncompressed insulation within the roof purlin space.

► Turn to Page 12 for the full story.



A PRECAST SOLUTION TO AUSTRALIA'S HOUSING CRISIS

Dear Readers,

It's a sad fact that an ever-increasing number of Australians are struggling to access permanent, secure or affordable housing – and it's not just a recent occurrence. Indeed, for as long as I can remember, there have been calls to increase public housing stocks and improve access to affordable housing.

Unfortunately, despite these calls, Australia continues to slip backwards on both counts.

In fact, recent reports state that on average, rents across Australia have increased by some 13.2% since mid-2021 making even the most basic rentals unaffordable for many - and the result is devastating.

According to Homelessness Australia, in 2020-2021 alone, more than 100,000 people approached homeless services in need of long-term housing, and this figure continues to grow. Most alarmingly, the fastest-growing category of homelessness is amongst women aged 55 and above.

Now, before I continue, I feel it would be disingenuous of me not to acknowledge the outstanding work being done by all levels of government, together with many of the nation's support and welfare services (both private and public organisations), however, the latest statistics also point to the fact that much more needs to be done... urgently.

Indeed, while there are reportedly more than 162,500 households currently on the waiting list for public housing, various sources place current estimates on the public/social housing shortfall in Australia somewhere between 430,000

and 500,000+ dwellings required. To put that into perspective, the Federal Government's \$10 billion *Housing Australia Future Fund* (which, incidentally, I believe – in a totally non-partisan way - is an extremely worthwhile investment) aims to build 30,000 social and affordable housing properties in its first five years. A laudable effort certainly, but one which falls extremely short of the mark in terms of meeting demand.

In short, even when combined with the social and affordable housing projects being supported by state and local governments, NGOs and other private sector service providers, an additional 30,000 dwellings over 5 years will not come close to meeting even the immediate need.

That said, I believe that one of the major issues limiting our capabilities in the public and affordable housing sector is one of methodology. More specifically, construction methodology.

What's more, I believe there is an answer to this issue, and that answer is **precast concrete construction!**

Incidentally, for more cynical (not that I would expect discerning CEA readers to harbour cynicism), this commentary is not sponsored by National Precast and has absolutely nothing to do with any association that we may have with National Precast or any of its Member companies. It is simply made based on personal observation of successful international projects.

CEA magazine regularly publishes articles relating to precast concrete construction, including affordable housing projects around the world. Indeed, the image above is from an article published earlier this year

about an affordable housing project in the Philippines by the company Megawide. As you'll see from the photo above, the resulting precast concrete townhouses are both attractive and functional and in no way resemble a cheap concrete box.

That aside, where they really come into their own, is the speed of construction and the price!

Using prefabricated kitchen and bathroom units, together with a standardised precast concrete design, contractors are able to deliver between 60 and 70 units per month. What's more, in this affordable housing project, residents are able to purchase the properties over an agreed time frame for around AUD\$60,000 for a 65m² 2-storey duplex unit. Most importantly, they are strictly for owner-occupiers!

Now, while costs in Australia will no doubt be higher, I feel confident that these units would still come in significantly under the price of a standard frame/brick veneer, solid brick or weatherboard construction.

In short, they may not be ideal for every situation, but I feel certain that if constructed as part of appropriate developments (e.g. with access to public transport, shops and services) they would provide an excellent housing solution for many of those in need of safe, secure and permanent housing.



Anthony T Schmidt
Managing Editor



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DIVERSE WINNERS IN URBAN DEVELOPMENT INSTITUTE OF AUSTRALIA (SA) AWARDS

The South Australia winners included everything from Adelaide's newest 5-star hotel to reservoirs to affordable housing.

The winners of the Urban Development Institute of Australia (SA) Awards for Excellence were announced at the annual UDIA Awards Gala dinner held recently at the Adelaide Convention Centre. The UDIA Awards for Excellence celebrate and showcase the best of the best across industries including planning, engineering, landscaping, architecture and marketing, and their contribution to liveability and growth in the State.

Three industry professionals were celebrated for their leadership in urban development, while ten developments and projects across both the private and public sectors were celebrated as the State's most innovative and cutting edge.

Pat Gerace, UDIA SA Chief Executive Officer said, "This year we saw an array of exceptional projects and contributions across the development sector".

The coveted *Project of the Year Award* was presented to Palumbo for their passion and dedication in creating Adelaide's newest luxury hotel, the Sofitel Adelaide, which also claimed the *Design Excellence Award*.

"The development of a five-star hotel in South Australia hasn't been seen for

decades — not to mention being built to an international standard by a wholly South Australian company," said Gerace.

SA Water won both *Social and Community Infrastructure* and the *Environmental Excellence Awards* for their opening up of reservoirs and surrounding reserves for public recreational use.

Of the win, Gerace said, "It took someone brave enough to question old thinking about locking away these vast open spaces and having the vision to transform them into what are now highly valued community assets."

"We encourage being brave and making decisions to do something different — it's often hard and comes with challenges, but the end result proves that it's worth it."

Lanser Communities took home the *Masterplanned Development Award* for Miravale, a boutique community in the heart of Angle Vale.

"Developers put every effort into creating exceptional open spaces and amenities such as playgrounds that bring the people living in masterplanned developers together — which in turn helps shape the community," Gerace said.

"The amenity, infrastructure and greening in these new developments often far and away exceeds that in Adelaide's many existing suburbs and it's important that we recognise this and celebrate these fantastic outcomes."

Individuals were also awarded for their contribution to the State's built environment.

The *Women in Leadership Award* was awarded to Anita Allen, associate director at URPS. She was recognised for her long-term contributions to the South Australian urban development sector — in particular, the transformational projects she has led for the State's planning system and reforms.

The *Stuart Main Young Professional Award* was presented to Kent Williams, founder and director of FUSION Property Development, with the win acknowledging his drive, vision and commitment to delivering quality projects.

The *Greg Waller Award*, nominated by the UDIA SA's Executive Council, was won by Stephen Jolly of SA Power Networks.

UDIA's Gerace said the calibre of entries continued to "push the boundaries and exceed the judges' expectations."

"From providing access to community spaces such as reservoirs, to development of quality affordable housing for those most in need, to the marketing of what are set to be Adelaide's premier destinations in the future — entries in the awards demonstrate valuable contributions to the growth of our state."

Eligible winners in selected Award categories will go on to represent South Australia at the UDIA National Awards for Excellence, to be held in Perth in 2023.



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PROPELLING WOMEN INTO STEM - APPLICATIONS OPEN FOR ELEVATE SCHOLARSHIPS

The *Academy of Technological Sciences and Engineering* (ATSE) has opened applications for the new \$41.2 million Elevate: Boosting women in STEM program. The program is funded by the Australian Government.

Elevate will award up to 500 undergraduate and postgraduate scholarships to women in science, technology, engineering and mathematics (STEM) over the next six years. The program encourages women to pursue education and careers in STEM and offer opportunities to extend qualifications, networks and professional skills in STEM and business.

The Elevate scholarship program will immerse women into a diverse and inclusive STEM ecosystem through collaborations between industry, academia and government. Three categories of scholarship are available for study in all STEM disciplines: Undergraduate, Postgraduate, and Leadership.

ATSE CEO Kylie Walker encouraged a diverse and broad range of girls and women to apply and pursue education and careers in STEM.

"Diversity builds strength and is crucial to the future of science, technology, engineering, and innovation in Australia. More women in discovery and innovation

will build the resilience, capability and breadth of Australian research and innovation," she said.

"As well as generous scholarships to support undergraduate and post-graduate university education, the Elevate program will provide targeted professional development, mentoring, and cross-sector networking that will ensure scholars graduate with career-building knowledge and skills, connections and relationships."

"Elevate will propel women into senior STEM leadership positions, boosting women's voices in decision-making and future-shaping in industry and academia."

"To lay the foundations for an Australian future that has a sustainable and prosperous economy, society, and environment, we need a broad range of people equipped to solve problems through creativity, collaboration and innovation."

Applications are encouraged from a diverse range of girls and women. An intersectional approach will be applied, and all STEM disciplines will be considered, including Indigenous knowledge systems in STEM.

The Elevate program is open to all prospective students who identify as women. ATSE particularly encourages applicants from individuals who identify as Aboriginal or Torres Strait Islander;

LGBTQIA+; individuals from culturally or linguistically diverse backgrounds; low-socioeconomic backgrounds; individuals from regional or rural areas or those living with a disability. Diversity, inclusion, and achievement relative to opportunity will be considered in the assessment and selection process.

More information

Applications for Elevate scholarships will be open all year round with an assessment period each year. For study starting in 2023, applications are now open and the assessment period begins 11:59pm on 30 September 2022. Applications received after this deadline will be considered for scholarships starting in 2024.

ATSE will administer and deliver Elevate and is excited to continue to work with our collaborative partners from industry and academia, including ATSE's Industry Mentoring Network in STEM (IMNIS), Australian Technology Network of Universities (ATN), Cooperative Research Australia, Cicada Innovations, FB Rice, DMTC Limited, gemaker, Indigitek, Women in Leadership Development Program (WILD), Women in STEM Australia (WiSA) and Science & Technology Australia.

Visit: <https://atse.org.au/elevate> to find out more and apply now.

MATES IN CONSTRUCTION AND BUNNINGS TRADE JOIN FORCES TO SUPPORT BETTER MENTAL HEALTH FOR SUICIDE PREVENTION

MATES in Construction and Bunnings Trade Australia are excited to announce a partnership that will help raise awareness around better mental health and work towards suicide prevention in the construction industry.

Workers in the construction industry are six times more likely to die by suicide than a workplace accident, representing around 200 workers who lose their lives to suicide every year (that's one worker every second day). Bunnings Trade Australia and MATES are committed to improving mental health support for construction workers, based

on a simple idea that 'suicide is everyone's business'.

To mark the partnership, Bunnings Trade Australia will be releasing a limited edition black co-branded hoodie to help raise funds, with all profits from the sales going directly to MATES to continue their vital work. The Bunnings Trade hoodie has become a widely sought-after wardrobe staple and the hope is that the co-branded black hoodie will not only help raise funds, but more importantly, awareness, around suicide prevention in the construction industry.

MATES National CEO Chris Lockwood said the MATES team is thrilled to partner with Bunnings Trade Australia and believes together, they'll be able to make a genuine difference by encouraging tradies to check-in on their mates.

"This partnership is a game changer for MATES. Our team has helped trained almost 260,000 workers in General Awareness Training (GAT) and case managed more than 12,000 people and now with Bunnings Trade support we can reach even more workers who might be struggling with life.



“The MATES program is based on the simple idea that suicide is everyone’s business. If the building and construction industry in Australia is to improve the mental health and well-being of workers and reduce suicide, it can’t be left solely to mental health professionals; everyone in the industry must play their part.

“Having one of Australia’s biggest trade suppliers, Bunnings Trade on board to help spread the word and normalise help-

offering, will expand our reach and help us save more lives,” said Chris.

Bunnings Trade General Manager, Rod Caust, said “We know mental health and wellbeing is just as important as physical health. But most of us are unsure about how to go about supporting a mate. We know it can be a hard conversation to have in our industry.

“That’s why we have partnered with MATES in Construction to support their

work and help fund training for construction workers. In partnership with MATES, we want to raise awareness of how-to check-in on a mate and who to reach out to for support.

“We are also excited to release a co-branded limited edition of our popular Bunnings Trade hoodie to raise funds and awareness to prompt a tradie to check-in on a mate,” said Rod.

In addition to the hoodies, over 300 Bunnings Trade desks (in stores and Trade Centres) will display posters to showcase MATES five ways to start a conversation, as well as MATES presence on the Bunnings website and in customer communications.

Bunnings Trade X MATES hoodie is available in-store at the Bunnings Trade desk only for \$49 with all profits going directly to MATES. Stock is limited so customers are encouraged to get in quick.

To find out more about the MATES in Construction and Bunnings Trade Australia partnership or for information on how to donate to MATES please visit: <https://trade.bunnings.com.au/MATES>

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GLOBALDATA REVISES DOWN AUSTRALASIAN CONSTRUCTION OUTPUT GROWTH FORECAST TO 4.1% IN 2022

Construction activity in Australasia (Australia and New Zealand) slowed in the first quarter of this year, with outbreaks of the Omicron variant, flooding in eastern Australia, and rising construction material and labor costs disrupting construction works. As a result, *GlobalData*, a leading data and analytics company, has revised down its forecast of Australasian construction output growth from its prior projection of a 4.6% annual growth, to 4.1% in 2022.

According to GlobalData's report, 'Construction Market Size, Trends and Growth Forecast by Key Regions and Countries, 2022-2026', the Australasian construction industry is set to record a real compound annual growth rate of 2.8% between 2023 and 2026.



Willis Rooney, Economist at GlobalData, comments: "The Australian construction industry is expected to expand by 3.7% this year, primarily supported by a significant pipeline of infrastructure works and projects generated by Labor's Powering Australia Plan, which aims to reduce Australia's carbon emissions to 43% below 2025 levels and increase the share of renewable energy in the National Electricity Market to 82% by 2030."

Significant investments as part of Powering Australia include the \$21.9 billion Rewiring the Nation policy, which aims to accelerate the construction of high-voltage infrastructure, allowing Australia's electricity grid to accommodate the significant planned increase in large-scale renewable energy.

Rooney continues: "However, with the Australian economy at near full employment and construction activity in the residential and infrastructure sectors already intense, a further increase of construction demand in the civil engineering sector is likely to lead to an increase of aggregate wages and exacerbate long-standing labour and skill shortages."

Rising project costs due to labour and skill shortages have already resulted in the delaying of some projects in New

South Wales, most notably the \$15.9 billion Beaches Link development and the \$11.6 billion M6 Motorway expansion.

Rooney concludes: "The construction industry in New Zealand is projected to expand by 5.5% this year, supported by an improvement in economic conditions, government investment on public infrastructure and an improvement in service sector activity as borders reopen. While the activity in the construction industry did slow to a marginal contraction of 0.4% YoY in Q1 2022, this was in part due to high base effects following the 10.6% YoY growth recorded in Q1 2021. Much like in Australia, however, tight labour conditions, with unemployment at record lows, pose a significant risk to industry performance in the short-term."

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Aussie building products company sets up first 3D printing factory in Melbourne

Boss Products, one of Australia's most successful and oldest family-owned building products manufacturers has transitioned from its traditional manufacturing processes to the launch of the country's first 3D printing factory in the building and construction industry. The Boss Products building and construction 3D printing factory is located in Melbourne and produces products for the industry across the commercial and domestic sectors. It is one of the biggest suppliers of planter boxes and retaining walls.

According to Michael Boss, Boss Products CEO, the decision to transition to 3D printing operations was made about two years ago.

"We could see the challenges ahead were going to be tough. As one of the leading manufacturers and suppliers of street furniture for parks and public outdoor spaces, planter boxes for commercial settings and retaining walls for domestic and commercial use, we were constantly having to find ways of making the manufacturing process more efficient but key elements including labour, power, and other operating costs were continuing to rise. We had to find another way," Boss said.

"We looked into 3D printing and realised that this was the answer. We searched the world for the most advanced and reliable 3D printing technology for building and construction and ended up finding the technology right here in Melbourne; Luyten 3D is the world's best in its field. Companies all over the world are buying Luyten's 3D printing technology and transforming their businesses, their customers and their industries," Mr Boss said.

"We couldn't believe how lucky we were to find the world's best 3D printers for manufacturing and building and construction in the suburb next door. We purchased their Platypus X2 3D printer which they customised for us. It is a large machine with extraordinary capacity that is extremely easy to use and incredibly versatile."

According to Boss, the traditional process of manufacturing a planter box involves an order time of four to six weeks to allow for materials. During this time, the company builds the supporting structure for the mould, makes the mould, pours the concrete mix into the mould, and waits for the mould to dry. The actual manufacturing process takes up to 10 days in total.

"The traditional process involves significant resources, labour and other costs. It also takes a long time," Mr Boss said. "Using our new Platypus X2 3D printer, we are now able to print a planter box in a matter of 20 to 30 minutes."

"We have cut time, resources and costs up to 95 percent. We are now literally able to manufacture at a rate that is hundreds of times higher at a fraction of the cost.

"We are able to provide our clients with an unlimited number of designs and the flexibility to change the shape, size or attributes of the planter boxes at the touch of a button. Using Luyten's proprietary concrete mix, our planter boxes are six to eight times stronger than regular concrete," he added.

Boss believes that his business is now equipped to grow the business at an exponential rate and insulate the business against other issues impacting Australia's manufacturing sector.

"We are already looking at setting up a new factory close by to give us the increased production space to quadruple our printing capacity of planter boxes and other products per year," Boss added.

"We did our research and our homework has paid off. Our investment in 3D printing is already delivering significant returns."

Founded in Melbourne, Victoria, Luyten 3D is the world's most technically advanced 3D printer manufacturer for the building and construction industry. Luyten is the first 3D printing building and construction company to build a 3D printed house in the southern hemisphere. It has also partnered with the

University of New South Wales to progress printing of structures and base camps on the moon.

"We are absolutely thrilled to see our technology being used right here in Australia. In fact, many businesses are starting to realise the unrivalled benefits of 3D printing," Luyten CEO, Ahmed Mahil said. "Our focus is to bridge the technological gap in large-scale and manufacturing industries through the introduction of robust construction automation technologies such as cutting-edge 3D printing and additive technologies."

"We design and manufacture custom large-scale three-dimensional construction printers for domestic and commercial construction. In the case of houses, these can be printed in two days and assembled on day three. Printed elements are ready to handle and be moved within only five hours of being printed. This is the great thing about our special concrete mix, it cures quickly and delivers results that supersede what is currently available at four times less cost. In addition, the build cost 70 percent less in comparison to traditional methods," Mr Mahil added.

Since launching, Luyten's mission has been to make construction easier and more sustainable across a broad range of industries by reducing the time and cost to build, the amount of construction waste generated, and the impact of build activities on the surrounding environment. Luyten's cutting-edge 3D printing and additive technologies have become a worldwide success story as companies across the globe scramble to purchase its printers.

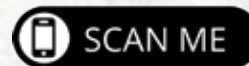
"Luyten transforms construction projects that traditionally take months or years to complete, and finishes them within a number of days. The 3D concrete printing revolutionary technology reduces 60 percent of construction waste, 70 percent of production time, and 80 percent of labour costs when comparing hands-on construction projects," Mahil explained.





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Replacing traditional purlin bridging, SUPABRIDGE™ accommodates the safety wire and uncompressed insulation within the roof purlin space. By utilising the structural purlin depth to achieve this, internal roof height can be maximised while maintaining the full bracing capacity of the roof sheeting thanks to direct fixing to purlin members.

This integrated approach delivers several important benefits for architects, engineers, installers, builders and ultimately, building owners.

With the SUPABRIDGE™ roofing system, buildings can achieve R values of up to R6.2,

ensuring they comfortably meet National Construction Code NCC thermal insulation requirements, while also delivering potential cost savings during installation, which can be undertaken by existing trades without specialist knowledge or extra equipment.

Lysaght National Specification Manager, Tony Jamieson, said SUPABRIDGE™ had already been trialled on a number of projects and had been extremely well received.

“SUPABRIDGE™ makes it easier and more cost effective to meet NCC thermal requirements without the need for roof raisers,” Mr Jamieson said.

“Along with the added expense of fitting raisers and the extra installation costs, raising the roof can also reduce sheet uplift capacities

—because SUPABRIDGE™ allows the cladding to be fixed directly to the roof structure, this new system actually has the opposite effect.

“The added cavity space provided by LYSAGHT SUPABRIDGE® also means there’s no need to compress the insulation blanket during installation, a practice that is no longer acceptable under NCC.

“Feedback on the new system from builders who have trialled the technology has been very positive, with comments focusing on simplicity of installation along with how easy the system allowed the required insulation R values to be achieved compared to previous methods.”

SUPABRIDGE™ provides many tangible benefits across a range of operational parameters.

The integrated LYSAGHT SUPABRIDGE® system replaces the need for the separate purlin bridging and roof raisers used in traditional commercial and industrial metal roof installation.

► IMPROVED INSULATION PERFORMANCE

Insulation blankets are installed to SUPABRIDGE™ buildings without being compressed, ensuring they continue to meet their specified performance levels, with the ability to deliver R values ranging from R3.7 to R6.2.

► REDUCED COST

SUPABRIDGE™ eliminates the need for roof raiser components and traditional purlin bridging components, leading to faster and more efficient installation.

► EASY TO INSTALL

Installing SUPABRIDGE™ is simple. Components are delivered preassembled and are readily adjustable on site using traditional purlin bolts. Easy on-site adjustment of brackets also efficiently accommodates variances if required.

Additionally, SUPABRIDGE™ uses fewer components than traditional systems and can be installed by existing trades without the need for specialist skills or equipment.

► IMPROVED INSTALLER SAFETY

SUPABRIDGE™ integrates roof safety mesh to provide a safer working platform, while placement of the insulation between purlins keeps them visible throughout the roof installation process.

The system also eliminates the potential for roof spacer 'roll-over' during installation. A further benefit of SUPABRIDGE™ is that it allows SUPATHERMIC insulation options that are glass wool fibre-free, non-allergenic and formaldehyde free, meaning specialist PPE is not required. Additionally, these options provide easier on-site handling due to their compact dimensions and light weight nature.

► MAINTAINS ENGINEERING AND DESIGN PERFORMANCE

Using SUPABRIDGE™ ensures the engineering integrity of the roofing is maintained. The system allows the roof cladding to be fixed directly to thicker purlin sections for added integrity rather than roof raisers. From a design and approvals perspective, SUPABRIDGE™ also helps keep roof heights in check, which is important for sites that are bound by height restrictions.

► ASSURED COMPLIANCE

The new SUPABRIDGE™ meets – and in many cases exceeds – a broad range of building governance and compliance requirements including NCC, Section J Insulation Performance, Fire Performance to AS1530.2:1993 (R2016), Roof Safety Mesh standards to AS/NZS 4389:2015 and the AS/NZS 4600 Cold-Formed Structures Code.

For additional information about LYSAGHT SUPABRIDGE®, visit <https://professionals.lysaght.com/supabridge> or contact your local Lysaght representative.

LYSAGHT SUPABRIDGE®

HELPS ACHIEVE THERMAL COMPLIANCE AT HUNTER VALLEY RESORT

Meeting higher insulation R-values in building projects delivers two main benefits for owners and users of these spaces. First and foremost, higher ratings provide greater resistance to heat transfer which results in more efficient heating and cooling, and a by-product of this is a more comfortable environment for users.

New building projects are required to adhere to increasingly higher insulation standards – in some construction types, meeting these requirements is a straightforward process, with generous ceiling and wall cavities allowing for easy fitment of insulation products.

In many commercial and industrial building settings, however, the task is made more difficult due to the nature of the architecture, scale of the project and other limitations.

A recent product innovation by Lysaght is assisting these types of buildings to meet their R performance obligations, as outlined under the Australian Building Codes Board's NCC 2019 requirements.

► A SAFE AND INNOVATIVE ALTERNATIVE

The LYSAGHT SUPABRIDGE® roofing system provides a safe and innovative alternative to roof raisers for compliance to thermal

insulation requirements, allowing sites to achieve R values of up to R-4.5.

The system features a unique integrated bridging method which replaces traditional purlin bridging, allowing for installation of safety wire and uncompressed insulation within the roof purlin space. The system integrates seamlessly with LYSAGHT SUPAPURLIN®s as well as Lysaght's extensive range of roof cladding.

The LYSAGHT SUPABRIDGE® system was recently applied during construction of the Four Pines Brewhouse building at the Hunter Valley Resort, New South Wales, allowing it to achieve the required R-3.2 rating. The building was a customised Ranbuild Covermaster® design measuring 30m x 28.5m.

General Manager - Ranbuild, Chris Currie, said that more traditional methods of fitting insulation in these building types were no longer acceptable.

"Achieving the required R-3.2 thermal rating could not have been possible without the use of the LYSAGHT SUPABRIDGE®," Chris said.

"Traditional methods no longer comply with the Building Codes Australia requirements, which will not allow for the insulation to be compressed when fitted."

"Using LYSAGHT SUPABRIDGE® let the builder install a dual layer insulation system utilising a traditional blanket overlaid with LYSAGHT SUPATHERMIC® bubble core insulation, separated by a layer of foil-faced blanket insulation."

Chris said that as well as helping to achieve the required thermal performance, the LYSAGHT SUPABRIDGE® system also offered other benefits to using components such as roof raisers.

"Raising the roof away from the roof structure itself using roof raisers can compromise the engineering design," he said.

"LYSAGHT SUPABRIDGE® allows the cladding to be fixed directly to the roof structure, the cladding acts as bracing in our designs and assists with structural integrity as a result of diaphragm action; it also stops and purlin roll or deflection for easy room cladding.

"Builders have also told us that the LYSAGHT SUPABRIDGE® system is light to work with and easy to install," he added.

For additional information about LYSAGHT SUPABRIDGE®, visit <https://professionals.lysaght.com/supabridge> or contact your local Lysaght representative.



"Achieving the required R-3.2 thermal rating could not have been possible without the use of the LYSAGHT SUPABRIDGE®"

Chris Currie, General Manager – Ranbuild



LYSAGHT'S ONE-STOP RESOURCE FOR CONSTRUCTION PROFESSIONALS

The Lysaght Professionals website offers construction industry practitioners the ideas, inspiration, technical and compliance information they need to confidently specify, install and support the complete LYSAGHT® steel building products range.

By accessing the Lysaght Professionals website engineers and building designers can view and download a complete range of LYSAGHT® product brochures to assist client discussions, and to provide broader referencing when selecting their steel building materials.

The website offers detailed product information, for:

- ROOFING & WALLING PRODUCTS
- ZENITH™ ARCHITECTURAL CLADDING
- STEEL SECTIONS, FORMWORK & FRAMING
- GUTTERING, FASCIA & RAINWATER GOODS
- FENCING & SCREENING
- PATIOS, CARPORTS & STRUCTURES

In addition, the site also presents case studies showcasing the use of LYSAGHT® steel building products across a range of residential, commercial and industrial applications, giving added insight and valuable feedback from real end users.

Another key feature of the website is the wide scope of technical information it houses. This range of materials includes Design and Installation Manuals for all the products in the LYSAGHT® steel products, as well as providing access to easy-to-read fact sheets covering specification, design and installation topics.

Importantly, the website can also assist building professionals stay abreast of industry regulatory requirements, by providing access to a suite of National Construction Code (NCC) compliance bulletins covering the complete LYSAGHT® product range. NCC details the minimum necessary requirements for safety, health, amenity and sustainability that need to be met in the design and construction of new buildings (and new building work in existing buildings) throughout Australia.

For more on the Lysaght's resources for building professionals, scan the QR CODE or visit: <https://professionals.lysaght.com>



SCAN ME

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The Lysaght Professionals website also allows users to bring their designs to life using the **Lysaght Visualiser** tool.

Start by selecting a house from a variety of building designs, then tailor the building products, including the broad range of LYSAGHT® steel products, to match your style.

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The Lysaght Professionals website also provides access to a suite of National Construction Code (NCC) compliance bulletins covering the complete LYSAGHT® product range

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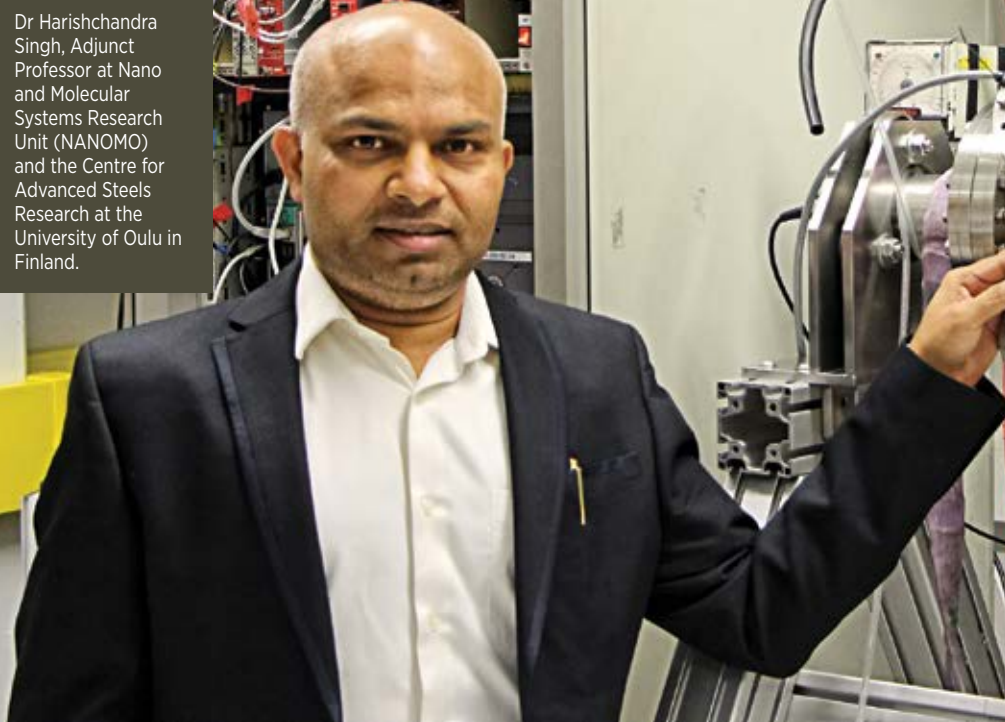
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SCAN ME

**INNOVATION
TOWARDS ZERO**

Dr Harishchandra Singh, Adjunct Professor at Nano and Molecular Systems Research Unit (NANOMO) and the Centre for Advanced Steels Research at the University of Oulu in Finland.



X-rays allow us to quickly develop high-strength steels

Synchrotron analyses could be used to fast-track the development of novel high-strength steel designs.

Knowing how strong a piece of steel is, especially the stainless steel used in everything from cars to buildings, is vitally important for the people who make and use it. This information helps to keep people safe during crashes and to prevent buildings from collapsing.

Accurately predicting the strength of a steel prototype based on its microstructure and composition would be indispensable when designing new types of steel, but it has been nearly impossible to achieve — until now.

“Designing/making the best-strength steel is the hardest task,” said Dr Harishchandra Singh, an adjunct professor at NANOMO and the Centre for Advanced Steels Research at the University of Oulu in Finland.

Estimating the contribution of various factors towards designing high-strength novel steel has traditionally required numerous tests that can take months, according to Singh. Each test also requires a new sample of the prototype.

Instead, Singh and colleagues used the Canadian Light Source (CLS) at the University of Saskatchewan to predict the strength of a novel steel.

They shone the facility’s synchrotron light on a small cube of steel and analysed the diffraction pattern it produced as the powerful X-rays passed through it. This created data on the crystal structure of the steel that the researchers used to predict its material properties, including strength, through an analytical model.

The team found that these predictions matched up exactly with the data from time intensive, traditional lab-based tests.

The team’s method offers a new way to predict the yield strength for highly alloyed complex steel. The process could also help to engineer novel steels through a better understanding of the relationship between a steel’s microstructure and its mechanical properties.

Not only was the synchrotron-based method for analysing steel just as reliable as traditional testing, but it was much faster and required far less material.

“We can get complete information about the crystalline microstructures from the synchrotron in one hour, rather than spending a couple of months on various lab-based testing,” he said. Their findings were published recently in the *Journal of Materials Research and Technology*.

This rapid and accurate synchrotron-based method of testing could be extremely helpful to

the steel industry to approximate the strength of the developed steels and could save months compared to standard routes, said Singh.

“Steel companies make hundreds of batches of steel. With synchrotron testing, they could have precise results from every batch the same day,” he said.

Going forward, steel developers can use synchrotron analyses to quickly and accurately predict the strength of novel steel prototypes and use the data to help identify what elements of a prototype are beneficial or not. This faster method for assessing and developing steel could lead to better building materials coming on the market.

ABOUT CANADIAN LIGHT SOURCE (CLS)

The Canadian Light Source (CLS) is a national research facility of the University of Saskatchewan and one of the largest science projects in Canada’s history. More than 1,000 academic, government and industry scientists from around the world use the CLS every year in innovative health, agriculture, environment, and advanced materials research.

The Canada Foundation for Innovation, Natural Sciences and Engineering Research Council, Canadian Institutes of Health Research, the Government of Saskatchewan, and the University of Saskatchewan fund CLS operations.

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WELD AUSTRALIA 2022 MEMBER SURVEY RESULTS REVEALED: AUSSIE FABRICATORS ARE TURNING DOWN WORK DUE TO SKILL SHORTAGES

Weld Australia has released the results of its *2022 Member Survey*. The results demonstrate that significant concerns remain for Australia's welding industry. In particular, Australia's fabricators are being forced to turn down work due to a severe shortage of skilled welders.

According to Geoff Crittenden (CEO, Weld Australia), "Distributed in June 2022 and completed by approximately 140 companies, our 2022 Member Survey indicates that skills shortages, local content and sustainability remain high on the agenda for the welding industry."

"When asked what they are most concerned about, 64% of senior managers cited lack of skilled staff in an extremely constrained recruitment market. This comes as little surprise, with Australia facing a looming shortage of skilled welders—70,000 additional welders will be needed by the end of the decade."

"With a considerable volume of work being on-shored in the wake of international supply chain disruptions, most Australian fabrication companies are so strapped for skilled welders that they are working at anywhere between 30% and 50% of their full capacity. They are being forced to turn down jobs because they simply don't have the manpower to complete the work. This is having a major impact on production and causing delays throughout downstream industries including building and construction, mining, oil and gas, and manufacturing," said Crittenden.

It is little wonder that almost half (47%) of survey respondents have a pipeline of work that extends for six months or longer—this protracted pipeline is necessary in the face of these ongoing skills shortages. By way of context, this is a marked increase on Weld Australia's 2020 member survey results. In the wake of the COVID-

19 pandemic, the most common answers were a pipeline of work that extended less than one month (at 28%), one month (19%), and two months (16%).

Given the concern over Australia's looming skills crisis, it makes sense that 95% of respondents support the concept of free TAFE, increased funding to upgrade TAFE facilities, or both initiatives. Clearly, the welding industry is looking to the government to help increase the supply of skilled labour over the coming years.

"Our members are also investing in their own welder training programs. BHP, Komatsu, JRS Manufacturing, Maxi-Trans and Precision Manufacturing Group have all established their own schools. While industry appreciates the roll-out of government-funded TAFE places, it remains to be seen whether this initiative will translate into high completion rates. Moreover, while encouraging more students into TAFE is always a positive, government spending also needs to focus on resources for TAFEs, teachers and equipment—TAFEs need the right tools to teach this sudden influx of students," said Crittenden.

Industry is also investing in advanced welding technology to help overcome skills shortages. Over 28% of respondents indicated that their company or the company they work for has purchased robots or cobots, and 25% has invested in Industry 4.0 capabilities. A range of other types of technology were also mentioned, from drones and automated welders, through to various software solutions.

Despite the skills shortages, local procurement and content targets remain top of mind for the welding industry. 100% of respondents confirmed that they would support Federal and State Government policies to increase Australia's share of fabricated steel product to at least 75% as part of a joint government-industry plan to grow the manufacturing industry.



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“Importantly, whether it is imported or locally manufactured, all fabricated steel erected in Australia must comply with Australian Standards. Weld Australia is committed to ensuring that no Australian lives are lost through an accident caused by non-compliant welding, without causing undue regulatory burden on industry. We firmly believe in quality welding for structural safety,” said Crittenden.

Inflation and rising costs were also of concern for approximately 23% of respondents, followed by weak international supply chains (9%) and reliability and affordability of power supply (4%).

ENVIRONMENTAL SUSTAINABILITY AND CORPORATE RESPONSIBILITY

Australia is rapidly moving from carbon fuelled power generation to a renewable energy system. In June 2022, Prime Minister Anthony Albanese announced more ambitious climate targets. Albanese pledged to cut carbon emissions by 43% from 2005 levels by 2030, up from the previous government’s target of between 26% and 28%. Given these targets, private companies will play a key role, making sustainability a priority for many businesses. As such, our 2022 member survey asked a series of environmental sustainability focused questions.

Welders are environmentally responsible. 30% of respondents support the target of zero emissions before 2050; 20% prefer cutting emissions by 35% by 2030; and another 17% support cutting emissions by 43% by 2030. In addition, 74% of respondents would support a Federal Government package to help employees transfer from carbon intensive to carbon free industries.

Clearly, Australia’s welding industry is already taking steps to reduce its carbon emissions. While 41% of respondents have already installed solar panels to supplement power supply, another 53% have installed LED or sensor lighting, 46% have waste reduction programs in place, 46% operate recycling, up-cycling or repurposing programs, and 13% have a net zero carbon plan in place.

When asked if an electric or hybrid UTE was available in Australia at a competitive price would you buy them for your company or employees as fleet cars, 50% of respondents answered in the affirmative. Interestingly, 63% of respondents would buy an electric or hybrid UTE for themselves.

Corporate responsibility remains a growing area of focus for the welding industry. Over 63% of respondents indicated that they have initiatives aimed at improving opportunities for women; 63% promote opportunities for apprentices and trainees; 63% have diversity and inclusion initiatives in place; 59% have mental health and fitness initiatives in place; and 31% have a Reconciliation Action Plan.

ABOUT WELD AUSTRALIA

Weld Australia represents the welding profession in Australia. Its members are made up of individual welding professionals and companies of all sizes. Weld Australia members are involved almost every facet of Australian industry and make a significant contribution to the nation’s economy.

The primary goal of Weld Australia is to ensure that the Australian welding industry remains locally and globally competitive, both now and into the future.

Weld Australia is the Australian representative member of the International Institute of Welding (IIW). For more information or to join Weld Australia, please visit: www.weldaustralia.com.au

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Quarry flood rescue

When the east coast was drenched, flooded towns like Lismore and the Hawkesbury Valley in Sydney got a load of publicity. Emergency Services swung into action, supported by a tremendous effort from the communities involved. Anybody with a boat was “flat out” helping people of all ages, their pets and sometimes even livestock to escape the floodwaters.

What didn't get any attention was indispensable industries like quarries. They were flooded too!

It isn't as dramatic as seeing people in trouble but, it certainly stops a quarry from operating.

One such case is Mulgoa Quarries on the outskirts of Sydney. This clay and shale quarry which has been operating for a number of years suffered immediate flooding that put them out of action. The flooding even submerged their Aussie 4” standby quarry pump.

THE SOLUTION

The management of the quarry contacted Aussie Pumps and one of their team, Tyson

Siecker threw a 4” heavy-duty open impeller transfer pump from the Aussie Pump stock and raced out to the quarry.

The photo shows just how high the water had risen and Aussie's 4” guzzler, a pump that will move 1600 litres a minute, managed to lower the water level within just a matter of hours. The pump used was an Aussie QP402 - a 4” pump with a large open high SG impeller that will pump solids in suspension.

“It's not exactly a trash pump but, with its tremendous self-priming capability and heavy-duty cast iron internals, it made short work of reducing the quarry water level to an acceptable point,” Tyson said.

The pump is powered by a Honda 8hp petrol engine, fitted with an oil alert so in the event of being tipped at an angle, it will automatically turn the engine off before any kind of catastrophe can occur. The pump and engine are enclosed in a heavy-duty steel frame with sub-base and anti-vibration mounts. This is part of the standard Aussie Pump design criteria for providing pumps that will last a long time, do a good job and are backed by Aussie's unique five-year warranty.

The pump was supplied with a 4” suction hose that helped to prime fast and help lower the water level. Note the pump's huge ‘shoulders’. Those shoulders are the priming tank that is built into the pump casing.

It's that tank that enables this pump to pull water through a vertical lift of 8.2 metres. The pump's vertical lift in terms of delivery head is a maximum of 30 metres. Because the pump has a big open impeller, it will also handle slurries in suspension.

The company also makes a ‘Mine Boss’ version of the same pump. The ‘Mine Boss’ is Diesel drive powered by a 10hp electric start Yanmar engine. It comes enclosed in a super heavy duty 38mm stainless steel frame with an integrated lifting bar and turns this standard Honda-powered pump into a product that will feel at home on any mine, construction or civil defence application. The ‘Mine Boss’ version features lockup battery isolation, E-stop and a fire extinguisher for emergency situations.

Further information on the Aussie self-priming centrifugal pump range, including their big 6” trash pumps, is available from www.aussiepumps.com.au

Whether it's a TL-2 or TL-3 attenuator, your first question should always be: **IS IT MASH APPROVED?**



With the ASBAP (Austroads Safety Barrier Assessment Panel) guidelines now requiring all new TMAs sold for use in Australia to be tested and approved to MASH Standards, one of the most critical questions for equipment purchasers to ask is: **“Is it MASH Approved?”**

When it comes to **Scorpion® TMAs**, the answer is a resounding **YES** – for BOTH TL-2 and TL-3 attenuator.

In fact, the Scorpion II® Metro MASH TL-2 TMA is not only **THE FIRST TL-2 TMA** to be fully tested and approved to the latest MASH Standards, it is currently **THE ONLY TL-2** Truck Mounted Attenuator to be successfully **TESTED, PASSED & ELIGIBLE** to the current MASH Standards.

So, whether it's TL-2 or TL-3, when it comes to selecting a fully MASH tested, passed and eligible TMA that has also been **ASSESSED, APPROVED & RECOMMENDED FOR ACCEPTANCE** throughout Australia by ASBAP, the only name you need to remember is Scorpion® from A1 Roadlines.



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INFINITY TESTING

'Infinity Testing' is without a doubt the harshest method of testing the performance of a Truck Mounted Attenuator (TMA) during an impact.

NO RELIANCE ON ROLL-AHEAD DURING AN IMPACT

Rather than relying on some of the impact energy being absorbed by the forward movement of host vehicle on which the TMA is fitted, with 'Infinity Testing' the host vehicle is anchored to the ground to prevent any forward movement during an impact.

'WORST CASE' SCENARIO TESTING

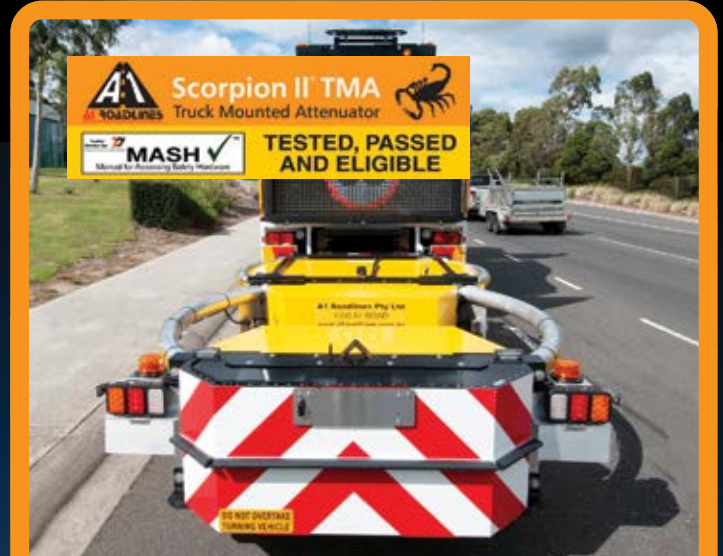
Compared to standard testing with an unrestrained host vehicle, Infinity Testing is a much tougher testing regimen. It is considered 'worst-case scenario' testing which makes it much more difficult to meet the pass criteria for IS values, as all of the Ridedown Acceleration must be provided by the TMA absorbing the energy from the impact.

TMA ABSORBS & DISSIPATES 100% OF THE IMPACT ENERGY

Testing the TMA on a host vehicle which is anchored in place, tests – and for both the Scorpion II® TL-3 and Scorpion® II METRO® TL-2 TMAs – confirms the capacity of the TMA to absorb/dissipate 100% of the impact energy – without the benefit of the host vehicle roll-ahead.

NO UPPER LIMIT FOR HOST VEHICLES

From a practical standpoint, the fact that both the Scorpion II® TL-3 and Scorpion® II METRO® TL-2 TMAs were successfully tested to MASH Standards using the 'Infinity Testing' method, means both units are MASH certified with no upper weight limit for the host vehicle.



THE ULTIMATE TEST OF ATTENUATOR PERFORMANCE

HOW IT'S DONE

With 'Infinity Testing' the host vehicle is anchored in place during the impacts to assess the TMA's capacity to absorb/dissipate 100% of the impact energy without the benefit of roll-ahead.



WHAT ABOUT ROLL-AHEAD DISTANCES?

Importantly, to emulate 'real world' operating conditions, both the Scorpion II® TL-3 and Scorpion® II METRO® TL-2 TMA have also been successfully tested and MASH certified using standard 'non-anchored' host vehicles, with both units posting impressively low roll-ahead distances.

Scorpion® II TL-3 TMA

Crash Test: MASH Test 2-53
Impact Angle: 10.3 Degrees
Roll-Ahead Distance: 5.1m

Impacting Vehicle Weight: 2266kg
Impact Speed: 103.8km/h

Scorpion® II METRO® TL-2 TMA

Crash Test: MASH Test 2-53
Impact Angle: 9.9 Degrees
Roll-Ahead Distance: 12.4m

Impacting Vehicle Weight: 2295kg
Impact Speed: 81.6km/h



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THE CHANGING FACE OF CPD - CONTINUING PROFESSIONAL DEVELOPMENT – FOR ENGINEERING STAFF

by Paul Uno, Director, ETIA

The acronym CPD was virtually unknown in Australia 30 years ago. Various forms of Professional Development were around between 1960's and 1980's in overseas countries (eg USA, UK), however the formalised systems we see today did not really evolve in Australia until the late 1990's.

When I first started our training organisation for engineering personnel (called Cement and Concrete Services, CCS) in 1998, the only engineers who attended these courses were those who personally wanted to learn more about specialised areas for their own benefit. There was no requirement by the various Engineering and Building Institutions to satisfy any form of minimum training after graduation. We thus advertised in magazines such as *"Australian Concrete Construction, ACC"* – the predecessor to *"Construction Engineering Australia, CEA"* and EA (Create).

By 2013, CCS had expanded its course range of topics into other areas (eg Steel, Timber, Masonry etc) so we felt it more appropriate to change our name to Engineering Training Institute Australia (ETIA) to reflect the variety of engineering courses presented. By 2014, ETIA was offering over 30 topics to engineering personnel throughout Australia.

At the same time, nearly every organisation dealing with professionals (eg Engineers, Builders, Accountants, Teachers, Lawyers, Nurses etc) had instituted requirements for CPD learning for their members. The Institution of Engineers, Australia now requires that its members achieve at least 150 hours of training every three years in order to maintain certification. Part of this requirement is to also attend at least 8 hours mandatory training in Accounting/Finance basics, and 10 hours in Risk Management. Keeping up with changing Codes, Standards, Industry practice or just refreshing the skills gained at University, were now paramount to being a "professional" in your field. This development process was also satisfied by reading technical articles, doing research, higher education studies and other such criteria.

At ETIA, we now have many more engineers attending our courses than in our CCS days, as they need to be able to satisfy the CPD requirements of such organisations as IE(Aust), BPEQ, IPENZ and so on. Even though I present many of the training courses for ETIA, I also still need to attain 150 hours of CPD every three years in order to maintain my CPEng, NER and RPEQ status.

I am proud to advise that in 2022, ETIA now offers over 40 topics available to engineering personnel. Topics include: Cement and Concrete Practice, Reinforced and Prestressed Concrete Design, Timber Design, Structural Steel, Masonry Design, Accounting, Risk Management, Hydraulics, Applied Loads (eg Wind and Earthquake), Glass and Aluminium Facades, Metallurgy, Contract Law, Forensics, Repair as well as a range of Geotechnical topics such as Pile Design, Slope Stability, Retaining Wall Design, Shallow Foundations, Industrial Floors. The full range of topics and upcoming course dates can be viewed on our website www.etia.net.au

Together with the significant expansion in CPD content now on offer, it is also interesting to see how the delivery of training has changed over recent years. Previously, engineers would attend a seminar or workshop that was held at a remote venue. The process inevitably involved getting up early (to avoid peak hour traffic), driving to the venue and then trying to find parking. After eventually locating the lecture room, you could often find yourself at the back of the room with people's heads in front of you as you tried to see the screen. If you were lucky, the training organisation would provide you with lunch, but if not, you had to find a food shop somewhere. At the end of the day, you would then have to drive home again in the traffic – all in all, a very long day. The only benefit of this face-to-face course was that you could possibly interact with the speaker and try to network with other attendees during breaks.

With the onset of Covid 19, *"Isolation"* was the key phrase. You could not mingle with other people, nor gather in closed rooms as previously has been the case in training workshops and at conferences. The solution to this challenge came in the form of Live Streaming, using media tools including Zoom, Microsoft Teams, Skype, etc.

Not surprisingly, at ETIA we also had to quickly change our method of course delivery, and within a matter of weeks, all of our courses were being conducted via Zoom.

Course attendees were initially asking us when our courses would revert back to face-to-face teaching. Our answer was always *"...when the medical experts advise that it is safe to do so"*. However, as we all



saw, various strains came and went (Alpha, Delta, Omicron, etc.) and before we knew it two years had transpired before we could once again start advertising face-to-face courses or hybrid courses (which provide the option of face-to-face attendance or live streaming via Zoom for those who prefer remote learning).

Interestingly, while there was initially a strong desire by many to get back to face-to-face learning, these days we're finding that the majority of engineers registering for our courses tell us they prefer remote learning via Zoom over both face-to-face or hybrid learning. It would appear that being in your own space, saving travel time and associated expenses - while still gaining the

all-important CPD points - has become an attractive alternative to attending in person.

One major advantage of attending ETIA courses via Zoom is that they are "Live" streamed (not pre-recorded), and as such, are fully interactive with participants able to ask questions via audio or Chatbox.

At ETIA we will still offer the occasional face-to-face course, however, Zoom live streaming courses will now form the majority of the courses we run in order to satisfy the preference of registrants. Covid thus changed our lives in many more ways than we could ever have envisaged.

We hope to see you at one of our upcoming courses - just visit us at:

www.etia.net.au



This blog is the latest in a series produced for Construction Engineering Australia by globally respected engineering educator and reinforced concrete specialist, PAUL UNO BE MBdgSc MIE(Aust) CPEng NER RPEQ APEC Engineer IntPE(Aus), Director, ETIA (Engineering Training Institute Australia).

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ROTOFLEX®

BY BLUNDSTONE

WORLD-LEADING, BIOMECHANICALLY DESIGNED SAFETY FOOTWEAR

Blundstone has always been a consumer-led business, researching and identifying those products its customers need and want and understanding the role Blundstone products play in their lives. Over the past three years the business has invested in a massive, multi-layered research project which has created an even greater depth of understanding of today's worker and the footwear they want to be wearing tomorrow.

These consumer insights have led to the development of Blundstone's most technologically advanced safety footwear range, RotoFlex®, designed utilising biomechanical principles to provide an outstanding level of comfort and safety for wearers. The evolution of new materials and world-leading technologies has been a game changer in the development of these

safety boots, which Blundstone are confident will increase consumer expectations of the Australian safety footwear market.

"The research has shown without doubt that wearers want better performing work boots," says Adrian Blandford, Blundstone's Global Work & Safety Range Manager. "They want them to be strong, lightweight, offer good grip and manoeuvrability as well as high protection for the user. The most common injuries occurring on work sites include musculoskeletal injuries and ankle and knee injuries caused in falls and slips."

Other concerns and priorities for wearers included durability and quality of componentry and materials; pain-free, all-day comfort with ankle flexibility and movement; thermal regulation with ventilation to increase airflow and a sole that provides ergonomics, longevity, stability, and traction.

As an outcome of the research, Blundstone embarked on a journey to 'build' safety boots that would address all the above concerns. "We have built them new from the ground up. This is something the safety footwear market in Australia has been demanding for many years," says Blandford.

A collaboration with the University of Tasmania's School of Health Science's Biomechanics experts, resulted in the RotoFlex range of six new styles - four unisex and two designed specifically for women. These are truly new 'whole-of-boot' designs, based on biomechanical research and evidence to create a boot system that is safer, more comfortable, better performing and more durable. RotoFlex is a range of boots where stability meets the freedom to move, allowing the wearer's foot to rotate and the ankle to flex to avoid injury.





“Every single component used in the construction of the RotoFlex range has been researched, tested and trialled to ensure we deliver truly innovative, better performing safety footwear. Our design team and technicians looked at multiple options for each element and selected the best performing, most appropriate product, and if they couldn’t find the perfect piece, they went and created it so we could deliver best-in-market safety footwear,” says Blandford.

The biomechanical systems central to the RotoFlex design comprises four unique elements:

GripTek® HD - a strong foundation from the ground up; *Fortalite®* - compression-resistant composite toe cap; *AirCell* - ventilating, zoned airflow footbed, and *SoftCell®* - an all-encompassing comfort design, along with a host of componentry and materials critical to the performance of the product.

SoftCell utilises a combination of specialist materials and a unique biomechanical foot-cradling design to increase stability, balance, comfort and manoeuvrability, while reducing ankle slip risk and fatigue.

SoftCell creates more room to move within a stable foothold. This is achieved through expert understanding of the connection between a moving foot and the inside of a boot, providing room for the foot to move more freely whilst still maintaining stability with the ground. It also incorporates Infinergy E-TPU, a super elastic energy foam which is used in top brand sports shoes. This soft and resilient compound provides enhanced cushioning and reduces the impact of every step taken.

The RotoFlex range has been developed with all the principles of Blundstone’s Every Step Better (ESB) program front and centre of their decision-making process. ESB



encapsulates an ongoing commitment to three key pillars: People, Planet, Product, and with the mission ‘to make every step we take better than our last’. In line with Blundstone’s commitment to minimise their impact on the environment, the boot’s lining and laces are made with 100% recycled materials, and the heel grip, insole, and counter stiffener utilise sustainable raw materials.

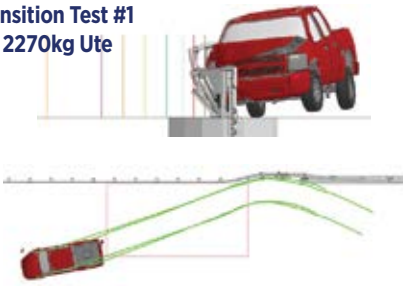
Throughout this process, Blundstone has developed a greater understanding of what safety boot wearers want, need, and expect in their footwear. “We utilised our consumer research insights to design safety boots with the features workers have been looking for -

RotoFlex is the result. We are very proud to launch our RotoFlex range”.

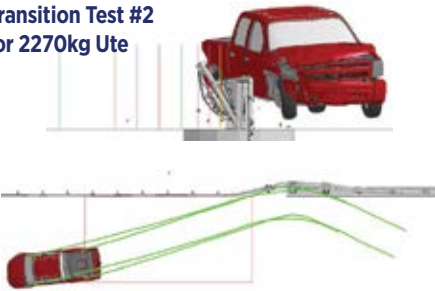
“RotoFlex will be the benchmark for boots in the safety footwear market,” says Blandford. The product can back up best-in-class claims: trial results, comfort ratings, durability and componentry testing are all rating at never-seen-before levels. Blundstone is a safety footwear brand that Australian workers relate to, and we aim to increase this with the delivery of a premium, lightweight, super-spedded product they will love.”

For further information and online ordering, visit: <https://www.blundstone.com.au/rotoflex>

Transition Test #1
for 2270kg Ute



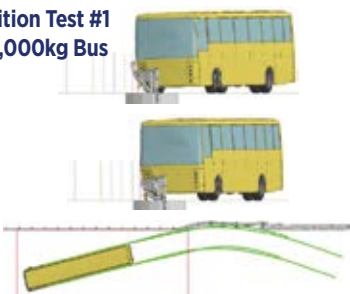
Transition Test #2
for 2270kg Ute



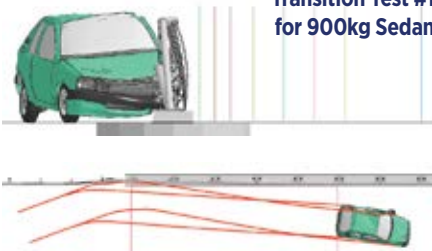
Transition Test #3
for 2270kg Ute



Transition Test #1
for 13,000kg Bus



Transition Test #1
for 900kg Sedan



The DOLRE bridge traffic barrier development demonstrates how the incorporation of FEA into the design process can optimise a solution that is vastly different from the solutions that traditional Engineering methodologies would produce.

A problem was identified and through the iterative use of FEM combined with Eurocodes for structural analysis a solution was found and optimised that was vastly different to the direction that traditional engineering was leading.

Once the bridge barrier design was optimised, the same process was used to assess **transition designs** to various European roadside barriers in accordance with EN1317 and TR16303-2011 requirements.

Australian authorities required product assessment to Australian bridge standards. Future finite element modelling in accordance with MASH standards and NCHRP179 validation requirements satisfied ASBAP's analysis for both traffic barrier and transition designs.

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SAFETY IN DESIGN

Scan the QR CODE to see how the Dincel OSD tank has helped to optimise safety for the Sydney Metro project.



Dincel Civil Solutions key strengths lie in undertaking alternate design proposals to standard blockwork or pre-cast OSD Tank designs, while providing supply and installation assistance packages to streamline build timelines.

One key focus is to incorporate the Dincel permanent polymer formwork system and metal decking options to assist with flexible modular design options. Alternate engineering design options can include base slabs, Dincel support walls, metal deck suspended concrete slabs and Dincel access shafts, as well as engineering inspections and certification.

With a typical Dincel proposed OSD Tank application, standard Dincel 200/275mm external walls supported by 155mm internal support walls can be used to enable flexibility within the installation process, accommodating site-formed penetrations and perimeter

The Dincel OSD Tank

The purpose of an OSD Tank is to capture stormwater run-off during times of heavy rainfall and temporarily storing this water within. Overflow is then discharged off-site through local stormwater channels.

Traditionally, OSD Tanks are constructed using standard blockwork or pre-cast tank designs which come with, as a minimum, heavy panel lifting and unrealistic conventional component lead times. The Dincel Structural Walling alternative will simplify and reduce the build timelines by incorporating readily available modular construction methodologies, preventing the need for heavy panel lifting and perimeter waterproof bandages as

traditionally seen with these alternate methods.

Constructing your OSD Tank with the Dincel permanent polymer formwork system is also a much safer design, a view supported by Andrew Curruthers – Deputy Executive Director of Engineering & Design for Sydney Metro:

“An OSD Tank is effectively a water tank, so traditional methods of constructing would include heavy panels to construct the tank and significant concrete pours.”

“Permanent formwork systems prevent the need for heavy lifting and prevents the need for significant concrete pours, so intrinsically, it’s a safer design,” Mr Curruthers added.



openings for pipe penetration. All of which eliminates the need for shop drawings or long production lead-times.

The Dincel polymer skin and patented snapping panel joints perform 180 times better (as tested by CSIRO) than the requirement for a waterproof membrane and eliminate the need for submerged bituminous-based waterproofing membranes.

Locally manufactured components enable minimal lead time for customised lengths, mitigating the need for site modifications, which helps to reduce the need for additional labour and equipment, while also reducing materials wastage.

Exceptional concrete compaction without the need for vibration can be achieved with high slump Self-Compacting Concrete (SCC). With the use of SCC, flow is unimpeded, leading to the elimination of air voids within the walls. Alternatively, GP 10mm 180mm slump blockmix can be utilised provided there is sufficient vibration during placement.

The Dincel permanent polymer shell provides added protection by encapsulating the reinforcement and concrete infill. The use of Dincel's VRC reinforcement clips can be utilised to ensure correct concrete cover is achieved, aligning with engineering specifications.



“Permanent formwork systems prevent the need for heavy lifting and prevents the need for significant concrete pours, so intrinsically, it’s a safer design”

Andrew Curruthers, Deputy Executive Director of Engineering & Design Sydney Metro

The suspended slabs for a Dincel OSD Tank are typically designed utilising various lightweight modular metal deck permanent formwork systems, easily incorporating access shafts during the build process. Pending required spans between support or restricted access height underneath, either propped decking or clear span slabs can be designed – reducing “Confined Space Works” while mitigating any potential injuries and unnecessary time-consuming material handling associated with internal formwork stripping. All of which contribute to Dincel’s “Zero Harm” philosophy.

As an added environmental benefit, Dincel PVC offcuts can be collected, recycled and repurposed off-site.

To discuss how Dincel Structural Walling can benefit your next OSD Tank build – including residential and commercial pools – contact the team at Dincel Civil Solutions, Tel : 0427 744 908 or visit: www.dincelcivilsolutions.com.au

ABOUT DINCEL STRUCTURAL WALLING

Originating from the foundations of a structural engineering consultancy back in 1977, Dincel Structural Walling has emerged as Australia’s Own “Concrete Wall with Benefits”.

Developed to meet the demand and pace of today’s building developments, Dincel’s unique and internationally patented snap-lock joint connects the Dincel panels for fast, easy and lightweight maneuverability and installation.

An advanced, innovative and mature solution, Dincel Structural Walling enables load-bearing walls and columns to be constructed at lower cost, in less time and with minimal skill demand over traditional methods – delivering a waterproof skin, and fire-compliant permanent formwork solution.

Since the first profile rolled off the production line in 2006, Dincel Structural Walling solutions have been widely used across Australia, New Zealand and the Pacific Islands.

UK ICT HONOURS CONTRIBUTORS TO CONCRETE TECHNOLOGY

SILVER MEDAL AND HONORARY FELLOWSHIPS

At its recently 50th Annual Convention, the UK Institute of Concrete Technology celebrated 50 years of progress with a technical symposium and anniversary banquet, and marked the occasion with the presentation of awards to a number of significant contributors to Concrete Technology.

Professor Peter Hewlett was awarded the ICT's Silver Medal, for dedicated service to the Institute over many years, as Honorary Fellow, lecturer and convention chairman, member of multiple committees, President for seven years (2008-15) and editor of the ICT Yearbook since its first issue in 1996. This is only the fifth time the prestigious medal has been awarded since it was introduced in 1986. It was last awarded to the last Professor Adam Neville.

Past President Rob Lewis (2019-21) and Professor Jorge de Brito (University of Lisbon) who delivered this year's Sir Frederick Lea Memorial Lecture, were elected Honorary Fellows. And to reflect the Institute's five decades, five nominees from around the world were similarly honoured for their various contributions in this field: Ron Burg (Executive VP of the American Concrete Institute); Anne Ellis (Past President of the American Concrete Institute); Professor Johann Plank (Technical University of Munich and co-editor of *Cement & Concrete Research*); Edwin Trout (Information Services at the Concrete Society and Executive Officer of the ICT); and Dr Surendra Manjrekar (Chairman and MD of Sunanda Chemicals Speciality Coatings Ltd and "the backbone" of ACI activities in India).

ICT SILVER MEDAL AWARD WINNER

Professor Peter Clive Hewlett, Hon FICT

Prof. Peter Hewlett is a "chartered chemist turned materials scientist" who has been involved in the research and development of construction materials, especially concrete-related materials, for some 60 years. He has a particular interest in chemical admixtures and geotechnical materials and has received an Honorary

Doctor of laws degree for his work on concrete durability. He has written more than 200 papers, with various patents and three books to his name, including the editing of Lea's *Chemistry of Cement and Concrete*. And since 1988 he has been Chairman of the Editorial Board of the *Magazine of Concrete Research*.

He spent 25 years as a researcher and Director of Cementation Research, before his appointment as CEO at the British Board of Agrément in 1988. He has since acted as a consultant for John Doyle Construction and the David Ball Group. He is a Gold Medallist and Past President of the Concrete Society, and has been a visiting industrial professor at Dundee University for 36 years.

It was in 1988 that he joined the Institute of Concrete Technology, elected as an Honorary Fellow (HF17) and since that date has played a key role in the Institute's activities. Perhaps his first, in the year of his election, was to give the Sir Frederick Lea Memorial lecture at the annual Convention. He spoke to the title: *'Perceptions of concrete: the surface'*.

He has subsequently become a stalwart at these events, attending most years, serving on the organising committee (2008-present), chairing several (2007, '12, '15 and '18) and speaking at others (1991 and 2014). He even, on more than one occasion, delivered papers for speakers who were unable to be present on the day, memorably stepping in for Prof. Fred Glasser at the 40th Convention. This year also saw him commission and ceremonially cut the celebratory anniversary cake.

But perhaps his greatest involvement in the ICT came in 2008, with his election to the Presidency. Having served seven years from 2008 to 2015, his term of office was longer than that of any other, save that of the first President, Jim Wootten. It was an eventful and formative period for the Institute (and perhaps for Peter!), during which the ICT became the incipient 'professional wing' of the Concrete Society. It was marked by the ICT adopting the award of CT&C qualifications from the

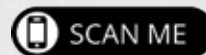
CGLI; undertaking of the examination for all four Stages (rather than just the ACT); recognising the new qualifications from Derby (after lengthy discussion); signing agreements with Queen's and UCL as ACT course providers; recognising Go Academy and the TALENT online course; introducing the Affiliate grade of membership; and negotiating the demerger from the Concrete Society and its replacement with the service level agreement. In recognition of his service and achievements, he was presented with a plaque at the time of his handover to Mike Grantham in 2015.

Peter claims his initial task in the post was to review and invigorate the ICT's committee structures. Moreover, he joined every committee himself and attended in person almost all meetings during his tenure – perhaps 100 or so meetings. He has remained on each committee since, to the present time, even adding Regional Branches to a portfolio that includes: Tech & Ed, Exams, Admissions & Membership, Events & Marketing, as well as the Yearbook. Moreover, he has served on Council continuously since 2008, participating actively in its discussions.





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CONFIDENCE IN STEEL SUPPLY

FROM SOURCE TO SITE

There is no question! We live in challenging times, with the COVID-19 lockdowns and movement restrictions giving rise to global logistics issues and subsequent challenges throughout the supply chain. At the same time governments around the world are investing in infrastructure at unprecedented levels, with a subsequent rise in demand for materials. These rises in demand and challenges to the source of most building materials, including steels, are having a significant impact on product availability, quality and costs.

In today's highly globalised markets, where materials are being sourced from multiple locations around the world (all of which are being manufactured to an assortment of international standards) it is more important than ever before to ensure that steel coming into both Australia and New Zealand meets the required standards for quality and for sustainability.

From discussions in the industry, and judging by the outcomes of recent litigation, there is no question that in the current market, there are numerous suppliers who are either deliberately or

unintentionally supplying materials that do not meet the specified standards. Alarming, there are also some material purchasers that appear to be oblivious to the issue, or worse still, are choosing to ignore these risks in the interests of meeting time frames or to minimize costs.

So, how can we achieve an appropriate level of confidence in the materials being supplied? Is buying local enough? Is there any more assurance buying with larger suppliers? Do buyers need to inspect materials to ensure compliance? Do buyers even have the required expertise on site to carry out the inspections? Or the resources or the time? And what are the risks of non-compliance?

Focusing on steel and particularly on reinforcing and structural steel products, local production is reportedly already running at capacity, with some domestic manufacturers having to supplement locally produced steel with imports to meet demand. So, buying local may provide confidence, but with mixed batches frequently being delivered, they may not necessarily be compliant.

Looking at the experience required to inspect materials, this is a challenging area as different standards require different parameters, and invariably the test certificates accompanying batches of steel are only for a single sample. These are generally provided by the manufacturer, not necessarily in English, and increasingly, cannot be shown to apply to all the steel in any one batch. So, can they really be relied upon to demonstrate compliance, or is there another way to demonstrate conformity?

In the current environment the Australasian Certification Authority for Reinforcing and Structural Steels ("ACRS"), is seeing increased enquiries from both sides of the Tasman around supply availability, and possibilities of importation of product into both Australia and New Zealand. ACRS has also received numerous requests for certification for steel manufacturers who are being used by buyers/traders for the first time, as ACRS is seen as a proven system to ensure the quality of the imported product.

Over the twenty years that ACRS has been certifying steel destined for both countries, it should be stressed that the

product being put forward for compliance has not always met the necessary standards, with some suppliers having been denied certification. Buying product that meets specified standards, regardless of what the accompanying documentation might state, cannot be taken for granted and ACRS would urge all end-users/purchasers to remain vigilant when using producers who do not hold ACRS certificates.

Andrew Wheeler, CEO, ACRS, also stated that “on a positive note, in respect to manufacturing, there have recently been a number of new mills that have gone through the ACRS audit process and obtained manufacturing certificates, consequently increasing the supply diversity of products into the building industry which is particularly important at this time.”

“Similarly, we are seeing an increase in firms taking up the traceability scheme to ensure products being imported maintain full traceability,” he added.





While it is encouraging that there is an increase in ACRS Manufacturing Certificates, it is important to note that both Australian and New Zealand standards require that dimensional and mechanical properties need to be verified by the processors of reinforcement after the processing stage, or by the manufacture of sections. The processing of the bar, which includes straightening off coil and bending bars into scheduled shapes, can have a significant impact on both the material's properties and its geometry, and it is mandated in the Standard that these be checked.

ACRS has seen numerous examples of poorly processed materials, with flattening of ribs, cracking of bars at bends, and significant reductions of ductility due to the steel being overworked. In each case, the resulting products were non-compliant.

Hence, purchasers need to ensure they are checking the dimensional data, monitoring the long-term quality data supplied by the processor and verifying the appropriate test certificates.

Alternatively, the purchaser can source product from an ACRS certified processor. ACRS' audit processes ensure that all testing to the correct Standard has been carried out as part of the processing, and that that process has been independently verified. It should be stated explicitly that the processing of an ACRS certified product by a non ACRS certified processor means that compliance is no longer assured, and traceability of product may no longer exist. In short, the product can no longer be called ACRS Certified.

In the current procurement and supply environment it is increasingly recognised

that the whole supply chain has a responsibility for ensuring compliance. Consequently, understanding any third party certification and what it covers is critical to ensure what is being specified complies.

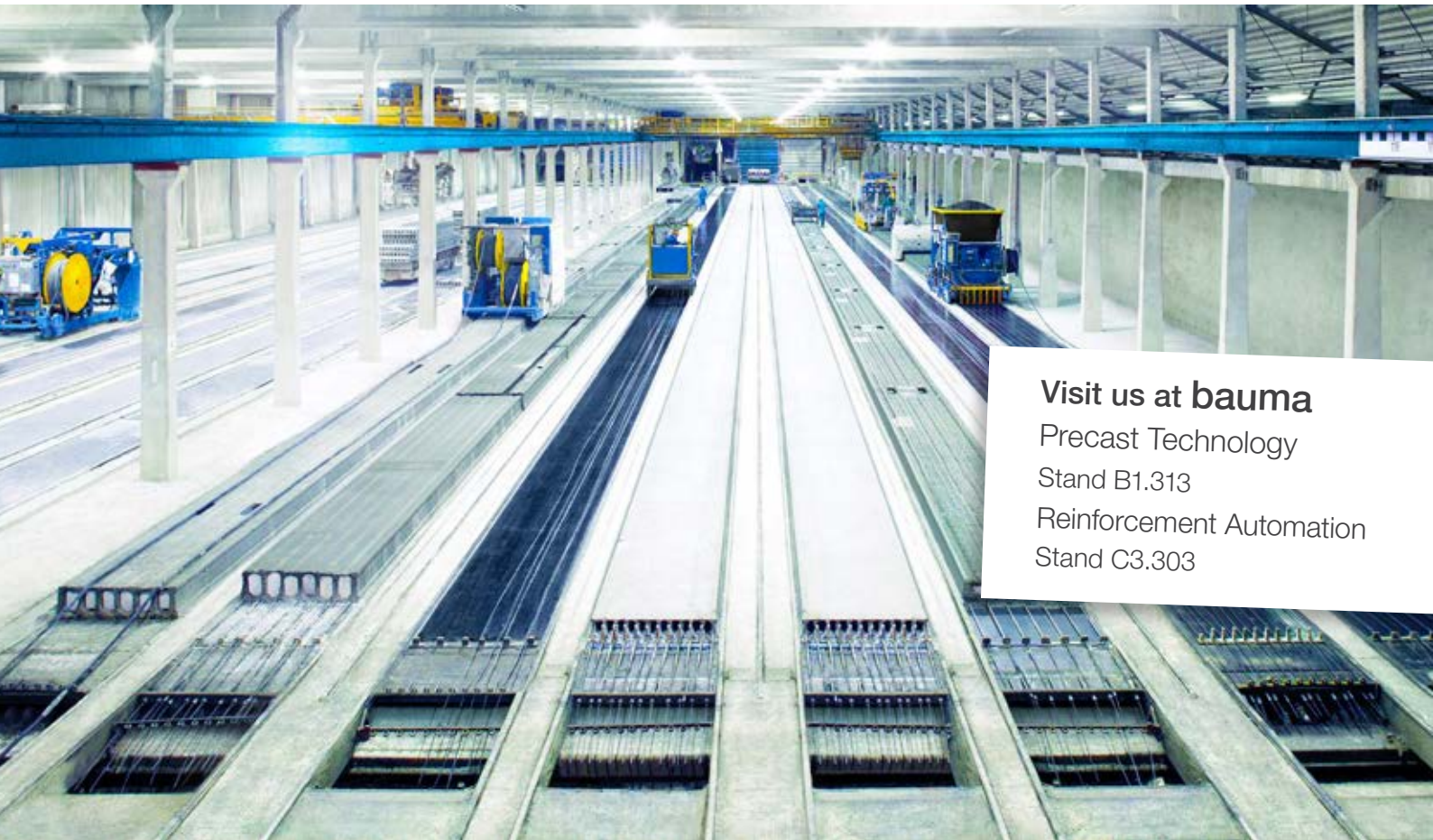
The ACRS steel scheme certifies both the steel mill (the producer of the raw product) and the downstream processing (steel reinforcement processor, mesh manufacturer, or structural welded section manufacturer) - providing a rigorous mechanism covering the two critical aspects of steel supply, and the traceability of materials between them.

This 2-Stage 'chain of certification' provides a vital link between the steel producer, the downstream material processing, the steel supplier, and the construction site. Known as a "bookended" system, this type of 2-stage certification is far more robust than a single point certification of either just the mill, or just the processor or fabricator.

For your steel to be ACRS certified, it must be covered by both the ACRS certificate from the Mill/Manufacturer and the ACRS certificate from the processors. Any break in the 'chain of certification' between the steel mill and the processor or fabricator means the steel delivered to site is not ACRS certified.

All certified suppliers and processors and their range of products may be easily found at www.steelcertification.com





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Pruksa modernises building solutions with automated hollow core production plant

One of Thailand's best-known real estate development market leaders, Pruksa Real Estate Public Company Limited (Pruksa), has modernised two of its existing precast plants to include the production of hollow core slabs with a high level of automation with machinery from Echo Precast Engineering, a company of the PROGRESS GROUP.

Pruksa was the first company in Thailand to introduce highly automated precast technology and continues to develop this advanced and innovative technology there.

With its latest investment in its hollow core production facilities, Pruksa once again focused on automatic processes to improve the productivity and efficiency, while also significantly reducing the opportunity for production faults resulting from human error.

PRECAST CONCRETE GREEN FACTORY

The market leader has developed the first Green

Factory in Thailand, which works with strict sustainability development policies for waste as well as noise pollution inside the factory. Pruksa's 'Green Factory' encompasses three aspects of operation, known as: Heart to Home, Heart to Earth and Heart to Society.

Heart to Home - Tomorrow Reimagined.

Especially with the current situation, the focus is even more on creating a new standard of living.

Pruksa states: "We see megatrends that affect the housing of people all over the world: health and wellness is being redefined and real estate developers need to create a new definition of comprehensive healthcare offerings for the residents. Lifestyle disruption was immense, so we need to create a new way of life that is adaptable to changes by leveraging new innovations to enhance the living conditions. Also, to ensure sustainability of the environmental, social and living

perspectives for future generations needs to be a key focus."

Heart to earth. Heart to society - Sustainable production for sustainable living conditions

Pruksa has been innovating the real estate market in Thailand for almost 30 years. Founded by Mr Thongma Vijitpongpun, Pruksa Real Estate focuses on developing projects for townhouses, single-detached houses and condominiums with the mission of developing high-quality houses at reasonable prices and thus ensuring better living conditions.

The company employs over 1,600 people, all of whom work together to deliver construction innovations that offer a wide range of modern patterns. All aspects of the business focus on combining the environmentally friendly concept with appropriate resource allocation in every process.

Pruksa was the first and is still the leading company investing in the production of precast concrete elements in Thailand.



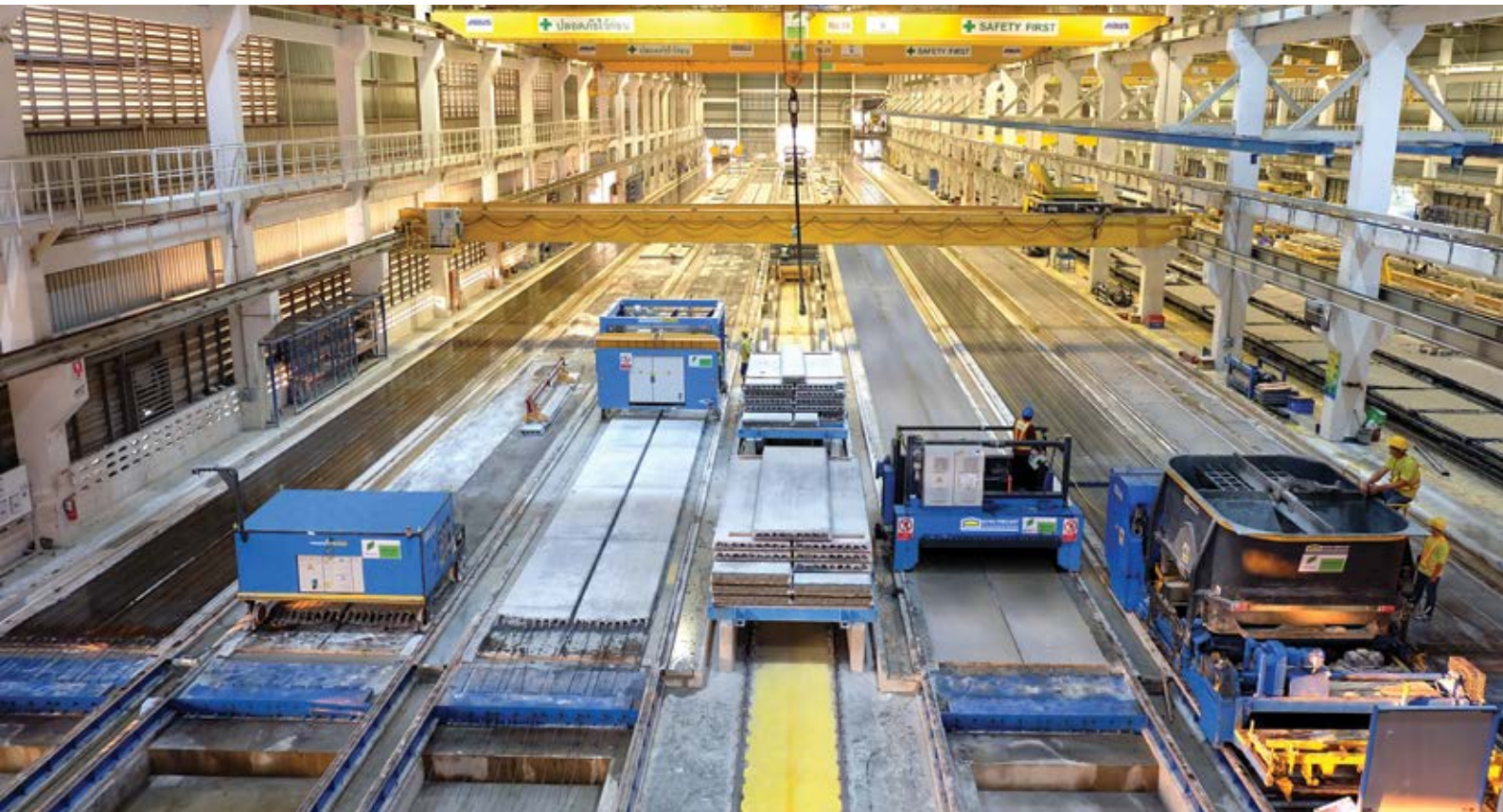
PRECAST CONCRETE PLANTS – A PRIMARY FACTOR IN SUSTAINABLE BUILDING

Pruksa invested in its first precast concrete plant in 2005. Since it was founded, the company believed that innovation and sustainability should be at the core of its business. Pruksa has lived this vision through its system of building with prefabricated concrete elements.

In the beginning, Pruksa focused on delivering townhouses using the tunnel form construction method. As the company grew, it wanted to meet the requirements and demands of the rapidly expanding market, while also securing more market share in the single-detached house market. To achieve this, it applied new methods of production, including innovative precast systems.

The equipment for the automated carousel plants was provided by Ebawe Anlagentechnik and Progress Maschinen & Automation, the software solutions from Progress Software Development and the new hollow core production plants by Echo Precast Engineering, all companies of the PROGRESS GROUP.

The main products made in the plants are walls and slabs, which are used for the fast and secure building of residential housing.



ABOVE: Two plants have been equipped with new machinery for the production of hollow core slabs.

HOLLOW CORE SLABS AND AUTOMATED PRODUCTION

In recent years, to keep up with growing demand, Pruksa made the decision to renew and redevelop two factories to allow for the expansion of the company's hollow core production capabilities.

Pruksa operates a total of 7 factories, with the PCF3 and PCF7 facilities supplying solid precast concrete slabs. Following extensive research into the production and use of hollow core slabs, and the many benefits that they can deliver, the team at Pruksa decided to convert the PCF3 and PCF7 facilities to hollow core production plants.

Hollow core slabs are efficient in design, production, and construction. They contribute significantly in terms of sustainability, as they reduce the amount of concrete needed and thus the weight of the slabs. With this knowledge Pruksa decided to change the slabs for their house concepts and modified PCF3 and PCF7 into two highly automated hollow core production plants with machinery from Echo Precast Engineering to supply all their building projects.

The new hollow core production plants have been equipped with a Universal Slipformer S-Liner® 2.4m to produce two rows with 1.2 m wide slabs. The unit also provides the flexibility to be adjusted to produce one 1.2 m as well as two 0.6 m lines simultaneously.



ABOVE & TOP: The Slipformer S-Liner is a flexible machine. It is capable of producing 1 slab 1.2m in width and 2 slabs of 0.6m, or two slabs of 1.2m at the same time.



ABOVE (L&R): The SamrtJet automatic plotter works with the CAD data imported through the EBOS HC software. This machine ensures fast marking on the slabs, with no mistakes made. The markings for the Line Detection are made simultaneously.

Additionally, the production line is supported by a 2.4-metre, battery-driven Multi-functional Trolley. The installed Concrete Aspirator makes accurate cut-outs, openings, and protruding reinforcement in hollow core slabs without effort. An automatic SmartJet Plotter featuring Echo Precast's Advanced Line Detection technology was supplied, together with the Multi Angle Sawing Machine (MAS) in 2.4m wide variant.

The highly automated facilities also incorporate additional equipment including specialist lifting equipment for the 1.2m and 0.6m-wide slabs. This machinery has not only helped to significantly reduce hollow core slab production times while at the same time increasing safety but is also contributing enormously to the *Green Factory* concept, as concrete usage FOR THE HOLLOW CORE SLABS is 40% less compared than comparable solid slabs. In short, the new plants represent a major step forward in green and sustainable production.

Speaking about the new automated hollow core production facilities, Mr Porntep Supparatararn, Group Chief Procurement and Supply Chain Officer with Pruksa commented: "The decision to purchase the new hollow core production equipment from Echo Precast Engineering was not only due to the quality of the equipment and the innovative technology



ABOVE: The fully automatic Multi Angle Sawing Machine (MAS) incorporates an array of safety sensors for a safe environment. The unit can function in fully-automated mode using Echo Precast Engineering's patented 'Line Detection' technology.

involved, but also due to the good coordination and the fact that they could deliver a machine design which met all of our requirements."

"While we were redeveloping the two facilities, we didn't only want to implement the hollow core system. We also wanted to increase the level of automation within the storage location system – and we needed both systems to synchronize."

"With Echo, we could have a supplier from the same group as the supplier of the existing

factory and storage location systems, which meant we had no issues with the technologies being able to work together."

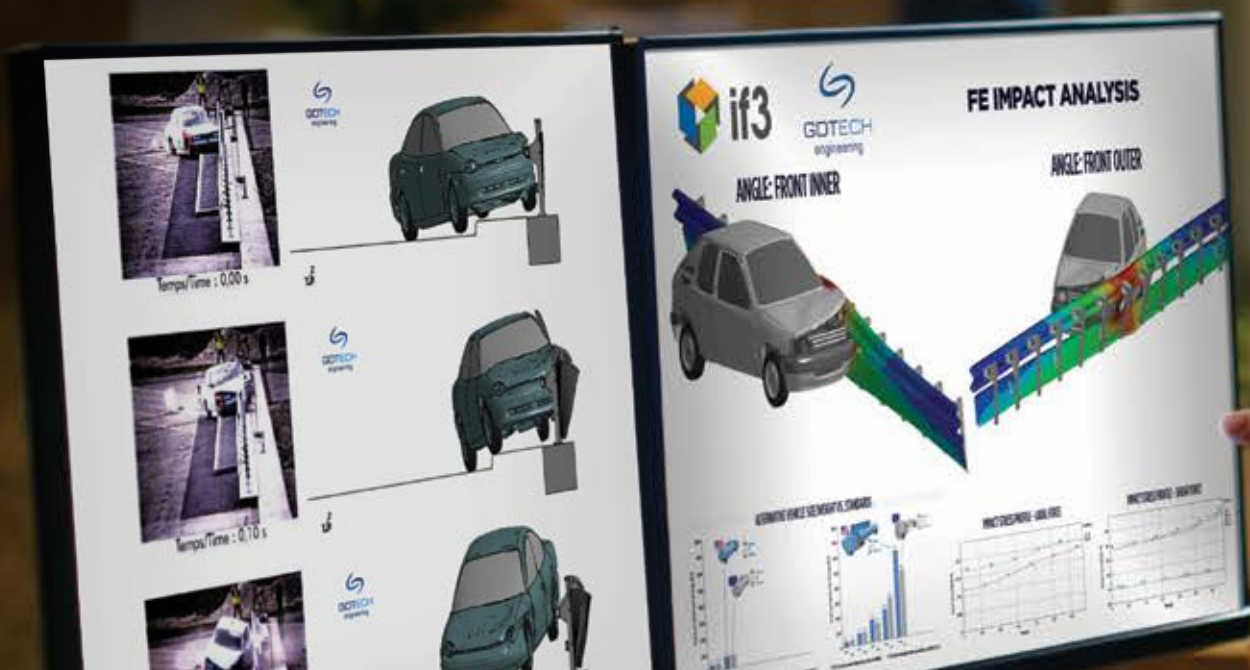
"We're extremely happy with the new facilities," Mr Supparatararn added. "The project worked well and everything came together well – despite the additional challenges of the past couple of years – and that was down to the high levels of coordination and cooperation between all stakeholders. The collaboration was very impressive," he concluded.



ABOVE: The highly automated Pruksa plants produce hollow core slabs for use in sustainable residential and commercial buildings.



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NATIONAL PRECAST MEMBERS' SNAPSHOT

Established in 1990, National Precast is the only industry body representing precast concrete manufacturers. Membership comprises precast manufacturers of all capabilities, across all states, as well as product and service suppliers, industry professionals, tertiary institutions and allied organisations. As it unites the industry through national members' meetings and dinners, National Precast empowers, represents and promotes its members. Following is a snapshot of some of the projects being undertaken by National Precast members across Australia. For more information, or to find a Precaster for your next project, visit: www.nationalprecast.com.au

Project: St. Bede's Catholic College

Location: Chisholm, NSW

Master Precaster: Waeger Constructions

Precast is no stranger to awards. In the case of St Bede's Catholic College in the Maitland, NSW suburb of Chisholm, being a finalist in The Urban Development Institute of Australia's *Excellence in Design awards*' category has thrilled Master Precaster Waeger Constructions, which manufactured and installed customised precast columns for the project. The 22 tonne columns measure between 500mm and 1650mm wide and between seven and 12 metres long. They feature a tapered profile and are externally visible around the perimeter of the building.



Project: Geelong Arts Centre

Location: Geelong, VIC

Master Precaster: Advanced Precast

Little Malop Street is home to the Geelong Arts Centre, a new development which will be Australia's largest regional arts centre. The project's unique design reflects Geelong's history and culture. The precast wall panels have been supplied and installed by Alpha Precast, a longstanding Master Precaster. As a result of the redevelopment, about 600 construction jobs will be created as well as more than 300 ongoing jobs in the tourism and service industries.

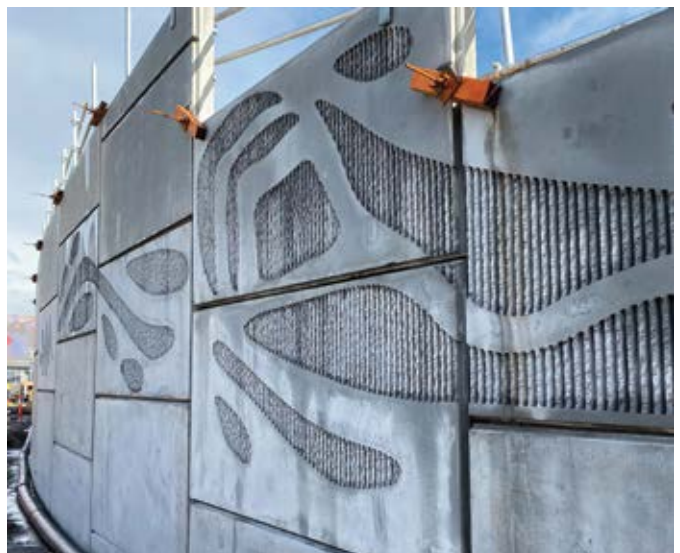


Project: Sydney Airport

Location: Sydney, NSW

Master Precaster: The Reinforced Earth Company Australia

National Precast Master Precaster Reinforced Earth never ceases to amaze clients with their capability in reinforced earth walls for Australian infrastructure projects. Reinforced earth walls that are being installed along Sir Reginald Ansett Drive on the approach ramps to Sydney's Airport Domestic Terminal, feature a striking architectural design, giving the walls both form and function.



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Project: Yatala Project

Location: Yatala, QLD

Master Precaster: Alpha Precast (installer: Total Precast)

Recent rains have allowed precast to shine in a Yatala project, where panels manufactured by Sydney Master Precaster Alpha Precast were installed in an impressive timeframe. Despite being interrupted by rain, installer Total Precast erected 140 panels across four days. Amazingly, the company erected 47 panels in just 11 hours after the crew recovered from the washout on the first day. Despite the obstacles, the panels were rotated during installation and installed vertically.



Project: Green Bridges - Yanchep Rail Extension

Location: Yanchep, WA

Master Precaster: PERMAcast

As is commonplace in Europe, green bridges allow animals safe passage across motorways that are located in significantly vegetated areas. Three new green bridges that are being constructed over the Yanchep Rail Extension - featuring precast elements from Master Precaster PERMAcast - will protect local animals such as the Western Brush Wallaby and Southern Brown Bandicoot. Local native plants that provide shelter and food will be chosen to create a native habitat on the bridges. As well as providing safety for wildlife, the bridges will also serve as a support for firefighting vehicles during bushfire emergencies. Cameras are also being installed to monitor and ensure the success of the green bridges.



2022 Excellence in Precast Concrete Awards

Nominations close Friday, 30th September, 2022
www.nationalprecast.com.au/awards

AWARDS RECOGNISE SAFETY IMPROVEMENT INITIATIVES

A new awards programme introduced by the precast concrete industry's peak body National Precast, recognises excellence across a number of areas, and safety is one of them.

"The Excellence in Precast Awards are a first for the precast industry," says the Association's CEO Sarah Bachmann. The awards will not only recognise exemplary projects, they will also acknowledge

contributions by the organisation's companies and people. Those contributions can include new initiatives that improve safety practices in the industry.

"Many of our members are constantly introducing new initiatives which set new benchmarks in safety. Alternatively, a contractor may implement an outstanding practice on site. Nominating for an award not only recognises this but shares the information

among all members and the broader industry," Ms Bachmann says.

Entries are open until the end of September and can be submitted by either National Precast members or by contractors or designers who have used a National Precast member to supply a project. Visit <https://nationalprecast.com.au/awards/> to enter and for more information.

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