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**OCT/NOV 2019** 

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#### **About the Cover**

Together with their attractive modern aesthetics and the fact that they allow large numbers of people to pass in and out of a building quickly and efficiently, revolving doors also deliver a number of major environmental and cost benefits, including significant savings on both heating and cooling costs.

Turn to Page 10 for the full story.













# **Deeper Engagement** Connecting with Industry Professionals at All Levels

#### Dear Readers,

Some of you may have already noticed a couple of new additions on this issue's front cover under our list of Media Partners and Industry Supporters - more specifically, the logos of the Australasian Furnishing Association (AFA) and the newly-formed Australian Balustrade Association (ABA).

Now, while I don't usually make a habit of writing editorials that focus on either *Construction Engineering Australia* (CEA) as a publication or EPC Media Group as an organisation, for this issue I'm going to make an exception. Don't worry, it won't be a regular occurrence (and I will be attempting to justify what may be construed by some as mindless selfpromotion by providing a deeper context later in the editorial).

That said, first and foremost, I'd like to welcome both the ABA and AFA on board as our newest Media Partners, and at the same time, send a warm welcome to the members and affiliates of both Associations into our ever-expanding CEA family.

For those of you who may be wondering why we have made the effort to establish media partnerships with leading organisations including:

- IPWEA NSW
- National Precast
- Concrete Institute of Australia
- Australasian Corrosion Association

and now the AFA and ABA, the answer is quite simple - It's all about industry engagement.

As with our other Media Partners, our new Media Partnership Agreements with

both the ABA and AFA are much more than just a simple exchange of logos or an attempt at 'popularity window-dressing'. Rest assured, we're under no illusions that logos on the front cover will somehow make us more popular or relevant! As with all media, that comes down to content (hopefully we pass muster on that front!)

No, each of our Media Partnerships have been established as genuine cooperative agreements that aim to benefit both the members and affiliates of each of our partner organisations, whilst also adding value for our entire readership. Again, it's all about engagement.

When we created CEA some 5½ years ago by merging Municipal Engineering Australia (which was at the time one of Australia's leading civil construction and engineering publications) with Australian Concrete Construction (one of the country's leading large-scale construction and specialist construction materials publications), our aim was to produce a publication that would address all aspects of construction, civil works and construction engineering in one magazine.

From the initial planning and design phase, through to civil and engineering works, detailed planning (including materials selection), construction, protection (including specialist surface coatings and anti-corrosion measures), fit-outs, maintenance and repairs, we felt that in an increasingly busy world where everyone is time-poor, we would try and bring the entire construction sector – and all the relevant news, information and articles – together into one publication. Providing a deeper engagement both with and between the many diverse construction industry segments through the sharing of useful information.

Now, please don't misunderstand. I certainly don't ascribe to the 'one central point of truth' theory and it was never our goal. Our aim was, and is, purely to provide a publication containing relevant and interesting content from across all aspects of construction, and as such, we've always felt that the best way to achieve that is to engage with the experts.

With that in mind, we always try to include feature sections with news, articles and case studies from each of our Media Partners - and the AFA and ABA are no exception. Indeed, this issue contains both an ABA News section and an extremely informative AFA Feature on the importance of following the new procurement rules surrounding the use of *'Responsibly Sourced Timbers'* both in construction and furnishings.

Importantly, (and I will take this chance to boast just a little) it's a formula that has proven to be extremely popular with readers, with our most recent readership figures showing significant growth over the past 12 months – especially in terms of our digital readership.

That said, all that remains for me to say to our many new readers – welcome – and to our many thousands of long-time readers, thanks for your ongoing support.

Anthony T Schmidt Managing Editor

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A recent Deakin University report examining the rising number of defects in apartment buildings has found they lead to significant distress in affected residents and owners. Lead researcher Dr Nicole Johnston, a senior lecturer in Deakin Business School, said the report aimed to identify the types of defects and how they impacted on the building and its occupants.

The study, funded by the PICA Group, found water damage was the biggest problem in apartment buildings. The researchers also assessed the regulatory environment to understand how defects are managed and rectified within the residential property environment.

Dr Johnston analysed 212 building defect reports as part of the study, and sorted them by what construction systems were impacted by building defects.

"Of the 3227 defects analysed, defects relating to building fabric and cladding were the most prevalent, followed by fire protection, waterproofing, roof and rainwater disposal, and then structural issues," Dr Johnston said.

"It is important to note that of the defects coded to building fabric and cladding, one third of those defects were a consequence of water penetration or moisture. So these cases are more likely a result of waterproofing or roof and rainwater disposal defects, showing these two areas may be more greatly impacted than the headline numbers suggest.

"But the number of defects relating to fire safety are also alarming. Fire is a direct threat to life and fire safety measures installed need to be independently checked and verified to ensure compliance."

Industry stakeholders, apartment owners and residents were also interviewed for the project, including those who volunteered on owners' corporation committees.

"Water penetration and fire protection defects were the most commonly cited problems from their perspective," Dr Johnston said.

"A number of concerns were also raised about the relationship between the National Construction Code and the Australian Standards, where there is some disconnect in requirements, and industry identified a need for better consistency. "The focus on minimum standards instead of best practice in the National Construction Code was also raised as a concern, as well as the private certification system, where community expectations were seen to be out of step with legal requirements.

"Many industry representatives suggested that human error played a significant part in building defects and the misuse of building products, lack of training, and lack of licensing were all common factors contributing the defect problems."

But Dr Johnston said potential impacts on owners and residents was most concerning – including health and financial impacts – as well as volunteer owners corporation committee members who had the stress of dealing with building defects.

"Mould that has arisen due to water penetration defects is often present and has the potential to lead to serious health implications for residents. Plus the lack of care by trades in properly managing mould often leads to spores embedding or remaining in lots," she said.

"And for lot owners there are also financial impacts. The type of defects we commonly observed require invasive and often costly remedial works to rectify, particularly for waterproofing and fire separation failures.

"The financial burden placed on lot owners when builders fail to rectify building defects can lead to a number of psychological health impacts, particularly stress related, and for some are financial ruining."

Dr Johnston said it should be reasonable to expect that homes are constructed in a manner that, at the very least, is stable, safe, sheltered and fit for purpose.

"Unfortunately, new residential buildings in Australia appear to be plagued with defects, and while the building itself can be fractured by these defects, it is the residents living there who face the impacts," she said.

"Building defects are considered inevitable by the building industry, so it is essential to gain a better understanding of the nature of defects in residential multi-owned properties in order to respond effectively.

"Government intervention that starts with in-depth stakeholder and end-user consultation is urgently required in order to stem the flow of these defects."

### DR BRONWYN EVANS ANNOUNCED AS NEW CEO OF ENGINEERS AUSTRALIA

Engineers Australia has welcomed Dr Bronwyn Evans HonFIEAust FTSE CPEng as the new Chief Executive Officer of the engineering peak body.

Dr Bronwyn Evans is an experienced and respected CEO who brings a wealth of leadership, commercial and policy expertise that she has gained across a career spanning corporate and not-forprofit roles at the forefront of engineering in Australia and globally.

Those have included CEO of Standards Australia, senior executive roles at Cochlear Ltd and GE Healthcare, as well as non-executive board experience in the construction, medical technology and digital business sectors.

"Over the last few years, Engineers Australia has modernised its governance and operations to support the increasingly important role of the profession in Australia's economic, social and sustainable future, with our advocacy and media engagement also at an all-time high," said Trish White, National President and Board Chair of Engineers Australia.

"Our board looks forward to Dr Evans advancing this work, growing our organisation through provision of clear member value and furthering the influence of our profession in the ethos of community service embedded in our Royal Charter.

"An electrical engineer who has led successful corporations across manufacturing, construction, research and standards-setting, Dr Evans is well-placed to lead our organisation into its next chapter as the engineering profession transitions to take advantage of the technological disruptions and innovation of the future."

Dr Evans said she was excited to take on the role.

"With the global megatrends shaping our future relying so significantly on engineering insight and leadership it is a fascinating and important time for the profession," she said.

"I am looking forward to working closely with the Board, the staff and the broader membership to continue to grow and advance our organisation," said Dr Evans.





## TAYLORS TAKES GEOSPATIAL TECHNOLOGY-DRIVEN AUGMENTED REALITY MAINSTREAM

Melbourne surveying firm Taylors is harnessing its expertise in geospatial technology to create not just added value for its clients, but for mainstream art lovers as well. The new platform, called Aura Vista AR, is the latest brainchild of Taylors Lab, an experimental and creative arm of the business aimed at bringing innovative solutions to life.

The fruit of three years' work, the Taylors team has created and designed this first-of-its-kind cloud-based augmented reality application, which allows artists to create fully immersive art exhibits for the public. The artworks superimpose a computergenerated image over a user's view of the real world on their smartphone when triggered at a specific location. Premiering at Melbourne's 2019 Fringe on the Arts Centre lawns and featuring work by local artist Richard Payne, AuraVista AR provides an opportunity for anyone to step into an AR world.

The Taylors Lab itself, under the leadership of Taylors Managing Director Richard Cirillo, works at nurturing ideas across the entire spectrum of its talented staff, be they drone pilots, 3D visual artists, licensed surveyors, engineers or draftspersons.

Together, they've worked on projects that include everything from computer vision and laser scanning, photogrammetry and holograms, to 3D interactive viewers and even a project management system. These mostly find a home in another part of the Taylors business, but every now and then one comes along they think can step outside their industry and bring their work to a wider audience.

With 3D rendering and reality modeling being a key next-level service provided to Taylors' clients, the creation of Aura Vista AR was the next logical step when it came to expanding on that technology and bringing it outside surveying and into the art world.

"The launch of AuraVista AR is the result of years of ideation and cultivation in proving that spatially triggered AR is possible," said Richard Cirillo.

"We knew that our access to world-leading, geospatial technology could evolve to be shared with the broader community. We wanted to bring lasting, memorable AR experiences to life for all to see. We're proud that AuraVista AR will connect curious minds with creative endeavours that need not be exclusive to just our industry and clients," he added.

But how does it work from a technical standpoint? As most good things are, it was a lot more difficult to take the idea from something on paper to a practical solution. Location in the context of Augmented Reality on a smartphone is the combination of the device's native location services, a third-party plugin for improving that location over time, and then tying that in with the AR tracking to place the artwork as close to expected position as possible – usually within two metres.

When taking scans of real-world objects to be brought into the digital world, Taylors uses a variety of survey-grade equipment as well as photogrammetry techniques. Aura Vista AR itself is built on the Unity3D game engine, using use both ARcore and ARkit to tie things into reality, as well as the device's help to find a starting position.



The artwork itself is then brought to life by bringing the digital twin of the physical location – in this case Arts Centre lawns - into Tilt Brush VR, and the artist works inside that canvas. Then then it's a matter of taking the resulting art piece out of Tilt Brush VR and placing it back into the original digital render. Taylors will soon support art created in Adobe and Autodesk, as well as Blender, Gimp and Google Blocks, making the platform as accessible as possible to both the artists and art lovers.

In an exciting time in both app development and Augmented Reality where many people are coming at the problem from many different angles, it's refreshing to see an Australian business, of surveyors and engineers no less, combining their technical expertise usually reserved for urban planning and construction, to a purely creative endeavour.

For further information, please visit: www.taylorsds.com.au



### KNX LAUNCHES THE WORLD'S LARGEST SMART BUILDING TRAINING PROGRAMME

As the world's leading standard, KNX has been instrumental in shaping the multi-billion dollar global market for smart home and smart building solutions. With the new worldwide training programme #KNXtrain, users and professionals can now jump on the bandwagon of intelligent building networking.

"Since the introduction of KNX almost 30 years ago, training has been an integral part of KNX's continued success. We are therefore proud to launch #KNXtrain, the world's largest training programme in the smart building sector", explains Franz Kammerl, President of the KNX Association.

#KNXtrain offers its "passengers" access to a variety of training options designed for both novice and experienced KNX users. Further to hands-on training sessions held in the 470 KNX training centres, #KNXtrain also includes online training, events and webinars. To keep an eye on the comprehensive offer, "Start@KNX" presents all training options and provides interested parties and participants with appropriate accompanying materials.

#### **ON-SITE KNX TRAINING**

Together with the numerous online training courses, KNX's 470 certified training centres have already trained and certified over 80,000 users and professionals for the specification and installation of KNX systems. From basic courses that introduce beginners to KNX technology and ETS (Engineering Tool Software), to advanced courses to deepen KNX knowledge and instructor courses, participants chose their training centre and engage in direct conversations with experienced KNX experts.

#### **ONLINE TRAINING**

Of course, the #KNXtrain must also feature an "online training wagon", where newcomers will learn the basics and use the ETS eCampus, free of charge. The web-based learning platform gives participants comprehensive insights into the KNX technology and the planning and commissioning tool ETS. Once the ETS eCampus is successfully completed, participants will receive a complimentary

ETS Lite license voucher. The #KNXtrain carries many other benefits and advantages aboard, so interested parties and training participants should keep an eye on KNX social media channels.

#### **KNX READING**

Self-study is also possible with the help of training documents from KNX. All documents are available for download free of charge on the KNX website. Further reading can also be ordered with just a few clicks via the MyKNX account.

For more information on KNX in Australia visit: https://knx.org.au/

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- The Glen Shopping Centre Mt Waverley
- 161 Collins Street Melbourne



# The First Latent Defects Insurance in Australia

For the first time in Australia, there is now available a Latent Defects Insurance that transfers the cost of repairing building defects to the Insurer from the Builders balance sheet. As this can and does have massive implications on the profit and financial wellbeing of builders and developers alike, the new insurance initiative has enormous implications for the Construction Industry. No longer does the builder have to make provisions in their balance sheets for the rectification of possible Latent Defects. Nor is it a necessity to place the entire project's profit at risk by future unknowns.

With the media coverage of building defects of Sydney's Opal Tower and, most recently, Mascot Towers hitting the headlines, the true cost of hidden defects are now being exposed. In fact, a spokesperson for Opal Towers recently stated that more than \$10m has been spent on residents' accommodation and living expenses alone since December 31 – and this does not include the substantial costs of rectification of the defect(s).

In the Mascot Towers case, latest reports claim that in addition to their relocation, accommodation and living expenses, Mascot Tower owners are now up for an estimated \$5m for rectification works for the building as it is now outside the contracted warranty period.

The implications of Latent Defects are both significant and far-reaching, with the effects not just felt by the builder and developer. Indeed, individual owners will find it almost impossible to sell and/or adjust their mortgages due to the significant impact that these issues have on a property's value. What's more, if issues arise with a property, banks and other lenders will likely be reluctant to offer mortgages to future purchasers.

It is an industry-wide problem that is only expected increase with time, with an estimated 54,000 new apartments being completed in Sydney alone in 2019. Unfortunately, many more properties across Australia are also at risk of quality issues arising due to future hidden defects.

With that in mind, the timing of an insurance policy to cover these latent defects costs is perfect. Construction Industry

experts SHC Insurance Brokers (SHC) have sourced this product that is backed by Lloyds of London.

SHC's Managing Director, Stefan Hicks who is based in London, has been working on the establishment of this product into the Australian market for more than four years. Mr Hicks realised there was a massive gap in financial risk for the builder and developer some years ago and commenced enquiries in the London market.

In summary, SHC is now able to offer Construction Industry Latent Defects Insurance for the following:

- · Cover up to \$10m, more on application.
- Cover up to 10 years
- Retrospective cover upon application
- Indemnity costs also covered, such as Accommodation Expenses
- Builder held harmless no liability
- High Rise and Low Rise

• Commercial and Residential Properties According to Mr Hicks, all builders should effect this insurance before the first day of construction.

"All builders take out Contract Works Insurance that covers the risk against theft, fire, malicious damage etc, which would have adverse impacts on the profitability of the project. At SHC, we believe Latent Defects can have a high potential damaging impact on profits and financial stability," Mr Hicks said.

"It is difficult for the builder to provision and carry this risk for a minimum period of 7 years. The rectification costs of Latent defects cannot always be afforded and paid from working capital," Mr Hicks added. "What's more, for any director looking to exit the industry within the next 10 years, it's a long period to be financially exposed after the last completed project

oroker

The delivery of this product into the market should alleviate a lot of the pressure being built up across the board for most stakeholders and especially the consumers themselves.

"SHC is adding an extra layer of consumer protection. Home Warranty Insurance covers nothing for high-rise and only the first circa 6 years for domestic construction. Even then, the cover is only activated basically if the builder becomes insolvent," Mr Hicks said.

"This insurance is activated by a latent defect, so therefore its irrelevant if the builder is solvent or still trading," he added.

Brett Graves, SHC Director and CEO, states that the application is a simple process with no disruption on works using the existing non-invasive inspection process, if professionally executed. Mr Graves believes that this insurance product will become a mainstream insurance policy for all construction projects in the future.

#### **ABOUT SHC**

SHC is one of Australia's largest independent Insurance Brokers in the Construction and Property Industries, covering Builders, Engineers, Architects and the Allied Trades. Operating across Australia with over 30 years of professional experience and expert service, SHC also has representation in the London international markets.

For further information, please contact: Brett Graves, Director, SHC Insurance Brokers, Phone: 1300 550 665, Email: bgraves@shcorp.com.au or visit: www.shcorp.com.au

# Australia we have you covered

# Latent Defects Insurance

<b>√</b>	A 1st for Australia – SHC has sourced this special product on behalf of its clients and the Australian construction industry.	<b>√</b>	Builder held harmless – cannot be held responsible and pay (no liability).
1	Transfer Defects risk and rectification costs off your balance sheet to the		Cover for; Builders and Developers, Owners and Strata Body Corporates.
	insurance company.	1	Commercial or Domestic (any size).
1	Cover up to \$10m per project (more on application).	<b>√</b>	Simple Application and Process.
<	Cover up to 10 years.	<	No personal guarantees.
1	Cost Effective Insurance.	1	Great Security - Lloyd's of London.

This insurance product is the **first in Australia** that can cover the risk of costs associated with rectification for **Latent Defects**. Currently the Builder and Developer bear the entire risk and cost should something go wrong which can have serious repercussions and adverse effects on their Balance Sheet, profitability and financial position. This product allows the transfer of that financial risk onto the insurer for the amount of the Sum Insured.

For **Commercial Construction** (including all High Rise) the need for Latent Defects Insurance is obvious. For **Domestic Construction** the need for this insurance also continues to be obvious to any builder who has previously borne the cost of rectification works. Statistics show that 1 in 8 houses require rectification at an average cost of **4% of the total contract value** – all currently paid by the builder.

#### **Register your interest**

Don't be caught out ever again without purchasing this insurance from SHC Insurance Brokers – register your interest in Latent Defects Insurance by calling or emailing Brett Graves (*Director*) or Richard Durnell (*Executive*).

# 1300 550 665

customerservice@shcorp.com.au



SHC Insurance Brokers Level 2 - 2 Glen Street, Milsons Point, NSW 2061 www.shcorp.com.au/latent-defects-insurance

# **BOON EDAM** YOUR ENTRY EXPERTS.

TTTTT:

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# OPENING THE GREEDDOOR TO BUILDING HVAC SUSTAINABILITY IN AUSTRALASIA

Together with their attractive modern aesthetics and the fact that they allow large numbers of people to pass in and out of a building quickly and efficiently, revolving doors also deliver a number of major environmental and cost benefits, including significant savings on both heating and cooling costs.



evolving doors function beautifully as airlocks, which allow smooth pedestrian flow while saving money on heating, ventilation and air-conditioning. On warmer days, they keep cool air in, reducing air conditioning costs. In cooler times, they keep cold air out, thereby reducing heating costs.

"Because revolving doors cut off the air path between the outside of the building and the inside – compared with a sliding door, for instance – the savings they make on the HVAC costs of larger buildings are substantial," says Boon Edam Australia Managing Director Mr Michael Fisher.

Boon Edam – which provides entrance technologies for dozens of Fortune 500 companies in 27 countries globally – is making available features to optimise the inherent heating, ventilation and air conditioning (HVAC) advantages of revolving doors. In Australasia (including Australia, New Zealand and Papua New Guinea), the company is also offering OEM-standard maintenance packages that optimise the HVAC performance and operating durability of revolving doors.

The Australian Department of Environment and Energy has estimated that HVAC represents 39 per cent of the typical energy consumption breakdown of an office building, well ahead of the 25 per cent for lighting and 22 per cent for equipment and 4 per cent for lifts.

"Prevention of HVAC losses through inefficient doors is integral to sustainability and the efficiency of green buildings, because HVAC costs are often the single biggest major costs of operating a large building," says Mr Fisher.



Revolving doors have a higher up-front cost compared with sliding doors, but their saving on HVAC and maintenance costs lead to greater savings in the long term.

"Further, revolving doors are important in buildings that have an elevator," Mr Fisher added. "Let's suppose we have an open door at street level. There is an air path from outside, through the open door, through the elevator doors, up the elevator shaft, and out the vents into the machine room, and out of the building."

"Revolving doors act as a draft block, preventing this chimney effect of sucking air in at high speeds and ejecting it through vents in the roof."

And while the main reasons for using revolving doors are energy efficiencies in heating and cooling and preventing drafts, there are other advantages:



- Revolving doors allow large numbers of people to pass in and out easily and quickly. They permit people to go in and out of the door at the same time in an orderly, safe and controlled manner.
- Most revolving doors can accommodate strollers and wheeled luggage bags, including Boon Edam designs used in airports, traffic terminals, tourist hot spots and major retail centres globally.
- Revolving doors block much street noise from entering a building, as well as pollutants and irritants affecting many in urban environments.
- The noise created by a hinged door opening and closing is eliminated. Car and bus fumes are locked out.
- They prevent the strong drafts that hinged or swinging doors can create – a wind that is strong enough to blow small objects around.
- Revolving doors assist people carrying packages. Both hands are freed. These doors are ideal for accommodating people on crutches, in wheelchairs or with ongoing disabilities.
- They usually have glass panels, which allow people to see and anticipate who is coming and going.

- Revolving doors can be used for security purposes, involving radiation detectors and metal detectors.
   Sensors can go off it a person tries to enter in the wrong direction.
- Large revolving door systems may have, in the central pivot, a small glass enclosure permitting the display of sculptures, mannequins, plants and advertisements.

"Architects using revolving doors appreciate the fact that they can render a building more aesthetically impressive and pleasing by the size of the doors and the aesthetic scale they create," says Mr Fisher.

The revolving door was invented and patented by Theophilus Van Kannel of Philadelphia in 1888. The world's first revolving door was installed in a restaurant in New York's Times Square 10 years later.

They have since spread to be ubiquitous throughout America, and widespread throughout the world as more specifiers appreciate their builtin advantages that apply strongly to Australia, New Zealand and Papua New Guinea.



Smoke tests demonstrate the difference in airflow control between standard open doors (left) and revolving doors (right).



#### OUTSTANDING PERFORMANCE IN EXTREME CONDITIONS

Users of Boon Edam revolving doors include the world's tallest building, the 828m Burj Khalifa in Dubai, where Boon Edam installed the highest revolving door in the world.

The revolving door provides access to a new viewing platform on the 148th floor, where visitors who don't have a fear of heights are afforded a stunning view over the city, some 555m below.

The doors were specially engineered to overcome high wind issues affecting other designs.



## Boon Edam OEM and retrofit sustainability

Boon Edam Australia is introducing a range of features that optimise the high energy-saving performance of its major products in Australia, New Zealand and Papua New Guinea. Examples include radar-based traffic sensors and door sealing tailored to particular applications to optimise the inherent heating, ventilation and air conditioning HVAC advantages of revolving doors.

Boon Edam's latest revolving door technologies and maintenance packages are used throughout the region in applications including retail and hospitality chains, health and educational facilities, corporate and commercial offices, as well as major government, tourist and transport facilities.

"There is no doubt the energy savings available through revolving doors are very real and very significant for a host of major industries and building types in this environmentally attuned 21st century," says Mr Fisher.

"With its always open, always closed functionality, revolving doors are particularly suited to warm and tropical climates, where this in-built advantage helps to control losses of cool air produced by hard-working HVAC systems. Revolving doors have also demonstrated their performance benefits in areas subject to cold nights and wide seasonal daytime temperature variations, which extend from the outback of Australia to large areas of New Zealand and PNG."



Boon Edam's OEM, service and retrofit products apply to major Boon Edam ranges – including its Tourniket of which a 5m tall custom-built variant is used in the current \$A100 million revitalisation of the Rialto project in Melbourne – as well as compatible other-brand installations throughout the Asia-Pacific.

"Calculating the exact amount of savings available per building is a science that depends on a host of factors, including the individual site, how heavily it is trafficked, the state of maintenance of the revolving door, and whether it is used in an hotel, retail outlet, educational institution, health facility, commercial headquarters and so on," says Mr Fisher. "But the benefits of revolving doors are accepted worldwide, for both retaining warm air and cool air, which can be particularly important to the energy efficiency of HVAC plants throughout the region."



The Rialto revitalisation project in Melbourne showcases striking and practical 5m high Boon Edam revolving doors, the tallest in the Southern Hemisphere



"There is no doubt the energy savings available through revolving doors are very real and very significant for a host of major industries and building types in this environmentally attuned 21st century."

#### **Sustainability**

"People can probably remember in the days of cheaper energy walking past offices, shopfronts and hospitality venues on hot days to be greeted with a beautiful icy wave of cold air emanating from their open entrances. It was welcome relief, but designers and facility managers can't afford to make a gift of their expensive cooled air like that these days," says Mr Fisher, whose global parent company Royal Boon Edam, with over 140 years of entrance solution experience, has among its clients some of the world's largest firms and household names in technology, resources, retail and health and hospitality.

"Although revolving doors generally enjoy a built-in energy conservation advantage, this can be extended further by sensible maintenance and upgrading where required," says Mr Fisher.

"Our maintenance services – which are conducted to the global standards of Boon Edam – can deliver benefits not only with OEM equipment, but also wider brands that can be both improved in energy performance while also having their durability extended," he said.

#### FOR FURTHER INFORMATION, PLEASE CONTACT:

Michael Fisher, Managing Director, Boon Edam Australia P/L, **T:** +61 1300 689 905, **M:** +61 (0)415671884, **E:** michael.fisher@ boonedam.com or visit the website: **www.boonedam.com.au** 



#### **ABOUT ROYAL BOON EDAM**

Boon Edam is a world leader in entrance security solutions and architectural revolving doors. Headquartered in the Netherlands, with 140 years of experience in engineering quality, Boon Edam is focused on providing an optimal and sustainable experience for clients globally.

The company's entrance solutions for Australasia are used by leading private and government specifiers locally and globally, including for HQs of Fortune 500 companies, the facilities of household names in industry, commerce and finance, and some of the world's most sensitive data, service, Government, legislative and executive agencies. Boon Edam's comprehensive entrance solutions suite ensures that all facilities have entrance security technologies that are secure, yet architecturally elegant and cost-efficient.



# NEW CPD COURSES USHER IN HVAC SAVINGS THROUGH REVOLVING DOOR DESIGN

Royal Boon Edam – one of the world's largest producers of architectural revolving doors – is introducing Continuing Professional Development (CPD) courses to help Australian and New Zealand building specifiers optimise their energy conservation and sustainability advantages. Royal Boon Edam works closely with architects, builders, facility managers and HVAC specialists around the globe to provide unique and customised solutions for individual buildings and facilities.

"Designers appreciate the traffic and air flow benefits of revolving doors, says Boon Edam Australia Managing Director, Mr Michael Fisher. "But not all building specifiers understand how best to optimise the contribution that entrance design can make to building sustainability by reducing the load on HVAC systems."

Their advantages apply for wide ranges of public buildings and private facilities, says Mr Fisher, whose company has introduced the CPD courses for specifiers operating in key markets where energy efficiency and sustainability are major issues, including corporate HQs, hospitals and healthcare facilities, retail and hospitality buildings and private and public infrastructure including transport terminals, schools, data facilities and tourist hot spots.

#### **Formally Certified CPD Courses**

The new CPD courses are typically presented to groups of 10 or more on specifiers' premises and conducted concisely within an agreed time frame. Boon Edam's CPD presentations are formally certified by the Architectural Information Service (AIS), which means architects can claim formal CPD points required in most states of Australia, as part of their ongoing professional education and commitment to maintaining and improving their knowledge and skills.

Knowledge gained can also be incorporated into private and public educational attainments and can be an invaluable adjunct to on-the-job training, says Mr Fisher. "Different professional organisations have different ongoing CPD educational requirements for their members, but all have a stake in being abreast of the latest global trends on which Boon Edam is an authority," says Mr Fisher.

Boon Edam is continuously involved in developing designs and applications to optimise the inherent HVAC advantages of revolving doors.

The knowledge gained is built into course discussions on areas including:

- Energy and the built environment, which uses more than 50 per cent of energy generated in this country
- Air flow and energy efficiency, including "chimney effect" air paths through buildings, losses through areas such as lift shafts and summer and winter flow patterns within buildings
- Sliding and hinged doors vs. revolving doors, which are up to 8 times more energy-efficient
- Greenhouse gas emissions NABERs, LEED and Green Star rating
- Design elements and applications of revolving doors and optimising their performance
- Integration of revolving doors as part of optimised security and traffic flow strategies, including electronic integration with lifts and security gates

For further information on Boon Edam's CPD courses, please contact: Darren Assey, Business Development Manager, Boon Edam Australia, **T:** +61 1300 689 905, **M:** +61 (0)426 703 326, **E:** darren.assey@ boonedam.com or visit the website: **www. boonedam.com.au** 

"Different professional organisations have different ongoing CPD educational requirements for their members, but all have a stake in being abreast of the latest global trends on which Boon Edam is an authority."



Boon Edam Australia's Business Development Manager, Darren Assey, with one of the AIS Certificates which are awarded to participants upon completion of the new CPD courses.

#### **IMAGINEERING**

To help show building designers, architects, refurbishers and managers just how impressive a revolving door or security entrance will look when applied to their own projects, Boon Edam is introducing its 'Imagineering' product realisation service.

Building specifiers can submit graphics of their planned entrances areas for Boon Edam to complete with a graphic containing the security entrance leader's solution for the particular need presented.

These security entrance systems are all designed to the highest standards of crisp European style and functionality, says Mr Fisher, "But we have found that a recurring consideration for architects, engineers, facility managers, security consultants and other specifiers is how to visualise the product blending in with their particular architectural style and the corporate style of the building and the rest of the entrance.



# Queensland's Largest Ever Greenwall Unveiled

During August, Brisbane's much-awaited Breakfast Creek Lifestyle Precinct opened its doors to the public. Vertikal Design in collaboration with LSH Property Australia, Cottee Parker Architects and John Holland Group, were tasked with installing one of the largest greenwalls ever built in Australia.

With over 340sqm of internal planting, a virtual "lung" has been created for the building and its occupants. At a total height of 15m and more than 23m in length, the greenwalls contain over 27 different species of plants. Importantly, the palette includes the top 6 species that have been scientifically proven to reduce the largest number of VOC's (Volatile Organic Compounds) found present in the air.

Speaking about the greenwall, Steve Riches, Project Manager John Holland Group congratulated Vertikal on successfully sourcing and installing all elements of one of Australia's largest ever greenwalls on-time, cost-effectively and to a great standard.

"The plants looked amazing from day one, and have been maintained immaculately ever since," he said.

Irrigation for the plants is harvested from rainwater tanks on the roof of the building, and in an Australian-first on a project of this scale, LED Grow lighting supports the growth of the plants where there may be a variance in light levels internally.

"As the Project Manager responsible for building the new home for Mercedes-Benz Brisbane, one of the most prestigious and high-end buildings in Brisbane, I needed certainty from Vertikal Design for this integral part of the building," Steve Riches added.

"From myself and my team, we want to thank James, Sam and the whole team at Vertikal for delivering such a great result and making everything very, very easy."

Needless to say, the team at Vertikal Design are immensely, and it must be said, justifiably, proud of what they have produced at the Breakfast Creek Lifestyle Precinct.

#### BIOPHILIA - FULFILS OUR INNATE NEED TO BE WITH NATURE

Biophilia is humanity's intuitive and deeply ingrained attraction to nature. It actually means 'love for other life forms'. It's why almost everyone pictures a natural setting – a forest, a green field, a beach – when they want to feel calmer and more relaxed.

Vertical gardens are biophilic designs that integrate natural elements, materials and forms into architecture. Research has shown that they can provide us with measurable physical and physiological benefits such as:

- reduced stress levels
- enhanced cognitive function and creativity
- a deeper sense of happiness and well-being
  an ability to heal faster.
  Vertical gardens will often bring together a

wide range of plants. Research has shown this melange of species can have an even more potent biophilic effect.

#### AIR PURIFICATION - BREATHE PURER, SAFER INDOOR OXYGEN

In big cities, we spend close to 90% of our lives learning, working, socialising, relaxing and sleeping inside. These air-conditioned environments contain toxins such as formaldehyde, VOCs, trichloroethylene, carbon monoxide, benzene, toluene and xylene – a heady concoction for our lungs to try and filter every day.

Plants have long been known to naturally absorb and filter air pollutants. More recently, a NASA study found that:

- plant leaves and root micro-organisms can remove these toxins from modern building air
- certain tropical species are more efficient than others
- extra oxygen released from plants helps keep people awake and alert.

With a vertical garden, you could have hundreds of plant species matched to your environment creating safe, clean air in your building day and night.

#### THERMAL BENEFITS - FOR PEOPLE AND POWER BILLS

#### EXTERNAL VERTICAL WALLS

The Urban Heat Island (UHI) effect is a result of the land and atmosphere being modified to build cities. Hard inert surfaces – such as building walls – become far hotter with increasing exposure.

Vertical gardens will play an important role in making the cities of tomorrow more sustainable by:

- reducing thermal energy flowing through building walls to inner surfaces
- decreasing cooling load demands placed on air-conditioning systems
- increasing energy savings.

#### INTERNAL VERTICAL WALLS

An inside building wall featuring a range of lush, green plant species will emulate a natural exterior environment, resulting in:

- a slightly cooler air temperature
- a more natural humidity level
- subtle, pleasant airflow not present without vegetation.

#### ACOUSTIC - MORE COMFORTABLE SOUND LEVELS

In reverberation chamber tests and many different building settings, internal vertical gardens have proven to:

- increase wall sound absorption coefficiency
- enhance speech privacy
- improve ambient noise levels of office environments

For further information, please visit: www.vertikal.com.au

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Australia is moving to MASH tested Crash Cushions on December 31st 2019 and the time to prepare, is NOW!

According to the Austroads / ASBAP 'Transition to MASH' process, tenders called for new crash cushions installed on Australian roads after December 31st 2019, will require them to be tested and approved under the AASHTO MASH guidelines, rather than the superseded NCHRP350 guidelines.

> With this date rapidly approaching, **NOW IS THE TIME** to start preparing for this critical transition.

#### SMART CUSHION has been ASSESSED, APPROVED & RECOMMENDED FOR ACCEPTANCE throughout Australia by ASBAP (Austroads Safety Barrier Assessment Panel).

**SMART CUSHION** has been used in the USA for

almost two decades and in Australia for over 5 years.

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SMART CUSHION is the
ONLY crash cushion to
have passed both the
NCHRP350 and
MASH-2016 crash test
standards.
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# DECEMBER 2019



# **SMART CUSHION** Speed Dependent Crash Attenuators

# **SMART CUSHION** Speed Dependent Crash Attenuators

# MASH TESTED & APPROVED



### **SAVE TIME...**

For most impacts up to 100km/h (by vehicles up to 2,270kg) the SMART CUSHION can usually be repaired and reinstated into service in under 60 minutes.



## SAVE MONEY...

In 90% of all impacts in Australia, the only spare structural parts needed for repairs are 2 shear pins (COST <\$5). After 59 impacts in Australia, the average cost for each reset was \$169.



# SAVE LIVES...

After more than 20 years of successful service internationally and over 5 years successful service in Australia, SMART CUSHION has been directly credited with saving numerous lives and significantly reducing the severity of injuries in literally thousands of impacts.



## Otto Balcony Danger - The 'Tip Of The Iceberg'

The Australian Balustrade Association has warned that the balcony problems reported at Sydney's Otto building, in Rosebery, Sydney, are just 'the tip of the iceberg.'

Since its inception earlier this year, the Association has been lobbying for an urgent review of balustrade standards, certification and industry training.

According to ABA Executive Manager, Patrizia Torelli, there are many in the balustrade industry who fear that without change, there may be major injury or loss of life, due to inappropriate materials and fittings. The trend towards using 'glass' in balustrades has escalated the problem.

"Many in the industry won't let their children run out onto a glass balcony, when on holidays, because they know the risk," Ms Torelli said.

"We believe there may be literally hundreds of new and old buildings with unsafe balconies and balustrades nationwide," she added.

"As the responsible industry body, we are seeking a review of current balcony standards, certification and training."

At an industry event in August, a packed glazing industry audience gave resounding support to calls for urgent revision of current Australian glass balustrade safety standards.

More than 100 delegates at Australia's largest gathering of window, glass and security screen specialists, agreed that glass balustrade failure is a national problem.

Professional Engineer and Standards expert, Phillip Davies, described the current AS1288-2006 'Glass in Buildings, Selection and Installation' standard as outdated and inadequate, even when it was introduced thirteen years ago.

Mr Davies told the industry audience that Australia is way behind countries like New Zealand and the United States, where glass balustrade standards have been updated to fit



with changes in glass balustrade technology - especially given the popularity of frameless glass balustrades.

In the latest glass balcony scandal, reported by The New Daily, occupants of the Otto Rosebery complex in suburban Sydney have been issued with 'urgent' instructions.

A safety letter, which has been reportedly sent to the residents of Otto Rosebery's 298 units, apparently instructed them not to lean on the balconies, let children play on them or let more than three people on at any one time.

The warning comes after an investigation allegedly revealed the block's balustrades were 'structurally defective' and of 'inadequate strength.'

In a national Safety Survey, conducted by the ABA earlier this year, more than 40 leading balustrade firms cited problems they had observed in the industry, including: use of inappropriate materials, inadequate fittings, and unskilled and uncertified operators.

There were reports that building safety certifications were issued before balustrades were fitted, which allowed developers to give costs and aesthetics priority over balustrade safety.

### ABOUT THE AUSTRALIAN BALUSTRADE ASSOCIATION

The ABA's goal is to prevent injury or death as a result of balustrades not fulfilling their purpose – to prevent falls.

ABA Members operate across all areas of the residential and commercial built environment. They are dedicated to unifying and developing a professional, sustainable industry, improving safety standards and eradicating unqualified or non-compliant work.

The ABA is dedicated to:

- Protecting the Australian public and the industry from unqualified or non-compliant tradespersons.
- Lobbying training regulators and governments to establish a stand-alone accreditation/ licence for the industry.
- Replacing state-based licensing with a uniform, national code.
- Promoting safety and integrity through the creation of national guidelines and standards
   for design, safety specifications, fit-forpurpose materials, monitoring and testing.

For further information, including membership enquiries, please visit: **www.theaba.asn.au** 



## Survey Reveals Need For Urgent Action On Safety

A national industry survey of stair and balcony professionals has confirmed concerns over current engineering, testing and certification standards - failures that could lead to injury or loss of life in Australian buildings. Conducted by the newly-formed Australian Balustrade Association (ABA), the safety survey collated data on issues including balustrade failures, near-misses or accidents, as well as information on the most prevalent balustrade safety issues in members' states or regions.

There were responses from 38 major industry installers, suppliers, designers and certifiers from around the country. Findings included reports of glass balustrade breakage, poor balustrade fixings, inappropriate materials and an alarming number of unlicensed and untrained installers fitting life-saving products.

The survey findings support the ABA's proactive discussions with the Industry Skills Commission, regarding the establishment of new training and licensing classifications, to prevent unqualified and unsafe balustrade installation.

The survey findings have sounded alarm bells throughout a construction industry that is already facing multiple safety issues, like the non-compliant use of flammable cladding, the cracking of the Opal Tower apartment block and multiple instances of balustrade failure in high-rise buildings.

In order of priority, survey respondents called for the clarification of engineering and testing standards, with the potential adoption of a national code of practice, and the introduction of a single national certification process, to assist designers and certifiers.

These are areas where the ABA is working with state and national regulators, to bring about Australia-wide design and compliance standards for timber, iron and glass staircases and balconies.

Respondent recommendations included a call for site-specific balustrade engineering, fixings and materials to be assessed and certified before any building works commence - a recommendation put forward at an ABA launch forum earlier this year. Site-specific certification would accommodate variances in glass types, sizes, wind loading, positions of fixings, odd shapes, cut-outs, fixing types,



positions of handrails, loading applications and safety margins.

Other recommendations included balustrade re-certification every two years for commercial properties and each time a property is sold, similar to current pool fencing regulations.

The inappropriate use of pool fencing was also cited as a serious safety problem, with pool fencing products being fitted as life-saving balustrades by uncertified trades people, the DIY market and builders.

One respondent wrote, '...Installation is a major issue within our industry. Licensing our glaziers/fabricators is a must. Educating them, and offering a level of services for them to become licensed, is extremely important.'

Australian Balustrade Association Executive Manager, Ms Patrizia Torelli says the survey findings have helped confirm the ABA's priorities over the coming months.

"We will be proactive in making the changes that are essential to the safety of all Australians, at home, at work and in public buildings," Ms Torelli said.

"There can be no compromises when it comes to stair and balcony safety, and I thank the industry leaders who participated in our national safety survey," she added.

For more information visit: www.theaba.asn.au

# Industry Alarm at National Safety Problem

A packed glazing industry audience gave resounding support to calls for urgent revision of current Australian glass balustrade safety standards, in Sydney recently. With a unanimous show of hands, more than 100 delegates at Australia's largest gathering of window, glass and security screen specialists, AusFenex, agreed that glass balustrade failure is a national problem.

Professional Engineer and Standards expert, Phillip Davies, described the current AS12882006 'Glass in Buildings, Selection and Installation' standard as outdated and inadequate, even when it was introduced thirteen years ago. Mr Davies is founder of Davies Laminated Glass Consulting (DLGC). He is a past member of the Standards Australia BD-007 'Glass in buildings' Committee and has represented Australia on ISO Committees and Working Groups.

Mr Davies told the industry audience that Australia is way behind countries like New Zealand and the United States, where glass balustrade standards have been updated to fit with changes in glass balustrade technology - especially given the popularity of frameless glass balustrades.

During the panel session, Australian Balustrade Association co-founder, Sam Bevis cited some alarming 'close calls' where glass balustrades had failed.

He described how young children came within centimetres of falling from a Queensland holiday high-rise, where a glass balcony balustrade had failed and fallen into a garden, unnoticed.

Sam said that his company was asked to replace the failed balustrade with exactly the same glass fitting. Alarmingly, the glass was compliant with the current standards, 'ensuring the situation could happen again.'

"The national problem is that we are waiting for an incident to happen, no different from the cladding fires, before we actually make a change," he said.

Fellow panelist, Peter Condon, co-owner and founder of Euroglass Australia and 1st Glass Australia, said that the industry would benefit from greater education and uniform interpretation of standards and compliance. He also reinforced industry calls for certification of balustrades to occur earlier in the construction process. In many cases, building certification does not include a building's balustrades, which are specified after certification has taken place.

Training package specialist, Vince Panozzo, urged the industry to join the Australian Balustrade Association, to strengthen the glass balustrade industry's national voice, and add their input to efforts to introduce agreed national training and accreditation standards.

To comment on glass balustrade training, accreditation and industry development needs, please contact the ABA at: training@theaba.asn.au



### **ABOUT IPWEA NSW**

The Institute of Public Works Engineering Australasia (IPWEA) NSW Division is the professional membership organisation which provides services and advocacy for those involved in and delivering public works and engineering services to the community.

IPWEA NSW has been established as a charity with the purpose of advancing the public works sector in Australia, particularly in NSW. Our mission is to enhance the quality of life of NSW communities through excellence in public works and services. We seek to inform, connect, represent and lead public works professionals in NSW.

Many of our members are engaged in local government, the tier of government that has at its heart the provision of public infrastructure, works and services, management of roads, bridges, community health, road safety, sport and recreational facilities, water and sewer, emergency management which are all key areas of responsibility for local government engineers.

To become involved in this prestigious membership organisation, contact us via email at: nsw@ipweansw.org or go to our website and sign up via our new system and membership portal at: https://www. ipweansw.org/membership

Don't miss out on the opportunity to be a part of something special.



# Young IPWEA NSW Professionals Tour

In July 2019, Young IPWEA held its first Young IPWEA Professionals Technical Tour at the NorthConnex Project Site in Pennant Hills. This was a great event for our members and community to learn about an exciting (and challenging) engineering project right in our back yard! It also provided a great opportunity for young professionals to network and engage with each other, and share knowledge of their own experiences.

During the tour, the group learned about the specifications of the project, constraints and difficulties the project faced, and the strength of community engagement in delivering such a massive project. The tour also heard about how the project team worked with neighbouring councils for a positive community outcome.

After a presentation, the group went on a bus tour through part of the tunnel at the southern interchange with the M2. This showcased the scale and size of the tunnel project, the intricacies required in the design and construction of such work, and just how many people have been involved in the construction of this project. The end outcome is going to provide considerable travel time savings for those travelling between the M7/M2 and the M1.



## NSW Training Awards 2019

IPWEA NSW had great reason to celebrate recently when Warren Sharpe OAM, IPWEA NSW President, Elsie Pathmanathan, IPWEA NSW Professional Development Manager and Melvin Eveleigh, Director Safe Systems - Centre for Road Safety attended the *NSW Training Awards 2019.* 

Warren said, "It was a spectacular night, Elsie was an exemplar for our team, and there were many inspiring young people."

"Anyone who isn't grabbing and training young, talented people today needs to jump into action and make a start. They will be amazed by what they bring to the table," he added.

IPWEA NSW nominated the *Road Safety Audit Training* for the *Industry Collaboration Award.* The training was put together in collaboration with Transport for NSW. We are extremely proud to announce that from the 900 submissions across 8 categories we came a close 2nd.

The RSA Training has grown massively over the past few years. IPWEA NSW secured funding, developed the course further working closely with RTD and C4RS, and trained 122/128 Councils in NSW to provide them with staff newly trained in road safety audits.

"What we get to do as the IPWEA NSW Team is 'pretty cool' and a real privilege," Warren concluded.



IPWEA NSW President, Warren Sharpe OAM, and IPWEA NSW Professional Development Manager Elsie Pathmanathan at the recent NSW Training Awards 2019.



Decked out in shades of pink and purple, Sydney Town Hall provided the perfect location for the gala Awards event.

### Ken Halstead OAM Awarded the Keith H Wood Medal

Mr Ken Halstead OAM has been awarded the Keith H Wood Medal during the opening ceremony of the IPWEA International Public Works Conference in Hobart. This medal recognises an outstanding engineer in public works, who has demonstrated exceptional dedication, leadership, and contribution to both the industry and IPWEA over a significant number of years and is worthy of the highest industry commendation. This is the most prestigious award presented by IPWEA.

Ken Halstead OAM has spent almost 30 years in both metropolitan and rural Councils, 19 of them as a Director of

### John Roydhouse to step down after nearly 12 years' service

Mr John Roydhouse, Chief Executive Officer of the Institute of Public Works Engineering Australasia NSW Division has announced his departure from IPWEA after nearly 12 years of dedicated service.

Joining IPWEA NSW back in February 2008, initially as Executive Officer then for the past six years as Chief Executive Officer, under John's leadership IPWEA NSW has continued to promote its purposes to enhance the quality of life of NSW communities through excellence in public works and services.

"Large in stature, even larger in passion, John's commitment to our IPWEA NSW family and our mission to help communities across NSW be stronger, more resilient and safer, is unparalleled," says IPWEA NSW President, Mr Warren Sharpe OAM.

"As IPWEA NSW CEO, John has been a strong visible presence championing public infrastructure and the people who work tirelessly to keep our communities moving forward," he added.

"For the board, our staff and our members, John has been a major influence in building a strong and influential organisation and he is leaving very big shoes to fill."

"Always accessible, tackling all in front of him, while caring about and placing our members' needs first, has always remained a priority for John," Mr Sharpe said. Engineering and/or Town Planning. He has also spent time as a senior lecturer at NSWIT/UTS teaching Road and Transport Engineering, Engineering Mechanics, Introduction to Civil Engineering, Environmental Planning and Law, Road Engineering Practice and Environmental Assessment and Planning. He has done this full-time for 18 years and part-time for 16 years.

Ken gets involved with every aspect of IPWEA including chairing sessions, speaking and presenting at the NSW state Conference, presenting at the IPWEA NSW Development Engineering Forum and being a big part of IPWEA NSW professional development including presenting and teaching and also generating content for the various workshops.

Congratulations again Ken, you really are a very worthy winner.



"We are extremely grateful to John for his leadership and service to IPWEA NSW, and we wish him well in his future endeavours," Mr Sharpe added.

Mr Roydhouse said "IPWEA NSW is a significantly different organisation to the one I was introduced to in February 2008, growing in reputation, awareness and influence ever since. The level of engagement with members has also increased significantly with our events continuing to grow."

He added, "There have been numerous highlights and achievements, above all, a sense of fellowship within IPWEA that will be hard to replicate."

The IPWEA NSW Board will begin the process of an executive search to identify a worthy successor with Mr Roydhouse completing his duties with IPWEA NSW at the end of November.

Construction Engineering Australia • Oct/Nov 2019 23

This 'slip on' tipper/ tanker uses a 4" Aussie Quick Prime electric drive Kubota diesel pump.

# Water Cart Pumps Unsung Heroes Of The Construction Industry

When Australian Pump Industries got started 25 years ago, one of their very first products was a Honda engine powered 3" tanker pump designed for basic water delivery. Since then, the world has changed and dust suppression is not just a desire but an essential addition to all earthmoving and construction projects.

Input from the market inspired the company to develop a wide range of pumps suitable for water carts with petrol, diesel and even hydraulic drive configurations. The company progressed to diesel drive pumps with a focus on both Yanmar and Kubota as the key drive.

"These reliable Japanese-designed engines provided loads of power and reliability," said Chief Engineering Officer, John Hales.

"Parts are also readily available in Australia and overseas," he added.

Twenty-five years ago, most road construction work was limited to a motor grader, a vibrating or multi-tyred road roller and a beat up old tanker with a dribble bar. Today we live in a more sophisticated world where dust is regarded as a pollutant and people don't like their shiny new sedans being covered with dust or mud when they drive through a road under construction.

The result is the continuing sophistication of water carts with water cannons, sophisticated angle sprayers and pumps that are a capable of working ten hours a day without failure.

#### **HYDRAULIC DRIVE TANKER PUMPS**

Australian Pump was one of the first companies to develop a hydraulic drive tanker pump. They took a cast iron industrial trash pump and turned it into a high-pressure hydraulic drive piece of kit that can deliver flows of 1,200 lpm and pressures to 50 psi.

"Not only is that a great success, but we were even able to offer the advantage of a clean-out port being built into the pump's bowl. That means no disconnecting pipework to carry out a pump flush," John Hales said. Australian Pump claim that the beauty of the hydraulic drive is that it defeats the massive maintenance problem of dust on the small single-cylinder engines normally mounted at the back of the tanker.

"Dusted engines are a thing of the past when you go hydraulic," said Hales.

"The system is sealed and protected from dust ingress. What's more, because the drive lines from the hydraulic pump to the hydraulic motor driving the water pump are flexible, the pump can be mounted wherever you like."

The Hydraulic drive tanker pumps also deliver a range of other benefits. The big self-priming cast iron pumps are not subject to issues with pressure spikes. They prime from vertical depths of up to six metres, so you can refill the tanker from streams, rivers or dams when necessary.

"We've heard of construction site tankers being used in emergency fire-fighting applications where that self-priming capability is a godsend," Hales said.

#### **CHOICE OF DRIVES**

Aussie's family of self-priming tanker pumps isn't only available in hydraulic drive. The same family of pumps are also available in heavy-duty cast iron construction pedestal pumps with bare shaft. Bare shaft means the pump can be run off PTO shaft, or even by pulley drive.

All units feature cast iron foot mounts and a separate flanged bell housing to mount the hydraulic motor. The mount for the hydraulic motor and the pump pedestal can be aligned for easy installation on rails or a flat tray.

The company chose Casappa gear motors for their reliability, reasonable cost and rugged design. The motors are simple, capable of dealing with a little contamination, and easy to repair.

#### **BIG PUMPS MAKE SENSE**

In the Aussie GMP hydraulic and bare shaft drive configuration pumps, the largest is a high pressure, high flow 4" unit with tremendous performance. It can push up to 2,900 lpm out and at the same time offer pressures as high as 50 psi. Together with this outstanding performance, the pump also has the ability to draft water from 6 metre vertical lift. It also features the simple cleanout port fitted on the front.

"Tanker operators love the design of these pumps," Hales said. "They're not only robust, they're also simple to service, with very few moving parts."

"We like the idea of running the pump from a dust free hydraulic circuit, preventing 80% of the failure of tanker pump engine drive units," he added.

The big 4" pump, Aussie's B4XR-A is claimed by the company to be simple to mount and to represent excellent value for money.

#### THE ADVANTAGE OF HYDRAULICS

Hales says you can summarise these advantages very simply. It basically gets back to excellent pump performance with virtually unlimited horsepower. That allows the pump to perform to its maximum capability.

The hydraulic motor also means a clear circuit. And when combined with a cast iron trash pump design, the pumps will handle even small solids in suspension without problems.

Hales also points out the elimination of small petrol or diesel drive engines doesn't only save fuel and space, but dramatically cuts maintenance costs and downtime.

"Our prices for hydraulic drive pumps, all built to ISO 9001 standards, are extremely reasonable compared to diesel drive units," said Hales.

The company is currently working on developing 316 stainless steel versions of these pumps and already offers a range of bronze hydraulic drive pumps suitable for handling seawater or other corrosive liquids.

"The 316 stainless steel pumps are currently being used by the Australian Army in both 3" and 4" configuration," he said. "The Army likes the idea of 'bullet-proof' self-priming pumps they know will never give them a rust issue.

Further information on Aussie Pumps, including a free tanker and water cart selection guide is available from Australian Pump Industries at: **www.aussiepumps.com.au** and authorised distributors around Australia.

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### Reduce your environmental footprint

# **The Truth About TMAs**

Dispelling some of the myths and rumours surrounding TMAs and Australia's Transition to MASH



It's fair to say that since the Austroads Safety Barrier Assessment Panel (ASBAP) announced its *Transition to MASH* program some 18 months ago, the traffic management and road construction and maintenance industries have been literally bombarded with information relating to the capabilities, performance and eligibility of different Truck Mounted Attenuators (TMAs) after the final transition date on 31st December 2020.

The Transition to MASH represents a significant change in how safety barrier devices such as TMAs will be assessed for suitability for use on the Australian road network. As such, it's also clear that as part of that process, TMA owners and operators need to be fully informed of the new Standards, regulations and operational requirements.

While there has been no shortage of TMA-related information 'doing the rounds' over the past 18+ months, it's also clear that not all of it is accurate... In fact, far from it! Indeed, it's fair to say that some of the information being distributed – especially in relation to the Scorpion II TMA - could at best be described as highly inaccurate, and at worst, be described as malicious, alarmist and highly misleading.

With that in mind, HEA magazine recently sat down with Janine Bartholomew, Manager of A1 Roadlines – the exclusive Australian distributor of the Scorpion II TMA – to address some of the claims and dispel some of the myths and rumours surrounding the Transition to MASH and the Scorpion II TMA.

# HEA: Hi Janine, thanks for joining us today. The Transition to MASH program is an extremely busy time for everyone in the industry, what have been some of the biggest challenges so far?

**JB**: Together with the work involved in the approval process, for us, one of the biggest challenges has been trying to dispel some of the myths, rumours and allegations being spread throughout the road maintenance and traffic management industries about the Scorpion TMAs.

HEA: What kind of myths and rumours are we talking about specifically?

**JB**: One of the first myths doing the rounds was that once we got to the December 31, 2020 deadline, everybody's older TMAs would be taken off the road and no longer be able to be used because they had been tested and approved to NCHRP-350 rather than MASH. This is simply not true. The MASH testing requirements only apply to new equipment.

## HEA: I'm assuming that myth caused a lot of stress for existing equipment owners?

**JB:** It certainly did. We were inundated with calls from equipment owners who were panicking because they'd been told that their TMA trucks were all going to be taken off the road and they wouldn't be able to use them again! That would be an absolute disaster for any equipment owner.

### HEA: So, to be clear, the new 'Transition to MASH' requirements don't render your existing equipment obsolete after the cut-off date?

JB: Absolutely not. To suggest otherwise is simply not true. Existing equipment, including the older Scorpion TMAs approved for use on the road network prior to December 31, 2020 will still be able to be used after that date. What's more, there is no cut-off date for existing equipment.

#### HEA: There have also been some claims that the Scorpion II is 'not really' or somehow 'not fully' MASH tested and approved... how do you respond to those allegations?

**JB**: Both the Scorpion II Truck Mounted Attenuator and the Scorpion II Trailer Mounted Attenuator are fully tested, passed and eligible – or in common terms, fully tested and certified - to MASH 2016 testing and assessment standards.

In fact, the Scorpion II TMA was actually the first TMA to be fully certified under MASH 2016. The official eligibility letters (CC-132 and CC-138) are available on the U.S. Department of Transportation website for all to see.

All of the documentation, including full details of the MASH tests, is also available on our website (**www.a1roadlines.com.au**).

We're also happy to provide copies of the testing approvals via email to anyone who wants to check them.

#### HEA: What about the allegations that the Scorpion TMA is 'not fully' MASH tested because it was tested with an impact speed of 100 km/h rather than 110 km/h?

**JB:** That just is another one of the ridiculous claims doing the rounds at the moment. And I call it ridiculous because it makes no sense whatsoever.

Each of the MASH tests have extremely strict criteria and must be carried out accordingly. Vehicle weights, impact angles and impact speeds are all specified, and must all be strictly adhered to - they're not optional. The tests need to be carried out as specified, under strictly controlled conditions to ensure the product being tested meets all of the performance requirements before it can be certified.

The impact speed requirement for the MASH Level TL-3 tests 3-50, 3-51, 3-52 and 3-53 is 100 km/h at specified impact angles, and the Scorpion II was successfully tested and certified to those requirements.



**Top:** During '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.

**Above:** The Scorpion II was also successfully tested to MASH 2016 while attached to an unblocked host vehicle weighing 6803kg with the parking brake engaged and the transmission in 2nd gear. The TMA has a recorded roll-ahead distance of 16.8 ft (5.1 m) when impacted by a 2012 Dodge RAM 1500 4-door pickup truck weighing 2266kg at an impact angle of 10.3° and with an impact speed of 103.08 km/h.

HEA: A lot is being made of roll-ahead distances during an impact, and this has led to a number of serious allegations in relation to the Scorpion II's performance and capabilities during an impact. Indeed, together with the claim that no roll-ahead distances have been measured for the Scorpion II during testing, it has also been inferred that the Scorpion II somehow avoided being tested for rollahead distances because it was attached to a host-vehicle that was 'anchored' to the test bed to prevent it from moving forward during the impacts.

**JB**: Again, this is yet another highly misleading claim being made about the Scorpion II, in what I can only assume is an attempt to seriously undermine the product's reputation.

To suggest that the Scorpion II was somehow not subjected to the full rigour of MASH testing because some of the tests were conducted as 'infinity' weight tests is another ridiculous claim. If fact, 'Infinity Testing' is the harshest method of testing the performance of a TMA during an impact.

#### HEA: So, what exactly is 'Infinity Testing'?

**JB:** In short, during an impact into a TMA out in the field, some of the impact energy is absorbed by the TMA, and some is absorbed by the forward movement of the host vehicle – the roll-ahead. Just how far the host vehicle rolls forward during an impact relies on a wide range of factors, including the weight of the host vehicle, the brakes, the tyres, the condition of the pavement, the weather, etc.

### HEA: That makes sense. So why would you test the unit with the host vehicle anchored in place?

**JB**: Testing a TMA with a host vehicle that can roll forward during the impact makes it much easier to obtain preferred Impact Severity (IS) values, thanks to the benefit of the host vehicle's forward movement.

On the other hand, testing the TMA on a host vehicle which is anchored in place 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. It's a much tougher testing regimen and is considered a 'worst-case scenario' test condition from the perspective of testing the TMA's capacity to absorb/dissipate 100% of the impact energy without the benefit of roll-ahead.

### HEA: What are the practical benefits of 'Infinity Testing' for TMA owners?

JB: As well as knowing that the TMA alone is capable of absorbing the energy of the impact without having to rely on the host-vehicle rolling forward, it also means that the Scorpion II TMA is the only TMA to be MASH certified with no upper weight limit for the host vehicle. Unless a TMA has been tested under blocked/anchored host vehicle conditions, there is no method for evaluating the TMAs capacity in the event the TMA is attached to a support vehicle beyond the tested documented weights used during MASH evaluation.

### HEA: So how are roll-ahead distances calculated for the 'Infinity Tests'?

**JB**: While MASH states that support truck roll-ahead distances should be documented, it also recognises that this is not possible during 'Infinity' tests. With that in mind, MASH 2016 Appendix Section A2.2.3 also states: "It is noted that roll-ahead distances can be accurately estimated from the "conservation of momentum" principle of mechanics based upon an estimate of the frictional resistance of the support truck to forward movement (70)."

70. Humphries, J and T.D. Sullivan. Guidelines for the Use of Truck-Mounted Attenuators in Work Zones. In Transportation Research Record 1304. Transportation Research Board National Council, Washington, DC, 1991

#### HEA: Is this information provided to your customers?

**JB**: Every Scorpion TMA comes with clear instructions as to safe operating distances and buffer zones to protect workers in a wide range of workzone conditions.

HEA: Were all the MASH tests carried out as 'Infinity Tests'?

JB: No. Tests 3-50, 3-51 and 3-52 which according to MASH 2016 (Sections 2.2.3.1 and 2.2.3.2) should be conducted with the heaviest allowable support truck or a rigidly blocked support truck for no upper support-truck weight limit (Infinite Weight), were conducted as 'Infinity Tests'.

Test 3-53, which according to MASH 2016 should be conducted with the lightest allowable support truck, had the Scorpion II TMA attached to an unblocked host vehicle weighing 6803kg, with the parking brake engaged and the transmission in 2nd gear. The TMA was then impacted by a 2012 Dodge RAM 1500 4-door pickup truck weighing 2266kg at an impact angle of 10.3° and an impact speed of 103.08 km/h

#### HEA: Were roll-ahead distances recorded for test 3-53?

**JB**: Absolutely... recording the roll-ahead distance is a requirement of the MASH 2016 testing. The recorded roll-ahead for the support vehicle was 16.8 ft (5.1 m).

#### HEA: Well, that seems to have addressed most of the rumours and myths doing the rounds at the moment. Is there anything else you'd like to add?

**JB**: I think the clearest lesson from the past 18 months is that you can't believe everything you read or everything you're told.

There is a lot of misinformation doing the rounds, but importantly, accurate information is readily available from a range of independent sources.

For us, we're only interested in looking after our clients and selling our products on their merits. With that in mind, we felt that it was important to set the record straight on some critical issues and address some of the myths and allegations that have been doing the rounds, so TMA owners and operators can make informed decisions based on accurate and factual information.

# **GET THE FACTS!** on TRUCK MOUNTED ATTENUATORS (TMA's)

### **BEWARE OF 'FAKE NEWS'**

With the move from NCHRP350 testing to MASH (Manual for Assessing Safety Hardware) as the preferred testing for Truck Mounted Attenuators (TMA's) in Australia currently progressing there has been confusion amongst some equipment owners as to what equipment is compliant and, perhaps more importantly, what the status of their equipment will be after Australia moves to MASH as the testing standard.



The move by the Austroads Safety Barrier Assessment Panel (ASBAP) towards MASH testing and certification is a complex process that will take some time to

implement. The Panel is transitioning the current suite of accepted road safety barrier systems and devices within the Australasian market to MASH guidelines over an extended timeframe, with Part 2 Products (which includes TMA's) to be completed by 31 December 2020.



This **DOES NOT** by any definition mean that non-MASH tested equipment is suddenly obsolete or can no longer be used. It also **DOES NOT** render TMA's that have

been previously approved as tested under NCHRP350 guidelines obsolete or unusable – to suggest otherwise is simply NOT TRUE.



While there is a formal agreement on the transition to MASH testing from NCHRP350 testing, there is **NO CUT-OFF DATE** for using equipment that has been certified under the g while it is operational – to suggest

NCHRP350 testing while it is operational - to suggest otherwise is simply NOT TRUE.



Even if a TMA is recommended for acceptance at an Austroads level by ASBAP, it must still be approved for use in individual jurisdictions by the relevant State Authority.

The State Authorities are responsible for approving the use of TMA's in their individual jurisdiction.

This situation has no doubt been inflamed by the inaccurate information and spurious claims that have surfaced over the past 12 months – including claims that some units will no longer be permitted to be used after December 31, 2020.

With that in mind, the following fact sheet has been developed to provide key FACTS as to the current status of the 'Transition to MASH Guidelines'.



The transition to MASH guidelines is a lengthy and ongoing process and lists of 'Austroads Approved Products' are currently a Work in Progress. If a product does

not currently appear on a jurisdiction's list, or is not currently recommended for acceptance at an Austroads level by ASBAP, it **DOES NOT** mean that it has not been successfully tested and certified to MASH guidelines, or that it is not acceptable for use in that jurisdiction. It may simply have not yet been assessed by ASBAP.



The Scorpion® II Truck Mounted Attenuator was the first TMA to be fully certified as Tested, Passed and Eligible to MASH 16 by the U.S. Department of Transportation

Federal Highway Administration. The U.S. Department of Transportation Federal Highway Administration *Safety Eligibility Letter CC-132* for the Scorpion® II TMA can be viewed online at: https://safety.fhwa.dot.gov/roadway\_dept/countermeasures/reduce\_crash\_severity/barriers/ pdf/cc132.cfm



The Scorpion® II Trailer Attenuator is also fully certified as Tested, Passed and Eligible to MASH 16 by the U.S. Department of Transportation Federal Highway Administration.

The U.S. Department of Transportation Federal Highway Administration *Safety Eligibility Letter CC-138* for the Scorpion<sup>®</sup> II Trailer Attenuator can be viewed online at:

https://safety.fhwa.dot.gov/roadway\_dept/countermeasures/reduce\_crash\_severity/barriers/ pdf/cc138.cfm

### **CHECK THE FACTS**

Scorpion II<sup>®</sup> TMA









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# **50 YEARS OF EXCELLENCE IN CONCRETE**

The Concrete Institute of Australia is proud to announce the launch of its Golden Jubilee 50 Year Celebrations that will take place in 2020.

Activities include:

- Nationwide Birthday Party 17 April 2020
   National symposium Concrete Past, Present and Future October 2020
- Commemorative Book
- Young Professionals and Student Competitions
- Concrete in Australia Medallion



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https://www.concreteinstitute.com.au/Golden-Jubilee-2020





# **CONCRETE 2019 – AN OUTSTANDING SUCCESS**

The Concrete Institute of Australia's 29th Biennial National Conference, Concrete 2019, was held at the International Convention Centre in Darling Harbour, Sydney, from 8th to 11th September, and has been described many of the delegates as the best conference ever held by the Institute.

Concrete 2019 brought together over 530 delegates from 22 different countries around the world to Sydney for a week of learning, discussion, networking and fun. With a program that focused on the theme "Concrete in Practice – Progress through Knowledge", delegates were presented with an amazing opportunity to learn about latest trends, network with leading global influencers, and develop worldwide contacts in the industry. The conference exemplified its position as a truly international event, particularly with the support of the American Concrete Institute (ACI) and the large number of keynote and invited speakers that they provided, along with many other overseas delegates who were attending as speakers, exhibitors, sponsors, or delegates.

The secret to the success of the conference organisation was the dedication and experience of the Organising Committee. Conference Chairs, Dr Daksh Baweja and Dr Warren South, not only guided the team with enthusiasm, professionalism, and good humour, they also provided experience and networks to build a great framework for the conference. As Technical Chair, Warren was also able to work with a dedicated sub-committee to put together a program that was not only diverse and interesting, but led to many delegates describing it as one of the best the Institute as provided.

Concrete 2019 also saw the introduction of a Young Professionals sub-committee who were tasked with organising and leading events and activities that were focused on providing delegates under the age of 35 with networking and professional opportunities related to their needs. The sub-committee, which included outgoing Young Member Representative on Council, Isuru Daranagama, incoming representative, Jemma Ehsman, Victorian YMG member, Alastair Macleod, and NSW YMG member, Ali Amin, did an outstanding job and we are already eagerly awaiting what the next conference will bring for our up and coming concrete delegates.



With Organising Committee Members Malcolm Boyd (Sponsorship & Exhibition) and Doug Jenkins, the Technical Paper reviewers, the NSW State Committee, CIA staff members, and of course the Conference Organisers, Arinex, it was a huge team effort.

Whether you attended the technical sessions, sat in on multiple committee meetings, or networked with friends and colleagues, Concrete 2019 provided everyone with ample opportunity for educational growth and professional and development. In the words of one of long serving Members, it truly exemplified excellence in concrete!

#### **TECHNICAL PROGRAM**

The technical program was wide and varied, covering 20 different streams including alkali-activated concretes, bridge structures, case studies and major projects, construction, durability, precast and prefabricated concrete, reinforcing and prestressing materials, standards, specifications and codes and underground and foundation structures. Within these streams there were over 140 technical papers presented over 4 parallel sessions. The technical program however was headlined by 5 plenary presentations, along with 5 invited speaker sessions.



Highlights of the keynote and invited speakers were:

- Anne Ellis, founder and CEO of Ellis Global, as well as being a Past President of ACI, really set the tone for the conference from the outset with her presentation "The Innovation Imperative". Anne certainly got the delegates talking as she highlighted the importance of the concrete industry to start thinking about innovation in areas that may not seem to be under threat, but through disruption in the 21st century could impact the way it used in the future.
- Professor Christoph Gehlen from the Centre for Building Materials of Technical University of Munich presented on the "Performance-Based Durability Design and Assessment of Structural Concrete Members" and had all the durability experts sitting up and taking notice as he outlined performance-based service life design based on lab material performance along with in-field inspection data.
- Michelle Wilson from the Portland Cement Association (PCA), USA, and a Director at ACI, as always delivered a practical and entertaining presentation on "What Did I Just Promise You? Standard Specifications for Structural Concrete". No stranger to the Institute's members, Michelle's down to earth approach on specification practice resonated with the delegates across all sectors of the industry.

- David Polkinghorn, Design Manager for the Sydney Metro City & Southwest Tunnel and Station Excavation (TSE) Project, delivered the presentation "Challenges experienced with the design and construction of concrete on major projects" which focused primarily on the need for all aspects of any construction project to communicate and work together, with the role of design manager being central to this occurring.
- Emeritus Professor Elizabeth Taylor, who is Chair of RedR Australia, and Deputy Chair of the Washington Accord, International Engineering Alliance, rounded off our key note lectures with a thought provoking presentation titled simply The Future of Engineering Education that tied in with the conference theme "Progress through Knowledge" extremely well.
- Prof. Larry Sutter from the Materials Science & Engineering Department at Michigan Tech, Chair of ACI Committees 232 on Fly Ash and ITG-10 Alternative Cementitious Materials, and Secretary of ACI 201 (Durability) was also attending as the ACI Ambassador. Larry brought all his experience to the table as he provided our delegates with a presentation titled "Trends in Concrete Durability Specifications for U.S Transportation Agencies" and outlined a number of initiatives being implemented in this area.
- Jeffrey Coleman, Attorney at Law and Principal Partner of The Coleman Law Firm in Minneapolis in the USA, is also the incoming ACI President. Jeffrey was involved in the forum "Concrete – An Industry Ripe for Disruption" but also presented on "When is Crack a Defect, and When is it Not?" which included information from his book Legal Issues in Concrete Construction. Given the current climate in the Australian building industry this session was very popular.
- Andreas Tselebidis, who is the Director for Sustainable Concrete Technology and Solutions at BASF in the USA gave an entertaining, and extremely informative presentation titled "Engineering the Impossible – Building a Sustainable Future". Andreas' presentation style made delegates sit up and take notice on a topic that is extremely important on a global front today.
- Alessandro Palermo, Professor in structural engineering, academic researcher, and lecturer at the University of Canterbury, New Zealand, delivered a sobering but extremely important overview of the Morandi Bridge Collapse in Italy. There are still many questions being asked, and much to learn from this disaster, but Alessandro's presentation was informative, respectful, and well received.
- Mike Schneider who is Senior Vice President and Chief People Officer at Baker Concrete Constructions and Past President of the American Concrete Institute was at his second CIA conference and provided the delegates with a fascinating insight into the concrete construction capabilities of his organisation, using some high profile case studies, such as the Miami Frost Museum of Science, to display this.

If you missed seeing our keynote speakers, you can catch up on a number of their presentations on the Institute's YouTube channel where they can be found in full. (Search Concrete Institute of Australia in YouTube).

#### **EXHIBITION**

As always, the Exhibition was a vibrant cavalcade of concrete knowledge. With over 50 exhibitors from Australia and overseas, and with so many local and international delegates in front of

them, companies were able to show off the large array of new technologies and innovations that had on show. The exhibition is a traditional part of the Institute's conference and is always an excellent setting for networking, break outs, and of course, the Conference Welcome Reception.

#### **SPONSORS**



Concrete 2019 was most grateful for the support provided by all the sponsors of the conference. In particular, Conference Partners, Sika, who have been long-time supporters of the Institute and the concrete industry in general, along with our two conference Platinum Sponsors, BASF Master Builders and Penteron.

#### ACI

Concrete 2019 enjoyed the support of the American Concrete Institute (ACI) in many ways. In particular, the conference welcomed several well credentialed keynote and invited speakers who have great depth and knowledge of the industry, and experience within the ACI framework.



As part of the conference opening ceremony, the ACI's Senior Managing Director, Operations, Mr John Glumb, addressed the Concrete 2019 delegates on behalf of the organisation.

During his opening remarks, John highlighted not only the importance of the International Partner Agreement that is held between ACI and CIA, but the fact that it is the longest partnership of this kind that they have with any other partner. The relationship has always been highly valued by both parties and continues to be so today and in the future. John also participated in the Closing Forum *"Concrete 2030 – Surviving the Disruption"* where his experience in the global concrete market proved invaluable.

#### **CONCRETE 2019 SOCIAL EVENTS**

The Institute played host to the many overseas delegates and guests on the Sunday before the conference at an International and ICDC Delegates Reception. The reception, held at Planar in Darling Harbour, was a wonderful way for all the international travellers to meet fellow delegates and members of the Institute prior to the conference beginning.

The traditional Welcome Reception, held on the evening concluding the first day of the conference in the exhibitors' hall, was a wonderful evening. With over 500 people networking, socialising, and collaborating, it was a great way to work into the conference.

The premier event as always was the Gala Awards Dinner held on the second night of Concrete 2019, hosted by the ABC's James Valentine. At the dinner we recognised our new Life Members, Frank Papworth and the late Paul Mahaffey, four new Honorary Members in Ihor Hinczak, Vute Sirivivatnanon, Malcolm Boyd, and Bob Munn, and the 2019 National Engineering Bursary winner Mahdi Babaee. We also celebrated the winners of our "Awards for Excellence in Concrete" medallions in the categories of Residential Buildings, Commercial Buildings, Infrastructure, Repair & Rehabilitations, and Technology & Innovation, as well as our overall Kevin Cavanagh Trophy winners, Taylor Thomson Whitting, Johnson Pilton Walker, Precast Concrete Products, and Built.





**Left:** Dr Mahdi Babaee was awarded the 2019 National Engineering Bursary.

**Below:** MC of the Concrete 2019 Gala Dinner, James Valentine.



#### YOUNG PROFESSIONALS ACTIVITIES

For the first time the Concrete Institute of Australia's Young Members Group were actively involved in organizing activities and events for the conference and they certainly were "in the mix".



Jemma Ehsman from Vinsi welcomed the delegates on the first morning on behalf of the young professionals, and it was fabulous see them all take full advantage of the opportunities to present, network and learn. Highlights included:

- The Young Members Drinks at the Watershed Hotel following the Welcome Reception, which seemed to be gatecrashed by a few people a bit older than 35. The mix of local and international delegates at this function was fantastic to see!
- The Networking Breakfast the following morning was extremely well attended, and our special guest, key note speaker Anne Ellis, was in heavy demand. Anne commented afterwards how delighted she was to be able to be a part of the morning.
- Andras Fehervari from Deakin University taking out the Best Under 35 Paper Award for "Workability and fresh properties of a low CO2 footprint concrete" that he co-authored with a number of colleagues from Deakin.
- Seeing some many of our young Under 35 concrete professionals presenting, exhibiting, chairing, and participating at Concrete 2019.





#### FORUMS

Concrete 2019 provided delegates with two forums that were facilitated by Chris Clark, renowned strategic thinker and facilitator, as well as an entertaining presenter, and included several industry representatives from all sectors including academia, design, construction specification, supply, asset owner, and industry representation. Their aim was to provide some thought provoking discussion and ideas, and start looking at solutions, by challenging the various sectors to identify what it is that's changing, the disruption these changes will have on the concrete industry, and what the knowledge gaps are that need to be addressed.



The first of these forums, titled "Concrete – an Industry Ripe for Disruption" noted that changes in concrete design and construction are a given, not a maybe, and the impact will be felt right through the various sectors within the concrete industry. Chris Clark asked the question - what are the disruptors to our industry that are going to stifle progress and create challenges, and what are we doing to address them?

The forum panel, which included Shan Kumar – Associate for Resources & Manufacturing at Hickory, and incoming President at the Concrete Institute of Australia, Des Chalmers – Director, Cement & Fly Ash Advisory, Kevin Doherty – Executive Director, Office of Projects, Victoria, Colin Edmonds – Technical Principal – EIC CIMIC Group, and Jeffrey Coleman – Principal Partner, Coleman Law Firm and incoming ACI President, tussled with issues related to material supply, overseas resources, new materials, sustainability benchmarks, inexperienced industry practitioners, hindrances to innovation and change, and current perception and challenges in the building industry.

Jeff Coleman's experience in concrete construction law in the USA allowed him to outline some similar examples of past construction challenges experienced in North America similar in nature, and the expectations that are now required around certification. One interesting comment posed from the floor was that the industry is being complacent and not moving in the direction required to address the various issues. Overall the panel discussion and questions from the floor provided a lot of food for thought.

The second forum, "Concrete 2030 - Surviving the Disruption", a new group of panelists were asked by Chris Clark to try and address some of the issues that arose from the first discussion. The panel was made up of industry stakeholders whose role it is to collect, transfer, and use the knowledge, and included Professor Anne Gardner, Head of School, School of Professional Practice and Leadership at UTS, representing academia; Nicholas Boey, Principal Engineer at Northrop Engineers, representing the future of engineering practice; and three leaders in professional and industry associations in the concrete industry - John Glumb, Senior Managing Director of Operations at ACI, David Millar, CEO of the Concrete Institute of Australia, and Ken Slattery, CEO of Cement Concrete Aggregates Australia.

#### NATIONAL AWARD WINNERS

The State winners of the Awards for Excellence in Concrete were all showcased at the Gala Dinner at Concrete 2019 with the winners announced in the 5 categories as well as the overall Kevin Cavanagh Trophy for Excellence in Concrete. The National Winners were:

#### Excellence in Concrete - Commercial Building Projects, and Winner of the Kevin Cavanagh Trophy

#### **Anzac Memorial Centenary Project**

Taylor Thomson Whitting, Precast Concrete Products, Johnson Pilton Walker, and Built



As part of the NSW Centenary of Anzac, the Memorial was redeveloped to construct new education and interpretation facilities, including a water cascade that completes the original 1930's vision for the Memorial, and to enhance the site as a focal point for future generations to learn about our Anzac legacy and Australia's war history. The

combination of the smart finish in off white coloured concrete with the structural requirement for prestressing was a triumph for the Architect, Engineer, Builder and Precaster.

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Excellence in Concrete – Residential Building Projects Mosman House Partridge Structural



Mosman House showcased concrete design, detailing, planning, execution, construction, and finishing at its finest, which included large spans, high-performance structural elements, and large concrete pours and details that pushed the limits for crack control and shrinkage.

#### Excellence in Concrete – Infrastructure Projects Mandurah Bridge Replacement Project

Main Roads WA, City of Mandurah, Georgiou Group and BG&E.



The overall solution with its integration of curvature, unique cross section, pier shapes, shared path providing separation from road traffic, and connection with the water and the past, achieved the objectives for a high quality aesthetically appealing landmark structure.

Excellence in Concrete – Repairs & Rehabilitation Projects Brooklyn Trunk Sewer BTSO01 Rehabilitation Eywad



The structural condition of the entire structure had deteriorated significantly over time, due to the hydrogen sulphide gas attack and the resulting works reintroduced the structural integrity of the base structure and extended the structures service life.

#### Excellence in Concrete – Technology & Innovation LaTrobe Street Student Accommodation

Hickory Construction Group



At nearly 150 metres high, 50 LaTrobe Street is one of the world's tallest student accommodation projects to use the innovative prefabricated speed safe construction method. The utilisation of this method reduces both build time and construction impact for neighbouring properties, creates a safer environment during construction, and limits disruption by taking key activities off-site.









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Rodney Paull Concrete 2021 Chair


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# AUSTRALIA PRESENTS AT MALAYSIAN CONFERENCE

As Malaysia's Federal Government regulates, develops and facilitates its construction industry toward global competitiveness, it has recently turned its focus to Australia. But perhaps there are lessons we here in Australia can learn from Malaysia, says National Precast's CEO Sarah Bachmann.

At the request of the Malaysian Construction Industry Development Board (CIDB), Ms Bachmann recently presented at the Board's The Way Forward conference in Kuching, Sarawak. The conference was attended by over 400 local builders, government officials and students in an effort to spread the word about IBS and encourage its uptake.

#### GOVERNMENT MANDATES IBS TO IMPROVE SAFETY, QUALITY AND PRODUCTIVITY

IBS – or Industrialised Building Systems – is being mandated in all new construction by the Construction Industry Development Board as a measure to improve safety, quality and productivity in the construction industry.

Since 2008, the Government has mandated that all public projects over RM10 million (or A\$3.5 million) must adopt IBS and achieve a minimum IBS score of 70. IBS is also compulsory for all private projects over RM50 million (or A\$17.5 million) and these must achieve a minimum IBS score of 50.

#### PRECAST AS LEAD IBS PRODUCT

In Malaysia, there are five IBS groups. Of these, the most common group of IBS products is precast concrete elements. Other groups include steel formwork, steel framing, prefabricated timber and blockwork.

### RESULTS ON TARGET, WITH HELP FROM GOVERNMENT

According to the CIDB Chief Executive, Datuk Ir. Ahmad 'Asri BinAbdul Hamid, who officiated the conference, the Government's commitment to boost construction productivity and efficiency has resulted in a more than threefold increase in the adoption rate of IBS, from 24% in 2014, to 81% as of June2019.

As of 2019, 35% of private projects have achieved IBS scores above 80. The government has funded the development of education for designers, builders and installers and is in the process of developing a licensing system for precast concrete manufacturers. It also provides financial incentives, including tax holidays for qualified producers, import duty exemption for heavy equipment and subsidised BIM technology.

#### **LESSONS FOR AUSTRALIA**

Ms Bachmann says that government in Australia could learn a lot from the Malaysian example.

"The Malaysian Government is looking to us as an example of a well developed IBS market. In terms of market adoption, that holds true for some sectors but not for all," says Ms Bachmann.

"Our precast industry here in Australia is well advanced with established supply chains. We manufacture in safe working environments, minimise construction waste and deliver quality products that are erected quickly. But our government could do a lot more to lead the way in improving construction industry productivity by setting targets and providing incentives," she suggests.

"Our Federal Government is generally focused on developing programmes that it believes should be implemented with limited industry consultation. Any funding that is made available is to adhere to strict and restricted programme requirements, meaning it is not always of value to industry. That means it doesn't always improve net outcomes.

"Our Government would be well served to look at the Malaysian model of mandating more use of off-site manufactured product in construction, better regulating the industry, investing in training programmes and providing incentives for its implementation," she adds.

#### IBS FOR SUSTAINABLE CONSTRUCTION

The term IBS is well recognised internationally. It represents systems which invest in equipment, technology and facilities that will maximise safety, output and quality while minimising wastage and labour.

In construction, the unique characteristics of IBS deliver sustainable outcomes and translates into increased use of prefabricated products, where elements of a structure such as walls, floors, beams, columns, stairs and so on are manufactured in a quality-controlled environment.

# A OLD FACE FOR NATIONAL PRECAST

National Precast has recently appointed a State Co-ordinator for Queensland. Peter Coombs, who has had many years in senior roles with Holcim and Humes, has come on board to be the face of National Precast in Queensland.

According to National Precast's CEO Sarah Bachmann, Peter's appointment is part of a multifaceted plan to restructure the organisation and grow membership.

"We want our State Co-ordinators to be our eyes and ears on the ground. With only a small staff in the national office here in Adelaide and a big workload, our ability to get out to visit members and encourage precasters to join, is limited," Ms Bachmann says.

"We're delighted that Peter has come on board. His background will be a huge asset to the industry in Queensland," she adds.



National Precast's new State Co-ordinator Peter Coombs, joins with many years of senior management experience with Humes and Holcim

# National Precast is on the lookout for people to act as State Co-ordinators in all states other than Queensland.

The role of State Co-ordinators is to:

- increase the state's membership base across all membership categories, prioritising Precaster membership;
- improve the personal connection between National Precast and its current membership in that state;
- promote Association services and activities; and
- identify new services, activities and training opportunities which could be developed and offered by NP.

Applicants should know and have experience with the precast industry, be excellent communicators and have loads of initiative. Anyone interested should email their details to Sarah Bachmann at exec@nationalprecast.com.au

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# PRECAST SHINES AS ANZACS COMMEMORATED

National Precast Member Precast Concrete Products has been recognised for its outstanding work on Sydney's ANZAC Memorial. Winning multiple categories in the Concrete Institute of Australia's 2019 Awards for Excellence in Concrete, the ANZAC Memorial in Hyde Park is testament to the design flexibility of precast as it honours the 100th Anniversary of the First World War.

According to National Precast CEO Sarah Bachmann, it's no surprise that this project has come up trumps in the Awards, winning the State Awards for Excellence in Concrete, then going on to win the Commercial Buildings Award and Kevin Cavanagh Trophy in the national Awards. The prestigious Kevin Cavanagh Trophy is the highest honour that can be awarded to a concrete project.

"Brisbane-based Precast Concrete Products has an impressive track record in manufacturing outstanding quality precast for some of the country's most architecturally challenging projects. The attention to detail that has been applied to this project is consistent with the approach this company takes to every project," Ms Bachmann comments.

#### **RECOGNISING 1930'S DESIGN INTENT**

The War Memorial was originally designed by architect Charles Bruce Dellit and built in the 1930's to pay tribute to the ANZAC landing at Gallipoli in World War I. The \$40 million expansion to mark the one hundred year commemoration is a partnership between the NSW Government and the ANZAC Memorial Trustees. To realise Dellit's original vision for incorporating two water features in the design, the project comprises a cascade fountain as well as new underground education and exhibition facilities that are organised around a new central chamber, a Hall of Service. These are connected to the Memorial through an open oculus.

The design focus of architect Johnson Pilton Walker and the NSW Government Architect was on complementing the composition of the existing Memorial. That was achieved with the use of concrete as the main building material.

#### **PRECAST FOR QUALITY AND SPEED**

According to Precast Concrete Products' General Manager Colin Ginger, the decision to use precast rather than in situ concrete was to enable better control of the quality of finish and meet the tight construction program.

"The use of precast has resulted in high quality finishes in conjunction with custom profile prestressed structural beams, loadbearing walls and columns. All elements are high quality white concrete with an off-form finish," Mr Ginger comments.

The close collaboration between the architect, engineer, builder and precaster was almost unprecedented says Mr Ginger.

"If not for the level of respect between the parties, the extra effort to create such a beautiful result would have been difficult to maintain," Mr Ginger says.

This collaboration as well as carefully crafted moulds and a thorough sampling process that

involved testing different quantities of titanium oxide in an off-white cement mix, culminated in a stunning result.

"What we have produced is a high quality of finish with a tonal subtlety that varies at differing times of the day and in changing weather conditions," Mr Ginger adds.

All precast elements – namely wall panels, Tee-beams and columns - were cast from purpose-built steel moulds, enabling a seamless combination of high-quality architectural finishes and prestressed, structural elements. The use of super-flow concrete further improved the quality of finish, particularly on the 800mm deep beams.

#### **FIT FOR A PRINCE**

The ANZAC Memorial is a stunning combination of structural integrity, beauty and utility. It was officially opened by the Duke of Sussex, Prince Harry, in time for Remembrance Day 2018.

#### PROTECTING THE PRECAST

To protect the precast concrete and extend its already lengthy service life, Nawkaw Australia's photocatalytic coating, ecotio2, was applied. It is a coating which seals the surface of the concrete, while allowing it to self-clean and preventing ageing, bleeding, or changing colour. Nawkaw Managing Director, Tony Watling says the coating was chosen for the ANZAC project primarily because it keeps the concrete clean and looking new.

"The fact that the precast concrete was of such high quality meant that minimal surface preparation was needed before applying the coating. The concrete colours were already very good and no colour repair was needed," Mr Watling explains.

Ms Bachmann says this is a good reason for engaging Association members. "Our members produce high quality precast which minimises the need for repair or correction work, and that minimises cost," she adds.

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# **UNDERSTANDING YOUR SAFETY RESPONSIBILITIES** A MUST, SAYS NATIONAL PRECAST

As precast concrete continues to grow its market share, Australia's peak safety authority Safe Work Australia has released a new *Guide to managing risk in construction: Prefabricated Concrete.* According to the precast industry's national association National Precast, all builders and engineers who work with precast concrete must familiarise themselves with the document and understand their responsibilities.

National Precast's CEO Sarah Bachmann says the Guide has been in development for a number of years and replaces the *National Code of Practice* for precast, tilt-up and concrete elements in building construction, which was published by the authority's predecessor the Australian Safety and Compensation Council in 2008.

"When AS 3850 Prefabricated concrete elements was being developed prior to its release in 2015, we urged Safe Work to become involved to ensure the standard and any code or guide would complement one another. Ever since, we have been in consultation with Safe Work Australia, assisting where possible as the authority worked on updating the National Code. It is pleasing to see an outcome," Ms Bachmann comments.

Safe Work Australia's website indicates the Guide provides national guidance material for duty holders in the construction industry and applies to both building and civil projects. It provides information on managing risks and work health and safety (WHS) duties associated with working with prefabricated concrete. All prefabricated concrete elements are covered by the Guide – both factorymanufactured precast and site-cast tilt-up – with the exception of small products like concrete blocks, pavers, fence posts and the like.

The Guide gives guidance on planning, design and documentation, as well as the safe handling, transport, storage and erection of elements. There is also a series of Appendices which provide practical templates for use. These assist with assigning roles and managing qualifications of stakeholders. A manufacture certificate of compliance and a useful pre-erection checklist are there as well.

The Guide is available for free download from the National Precast website: www.nationalprecast.com.au

8		
Guide to	o managing risk in ction: Prefabricated	
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### **NATIONAL MEETINGS UNITE** PRECAST INDUSTRY: Invitation to join November event in Melbourne

One of the benefits of belonging to National Precast is being able to register for national Members' events. According to CEO Sarah Bachmann they are one of the highlights of membership.

"Our members readily travel across the country each quarter to attend our events," Ms Bachmann comments.

Typically consisting of a dinner, half-day meeting and a social activity or site or factory visit, the events are a great way for members to share experiences and knowledge.

"It's not uncommon for members to ask for help from other members which may be in the form of a technical question or a difficult contracts situation. The number of times I have heard of someone coming away from a meeting with information that will address a problem they have been facing, potentially saving them thousands of dollars, is quite staggering. The members may be healthy competitors but the level of co-operation and information sharing about technical and safety matters for example, is impressive.

"Alternatively, they'll share experiences about ways to improve outcomes. It really raises the bar for those who participate and ultimately the industry as a whole," she says.

"There's no question that our members are armed with more information and have access to a wealth of knowledge," Ms Bachmann adds.

National Precast Members' events are as they imply – for members only. Precasters who are interested in joining may also attend to experience what happens first-hand. They are held quarterly in rotating locations.

"While adequate time is allowed for informal networking, we also have a formal speaker programme for the half day meeting, where our members hear about new technologies, projects, legal issues, safety initiatives or process improvements. It's a good balance of learning and informal relationship-building time.





**Above:** At the recent Adelaide event, members enjoyed a pre-dinner sail.

"Sometimes we also visit a member's factory or a project site, which adds another perspective."

Anyone interested in joining National Precast or attending the next Members' event being held over 28th and 29th November in Melbourne's Docklands, should contact Sarah on 08 8294 0833 or at: exec@nationalprecast.com.au

The meeting agenda includes presentations on contracts, an innovative column connection, Safe Work Australia's new Guide and Infrabuild's new Barmat system.

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# NATIONAL PRECAST ANNOUNCES NEW STATE SUPPLIER MEMBERSHIPS

National Precast has changed the way it involves companies which supply precast concrete manufacturers.

The Association's CEO Sarah Bachmann says in an effort to make membership more reachable for smaller suppliers, a new state supplier membership has been introduced.

"The new state supplier membership is designed to attract membership from companies which only supply products or services to precasters in one state. Transport or installation companies are a good example," Ms Bachmann explains.

The existing national category remains for companies supplying into more than one state, and comes at an annual fee of \$6,000 for National Industry Supplier membership or \$15,000 for Industry Partner membership.

"State Industry Supplier membership has been introduced at a lesser annual fee of only \$1,500," she adds. State Industry Supplier membership provides most of the benefits offered by the national equivalent, with services and benefits limited to a state level. That includes the ability to register for quarterly events, information, marketing benefits and providing input to the Association's advocacy efforts.



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# **BLOCK** KEEPS ON WINNING

Having previously won the Best Educational Building in the \$20 – 50 million award category at the 2018 Master Builders Excellence in Construction Awards, the T Block building at Western Australia's Murdoch Campus of the South Metropolitan TAFE has again been recognised. This time, it has been awarded the title of State Winner at the Concrete Institute of Australia's State Awards for Excellence in Concrete.

Designed by Armstrong Parkin Architects, the three-level building encompasses mixed educational, administrative and commercial facilities and is located adjacent to the iconic Fiona Stanley Hospital on Jennalup Street in Murdoch.

## PRECAST THE ONLY MATERIAL TO ACHIEVE LATTICE DESIGN, SAYS ARCHITECT

Most notably, the building is an exemplar of the creative use of precast concrete, featuring a precast concrete lattice screen façade that fulfils structural and aesthetic ambitions.

Stephen Parkin, Director of Armstrong Parkin, says precast concrete was specified in the early design phase.

"The client wanted the building to provide a new identity for TAFE in the Murdoch precinct," Mr Parkin says.

"We chose precast because it was one of the only materials that could achieve the lattice design."

The screen that has a dual function—to provide shade to the glass curtain wall while being a striking architectural feature in its own right. In doing so, the screen also provides a substantial 120-metre-long verandah to the major street frontage and offers privacy and comfort to the internal occupants, without hindering the campus view.

#### **ESTEEMED PRECASTER FOR AWARD WINNING RESULT**

Long-time National Precast member Delta Corporation, was engaged to manufacture the 76 irregular-shaped lattice panels for the project. The panels were made to an off-form Class 2 finish to all surfaces with a white cement with added white oxide concrete mix. The multiple shapes and thin walls meant that the panels were reinforced with stainless steel fibre.

According to Delta's General Manager Jason Walsh, two prototype panels were produced to ensure that manufacture was possible and that the specified finishes were achievable on all surfaces.

"Great care and attention to detail was essential to ensure we produced the required quality of finish, and then minimise risk of damage during handling, transportation and erection. A special steel-handling frame was fabricated to minimise the stresses on the screen panels during the entire process," says Mr Walsh.

#### **SETTING A NEW BAR**

T Block is an example of industry best practice. While setting a new bar for design, manufacture and construction, it also shows that architects and designers are rethinking the way they create modern education buildings. Delivering both beauty and practicality, T Block is sure to revolutionise the approach to educational building designs while simultaneously improving the wellbeing of students and staff.



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# Sansiri Invests in **Sophisticated Battery Mould Technology by Tecnocom**



PROGRESS GROUP





Sansiri Public Co. Ltd, based in Bangkok, Thailand, can look back on more than three decades of experience in the field of construction projects and real estate development, successfully delivering hundreds of projects all over Thailand. With this experience, Sansiri has gained a reputation as one of the leading real estate developers in Thailand for quality housing offering single houses, attached houses and high-rise buildings.

To construct and deliver high-end quality housing projects, while at the same time staying continuously focused on optimising time schedules and minimising the use of resources, Sansiri is ultilising a range of stateof-the-art precast concrete technology in their precast concrete factory in Lam Lukka. By investing in the new battery mould technology, Sansiri has not only is increased the efficiency and productivity of the factory, it has also improved the design capabilities and flexibility of the plant, thereby expanding the range of products on offer.

The battery moulds were designed,

manufactured and commissioned by Tecnocom, one of the seven companies of PROGRESS GROUP, the leading group of precast technology suppliers globally.

Sansiri invested in two individually designed battery moulds from Tecnocom. Each Battery mould is equipped with 20 pockets (10+10). The first of the battery moulds, use in the production of partition walls, measures 6.00m x 2.85m, whilst the second unit, which is used in the production of fencing elements, measures 4.00m x 1.50m. The flexibility of the basic shuttering system enables Sansiri to manufacture precast concrete elements in various sizes, thicknesses and in a range of different patterns.

The battery moulds from Tecnocom ensure the highest productivity and quality, through the use of special high frequency vibrators. Installed at every pocket, the vibrators provide constant concrete compaction. This compaction technology allows for the production of precast concrete elements with extremely smooth surfaces and the to highest degree of surface flatness.

The Tecnocom battery mould production facility is supported by a BlueMesh M-System mesh welding machine from progress Maschinen & Automation AG, also one of the seven companies of PROGRESS GROUP.



Mr Phusak Yuthayanont, Deputy Vice President of Engineering & Logistics Precast Concrete Factory, is very satisfied with the new battery mould production.



The new battery moulds from Tecnocom have delivered a significant increase in Sansiri's production capacity for both precast concrete partition walls and fencing walls.

The BlueMesh M-System produces tailor made wire mesh for each and every precast element produced in the battery moulds, as well as the company's carrousel plant, provided by EBAWE Anlagentechnik GmbH, also one of the seven companies of the PROGRESS GROUP.

The welding machine is designed as a flexible production unit for tailor made reinforcement mesh directly from coil.

The equipment has not only resulted in a significant boost in productivity, it has also delivered major savings in manpower requirements and raw material wastage.

In keeping with its focus on maximising production quality standards and efficiency, Sansiri also invested in a customised magnetic formwork system. The system, which was developed by Tecnocom especially for the Sansiri battery moulds, allows Sansiri

to perform shuttering and formwork activities with the highest accuracy in a minimized timeframe

Needless to say, the battery mould production facility has proven to be an outstanding success, with partition walls produced in the facility being used in a number of major condominium projects, and fencing elements now being used in the majority of Sansiri projects. Indeed, a fleet of trucks leaves the Lam Lukka factory every day delivering a significant number of precast concrete elements to the various Sansiri project sites across the greater Bangkok area.

Importantly, this success story is based on a strong and professional cooperative partnership between Sansiri and PROGRESS GROUP. Tecnocom provided all services for a smooth and professional implementation of the battery moulds, starting with expert advice during the design and decision-making phase, followed by very transparent manufacturing, delivery and installation activities, and finally, sending a team of three battery mould experts to the Sansiri factory for an on the job training.

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# Legal Clout behind New Procurement Rules

A Queensland-based importer was the first company in Australia to feel the weight of the Government's 'gloves off' approach to illegal logging prohibition laws earlier this year. The Department of Agriculture and Water Resources (DAWR) random audits enforcement policy, and the prospect of massive fines and criminal charges for repeat offenders, are clear warnings for any business especially those wanting to tender for government work

The illegal logging laws take on even greater significance for the construction industry, in light of new Commonwealth Procurement Regulations (CPR's). CPRs are the basic rules set for all government procurements, with State and Territory regulations kept in line with the main provisions. They have been updated to incorporate new requirements arising from the *Government Procurement (Judicial Review) Act 2018*,

It is now obligatory for any tendering business or individual to operate within the law and have readily available proof of compliance.

## Providing that proof can be a minefield for the unprepared.

The complexity of the illegal logging regulations prompted the Australasian Furnishing Association (AFA), with the support of DAWR, to summarise and simplify the Act and Regulation for procurement officers, specifiers, designers, architects, manufacturers and suppliers across the furnishing sector. The result was the development and implementation of the Due Diligence Toolkit. (https://afaddt.australianfurniture.org.au/).





This easy to use resource has proved to be useful across a number of industries using timber and forest-based products in their manufacturing or fabrication processes.

The AFA also provides a concise summary of the new CPR's which can be accessed at: https://australianfurniture.org.au/product/afa-summary-commonwealth-procurement-rules-for-furnishing-sector-suppliers/

AFA CEO, and Australian Balustrade Association Executive Manager, Patrizia Torelli, said that when laws and procurement regulations change, there can be significant difficulty and delays for businesses coming to terms with the new rules, and putting processes in place.

"Our members in the balustrade and furnishing industries want to operate within the law, but can struggle to promptly introduce the required new processes to meet new obligations and more stringent requirements to provide proof."

"This can be particularly hard for small to medium sized businesses," she said.

"We needed to come up with a solution to make life easier. With summarised procurement regulations and a Due Diligence Toolkit that takes them simply through the process, they never have to face hefty fines or legal action," Ms Torelli added.

#### **KNOW YOUR TIMBER**

Under the new CPR's, tendering companies need to be able to prove that they comply with all relevant laws regarding the sourcing of materials. Providing that proof means doing your own detective work, in establishing the 'Chain of Custody' of even the smallest piece of timber.

'Chain of Custody' links the origin of the source of the wood to the final product. It provides documented evidence that timber or forest-based products are sourced from sustainably managed forests, and if properly understood, can be used to demonstrate compliance with the Australian Illegal Prohibition Acts and Regulations and fast tracking the preparation of customs documentation.

The Due Diligence Toolkit provides an easy-to-follow path to prepare the information necessary to meet the requirements of the Illegal Logging Prohibition Act.



It is available to any industry stakeholder requiring the appropriate reporting documentation to ensure that importers, manufacturers and distributors of timber related products can operate within the law, when tendering for government, commercial or private contracts.

Whilst the Commonwealth Procurement Rules specify that all government procurement must adhere to any Australian Law, the actual Illegal Logging Regulation IS LAW, therefore it also applies to non-government projects.

#### CASE STUDY: TIME TO STOP TRUSTING 'GUT FEELINGS'



'If you don't use the Due Diligence Toolkit, you may be paying for a product that you will never see. You could be the victim of one of many professional scammers out there.'

Zoran Angelkovski, 3RT VP, Business Development

When the makers of Designer Hardwood, sustainable technology company 3RT, went on a global search for timber veneers, they wanted to do the right thing and source legally harvested, certified timber.

Their innovative new timber product uses digital production units and materials science, to turn young sustainably sourced logs into hardwood, with the properties and performance of 100-year-old timber. The all-organic, non-toxic process requires a reliable source of certified sustainably sourced veneers. Like many businesses in Australia's manufacturing and construction industry, they found the DAWR timber regulations to be complex and time-consuming.

3RT's VP of Business Development, Zoran Angelkovski says that the AFA's Due Diligence Toolkit saved time, 'saved the day' and possibly saved the company from hundreds of thousands of dollars in fines.

"The beauty of the toolkit is that it is concise, to the point, and has a good logical flow. You can easily understand what you need to do when goods arrive, so they go seamlessly through the customs clearance process," he said.

Mr Angelkovski explained that fifty per cent of the international timber suppliers they were looking at, didn't make it through the DAWR's Due Diligence requirements. Some suppliers did a poor job of answering questions, others didn't have PEFC or FSC accreditation, or their certification had lapsed. In some cases the certificates were forgeries. The Toolkit helped refer 3RT to websites where licence or certificate numbers can be easily checked for legitimacy.



"If you are importing wood products, it is an absolute necessity that you do not just follow your gut feeling on suppliers, or simply accept their certification claims on face value," Mr Angelkovski said.

"You must do your Due Diligence homework, and the Toolkit is a good framework, so that you don't cause an issue for your customers, or companies sourcing the goods," he said.



#### THE RISKS OF BEING CAUGHT OUT

The government's approach to compliance when the Illegal Logging Prohibition Act was introduced in 2012, involved a period of 'soft' commencement, so that businesses could ensure their systems were adequate to demonstrate compliance.

Now there is no mistake, that the Department of Agriculture and Water Resources has adopted a new hard-line policy, with a spokesperson confirming that it is using random audits and an 'intelligence led' approach to identify and detect non-compliance, focusing on:

- Tip-offs and sharing of intelligence information
- Environmental non-government organisation reports and studies
- Complex supply chains including sourcing of product through multiple countries
- Previous instances of identified noncompliance
- Products from fragile and conflict affected areas
- CITES listed species (the Convention on International Trade in Endangered Species of Wild Fauna and Flora)

Illegal logging has significant global economic, environmental, and social impacts and undercuts Australia's legal and legitimate timber industry. The United Nations and Interpol estimate that illegal logging costs the global community up to \$206 billion each year, making it the largest environmental crime, by value, in the world.

It is estimated that up to 10%, or \$800 million, of Australia's timber imports could come from high-risk sources annually. There have also been isolated cases of the illegal logging of high-value Australian timber.

Leading the charge against illegal logging, is the world's largest forest certification scheme, the Programme for the Endorsement of Forest Certification (PEFC), which sets an international sustainability benchmark for the safeguard of ecologically important forest areas and the protection of communities and biodiversity.

Responsible Wood is the PEFC's official accreditation body in Australia, with the Responsible Wood Certification Scheme providing construction and furnishing companies with the assurance they need to remain on the right side of procurement and the law.

#### THE REWARDS OF RESPONSIBILITY

Recently, major high-profile government procurement projects have underlined the rewards of verified environmentally sustainable choices for commercial furniture suppliers and in construction.



Some 200,000 linear metres of responsibly sourced timber was used in Sydney Metro North West's seven stations.

In June this year, Sydney Metro North West, undertaken by John Holland and CPB Contractors, became the first Australian project to successfully achieve Responsible Wood Project Certification with a Responsible Wood claim being provided for timber supplied on the project.

Comprising seven stations and four car parks, Sydney Metro North West is Australia's largest infrastructure project in recent years, using 200,000 linear metres of timber.



#### 'This is a milestone project for Australia and we are proud that it reflects the country's responsible sourcing goals.'

John Holland Sustainability Manager Thirukumaran Jallendran

According to Responsible Wood CEO Simon Dorries, the Sydney project represents a pioneer project.

"It's not only the largest of its type in the southern hemisphere, but the first to successfully achieve Responsible Wood and PEFC project certification."

"We are fielding more and more enquires from construction teams and certification bodies looking to achieve certification for future projects," Mr Dorries said.

Those sentiments were echoed by Responsible Wood Marketing and Communications Officer, Jason Ross, who described forest certification as a little known 'blind spot.'

"For construction professionals it's simply a case of finding a timber supplier, merchant or broker that can make a Responsible Wood or PEFC claim on the timber materials invoice," Mr Ross said.

In the past, certification has posed problems for the construction industry, when short-term projects involve numerous, uncertified contractors. This has been resolved with Responsible Wood's mechanism for attaining Chain of Custody certification against the Australian Standard (AS4707) for a specified project with a limited duration.

It is a solid assurance at a time when claims around sustainability and products being 'green' are abundant and, frequently, unproven. Currently in Australia there are 250 individual sites operating Responsible Wood certified Chain of Custody systems.

The final message for businesses who are keen to do business with government, or with anyone in a more connected and environmentally-aware world, is to get help from the specialists, and use the tools provided by industry bodies, to make compliance easier and more accessible.

# Powering a Sustainable Future



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The Queensland-based company that fell foul of the Illegal Logging Prohibition Act was fined a relatively modest \$12,600, but those who disregard all the required checks, could risk millions of dollars in fines, perhaps five years in jail, and a criminal record.

The penalty is a timely reminder to importers and processors of timber for construction, furnishing or paper products, that they need to have processes in place to meet their obligations under Australia's illegal logging laws - especially if they intend to tender for Commonwealth Government projects.

#### **HANDY RESOURCES**

For further information on CPR's and regulations surrounding the sourcing, supply and use of responsibly source woods, please visit:

https://afaddt.australianfurniture.org.au/ due-diligence/

https://australianfurniture.org.au/product/ afa-summary-commonwealth-procurementrules-for-furnishing-sector-suppliers/

https://www.responsiblewood.org.au/



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