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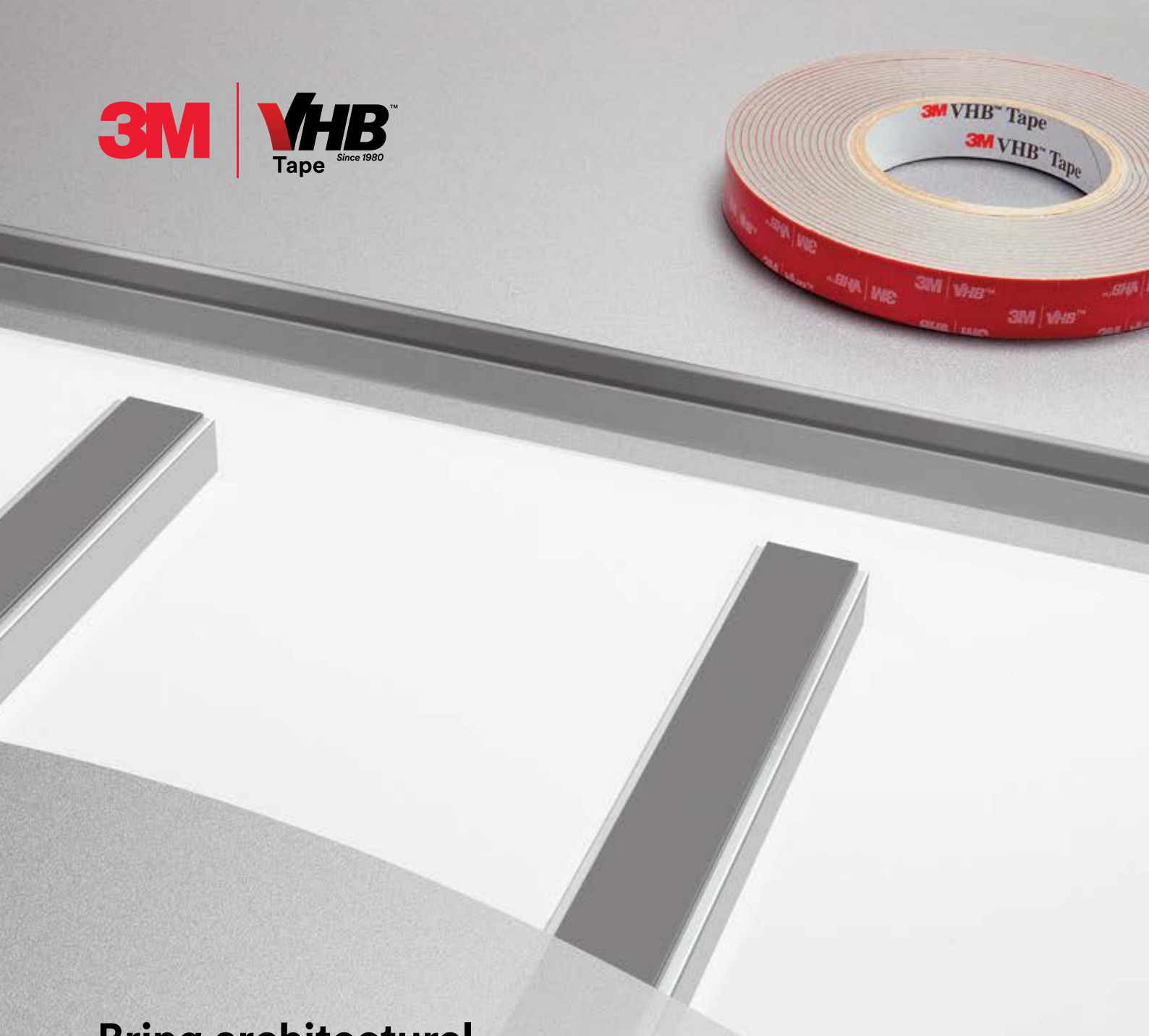

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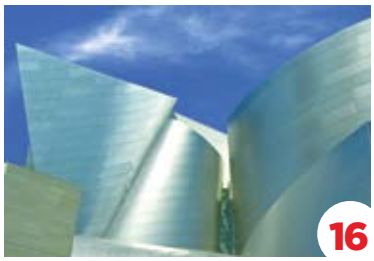

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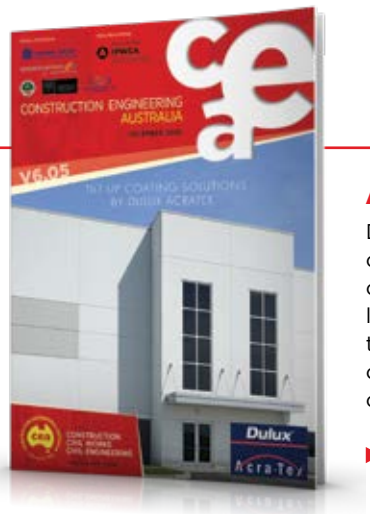

About the Cover

Dulux AcraTex's system for tilt up and precast concrete provides an end-to-end preparation and coating system specifically developed to deliver long-term concrete protection. These latest additions to the AcraTex product portfolio further enhance the overall coating system durability and ensure greater colour consistency, especially over large areas.

▶ **Turn to Page 10 for the full story.**

NO CONSEQUENCES, NO REGRETS

IS IT TIME WE TOOK A 'ZERO TOLERANCE' APPROACH TO GRAFFITI VANDALISM?

Dear Readers,

Considering the amount of time and resources that have been invested in graffiti prevention programs over recent years, I must admit to being more than just a little disappointed that graffiti vandalism is still so rampant throughout Australia.

Before I continue, I would like to clarify that I do understand the difference between graffiti vandalism and 'street art'. Indeed, many inner-city laneways (in Melbourne in particular) are adorned with 'legally applied' street art which is quite magnificent.

When I refer to 'graffiti vandalism', I am referring to is illegally applied graffiti, particularly the mindless application of tags to practically any and/or every available surface – a crass and destructive act of vandalism by any measure.

Despite this, there are still some 'cultural and social experts' that will publicly espouse the value of self-expression gained through graffiti or (my personal favourite) the 'valuable cultural capital' that our cities could gain when graffiti gangs post photos of illegal graffiti activities and results on underground Internet sites.

Regardless of the fact that I couldn't disagree more with these types of comments, I believe that the biggest issue is that any type of positive public commentary about graffiti vandalism can appear as 'tacit approval' for vandalism in all its forms.

Graffiti continues to be one of the most expensive and time-consuming public maintenance issues facing councils, householders, government authorities and private sector companies today. To suggest that we should somehow turn a 'blind eye' to graffiti vandalism is not only totally misguided, I believe it's also highly irresponsible.

Even though a number of Australian councils have had significant success in reducing the incidence of graffiti (generally through costly, on-going programs of rapid removal and repair), it's a sad fact that even for these councils, removing graffiti and repairing graffiti-related damage continues to be a an extremely expensive and onerous day-today battle.

Unfortunately, while we may have come a long way in some areas of graffiti management, I believe that one of the main reasons that we continue to suffer at the hands of graffiti vandals is that we, as a society, have failed to address some of the core issues surrounding graffiti. In addition to problems caused by easy access to spray paints, large format permanent markers, and other graffiti 'tools of choice', we are yet to attach any real penalties to graffiti vandalism.

As such, I believe that graffiti vandalism continues to be viewed by many of the perpetrators as a simple case of *'No Consequence - No Regrets'.*

Furthermore, the sort of 'mixed messages' that are still being sent about graffiti - both in relation to the cost and seriousness of the problem, and in terms of trying to attach artistic and/or cultural 'value' to graffiti - only serve to confuse the issue.

If you'll excuse the pun, painting graffiti in a favourable light - for whatever reason - only runs a risk of encouraging more graffiti.

This doesn't mean that we should throw our hands up in despair believing nothing can be done or, worse still, take an apologist view and start making excuses for graffiti - quite the contrary.

I believe that the best way to address the problem is to remove that prestige. Rather than allowing graffiti vandals to view their individual 'tags' as something to be proud of, a 'zero tolerance' approach will see their tags become nothing more than a handy method of identifying and prosecuting repeat offenders. Granted, widespread media campaigns and major policing operations carry a significant cost; however, when one considers the time, cost and resources currently allocated to removing graffiti and repairing the associated damage, the cost benefits of a 'zero tolerance' approach are easy to envisage.

Anthony T Schmidt
Managing Editor

Whether it's a TL-2 or TL-3 attenuator, your first question should always be:

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BLUEPRINT FOR CENTRAL SYDNEY'S FUTURE

The most detailed planning review of the city centre in more than four decades is set to play a critical role in Sydney's recovery from the impacts of the Covid-19 pandemic.

Lord Mayor Clover Moore said the City of Sydney's *Central Sydney Planning Strategy* provides a long-term vision that will promote job creation and economic growth, while protecting the inner-city's heritage and public spaces.

"By providing for buildings taller than 300 metres and creating increased employment space, while ensuring high-quality design and protecting our important public places, this strategy provides a vision for the city's commercial, residential and recreational future," the Lord Mayor said.

"Our communities, businesses, landowners and industries have all had the opportunity to contribute to the development of this strategy. It will help us lay the foundations for the city's recovery from the devastating economic and social impacts of the coronavirus and maintain Sydney's status as an attractive place for business investment.

"Following extensive consultation and three years of block-by-block research, we are proud to present this blueprint for planning done well – allowing the city to grow with new skyscrapers that will also ensure sunlight continues to shine on treasured public spaces such as Hyde Park, the Royal Botanic Gardens, Martin Place and Wynyard Park.

"This is about strengthening public open space, accessibility and connections to make moving around the city easier and more enjoyable for workers, residents and visitors. The new strategy uses extensive evidence-based work and considers the current and future needs of our city.

"We will protect, enhance and expand Central Sydney's heritage, public places and open spaces for all to use and enjoy.

"If we want Sydney to maintain its status as an economic powerhouse of innovation and collaboration, it's vital we safeguard economic floor space while allowing residential development to continue in the city centre."

After community consultation and feedback during the public exhibition, the City has made changes to the planning framework. These include:

- phasing out the incentive for residential development of additional floor space over two years
- saving time by allowing a project to proceed to a detailed design development application (stage 2) based on the approval of the concept design
- excluding the northern part of the Kent Street tower cluster around Gas Lane, which is a transition area between the residential character of Millers Point and the commercial centre
- removing the proposed additional 30 metres in height control in the same northern Kent Street area
- updating guidelines for site-specific planning proposals in central Sydney to allow landowners to lodge planning proposals.

To ensure local infrastructure keeps pace with growth, Council will ask the Minister for Planning and Public Spaces to amend the regulations to allow for a contributions levy of up to 3 per cent to apply to new development.

This increased levy will fund new infrastructure to support the increase in floor space in the planning proposal and ensure Central Sydney remains an attractive place for investment.

Other key elements of the strategy include supporting emerging designers and architects and promoting more women into design leadership roles to ensure central Sydney's ongoing growth, success and equity.

HOME CONSTRUCTION LOANS SMASH RECORDS

"The number of loans to owner occupiers soared by 11.5% during the month of October smashing the record set just one month earlier in September," Denita Wawn, CEO of Master Builders Australia said.

"The remarkable result is shown in the latest ABS lending data and is the latest evidence that the success of ***HomeBuilder*** is having a positive impact on the housing sector and the economy," she said.

"As yesterday's GDP figures show, ***HomeBuilder*** is already moving the economy forward," Denita Wawn said.

"Compared with October 2019, the number of loans for new home construction has expended by 82.8%," she said.

"Work on all of these new home building projects is keeping the residential building industry very busy in the lead up to Christmas and means that 2021 will get off to a very positive start," Denita Wawn said.

"***HomeBuilder*** is not only meeting its KPIs, but exceeding expectations," she said.

"The Government's recent announcement around the extension to ***HomeBuilder*** represents a very positive development. It means that new home building and major home renovations work can look forward to a steady pipeline in 2022," Denita Wawn said.

"Home renovations work jumped by 5.1% during the September 2020 quarter and contributed to the 3.3% expansion in Australia's economy over the three months," she said.

"Residential building activity has a much stronger ability to support overall economic growth than almost any other sector," Denita Wawn said.

"We will see more of the benefits from ***HomeBuilder*** coming over the next few months. This is good news for the businesses in the building supply chain and the people they employ. It is good news for the whole economy," Denita Wawn concluded.

BUILDING A COOLER FUTURE

The South Australian Government is investing $60 million over the next two years to improve energy efficiency in government buildings, creating hundreds of jobs and cutting the taxpayers' electricity bill.

"The $60 million commitment is the largest per capita stimulus investment of any Australian Government in improving the energy efficiency of public buildings," said SA Minister for Energy and Mining Dan van Holst Pellekaan.

"Simple measures like better insulation, shading, new lighting and more efficient air-conditioning can bring older public buildings that get too hot in summer and too cold in winter in line with modern energy efficiency standards.

"We want to build what matters – getting people working now, whilst saving taxpayers money, cutting our carbon emissions and reducing peak demand," the Minister said.

"This program could sustain around 310-430 green jobs for tradies, allowing us to upgrade lighting, insulation, air-conditioning, and add sensors and energy management software."

"The measures will reduce peak demand on the grid, make State Government buildings more comfortable and healthier places to be, whilst saving taxpayers an estimated minimum of $7 million each year once upgrades have been fully implemented."

"Cheaper electricity costs for taxpayers mirror the fall in electricity prices for households and businesses," he added. "Households have already saved on average $158 per year over the last two years."

"More energy efficient public buildings will complement the Marshall Government's new supply contract which is building the Cultana Solar Farm and Playford Utility Battery at Port Augusta to deliver even bigger savings to the taxpayer's power bill and a bigger reduction in carbon pollution," Minister van Holst Pellekaan said.

"The $60 million super-sizing of public building retrofits is the latest investment by the Government's in the delivery of lower emissions and cheaper power.

"The Marshall Government is driving an ambitious transition to net-100% renewable energy with an aspiration to reduce emissions by more than 50% by 2030 from 2005 levels. The SA-NSW Interconnector, Home Battery Scheme, Grid Scale Storage Fund, Government Supply Contract, demand management and now the building refurbishment program are all part of the South Australian Government's plans to reduce emissions whilst also reducing electricity bills."

"The Government's performance is proving that it is possible to both reduce the price of electricity, secure our grid, and reduce our impact upon the environment whilst creating jobs," he said.

The Home Battery Scheme is also receiving an additional $18 million (to a total of $118 million) to supersize the largest per capita roll-out of home batteries in the world.

PREVENTION IS THE ONLY CURE:

In 2020 More Australians Will Die from Asbestos Exposure than COVID-19

In 2020, more than 4,000 Australians will die from asbestos-related diseases caused from exposure to asbestos fibres either in the home or in the workplace – that's 3000 more deaths compared to the number of Australians who will have died from COVID-19 in the first year of the pandemic.

However, unlike COVID-19, deaths in Australia from asbestos-related diseases have been ongoing for more than 100 years.

Asbestos-related diseases include pleural disease, asbestosis, lung cancer and malignant mesothelioma which can develop 20-50 years after asbestos fibres are inhaled. There is no cure for mesothelioma and the survival time following diagnosis can be as little as 10-12 months.

As with COVID-19, the most effective means of preventing asbestos-related deaths is to prevent exposure – inhalation of deadly asbestos fibres. However, according to the Australian Mesothelioma Registry, Australia has one of the highest measured incidences in the world having recorded a steady increase in mesothelioma cases over the past 40 years with two Australians (on average) diagnosed every day in the last year alone.

Professor Ken Takahashi, Director of the Asbestos Diseases Research Institute (ADRI) said, "Despite the sinister history of asbestos in Australia, and the prediction that deaths from asbestos-related diseases will continue to rise due to Australia's legacy of wide-spread use of asbestos-containing materials (ACM); Australians remain complacent about the dire consequences of disturbing ACM and continue to ignore the warnings."

"Just as Australians have heeded the serious warnings, worn PPE and taken the hard decisions and necessary precautions to prevent community transmission to dramatically minimise deaths from COVID-19; with asbestos-related deaths in Australia predicted to rise due to homeowners and tradespeople inhaling asbestos fibres during renovations or the maintenance of older properties, Australians must take the warnings about asbestos seriously to protect themselves and their families from avoidable exposure to fibres that can kill," Professor Takahashi said.

"Unlike COVID-19, where diagnosis may be confirmed within 24-48 hours, diagnosing asbestos-related diseases can take many years so if Australians continue to ignore the warnings about asbestos; in coming years families across Australia will be devastated when a loved one is diagnosed with a deadly asbestos-related disease that could have easily been prevented by managing asbestos safely."

With Australia among the highest consumers of asbestos in the world, and with the wide-spread use of ACM in the construction of homes built or renovated prior to 1987 and in commercial and non-residential structures prior to 31 December 2003, it's going to be many years (if ever), before all remaining ACM is completely removed from properties.

There are thousands of different types of products that contain asbestos and remain in one third of Australian homes built or renovated prior to 1987 including fibro, brick, weatherboard, clad homes and apartments as well as in many commercial and non-residential structures including buildings, fences and farm sheds.

If undisturbed, well maintained, and in a stable, sealed condition, asbestos is unlikely to pose health risks. However, the risk of inhaling asbestos fibres can occur during maintenance, removal, refurbishment or demolition of ACM when damaged, broken, cut, drilled, sawn, sanded, scraped, waterblasted or if disturbed when using tools - particularly power tools which releases a high concentration of fibres.

Cherie Barber, Australia's Renovation Queen and Ambassador for National Asbestos Awareness Month who lost her Grandfather to an asbestos-related disease said, "With more than 4,000 Australians dying each year from asbestos-related diseases and the cause directly linked to DIY and renovating, it's vital that renovators, DIYers, tradies, property managers, demolition and construction workers make it their business to learn how to manage asbestos safely by visiting asbestosawareness.com.au"

"With Australia's passion for renovating fuelled by many popular DIY lifestyle programs and the increase in DYI during COVID-19, if Australians don't start taking the warnings seriously, we could be risking our lives and the lives of our loved ones including our children," she said.

The first wave of asbestos-related diseases in Australia resulted from mining. The second wave affected tradespeople who worked in transport, manufacturing and the installation of products that contained asbestos.

Following the Australia-wide ban on asbestos on 31 December 2003, the third wave of asbestos victims are tradespeople and do-it-yourself home renovators who disturb ACM during the renovation process with the number of Australians diagnosed with asbestos-related diseases predicted to continue to rise in coming years.

Asbestos materials were used everywhere in homes and in commercial and non-residential structures - lurking under floor coverings including carpets, linoleum and vinyl tiles, behind wall and floor tiles, in cement floors, internal and external walls, ceilings and ceiling space (insulation), eaves, garages, roofs, around hot water pipes, fences, home extensions, garages, outdoor toilets, backyard and farm structures, water tanks, chook sheds and even dog kennels.

"It's important to follow the first rule of asbestos management - If you think a product might contain asbestos, play it safe and go slow - treat it as if it is asbestos and take all the necessary precautions including getting the experts in. Occupational hygienists or licenced asbestos assessors can inspect your property and if you need to remove asbestos, please only use licenced asbestos removalists because it's not worth the risk!" Ms Barber said.

Renovating? GO SLOW - Asbestos it's a NO GO! Visit **asbestosawareness.com.au** to find out what you need to know.

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Photo: Matthew Anderson, Architect, Arkitekt MNAL, Steinlia AS.

PRE-FAB PERFECTION FOR SUSTAINABILITY AND STYLE

A second storey extension on an historic apartment building in London is the perfect study in pre-fab sustainability and style.

Site access and sympathetic design were just two of the parameters that had to be considered in the construction of an upper floor of a London City House.

Architect Matthew Anderson of Arkitekt MNAL, Steinlia AS, based in Oslo, Norway, was commissioned for the project. He devised a two-pod concept fully-engineered in DuFLEX ® Composite panels, supplied by vdL, Germany, ATL Composites' European partner.

"The project is located in a complex historic situation in central London and involved the addition of a new storey to an existing private terrace house," Mr Anderson explained.

"Site access and speed of construction, as well as the irregular geometry of the existing house, required prefabrication with a high degree of precision."

"We used DuFLEX for the main structure of the extension, including external walls, roof, and floor. The DuFLEX panels also provide the finished internal surfaces of these elements," Matthew added.

The addition needed to be lightweight due to crane restrictions in London. The panels are both structural and offer appropriate insulation. Sidewalls and roof were 70mm thick, while floors were 40mm thick and laminated with a 600grm biaxial E-Fibreglass skin and a high performance ATL epoxy and cored with PET Foam.

PET is a recyclable core which has excellent smoke and toxicity properties, good mechanical performance, is chemically stable and will not absorb water and consequently, there is a growing interest in the product for architectural and construction applications.

DuFLEX Composite panels offer a range of benefits, including structural stiffness and light weight. In fact, they represent a 90 percent weight saving over a comparable steel design, meaning ease of handling and reduced risk of worker injury. They are durable, will not rust, rot or corrode even in a marine environment and is very low maintenance.

DuFLEX provides excellent thermal insulation with vastly improved properties compared to steel, and the panels significantly reduce the size and weight demands on support structures and foundation. This also translates to a reduced cost for installation and handling.

With applications as diverse as building facades and door, gates and window frames to long-span roofing, composite decks, bridges and pre-fabricated housing DuFLEX can be engineered into architectural projects to meet design loadings and regulatory requirements.

Complex forms can be created relatively easily, and made-to-measure units can be manufactured to be adapted to existing structures, broadening design freedom and offering rapid processing and construction which helps to lower costs significantly.

The sections for the London House "pods" were built and CNC routed at vdL Composites GmbH in Wesel, Germany, then glued together and packed at Bootswerft Baumgart, Dortmund. They were transported by Glogau International Yachttransporte to the London site.

The project got underway in September 2019 and was completed in July 2020 after a two-month delay due to COVID19 restrictions.

According to architect, Matthew Anderson, who travelled to the site to witness the pods' installation, "they were a very good fit" and the process went perfectly to plan in just two hours.

"We chose DuFLEX due to its high specific strength (strength/weight ratio), insulating properties, aesthetic qualities, and flexible application."

"We are satisfied with both the speed and precision of constructing with DuFLEX, the structural performance of DuFLEX, and the beautiful rooms that we created together," he added.

The DuFLEX panel technology was developed in Australia by ATL Composites in the 1980s. DuFLEX has now become an industry standard for composite boat construction worldwide and is also widely accepted for Architectural, Transportation and Industrial applications.

In 2012, ATL Composites and MuH von der Linden of Wesel, Germany, announced the formation of a joint venture company, vdL Composites GmbH to produce DuFLEX® composite.

For further information, please visit: **www.duflex.com.au/markets/architectural/**

FIRST 3D-PRINTED HOUSE IN GERMANY REALIZED WITH SUPPORT FROM ALLPLAN

Germany's first 3D-printed single-family home is being built in Beckum. It was planned by the office MENSE-KORTE ingenieure +architekten using the BIM software Allplan. The 3D printing pioneers see enormous potential in the new technology.

The project is being realized by the HOUS3DRUCK building owners' association, which also includes Waldemar Korte from MENSE-KORTE ingenieure+architekten. The architects see a whole range of advantages in the machine production method.

"3D printing offers a high degree of design freedom, which could only be realized with a high financial outlay in conventional construction methods," says office owner Waldemar Korte.

As with other printed houses, the principle of contour crafting is also followed in Beckum, where parts of buildings - or even a whole house - are digitally produced layer by layer without manual labour. The execution is taken care of by PERI. The experts for formwork and scaffolding systems produce approximately one square metre of wall surface with their huge portal robot in five minutes - and that is completely without formwork.

The material that meets the special requirements for the 3D printing process comes from one of the world's largest building materials companies - HeidelbergCement. Together with its subsidiary *italcementi,* the building materials specialists have developed a special concrete called *i.tech* 3D for 3D printing, which can be applied without formwork.

The project is being accompanied by expert opinions from the Technical University of Munich and the engineering office Schiessl Gehlen Sodeikat.

More freedom for architects

The process opens up new design possibilities, for example for more complex shapes, and thus provides more freedom for the architect in planning and design. The Parasolid® modelling core integrated in Allplan provides the technical basis for planning such free-form geometries.

Waldemar Korte sees a further advantage in the integrative character of the design.

"Interdisciplinary design by architects and engineers in conjunction with machine manufacturing offers great potential for efficiency in the design and implementation of buildings and building structures."

"It also opens up the possibility that ancillary trades that would normally only be added at a later stage can already be implemented during the printing process," he said.

Challenge: Preparation of the 3D model data

One challenge at the moment is still the preparation of the 3D model data. The two-storey detached house with a usable area of around 160 square metres was modelled in Allplan without any problems. However, the model data then passed through several software products before the printer had all the information required for automated production. This is why MENSE-KORTE and PERI are currently working with Allplan to improve the interface between CAD and printer. This could provide some relief in the further course of the project, as this printed house is only the first of an entire housing estate that is to be printed afterwards.

The pilot house, however, will serve as a show house for 1.5 years after completion, until it is finally occupied.

For further information, please visit: **www.housedruck.de** or **www.mense-korte.de**

Dulux AcraTex launches new tilt up and precast concrete solutions

Dulux AcraTex's system for tilt up and precast concrete provides an end-to-end preparation and coating system specifically developed to deliver long-term concrete protection. The concrete solution upgrades the overall coating system durability and ensures greater colour consistency, especially over large areas. It reduces dirt accumulation, mould and algae growth, pollution and chemical attack – especially on high profile texture coatings.

Designed for simplicity of specification and ease of use with the painter in mind, the package includes an *AcraTex BondFree* Concentrate surface treatment and direct to substrate *AcraTex AcraTilt* mid-build nap roller applied coating.

MEETING THE DEMAND FOR HIGH QUALITY FINISHES FOR PRECAST CONCRETE

Developments in precast concrete - including improvements in production methods, technology and materials - have enabled precasters to deliver panels and components with extremely high quality off-form finishes. Not surprisingly, that quality of finish has been a key factor in the significant increase in demand for precast concrete construction that has occurred in recent years, both across Australia and globally.

Unfortunately, despite its versatility and performance, when it comes to applying aesthetic or decorative finishes, precast concrete is not without its challenges – both from a surface preparation and surface coating perspective.

From a surface preparation perspective, one of the most critical factors with precast concrete is to ensure that all form release / bond-breaker residues have been removed from the surface prior to the application of any surface coating. This has traditionally been both a time-consuming and extremely 'water-intensive' process.

As for aesthetic coatings, while there are a number of options available, in many instances these are not always suitable or practical. For example, many high film-build coatings require specific techniques and skills to achieve the perfect finish. And while standard decorative paint finishes might look ok in the short term, most are unable to provide the durability and performance required to stay looking good in the long-term.

As such, the increasing prevalence of precast and tilt-up concrete construction has also resulted in significant increase in demand by painters and applicators for purpose-developed surface preparation and coating products which are not only easy to use and apply, but also offer the protection and performance required to stay looking good for many years.

With that in mind, Dulux AcraTex has developed two new products specifically for the precast concrete industry to assist with surface preparation and deliver long-term protection and aesthetics suited to the harsh Australian environment.

DULUX ACRATEX BONDFREE CONCENTRATE

Ensuring that the surface is suitably prepared prior to the application of an aesthetic or protective coating is a critical factor in the long-term performance of any surface coating job. This is particularly true when it comes to precast concrete panels and components, which generally arrive on site with release agent / bond breaker residues from the manufacturing process.

As the name suggests, release agents are applied to the precast mould prior to the concrete being poured, forming a thin layer which facilitates separation of the hardened precast panel or component from the mould.

While they are an integral part of the precast concrete manufacturing process, release agent residues can spell disaster for surface coatings. As such, all residues must be completely removed from the finished components prior to painting.

Dulux *AcraTex BondFree* Concentrate is a water dilutable cleansing solution specifically designed to remove barrier-type form release agents / bond breakers from precast concrete panels and components prior to the application of a coating system.

AcraTex BondFree Concentrate is a non-caustic degreaser which has been specifically formulated to remove common barrier type bond breakers (e.g. oil and lanolin-based products) from concrete surfaces – quickly and efficiently while using only around 20% of the water traditionally required for the task

Easy to use and apply, it works by breaking down the oily layer so the release agent residues can be rinsed away, leaving a clean surface that's ready to work on.

FEATURES & BENEFITS:

- Non-caustic detergent wash
- Fast removal of barrier-type bond breakers
- Spray application via auto dosing siphon injector
- May be applied by airless spray or nap sack pressure pack (diluted 1:5)
- Uses approximately 1/5th of the volume of water vs. high pressure water blaster method
- 1L AcraTex BondFree Concentrate covers approx. 42m^2 equipment dependent

DULUX ACRATEX ACRATILT

When it comes to coatings for precast concrete, long-term protection and performance are critical. Exposure the harsh Australian environment, pollution and chemicals can rapidly degrade both the appearance and performance of an unsuitable surface coating.

Specifically developed for use on tilt-up / precast concrete panels and components, Dulux *AcraTex AcraTilt* provides the ideal combination of aesthetics, surface protection and ease of application.

"Specifically developed for use on tilt-up / precast concrete panels and components, Dulux AcraTex AcraTilt provides the ideal combination of aesthetics, surface protection and ease of application."

Significantly easier to apply than most high-build surface coatings, and more forgiving than decorative paints – especially on large broadwall areas - *AcraTex AcraTilt's* mid-film build formulation delivers around 3½ times this finished Dry Film Thickness of most decorative paints, whilst still delivering extended wet edge performance for ease of lapping and a professional finish.

Formulated to be self-priming on masonry surfaces, *AcraTex AcraTilt* provides efficient application, coverage, durability and performance.

AcraTex AcraTilt is available in a choice of three bases – Vivid White, Deep and Ultra Deep – providing maximum versatility in terms of colour matching and choice. Its high-performance formulation and inherent resistance to mould, algae growth and dirt accumulation, means it will stay looking good for the long-term.

FEATURES & BENEFITS:

- Self-priming on clean concrete surfaces
- Mid-build coating – 10m^2 per litre
- Broadwall coverage & ease of lapping
- Extended wet edge
- Concrete protection
- Crack bridging protection – 3.5 times Dry Film Thickness (0.3mm 2 coats)
- Vivid White, Deep and Ultra Deep bases
- 10-year product warranty*

**Terms and conditions and Consumer Guarantees apply. Refer to our website for full details. www.acratex.com.au*

For further information, please contact the **Dulux Help & Advice line,** T: 13 23 77 or visit the website: **www.acratex.com.au**

CASE STUDY

PROJECT NAME: Storage King - Minchinbury
LOCATION: Minchinbury, NSW
BUILDER: Xenia Constructions
APPLICATOR: Kapitol Painting Group
PRODUCTS USED: AcraTex BondFree Concentrate, AcraTex AcraTilt

Located some 38kms west of the Sydney CBD, the new Storage King facility in Minchinbury is not only one of the latest additions to the group's ever-expanding national network of secure storage facilities, it is also one of the first to be finished using specialist precast concrete surface coating solutions form Dulux AcraTex.

Completed in September 2020, the new 8,000m^2 facility was built by boutique construction company Xenia Constructions, and features an all precast concrete construction. The building has been painted in the client's corporate colours of blues/greys and white, using AcraTex AcraTilt.

The contract for the external painting was awarded to surface coating and painting specialists Kapitol Painting Group.

Prior to coating, the surfaces were prepared using the AcraTex BondFree Concentrate. This was followed by two roller-applied coats of AcraTex AcraTilt.

Speaking about the project, Manda Salic from Kapitol Painting Group, commented: "This is the first time that we've used the new Dulux AcraTex products, and we're extremely happy with the results."

"The AcraTex BondFree Concentrate was easy and quick to use and left a clean surface that was ready to coat."

"As for the AcraTex AcraTilt, everyone was extremely impressed," Manda said. "In fact, the guys on site said it was the best product they'd ever used on precast concrete"

"It was easy to apply, gave them excellent coverage and delivered a fantastic high quality finish, and the fact that it is self-priming helped to reduce the total time taken to complete the job."

"They were particularly impressed with its performance across the large broadwall sections," she said. "It delivered excellent consistency with no roller marks, while the extended wet edge formulation and easy flow through made it easy to get a consistent finish across the entire work area."

"They also like the fact that it cleans up in water and has low VOC's so it's also safe to use… both for them and the environment."

"Importantly, having a choice of three bases made it easy for us to match the colours to the client's requirements, and the finished colours are exactly what they were after," Manda added. "It went on well, it dried and cured as expected, and perhaps most importantly, delivered the finished result that everyone was looking for."

So too, the Engineer can use the vast capacity of Finite Element analysis to validate, optimize and adapt data to create the finest design solutions.


Just as the Conductor uses all the instruments
at his disposal to create the finest music...
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The art of tape technology... bringing architectural facades to life

With the rapid increase of advanced lightweight materials, designers and architects have access to a wide array of architectural cladding and profiles that allow them to design without boundaries. Today's modern construction and engineering design practices offer functional and versatile exterior finishing systems that not only offer contemporary and attractive facade solutions, but also quicker build times and environmental efficiencies due to thermal performance, reducing energy consumption for the life of the building.

ARCHITECTURAL FACADE PANELS

Widely used, lightweight architectural facade panels provide a high strength cost-effective facade solution that offers flexibility and extensive design potential, from shape through to colour, for an appealing and protected structure that requires minimal maintenance on both new constructions and in facade remediation. Their ability to be installed onto a variety of substrates makes them an adaptable and versatile solution.

Today's modern construction and engineering design practices offer functional and versatile exterior finishing systems that not only offer contemporary and attractive facade solutions, but also quicker build times and environmental efficiencies...

The facade is an essential element of any building. Even though there is a wide selection of architectural cladding and panel products available on the market, in many cases, the cladding panel system is to be comprised of non-combustible materials. The current trend for both remediation and replacement of combustible aluminium composite panels (APC) and new construction, is for the installation of solid aluminium panels. Whilst these panels are affixed to the structure and are non-load bearing, they do need to stand up to the environmental stresses applied to them. Depending on the size, thickness and wind-load applied to the panels, additional stiffening may be required through attachment of metal profiles to the rear of the panel.

WHAT ARE STIFFENER TO PANEL ASSEMBLIES?

Stiffener to panel assemblies refers to the process of applying reinforcing bars to the back of architectural facade panels to provide extra support and rigidity. They allow the panels to lay straight, withstand severe weather conditions and prevents them from losing their structural integrity over time.

Bonding stiffeners to panel assemblies require an attachment solution that is fit for purpose. This application requires a flexible attachment system that allows for thermal expansion and contraction of the panel, versus stiffener. It also minimises the potential of oil canning, the visible waviness in the flat areas of facade panels that may occur with rigid stiffener attachment methods.

STIFFENER BONDING METHODS

Stiffeners are bonded to facade panels via several methods; welds, mechanical fasteners, liquid adhesives and even tapes. Traditional mechanical fixings, means that rivets or screws are visible on the panels' surface and can present difficulties in the assembly process due to deformation or tearing, thereby reducing the reliability and longevity of assembled parts. Welding can damage metal surfaces by causing heat distortion, burn-through, or visible scarring, that often requires additional work to return the components to a condition suitable for finishing and painting. Liquid adhesive sealants tend to shrink after curing, resulting in isolated panel stress that may be visible on the exterior face of the panel. These methods are more likely to damage the integrity and aesthetic appearance of the panel.

High strength acrylic foam tapes provide an alternative to traditional fixing methods. They can replace liquid adhesives, sealants, welds and mechanical fasteners for an invisible means of attachment. Imparting a smooth, clean appearance - one that enhances the appearance of the overall facade by eliminating unsightly mechanical fasteners. High strength acrylic foam tapes offer instant strength, a high ultimate bond and stress distribution that allows relative movement of parts for thermal expansion and contraction. They have the added advantage of speeding up the assembly process and reducing labour costs.

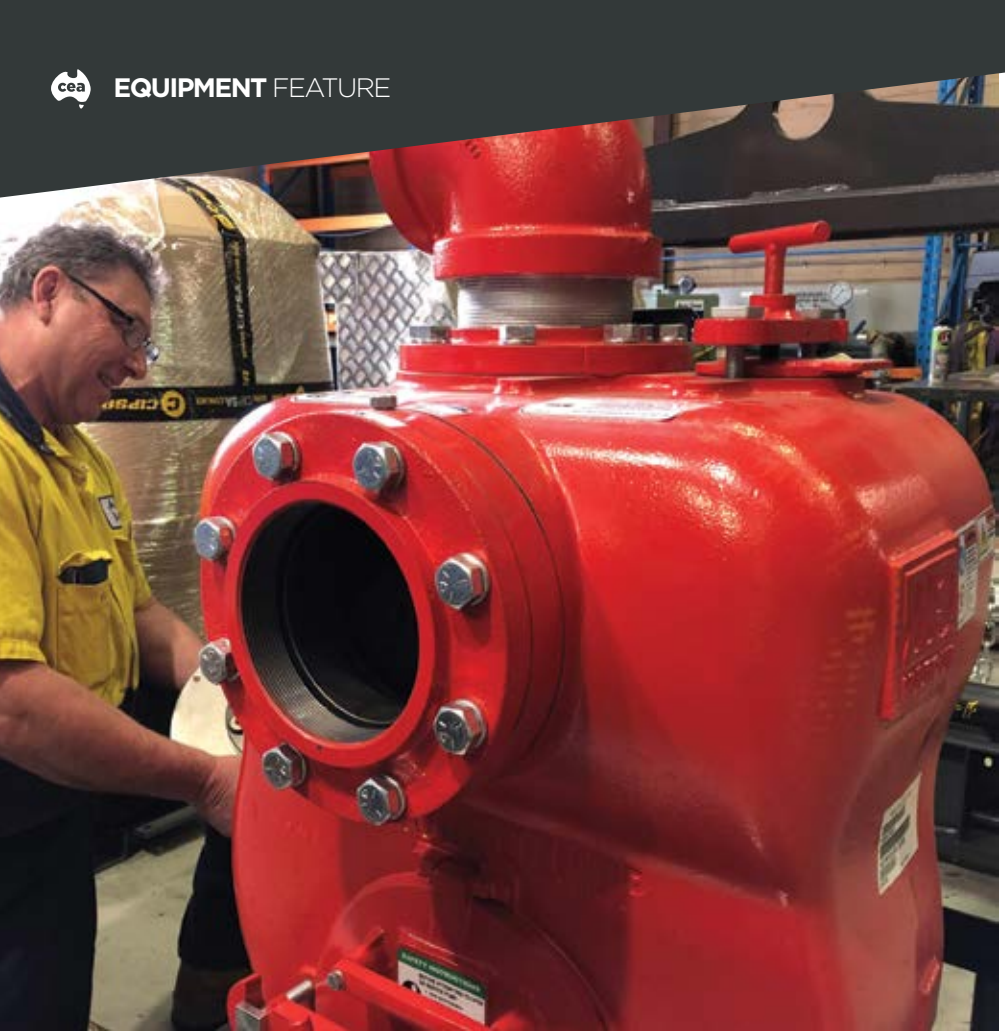
3M™ VHB™ ARCHITECTURAL PANEL TAPES

3M invented VHB Tapes in 1980 and in the forty years since, have been providing proven bonding solutions that outperform mechanical fasteners in a variety of applications. 3M™ VHB™ Tapes are high-performance double-sided pressure sensitive acrylic foam tapes used in the fabrication of architectural panel systems for quick, permanent assembly of stiffeners to facade panels, including aluminium composite material (ACM) panels and plate metal panels (aluminium and stainless steel).

3M™ VHB™ Tapes provide a fast and easy-to-use permanent bonding method for an ideal combination of high strength, long-term durability, performance and application. These attachment systems are quick, easy to process and provide an instant bond for immediate handling during the fabrication process. Their vibration absorption properties combined with the unique capacity to bond two different substrates together are all packaged in one solution to provide design flexibility and create visibly stunning facades.

The new 3M™ VHB™ Tape GPH-160GF allows for increased manufacturing efficiency and streamlining of processes as it is suitable for use on pre-finished panels or for assembly prior to liquid paint or powder coat processes involving a paint bake cycle, making it the ideal solution for stiffeners applied to architectural metal panels.

Contact a 3M Industrial Adhesive & Tape Specialist for assistance with your next project at: **https://www.3m.com.au/3M/en_AU/vhbtapes-au/support/** or call 136 136.



Construction site and quarry pumps – Dry prime or wet prime

Pumps play a massive role in the construction industry. They are indispensable in keeping quarries dry enough to be able to operate. Imagine if concrete batch plants had to shut down every time a quarry was full of water after a cloud burst.

One Australian company, Australian Pump, has done a lot to develop wet prime pumps in what has traditionally been a dry prime pump application.

Most dewatering applications involve some solids handling and the ability to move large amounts of potentially contaminated water. When you need to move water fast, most operators use diesel drive pumps. Nothing about that is new, and dry prime pumps by companies like Pioneer, Sykes and Cornell have all played a major role in keeping sites dry and operational.

However, those dry prime pumps, with their essential priming devices have their vulnerabilities.

Vacuum or compressor assist has potential for breakdown, particularly with corrosive or silty water.

Australian Pump Industries started out developing a range of first world self-priming centrifugal trash pumps from 2" through to 4". They realised that many of the dry prime pump applications could be better served by big simple self-priming trash pumps without complicated priming devices.

Aussie Pumps' Chief Engineer listened to Site Engineers and Quarry Operators about the real requirements of the job.

"Basically, it was about reliability and moving lots of dirty water with no fuss or breakdowns" said John Hales.

THE SELF PRIMING PROCESS

What makes the Aussie Pumps option so attractive, is the simplicity of the pump design. That is, a non-clog style, open impeller, designed to handle slurry and solids.

Integrating a huge tank in the pump's body enables it to hold the liquid required for priming. On the suction inlet, there's a check valve that stops the water in the pump from escaping when the pump is primed.

There are three simple steps to follow:

1. **To prime the pump, the operator fills the pump body with water. It is held inside the body by the check valve in the suction port.**
2. **When the operator starts the engine, the water in the body is expelled through the delivery port.**
3. **The vacuum created within the pump bowl, opens the check valve, and the water is drawn up through a suction line like drinking through a straw.**

There are no mechanical priming aids required.

The other major difference in design to dry prime pumps, is the front opening port. Being able to open the pump's body in the event of a choke of any kind, means the bowl can be cleared of debris in a matter of minutes, without disturbing the suction or delivery hoses.

Although the company started out with 2" trash pumps, with the Honda petrol engines, they quickly moved to diesel engines and increased the range to 3" and 4" products.

"We still weren't pumping water fast enough and had to move to a 6" pump, winding up with a design for a pump that will move 6,000lpm", said Hales.

The pump will draw water from a 7.6m vertical lift, without ancillary priming devices, produce a head of 46m, and can handle solids to 3". For a long, trouble-free life, it is fitted with an oil lubricated tungsten titanium carbide seal. The shock mounted control panel in a water-resistant housing includes an hour meter, ammeter, tachometer and alternator.

Left: Aussie Pumps build the big 6" Quarry pumps at their Castle Hill works in suburban Sydney.

Above: Aussie Pumps' Chief Engineer, John Hales inspects a production run of the big Aussie wet prime pumps.

"Known as the MQ600TD, the big 6" pump is powered by a 80hp Deutz air cooled diesel engine. It is built into the skid with a 152-litre fuel tank that facilitates 11 hours of continuous running."

Known as the MQ600TD, the big 6" pump is powered by a 80hp Deutz air cooled diesel engine. It is built into the skid with a 152-litre fuel tank that facilitates 11 hours of continuous running. The machine also comes with an integrated lifting bar and a super heavy-duty skid. It can also be configured into a robust site trailer for easy movement where required.

"You get a lot of pump for the money, but all this capacity, including the big 80hp diesel, weighs in at just under a tonne" said Hales.

The Deutz engine is fitted with engine protection and the Lofa DL240 controller. Low oil pressure, high oil temperature and v-belt failure shutdown are all incorporated in the protection kit.

Major mines and quarries are moving to wet prime Aussie Pumps with the company now planning an 8" "Guzzler" that will move dirty water at up to 9,000 lpm!

Further is available from: **www.aussiepumps.com.au**

Take the benefits outdoors:

Electric-drive portable compressors for outdoor use

Zero emissions and substantial savings in operating costs are just two of the benefits that portable compressed air users can enjoy with the Mobilair e-power series of portable compressors from Kaeser Compressors. A true alternative to conventional models, these rugged electric-drive portable compressors may be the ideal alternative wherever a power supply is available.

Environmentally friendly, powerful and efficient, Mobilair e-power units from Kaeser Compressors have been designed specifically for operation outdoors - wherever a power supply is available. The range was recently extended to include the M250E and M255E stationary portable compressor models. These mobile powerhouses - with drive powers from 132 to 160 kW - are robust, low-maintenance and easy to transport wherever they are needed.

The Mobilair M250E and M255E can be used either as a temporary solution to expand the capacity of an existing compressed air station, or as a permanent outdoor installation for industrial applications. They are particularly suited for use in locations where no compressor room is available, such as in mines, tunnels or shipyards.

Substantial operating cost savings can be achieved with these new systems in multiple ways:

At the heart of these systems lies a flow-optimised and premium-quality rotary screw compressor block with energy-saving Sigma Profile rotors. Optimised flow characteristics ensure the system delivers more compressed air for less energy output. Thanks to its 1:1 drive, the motor further ensures low speeds of 1500 1/min at 50 Hz resulting in enhanced service life.

The use of IE4 super premium efficiency motors (that comply with, and exceed prevailing Australian GEMS regulations for 3 phase electric motors) additionally deliver maximum performance and energy efficiency. IE4 motors are the technology of tomorrow, as current regulations introduced in January 2015 simply require the use of IE3 class motors.

Moreover, the electric drive motor is emissions-free and therefore particularly environmentally-friendly, and with sound levels at just 70 dB(A), these e-power Mobilair systems are also very quiet in operation.

Where power hook-ups are available, these electric compressors make even more sense, as electricity is generally much cheaper than diesel fuel. Another advantage: electric compressors cost far less to maintain. All maintenance parts are easily accessed via large doors, and service work is quick and simple, thanks to features such as the externally mounted drainage outlets for quick compressor fluid changes.

Compact dimensions allow these units to operate in locations where space is at a premium. They are also built to be moved quickly and easily from place to place. The narrow footprint is optimised for transport. Two units can be accommodated side-by-side on one HGV loading bed. Lifting eyes are fitted for the purposes of load-securing, whilst enormous skids enable the units to be easily moved into position. The skids also protect the underside of the body from damage.

The M250E has a drive output of 132 kW and delivers flow rates of up to 25 m³/min at 8.6 bar, while the M255E has a drive output of 160 kW delivers flow rates of up to 24.7 m³/min at 10 bar or 19.9 m³/min at 12 bar. Thanks to robust technology and a star-delta starter, the standard units are capable of operating in temperatures from -10°C up to +45°C.

For more information visit: **au.kaeser.com** or phone 1800 640 611.

Mobilair e-power portable compressors from Kaeser are made for tough outdoor environments.

Sullair launches new 'Managed Air Power' service

Sullair, a global leader in oil-free and oil-injected air compressors, has launched their Managed Air Power (MAP) solution to assist companies to run their operations efficiently and reliably, regardless of their budget constraints and market volatility. MAP is a solution for companies that may have their capital expenditure frozen due to COVID-19 complications. It makes compressed air simple, and allows companies to outsource the provision of compressed air to Sullair, allowing for total control over their compressed air without the significant upfront capital outlay.

MAP allows companies to save time and money by relying on Sullair's renowned expertise. By outsourcing their compressed air needs, Sullair installs the appropriate solution and takes care of all maintenance and servicing over 5 years.

Sullair Australia's Managing Director, Fred Funnell explains the benefit of outsourcing, saying that "…outsourcing provides the customer with the essential equipment they need, along with a whole of life support package and the peace of mind to know the

equipment is being closely monitored allowing them to focus on their core business."

After this period, companies have the flexibility to extend their contract, purchase the compressor outright, or end the contract. MAP gives clients the opportunity to buy compressed air on a consumption basis with a single monthly charge including usage, maintenance, and lease of the equipment.

MAP is a flexible offering that can work for both large and small companies. Key benefits include:

- **Maximised reliability and uptime:** Sullair's equipment will be remotely monitored 24 hours a day, 365 days a year. This means that Sullair will be able to know if there's a problem with your machinery before you do, and will act to minimize any downtime.
- **Easy budget management:** Customers will enjoy the convenience of one monthly invoice that covers all equipment parts, maintenance, monitoring and management.
- **Expedite purchasing of new or replacement equipment:** MAP allows clients to treat their compressed air as an operating expense rather than a Capex budget item.
- **Improved productivity:** Customers should be able to focus on their core business, not whether their compressor is optimised or if it's missed its routine service. By outsourcing to Sullair, clients are able to focus their time and resources entirely on their core business.
- **Comprehensive monthly reporting:** MAP comes with transparent monthly reports including usage, servicing, and equipment performance, giving clients clarity and peace of mind.

The most compelling benefit to outsourcing is being able to make the right decisions around the business's needs, whilst avoiding the significant capital outlay for new equipment.

"Outsourcing options give the customer a chance to stop and reassess their actual air demand and costs," Funnell explains. "It also helps them to ensure that they're not paying for energy that they don't need."

For more information on Managed Air Power, please visit: **sullair.com.au/managed-air-power** or contact Sullair on T:1300 266 773.

Worldwide Leaders of Anchors and Power Tools Unite Under One Brand

Pioneers in developing innovative construction solutions, iconic global brands, DEWALT® and POWERS have united under one brand, DEWALT® ENGINEERED BY POWERS™, to deliver a complete anchoring and installation system for the construction industry, focused on performance and productivity.

With construction work in Australia forecast to be $240 billion in 2021, DEWALT® ENGINEERED BY POWERS™ will meet the ever-growing demands of the construction industry to provide complete solutions that improve efficiencies, are code compliant and provide safer practice solutions with a focus on performance.

Both DEWALT® and Powers products have been used in the design and construction of many of the world's most iconic structures. DEWALT® now brings anchors, power tools and accessories to the forefront of structural engineers, specifiers, builders, contractors and on-site trades, with an understanding of tools and fastening systems that provide cost effective and exceptional results for construction projects.

"DEWALT is the trusted brand of choice for professional tradespeople, and Powers is a leader in the concrete and masonry fastening industry, so it makes a lot of sense to combine the expertise of these organisations to drive future innovation," says Adrian Davis, Managing Director, Stanley Black&Decker.

"The merger of the two brands positions us at the forefront of the construction and engineering industries in Australia and New Zealand. It also means that we can continue to support our products with expert solution and technical advice for all anchoring requirements, through our dedicated Enterprise Solutions Team. The team has been selected for their proven ability to respond to the demands of ever-changing industry requirements. The team is committed to adding value to our customers and projects, throughout the construction process," he adds.

Professor Emad Gad, Chairman of AEFAC (Australian Engineered Fasteners and Anchor Council) says, "From an industry body perspective, AEFAC is pleased that DEWALT ENGINEERED BY POWERS, which is one of the founding members of AEFAC will continue to enhance safety and efficiency associated with the use of structural anchors and fasteners through its products, and further elevate the technical knowledge and data for design engineers and specifiers. Implementing international best practice and offering products and systems with ETAs provide confidence to all stakeholders by meeting deemed to satisfy provisions of the National Construction Code (NCC)."

The first product to be launched by DEWALT® ENGINEERED BY POWERS™ is the Blue-Tip 2 Screw- Bolt™. The mechanical anchoring range offers state-of-the-art, one-piece design, heavy-duty screw bolt anchors. These innovative anchors hold a number of technical approvals which allows it to comply with various building codes and regulations. It can be used in numerous applications across a number of trades, including mechanical, electrical, HVAC, scaffolding, plumbing, interior finishing, civil construction and formwork.

"As part of our ongoing research and development, we continue to design products that meet today's requirements," says Davis. "The Blue-Tip 2 anchor is currently being used in a variety of applications by end users where a seismic rated anchor is required from a compliance stand-point. Some of these projects include multi-residential units such as Quay Towers at Darling Harbour and St Lucia's Student Accommodation in Queensland, Government projects including the Gold Coast Airport, Star Casino, Logan Motorway M1 Upgrade as well as tunnelling projects, M5 Tunnels and Metro Tunnel in Sydney."

Along with compliance and European Technical Assessment (ETA) approved products, DEWALT® ENGINEERED BY POWERS™ is constantly pushing the boundaries to create innovative tools for the construction professional with an emphasis on cordless tools for installation of anchoring systems. The one-piece design of Blue-Tip 2 makes it is easy to install with a powered impact wrench and is the preferred choice for fast but reliable anchoring which is also fully removable. The Blue-Tip 2 anchors are also designed with a tough cutting thread that allows for low installation torque, ease of installation and increased productivity.

"With complete solutions offering compliance, performance and productivity, our cutting-edge technology and user-driven innovation, we are looking forward to continuing to leverage our global and local experience to support the construction industry," concludes Davis.

For more information, please visit: **www.DEWALT.com.au**

THE CHOICE IS YOURS!

RANGE OF MODELS
IN STOCK
NOW
SET UP & READY TO GO

At A1 Roadlines we understand that our customers have a range of preferences when it comes to fleet vehicles. That's why we fit and service the Scorpion II TMA across a full range of suitable host vehicles from world-leading manufacturers including **ISUZU, UD, FUSO** and **HINO** to name a few.

So, when it comes to selecting a fully MASH tested, passed and eligible TMA that has also been **ASSESSED, APPROVED & RECOMMENDED FOR ACCEPTANCE** throughout Australia by ASBAP (Austroads Safety Barrier Assessment Panel), the only name you need to remember is **Scorpion II® TMA** from **A1 Roadlines**. When it comes to the brand of host vehicle... that's up to you!

THE EQUIPMENT YOU NEED – THE SERVICE YOU EXPECT

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P: 1300 217 623 (A1ROAD) | **F:** (03) 9765 9499 | **E:** sales@a1roadlines.com.au

INFINITY TESTING

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

NO RELIANCE ON ROLL-AHEAD DURING AN IMPACT
Rather than relying on some of the impact energy being absorbed by the forward movement of host vehicle on which the TMA is fitted, with 'Infinity Testing' the host vehicle is anchored to the ground to prevent any forward movement during an impact.

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

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

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

A1 ROADLINES

www.a1roadlines.com.au

THE ULTIMATE TEST OF ATTENUATOR PERFORMANCE

HOW IT'S DONE

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

WHAT ABOUT ROLL-AHEAD DISTANCES?

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

Scorpion® II TL-3 TMA
Crash Test: MASH Test 2-53
Impact Angle: 10.3 Degrees
Roll-Ahead Distance: 5.1m
Impacting Vehicle Weight: 2266kg
Impact Speed: 103.8km/h

Scorpion® II METRO® TL-2 TMA
Crash Test: MASH Test 2-53
Impact Angle: 9.9 Degrees
Roll-Ahead Distance: 12.4m
Impacting Vehicle Weight: 2295kg
Impact Speed: 81.6km/h

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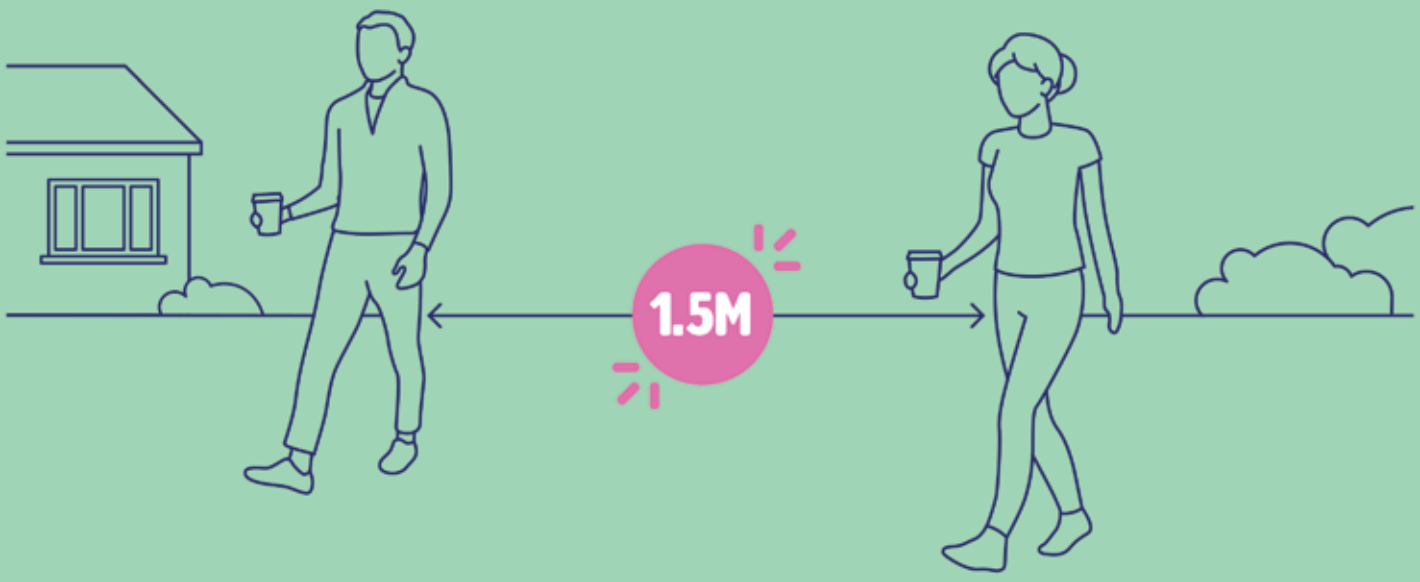
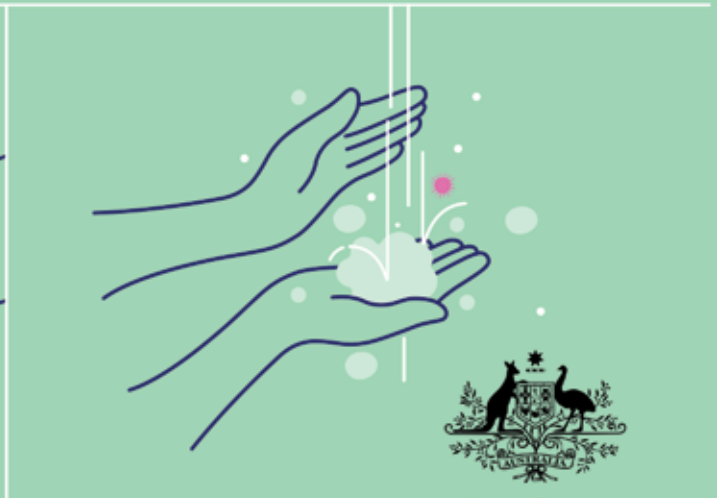
A1 ROADLINES

Keep physical distancing and **BE** COVID**SAFE**

Physical distancing is working to help keep us all COVIDSafe. Remember, whenever you go out, stay 1.5 metres apart and avoid physical greetings. Follow guidelines in shops and businesses and always practise good hygiene. This will help stop the spread of coronavirus.

Together, let's **BE** COVID**SAFE.**
Visit **health.gov.au** for more information.





Australian Government

Water Ingress in building basement eliminated with Acrylic Gel

A commercial property under construction in Wollongong was experiencing water ingress in the basement, primarily caused by the high-water table located approximately 2m above the basement slab.

Before the building's mechanical services, electrical lift and car stackers could be installed, the basement needed to be completely dry. In order to arrest the water ingress, the source of the leakage needed to be located, which proved challenging due to the latent ground conditions. The change in the hydraulic ground water gradient, local to the basement's perimeter, could not be easily identified.

Mainmark's team was able to locate the source of the water, which was found to be leaking through the combination secant piled and shotcrete wall system and the basement slab. They were then able to successfully deliver a perimeter treatment that intersected the interface between the wall system and the middle of the concrete slab.

The high-water table, unrestricted ground water runoff movement, and potential seepage via other un-tanked openings of the basement, particularly after heavy rain events, were major considerations when selecting a suitable water stop solution for the basement.

Given the time constraints and budget, Mainmark recommended using a specially formulated acrylic gel, which provided a flexible membrane and sealant between the basement concrete wall and original membrane previously installed at the rear of the basement wall.

Objectives

A long-term waterproofing solution that could seal the basement and eliminate water ingress was required for the construction to progress. The solution also needed to seal leaks at the joints, cracks and gaps in the concrete while diverting moisture away from the treated areas.

Solutions

Prior to the project commencement, the Mainmark team successfully identified the source of water ingress behind the basement walls, despite limited information available to guide them to the source of the leaks. The water was then diverted into the building's drainage system, preventing it from penetrating through the basement substrates.

Mainmark injected a specially formulated acrylic gel to areas where leaking was evident. The acrylic-based hydro-structural resin was identified as the most appropriate solution due to the product's ability to track the exact path of the water source, seal using a controllable reaction time, and ultra-low viscosity to seal behind the blind sides of the basement walls.

Once the preparatory drilling process is complete, the acrylic gel is easy to inject and boasts fast reaction and curing times. The variable setting time allows operators to adjust the speed of flow so the product is not diluted, allowing it to set behind and within the structure. The low viscous solution can also re-emulsify up to 500 times, boasts excellent adhesive properties, and is able to seal wet and dry substrates and surfaces.

The client placed a high degree of trust in Mainmark for this basement project, as there was limited information available about where the leaks started and finished. For this reason, and to help ensure the project remained within budget, initially only areas with evident leaking in the basement areas were treated. The acrylic gel provided an efficient and effective solution for a problematic situation that alternatively could have required the client to undertake a very expensive, full curtain membrane of the substrate.

For an obligation free, expert opinion contact us

1800 623 312

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mainmark

PRECAST JEWEL IN A **BUSHLAND CROWN**

Project: Mahon Pool
Location: Maroubra, NSW
Master Precaster: Waeger Constructions
Client: Randwick City Council
Architect: Lahznimmo
Builder: Currenti Constructions

A recently completed new precast club facility and amenities block perfects the swimmer experience that is afforded by Mahon Pool, a saltwater tidal pool just a short 20-minute drive south west from the Sydney CBD.

With Maroubra Beach close by and being surrounded by scenic cliffs, Mahon Pool in Maroubra has become a popular swimming spot for tourists and locals alike. The Pool is also the home of the Maroubra Seals Swimming Club.

Randwick City Council's brief was to reduce the visual impact on the Jack Vanny Reserve Headland by the existing 1960s clifftop building - a design which was reminiscent of public toilet blocks from the 1950s and '60s – and replace it with light and airy amenities that integrated into the local landscape.

The solution: a state-of-the-art precast facility which is nestled into its surrounding bushland landscape

National Precast Master Precaster Waeger Constructions manufactured and installed numerous types of structural and civil precast concrete units for this project.

Scope of works included demolition of the old structure and construction of two new linked buildings, gifting the Swimming Club a new clubroom adjacent new amenities which comprise male and female toilets, change rooms, accessible toilets, showers and a parents' room.

Creating a consistent look across the whole project, extensive landscaping complements the building and paths connect it with the existing coastal walkway to Maroubra Beach.

With a total budget of $2 million, high-quality and highly durable precast concrete was specified for the construction of the project.

PRECAST SPECIFICATIONS

Waeger Constructions supplied 36 precast concrete panels of varying dimensions, all suited to the clients' brief. They were manufactured with an exposed aggregate finish, highlighting the rose-coloured red granite aggregate that was sourced from the Eyre Peninsula in South Australia. Oxide was also added to the concrete mixture to obtain the desired colour set out by the architects, Lahznimmo.

Three precast grey sandblasted concrete seats were also supplied and installed to the Mahon Pool site, all detailed with custom radii on the ends of the units.

WHY WAS PRECAST CHOSEN

Located in a coastal zone, structural integrity and durability were needed to withstand the harsh climate, and precast offered the perfect solution.

According to National Precast CEO Sarah Bachmann, because precast is manufactured in a factory-controlled environment, the quality of the product is far superior to what can be achieved by pouring on site.

Indeed, the precast concrete supplied for the Mahon Pool amenities block boasts quality, with a consistent and elegant finish. The ability to deliver the details required by the client was achieved with incredible accuracy.

As an added benefit, on-site construction time and labour reduced the overall timeframe of the project and offered a safer and cleaner site for all.

AN ELEGANT OUTCOME

Blending in with the surrounding sandstone and coastal landscape, the deliberate choice of the aggregates, oxides and finishes used in the production of the precast panels and seats create a cohesive and contemporary appearance.

A safe sheltered place for local swimmers and visitors alike to swim if they aren't keen to tackle the surf at Maroubra Beach, or a place to stop and take in the panoramic view of the pacific ocean, Mahon Pool is now a destination in itself. And it now boasts a new state of the art facility that houses the winter Swimming Club and provides amenities for the Club and visitors alike.

It is truly a jewel that is nestled in a crown of coastal scrub.

ESSENTIAL INFRASTRUCTURE DEMANDS **BUSHFIRE SAFE MATERIALS**

Australia is no stranger to bushfire. As well as devastating property loss, damage to essential infrastructure that can add additional stress and even catastrophe. Continued power, water and communications services are very often compromised in extreme temperatures, especially when combustible materials are used in their construction.

Precast concrete power poles are a robust solution in fire-prone bush areas and they've been manufactured and supplied around Australia by Master Precaster Rocla for over 45 years.

The inherent ability for precast concrete elements to be non-flammable, non-combustible and ember resistant - all whilst maintaining a fast construction turnaround and low cost - means that precast construction is an excellent choice for high fire risk locations.

That is not to say that under intense and extreme conditions there will not be some changes however, to the aesthetics of the members. Structural integrity though is usually maintained.

Under the prolonged high-heat load of a bushfire, precast concrete poles occasionally exhibit non-structural surface defects known as pop-outs. Surface defects are typical at approximately 660 degrees Celsius, or the melting point of aluminium. Australian bushfires typically sustain temperatures of 600-800 degrees in heat fluxes that last for a few minutes. In extreme cases, the surface layer of precast posts may spall, resulting in an exposed concrete core as the outer aggregate layers degrade. In such cases, the inner layers of concrete retain their grey off-form colour, indicating that these layers have not lapsed 300 degree Celsius, and thus the structural integrity of the pole is not compromised.

To assert the validity of these claims, controlled tests have seen precast concrete poles manufactured by Rocla endure 6 hours of a 250 degree fire, whilst maintaining the typical specification of 115% bending strength.

As high wind speeds are common during bushfires, it is vital for precast concrete poles to simultaneously withstand the force of both heat and wind. Further testing has confirmed the rigidity of Rocla's poles to withstand 840 degrees over a 20-minute timespan. This testing identified that in accordance with AS3600, each concrete pole exhibits a fire resistance period (FRP) of 30 minutes. It is noted that the severity of such tests is over ten times the duration/heat load of a typical bushfire.

Precast poles are often embedded with services such as electricity and telephone lines, both of which are vital to remain active during a bushfire. National Precast's Master Precaster Rocla have taken great pride in protecting these services for rural communities. Rocla ensures that each pole has a wall thickness of 60mm or greater, which is double the appropriate fire rating standard of 30mm.

In bushfire prone areas, it is not uncommon for precast concrete poles to be lined with fire-retardant materials such as vermiculite or cementitious grout. Precast concrete, although not highly susceptible to heat inflicted damage, can be quickly and affordably repaired. Any surface imperfections due to bushfire damage can be repaired with cementitious, non-shrink mortar.

Not only does precast concrete provide affordable and constant quality power poles, but they also prove to withstand the sustained high-heat of bushfires. With bushfires on the rise, National Precast's members are industry leaders in the design, supply, and installation of precast concrete power poles.

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Artist's Impression - View of the North Deck at UTAS' Cradle Coast Campus.
Image courtesy University of Tasmania

STRIATED PANELS ADD AESTHETIC APPEAL TO ICONIC BUILDING

Project: Cradle Coast Campus UTAS
Location: Burnie, TAS
Precasters: Duggans Precast
Project Timeline (Precast): May 2020 – September 2020
Architect: John Wardle Architects (JWA) & Room 11
Builder: Fairbrother

Forming one of the key references to place, history and local geography are an array of striated precast concrete panels that form much of the recently completed Cradle Coast Campus for University of Tasmania.

A total of 148 precast concrete panels were supplied by National Precast Master Precaster Duggans Precast. The precisely formed panels cover a total surface area of 2030m^2, with much of the exterior surfaces featuring intricate vertical striations.

In choosing precast concrete, the University of Tasmania was able to minimise costs associated with on-site inefficiencies all-whilst maintaining a high level of precision in colour, material and finish of the building.

The 1350mm tall and 150mm thick precast panels produced were cast with the aid of a custom vertical-board form-liner. These panels contribute a striking aesthetic to this new and iconic building in the Burnie region.

Top: National Precast Master Precaster Duggans Precast supplied a total of 148 precast concrete panels for the project.
Above: The precisely formed panels cover a total surface area of 2030m^2. *Image courtesy University of Tasmania*

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Accelerating business recovery through digital transformation

by Warren Zietsman, Managing Director, Australia and New Zealand, IFS

Two centuries ago, the world witnessed the first industrial revolution. Using heavy machinery and new-found power sources, European and American businesses accelerated the manufacturing, construction and engineering processes at a rate that was seemingly impossible at the time.

Fast-forward to 2020 and the world is once again observing another revolution, this time characterised by the increasing prevalence of emerging technologies and an ongoing global pandemic. As the COVID-19 pandemic continues, digital transformation is moving into overdrive as Australian businesses seek to overcome major disruptions to vital supply chains, particularly within the construction, manufacturing and engineering sectors.

As organisations prepare for tomorrow's challenges, it is critical that Australian business leaders recognise the new digital transformation trends and consider how their organisation will operate in a new era of work.

Until this year, most industry experts assumed the macro-economic disruption would result in the dampening of business investment in new projects, and yet a recent IFS study *'Digital Transformation Investment in 2020 and Beyond'* revealed 58 per cent of Australian companies had plans to increase expenditure on digital transformation projects. Globally, the same study found people concerned with economic disruption were 20 per cent more likely to increase spending on digital transformation.

Surprisingly, those with plans to increase investment this year operate in sectors that have traditionally been laggards when it comes to adapting technology, including the energy and utilities sector (83%) and the construction and engineering sector (71%).

In the construction industry, hesitancy to implement new technology has often been a product of the sector operating on a project-basis which are typically fragmented along the value chain, with specialists operating in a small number of disciplines and project teams rarely demonstrating consistency. Organisations are often focused on solving unique problems without data management, meaning these projects lack repetition.

However, now the sector is investing heavily in enterprise technology to catch up with more digitally mature sectors, such as the manufacturing sector, to avoid falling behind their competitors, or worst. More than half (54%) of Australian businesses believed they would cease to exist in five years if they didn't take risks with their digital transformation projects.

More specifically, they understand that integrating the latest technology is a cornerstone for business continuity planning, alleviating process pain points and building resilience. Technology allows businesses to maximise the use of modular, offsite construction to build a base of project repetition, rely on systems to identify and manage project risks, and create a seamless end-to-end construction process, alleviating these issues.

As the construction industry begins to see the competitive advantage of investing resources towards technological renewal and innovation, the key question is how can business leaders ensure the success of digital transformation projects and deliver value?

Success relies on a leader's ability to exert caution during a digital transformation project, to ensure all projects are data measured and process-based. Failed

projects are detrimental to an organisation, with the average Australian construction business taking two years to fully recover. Subsequently, informed decision-making during integration is reliant on transparency throughout the entire digital transformation process.

When it comes to delivering value, it's time for business leaders to recognise that digital transformation is more than a band-aid solution, and will allow organisations to recover and thrive in the post-pandemic world. Investing in enterprise software solutions is an essential component to building short term business continuity, long term resilience and a competitive advantage over other industry players.

A full copy of the report *'Digital Transformation Investment in 2020 and Beyond'* can be downloaded from: **https://www.ifs.com/corp/sitecore/media-library/assets/2020/06/29/global-pr-survey-digital-transformation-investment-in-2020-and-beyond/**

ABOUT THE SURVEY

The study is based on responses from 3,032 executives in Australia, the UK, the US, France, Germany, and the Nordics. Respondents represent a broad industry scope, including manufacturing, construction, healthcare, IT/Telco, energy & utilities, and travel & transport.

Data was collected between 8 April and 5 May 2020, by *Censuswide.*

ABOUT IFS

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The Worksite of Tomorrow, Today

by Burcin Kaplanoglu, Executive Director, Innovation Officer, Oracle Construction and Engineering

The Australian construction industry is finding itself learning to respond to this new and unprecedented era of disruption. From global supply chains disruptions to adopting strict physical distancing rules to keep sites open, it has resulted in a slower-than-usual progress on many projects. For Australia, this has resulted in an 18 per cent drop in productivity[1] across the infrastructure sector since the impacts of the pandemic kicked in.

While the delays have been exacerbated by COVID-related challenges around health, safety and productivity, it only reveals what the industry already knows – that it remains one of the least digitised industries, with many onsite projects completed in the same way they were being done decades prior.

With the unpredictability around job sites, project managers must consider innovative but dependable solutions to achieve project delivery success in this new reality. In many cases, it may require adjusting the means and methods traditionally used when delivering projects in the past.

Here are a few solutions available that can help address the current unique industry challenges, ensuring construction projects are progressing with as little disruption as possible.

REMOTE VISUAL MONITORING OF CONSTRUCTION SITES

In lieu of on-site inspections, construction companies have begun embracing a variety of remote visual tools, including drones, laser scanning, light detection and ranging technology (LiDAR), to remotely monitor the progress, quality and security of their projects.

By conducting field inspections and scheduling reviews from the safety of workers' own homes, these new technologies can enable teams to review what is there versus what should be there to sub-centimetre accuracy. This allows for social distancing and enables project teams to revise contractors' work sequences to physically separate otherwise risky work interactions.

In addition, site cameras can also provide real-time monitoring and security. For example, pan-tilt-zoom (PTZ) cameras let users monitor various areas of the site and zoom into areas of interest while creating panoramic images and time-lapse videos. Site cameras use thermal sensing and edge-based analytics to sense motion, which

triggers email/SMS/text alerts. In addition, fixed cameras are increasingly leveraged to enhance remote collaboration between stakeholders while also capturing images and time-lapse videos to send regular updates.

SOCIAL DISTANCING ON CONSTRUCTION SITES

In the case that on-site inspections are necessary, construction companies have found success with artificial intelligence (AI) in improving jobsite safety and mitigating risk. This is due to its ability to provide more safety coverage without sending additional people to the site - creating automated reports to help with mitigation plans and documentation.

With sensors attached to the workers, it is also possible to emit a progressively louder alarm as a reminder whenever workers are too close to each other. The alarm will serve to gradually change and improve the habits of workers to practice safe social distancing.

In addition, in the event that there is a confirmed case of COVID-19 on a worksite, an employer can use historical data captured passively by the worker's device to gauge who may have been exposed.

BRING PEOPLE, INFORMATION, AND PROCESSES TOGETHER

To protect teams, operations and ultimately project outcomes, it is important that all project schedules are updated throughout the project. This means data silos and offline recordkeeping are minimised.

The update should be comprehensive, documenting a completed and in-progress status for all design, permitting, bidding, procurement, submittal, fabrication, delivery, and construction activities. This can be quite time-consuming, so a schedule management solution is ideal in this case to ensure a more seamless and efficient integration to log the data. Ideally this would be directed to a centralised centre.

It is remarkable that today's high-tech buildings and infrastructure assets are contrasted with dated, low-tech processes. Yet as a result of the ongoing global crisis, construction industries are finding themselves pursuing – and in some cases fast-tracking - digital transformation in order to continue to operate through this new reality. Whether it is to mitigate the direct impacts of COVID-19 on the worksites or new ways to approach project delivery, it is clear that the digital agenda cannot be ignored.

Reference

1. https://www.roads.org.au/News/ArticleId/516/infrastructure-sector-currently-expects-only-minor-delays-to-delivery-of-pipeline

ANZ construction industry rapidly adopting technology in 2020

A new survey by tech giant Autodesk shows 26% of owners, 24% of subcontractors and 20% of head contractors in the ANZ construction industry have adopted technology in response to COVID-19

Autodesk, Inc. recently announced the results of its latest research report, *Connected procurement: The foundation of construction success*. The report is based on an in-depth survey by *Censuswide* in June 2020 which surveyed 503 Australian and New Zealand (ANZ) construction project owners, head contractors and subcontractors involved in the tendering process for construction projects.

The survey found 26% of owners, 24% of subcontractors and 20% of head contractors in the ANZ construction industry have adopted technology in 2020 in response to COVID-19. The findings also showed that 80% of contractors see errors in some or all of their construction projects as a result of outdated manual processes.

Adele Bernard, Head of Marketing, Asia Pacific Operations, Autodesk Construction Solutions, said, "Autodesk commissioned this survey to explore the tendering process across the construction industry, including how new and existing business relationships factor into the process, the impact of COVID-19, the extent to which technology is being used and its potential future impact."

"We found that technology is being adopted broadly by the construction industry in 2020. The industry is moving to a digital world to reduce errors and risk, save time, connect with the right suppliers and work effectively remotely," said Ms Bernard.

The survey results found that across ANZ, the technologies used to invite, submit and review tenders currently include email, Google Drive, Microsoft Excel, Dropbox, Microsoft Project, spreadsheets, custom solutions or paper-based tender submissions.

According to Ms Bernard, "The pre-construction process, and specifically procurement, remains highly individual. Many companies make limited or disjointed use of technology, leading to inefficiencies and errors that can compromise the success of the project – and the business."

"Challenges experienced during the process of procurement and tendering can ultimately impact project outcomes. Whether a business makes or loses money is down to the things they do before – rather than during – construction."

"Inefficient procurement processes increase the risk of mistakes that could have serious repercussions for the business or the project itself. Technology can help to overcome issues during this process and prepare for the future of construction," Ms Bernard concluded.

BUILDINGCONNECTED – STREAMLINING THE TENDERING PROCESS

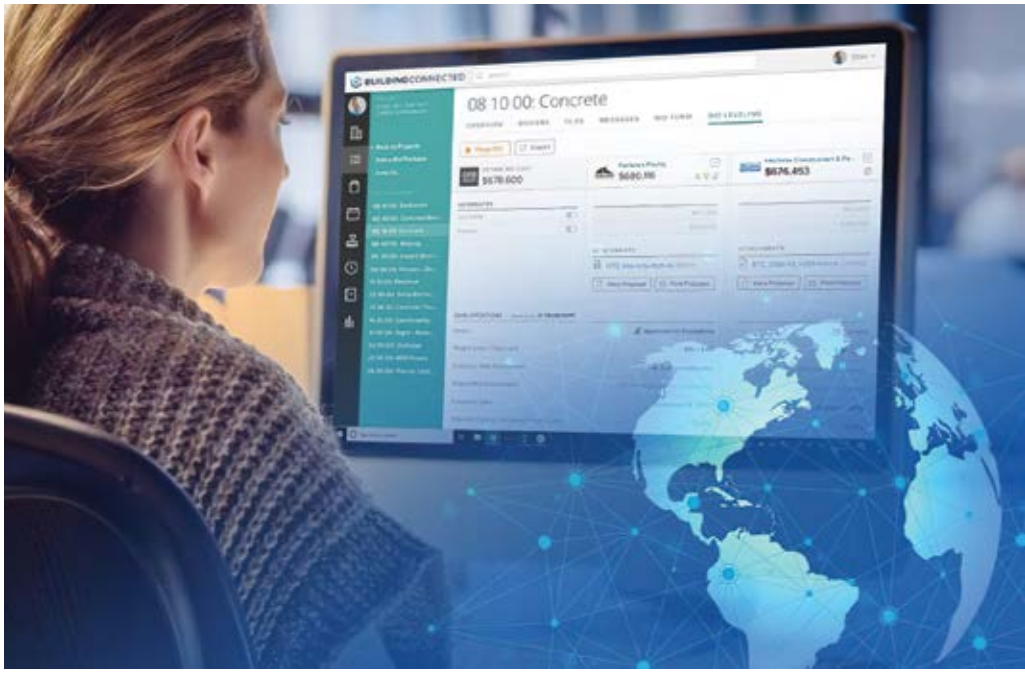
In October 2020, Autodesk announced the international expansion of *BuildingConnected,* a construction management solution that centralises and streamlines the tendering process, and encompasses the *Autodesk Construction Cloud* builders network, a crowdsourced network of construction professionals. *BuildingConnected* is now available for customers in Australia, New Zealand, United Kingdom and Ireland.

The platform has over 1 million construction professionals in North America alone with over 2,000 general contractors and owners actively bidding out projects – totalling USD56 billion in project values each month. Owners and general contractors use *BuildingConnected* to discover trade partners and identify the right subcontractor for the job, and to solicit and compare tenders from one central location.

BuildingConnected empowers preconstruction teams to:

- Quickly solicit bids with customisable templates and accurately compare those bids in a side-by-side "apples-to-apples" fashion
- Track against internal budgets with real-time cost updates
- Easily collaborate with other estimators on the team, and follow communications and bid versions
- Export bids and summary sheets for transparent collaboration with owners
- Gain valuable insight into historical bid data and reports to optimise for future projects

For further information, including key features, please visit: **https://constructionblog.autodesk.com/autodesk-expands-buildingconnected-global**



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Dexus required an entrance security system that incorporated sophisticated security yet kept an aesthetically pleasing and unobtrusive lobby. The ideal solution was found by integrating Boon Edam speedgates, MorphoWave palm readers, Schindler Lifts and Honeywell access control technology.

Touchless security upgrade integrates a perfect jigsaw of solutions to meet tenant needs

Property leader Dexus has upgraded the Gateway building in Sydney's Circular Quay, to feature entry security measures that are increasingly demanded by tenants seeking protection of employees, visitors and valuable data.

Gateway is Australia's first office tower to use fully integrated touchless hand scanning to allow authorised office workers and guests into the building.

The building's new entrance involves a complex integration of security and technology experts, including Boon Edam (master security licence 000 104 487), Schindler Lifts, Honeywell and IDEMIA (the manufacturers of *MorphoWave* palm reader technology). The solution had to work seamlessly to enhance the user experience and building security for tenants and visitors at the 46-storey landmark building in Sydney's CBD, owned by Dexus Wholesale Property Fund.

"Tenants have a duty of care to protect their employees and visitors as well as valuable data and intellectual property, and they need the cooperation and support of a responsible and innovative building manager such as Dexus to manage secure entry into the building," says Mr Michael Fisher, Managing Director, Boon Edam Australia

Mr Stephen Hodge, Senior Project Manager with Dexus, confirmed that this was a major reason for the Gateway upgrade.

"We have tenants in Gateway who requested ground floor security, so we went out to tender to seek the best combination of sophisticated security and elegance, without being obtrusive to the building's users," he said.

Boon Edam delivered the entrance security solution, with speedgates that are the slimmest in the market, which added to the aesthetics, and helped with design considerations within the width of the lift lobbies.

COMPLEX INTEGRATION

Gateway's access solution begins with a sign-in system for guests, while authorised tenants will have their unique finger pattern saved. The guest pass, or your finger ID pattern, is then used on a *MorphoWave* palm reader, which grants access to authorised personnel.

Each *Morphowave* reader is connected to Schindler's PORT Technology, which then receives the user's credential data and is cross-checked in the base building access control database. If the user is valid, a command is sent to the Boon Edam *Lifeline Speedlane* to open. This interaction is surprising quick with limited latency.

A major part of the solution involves lift destination control, whereby a user's credentials automatically assign a lift as they are verified and allowed access through the speedgate. This seamless integration was assisted by an existing global partnership between Boon Edam and Schindler Lifts.

The partnership enables Schindler's PORT 4 mini technology to be embedded into the speedgates at the manufacturing stage in the Boon Edam factory. The design also incorporates a high-level interface between Schindler's PORT Technology and Boon Edam speedstile to control the speedgates.

Using an advanced algorithm and the integrated Schindler PORT 4 mini lift destination control for visual and audio feedback, a lift is automatically assigned at the same time the gate is opening, for optimum efficiency. The security is controlled by Honeywell's access control system, integrated with Schindler's PORT Technology.

Honeywell has been managing the security and building management systems for the Gateway building since it was first opened in 1990. Honeywell Asia-Pacific Solution Architect Leader Rhys Crabb says early engagement at all stages and a commitment to a collaborative approach enabled Dexus to select the best available technologies.

Each of the Boon Edam Lifeline Speedlanes is fitted with a MorphoWave palm reader which is connected to Schindler's PORT Technology.

"Dexus placed customer outcomes first and foremost in the project brief, ensuring the delivery of a product that provided tenants and visitors with a premium, modern and secure user experience that is flexible and easy to use," said Mr Crabb.

Mr Hodge added that "with so many stakeholders, and a strong need for reliability and quality, it was important that everyone knew the goals of the project and worked well together. I'm pleased to say that it was like a perfect jigsaw and everything came together smoothly."

"What was important to Dexus is that we were pushing the boundaries to create better experiences, but we're only doing so with proven products. Boon Edam's speedgates have been installed globally and locally, and this gave us added confidence that they were the right product for this forward-looking project," he said.

"Another significant help with this project was that the companies involved built a prototype, located at Schindler's Head Office based in Sydney, so that the Dexus management and technical teams could test the solution well in advance of implementing it at Gateway. It gave us peace of mind that we'd selected the right suppliers."

PRIVACY

Palm readers were chosen to control access to secured floors and areas of the building, because it provided an extra level of privacy that was attractive to tenants.

"A computer algorithm converts each person's unique finger and palm signature into binary code – zeroes and ones – and uses that code to grant access," explained Mr Hodge.

"Boon Edam speedgates have the ability to integrate facial recognition, which could be highly valuable in other projects, but the palm readers were the right fit for this building. Boon Edam made it simple to integrate them with their speedgates, which helped us meet project deadlines," he said.

Top service, and a staged introduction

For such a complex project, installation always has its challenges, including managing installation work as people continue to use the building.

Dexus Facility Manager, Gateway, Mr Bill Garrett, was impressed by Boon Edam's service and installation team. "The Boon Edam installation team always ensured safety was the number one priority and they did a quality job, even with some very difficult to access areas," he said.

"I'm delighted with the result of the project. One of the major benefits of the new entry system is that there's a dedicated underground entrance for tradespeople, couriers and deliveries, which removes congestion and bulky trolleys from the main lobby. It's all about enhancing the user experience, and Gateway will set a new benchmark for a seamless, secure and aesthetically pleasing entry."

Mr Garrett explained that to get tenants used to a totally new system, they adopted a staged approach. At first, the speedgates were there, but left in the open position, then some gates were closed, so that tenants could trial entering using the new technology if they wished, in advance of the entire system being fully implemented.

"In addition to this staged approach, we met with key tenants and allowed them to trial the system in advance. The testing, combined with the staged approach, allowed for a smooth transition to the new security technology," said Mr Garrett.

A template for the future

Now that the technology has been successfully rolled out at Gateway, Dexus is looking at other locations that can utilise the same harmony of security technologies.

"We are continuing to assess opportunities to implement touchless technologies in new developments as well as in our existing buildings," said Mr Hodge.

"The stylish and secure entrance at Gateway has been ideal through the COVID pandemic. It manages flow, queries guests on visits to hotspots, if they are feeling any symptoms and can record all entrants to the building, helping us meet Government requirements. And the same features will be beneficial in a broader context, too, to help mitigate against unauthorised entry," he said.

For further information, including details on Boon Edam's range of revolving doors, security doors & portals, speed gates, tripod turnstiles, access gates and full height turnstiles, please visit the website: **www.boonedam.com.au/news**

Dexus Senior Project Manager Stephen Hodge, pictured, is pleased with how well different security and access technologies are seamlessly working together at Gateway to enhance the user experience.

The need for women in construction

by Kavita Lachmaiya, Construction Project Manager at HCF and Construction Management student at UniSA Online

When I tell people that I'm a project manager in the construction industry they're almost always surprised. Sometimes they'll even respond with "I thought you were a nurse or something, you have that vibe".

I can't blame them, I actually was a nurse for 3 years studying Health Sciences but fast forward 10 years and here I am, the only woman sitting in a project control meeting asking for updates from building contractors. As a 29-year-old woman I'm not what people picture when they think "construction", but change is in the air regarding female participation in our industry and it's for the better.

According to statistics from the Australian Labour Market Information Portal, only 12.4 percent of all construction jobs are held by women. NAWIC Queensland (National Association of Women in Construction) estimates that the number of women on tools in Australia is even lower - at around 2 percent.

With the skills shortage reaching crisis point in many fields, there's an urgent need to get more women into the construction industry. Better gender diversity correlates with higher profits and productivity, improved collaboration, as well as a more inclusive workplace culture. This improves the mental wellbeing of both men and women, which is critically important given the severe mental health statistics in the building sector.

According to worrying research, across Australia and all time periods, male construction workers have suicide rates 84% higher than non-construction workers. Higher numbers of women in building jobs could help to foster a more supportive environment for everyone.

When working with external contractors on job sites, I've seen first-hand on job sites the severely crass and negative language used to communicate between male construction workers, they usually quickly apologise when they realise that there's a female present. The behaviour can only be described as institutionalised bullying and certainly contributes to the poor mental health statistics of male dominated workplaces. If the presence of one female on a job site is enough to deter negative language, it's encouraging to imagine what effect increasing female participation in construction jobs would have.

NAWIC is one of the organisations actively trying to get more women into the construction industry. Its vision is for an "equitable construction industry where women fully participate", and it advocates for a minimum of 30% female participation in all construction projects, across both white and blue collar roles. So how can this be achieved?

"With the skills shortage reaching crisis point in many fields, there's an urgent need to get more women into the construction industry. Better gender diversity correlates with higher profits and productivity, improved collaboration, as well as a more inclusive workplace culture."

1. PROMOTING ROLE MODELS

Increasing the visibility of women in the construction sector is vital. Female high school students and university students need to see successful women in the industry. Many women may not even be aware of the opportunities out there. There also needs to be more women employed in leadership and decision-making roles, to actively push for cultural change.

The bullying culture on job sites can be particularly deterring to women. There have been some severe cases of bullying to females in construction roles, an example being that of Mathews who in 2015 was awarded $1.35 million in damages due to the severity of bullying that she experienced. Alarmingly, she reported her experience to her employer who laughed her off. By promoting role models and positive culture within the construction industry, cases such as Mathews' can be better addressed and deterred.

2. IMPROVING STEM EDUCATION

The Australian government's Advancing Women in STEM strategy aims to increase gender equity in STEM, which includes engineering and IT roles in the construction industry. Its action plan includes finding ways to better support girls with numeracy performance and participation.

In year 12, boys outnumber girls 3 to 1 in physics and almost 2 to 1 in advanced mathematics. This low participation directly impacts future opportunities for girls in STEM.

3. GETTING WOMEN "ON TOOLS"

Although there are many white collar/ office-based roles in construction, many of the men who end up taking these roles have previous experience working on building sites. This gives them a very good basis for studying construction management and a better understanding of the industry. Getting women interested in entry-level construction work would create a clearer path for them to continue up into management or at least allow for them to take the "natural" path into construction management that a lot of their male counterparts take.

4. FIXING BIAS AND STEREOTYPING

The bias and stereotyping that girls experience, from an early age, has been identified as directly impacting their confidence and their interest in STEM careers. Research shows that the construction industry is not appealing to high school girls because of its perceived exclusivity and gender imbalance. There are also issues with gender pay gaps in the construction sector, which has the third worst gap of all sectors at 26 percent.

I've been lucky enough to take advantage of the strong emphasis that my workplace places on further education and internal promotion. Studying Construction Management through UniSA Online with the support of my workplace has opened up avenues that I never would have considered when leaving school. I've met a handful of women also studying the course, but overwhelmingly it's been men that have a background in trades.

There's no single, fixed path to a career in construction. The important thing is that women - from students to those more advanced in their careers - don't rule out working in the construction sector because they think it's "just for men".

CRASHWORTHINESS RULES HAVE CHANGED...

DO YOUR CRASH CUSHIONS COMPLY?

The new rules requiring MASH tested & approved crash cushions came into effect across Australia on January 1st, 2020

In accordance with the Austroads / ASBAP '*Transition to MASH*' process, crash cushions installed on Australian roads are now required to be tested and approved under the AASHTO MASH guidelines, rather than the superseded NCHRP350 guidelines.

Both the **SMART CUSHION SC100** and **SMART CUSHION SC70** have been successfully tested to MASH-2016 Standards, with both models **ASSESSED, APPROVED & RECOMMENDED FOR ACCEPTANCE** throughout Australia by ASBAP (Austroads Safety Barrier Assessment Panel).

SMART CUSHION speed dependent crash attenuators have been used in the USA for almost two decades and in Australia for over 5 years – delivering outstanding life-saving performance and significant savings on repair costs in many thousands of impacts.

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.

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IPWEA NSW and ACT New Board of Directors

During the IPWEA NSW and ACT Annual General Meeting on 5th November 2020, the new Board of Directors was announced.

President:	Mr Grant Baker
Vice President:	Mr William Barton
Director:	Mr Joshua Devitt
Director:	Ms Megan Finnie
Director:	Mr Gary Woodman
Director:	Mr Peter Shields
Director:	Mr Paul Gallagher
Director:	Mr William Woodcock
Director:	Ms Nicola Daaboul

Also, during the AGM our outgoing President Mr Warren Sharpe OAM shared his final report and we celebrated his incredible achievements during his time on the Board.

Warren has been on the Board for 9 years, 6 of them as President. He has made remarkable contributions to our associations and we will be forever grateful to have worked alongside him.

Warren is very passionate, especially when it comes to local government and his local region and for this Warren was awarded an OAM in recognition of his many tireless years of service to the community.

Not only has Warren had a positive effect to our State Branch but he reset the focus of IPWEA Australasia away from protracted constitutional matters to as set of high-level governing principles that have since set the organisation on a path for success.

It would be fair to say that Warren has set a new standard of excellence in the capacity of President. As well as helping to improve Governance standards, Board advocacy, Roads and Transport Directorate outcomes, and elevating the profile of YIPWEA (Pocket Sally), Warren also played an integral role in successfully navigating through some very difficult situations such as CIVENEX revenues drying up and more recently COVID.

To view Warren's tribute video and also a video from our new President Mr Grant Baker, please visit IPWEA NSW and ACT's new YouTube Channel by scanning the QR Code or visiting: **https://l.ead.me/bbkBVY**

SCAN ME

We would also like to thank our other two outgoing Board Directors, Garry Hemsworth and Mark Roebuck. Garry has been on the Board for 6 years; in this time, he has worked closely with the Roads and Transport Directorate and helped to deliver their vision of better roads and transport for the community. He has been a member of the institute for 26 years. Mark Roebuck has been on the Board for 3 years, during this time he has established and chaired the Infrastructure Project Management Panel. Mark has been an active member of the IPWEA NSW Illawarra Regional Group and was Chair of the group for 4 years recently stepping down after moving to the Metro South Region.

Again, we would like to thank them for all their hard work and loyalty to the Institute. They have been incredible assets on the Board and we wish them all the best for the future.

Heavy Vehicle Road Reform by Roads and Transport Directorate

The Road and Transport Directorate supports the principle that better data will lead to better informed investment decisions. More telematics data collected from heavy vehicles will provide road operators with a great source of data on how the road network is actually being used.

Although the concept of setting a Service Level Standards (SLS) for each road category is supported, the following issues need to be considered:

- Funding as part of the reform is only provided for States and Territories. The vast majority, around 85%, of the road network is operated by Local Government. The reform is not sustainable without including funding for Local Government.
- Setting minimum SLS introduces the risk for litigation if the agreed levels are not met, even when the SLS is not mandatory.
- Due to the vast size of the road network that is controlled by Local Government it is suggested to identify a SLS range, to cater for the differences in the network and the varying traffic volumes.
- The Directorate has identified a shortage in skills and capacity to manage public assets is regional and rural Local Government organisations. It is recommended to include funding and other mechanisms to increase asset management capacity in regional and rural areas.

A Copy of the full submission is available on the Roads and Transport Directorate website: **https://www.roadsdirectorate.org.au**

IPWEA NSW & ACT

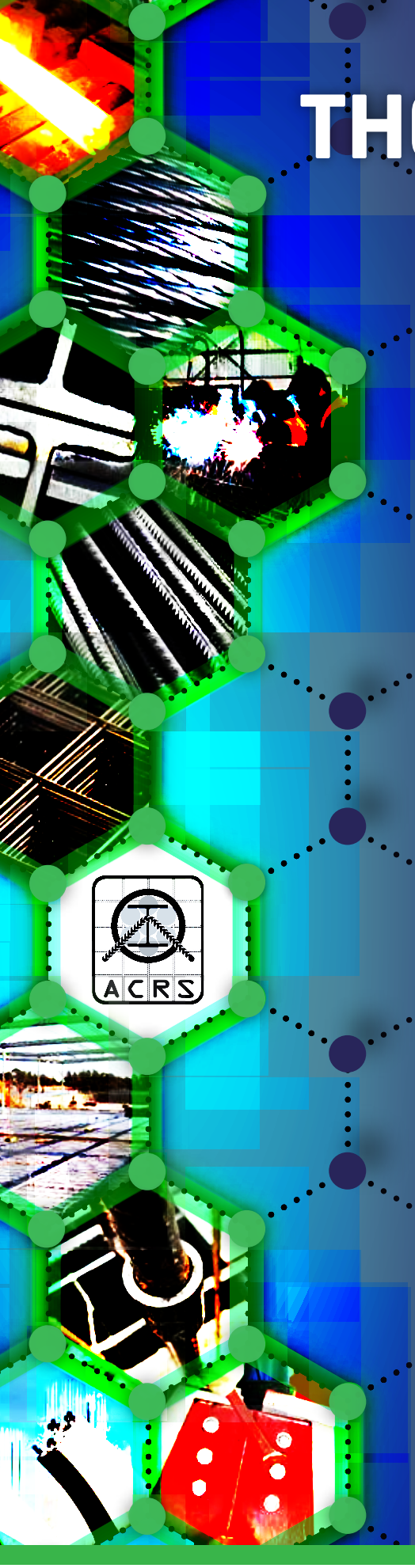
The Institute of Public Works Engineering Australasia (IPWEA) NSW Division is the professional membership organisation who provides services and advocacy for those involved in and delivering public works and engineering services to the community.

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

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, please visit our website **https://www.ipweansw.org/** and sign up via our new system and membership portal, or contact us via email at: nsw@ipweansw.org

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



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