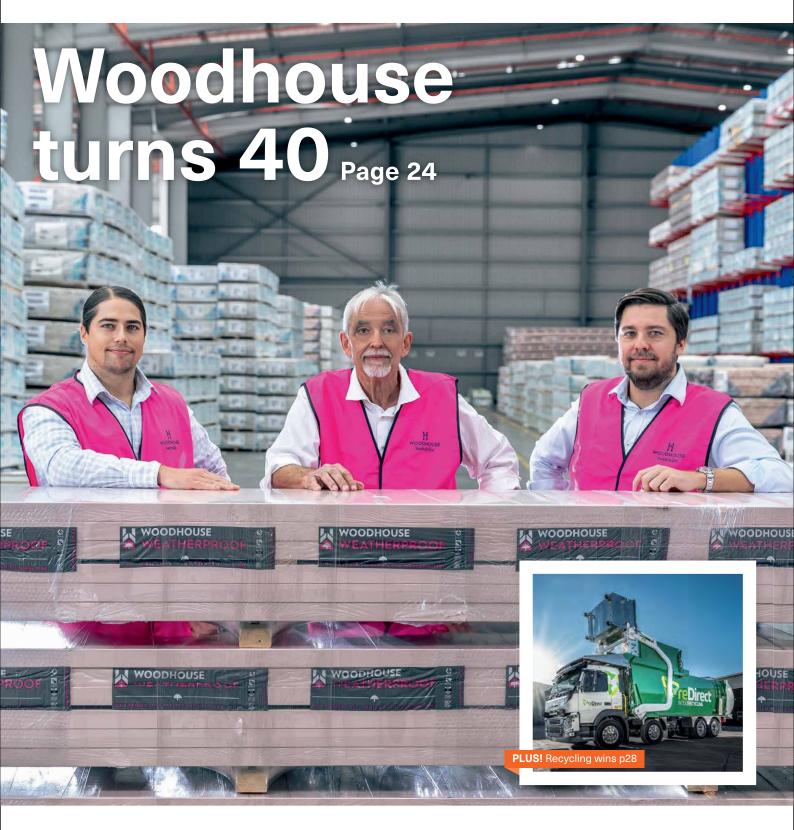
NO. 438 | MAY/JUNE 2023

TimberTrader



PAGE 10 SHIPPING IS NORMALISING BUT WATCHPOINTS REMAIN PAGE 36 VEKTA AND FRAMEQUIP MERGE FORCES PAGE 44 CUTTING THROUGH CLADDING RED TAPE



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COVER CREDIT: Courtesy Woodhouse (L-R Drew Woodhouse, Chris Woodhouse and Mark Woodhouse). Inset: Courtesy Redirect Recycling/Borg.

Timber Trader acknowledges the Cammeraygal people, Traditional Custodians of the land on which this publication is produced, and pay our respects to their Elders past and present. We extend that respect to all Aboriginal and Torres Strait Islander peoples today.

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Publisher's note

N ow with the first edition under our belt, we have been encouraged in our endeavour to expand and diversify the magazine. The editorial and management team certainly appreciate the positive feedback and support we have received. May I say it has not been without significant hard work and anguish by all involved. Notably, our editor has been tireless and, in the engine room, Campbell McInnes has worked fearlessly on advertising sales and Chris Parker has been busy with critical accounting and administration tasks.

Like almost everything these days, the cost of production has climbed so we are certainly focusing on growing our subscriber base. Thanks to those of you who have renewed your subscription or subscribed for the first time.

In this edition, we join with the industry in saluting the sterling efforts of Chris Woodhouse and his team at Woodhouse on their 40th anniversary. The business has grown solidly since early days by listening to its customers and providing innovative solutions for their needs. The fact they never sacrifice quality has been a core part of that success. The company offers a lesson in commitment and effort for others in the timber supply chain.

We hope you value the spread of articles in this second edition. And again, we really appreciate the support from advertisers, supporters and readers.

John Halkett Publisher







News in brief

Building the workforce

Master Builders Australia has released its plan for half a million new workers by 2026: where to find them and how to keep them.

Staff shortages are an Australia-wide issue in many businesses, but in construction the current difficulties in attracting and retaining staff are about to grow in line with Australia's population. A new plan released by Master Builders Australia estimates that 500,000 workers need to be added to the sector by the end of 2026 to meet estimated housing and other construction needs.

Currently, instead of growing to meet that demand, the construction workforce sees 7.8% of its workforce exit the industry every year. From project managers to tradies and crane drivers, there are gaps across almost every part of the sector.

MBA dissects the issue in its plan, titled Future-Proofing Construction: A Workforce Blueprint. It identifies four key priorities: Attracting workers

- Addressing the bias and improving careers education
- Improving gender diversity
- Reframing the apprenticeship story
- The role of migration

Recruiting workers

- Understanding the options and testing the waters
- Entering the industry
- Nurturing success in the early stages

Train workers

- Improving quality by improving information
- Work-integrated learning pathways
- Enhancing education integration

Retain workers

- Occupational licensing
- Embracing a culture of life-long learning
- Improving business acumen

Each priority is investigated within the plan, which starts important discussions, including the need to encourage more students into vocational courses and support them financially as they qualify, and the need for more diversity in construction – particularly in terms of gender and the crucial role of migrants in the workforce.

Importantly, the plan doesn't stop at growing the workforce, but goes on to question reasons why people are currently leaving and what training is needed to keep employees engaged. Its recommendations are strongly reality-based.

To download the plan, visit https://www. masterbuilders.com.au/MediaLibraries/ MB/Future-proofing-construction/ Master-Builders-Australia-Futureproofing-construction-April-2023.pdf



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Celebrating the best

National Timber & Hardware Association (NTHA) brings the industry together with conference and awards.

The first-ever Conference and Awards Program of the newly merged National Timber & Hardware Association (NTHA) is set to foster successful connections within the timber and hardware industry.

Taking place on Thursday 25 and Friday 26 May 2023 at the Crowne Plaza - Hunter Valley; the event will bring together industry leaders from across the nation. NTHA, the result of the amalgamation of TABMA Australia and Hardware Australia in April 2023, is dedicated to advancing the interests of their members and the industry as a whole.

The theme *Lead, Connect, Succeed*, puts 'people' at the centre of the agenda, and will provide attendees with the chance to gain new skills, share ways to attract and retain employees, as well as keep them safe.

David Little, CEO of NTHA said: "This is a fantastic opportunity for our new member group to meet in person; to learn from each other, network, and establish new business relationships.

"The social time will encourage attendees to share their experiences and ideas, whilst the sessions will focus on the latest trends, innovations and tools to help support and grow the timber and hardware sector."

"It will be an engaging and insightful twodays, offering attendees valuable insights they can implement immediately to enhance their businesses," declared Little.

The program offers a diverse range of keynote and breakout sessions, covering topics such as Psychosocial Obligations, Trade Credit Best Practice, and the Economy



Above: Thomas Devitt from HIA will be talking on the Economy and the Housing Industry.



Above: Kim Seeling-Smith is a keynote speaker.

NTHA will also be hosting the National Awards Program.

and the Housing Industry, presented by Thomas Devitt, senior economist with HIA.

Employers will gain practical tips to achieve a motivated, engaged, and highperforming workforce through a spotlight on Employee Attraction and Retention delivered by Kim Seeling-Smith. Other important issues will also be highlighted with a session on Industrial Manslaughter and its impact on employers.

As part of the National Conference, NTHA will be hosting the National Awards Program to be celebrated on Friday 26 May. The Awards recognise the outstanding achievements of individuals and organisations who are delivering or producing high-quality products and services.

The finalists for the 2023 National Timber & Hardware Industry Awards are:

National Supplier of the Year - Hardware • Dulux

- James Hardie
- Bremick

National Supplier of the Year - Timber

- Meyer Timber
- ITI Australia
- Dindas Australia
- Hume Doors & Timber

Retail Store Under 2500sqm

- Jenkins Home Hardware
- Home Timber & Hardware Biloela



Above: David Little, CEO of NTHA.

- Pink's Mitre 10
- Dunsborough Mitre 10
- Yamba Mitre 10

Retail Store Over 2500sqm

- TM&H Mitre 10 (Moe)
- Porters Mitre 10
- Sunshine Mitre 10
- Balhannah Mitre 10
- Margaret River Mitre 10
- Kincumber Mitre 10

Best Garden Department

- Barrow & Bench Mitre 10
- Tuckey's Mitre 10
- Acheson's Mitre 10

Best Timber & Building Materials Store

- Provans Mitre 10
- MacKenzies Home Timber & Hardware
- Gowan Lea Timbers
- Barossa Mitre 10
- Granex Trade Supplies
- Hardware & General (Brookvale)
- Swadlings Timber & Hardware
- United Building Products (Big River)

Best Timber Manufacturer

- Timbeck Architectural
- Cases & Crates
- Ultraflex Architectural Linings

Best Timber Frame & Truss Operation

- MB Prefab (Big River Group)
- TrussCorp
- K&B Timber & Hardware
- Northwest Frames & Trusses

The above are winners of the State Awards in last year's TABMA Australia or Hardware Australia's State Awards.

If you would like to attend the Conference or Awards celebration, visit **www.ntha.com. au** to find out more or contact our events team at **info@ntha.com.au**.





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Recognising changemakers

The Victorian Premier's Sustainability Awards are calling for 2023's success stories, both large and small.

ast year's Premier's Sustainability Awards in Victoria saw packaging made from mushroom mycelium and the revegetation of land in Euroa celebrated as the two Premier's Recognition Awards – the top honour in this diverse 21-year-old program. Among the other organisations recognised was Revival, a Melbourne-based sustainable building practice that will happily take your old building apart and re-use it in your new one, among its raft of practices aimed at removing waste from construction (see www.timbertradernews. com/2022/09/06/sustainable-building/) – a true indication of the diversity of entrants.

This year's awards are now open to enter. There are six categories aligned to the United Nations Sustainable Development Goals. Two awards within each of the six categories will be presented: the Community Champion Award for individuals and small organisations, and the Industry Leader Award for medium and large organisations. In addition, the Premier will select two overall winners to be presented at the award ceremony: The Premier's Recognition Award, a stand-out submission from the 12 award winners, and The Premier's Regional Recognition Award, a stand-out regional organisation/project from all qualifying finalists. These two awards cannot be entered.

Sustainability Victoria's Interim CEO Matt Genever said, "Now more than ever is the time to showcase Victoria's sustainability success stories so we can learn from each other, share this knowledge and bring about greater change collectively.

"The Premier's Sustainability Awards provides the platform to acknowledge the tremendous work going on right across the state and I look forward to celebrating the achievements of the many organisations, community groups and individuals leading the way to a sustainable future."

Entries for the Premier's Sustainability Awards close on Friday 30 June at 5pm. The judging panel will include a broad range of independent environmental experts selected for their sustainability and industry expertise. **For more information, visit www. sustainabilityawards.vic.gov.au**

In brief

oodSolutions has released its online Timber Framing Quiz for anyone who's ever wondered how hard it can possibly be to erect wall frames and trusses. The game is simple to play, choose the next member that the house needs from the panel on the left and drop it onto the site. It's harder to win, as three mistakes and you're out! Thanks to TTN's engineering team teaching me via their articles, I was doing very well until I got to the roof. Things went rapidly downhill there. If any of your customers ever ask why it costs so much to bang some timber together, send them the link: https://www.woodsolutions. com.au/timber-frame/index.html

A the recent Australian Biosecurity Awards, the Australian Forest Products Association (AFPA) was recognised for excellence in biosecurity preparedness. AFPA's Forest Health and Biosecurity Subcommittee (FHaB) was awarded a Biosecurity Commendation Certificate. Membership of the Subcommittee includes experts in forestry and science, who with their organisation's support, volunteer their time and expertise in service to the forest sector.

Senator Murray Watt, federal Forestry Minister, has announced grants of \$108 million for sawmills across Australia. The Minister made the announcement at Western Junction Sawmill near Launceston and \$15 million of that package will go to five mills in Tasmania. The money will be used to purchase new high-tech equipment to upgrade mills and innovate for value adding and efficiency in timber manufacturing. Hear the full announcement from 01.40 at www.abc.net.au/radio/programs/tascountry-hour/tasmanian-countryhour/102226870



Battshell brilliance

The brightly coloured covers make identifying tools easy.

Telling which cordless tool is which on a worksite can be hard and keeping track of the backup batteries is worse. Battshell provides a clever solution with brightly coloured, ventilated covers that come in 20 colours and 400 design combinations and can be customised for orders over 25 units.

BattShell is Australian designed and manufactured and a donation of \$1 from every purchase is donated to Mates in Construction to prevent suicide in construction. From \$14.95 per single cover, sizes will soon fit most major tool brands. For more, visit www.BattShell.com

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The shipping views

Rina Mclaughlin from ADM Global, an international logistics specialist, gives an update on where shipping is now and what's most likely in the near future.

During the course of the pandemic, we witnessed and experienced unprecedented changes and impacts across the globe, the impact of which not only affected the shipping industry but also the supply chains of most if not all importers and exporters. Many of these have fallen victim to these effects over this period and indeed the long-term effects are yet to be fully realised by all at this point in time.

As we have now entered into 2023 we have seen a vast shift with terms such as 'normalisation' and 'equalisation' being the talk of the town, as we are set to return back to traditional trends and pre-pandemic costs.

With the largest year-on-year reduction in shipping costs for at least 7 years, Q1 was a favourable time for importers, having been impacted so heavily during 2020–2022. However, this downturn is not all positive as swinging from one end to the pendulum to the other creates another form of instability. After hitting a historical height of costs, demand for global liner services has reduced by 12.32% with shipping costs decreasing around 79% from Q1 2022.

This and next year, logistics leaders have a chance to make a large contribution to their company's bottom line by reducing costs, after a period of difficult trading conditions.

AT A GLANCE

Global Shipping Line Services

- Transhipment delays/congestion have eased with the downturn of the global market driven by inflation, change in consumer behaviours and oversupply of products.
- Omissions/blank sailings are occurring on a semi-regular basis as the downturn destabilises global volumes – an average of 9% of global sailings cancelled weekly.
- Equipment/space is no longer a concern

as there is available space and equipment oversupply.

- Services into Oceania remain stable with shipping lines preparing for a slight upturn in Q3, in preparation for peak season.
- Record cuts to container shipping costs
 have been experienced in Q1 2023 –
 a 79% decrease from Q1 2022.

China/South East Asia

- Congestion and delays ex all major CN have eased with blank sailings/omissions continuing due to lines not fulfilling capacity.
- No further GRI (general rate increase) announcements at this stage.
- Freight rates and services have stabilised with lines actively seeking cargo to fill vessel capacity.
- China has now been added to the 'emerging risk countries' with heighten surveillance and subject to inspection

upon arrival – BMSB has been found on China-origin cargo.

• New vessels have been added into the Australian market in June with higher capacity, in preparation for peak season.

Americas

- Rates continue to decrease from the US trade into Oceania.
- US remains stronger than other global trades with steady services.
- Vessels off the USEC/USWC (east coast/ west coast) are now at manageable levels with the infrastructure handling the current flow in/out of major ports such as Long Beach – USEC does remain congested but delays are easing.

Europe

- Port delays and congestion have returned back to pre-pandemic levels.
- Freight rates are now at more sustainable levels.

Trans Tasman

- Services eastbound to Australia remain in higher demand with NZ infrastructure.
- Shipping line rates on the Trans-Tasman

There is a review of the Due Diligence Illegal Logging Legislation that will come into effect.

trade remain high and services/capacity limited.

 Total volume decreases average around 2.5% ex NZ ports, in comparison to global downturn of around 12%.

Landside

- Fuel charges have stabilised but have not reduced.
- No port industrial action has been announced, at this stage, as the infrastructure has now recovered and is capable of handling the throughput.
- PONDUS weight amendment fee is now applicable in BNE/SYD/MEL – containers that are selected for random weighing at Patricks Terminals will be subject to a fee if found to be mis-declared.

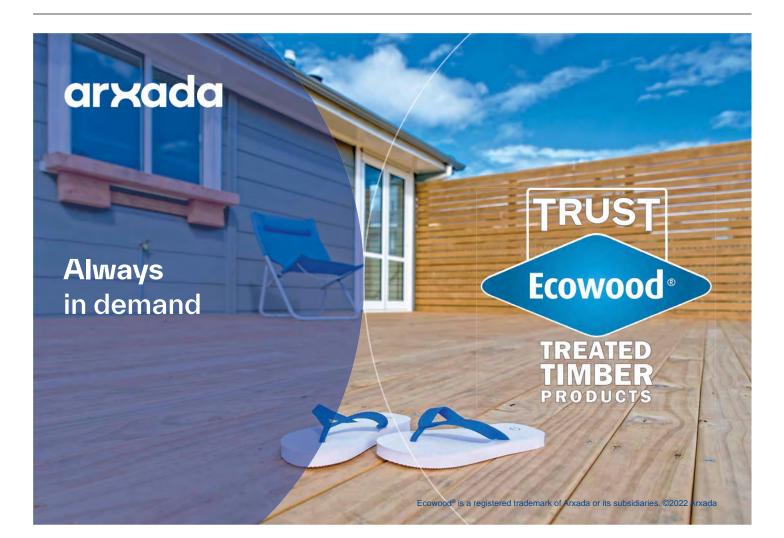
- There is a review of the Due Diligence Illegal Logging Legislation that will come into effect.
- BMSB season from Target Risk Countries continues until the end of APR 2023, with the season beginning again in SEP 2023.
- DAFF processing delays are minimal at this time as volumes have downturned significantly.
- India FTA (ECTA) has been finalised, however tariffs are limited to agricultural products.
- UK FTA is in the process of being finalised

 no start date has been announced as the legislation is unfinalised.
- Investment in the Newcastle/Port Kembla/VICT terminals continues with these terminals anticipated to become higher functioning container terminals in the future.

Statistics

 TEU volume DEC 22 vs DEC 23 – downturn of 12.32%.

For further information, visit admglobal. com.au or call contact our experts at info@admglobal.com.au



Mass timber makes significant gains in NZ

Government assistance has levelled the playing ground for mass timber to compete against concrete and steel in Aotearoa. **By Michael Smith**

Ten years ago, engineered wood projects in New Zealand were often thought of as infrequent 'showcases' of timber's possibilities. But that has changed, due in no small part to improved hard data on mass timber construction times and costings, and increasingly favourable comparisons with steel and concrete.

Previously the engineered wood industry provided professional development to meet consent requirements through the individual industry associations. However, last year the industry collectively recognised the need to improve information for engineering and design professionals to satisfy building code and consenting officials when specifying mass timber and related components for building systems.

EXPERT ADVICE

Among the organisations disseminating that data to architects, developers and specifiers is the Timber Design Centre (https:// timberdesigncentre.co.nz/) – established by the Government in March 2022 to encourage the greater use of timber in the construction sector.

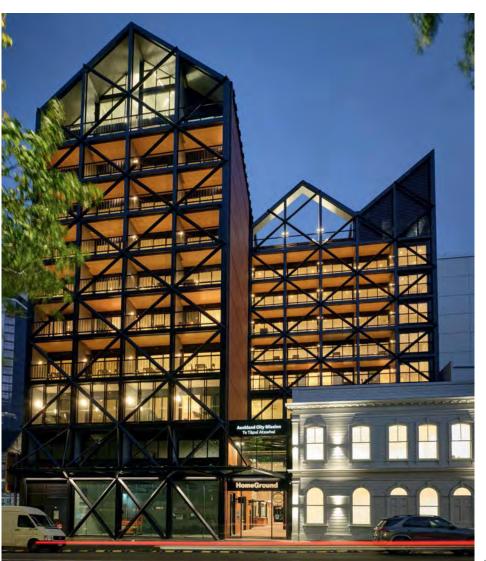
The centre looks to provide expert advice, research, information and educational resources for key stakeholders involved in building design and construction consenting.

Dr Robert Finch, the centre's director, says that because of the historical dominance of steel and reinforced concrete in the nonresidential building sector, costings for similar or better structures in mass timber had been infrequent.

But that information has been gradually forthcoming as an increasing variety of timber buildings become part of mainstream construction – notably Auckland City Mission's HomeGround (the country's tallest CLT building), libraries, social housing and educational institutions.

Finch notes that a complicating factor is the need to undertake cost comparisons on a 'full out-turn cost basis' – not just elementfor-element direct cost differences. "Mass timber designs and constructions often have savings in planning, erection and other associated construction costs," he says.

Given that large components can be prefabricated offsite, it's estimated that



Above: HomeGround includes some novel slip joints and connections that enable the expressed diagrid to brace the building and allow for movement. **Below:** Waimea College: the architects noted the significant carbon sequestration achieved and the speed of construction.



NEWS IN BRIEF / INDUSTRY UPDATE

timber projects are, on average, 30% quicker to build.

According to Mid-Rise Wood Construction (a Crown/commercial partnership that encourages the use of NZ-grown timber in the construction of mid-rise buildings) the flow-on effects can be significant. Most notably, site overheads (scaffolding, crane time, labour, etc.) and design/consent fees are carried for a shorter period; while sale or tenanting can be achieved earlier.

The partnership adds that mass timber material costs have typically been slightly higher than traditional materials but they are normally outweighed by time savings.

It also notes that steel prices have increased by over 40% in recent times – while "availability and lead times for steel and concrete have pushed out to as much as six months".

John Stulen, Innovatek Limited and WoodWorks NZ director, says the pandemic created widespread disruption "in pricing and material delays, which impacted across the construction industry on projects already under way. But now mass timber is winning new clients with reduced construction times, and crane times and sizes."

Stulen adds that currently the supply of engineered wood products for mass timber construction projects is tight, but increased capacity is coming on stream soon, saying, "Recently, Red Stag TimberLab confirmed two upgrades to extend its CLT panel processing capability. The company has finalised a second CNC, including an upgrade to process panels faster; and in less than two months it plans to add a third CNC unit."



PROCUREMENT GUIDE

In 2020, the building and construction sector accounted for 20% of the country's greenhouse gas emissions. And given that government agencies have a significant role to play in achieving net zero carbon by 2050, the central government released the 'Procurement guide to reducing carbon emissions in building and construction' in June 2021.

Around 130 NZ government agencies must use the guide for decisions about new buildings where the estimated capital value of a building project is NZ\$9 million or over (effective from April 2022).

Interestingly, the guide is not intended to provide advice on product selection (so-called 'materials agnostic'). However, given the carbon sequestration capacity of timber as a building material, it's not difficult to deduce that its consideration is encouraged through this process.

Stulen says funding has been forthcoming for several new projects at universities and

polytechnics using mass timber to reduce their carbon footprint.

"And," he adds, "since 2020, state-owned housing developer Kāinga Ora has been building a range of affordable housing solutions with mass timber as one of the key options, including three-level walk-up apartments. Currently the agency is extending its use of offsite manufacturing as a construction method and making increasing use of modular design and hightech building materials such as crosslaminated timber.

"And because mass timber is now more widely accepted, it is being promoted as a solution for warehouses and similar buildings where there may be limitations with ground-bearing capabilities on certain building sites. More and more, by combining materials, mass timber can offer wider clear span widths in these types of buildings – as it always has done for swimming pool complexes."



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In brief

ileen Newbury, the PR powerhouse who put FWPA and WoodSolutions into so many headlines over the past decade, has stepped down from her role. Newbury assured Jim Bowden that while she was taking a step back, she would continue to work with the timber industry. FWPA's CEO Andrew Leighton said: "Eileen has an energy and a passion for FWPA and for the industry that was felt by all and will be greatly missed. Data and research have always underpinned her marketing and education of the industry. As the head of the WoodSolutions program, Eileen was integral in lifting the recognition of wood and wood products in the design and build industry. Testament to this influence was the introduction of The Ultimate Renewable brand and its ongoing success." Read more at https://woodcentral.com.au/ thank-you-eileen-newbury-stepsdown-from-fwpa-woodsolutions/

here's bad news and good news in the latest HIA Trades Report. "The HIA Trades Report for the March Quarter 2023 reveals Australia is still enduring one of its most acute shortages of skilled tradespeople on record," says HIA senior economist Tom Devitt. "The Report's Trades Availability Index registered -0.75 for the March Quarter 2023, compared to 0.90 a year earlier. This still represents one of the most acute shortages of skilled tradespeople since HIA started this Report in 2003. The shortages are particularly acute in Australia's regions and in trades like bricklaying, carpentry and roofing. As more workers arrive from overseas, home building and renovations timelines that have blown out during the pandemic will shrink... The rate of increase in the price of trades already appears to be moderating."

A ustralian home values rose by 0.5 per Cent in April, according to CoreLogic's home value index, building on a 0.6 per cent increase in March, with the Sydney property market leading the turnaround. Houses in Sydney grew in value by 1.3% last month and by 0.2 per cent in Melbourne, with every capital city except Canberra and Darwin recording a bounce. Read the full story at www.smh. com.au/politics/federal/home-valuesback-on-the-up-as-rba-pondersanother-interest-rate-rise-20230428p5d42e.html



Above: The LVL towers are fabricated in sections, allowing for easier and cheaper transport to site.

Timber tower wind turbines

Traditionally, wind turbines have a green purpose but contain huge quantities of steel. Now there's an alternative.

Wind power is a clean, green energy source, but the turbines that create it have for years been built out of giant steel sections that are heavy, difficult to transport and require tens of thousands of reinforcing bolts, which need regular inspection.

Swedish wood technology company Modvion has partnered with Finnish wood product company Metsä Wood, using Metsä's Kerto LVL for Modvion's wooden wind turbine towers. The towers are constructed in sections that fit onto standard trucks, so can be transported with ease.

The LVL has higher strength per weight and higher strength per cost than steel options, making it not only a better alternative for today's towers but ready for larger towers in the future. It is more resistant to fire than steel, has a thick coating that removes water and humidity issues and requires much less in the way of regular inspections as the sections glue together into strong stackable modules.



Above: Sections are stacked and glued together.

"Building renewable energy with renewable materials can enable net-zero energy production from wind," said Pär Hallgren, head of procurement at Modvion. "Metsä Wood is an important partner in our journey to become a leading supplier of the next generation of sustainable wind turbine towers, which will also make us potentially one of the largest buyers of LVL."

Henrik Söderström, SVP of sales and marketing at Metsä Wood, says "Kerto LVL enables high material efficiency thus making it ideal for sustainable construction. Modvion's design and application is a great example of its versatility."

According to a lifecycle analysis conducted by the Swedish research institute RISE, a wooden wind turbine tower reduces emissions by 90% when compared to a steel tower of the same height and load. Considering that wood is also storing carbon, the tower becomes carbon negative, since it is binding more CO_2 than it emits during manufacturing. To ensure maximum carbon storage, Modvion plans to reuse the LVL after the wind turbine tower is decommissioned.

"The volumes of wood needed for a Modvion tower are between 300 and 1200m³ depending on the height and load. That means an LVL carbon storage capacity between 240–950 tonnes CO_2 equivalent per tower," said Hallgren.

The first commercial LVL wind turbine tower is being built this year. The wooden tower will be installed with a 2-megawatt wind turbine on top and stand at 150m total height, including the blades.



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Trees for health

Evidence shows your health and well-being are likely to be improved if you walk amongst the trees. **By John Halkett**

The Global Forest Expert Panels (GFEP) Programme of the International Union of Forest Research Organizations has issued a report that identifies the health benefits of forests. Titled, 'Forests and Trees for Human Health: Pathways, Impacts, Challenges and Response Options,' the report recognises the linkages between human health, the health of other species, and the health of the planet as a whole, and argues they offer solutions to global crises.

As if being renewable, storing carbon and contributing to climate change mitigation isn't enough – trees make you feel better!

Increasing urbanisation means that people have less access to nature in their daily lives. Australians on average now spend about 90% of their time indoors. This coincides with reports of increasing obesity and nearly half of Australians experience mental health conditions during their lifetime.

The GFEP report is just the latest research reinforcing the connection between wellbeing and nature. Academics at the universities of Melbourne and Tasmania examined 2.2 million messages on Twitter and found that tweets made from parks contained more positive content – and less negativity – than tweets coming from built-up areas. Why are people in parks likely to be happier? Because parks help them to recover from the stress and mental strain of living in cities and provide a place to exercise, meet other people or attend special events.

Cities make economic sense, but they are also becoming the epicentres for chronic, noncommunicable physical and mental health conditions. There is a growing recognition of the crucial role of urban green spaces in helping reduce these health problems.

More than 40 years of research shows that experiences of nature are linked to a remarkable breadth of positive health outcomes, including improved physical health, such as reduced blood pressure and allergies, fewer deaths from cardiovascular disease, improved self-perceived general health and improved mental well-being.

According to environmental planners at Griffith University, Australian cities are getting hotter, more crowded and noisier, while climate change is bringing more heatwaves. The obvious answer is more airconditioning, but this brings more carbon emissions, so a better answer is more 'green infrastructure': street trees, green roofs, vegetated surfaces and green walls.

Planting trees in parks, gardens or streets has many benefits, helping to cool cities, slowing stormwater run-off, filtering air



The simple act of taking a walk beneath the trees can work wonders for your health.

pollution, providing habitat for birds and animals, making people happier and encouraging walking. According to city planners, shading from street trees can lower surrounding temperatures by up to 6° or up to 20° over roads. Green roofs and walls can naturally cool buildings, lowering the demand for air conditioning.

Although scientists have much evidence that trees and other greenery improve our mood and health, they know less about the actual mechanisms by which this occurs. Japanese research suggests that when we walk through forest we breathe in three substances: beneficial bacteria, plant-derived essential oils and negatively charged ions.

This brings us to forest therapy. The concept is simple. Since most of our evolution happened in green, wild places instead of modern cities full of buildings, cars and computers, spending time among trees agrees with our ancient mental and sensory circuitry and so can make us happier and healthier. Formal therapeutic practice of regaining health in the forest – complete with studies to measure health effects – began in Japan in the 1980s. The practice there is called *shinrin-yoku* which roughly translates to "taking in the forest atmosphere" or "forest bathing".

In the United States, forest therapy through the US Association of Nature and Forest Therapy Guides and Programs, started in 2012. This group trains forest therapy guides and is establishing programs nationwide.

So, the simple act of taking a walk beneath the trees after dinner, rather than staring at a TV screen can work wonders for your health. Download the report at https://www. iufro.org/uploads/media/gfep-fhh-policybrief-low-res_01.pdf

UPCOMING EVENTS

MAY

LIGNA TRADE SHOW

The world's leading trade fair for the woodworking and wood processing industry runs 5–18 May in Hannover, Germany. It showcases the entire range of products and services for the primary and secondary industries – tools, machines and systems for custom and mass production, surface technology, woodbased panel production, sawmill technology, energy from wood, machine components and automation technology, as well as machines and systems for forestry, round wood and sawn wood production. For details, visit www.ligna.de

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NTHA NATIONAL CONFERENCE AND AWARDS

The newly formed association will come

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SEPTEMBER

TIMBER OFFSITE CONSTRUCTION 2023

Themed 'Timber & Technology – The Zero Carbon Future', will explore the growth and benefits of mass and other engineered timber construction. 11–12 September at Crown Promenade Melbourne. For more, visit https://timberoffsiteconstruction. com







More changes coming

A series of decisions mean obligations for employers are expanding. By Peter Maguire

This is shaping up as being the biggest year of change in obligations for employers that we have seen for decades. In our last column, we covered six significant challenges that employers are

having to deal with this year, namely:

- 1. Skills shortages
- 2. Paid family and domestic violence leave
- The positive duty to prevent sexual harassment, sexual discrimination and victimisation
- 4. Requests for flexible working arrangements
- 5. Managing mental health and wellbeing
- 6. Increases in cost of living and wages

There is a lot more that is happening this year – some due to the Albanese Government's Secure Jobs Better Pay and other legislation, some because of other legislative change and some as a result of decisions made in the courts or the Fair Work Commission.

Here is a summary of other key issues for employers in 2023.

#1: ANNUAL CLOSEDOWN CHANGES

The Fair Work Commission recently ruled

that, if an employee does not have sufficient available annual leave to cover an annual closedown period (eg at Christmas/New Year), the employer has the following options:

- To provide the employee with work for the shortfall in days of annual leave or
- Reach written agreement with the employee to either take leave without pay or to take annual leave in advance or
- If neither of those happen, to just pay the employee for the period without any deduction from annual leave entitlements.

#2: REQUESTS TO WORK ON PUBLIC HOLIDAYS

The Federal Court has decided that an employee cannot be required to work on a public holiday – an employer can only request that they do and the employee is able to refuse such a request if they have reasonable grounds.

This is really more of a definitive interpretation of what the Fair Work Act actually says than it is a new decision and it does provide greater clarity, albeit with more challenges for employers.

#3: NEW FAIR WORK COMMISSION JURISDICTIONS

The role of the Fair Work Commission is being considerably expanded and there are a

couple of new jurisdictions that they will have that employers need to be aware of.

From March 2023, in addition to the existing jurisdiction where employees can apply to the Fair Work Commission for stop sexual harassment orders, employees will be able to make claims for compensation for workplace sexual harassment whether that comes from the employer, fellow workers, contractors, customers, suppliers or any other workplace participant.

From June 2023, certain categories of employee who have statutory rights to request a flexible working arrangement (eg people who are parents, carers, are over 55 or are victims of domestic violence and some others), will have the ability to take a dispute over a flexible working arrangement to the Fair Work Commission for mediation, conciliation and consent arbitration.

#4: ABOLITION OF PAY SECRECY CLAUSES

Under Secure Jobs Better Pay changes, employment contracts and company policies and procedures can no longer include clauses which require employees to keep their remuneration confidential. If such clauses are in existing contracts they are no longer valid or enforceable. If they are put in a new contract, that is a breach of the Fair Work Act and prosecution and penalties could apply.

#5: RESTRICTIONS ON FIXED TERM CONTRACTS

From December 2023, fixed term contracts will generally be restricted (with a few very specific exceptions) to a maximum of two successive contracts for a maximum aggregate term of two years (for example, you could have two successive contracts for one year each).

If an employee continues in employment beyond that period, they will be deemed to be a continuing employee (fulltime or parttime as applicable) and any attempt to put them on another fixed term contract would be illegal.

#6: NEW JURISDICTION FOR AUSTRALIAN HUMAN RIGHTS COMMISSION

New regulatory powers have been conferred on the Australian Human Rights Commission to investigate and enforce compliance with the positive duty. Recognising that employers and PCBUs will need time to make changes to ensure that they comply with their new legal obligations, the Commission's compliance powers will commence in December 2023.

AND YET MORE TO COME

All of the above are already happening – the decisions have been made and legislation has been passed.

There is more to come with the Federal Government introducing more legislation to regulate labour hire guaranteeing same wages as directly employed workers, to redefine the meaning of casual employment and to stipulate minimum pay and conditions in the gig economy and to provide a jurisdiction for disputes to be heard.

The other major change this year is with the introduction of positive duties to prevent and control psychosocial hazards which are progressively being introduced across the country. These are being dealt with under workplace health and safety legislation and so have very serious potential consequences for those prosecuted for breach up to and including imprisonment.

WHAT IT ALL MEANS

One of the first duties you have under WHS and workplace relations laws is to ensure that you have access to competent advice.

Whether it is through an industry association, a legal firm or independent HR and WHS Consultants, make sure that you do have that access because this area is really complex now and the costs of getting this stuff wrong can be devastating... and, as the old saying goes, "you don't know what you don't know". **T**

Peter Maguire is the owner and practice leader of Ridgeline HR, an award winning HRM consulting practice which he founded in 2000. Peter is an acknowledged expert in workplace relations compliance and also a high-performance leadership coach with over 40 years' experience in HRM. Ridgeline HR's byline is Helping PEOPLE in BUSINESS and that is essentially what Peter does – help business people with their people business.





Timber Trader

GROW YOUR UNDERSTANDING

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AUSTRALIA'S MOST RELEVANT AND INSIGHTFUL TIMBER INDUSTRY MAGAZINE



Above: Companies are urged to ensure their illegal logging due diligence guides are up to date in the wake of more infringement notices.

Association news



ILLEGAL LOGGING PROHIBITION COMPLIANCE AND INFRINGEMENT NOTICES

It is now apparent that, since the change of Federal Government, the Department of Agriculture, Fisheries and Forestry (DAFF) has been much more active on illegal logging compliance, and the issuing of infringement notices. A substantial number of infringement notices have now been issued for alleged non-compliance with the illegal logging legislation.

Based on advice received, infringement notices have been issued to importers of furniture products subject to the illegal logging legislation exceeding \$200,000. Also, several timber importers have received infringement notices, notwithstanding that these companies had already provided written responses to DAFF information requests and also provided copies of their due diligence guides.

ATIF is of the view that some of the infringement notices appear to be for trivial reasons and outside the scope of the

'reasonably practical' test in the illegal logging legislation, with related fines in the region of \$13,000. This matter has been raised with DAFF.

It is recommended that companies:

- Ensure that their illegal logging due diligence guides are up to date, including containing summary information about company corporate and contact details, such as emails, phone numbers, ABN/ CAN, and a brief outline of business activity.
- If concerned about receiving infringement notices for what appear to be trivial reasons, companies are encouraged to make written representations to the Secretary of DAFF seeking the withdrawal of infringement notices. You may write to the Secretary through the Infringement Unit.

The Secretary may withdraw an infringement notice whether or not you have made written representations. You will be notified in writing if an infringement notice is withdrawn. Correspondence should be sent to: Infringement Unit, Department of Agriculture and Fisheries and Forestry, GPO Box 858 Canberra, ACT 2601. Email: InfringementUnit@agriculture.gov.au

COMPLIANCE WITH BUILDING CODES AND STANDARDS

Compliance with building codes and standards has been a matter discussed by the ATIF Board in the past and will again be on the agenda for the next Board meeting. Previous statements by the ATIF Board have included concerns being expressed that some imported structural softwood products may not always comply with the requirements of building codes. Further, it was affirmed that complaints received about possible noncompliance were taken very seriously by ATIF to protect the overall reputation and credentials of the timber supply chain.

Ongoing challenges around the sourcing of additional timber products are continuing to be exacerbated by a shortage of containers, shipping space availability, and port congestion. This has resulted in climbing costs and charges that have contributed to ongoing difficulties across the supply chain and for building and construction industries.

For further ATIF-related information contact John Halkett at: john.halkett@atif. asn.au or 0417 421 187.

John Halkett General manager



FOR the first time, Regional Forestry Hubs from around Australia have gathered in Western Australia's South West region.

There are 11 Regional Forestry Hubs nationally, established under the National Forestry Industry Plan 2018.

The Australian Government's 'A Better Plan for Forestry and Forest Products' 2022-23 Budget measure committed additional funding for the Hubs and to extend and expand their roles.

The South West Timber Hub hosted nine hubs for the first regional meeting from April 11–14, which took the group to Bunbury and surrounds, with tours of softwood sawmiller Wespine and particleboard and MDF manufacturer, Laminex.

The group also ventured out to the site of an ecological thinning demonstration site.

South West Timber Hub Project Manager Wendy Perdon said the Regional Forestry



Above: An ecological thinning demonstration site formed part of the Forestry Hubs tour of SW WA.

Hubs meeting was a great success and she looked forward to being hosted by other Hubs in the future.

"It is so important for us all to get together like this and essentially, compare notes," Perdon said.

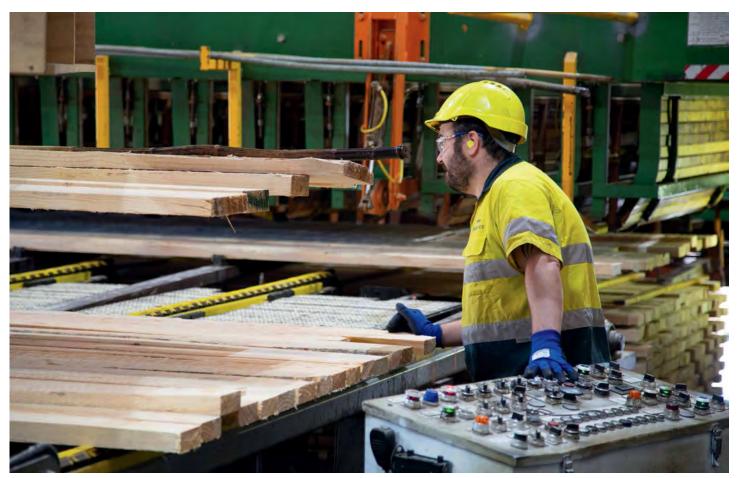
"We are all working on very similar projects and to be able to see those projects in a local context is much more powerful than just reading about it.

"From a hosting perspective, I was so

proud to be able to show off our local industry and show the other Hubs a snippet of what WA has to offer."

The South West Timber Hub was established in 2019, with key activities including expansion of the softwood plantation estate, full utilisation of fibre and community engagement.

For more on Forest Industries Federation WA (FIFWA), visit www.forestindustries. com.au



Above: The South West Timber Hub hosted a tour of softwood sawmiller Wespine for representatives of nine national Forestry Hubs.



MGA TMA INDUSTRY EVENT

On Wednesday 22 March, over 60 MGA TMA members, industry friends and suppliers came together at the Melbourne Cricket Ground for the first MGA TMA Industry Event of the year.

Before the event officially kicked off, there was lots of chatter with everyone catching up on the last few months while taking in the hallowed turf of Melbourne's iconic MCG.

The first guest presenter of the morning was AFL great Kevin Sheedy. Kevin spoke of the need to grow and diversify businesses and used examples of his time with the league – when AFL moved into Sydney and also recruiting indigenous players to the league. At the end of his talk, guests had the opportunity to ask questions, which they made the most of.

Due to illness, a replacement speaker was needed to fill the industry expert position and luckily Jim Houghton was able to assist.

Jim leads the consultancy group Hire Thinking and was formally with Forest and Wood Products Australia. Jim spoke of the current state of the industry with interest rate rises and the economy slowing. With timber dominant in building, it was important to cover the housing market and Jim discussed prices being down, new building approvals also down and finished off outlining building material supply relative to local production and imports.

MGA TMA members rely on the expert advice and guidance of the MGA TMA employment law team to help them navigate complex situations. MGA TMA's Head of Legal, Martin Stirling addressed the room and spoke about current issues facing members and some proposed IR reform changes.

When the formalities of the morning were complete, the official Melbourne Cricket Club

tour guides were ready to take groups on a guided tour of the MCG.

It was such an experience to be walked around the ground and have the knowledgeable guides talk about the rich history of the MCG. The tour included The Long Room, with participants were allowed to sit in the best seats of the house – the leather lounges facing onto the ground. The tour navigated its way through many interesting places including the media room, players room as well as heading down to ground level. It was a great way to end the morning.

Stay tuned to **mgatma.com.au** for announcements on our future events. If you would like to learn more about the benefits of MGA TMA membership, contact us on (03) 9824 4111 to discuss.

> Marie-Claire McKiernan National membership manager



PLANNING FOR THE FUTURE OF TIMBER FRAMING

As we head towards the next downturn in the housing construction cycle, it reminds me how the timber sector is tied so much to this market. You kind of wish there were other applications for our house-sized, timber-framed product other than singlefamily housing in these times.

Well, there are, as there are many applications of house-sized structures that could use timber framing (one or two-storey schools, retail malls, accommodation, and so on), except there is not a clear prescriptive solution in our building regulations.

The timber framing standard AS 1684 scope is generally limited to Class 1 or Class 10 buildings or other classes of buildings where the design criteria, loadings and other limitations are applicable. Furthermore, AS 1684 is limited to only two-storey buildings, again cutting down on the range of buildings within its scope.

With the industry using software to design that can easily accommodate other loadings and design criteria beyond AS 1684's scope, maybe it's time we also expand the scope of our standards to include these other building types. This expansion would give us an increased market opportunity when times are bad.

Achieving this requires work, and unfortunately, this downturn will be missed. But maybe we can be complete by the next downturn if we start now.

WHAT'S HAPPENING AT TDA

WoodSolutions Sweden/Norway Tour – 11 to 17 June

In partnership with WoodSolutions, we are organising a tour to Sweden and Norway to investigate the absolute latest in advance offsite timber fabrication. BoKlok, a joint venture between IKEA and Skanska, utilises advanced off-site manufacturing, much of it robotic-assisted. The tour will visit factories and building sites to see this form of construction in action. Mass timber will also be on the agenda, as Sweden and Norway have over one-quarter of all the mass timber buildings over eight storeys in height. The tour intention is to stay one night at a hotel that is 18 storeys high. For more details, refer to www.woodsolutions.com.au/events/ woodsolutions-2023-study-tour-swedenand-norway

Timber Offsite Construction Conference - 11 and 12 September 2023

Planning is well underway for this year's conference, which aims to deliver the latest knowledge on what is happening in timberframed and mass-timber construction for the design building professional. The underlying theme of the conference is to plan for a successful timber building design,



Above: Kevin Sheedy presenting at the MGA TMA Industry Event; a guided tour of the iconic MCG was a highlight for attendees.



Above: A pair of dancing robots at Freres Engineered Wood in Oregon, US, making Mass Ply panel; this sort of automation will be featured at the Timber Offsite Construction Conference in September.

investigating common pitfalls and methods to lessen them. The focus is on commercialready solutions, not on the latest academic research. A key feature will be North America's latest building methods and products. For more details, visit https://timberoffsiteconstruction.com/

Andrew Dunn CEO

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Timber Trade Industrial Association

MAJOR WORKPLACE CHANGES GAIN MOMENTUM IN 2023

The last really significant changes in the Australian workplace took place over 10-15 years ago in the form of the abolition of WorkChoices legislation by the then Rudd government, and its replacement with the Fair Work Act 2009 (FWA).

The election of the Coalition government in 2013 resulted in a largely timid approach to IR reform and legislation remained largely unchanged until now. It was a case of once bitten twice shy and the Abbott, Turnbull and Morrison governments largely kept the inherited IR structure intact for fear of adding to any scare campaign from the trade union movement or their political opponents.

However, the changes passed in Parliament last December by the Albanese Labor government are in many ways just as controversial and significant as those in the WorkChoices legislation all those years ago. The main difference this time is arguably the pendulum and power balance has swung in the favour of the trade union movement and the new Labor government has largely delivered what that movement sought.

PHOTO: COURTESY TDA

Where does that leave businesses in the timber products industry? Well, it leaves

them with a very steep learning curve to get on top of the multitude of changes both in terms of complying with the new legal requirements and coming to terms and adapting strategies that can deal with this power shift that has taken place.

The introduction of multi-employer bargaining with agreements covering multiple employers is a potentially seismic shift. It means business can be compelled to bargain for agreements that literally cover multiple employers as the Fair Work Commission (FWC) can make supported bargaining authorisations and single interest employer authorisations to allow this to occur.

Businesses promptly need to revise their bargaining position and consider whether they are susceptible to multi bargaining or roping in applications. TTIA Legal can help discuss such options in this instance and a call to the Association would be a wise investment of your time.

The new legislation has further expanded the scope for employees to request flexible work arrangements, including the requirement for employers to give valid reasons for any such request, limits on the refusing a request and FWC arbitration powers to deal with disputes. It's no longer a case of management prerogative, but a case of businesses ensuring they have acceptable grounds for any refusal.

The new laws give the FWC the ability to invalidate any secrecy clauses in contracts in relation to a person's pay. Employers need to review and alter such contracts to avoid financial penalties. TTIA is available to assist you in reviewing your contracts in regard to this and other new measures that have been introduced. Now is definitely the time to get a health compliance check-up on those contracts of employment and policies.

The Respect@Work changes introduce a number of changes in the legislation including giving the Australian Human Rights Commission new powers to issue compliance notices to employers who fail to meet their obligations. The changes also make principals of the business liable for the actions of their employees with more farreaching powers to the FWC to adjudicate on a sexual harassment dispute. In light of these changes, it may be time to conduct a risk identification and assessment process to identify the areas where the business may be exposed. Once again, review your policies in this area and consider whether you need updated workplace training.

Significant changes have been made to fixed-term contracts including restrictions on their use and term. Employers will need to review current employee contracts and future hire contracts in regard to the use of fixed or maximum term contracts.

Employers should also note that legislation commencing on 1 February this year amended the National Employment Standards in the FWA to introduce 10 days paid family and domestic violence leave (DVL) in a 12-month period replacing the previous five days unpaid leave entitlement. In order to protect workers' personal information, the new provision places an obligation on employers not to include any information on the payslip in relation to the paid family and domestic violence leave taken.

The DVL change and others introduced in 2023 highlight the importance of employers having TTIA review their contractual arrangements to address their leave policies and other issues dealt with in this raft of IR changes. **Call the TTIA office on (02) 9264 0011 to get those policies checked.**

Finally, TTIA will be running a series of industry meetings in July specifically dealing with these changes and how they affect businesses in the timber products industry. The meetings will also deal with the myriad of award changes and relevant legal cases over the past 12-18 months, including the use of casual employees, directing employees on annual closedown and requiring employees to work on a public holiday, to ensure businesses are equipped to manage these significant changes. We will also go through our popular Q&A session on key award provisions as an essential revision exercise.

The dates are available by contacting the Association on (02) 9264 0011 or by emailing ttia@ttia.asn.au I urge business owners, senior personnel or HR/Payroll staff to register as early as possible to attend these important industry meetings.

Brian Beecroft, CEO T

40 years of Woodhouse

A focus on quality and relationships underpins the company's growth from its Brisbane roots.

There are multiple paths to success. One of the most difficult to choose is through a commitment to quality ahead of all else, especially in timber supply, where the competition often focuses on price. When Chris Woodhouse, who had originally trained as a bricklayer, started his own business in 1983, he very quickly realised that was the path he wanted to take.

"I'd hate to add up how much timber we've sold, but it would be hundreds of millions of metres," Chris says. "And our callback rate is low enough for me to call it zero. We don't spend a lot of our time going out on calls to fix up jobs, because we don't get callbacks."

This focus on reliability has been at the heart of Woodhouse Timber Company since its start, and is a key reason for the growth that has seen the business expand from its small Brisbane warehouse origins to distribution centres across Australia.

Now with a second-generation of Woodhouses at the helm, the company is continuing to grow. Over 40 years, that commitment to quality has remained consistent. We talked with Chris and Mark Woodhouse about educating their market to see the value in quality, plus how to manage change while keeping a consistent culture.

EARLY DAYS

"I was working for a famous old Queensland company called Wilkinson Timber Industries," says Chris. "I was a sales manager when they decided not to service the reseller market any more; they wanted to stick with builders. I knew they were missing a market.

"Over a short period of time, I found some willing suppliers in New Zealand and set up in business. Those original suppliers were three brothers and their father. Only one of those brothers survives, now we're dealing with the kids. It's 40 years we've been with that firm. They're like family."

Chris's wife Kay came on board to manage everything for the new company that wasn't sales or delivery. "I saw a lot of opportunity in the resale market with all these little hardware stores around the place," Chris says.

Woodhouse's first products were dressed timbers, mainly interior mouldings, similar to what had been sold at Wilkinson's. "There, we had been concerned, because it was meranti rainforest timber," says Chris. "One of the benefits of joining up with the Kiwis was we immediately switched to plantation timber. Environmentally, we knew that was going to be the bee's knees down the track, and so it's proved to be."



Above: Woodhouse Timber Company's Brisbane head office, one of five state warehouses.

Of course, now they were no longer using hardwoods, the timbers needed to be finger jointed, and the technology was still in its infancy. Chris says, "You'd watch someone with a brush painting glue onto a joint in those days. Our suppliers have heavily invested in machinery improvements over time, now it happens within a split second but with perfect accuracy – it's incredible."

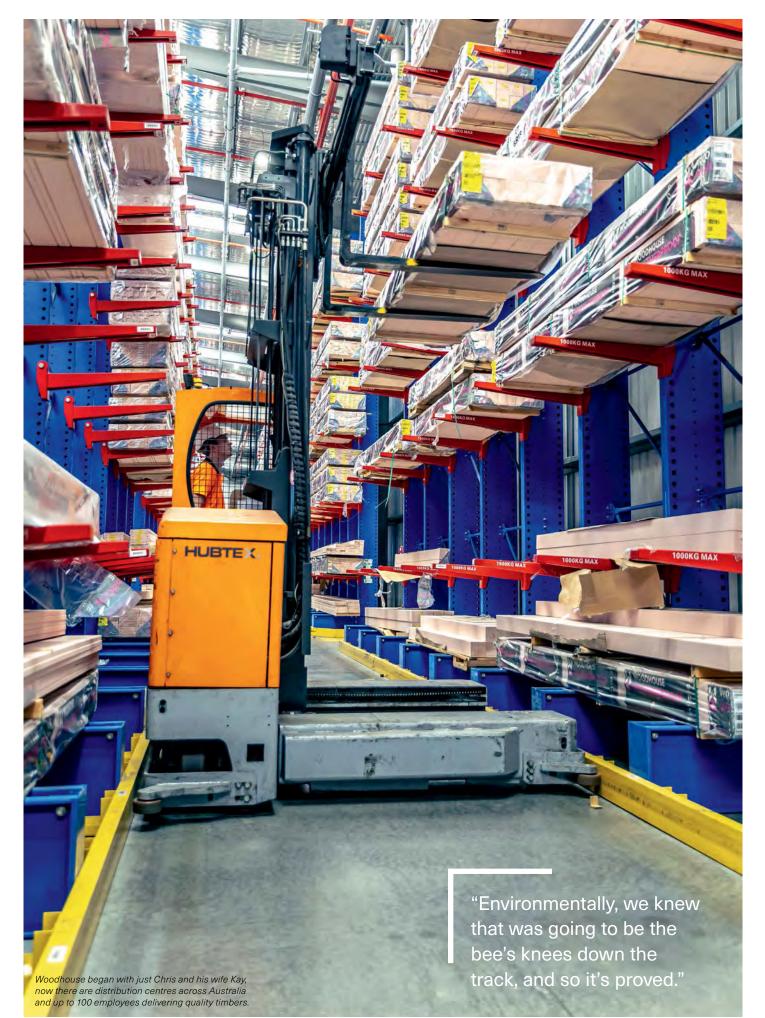
Woodhouse quickly developed its own distinctive products. The first and still the most famous was Weatherproof, an H3-treated range of exterior FSC-certified radiata pine timbers, all pre-primed in eyecatching pink Weatherproof paint.

"There's a simple story behind the pink," says Chris. "Back then, if you wanted to use a piece of timber externally, you had to prime it and the primer was pink. It was just known as external timber. I thought, let's paint our timber pink, because that's what it is: external timber."

The LOSP treatment is done by the manufacturers to Australian standards, with regular testing by Woodhouse. Treatment is done to H3 levels rather than the more commonplace H2: "We decided on the higher rating to get a better product," says Chris, "and because there are areas of the country where users need it."

Weatherproof readily found its audience. The boards were lighter than the hardwood that then dominated the market, straight, ready to be painted and highly durable. The feedback from their customers' builder clients was enthusiastic, though the hardware stores themselves had different reasons for liking it.

Chris says, "Some of our customers saw the sustainability aspect, but most were more interested in the stock control side. When you bought mouldings previously, you'd buy a bundle of 50m. The 0.9m and 1.2m pieces were left in your rack, so you'd have about 15-20% waste. One of our big selling factors was you buy 20 pieces, you sell 20 pieces. It would have been about three or four years into it, that the sustainability aspect caught on, and it's been on a roll since then."





"Dad's always been there as a sounding board who let me make decisions – whether they be wrong or right. The succession has been really, really good."

GROWTH AND CHANGE

Within a few years, Woodhouse grew into a larger Brisbane location, then expanded into Sydney, then Melbourne and beyond.

Now the team numbers fluctuate between 90 and 100 staff members and Chris' son Mark Woodhouse has stepped into the role of CEO. "Succession is always going to be complex," says Chris, "But it's a fact I've faced. I'm 72 now; when I was 60, I started thinking about the future."

A couple of Chris' children who were already working for Woodhouse opted for management roles. "Over the past 10 years, I've transitioned out and they've moved in," Chris says. "In the last five years I've not been involved with a lot of the major decisions, which was a part of the process. It's been pretty seamless."

Accordingly, Drew Woodhouse is now the chief operating officer alongside Mark as CEO. "I think to say that I was drawn towards timber probably wouldn't be accurate, but I was definitely drawn towards business," Mark says. "And you don't get too many opportunities to go into an established family business. So a few things fell in place.

"I was very fortunate, I've been running it for about seven years now. And Dad's always been there as a sounding board who let me make decisions – whether they be wrong, right or indifferent. From my point of view, the succession has been really, really good."

In the early days, as Mark learned the timber business, he relied on the expertise of the Woodhouse staff, some who had been there for over 15 years.

"We have really good people at Woodhouse that have a lot of experience and understand products extremely well," Mark says. "They shared their knowledge and I shared their willingness to learn. The big thing for me, now, is to push the boundaries a little bit in a sector that can be slow to evolve."

That institutional knowledge is still a vital part of the company, as is the expertise of and close relationship with suppliers. "Our timber suppliers have put a lot of effort into their equipment," says Chris. "They've researched quality glues with better outcomes for both the product and health. Our coatings suppliers, including Dulux and Intergrain have developed top-of-the-range products in conjunction with us."

This has been built up over time. "Some of these businesses have been working with us since Dad started the company," says Mark. "Others for 15 or 20 years. It made it easy for us to weather the pandemic disruptions, and it means we can sit down and talk with them regularly about what we can improve and about new technologies and processes."

KNOWING THE MARKET

From the start, Woodhouse has had a major advantage in understanding the needs of builders. "It helped us with our product development," says Chris. "We delivered benefits like Weatherproof being easy to lift on site and Edgeline, our interior mouldings range, being easy to paint. Builders immediately appreciated these qualities."

It's also helped them expand nationally, as the range differs subtly state by state according to what the local market prefers, though of course the extensive full set is available if required – a bonus for renovators seeking to match product bought when the house was first built, particularly as Woodhouse is happy to supply regular stock in smaller quantities. "Our products are at different parts of their maturity cycle in different states," says Mark. "We are new in WA and very established in Queensland and NSW, especially in the case of Weatherproof. Nationwide, the benefits of timber are becoming more evident and understood – particularly talking carbon emissions when you compare it to other building products. It has a nice story."

Chris adds that he thinks the double brick market that has been dominant in WA is headed for a downturn. "I think more people will say 'hey, I want something which is going to be a bit friendlier to the environment'," he says. "We've got timber. Without bragging too much, it really is the bee's knees of building products. It's light, strong, durable and soaks carbon up: it does the lot."

A set of new Woodhouse products is underway. "We're about six months too early to talk about them," says Mark, "but they are all designed around making people's lives easier on site – whether that be mum and dad DIYers or builders – and delivering quality products. At the end of the day, there's a lot of cheaper stuff that seems good at the time, but can come back and bite you."

Other plans include better integrating supply chains, particularly with the lessons

learned during Covid. "If you can understand your customers' requirements and almost pre-empt them, that's going to help taking cost out of the supply chain," Mark says.

The majority of market research still comes the way it has for decades: by talking to customers and their customers. "I've been down this morning to a furniture building company down the road, chatting to them about some new products," says Chris. "That's how I do most of my information gathering."

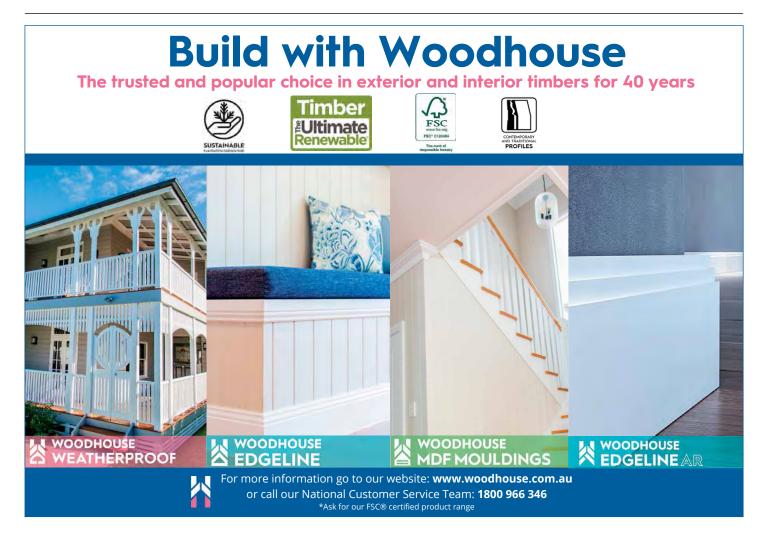
Mark has overseen the company's move onto social media, with its Instagram a mix of news and inspiration, and managed the up-to-date website, which is now a comprehensive catalogue of the Woodhouse range. "I love that someone can jump onto the site and find what they need within two minutes," he says.

"But I agree with Dad: there are times where by physically going and seeing someone and talking to them, you're going to get a lot more out of that than out of an email or phone call. Some of our customers want a seamless automated response, but we've also got other customers who love that physical approach and a chat. And we'll always do that for them." T

For more, visit www.woodhouse.com.au



The majority of market research still comes from talking to customers.





Timber re-use

We talked with three industry powerhouse firms that are closing the loop on their wood waste and working to make timber a fully circular commodity. **By Donyale Harrison**

There's an enormous irony to timber. On the one hand, the sector represents far and away the most sustainable and environmentally responsible building product. On the other hand, a large portion of the wood fibre we harvest ends up as waste, providing a handy stick for those opposed to timber (whether misinformed Greens or steel and concrete manufacturers) to beat us with in the court of public opinion.

Optimising use of the fibre supply from our harvest is a wider problem, but there are major players who have committed to getting the most from their personal fibre streams and in the process bringing the idea of the 'circular economy' – one in which products at end of their first life are seen as resource rather than waste and re-purposed for second, third and more lives – into reality.

We spoke with two Borg's firms – reDirect and Australian Panels – about their recycling program, with Dulux about its offcut scheme and with Kennedy's Timbers about its path to both zero waste and negative carbon costs.



REDIRECTING RE-USE

Three years ago, *TTN* reported on a new scheme from Borg Manufacturing. The company is famous for its panel and board products and sells directly to fabricators and retailers. As national sales manager Stuart Toakley said of his customers at the time, "we realised they were producing a lot of waste wood, and we need to use a lot of wood fibre." A trial program was born, bringing that waste back in the empty trucks every time Borg made a delivery.

Fast-forward to now, and that trial has boomed. Aaron Hudson, CEO of reDirect Recycling (a Borg company), says, "In those days we were doing maybe 30 tonnes a day of material – around 7500 tonnes a year. Now we're at 80,000 tonnes per annum and my goal is for 200,000 to 220,000 tonnes."

The waste comes through three main streams. The first is customers of the Borg family of companies, particularly the Polytec board and laminate division. "We can re-use all their particle board and softwood offcuts," says Hudson. "We don't collect MDF or hardwoods, because they don't fit our board manufacturing process."

Front-lift trucks go out to Polytec customers and pick up their particle board and pine offcuts. There's a cost, but it's attractive and with added benefits for both parties.

"We charge \$100 per bin," Hudson says.

"We charge \$100 per bin, traditional waste companies are charging about \$180 a bin. That's obviously an incentive."

"Your traditional waste companies are charging about \$180 a bin. So we're roughly half price. For those businesses, that cost is obviously an incentive but also that material doesn't go to a resource recovery centre, it goes into new panels, so they can point to a transparent re-use process. For us, we know that waste has no contaminants or other unwanted materials. It can go directly to one of our four facilities to be shredded."

Once shredded to the right size for the next stage in the manufacturing process, the waste is put into a walking floor – a huge truck that can hold 20-22 tonnes of shredded timber, and then shipped to the manufacturing site at Oberon where it's made into new panels.

"We call it cradle to cradle," says Hudson. "It's not just one re-use, it's designed to be endlessly reusable. We can recollect it and re-manufacture it into another product and this loop keeps going. It's a circular economy within the Polytec group."

The second major stream involves hook bins delivered to facilities that have large amounts of timber waste. "We've got them in hardware stores, furniture and pallet manufacturing plants, with timber merchants, frame and truss plants, all the people with lots of pine offcuts," Hudson says. "Places »



Above: Particleboard from Borg's Australian Panels now contains in excess of 50% recycled content.

like Linfox and Veolia where they collect pallet waste. We collect that waste through our network of Borg trucks in Sydney and Melbourne then take it to Oberon in semi trailers. Again that's half price compared to traditional waste companies.

"The final stream is from people who have so much wood waste that they deliver directly to us in Oberon. We have something like 13 or 14 semis a day delivering wood to us from New South Wales and Victoria. And then we put it all into our particleboard – which now exceeds 50% recycled content – and Structaflor – which has about 48%."

Importantly, Borg recycles ply and particleboard, which has not previously had an easy route for reuse. "This type of waste has glues, resins and formaldehyde, and traditionally went to landfill and rotted," says Hudson, "because there's no other home for it. You can't make a mulch out of it, the only other thing you can do is burn it in a waste energy plant, but they're scarce. Our system means they can be re-used endless times rather than burned once."

It's been a significant investment. As well as 13 new walking floors, there is the cost of new plant and the time spent obtaining permissions from the various authorities to set up. But the benefits are also substantial.

"It's a great marketing tool for the Borg network, because it's really a vertical step in the integration process," Hudson says. "It means control of the supply line and a circular economy solution for your customers, as well as outside parties, who all benefit as well."

Borg is creating a new marketing program that highlights the work done by reDirect, and partner companies will receive certification showing the amount of waste they divert from landfill and its equivalent value of CO_2 emissions. "Those Green Certificates aren't backed by the government yet, but they are transparent and auditable," says Hudson.

What is supported by both state and local governments is the huge diversion of construction material from waste facilities. And they're not the only fans.

Kevin Bunting is business development manager at Australian Panels, the Borg company that oversees panel manufacturing. "With our Structaflor, which is our most famous product, we now have two distinct markets," he says. "There's the tradies who just buy the product because they love it. Then there's the architects and the designers who specify it because they're leaning into the green side of the product.

"What's interesting to me is that this hasn't been driven by the market. It's been driven by John and Michael Borg thinking there's a better way. Yes there's the selfish side of it in that we will always need the fibre, but they decided 'let's stick our money where our mouth is' and they've taken the industry with them on the journey. That's a pretty strong message, even if we've kept it quiet."

Hudson laughs in agreement at this. He says, "I've been telling the business, 'we need to start telling this story more', because it's an incredible achievement to have that percentage of recycled material in the product range. And yes, it's only some products, but those are the major part of their sell."

EDUCATING WITH OFFCUTS

Intergrain Trade & Industrial has long been delivering solutions to the recycled timber market, from working with major suppliers to develop coatings that work best with reclaimed timbers, to machinery and product for pre-oiling (which helps give reclaimed timbers equal footing in ease of use on site). Now, the team has reworked their marketing program to recycle their own materials.

"A big part of our job is educating the market," says Madhuri Ranjan, Intergrain's commercial marketing manager.

"In the past, we found there were a lot of people who wanted to specify timber, but they didn't have the breadth of knowledge when it came to the specifics. We'd hear from customers who needed help in terms of what different timber grains could do in their designs, how to use different types of timbers and what coatings would look like on these timbers. So we created The Timber Studio."

A comprehensive resource for all Intergrain products and related brands The Timber Studio starts with an online service and ends with real physical samples.



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TALK TO ONE **OF OUR TIMBER SPECIALISTS**

() kennedystimbers 🙆 kennedystimbers 🕑 sales@kennedystimbers.com.au WWW.KENNEDYSTIMBERS.COM.AU



Above: Intergrain Trade & Industrial has upcycled their scraps into gifts such as coasters as well as samples.

"The major users are architects, builders and specifiers," says Ranjan. "We've made the site as simple to use as possible. When you come in, you can choose how you interact with it.

"If you already have an idea, you can go to one of our six standard timber sample folders: most popular, interior timber stains, interior floor stain and varnish, interior clear floor, exterior stains and exterior Universal Timber Oil. Each of these will show you a range of coatings on the most popular timbers and you can order the physical sample folders directly.

"Alternatively, you might be still planning, so you can click on the Interior or Exterior icon for a range of suggestions that meet your specific purposes."

The sample folders use real timber and provide the full information for each coating (including number of coats).

"We also provide fandecks for architects and big builders, so when customers are in the studio or the show room, they can see exactly what the timber in their home will look like," says Ranjan. "They can say: 'could you show me what the floor would look like in Black Japan?' and then look at the exact finish on the exact timber. We have those available for all our shades and colours in our full range of products.

"And, of course, for builders and architects who want something more unusual, we can



Above: One of the Kennedy's Timbers sawdust piles.

do custom samples for just \$2 a piece. Those can be very specific, with a certain timber, coating and number of coats, or you can let us know what sort of finish you are after on which type of timber and we can advise you. They'll get to you in seven days in Australia."

The simple existence of The Timber Studio already helps to lower waste by helping customers make the right choices, but the Intergrain team has gone one step further.

"The timber pieces on those sample folders and fandecks start out as big sheets of timber, which we cut down," Ranjan says. "All the pieces leftover are recycled, some back into the folders – glued on recyclable carboard – and fandecks, and some into custom samples.

"For the rest, whenever we're off to a trade show or similar event, we have show bags. We have two team members who take those remaining scraps and upcycle them into great handmade gifts. At the recent Sydney Builds, we had beautiful coasters with all our finishes on them. Others have included bottle openers and gorgeous mixed-grain chopping boards."

As with the folders, these are made of all recyclable materials, down to the felt. "Even the glues are low-toxicity and won't contaminate the timber," says Ranjan. "It's a win-win for us, as it's memorable marketing, but it ties in perfectly with our wider goal to always be part of the sustainability solution."

ZERO WASTE GOALS

No name is more synonymous with timber recycling in Australia than Kennedy's Timbers. For years the company has been at the forefront of reclaiming quality hardwoods and returning them to new applications as structural or aesthetic products.

"We've done a lot of work on proactively promoting better utilisation of wood fibre once it reaches its end of service life," says founder Michael Kennedy. "We know it has economic and also environmental value. Historically, we've focused on big posts and beams for flooring, decking, cladding and so on. Now, we're looking at greater utilisation of wood fibre that traditionally didn't have a market. All that smaller end section timber, like hardwood wall studs and roof battens of smaller diameter or smaller section size – we're collecting them, finger jointing them and making them into structural beams and laminated product."

Kennedy calculates that about 85% of the wood fibre that could be recycled into other applications is currently not being recycled. "It ends up being crunched and sent into landfill, or burned or destroyed in some way. It's lost to the circular economy," he says.

The business has established drop-off centres in Brisbane, Sydney, and Melbourne where builders and others can leave this »

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Above: Recycled ironbark from Kennedy's in the Prime Minister's Courtyard at Parliament House, Canberra.

type of timber. Kennedy says, "At the moment, we're going to be manufacturing this line in Brisbane, because Queensland was built on timber and tin, so there's a lot of wood fibre out there that can potentially be reused and re-utilised."

That's not the only new process coming on line. In the process of remaking their products, Kennedy's Timbers creates giant piles of sawdust. "Shortly, we'll be implementing a briquette and pellet machine to pelletise the sawdust for green heat and energy production," says Kennedy. "We'll also be mixing some into fertiliser as a carbon store, to help re-energise and re-carbonise soils.

"Those briquettes will be used in our facility. They're part of our current three-year plan to have 100% of material on our sites re-utilised on site. The goal is zero waste leaving our sites and net negative waste overall as we look at new streams of wood fibre coming in that we stream into new products."

The recycled finger jointed product will move into the same market as mass timber made from virgin fibre, supplementing the Australian market's needs without competing with the local CLT and glulam manufacturers for fibre supply.

"It's an idea that's right for now," Kennedy says. "We were recently successful with a federal government grant for \$1.6 million towards capital expenses around this sort of optimisation. Part of that is going towards

"People can see that recycling enriches the timber story."

implementing plant equipment that will see these products manufactured and also see the recycled timber business expand into other markets that historically haven't been supplied by recycled timber.

"It's all about giving customers a choice. We all know the wonderful story of wood its storage of carbon, its biophilia effects and its positive environmental credentials. Recycled products give customers another choice about what they value when they're buying."

When it comes to carbon footprint, Kennedy's has already sailed past net zero. "We're well into carbon negative," says Kennedy. "Right now, 46% of our power comes from solar generated on site. In our expansion program, we will have 98% of our power generated from on-site solar. The balance will come either from batteries, or augmented with green power from briquette production. So we will be able to effectively disconnect our usage from the grid and we will be able to put power back into the grid, further enriching the environmental credentials of timber use."

Kennedy notes that the expansion in industry recycling and innovation means timber's environmental story reaches a wider audience. "There are a lot of great opportunities in product innovation and better utilisation of wood products," Kennedy says. "When I started doing recycled product, there were people who thought it would negatively effect the market, but now they can see it enriches the timber story.

"In our office, there's a sign that says 'a track record of delivery on commitments', and when I look at the things we plan, we always make them happen. Now more of the industry is focused on the environmental story that timber has to tell, and we're all getting that message out." T

For more information, visit www.borgs. com.au, www.timberstudio.com.au and www.kennedystimbers.com.au



Above: Solar panels on the plant at Kennedy's Timbers have helped the operation to be carbon negative.

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Vekta and Framequip combine forces

With expanded capabilities and range, the merged business is a win for the timber industry.

There has always been more that bound Framequip and Vekta than divided. Yes, the family-run companies were born in cities with practically all of Australia between them – Sydney and Perth respectively – and yes their founders were born a Pacific Ocean apart, but both have an identical history of being driven by a passionate, innovative engineer who is focused on delivering productivity and safety for his customers.

Now, the two companies have become one with their recent merger, which Ed Serrano, CEO of Vekta, announced, saying: "We are delighted to welcome Framequip to the Vekta family.

"Rob Armour and his team have built a proven frame line solution business over the years and their knowledge of manufacturing systems and technology automation offerings will support the growing demands in this sector as we continue to strive to transform the frame and truss industry with leading-edge technology." Serrano told *TTN*, "The Framequip approach is intended to give us a broader toolbox to assist our customers with the appropriate level of automation for their plant.

"Our intention is to take the already solid Framequip product line and use our resources to give it fresh energy. We want to eventually have upgrade options available for both existing and future customers that will



Above: Framequip's Rob Armour.



Above: Vekta Automation's team celebrating their 10th anniversary with Shelena and Ed Serrano at centre.

enable our customers to grow and expand with the changing markets."

He added, "We want to be in a position to offer a one-stop shop for plant automation, giving our customers a partner that can help them realise their industrial automation plans. The Framequip line thus fits in nicely with the overall objectives of Vekta."

Framequip will continue to function under the leadership of Armour, while closely collaborating with Vekta's sales and operations teams.

"Joining Vekta is a fantastic opportunity for Framequip," said Armour.

"I am thrilled to contribute to Vekta's mission to provide and deliver leading automation solutions and services to support the timber frame and truss industry globally. Systems-level disruption will continue to evolve as will Vekta to meet new industry challenges and market forces, while investing continually in research and workforce development programs.

HISTORIES OF SERVICE

Vekta was born when Serrano took a lifechanging dive into business. Less than a decade earlier, he had moved to WA from the US as an undergrad student to enrol in Curtin University's Mechatronic Engineering degree (essentially robotics and other automated systems). Straight out of university he secured a job with PFP Technologies in Perth, and started to build his career.

One of the products he had been hired to work on was the Razer saw. "It was one of the first linear saws introduced," Serrano says. "And it was one of the few that was built from the ground up specifically for truss and frame, as opposed to designed for another timber-related industry and adapted for the truss and frame industry."

However, the machine wasn't profitable. Serrano could see the engineering potential, but it had neither the sales nor support backing it required. When the company decided to mothball the line during the GFC, then 28-year-old Serrano took the idea to his wife, Shelena, and brother and together they bought out the machine and began Vekta. "We want to offer a one-stop shop for plant automation, giving our customers a partner that can help them realise their industrial automation plans."

Fourteen years later, it's an international firm with an ever-expanding line of automated solutions and a solid reputation for working with customers to deliver results that work for their needs.

Framequip began after Armour, who had a history of working in truss and frame machinery and jigs with Stanley Bostitch, struck out independently. In those early days, a box of tools, an old ute, a good head for engineering and a good reputation in the industry was the sum total of his starting assets, but it was enough.

Framequip's renown and scope both expanded quickly, largely as a result of Armour's focus on customisation. He says, "People would ring up and say 'Rob, we like what you've got there, but can you make it this way? Or make it do that thing?' We'd go away and think about it and come up with solutions. So we were able to come back and say 'Sure, we'll give it a crack for you!'"

The standard range grew to include nog nailers, auto nailers, waste conveyors, frame lines and more, with a customer base that stretched around Oceania and into the US.

While at first glance, it's the passion for engineering that ties Armour and Serrano, in terms of how they've run their businesses, it's the passion for delivering best-fit solutions, with both companies having a long history of spending time learning about what their customers do now and want to do with expanded production and then finding ways to help them reach those goals. Accordingly, this is a dream match for the customer base as it brings together the best of both companies in terms of innovation and gives Framequip the benefits of Vekta's scope.

"There will be new products that stem from the current Framequip equipment," says Serrano. "And once the onboarding process is complete, we will start looking at enhancements and upgrades – where possible piggy-backing off of technology we've developed in other areas – to the existing product lines."



Above: A recent Framequip machinery installation in Victoria; the new company sees expanded capability.



Above: Independent branding will continue for now.

In addition to the expanded engineering capabilities, the merger of the two companies significantly expands the servicing and support capacity, particularly across Australia, and spreads the load on teams, which is important at a time when fabricators have been pushed to their production limits over the past few years. Both teams have always prioritised service, as they know customer production relies on the least down time possible.

The Framequip branding will be retained for 12 months to recognise the history of the company and ease its customer base into the transition. Its library of systems will form part of the Vekta R&D development lifecycle which will deliver future enhancements in high quality machinery to an even bigger sector of the Australian fabrication market. **T** For more, visit https://vekta.com.au and https://framequip.com.au/

Easy timber software

CLT Toolbox is about to make life much better for engineers, designers and certifiers working with mass timber. **By Donyale Harrison**

> "This eliminates the barriers of adoption for new engineers entering timber."

LL PHOTOS: COURTESY CLT TOOLBOX

Adam Jones, founder and CEO of CLT Toolbox. As an industry, we're making inroads when it comes to educating the market about the timber's superiority in areas such as versatility, carbon storage, renewability and durability. And yet timber constructions in Australia are almost exclusively domestic, aside from a handful of 'hero' projects built by top-tier companies (eg 25 King in Brisbane and the hybrid Atlassian Tower in Sydney). In between, an enormous part of the market is largely captured by steel and concrete.

Adam Jones, who formerly worked as an engineer at WSP then with WoodSolutions and XLam, has a simple explanation for why this is the case. "We've seen demand growing on the architect and client side," he says. "There's a real desire to reduce embodied carbon in these buildings and improve sustainability. But when they go out to the engineer, they learn there aren't many timber specialists in the country, it's a real bottleneck. A lot of options get lost right there because engineers are trained in and used to using concrete or steel. Those materials are familiar; timber isn't."

Jones found the absence of design infrastructure and support for timber to be the "big pressing issue" in his former roles.

"You've got the two big problems," he says. "Engineers have to go out and self-educate, essentially, because timber isn't taught at university. And, especially when it comes to mass timber, there's no Australian standard. So they need to hunt around the globe for that information; there's no single authority telling them 'this is exactly how you design'.

"That leads to problem number two: they have to build design spreadsheets, which they don't have to do for concrete or steel and which take a lot of time at considerable expense, especially for those first timber jobs."

With those problems in mind, Jones wrote a white paper and interviewed a lot of engineers in the industry to really get an understanding of the issues in detail. As a result of that experience, he is now the founder and CEO of CLT Toolbox.

It's a simple, if enormous, proposition. CLT Toolbox is web-based engineering software that automates the complex structural design computations required in using the suite of mass timber products currently on the market, making it easier and more costeffective for engineers to design and build with sustainable materials.

"This really eliminates the barriers of adoption for new engineers entering timber for the first time," says Jones. "It gives them the software tools to design it and to confidently choose timber, as well as delivering a wealth of transparent detail from the supply chain so they can be more open in who they contract with for supply."



Those suppliers are eager partners, with several assisting the software's development, as well as contributing to the company's educational material.

Jones says it's a natural partnership: "We've got the supply chain data from all the major suppliers, because it's a big issue for everyone – suppliers as well as engineers. They want people to be designing with their materials from the start. Without that information being available upfront, it gets to the drawings stage and it's a hard scramble to try and figure out how to make it in wood. Our software solves that."

The goal is for CLT Toolbox to make building mid-rise and above straightforward, in the same way that familiar tools such as AS 1684 and nailplate and timber suppliers' software packages currently assist with oneand two-storey domestic builds.

And it's come at an opportune time for the new, expanding and soon-to-launch set of Australian mass timber suppliers: "There's a lot of new EWP suppliers coming online who need to fill out their factories and their order books," says Jones.



Above: Ringo Thomas, chief commercial officer

"This will give power to engineers at the very start to choose within the whole supply chain. At the moment, they're 'pushed' to choose one supplier and go all the way with them. But now with this, they can really have that supply chain competition, which is best for the end user."

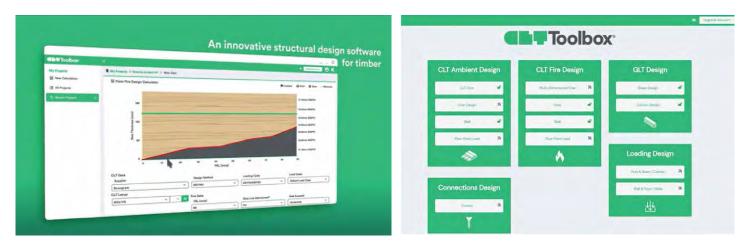
The software package itself is reassuringly familiar for engineers. It provides a series of calculators to design walls, columns, beams and floors. Its beauty comes in the comprehensive data sets, and the simplicity of the next steps – "An engineer can easily use that design to create the drawings and the BIM model and send that information seamlessly into other models," Jones says.

"If you want to constrain the suppliers to a criterion, that's easily done, too. A client might just want the best local option, which is totally reasonable. We give that power to them: to choose within the supply chain and not be shoehorned to a single supplier."

BUILDING THE TEAM

The software is currently undergoing its final months of beta testing before its public launch, currently scheduled for 1 July.

It's backed by an impressive international team. In addition to Jones (2019's Future Green Leader of the Year for the GBCA), Ringo Thomas is the interim chief commercial officer. Thomas was the head of sales and the first employee at Everest Engineering, building the company to a 200 headcount and over \$50 million in sales revenue. Other key members of the team include Ikhsan Agustian, who leads the software team; Lelissie Bedada and Wenderade Beshada, who spearhead the structural design development; Marco Dimitrijevic, who leads Eurocode development; Jack Turner, who heads product design and Ari Yulianto, head of calculation development. **>>**



Above: CLT Toolbox provides a full set of design tools for mass timber products, including loading, connections, fire, noise and more.

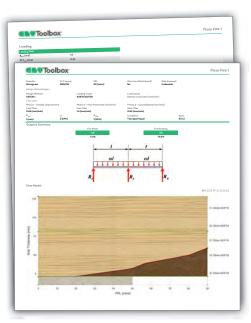
The global team ties in with Jones's wider mission to remove hurdles in the industry, including in the make-up of his own company.

"Right now, mass timber products are limited to the small number of engineering firms who have the resources and expertise to manage the current complexity," he says.

"The white paper showed there might only be, say, 30 timber specialists in the country right now, out of 10,000 structural engineers. So it's very hard to find those engineers and only the big builders can get them. But if we provide the tools for the other 10,000 structural engineers, then pretty much any builder can access a sustainable solution."

The benefits flow through to other parts of the construction process as well. Currently, building certifiers and checking engineers have the same problem with lack of familiarity using mass timber products.

"The engineer builds a design report that



Above: This sample floor fire design includes multiple phases of char data.



Above: Jones, Thomas and the team have been pulling some long hours in bringing the project to market.

shows the loads and the forces in the building and that it meets wind and earthquake requirements, all those sorts of things," Jones says. "Then they pass it to a certifier, who usually has a checking engineer and that checking engineer has no idea what they're looking at.

"Our software helps the structural engineer get their building certification, but it also helps the certifier and the checking engineer review computations as well, from a standardised place and with full transparency. That educational aspect of our work is really important."

When we spoke in early April, Jones had a set of five engineering firms beta testing the program and was about to expand. "We limited that first set very intentionally so that we could work on their feedback before broadening the testing base," says Jones. "We've had over 30 demos requested from leading engineering firms all over the country and we're going out to them as regularly as we can and showing them what CLT Toolbox can do. More of those firms will be coming on in the next rounds of testing, which will expand each week.

"We expect the beta program will be two to three months. We want to stress test the software enough that we can feel extremely confident it does what we say it can do in the most efficient way for the end user."

Jones jokes that like all engineers he is torn between the perfect product and wanting to see it in action.

"Right now we're aiming to have it fully publicly available at the start of July, perhaps even the end of June. We're just sequencing the right pace. Being a software product, you want to wait until it's perfect but, at the same time, we can't wait to see the difference this is going to make in the real world." **T**

For more information on the beta testing program or to book a demonstration, visit https://clttoolbox.com.au



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Timber buildings and embodied carbon

This seemingly esoteric term is a vital tool in meeting our carbon targets. By Afzal Laphir, Principal Engineer, Meyer Timber Pty Ltd.

t might seem like I am about to state the obvious for all the readers of this magazine, but this is a message that needs to be told by everyone in the industry. Before going into the intricacies, the basic facts are that timber stores carbon (and a lot of it). When timber is harvested and used within a building, this allows room for more trees to grow and store more carbon. You see where this is leading – the more timber we use in construction, the more we help the environment. And now for the finer details.

Carbon is a critical element that is essential for life on Earth. However, its increasing concentration in the atmosphere, in the form of carbon dioxide (CO₂), due to human activities is causing significant environmental problems such as global warming, ocean acidification, and climate change. Therefore, it is important to manage carbon emissions and promote sustainable

Timber can play a major role with its negative carbon footprint. practices to mitigate these impacts.

In September last year, Australia's net-zero emissions target by 2050 was enshrined in legislation. In order to make this a reality, the traditional method of controlling operational carbon emissions (see Fig 1, below, for definitions) alone is not enough. There needs to be an increased focus and investment on tackling embodied carbon and this is where timber can play a significant role with its negative carbon footprint.

WHAT IS EMBODIED CARBON AND UPFRONT CARBON?

Embodied carbon refers to the emissions associated with materials and construction processes throughout the life cycle of a building and includes upfront carbon, usestage embodied carbon and end of life carbon. Emissions caused during manufacture of building products, transport of building products to site and construction of buildings are defined as upfront carbon (British Standard EN 15978).

WHY IS EMBODIED CARBON IMPORTANT?

The built environment represents about 40% of all emissions worldwide, of which

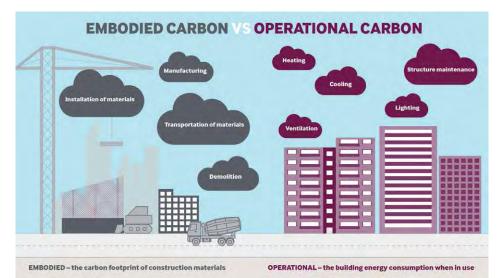


Fig 1 – Embodied carbon vs Operational carbon (Source www.rpsgroup.com)

approximately 11% result from embodied carbon emissions, i.e in the manufacturing of building materials and products such as steel, cement and glass (IEA Global Status Report 2019) In Australia, the embodied carbon proportion is higher, approximately 16% (source Green Building Council of Australia, 2022) and according to a recent Clean Energy Finance Corporation report, this figure is expected to double by 2050 if the construction sector doesn't clean up its act.

About 80% of the embodied carbon emissions happen upfront, i.e. they occur during the construction stage, which represents about 25% of a building's lifetime emissions. As we reduce operational carbon with time, through a shift towards renewable energy, the proportion of upfront carbon emissions will increase further. This means, as we look ahead, embodied carbon will become the most important metric for emissions reduction in buildings, replacing operational carbon.

Considering embodied carbon in buildings is also important because it helps to promote a more holistic approach to sustainable design. By taking into account the full life cycle of a building, including its embodied carbon, designers and developers can make more informed decisions about materials selection and building design that can help to reduce the environmental impact of the built environment.

HOW CAN TIMBER CONTRIBUTE?

Trees absorb CO₂ from the atmosphere and store it as carbon in their wood, roots, and leaves. This process is known as carbon sequestration or carbon capture. When timber is harvested and used in construction, it can continue to sequester carbon for the lifetime of the building. This means that using timber in construction can have a negative carbon footprint, as it can offset the emissions associated with other building materials such as concrete or steel. In general, making a product from steel requires almost 20 times more energy than from kiln-dried (KD) hardwood.

Process	kg CO ₂ -e/m ³
Tree Growth	-912
Forestry	32
LVL Production	159
Treatment	109
Untreated LVL (cradle to gate)	-721
Treated LVL (cradle to gate)	-612

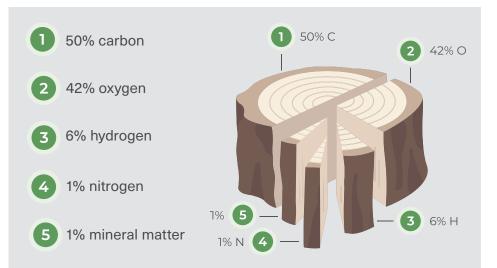


Fig 2 – Cradle to gate GWP emissions for LVL Fig 3 – Chemical composition of wood (source https://ecotree.green) produced in NZ (source Scion 2010)

According to the WoodSolutions publication "Environmental Product Declaration – Softwood Timber" (Dec 2017), the production of 1m³ of sawn, KD softwood generates a negative 760kg of global warming potential (GWP) emissions.

By the same token, a study carried out by Scion in 2010 on LVLs produced in NZ (see Fig 2, above) concluded that the production of treated LVLs gives a negative 612kg of GWP emissions. Therefore, whether softwood or engineered timbers like LVLs are used in construction, the negative embodied carbon component remains significant. So much so, research studies (Durlinger et al, 2013 and Carre and Crossin, 2015) have found that the embodied carbon emissions of an engineered timber building can be as much as 75% less compared to its conventional concrete-steel counterpart on a per square metre basis.

CALCULATING UPFRONT CARBON?

The Green Star Building Council Australia (GBCA) has kicked off the net-zero initiative in their latest version of Green Star Performance allowing the transition of existing buildings away from fossil fuels.

The GBCA's Upfront Carbon Emission Calculation guide (Interim Ver 1 Dec 2022) is a valuable tool for designers, that sets out the basis on which a building's upfront



carbon emissions modelling should be completed when the intent is to compare

For more information on this topic, contact Afzal Laphir via email at AfzalL@meyertimber.com.au

The embodied carbon emissions of an engineered timber building can be as much as 75% less.

a reduction to a typical building in Australia. An expanded version of this guide is expected anytime soon.

A more simplistic calculation is provided by the three nailplate companies, Pryda, Mitek and Multinail, through their respective design software. The total stored carbon in trusses and wall frames are calculated based on carbon representing 50% of a tree's dry mass (see Fig 3, above). To put things into perspective, an average two-storey house consumes around $20m^3$ of timber, meaning it stores about 4.6 tonnes of carbon which translates to as much as 14 tonnes of net CO_2 absorbed from the atmosphere. This equates to the amount of CO_2 emitted by a standard car that has travelled a distance of a staggering 100,000km.

TIMBER FOR A GREENER FUTURE

It is important to acknowledge the wonderful work done by a few associations in promoting timber as the building material of choice. FWPA's *Timber Framing – the Ultimate Renewable* campaign through various media platforms has hit the right note with its target audience. The Planet Ark's *Make it Wood – Do your world some good* is another program that aims to encourage increased use of responsibly sourced wood as a building material.

More recently, with their slogan *Creating a Greener Future*, the Carbon Warrior drive initiated by the Frame & Truss Manufacturers Association (FTMA) is attracting positive discussion not just within the industry, but extending to the wider public. Their recently released document "Carbon Warrior discussion points" (see page 46) is a useful resource to support this campaign.

The benefits of timber as a renewable and sustainable material are well-known and initiatives like these can help to raise awareness and encourage the use of timber in construction. It is important that we continue to support these initiatives and work towards a more sustainable and environmentally friendly built environment.

And this is where you come in. Use these resources and promote timber. Focus on the stored carbon from the nailplate software outputs and promote the environmental benefits to all your builders. Make it part of general conversation both inside and outside of your business activities.

If we want to achieve net-zero by 2050, there is currently no renewable building material more available and versatile than timber to make this a

reality. Let everyone know this. T

leye



Exterior timber wall cladding

Many newer products are currently caught up in performance solution red tape. A new standard aims to cut through. **By Craig Kay, national product engineer, Tilling**

t's been almost 50 years since Captain Rock – AKA Wally Johnson and Bob Brown – wrote 'Home Among The Gumtrees' in the early 1970s. The song slowly took on a life of its own with its lyrics becoming permanently lodged in the back of every Australian's mind.

The pair wrote the track about a home in Eltham, a leafy suburb on the outskirts of Melbourne. But Narayana Johnson, the son of Wally Johnson, said the home he grew up in in NSW's Northern Rivers region bears a striking resemblance to what was so vividly described in song.

While I can't find hard evidence, I feel that it is fairly safe bet that the home being referred to in the song lyrics would have timber wall cladding, most likely weatherboards.

Introduced into Australia in the 1850s, weatherboards for homes became popular because they are lightweight, weatherproof, easy to install, affordable, and work as a natural insulator. They were used for a broad range of houses including worker's cottages, Federation-style houses, and Queenslanders. Later, weatherboard was often used in Californian bungalows in Australia. The material grew in popularity and contributed to a distinctly Australian style. The weatherboard cottage was first found in Australia's then-working-class inner cities: in suburbs like Balmain and Pyrmont in Sydney; Victorian suburbs like Fitzroy and Albert Park; Tasmania's West Hobart and Brisbane's West End and Nundah.

In many locations around the world, weatherboard also goes by other names, including clapboard, bevel siding and lap siding. In Australia and New Zealand it has always been known as weatherboard.

Traditionally made from solid timber, there are now other wood based composite weatherboards and cladding profiles.

Despite there having been hundreds of years of use of timber cladding, there was no formal standard developed and no method to demonstrate compliance to the BCA. This is particularly relevant for non-traditional applications such as timber cladding placed on the diagonal and vertical orientation.

The 2015 BCA amendments introduce a new verification method for exterior envelopes for building (NCC Vol 1 Part F1) to demonstrate compliance for the first time.

The BCA 2015 Volume One Part F1 Performance Requirements stipulate that an external wall (including openings around



windows and doors) must prevent the penetration of water that could cause:

- a. unhealthy or dangerous conditions, or loss of amenity for occupants, and
- b. undue dampness or deterioration of building elements.

GAPS IN THE STANDARDS

After implementation of BCA 2015, the timber industry commissioned CSIRO to complete a study to confirm or otherwise that the mostcommonly specified exterior timber cladding conformed to this new test.

The research highlighted a gap in knowledge for two issues. The first regards common practices in the specifying of flashing details around meter boxes, windows and doors, internal/external corner details and cavity closers. It also covers the best installation directions and fixing methods for different timber-clad wall systems to pass the extensive water and wind pressure applied to comply with the Verification Method specified in BCA. For timber cladding, the old adage "the devil is in the detail" is as true today as it was when first penned.

Part 7.5.2 Timber wall cladding in NCC 2022 Vol 2 and Housing Provisions include some DTS provisions for timber cladding, however these provisions do not include any of the newer composite wood exterior cladding systems.

A part A 2.2(4) of Amendment 1 of NCC 2019 came into effect in July 2021. This requirement introduced for the first time a very complex and time-consuming requirement to provide a four-stage evidence of suitability for any performance solution – not for the product as a whole, but for every individual project is was to be used on.

The fact that these composite timber cladding systems were not directly referenced in the NCC meant that they were essentially a performance solution, and they joined a list of other now-common building products caught up in this new requirement.

So far, regulatory authorities have been laser focused on forcing companies producing non-DTS products that form the exterior of the building envelope to undertake this four-stage process for each project.

The pathway to DTS status is to have a standard or other document directly referenced by the NCC in a similar many to common standards we are familiar with, such as AS 1684.

Industry has now reacted to this problem and has commenced the mammoth task of developing a "Design and Installation of Exterior Timber Wall Claddings" standard. This will involve significant stakeholder (users of the Standard) engagement to develop a draft standard ultimately for release to the public for their comments. Adding complexity to the process is the valid decision to incorporate the new NCC condensation requirements introduced in NCC 2022.

Concurrent to the development of the new standard, industry will make application to the ABCB to seek permission to develop a standard intended for call-up within the NCC. The ABCB has prepared an extensive protocol on how to develop a standard before they would call it up in the NCC.

It is envisaged, all things going well, that by the end of 2023, substantial progress will be made on the development of this document. This will involve a public comment phase and redeveloping parts of or creating additions to



the draft that come about because of public comments, prior to development of a preballot draft.

During the first half of 2024, it is planned that all the committee deliberation will be completed, and the standard, written in a format acceptable to the ABCB for inclusion into the NCC will be published for use by industry and regulators alike. Draft NCC 2025 information will be carefully monitored to ensure the Standard is referenced in NCC 2025.

I find it a little ironic that an historic Australian icon like exterior timber cladding is now caught up in a 21st century problem,

but it is what it is. T

Dilling



Craig Kay is the national product engineer for Tilling. For more information on this topic, contact Craig Kay and the Tilling engineers via email at **techsupport@tilling.com.au**



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Above: Responsible Wood CEO Simon Dorries (centre) with Jason Ross Marketing and Communications Officer (right)



The case for timber

How to frame the benefits of using timber in the built environment for your customers. **By Kersten Gentle**

We all have a role to play in advocating for the environmental benefits of timber. Your voice is important, but often I get told that people are nervous about responding to questions from customers, as they don't necessarily know the facts.

FTMA has collated the most common questions and written a simple script, below,

to show you how easy it is to promote the environmental benefits of timber.

The built environment is currently responsible for nearly 40% of the world's carbon emissions. By implementing policies that target the use of renewable materials, such as timber, which stores carbon for life, we can build a greener future.

TIMBER: THE ANSWERS

Q. Why should we use wood and how does timber store carbon for life

Trees absorb carbon dioxide (CO₂) from the atmosphere as they grow. Using the process of photosynthesis and the solar energy from the sun, the CO_2 is converted into emitted oxygen, which we breathe, while the carbon is stored in the woody mass of the tree. When the tree is harvested for timber products, that carbon is stored and locked in the timber for the life of the product while it is being used or if it is recycled into another product. The accumulated storage in Australia's harvested wood products in-use is estimated to be approximately 97 million tonnes of carbon.

Prof Ian Chubb, the former Australian chief scientist, told journalists in January that: "The only pathway known to science that has the *immediate capacity* to remove greenhouse gases, particularly CO_2 , from the atmosphere at scale is photosynthesis, the means by which plants absorb CO_2 and water to create energy to fuel their eventually growth."

Timber products remove more CO_2 from the atmosphere than they emit through the manufacturing process, unlike other materials. In fact, 1m³ of softwood contains roughly 0.9 t (tonnes) of CO_2 , and 1m³ of hardwood has 1.2 t of CO_2 .

Q. How much carbon is stored in the average timber framed house?

An average Australian home uses approximately $12m^3$ of sawn softwood timber framing, which effectively stores almost 3 t of Carbon – and which equates to approx. 7.6 t of CO₂. Over 7 t of oxygen is also released by those trees, replenishing the atmosphere during the photosynthesis process.

Q. How quickly can you grow that wood back in Australia's forests?

Australia's sustainable and renewable forest industry replants each tree harvested, which in turn continues the natural carbon cycle (over 70 million trees each year).

Australia's softwood plantations can regrow the timber used in an average framed house in just 150 seconds! Timber grows back, steel and concrete don't.

Q. What can we do with timber products at the end of their life?

Timber has the ability to be a fully circulareconomy positive material that at the end of its first life can be reused, recycled or have its energy recovered as bioenergy.

At end-of-product use, timber products should no longer seen just as 'waste', but effectively they should be seen as becoming a valued feedstock for another process; either a by-product (recycling), or recovered resource for another industrial process or as regenerative resources for nature (e.g. compost or, for biomass-based products, energy generation – displacing nonrenewable fossil fuels).

The City of Amsterdam has a roadmap to become one of the first fully circular cities. As a key part of this goal, it has introduced the Green Deal Timber Construction policy, which mandates that all new construction must include at least 20% timber or other biobased materials from 2025. The city estimates this will immediately reduce 220,000 t per annum of CO_2 .

Q. If timber is placed in landfill, does it decay and emit carbon?

At the end of the service life, if it can't be reused or recycled any further, some wood products may be disposed of in landfill and under the anerobic conditions of most landfills this carbon will remain stored. Recent research has shown that the rate of decay in landfill is much slower than previously thought, with studies finding that more than 95% of the carbon in wood remains stored after being buried for 30 years in landfill. In theory, if there is no oxygen in the landfill, virtually no carbon loss will occur, and the carbon will remain stored forever. This fact is at odds with many current policies that make the demonstrably incorrect assumption that 'all the carbon is released as soon as the wood product is disposed of in a landfill'.

Q. What about Green Steel? Is that an answer to net-zero housing?

The concept of 'Green Steel' – manufactured without the use of fossil fuels – is still just that, a concept. While it's an admirable goal, the reality is that green steel currently is not available to the market, outside a very few experimental programs.

The steel manufacturing sector's aim is to transition from coal-fired plants to electric and water plants which will allow hydrogen production. However, hydrogen production at scale will require billions of dollars of investment in renewable power generation and is also not a current solution.

Europe's biggest steel maker, ArcelorMittal, has told the *Financial Times* that decarbonising its operations on the continent in line with EU targets could cost them up to \$40 billion; as yet the technology is still not available within any market.

Additionally, no matter what changes are made to steel's manufacturing process, you cannot replace the ore, rocks and minerals extracted from the planet for steel or concrete. However, by using certified,

When the tree is harvested for timber products, that carbon is locked in the timber for the life of the product.

renewable and sustainable plantation timber, you can be guaranteed the trees used in a house frame are replanted and regrown and the cycle of carbon storage continues.

Q. Does Australia have enough timber to meet our demands?

Australia needs to put more trees in the ground if we are to be self-sufficient when it comes to our timber needs.

Currently we import approximately 22% of all our structural timber needs, and it is envisaged that within the next decade this could rise to 40%. Australia is fortunate to have quality importers, who are committed to the Australian market.

The Federal Government has made policy changes which will allow greater investments into plantations, such as the removal of water rules and inclusion of plantations with the Emissions Reduction Fund. Several state governments are also funding plantations.

Q. What evidence is there to show that timber stores carbon for life and that we should be using more timber to tackle our climate crisis?

Recently, the Intergovernmental Panel on Climate Change (IPCC) cited sustainable forest management along with sustainably produced forest products, as key solutions to fighting climate change.

When you look at countries leading the way in climate action, one thing they have in common is sustainable construction policies that recognise the role renewables, such as timber, play in lowering the built environment's carbon emissions.

For example, France has introduced a policy that all new public buildings must be built with at least 50% wood or other natural materials. This policy not only aligns with the country's net-zero targets, but also with their ambitions to host the most sustainable Olympics ever in 2024. The Olympic Village will include beautiful mid-rise timber buildings, which will be turned into social housing after the games, and which will store carbon for life.

The Swedish city Växjö, dubbed the 'Greenest City in Europe' is aiming to be

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fossil fuel free by 2030. Växjö's declaration of becoming fossil fuel free states: "Växjö builds in wood. We build passive houses, lowenergy houses and energy plus houses in close collaboration between the municipality, private sector and academia."

Currently, over 50% of all new builds are built with timber, a target that was set by the city and reached in 2020.

Furthermore, the Swedish municipality's steering document for sustainable development explains that Växjö needs to build sustainably and continue to be a role model for wood construction.

The Wood Building Programme coordinated by the Finnish Ministry of the Environment, has set out national targets for the use of wood in public construction. These targets were set as the Finnish Government identified timber construction as a key measure for reducing regional emissions, as timber stores carbon dioxide in the building stock. Targets have been set for the share of timber in all new public construction and for the types of buildings with the greatest construction volumes, including a goal of 65% of timber construction of educational buildings by 2025.

The City of Amsterdam's Green Deal Timber Construction mandates that 20% of all new construction in the Dutch capital must be constructed with wood or other biobased materials from 2025. This is in line with the city's goal to have a fully circular economy by 2050. To qualify as a 'timber building', a detached house would have to be constructed with at least 80% timber or biobased materials. For multistorey housing Embodied carbon emissions are expected to double by 2050 if Australia doesn't act now. We cannot wait.

up to 10 storeys, this is reduced to 65%, while multistorey housing over 10 storeys must contain at least 50%.

According to the Amsterdam Institute of Advanced Metropolitan Solutions (AMS Institute) this move will lead to an annual reduction of approximately 220,000 t of CO_2 emissions (equivalent to the average emissions of 22,000 households).

Q. Will these kinds of policies be introduced in Australia?

If Australia is fair dinkum about tackling our climate crisis, then we must act now. This isn't about reinventing the wheel, but about following in the footsteps of those countries leading the world when it comes to tackling our climate crisis.

We must introduce policies that make a difference now. For example, if the Federal Government ensured all social houses built under the National Housing Accord were to be built using timber frames and trusses, they would store nearly 8 million t of carbon.

The National Housing Accord suggests 1,023,866 social houses are built throughout

the country. If you calculate these houses by the average $12m^3$ of framing timbers used in a similar-sized home- storing 7.65 t of CO₂ per house - this equates to 7,832,574.90 t of CO₂ stored.

How can any government walk away from this benefit?

Q. Will these kinds of policies be challenged by more carbon intensive sectors?

When the City of Helsinki introduced planning and zoning requirements that mandated all building of newly developed neighbourhoods to have timber frames, trusses and façades, it was challenged in their Supreme Court. However, the decision was upheld, as the Finnish Supreme Court recognised the decision did not conflict with EU trade laws, thanks to the sustainable nature of timber as an answer to our climate crisis.

Q. What will happen if sustainable construction policies are not introduced now?

Embodied carbon emissions (see page 42) are expected to double by 2050 if Australia doesn't act now. This is why we cannot wait, and why sustainable construction policies, recognising the pivotal role that timber plays, are needed now.

So come on, learn this script and repeat it to your customers. We have an amazing story to tell that timber stores carbon for life and creates a greener future.

> Kersten Gentle FTMA CEO T

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Good bones

Age can weary us all, including our roofs. Just as beauty depends on nice features and moisturiser, trusses and roofs will benefit from a good beginning and care along the way. **By Paul Davis**

won a baby beauty contest when I was 10 months old. Given that start, you'd think I might have ended up as a male model and then a movie star. Yet here I am as an engineer, almost the definition of an unglamorous career in the public's eyes. However, from the inside of the profession, I still find it challenging and rewarding. And, in my fifties, there are no prospects of winning a beauty contest, so engineering it is!

Over all those years of engineering I have investigated a lot of trussed roofs which have experienced some sort of structural distress or collapse with the kinds of damage categorised below with some examples:

- Communication mistakes: working with superseded plans, designing for a sheet roof when its tile.
- Design mistakes: getting the layout, webbing or loads wrong.
- Fabrication mistakes: leaving off a nailplate or no camber to a truss.
- Erection mistakes: poorly plumbed trusses, inadequately braced roofs, internally supported trusses back to front.
- Inadequate support: walls in the wrong place, lintels that sag.
- Erection damage: just a lack of care in lifting and fixing but also, in particular, exposure to the weather for multiple wet/dry cycles.
- In service damage: cutting truss members, termites, adding storage loads

Left unchecked, these trusses and roofs will inevitably collapse.

in the roof, water causing rot, or nailplate corrosion.

• Age-related deterioration.

It is this last category that I want to focus on. I first worked in truss and frames in 1993 and back then the industry was quite new (Carl Sandford invented the nailplate in the 1960s and then the industry took time to kick off) so there were very few roofs more than 10 years old. Thirty years on, I am older and greyer (don't be fooled by the photo on this page!) Although physically I am still doing pretty well, those old injuries (as a 20 year old I was stupid enough to jump into a dam spillway, I've headbutted a goal post, fallen off a waterfall and been T-boned by a red light runner) come back to haunt.

So now, just as I am older, there are a whole lot of older roofs, some of which are over 40 years old, many over 30 and some as old as me! It turns out that that roofs suffer from age as well. Imagine if you had had 30 summers of heating in a roof space, been battered by storms, walked on by sweaty



electricians and crapped on by rats – you would be feeling a bit the worse for wear!

And, it turns out, it is those old 'injuries' that I discussed earlier that come back to haunt aged trusses. Re-read that list above again – those same classes of problems that a youthful truss could withstand 30 years ago can be too much for a truss that has now lived a life.

I am seeing poorly braced roofs that are in the process of a slow but inexorable buckle, postage stamp nailplates that have failed, very long unbraced webs with ever increasing bows, 70mm bottom chords snapping, corroded plates in roofs near the sea and dodgy past fixes letting go – just to name a few. Left unchecked, these trusses and roofs will inevitably collapse. A few have.

The average Australian kicks the bucket in their 80s; I image that the average trussed roof will find the end of its natural life somewhere between 100 and 200 years. Thermodynamics and physics dictate that even the universe itself ultimately meets its heat death and nothingness will prevail.

None of us want to die early; we also don't want our prefabricated timber buildings to end prematurely. In 35 years of engineering thousands of structures and in all sorts of materials, nothing I have designed has failed. Personally, I hope my structures outlive me! I'd recommend that as a good objective for truss and frame plants as well.

As good designers and fabricators, we want to learn from past mistakes and do our best to avoid them in the future. There are a multitude of different things to think about and to do to make sure our trusses don't fail early. The list above and my last 25 years of *TTN* articles would be a good reference to learn what they are! But to summarise that 25 years, I can boil it down to a very short list: understand what you are doing, take the time

to do it well and communicate clearly with all stakeholders. And maybe have a laugh along the way! **T**



Paul Davis is an independent structural engineer managing his own consulting firm Project X Solutions Pty Ltd. The views in this column are Paul's and do not reflect the opinions of *TimberTrader News*. Phone: 02 4576 1555 | Email: paul@projectxsolutions.com.au



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