



**Elton Group  
Sustainability  
eBook 2018**

**ELTON**GROUP  
INTERIORARCHITECTURALPRODUCTS

# Plywood Without the Downsides: Elton Group's EPlly PanguaPureGlue



Plywood has long been valued for its dimensional stability and strength-to-weight ratio. However, while it has historically been utilised primarily for utilitarian means such as concrete formwork or as a veneer's subsurface, the ever-increasing quality of plywood in recent times has paved the way for its specification in roles beyond that original brief. Its accessibility, improved appearance and versatility mean that beyond formwork, plywood can also be utilised in interior applications – be they structural or aesthetic.

This shift has unfortunately brought about two consequences in particular, which limit the potential environmental and practical benefits of

plywood: firstly, the higher demand for the timbers used in plywood has resulted in some intensive deforestation, particularly in tropical regions. The consequences of this are manifold – deforestation threatens traditional populations' ways of life and the natural conditions and habitats of native flora and fauna, as well as harming the economic and social livelihoods of those who depend on legal forestry. Furthermore, the destruction of tropical forests also limits their potential to act as a carbon sink, accelerating the negative impacts of climate change.

The second consequence of plywood's increased uptake, occurring further down the manufacturing process, is the common use of urea formaldehyde or phenolic glues in binding each ply to the next.



As known VOCs prone to off gassing, this presents particular health problems – specifically when used in an indoor context. While low concentrations of formaldehyde are unlikely to cause acute symptoms in building occupants, particularly if a space is ventilated properly, studies have shown that even small amounts (less than 0.05 parts per million, or ppm) might exacerbate other conditions such as allergies, chronic irritations, or cancer.

Tackling these two problems presents more of a challenge considering their occurrence at opposite ends of the manufacturing processes – typically involving more stakeholders and making chain of custody more difficult to track.

Elton Group's Eply PanguaPureGlue was developed in response to both of these issues. As a No Added Formaldehyde (NAF) plywood, PanguaPureGlue significantly reduces VOC off gassing with an innovative, non-toxic, soy based bonding system. While even Ultra-low Emitting Formaldehyde (ULEF) based panels nonetheless feature formaldehyde emissions up to 0.030 ppm,

PanguaPureGlue improves upon that number by over 7 times, with the certified number lying below 0.004 ppm – no more than what exists naturally in the wood itself. Both factory workers and end-use building occupants can breathe easy, without any risk of inhaling toxic fumes.

Panguaneta also produces PanguaPureGlue from their own FSC certified plantation-grown timber, ensuring the long-term health of the land upon which it is grown and guaranteed transparency regarding chain of custody.

Produced using fast growing poplar wood, PanguaPureGlue is, on average, half the weight of MDF and the lightest out of Birch, Pine or Hoop-based plywood, making it easier to transport and manipulate. Available in multiple sizes and thicknesses and featuring a Class 1 face grade, PanguaPureGlue is suitable for the highest quality wall and ceiling linings, joinery or furniture – without toxic fumes or doubts about sustainability.

For more information about Elton Group and Eply PanguaPureGlue, [click here](#).

# Real Face Value: E veneer Prefinished Timber Veneers

**S**olid wood is often touted as the be all and end all of timber products. To do so, however, would be to neglect the inherent advantages of timber veneer.

First and foremost, timber veneers are often a more sustainable option than solid timber. The act of slicing veneers from a log produces no waste, meaning that more of any tree can be used than the comparative act of sawing solid timber boards, which produces significant amounts of sawdust and inevitable waste. The relative thinness of timber veneer to solid timber planks also means that any individual tree can stretch significantly further, sliced into numerous sheets that are, at most, mere millimetres thick. Adhered to a plywood, MDF or particleboard substrate, fewer trees are needed to make more finished panels than any solid timber equivalent – a fact that is not only better for the environment, in that it reduces the demand placed upon our forests and slower-growing trees – but also from a cost perspective. While solid timber panels of an exotic timber might be cost prohibitive in the quantities needed for certain projects, timber veneers can lower the threshold of accessibility.

With a structural core of plywood or similar, veneered panels are also typically lighter than equivalent solid timber pieces, making them easier





to transport and work with. The same structural core, particularly plywood, also provides veneered panels added protection from the warping and dimensional change that often occurs to solid timber over time as a result of changes in humidity and temperature.

Elton Group's own Eveneer Prefinished range of veneers makes the most of these qualities, and is a high quality product free from the splits, holes, knots and discolouration that are found in conventional veneers. Eveneer Prefinished is FSC certified or Controlled Wood, manufactured only with timber sourced from agricultural plantations and certified forests. It is also certified E0.

Eveneer sheets are available in a wide range of timber, colours, finishes and patterns, and in large sheet sizes up to 3050 x 1300mm, maximising the yield of any individual tree and eminently suitable for modern furniture manufacturing. Delivered ready to use, already polished and complete with UV inhibitors – either as 1mm sheets or pre-pressed onto MDF panels – Eveneer Prefinished sheets are ideal for furniture production and interior panelling.

For more information about Elton Group and the Eveneer Prefinished range, visit the link below.  
[/eltongroup.com/eveneer-prefinished/](http://eltongroup.com/eveneer-prefinished/)

# Elton Group

## Q+A



**E**lton Group has been a part of the Australian forest products industry for over 70 years. In the time that you've been with the business, how have you seen the industry attitude toward sustainability develop?

Elton Group was founded in Melbourne in the 1930s. The current Managing Director Michael Elton, grandson of the founder, was trained by his uncle in Sydney and was sent overseas for training in timber veneers in Germany and Italy. The furniture industry of old was sustainable. Good veneer trees were harvested; the rest were left, and smaller logs were utilised. Furniture had timber legs and short panels -

short components. The average panel size was 1.8m - 2.2m. Every part of the log was utilised.

Fortunately, timber veneer is intrinsically an efficient use of timber. Timber veneer was in fact used by ancient civilisations to maximise the yield from highly valued timbers and examples of veneer use were found in the tombs of Egyptian pharaohs. Timber veneer consists of thin slices of timber, peeled or sliced from good quality logs, applied over a substrate - in the old days, common, fast growing species such as pine, nowadays, generally MDF or particleboard.

There is no longer any timber veneer sliced in Australia. Veneer is either imported from overseas or Australian logs and is sent overseas for slicing. The 1990s saw a growth of awareness of sustainability and the advent of FSC, followed by the Green Building Council of Australia and the Greenstar rating system, echoing what was happening overseas. Architects and designers were encouraged to undergo Green Star Training and aim for world's best practice in their designs and specifications.

At Elton Group, we and our suppliers had already committed to focus on the future in terms of sustainability to bring us in line with world's best practice and make us leaders in our field. We became FSC certified and implemented in-house environmental standards.

### **How do you hope to see it evolve in this respect in future?**

We'd like to see better protection of the forests for future generations and investment in planting new forests. Plantations for commodity timbers would also be beneficial, although they need longer to grow in most cases. Unlike stone, timber is renewable in a human lifetime. Timber is a renewable crop with a very long harvest time, so we need more forward thinking - planning for future generations.

For example, we can use reconstructed veneers rotary peeled for maximum yield from fast growing, common species. We can also slice veneers more thinly and use less MDF in a sustainable world.

**All Elton Group veneers are sourced from woods harvested in accordance with the CITES international trade agreement. Are you able to please provide more detail about your overall sustainability strategy?**

Unlike most firms in the timber industry, we travel regularly to most of the sources that our logs come from so we don't just rely on the information provided by overseas suppliers - we actually see and understand the logs. That's the advantage of being in the Industry for a long time: you know where they come from. With some species, you can even smell where they come from. We use timber that's harvested and replanted, timber that's grown in farmland plantations and old logs that are no longer producing oxygen.

We and our suppliers are FSC (Forest Stewardship Council) certified.

When you choose FSC®, you help support principles and actions that protect our air, water, and overall quality of life. FSC certification of forests and companies means that they comply with rigorous standards, and that forests, communities, and workers are looked after.

Elton Group operates in complete transparency regarding environmental and social responsibility, constantly focusing on excellence in the use of natural resources. Eveneer, Eveneer Prefinished and Alpi Designer Collections take common fast growing timber species and through a process of peeling (to obtain maximum yield) toning and reassembling into a block that is then sliced,



are able to reproduce rare or endangered timber veneer species as well as a creating new and exciting colours and patterns not available in traditional timbers. They are all made with Poplar, Lime Wood and Ayous from certified sustainable forests, directly controlled for maximum respect of environmental biodiversity. Maximum care also goes into safety in the workplace and environmental protection, including an advanced industrial water purification system.

Importantly we are the only supplier of reconstructed veneer with direct control of the entire supply and production chain, from the log to the finished product. Forestry management by means of the chain of custody guarantees legal and sustainable origin of wood, and total product traceability also ensuring the growth of local communities in terms of economics and infrastructure, thus combining the core business with activities of social and environmental sustainability.

**Does this extend beyond the sourcing stage and into, say, manufacturing and post-use disposal?**

When we do manufacture we're very specific about the glues and substrates used and also the

packaging, plastic and mostly plywood from plantation forests. All our crating material comes from plantation grown timber. Our warehouse policies reduce the use of wrapping and encourage the reuse of crates and packing materials. In the office our systems support the reduction of paper and any paper that is generated is reused for note taking or recycled. We have also closed off and maintain an area of 800 acres of natural forest in the Otway Ranges for the protection of Flora and Fauna.

**Are there any other things that Elton Group is doing to achieve sustainability outcomes that you would like to discuss?**

We've put in a passive heating and cooling system that uses 30 percent less energy than a traditional system and gives us a purity of air with no dust or allergens being blown around. We're constantly on the lookout for new products and substrates to give a lighter environmental footprint in both weight and sustainability.

Through a desire to specify sustainable timbers, we have seen growth in the use of reconstructed veneers. The difference with our reconstructed veneers is that our supplier owns and is





responsible for their forests, whereas all other manufacturers purchase their logs on the open market and therefore the chain of traceability can be broken. The production of Eveneer maximises yield from faster growing species and thus protects rare and endangered forests from felling. In addition, the sources of the base timbers used in Eveneer are all certified.

**How do you hope to see it evolve in this respect in future?**

We're making some exciting technological advancements in the making of Eveneer. Similar to our EPly PanguaPurePly, adhesives have been developed that contain no added formaldehyde, offering a solution to the problem of formaldehyde that has been a concern for many years in the wood products sector.

In line with the most rigorous international standards, Eveneer can be produced with zero added formaldehyde. This can contribute to help achieve LEED certification (Leadership in Energy and Environmental Design), which sets the standards for the construction of sustainable buildings.

# A Change In The Culture Of Specifying Timber Veneers In Australia



As the country's construction sector remains buoyant, architects and construction managers are seeking new ways to minimise waste generated from new builds. In this, material manufacturers have proven to be particularly adept at satisfying this increased demand without compromising on either quality or sustainable solutions.

Bridging the divide between design flexibility and sustainable outcomes (that are, by virtue of this industry's mushrooming growth, still scalable), the use of timber veneers continues to be widely embraced by our AECO sectors. Providing additional health and wellbeing

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benefits for end users, the specification of timber veneers sits squarely within critical success factors for wellbeing-focused certifications – such as those awarded by the WELL Building Institute. Evidently offering a significant value add for clients in terms of meeting health and sustainability criteria, designers are increasingly turning to timber veneers in recognition of the degree of design freedom and flexibility such material offers.

## **New Layers Of Veneer**

New Technology In Timber Veneer Improves The Industry – a new whitepaper – equips builders, designers and architects alike with the ability to make informed decisions about timber veneer in a competitive market. Outlining how timber veneer achieves sustainability, design flexibility, health and wellness while also meeting the pressure of an ever-strengthening market, the whitepaper demystifies questions surrounding the specification of timber veneer in this dynamic and changing industry.

Due to a number of internationally recognised standards, timber veneers present designers with the chance to specify materials that have been sourced both transparently and sustainably. As a result, many of our industry's leading

practitioners select timber veneer in anticipation of legislature currently being expected to pass in the coming year, and which explicitly enforces more sustainable building processes that are both wellbeing - and environmentally-aware for end users, designers, builders and investors.

In fact, brands such as Elton Group – one of Australia's largest suppliers of timber veneer – understand the aggregative value potential timber veneers now offer designers ahead of this mass industry change. Shrewdly backing up its exhaustive portfolio with a suite of international standards (including the Forest Stewardship Council Certification (FSC), Elton Group has continued to lead the Australian timber veneer market with high quality architectural products for more than seven decades.

With the brand's proprietary WoodWall veneer, Elton Group bring a highly flexible veneer solution to the market. As a high-quality, real timber veneer wallpaper suitable for a wide range of direct applications including MDF, plaster, plasterboard, steel and acrylic, WoodWall promotes rapid and simple installation that will completely transform spaces with minimal delay or downtime, and at less than half the cost of conventional timber panelling.

[Click here to download complete whitepaper.](#)

# 2018 Sustainability Awards

**T**he 2018 Sustainability Awards were in many ways a milestone. These 12th awards were also the first to be held at The Star, Sydney – a venue noted for its sustainability as well as its style, glitz and glamour.

The 2018 awards also represented the culmination of decades of research and industry application for many of our entrants, the fruits of which were patently evident with the winners on the night across all of the 15 categories.

This is underlined by what is happening across the world in the corporate sector. For example, Professional services giant PwC recently pledged to source 100 percent renewable electricity for its global operations and to offset all emissions accounted for by flights taken by employees for business purposes.

The multinational, which has operations in 158 countries and more than 236,000 employees, recently joined The Climate Group's RE100 initiative to source 100 percent clean power for its global operations – an aim it has committed to achieve by 2022 across its 21 main territories, which

account for 88 percent of its revenue streams. “We believe business has a key role to play in solving societal challenges alongside other stakeholders,” PwC's global chairman Bob Moritz says.

“This commitment is for us a recognition of the need to accelerate the pace of change, and individual business commitments, collectively, will make a critical difference to that.”

For companies like Elton Group, who are active and willing participants in the drive to introduce best practice solutions for the effective and, ultimately, sustainable removal of waste from the built environment, it would be easy to say that sustainability is at the very core of their business. Therefore in order to achieve their sustainability goals, companies like Elton Group put a huge amount of effort and forethought into the design and application of their products to ensure they not only comply with all national standards and expectations, but that they also out-perform what is required.

*Branko Miletic, editor of Infolink | BPN*



**Dick Clarke**  
Enviroecture



**Mike Faine**  
Faine Group Architects



**Kate Harris**  
GECA



**Timothy Horton**  
NSW Architects  
Registration Board

## The Jury



**Jeremy Mansfield**  
Lendlease



**Rory Martin**  
Fraser's Property Australia



**Robin Mellon**  
Supply Chain School



**Caroline Pidcock**  
Pidcock



**Suzanne Toubmourou**  
Australian Sustainable Built  
Environment Council



**Jeremy Spencer**  
Positive Footprints



**Steffen Welsch**  
Steffen Welsch Architects



**Kerry Wilmot**  
University of  
Technology Sydney







# The Winner

krakani lumi

Taylor & Hinds Architects



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Urban Design  
Award



*From the judges: "krakani lumi: What a fantastic place this is! I definitely want to visit this beautiful sensuous form seemingly dropped from the heavens to rest in the Bay of Fires. Yes it cost a bomb to build but it was worth every cent, pack your bags and get your walking shoes on. Your spirit will sing in this camp site."*

## The Shortlist



**Foreshore Amenities**  
**Zen Architects**

Image from Left To Right: Managing Director  
of Elton Group, Award Winner: Krakami Lumi | Taylor & Hinds Architects  
(Award accepted by Indesign), Photographer: Tim Da Rin.





# Street Seats 2018

Students from the Parsons School of Design at The New School have created a new temporary public space in New York from recycled fishing net and natural timber.

The recently unveiled Street Seats project sits in two parking spaces in Greenwich Village. Designed and constructed by students from multiple faculties, including Architecture, Interior Design and even Food Studies, it invites locals to sit, socialise and people-watch.

The team used naturally rot-resistant western red cedar to create the structural modules and countertops, while repurposed fishing nets was used as netting for the seats, planters and screens.

Planters are installed on the edges of the seating area, creating a restful environment while reducing noise from the street. Herbs and native plants were selected for their fragrance and ability to thrive in the urban environment. The seeds of the 13 species were donated by the Greenbelt Native Plant Center. Coconut fibre and jute webbing—both biodegradable materials—are also used here.

Operating independently from the grid, the lighting system was designed by Lighting Design graduate





students, with assistance from Voltaic Systems. It relies on solar panels, batteries and energy efficient LED lights activated by a daylight sensor to provide artificial lighting when the sun sets.

Street Seats is an ongoing, citywide program of the New York City Department of Transportation, aimed at the creation of public open spaces at locations where sidewalk seating is not typically available.

In 2017, Parsons students delivered a solar-powered bamboo seating structure that was inspired by the use of bamboo in construction across multiple regions across Asia.

The 2017 design sat directly along the curb, acting as a multi-level planter that separated the road the sidewalk. The structure was built from 360 pieces of Vietnamese bamboo, with hanging plants suspended in 75 recycled water bottle pockets. Twelve solar panels mounted to the frame provided energy to LED lights.

[Click here to find out more about the Street Seats program.](#)



Photography courtesy of Parsons School of Design.



# North Fitzroy Library + Community Hub by Group GSA



“A cross-generational meeting place for people of different cultures and ethnicities, with a strong focus on user experience, future flexibility and environmentally sustainable design.”

It was an ambitious goal set out by the City of Yarra—the first council in Australia to achieve a One Planet Living certification—but one that was elegantly and successfully achieved by Group GSA.

Named ‘Bargoonga Nganjin’, which means ‘Gather Everybody’ in Woiwurrung, the language of the Wurundjeri people, the North Fitzroy Library and Community Hub is a three-storey, 2,040sqm, 6 Star Green Star facility. Encompassing a library, Maternal Child Health facilities, and a variety of

community-focused facilities, it is also home to the City’s International House.

Central to the design strategy was the need to create a socially inclusive space, with a focus on minimising the building’s environmental footprint while seamlessly integrating it with the existing local context.

The design opens with a tight, wedge-shaped site, formerly home to a library branch. The façade, simple and striking, consists of polished and etched precast concrete, and locally sourced, recycled bricks, broken up by circular openings that connect the indoors to the outdoors. Above it, perforated screens catch the eye, working to filter light into the building.



“The perforation patterns were inspired by a walk through Edinburgh gardens and a desire to recreate the dappled light experienced when sitting beneath a tree canopy,” Michael Mandl, Director of GroupGSA, explained in an interview. “Patterns were custom generated using an algorithm to control the size of aperture and overall transparency.”

The library, distributed over two floors, occupies the majority of the floor plate. The first floor is divided between the Maternal Child Health facilities, including two playgroup rooms, and the library’s reading area.

The second level features community facilities with large dividable spaces, a commercial kitchen and shared community office. An extensive rooftop garden serves as an extension of these spaces, providing an area for interaction and study. Here, an automatic irrigation system, equipped with moisture sensors, help minimise water usage. An under decking water catchment system collects rainwater for reuse throughout the building.

Other green initiatives include an onsite power generation and pressurised air-handling system. Solar panels on the roof provide up to 12.5 kilowatts of power.

The building was also designed with Best Practice Universal Access features, which include changing places facilities, lifts as fire escapes, hearing loops, luminance materials and on-site generator back up.

The \$17 million project was funded almost entirely by Council, and came off the back of extensive consultation with multiple stakeholders and the community.

“Bargoonga Nganjin is a wonderful, modern facility offering a suite of community services for people of all ages, from newborn babies to seniors and everyone in between,” Yarra Mayor, Councillor Amanda Stone, said.

“It will support the lifelong learning and the ongoing health and wellbeing of our community for decades to come.”





# Sustainable upgrade of first US art museum reduces energy use by 50 percent



**T**he first purpose-built art museum in the United States has been named a recipient of the American Institute of Architects' (AIA) annual Committee on the Environment (COTE) Top Ten Award—proving that it is possible to strike the perfect balance between heavy infrastructure improvements and a light historical touch for heritage buildings.

First built in 1859, the Smithsonian American Art Museum's Renwick Gallery was designed by architect James Renwick Jr., and situated across the White House in Washington. It has not undergone a renovation since 1972.

The 2015 upgrade by DLR Group and Westlake Reed Leskosky, sought to preserve and respect the historic character of the National Historic Landmark building, while modernising its infrastructure and systems with state-of-the-art sustainable and energy-efficient technologies.

Instead of relying on rote historic preservation, the design team chose to take advantage of the building's existing spaces and elements. For example, the project's already-modified interior core light wells and attic space have been used to accommodate new infrastructure. At the same time, the basement was reconfigured for improved staff

offices and workshops, providing an entrance with well-defined separation from non-public staff areas and mechanical spaces.

Notable updates include the restoration of two long-concealed vaulted ceilings; the recreation of the gallery's original 19th century window configuration; and repairs to the roof, roof draining system and exterior façade. Meanwhile, the HVAC, electrical, plumbing, fire-suppression and life safety systems were all replaced.

One of the project's major goals was to improve public accessibility. On this end, entrance doors were reworked for greater transparency, and the accessible entrance enhanced with lighting, signage and snow melt systems. A modernised elevator, ADA compliant restrooms and a new egress stair in the East core of the building provided additional access points.

The innovative reuse of air conditioning condensate was another key initiative. After evaluating all sources of water use on the outset, the team realised that the museum's cooling tower was the "single largest consumer of potable water" and took steps to reduce system waste.

"Museums, due to dehumidification, generate a significant amount of cooling coil condensate. In this application, this condensate is diverted 100 percent to the cooling tower, resulting in the equivalent of a 65 percent offset in indoor plumbing fixture potable water use and 35 percent of total cooling tower make-up water use," the AIA explains.

"The project also properly separates sanitary and storm water systems, in alignment with larger initiatives in Washington, DC to separate these systems for better overall water quality."

DLR Group also installed an all-LED solution for the gallery lighting—the first of its kind in the US. The development of a brand new LED product line reduced lighting power density significantly, enhancing energy efficiency and preserving the level of controlled lighting needed in a museum environment.

Furthermore, this new product allowed for the "judicious sizing" of mechanical and electrical systems—from the modular water-cooled chiller system to advanced sub-metering and even fully networked digital controls—to better fit within the tight spatial boundaries of the building.

The result of these efforts is a significant 50 percent reduction in annual energy use—a feat achieved even while welcoming more than 500,000 visitors within the first six months of the gallery's re-opening.

"The Renwick Gallery renovation wove complex and robust new systems while preserving the impressive historic design and collection and allowing opportunities for new works to be displayed. All of this was done within a very restrained site, budget, and schedule," AIA COTE Jury members stated.

"The success of the its improvements demonstrate that museums and historic landmarks can deliver comfort energy savings with creative retrofits and will hopefully encourage similar projects."



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