

129

JUNE 2019
ARCHITECTURAL
STEEL INNOVATION
WITH BLUESCOPE

STEEL PROFILE

GOLD COAST SPORTS
AND
LEISURE CENTRE

BVN
GOLD COAST SPORTS AND LEISURE CENTRE

MATTHEW THITCHENER ARCHITECT
NORTH AVOCA STUDIO

IN PROFILE:
HASSELL, COX ARCHITECTURE AND HKS
ARCHITECTS, IN ASSOCIATION

EDITORIAL

Welcome to *Steel Profile* 129.

We acknowledge that architects, designers and specifiers of every great building constantly walk the tightrope between new creative territories and commercial responsibility. So we are always genuinely excited to encounter projects that balance form and function; projects that provide a renewed sense of cultural identity and community, and those that are destined to re-invigorate our urban spaces.

Great buildings are a mix of art and science, inspiration and discipline. To support the needs of the industry, we've been busy revamping SteelSelect.com.au – BlueScope's product specification website – making it even more relevant for today's professionals.

For anyone unfamiliar with SteelSelect®, it provides industry-recognised specification tools, resources and information to support specifiers' commercial responsibilities, whilst also allowing the freedom and certainty to push into new, rich creative territories.

Whether you're an architect, designer, engineer or project manager, SteelSelect® can make the process of researching, selecting and specifying steel products and construction solutions faster, easier and more accurate. It's a one-stop-shop to support you, whether in the office or on-site. There, you can access product and technical information from leading Australian manufacturers*, handy tools, and project inspiration.

We encourage you to make use of this excellent free-of-charge resource so please ensure to bookmark SteelSelect.com.au

Finally, BlueScope is once again proud to be the Principal Corporate Partner of the Australian Institute of Architects and we are looking forward to the 2019 National Architecture Conference – *Collective Agency*. If you are attending, we look forward to hearing your thoughts on what is precious and how the industry can collectively empower and improve the practice of Australian architecture.

Brad Wickham
BlueScope editor

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EDITORIAL ADVISORY PANEL

Steel Profile has an Editorial Advisory Panel to ensure that only projects of the highest calibre are selected for publication. The panellists are:



FRANK STANISIC

Stanisic Associates founder Frank Stanisic is a Sydney-based architect and urbanist.

His work is fuelled by an evolving interest in the diagram and frame as a basis for architectural invention, and the aesthetics of permeability.

Frank's projects have won numerous awards including Australian Institute of Architects' Special Jury, Wilkinson, Aaron Bolot and Frederick Romberg prizes.



PENNY FULLER

Penny is a partner at Silvester Fuller, established in 2008. Silvester Fuller's first built projects have been awarded for their creativity and design sensibility. Penny's work draws on experience gained across a broad range of international projects. She is a previous recipient of the Australian Institute of Architects' Emerging Architect Prize.



MATTHEW HYLAND

Matthew Hyland works with Woods Bagot. He obtained a Master of Architecture from the University of Tasmania and was awarded the 2015 BlueScope Glenn Murcutt Student Prize.

Having a preoccupation with enriching the ordinary, Matthew is continuing to develop and refine design processes through observation, research and experimentation.

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BVN, BlueScope and Kingspan worked together to create cladding panels for this project made from COLORBOND® Metallic steel in custom colours – namely Carrara Gold™ and Temple Gold® – that capture the Gold Coast's essence.



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A challenging site was the genesis of this studio in the sky – wrapped in cladding made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument® – which perches on slender steel 'branches'.

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COVER PROJECT

Gold Coast Sports and Leisure Centre

PHOTOGRAPHER

Paul Bradshaw



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Optus Stadium's three key architects – HASSELL, COX Architecture and HKS Architects – collaborated to fulfil the design vision for a distinctly Western Australian, world-class sports and entertainment facility – underpinned by BlueScope.



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This small and inexpensive new health clinic by Kaunitz Yeung Architecture wrapped entirely in cladding made from COLORBOND® steel in LYSAGHT LONGLINE 305® profile, in the colour Monument®, packs a lot into its complex program to become a beacon for the local community.

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BLUESCOPE EDITOR Brad Wickham MANAGING EDITOR Rob Gillam

CONTRIBUTING WRITERS Leanne Amodeo, Rachael Bernstone, Rob Gillam, Glenn Morrison, Micky Pinkerton, Lucy Salt

CONTRIBUTING PHOTOGRAPHERS Peter Barnes, Peter Bennetts, Brett Boardman, Paul Bradshaw, James Broadway, Paul A. Broben, Tom Ferguson, Peter Glenane, Christopher Frederick Jones, Peter Hyatt, Keith McInnes, Cieran Murphy, Bob Seary, Peter Taylor

ART DIRECTOR Natasha Krncevic

PROJECT SUBMISSIONS To submit your project for consideration please visit steelprofile.com.au

SUBSCRIPTIONS For all subscription enquiries please contact us via steeldirect@bluescopesteel.com

EDITORIAL EMAIL rob.gillam@steelprofile.com.au

MAIL CORRESPONDENCE *Steel Profile*, 121 Harrington Street, Sydney, 2000, AUSTRALIA

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This ingenious new cellar door designed by Source Architects sports a soaring cantilevered 'fly' roof made from 3.8 tonnes of ZINCALUME® steel in Fielders ARAMAX FreeSpan profile – a material more often used for industrial-sized roof expanses.



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The humble bush passionfruit inspired Susan Dugdale & Associates' design for a colourful, multilayered fence made from COLORBOND® steel in LYSAGHT TRIMDEK® profile.

MIDAS TOUCH

Architects BVN worked closely with BlueScope and Kingspan to create cladding panels made from COLORBOND® Metallic steel with tones and colours befitting of a building that evokes sporting excellence, and captures the Gold Coast's essence.

Words **Leanne Amodio** Photography **Cieran Murphy; Paul Bradshaw (PMB); Peter Taylor; Paul A. Broben**



ARCHITECT
BVN
PROJECT
Gold Coast Sports and Leisure Centre
LOCATION
Carrara, Queensland

For many people growing up in Australia during the 1980s, the Gold Coast was at the top of their family holiday wish list. Queensland's second-largest city experienced a tourism boom 30 years ago and the industry is still thriving, fuelled in part by events ranging from the annual V8 Supercars Gold Coast 600, Magic Millions Horse Racing Carnival, Australian Surf Life Saving Championships and Gold Coast Marathon. The recent biggest event was the 2018 Commonwealth Games, being held in April of that year and the Australian teams did the country proud by topping the medal tally with a swag totalling close to 200, of which 80 were gold. As is the case with any international multi-sport event, the city's existing sporting venues were revamped and a number of new venues built in the lead-up.

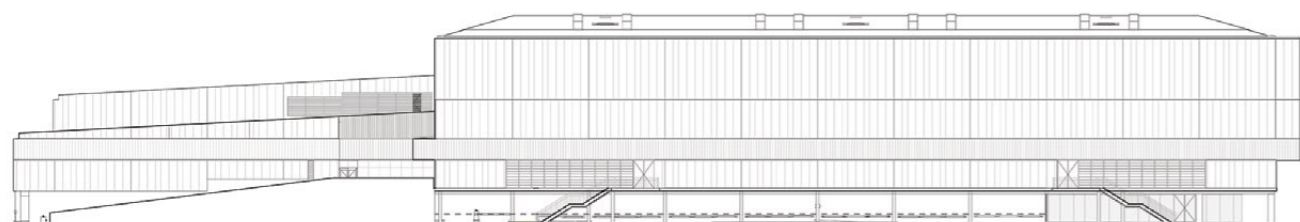
The Gold Coast Sports and Leisure Centre was designed as a new venue for the 2018 Commonwealth Games and still functions as an integral part of a key sporting precinct.

No stranger to the sports and recreation sector, having designed major projects such as the London 2012 Olympic Athletes Village and 2008 Beijing National Tennis Centre, BVN was engaged by its clients in 2013 to develop the masterplan for the

precinct surrounding Metricon Stadium – where the Games' opening ceremony was held – in Carrara. Most significantly, BVN was tasked with delivering the site's new Gold Coast Sports and Leisure Centre (GCSLC) as the event's badminton, wrestling and weightlifting venue. The building had to also co-locate the new Gold Coast Suns Elite Training and Administration Facility (GCSETAF), which made good sense seeing as Metricon Stadium is the AFL club's home ground. Consequently, BVN had a few stakeholders to consider along with three different clients; the Gold Coast 2018 Commonwealth Games Corporation, Gold Coast Suns Football Club and the City of Gold Coast.

Their brief for the new multi-purpose space was therefore not only to provide an international-standard sporting facility specifically for the 2018 Commonwealth Games, but also to ensure the building could be used by the community and other professional sporting groups (particularly netball and basketball) after the Commonwealth Games concluded. Incidentally, BVN was also responsible for saving the adjacent Carrara Indoor Sports Stadium (CISS) from demolition, convincing the clients that its refurbishment would be of more long-term value to the community than erecting a proposed temporary Games facility. ➔

The Gold Coast Sports and Leisure Centre was designed as a new venue for the 2018 Commonwealth Games and still functions as an integral part of a key sporting precinct.



WEST ELEVATION



NORTH ELEVATION



TOP: The exterior cladding is predominantly made from COLORBOND® Metallic steel in the custom colours Carrara Gold™ and Temple Gold®, as well as Copernicus® and Copper Penny®. A mixture of 600mm, 900mm and 1000mm vertically laid Kingspan BENCHMARK Evolution modules were specified in all four colours to help visually break down the building's immense scale.

LEFT: The Kingspan panels appeal for their refined simplicity that complements the project's minimalist materiality. A ribbon datum of KS1000 RW Trapezoidal-profiled panels run around the entire building, quite deliberately. This feature with its distinct panel profile stands at the same height as the street's mosaic band.

ABOVE: The GCSETAF sits at the building's northern end and is also clad in different-sized Kingspan BENCHMARK Evolution insulated wall panels made from COLORBOND® Metallic steel, in this instance in the custom colours Copernicus® and Copper Penny®.

The GCSETAF sits clad in Kingspan BENCHMARK Evolution insulated wall panels made from COLORBOND® Metallic steel in the custom colours Copernicus® and Copper Penny®, making this elevation particularly striking.



BVN's masterful command of planning is evident in the overall configuration, expressed as a series of simple stacked volumes that belie the facility's programmatic complexity.

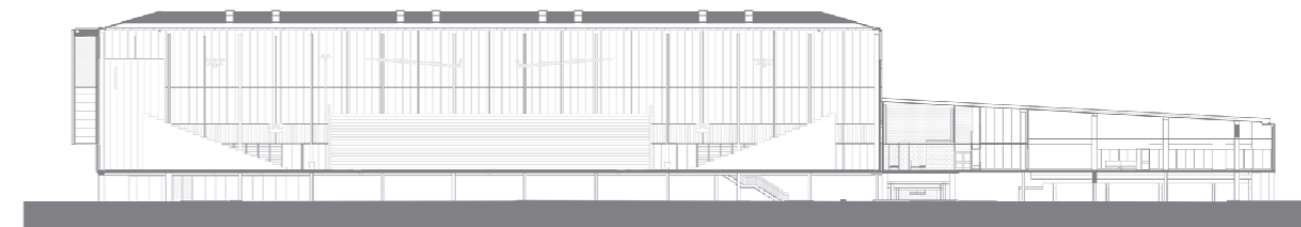
The GCSLC itself is an ambitiously sized project comprising 26,000 square metres across two levels, with a carpark integrated at the building's ground level contributing an additional 17,000 square metres to the internal floor space. BVN's masterful command of planning is evident in the overall configuration, expressed as a series of simple stacked volumes that belie the facility's programmatic complexity. This is made more compelling given the initial challenges the site's constraints posed. So whilst the GCSLC is sandwiched between the existing CISS to the west and Carrara Lake to the east, the architects had to also factor in the procession to Metricon Stadium.

As BVN associate Rebecca Buffington explains, "That's how we determined the set-back from Nerang-Broadbeach Road because there had to be a connection to the stadium on game days. To enable this we created a new link to the Nerang railway station so people would stream through from the station across the southern plaza in front of the GCSLC, towards Metricon Stadium." The site is also in a floodplain and BVN responded accordingly by raising the building off the ground. Its orientation was likewise deliberate because everything had to be arranged to sit parallel to the direction of the water, so as not to create any obstacles that could potentially cause a blockage.

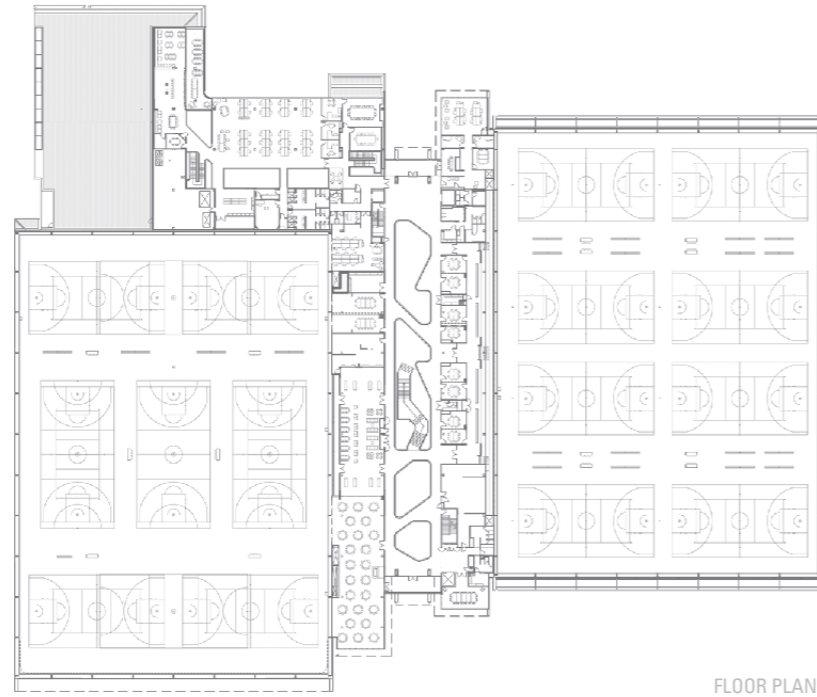
A public 'street' runs through the centre of the GCSLC and this internal thoroughfare houses change rooms, amenities, event areas, meeting rooms and various food and beverage offerings across two levels. The architects wanted it to feel bright and airy so that the experience of moving through this space was not like being stuck in a tunnel but rather like being in the open outdoors. To this end, they created organically shaped skylights that look down on the full-height void like gently glowing jellyfish and manipulated a portion of the floating mezzanine to curve outwards – essentially forming a viewing platform. A suspended staircase follows this line and bends and turns through the centre of the space in a sympathetically lightweight gesture.

The street is flanked by two multi-purpose halls that boast the flexibility to accommodate a range of sports across 15 basketball courts and a retractable 5000-seat arena. It also clearly reveals the project's design inspiration, which is carried throughout the interior spaces and out onto the exterior. "We very much looked to the building's context for inspiration," says Buffington. "So we wanted to do something quintessentially Gold Coast and incorporate elements that relate to the climate, are subtropical in appearance and are colourful, vibrant and fun."

All the interior spaces receive plenty of sunlight, are naturally ventilated and maintain a strong connection to the outdoors via generously sized windows, terraces and verandas. However, it's



SECTION



FLOOR PLAN

the GCSLC's colour palette that undeniably embeds it within its lush setting and speaks to the Gold Coast's image as a confident, laid-back city appreciated as much for its lively culture as for its natural environment. The architects incorporated green and taupe accents on the street's upper level walls as a reference to the hinterlands beyond the southern plaza. And a tile mosaic on the mezzanine floor's 2400mm band twinkles with flecks of yellow and gold in a sun-and-sand homage.

This luminous scheme continues through to the GCSLC's external wall cladding, comprising two types of Kingspan insulated wall panels: the flat panel BENCHMARK Evolution and also KS1000RW Trapezoidal-profiled panel. These panels are comprised of an insulation core, finished on both sides with steel cladding. In this project's case, the exterior cladding is predominantly made from

COLORBOND® Metallic steel in the custom colours Carrara Gold™ and Temple Gold®, as well as Copernicus® and Copper Penny®.

A mixture of 600mm, 900mm and 1000mm vertically laid Kingspan BENCHMARK Evolution modules were specified in all four colours to help visually break down the building's immense scale. A ribbon datum of KS1000 RW Trapezoidal-profiled panels running around the entire building serves a similar purpose. Quite deliberately, this feature with its distinct panel profile stands at the same height as the street's mosaic band, cohesively unifying interior and exterior.

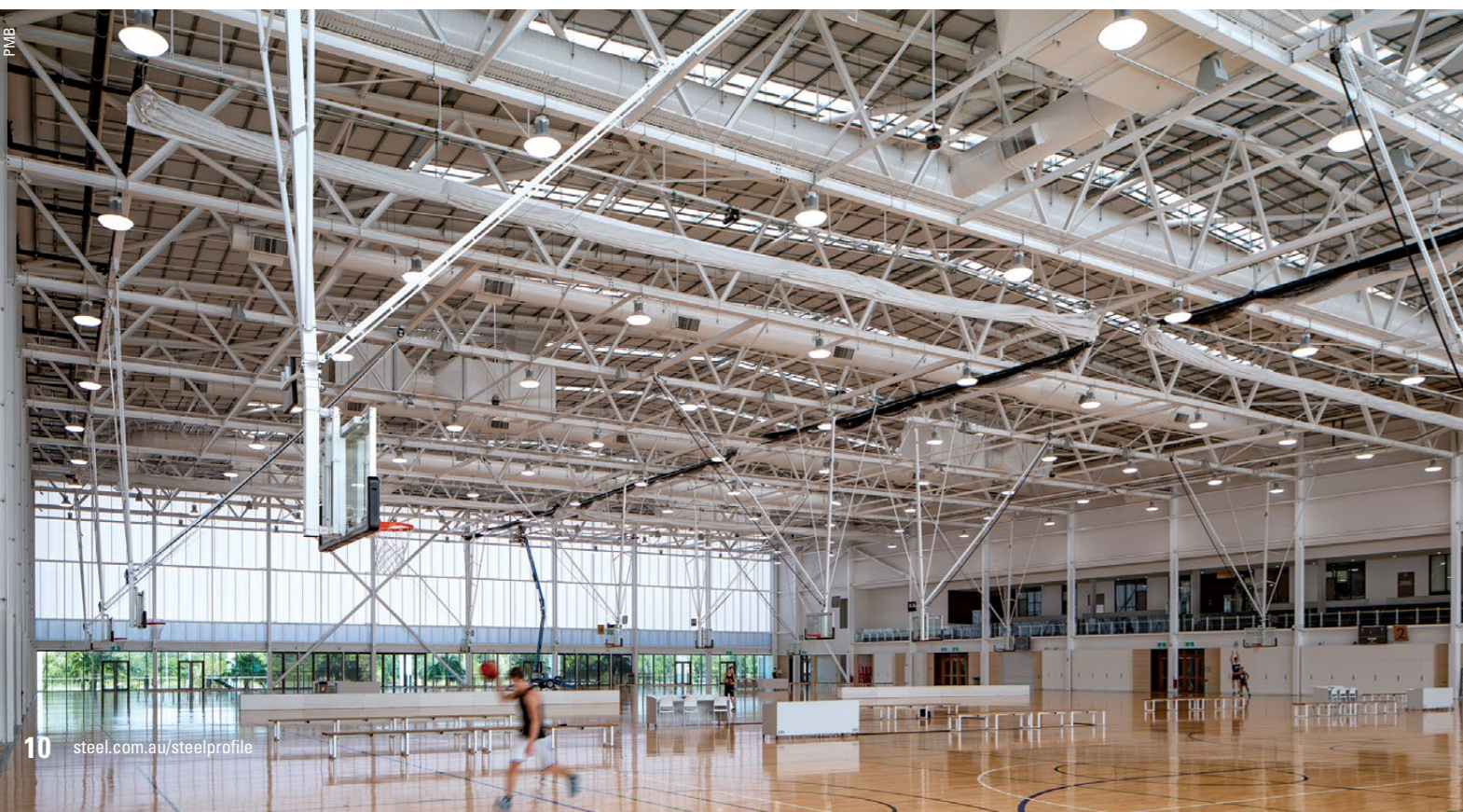
The GCSETAF, which sits at the building's northern end, is also clad in different-sized Kingspan BENCHMARK Evolution insulated wall panels made from COLORBOND® Metallic steel in the custom colours Copernicus® and Copper Penny®.

It makes this northern elevation particularly striking, ensuring it has its own identity and acts as the building's gateway, yet ties in tonally with the GCSLC.

For Buffington, the appeal in using Kingspan panels is that they have a refined simplicity that complements the project's minimalist materiality. It is also not lost that it's a practical, low-maintenance product. "We selected the Kingspan wall panel because it can produce an external and internal finish as well as insulation, all in the one system. We didn't have to do an extra build-up and because we were able to work with BlueScope's Specification Team and Kingspan to customise COLORBOND® Metallic steel colours, we didn't have to think about sourcing extra cladding or worry about painting finishes."

BENCHMARK commercial director, Roof & Wall Panels, Kingspan Insulated Panels, Niall Horgan, says his specification team was heavily involved

The sealed truss system includes a complex truss joint at the peak of the roof where 16 different steel members come together in one location.



with the project, from the early sketch design phase through to on-site installation. "We worked closely with the architect BVN in relation to product selection, available finishes through BlueScope, detailing, thermal performance and fire compliance," says Horgan. "We also worked closely with the builder, Hansen Yuncken, on ensuring the structural steel frame was suitably designed for our product and that the program was met."

The building's predominant colour – Carrara Gold™ – is symbolically linked to first place in high-level sports competitions. It was designed for this project by BlueScope's paint laboratory technicians and suppliers to the architects' exact specifications.

A beautiful photo of a Gold Coast sunrise was used to select a specific shade from. After going through 16 different shades, one was settled on and BlueScope created a Carrara Gold™ sample.

The buildings' roof is made from 80 tonnes of COLORBOND® Coolmax® steel, only available in the colour Whitehaven®. It may not be visible from ground level, but this cladding is working hard to help reduce internal temperatures on hot days – which is of added importance in the halls during training sessions and games.

COLORBOND® Coolmax® steel in the colour Whitehaven® is an ideal material for large commercial roofs as it is scientifically designed to provide high solar-reflectance and thermal emittance. Highly solar-reflective cool roofing material such as COLORBOND® Coolmax® steel can help lower active cooling energy costs and reduce the urban heat island effect by minimising heat absorption.*

To aid in passively cooling these areas, the architects have ensured they open out to a number of veranda spaces and in this regard, the halls differ to many other sporting facilities because they are so light and breezy.

All-in-all, 180 tonnes of purlins and girts made from GALVSPAN® steel and supplied by Metroll, plus 213 tonnes of XLERPLATE® steel was used to help efficiently achieve the project outcome. Case-in-point being the sealed truss system that includes a complex truss joint at the peak of the roof where 16 different steel members come together in that one location.

The use of cladding made from COLORBOND® Metallic steel in the custom colour Carrara Gold™ at this venue couldn't have been more fitting for the Commonwealth Games and well after the event has finished, it still stands iconic.

Whilst the building's colour palette may appear a smidgen ostentatious, it's tempered by a thoughtful plan, fine detailing and highly resolved spatiality. This is a venue of which the Gold Coast is very proud and whilst it was originally designed to be a multi-purpose facility, its obvious popularity has even surpassed the architects' expectations. **SP**

**Any savings and or the extent to which a building is cooler may vary and depend upon the particular circumstances of your building, including building location, level of insulation, location of air-conditioning when installed, building shape, building function and environmental factors.*

For more information about potential savings visit www.steel.com.au/coolmaxcalculator

For more information on urban heat island effect visit www.epa.gov/heatisland/about/index.htm

PANEL SAYS

The rational organisation of this new sports building – which comprises halls, admin functions, changerooms and meeting rooms that are arranged off an internal 'street' – creates a simple legibility for its large and complex program. Completed last year for the 2018 Commonwealth Games, it's now a public facility for local residents. The design makes a tongue-in-cheek comment about local culture with its insulated Kingspan wall panels with cladding made from COLORBOND® Metallic steel in the custom colours Carrara Gold™, Temple Gold®, Copernicus® and Copper Penny®. The cladding has been beautifully arranged to achieve horizontal and vertical textural variations that break down its scale and bulk to transform it beyond what might otherwise been viewed as a large 'decorated shed'.

BELOW: The luminous scheme of the GCSLC's external wall cladding, comprising two types of Kingspan insulated wall panels: the flat panel BENCHMARK Evolution and also KS1000RW Trapezoidal-profiled panel. These panels are comprised of an insulation core, finished on both sides with cladding made from COLORBOND® Metallic steel.



SOUTH ELEVATION

The building's predominant colour – Carrara Gold™ – is symbolically linked to first place in high-level sports competitions. It was mixed for this project by BlueScope's paint laboratory technicians and suppliers to the architects' exact specifications.

PROJECT Gold Coast Sports and Leisure Centre **CLIENT** Gold Coast 2018 Commonwealth Games Corporation, Gold Coast Suns Football Club, City of Gold Coast **ARCHITECT** BVN **PROJECT TEAM** Mark Grimmer (principal); Paolo Frigenti (project leader); Celeste Norman (project architect); Rebecca Buffington (project architect); Hayley Sainsbury (interior designer); Glen Millar (architect); Amanda Robinson (architectural graduate); Carolyn Jo (architectural graduate); Patrick Ozmin (architect); Angela Lamb (senior architectural technician); Peter Eedy (specification consultant); Fedor Medek (consultant); Marilena Hewitt (architectural graduate); Isabella White (architectural graduate); Damian Eckersley (architect) **PRINCIPAL STEEL COMPONENTS** Wall cladding: Kingspan BENCHMARK Evolution and KS1000RW Trapezoidal-profiled insulated wall panel made from COLORBOND® Metallic steel in the custom colours Carrara Gold™, Temple Gold®, Copernicus® and Copper Penny®. Roofing: made from 80 tonnes of COLORBOND® Coolmax® steel in the colour Whitehaven®. Structural steel: 180 tonnes of purlins and girts made from GALVSPAN® steel, 213 tonnes of welded beams and columns made from XLERPLATE® steel **BUILDER** Hansen Yuncken **STEEL FABRICATOR** Steel Fabrications Australia **STRUCTURAL ENGINEER** Bligh Tanner **STEEL FABRICATOR AND SHOP DRAWING CONTRACTOR** Steel Fabrications Australia **CLADDING CONTRACTOR** Padstar **LANDSCAPE ARCHITECTS** Cardno **PROJECT TIMEFRAME** October 2013 - February 2017 **AWARDS** 2018 Australian Institute of Architects Queensland Chapter: COLORBOND® Award for Steel Architecture; Public Architecture Commendation; GHM Addison Award for Interior Architecture; Gold Coast Regional Commendation – Public Architecture; Gold Coast Regional Commendation – Interior Architecture. 2018 Australian Institute of Architects National Commendation for Interior Architecture. Australian Steel Institute Queensland and Northern Territory Chapter Steel Excellence Awards – Buildings – Large Projects (awarded in association with Bligh Tanner and Steel Fabricators Australia). 2017 Gold Coast Urban Design Awards – Urban Design Award **BUILDING SIZE** 43,000m² (internal) **TOTAL PROJECT COST** \$101 million



PROFILE PROFILES...

JAMES BROADWAY



MATTHEW
BATCHELOR

From the outset, Optus Stadium's architects in association were acutely aware of, and in agreement about, the need for the project to make a tremendous, majestic impression.

"We were in awe of the opportunity, because the stadium was clearly going to be a landmark and we were conscious that it was a big responsibility," says Peter Dean, director at HASSELL's Perth office.

Also based in the Western Australian capital, Matthew Batchelor of COX Architecture says that the "Rare opportunity" to work in their home town meant everyone pushed hard to win the project. COX and HASSELL had worked together on the Adelaide Oval Western Grandstand Redevelopment project (see *Steel Profile* 112) and, in many ways, the new Perth stadium was a natural evolution. "That project went down really well, and we wanted to go the next step," says Batchelor.

The project combined high ambitions with a raft of complexities to be tackled. Working from a

are fighting to get people out of their armchair, because it's very comfortable at home with these great TVs, so how do you make the experience better than that?"

Renowned for its work on AT&T Stadium, the home of American Football team the Dallas Cowboys, HKS Architecture knows how to elevate stadium design and experience – as evidenced by that stadium's sweeping steel arches, hotel-like interiors and multi-million-dollar art collection. "Anything that adds to a quality experience for fans leads to fans-first," says London-based Paul Hyett, director of sports at HKS.

"We brought in HKS to challenge us and push our knowledge – all those Super Bowl experiences where it goes to the other end of the spectrum, where it becomes about the technology and hospitality," says HASSELL's Dean.

HKS' Hyett was similarly enthusiastic about the partnership. "We knew we were working with

"Within two weeks that was thrown out and we had everybody spread across every team, bringing the right expertise to the right spot," he says.

"Having everyone in the one space, having one conversation, meant you could hear things changing and developing in detail... some of the best conversations happened late at night around the computer screens where people were saying 'What if we do this, can we get something better out of this space?'. Dean concurs: "If you've got the right people in the room those decisions can be made quickly and effectively", he says.

Working from a Building Information Modelling (BIM) platform meant the collaborative mindset extended beyond the design phases through to engineering, fabrication, construction and, finally, into the maintenance phase. "We referred to the model as the single point-of-truth," continues Dean. "From a steel perspective, it allowed the workflows to go straight from the architect, through the engineers and into fabrication as a singular process."

"From a steel perspective, it allowed the workflows to go straight from the architect, through the engineers and into fabrication as a singular process."

More than a year after completing Perth's Optus Stadium, three key architects from the design partnership of HASSELL, COX Architecture and HKS Architects took time to reflect on the dual National AIA Award-winning project and its innovations forged through healthy collaboration and extensive use of steel. Words **Lucy Salt**

PETER
DEAN



PETER BENNETTS

shared vision, each practice's experience enabled a nuanced response. HASSELL, contracted separately to lead the precinct's landscape and the new Stadium Station, was keen to fuse the infrastructure and extensive parklands into a cohesive whole.

For its part, COX saw the opportunity to create a next-generation stadium, and HKS – with its extensive experience in the American market and focus on revenue-based design – added yet another layer.

"From a sports perspective, the stadium was a great opportunity to bring some of our international learnings to the project, particularly from the fans-first perspective," says Batchelor. "Sporting stadia

outstanding architects on Perth Stadium," Hyett says. "HASSELL's Fiona Stanley Hospital is one of the most advanced hospitals in the world and COX would be amongst the top four-or-five firms in the world". Together, he says the practices "Enriched the perception of what the building could be about."

After a long gestation period, the contract was awarded and the project fast-tracked. To expedite the process, the core team worked from a central project office. "People checked their 'badges' at the door," says Batchelor. And while they initially followed a structured, practice-based approach,

For Batchelor, one of the best expressions of the collaboration is the 400-metre-long Community Arbour, which features dramatically curved steel members which are punctuated with folded metal panels. Whilst the idea originated with HASSELL's landscape architecture team and debate ensued about whether it was an architectural or a landscape piece, Batchelor says the eventual consensus was that it is just a piece embedded within the overall design: "We had architects doing the structure, we had landscape architects making sure that it connected to the ground plane properly and we had facade people working on the perforated panels. It was a true collaborative piece that blurred the boundaries."

Perth's new stadium harnesses the strength of over 4500 tonnes of welded beams and columns, and 3000 tonnes of XLERPLATE® steel to take sports and entertainment facilities to help create a distinctly Western Australian, world-class sports and entertainment facility.



PETER BENNETTS

HKS ARCHITECTURE



PAUL
HYETT

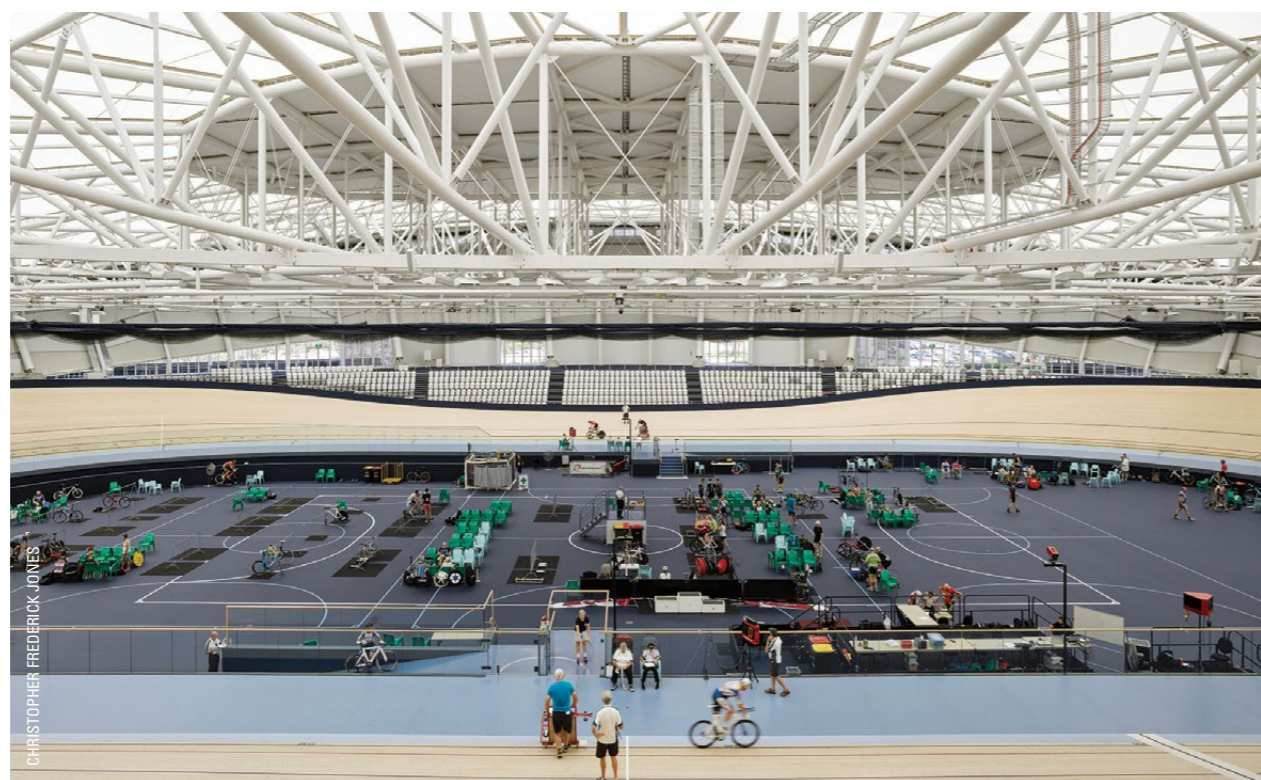


ABOVE: AAMI Park stadium, with its multi-faceted steel 'bioframe' design, is COX Architecture's stellar addition to Melbourne's world-class sporting precinct.

RIGHT: COX is also responsible for Brisbane's Anna Meares Velodrome, featuring a vast, geometrically intricate steel roof frame that creates a sense of theatre for racing athletes and fans.

BELOW LEFT: HKS' 2017 World Architecture Festival Award-winning sporting project, U.S. Bank Stadium, dispensed with an operable roof by using structural steel to support a network of transparent panels.

BELOW RIGHT: With AT&T Stadium, HKS Architecture demonstrated its prowess in elevating the typology's design and experience – as evidenced by that stadium's sweeping steel arches, each spanning the entire 390-metre length.



CHRISTOPHER FREDERICK JONES



AKER IMAGING



HKS

The collaborative process was further bolstered when the team commissioned Paul Finch, journalist and head of the World Architecture Festival, from the UK to act as peer reviewer. "For such a big project, we decided to get someone from the international stage, with independent eyes to challenge us and make sure that we're investigating everything that we should be," says Dean.

A longstanding friend, Paul Hyett, says Finch pushed the team to make the most of the site. "As a design critic, Paul has seen some of the

The many people using the stadium and parklands on a daily basis is, for Batchelor, evidence of the project's success: "Before, you'd just drive straight-past but now it's a new destination that connects to the river and surrounds," he says.

Dean laments the conclusion of a project that is ground-breaking on so many levels. "It probably is a once-in-a-lifetime opportunity, which in some ways is depressing to contemplate if that's my last job – I'm only 44!" Dean says, with a laugh.

In Melbourne, COX and HKS have again teamed up to lead the redevelopment of Melbourne's

BELOW A previous collaboration between HASSELL and COX Architecture, the elegant Adelaide Oval Western Grandstand Redevelopment conceals a vast and complex underside of refined structural steel.

BOTTOM: HASSELL and COX Architecture in association's Adelaide Oval Western Grandstand Redevelopment puts slender and efficient steel members to work at full capacity, achieving a gravity-defying appearance.

"You can have great richness to an architecture through complexity, but it needs to be within a simple framework, otherwise you've got chaos."

largest, most complex projects in the UK," Hyett says. "His capacity to see projects as a simple diagram is invaluable. He always asks: 'How can it relate to the site, to the rest of the city? Can you find your way in and through it? Is it ordered?'" Such simple, but demanding questions required the team to clearly articulate their priorities and, as Hyett says, "To make sure our basic building diagram was simple and straight-forward.

"You can have great richness to an architecture through complexity, but it needs to be within a simple framework, otherwise you've got chaos."

Rod Laver Arena, while HASSELL's work on large-scale steel projects of civic significance builds off knowledge gained from Optus Stadium.

Presently working on stadiums in China and Japan, Hyett remains appreciative of his Perth experience. "I believe in relationships between firms and I'm sure we'll do many other things with HASSELL and COX. We got so much pleasure working with great architects in a great sporting nation. I hope we win more projects such as that." SP



PETER HYATT



PETER HYATT

NEW VINTAGE

Galileo said: "Wine is sunlight, held together by water" but it's fair to say that some wines have a bit more sunlight than others. And whilst there are plenty of vineyards held together by steel, this new cellar door – sporting a soaring cantilevered 'fly' roof made from 3.8 tonnes of ZINCALUME® steel – sets a new standard for the type through material ingenuity and daring design.

Words **Micky Pinkerton** Photography **Tom Ferguson**

ARCHITECT
Source Architects

PROJECT
Montoro Cellar Door

LOCATION
Orange, New South Wales

Bob Derrick knows a thing or two about wine. Over an eclectic career, which included 30 years as a teacher and running a couple of travel businesses with his wife, Jennifer, there has been the constant thread of his passion for wine-making. He taught the first course in viticulture in New South Wales at Mudgee TAFE in 1974 and studied wine science in Wagga Wagga in the 1980s. A long-held desire to own a vineyard was finally realised in 2009 when he and Jennifer bought five acres with over 6000 established vines located about ten minutes' drive from Orange. Since then Montoro has prospered, winning numerous awards for its cool-climate reds.

With that success, however, came new challenges. An electronic sales model suited the early stages of the business, but with the growth of wine tourism in the region and Montoro's point-of-difference as having the only local Shiraz vines, a steady stream of intrepid enthusiasts began to seek them out. Without a retail outlet, this saw cars heading down the driveway and people anticipating a tasting, literally in the Derrick family home.

“The Australian approach to gathering people is that you create a veranda – it’s not a brand-new idea but it’s been used time and time again, and it works.”

Which is how one day, this pragmatic yet personable man walked in off the street into Source Architects and said: “My name’s Bob and I need a cellar door”.

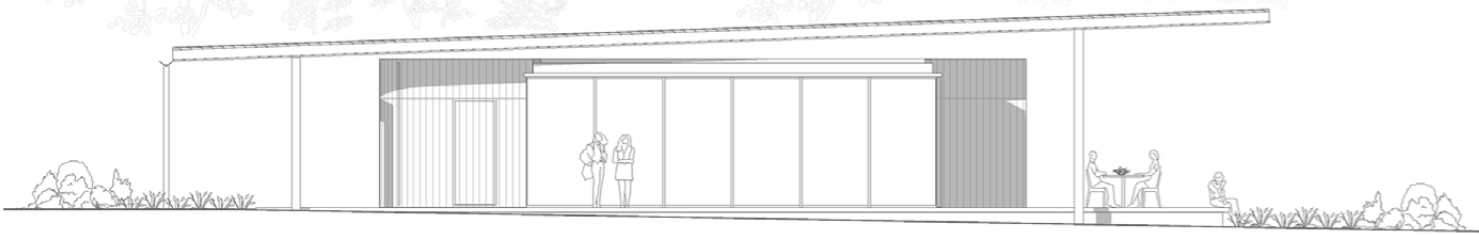
The brief was simple: a tasting area to showcase the wines, a bit of office and storage space, and no, they weren’t going to be selling food. In terms of style, the Derricks didn’t want a shed, the dominant winery typology in the area. They were looking for a building that was visible from the

road, had a distinct presence and which reflected the premium brand of Montoro Wines.

Sally and David Sutherland, having established Source Architects in Orange in 2014 after working for large practices in Sydney for more than a decade, were excited to be working on their first local commercial project, despite the challenge of developing a non-shed concept on a shed-like budget.

They took their initial design cues from the social meanings of wine. “If you’re selling and drinking wine you are bringing people together,” says Sally Sutherland. “The Australian approach to gathering people is that you create a veranda – it’s not a brand-new idea but it’s been used time and time again, and it works. The veranda and the platform meant we could stretch that indoor-outdoor relationship to allow people to gather.”

The building’s concept of a broad base protected by an oversized roof and with a smaller, sculptural mid-section is arresting and surprising – almost puzzling – but in a good way. It has the indicators of a shed, but isn’t a shed. It has touches of domesticity, ➤



NORTH ELEVATION



ABOVE: Normally used in large commercial and industrial projects, the Montoro Cellar Door building demonstrates how ARAMAX FreeSpan can provide a big statement on a more domestic scale.

BELOW: The large cantilevered roof made from ZINCALUME® steel in Fielders ARAMAX FreeSpan profile has used the material to its maximum span across the portals.



but isn't a home. It has a certain flourish to it, like the brand's logo, but isn't fussy. And it is definitely eye-catching from the road, inviting further discovery.

"People don't know why they like it but when they walk on site and take that pause moment – that's when you know the architecture has done its job," says Sutherland. "The roof makes a statement but the proportions are right, it's understandable, it all just works together thanks to the simplicity of the veranda idea."

Key to that idea is the large cantilevered roof made from ZINCALUME® steel* in Fielders ARAMAX FreeSpan profile. Readers of *Steel Profile* may recall the material's many benefits. It can allow for huge spans without the use of purlins resulting in a clean, lean appearance and it can be quick to install – permitting reduced construction timeframes. They may also have read how it often arrives on site as a huge roll of flat metal sheet which is then passed through a series of rolls, formed into profile and becomes rigid when sheets are fixed to one-another.

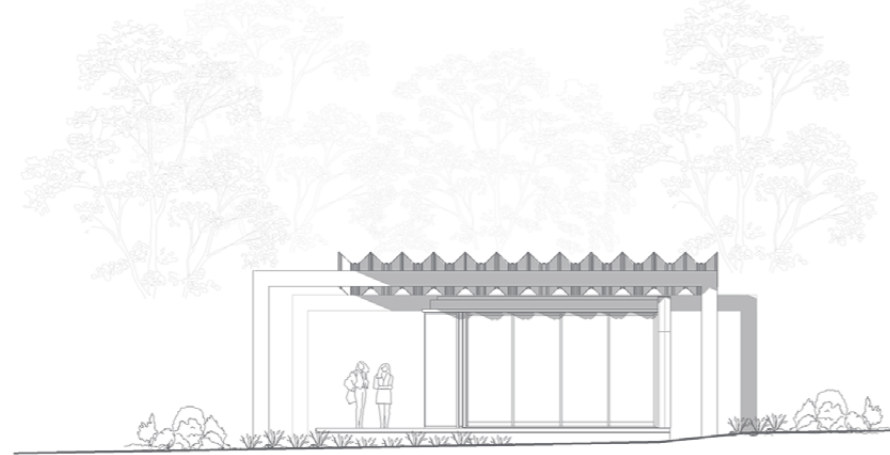
"The material almost dictated the design – one couldn't go without the other, it's all in conjunction with the statement of the really big cantilever at the end."

Source Architects knew from the outset that the ARAMAX FreeSpan profile was going to achieve the big span they were after, across just two steel portals.

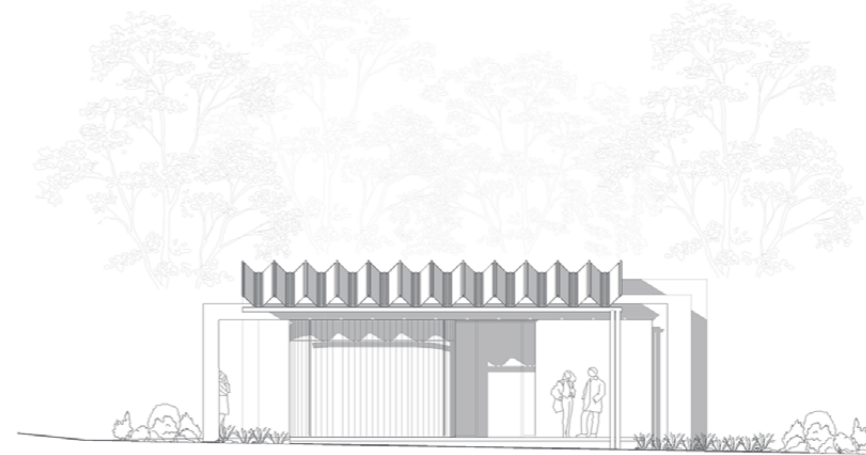
"The ARAMAX FreeSpan profile gave us that big span, that big statement," Sutherland continues. "We've used it at its maximum across the portals and the overhang so we've used the material to its fullest potential, which was really important in the design. The material almost dictated the design – one couldn't go without the other, it's all in conjunction with the statement of the really big cantilever at the end."

Whilst the building was designed with Fielders ARAMAX FreeSpan profile in mind, it was the first time Source Architects had specified it. The material is often used for considerably sized roof expanses in metropolitan markets, but this project was of a more modest scale and in a regional location which introduced some logistical planning. Roll-forming the ARAMAX FreeSpan profile in Sydney and then transporting to site would have required an escort over the Blue Mountains. 🗞

*Warranty subject to application and eligibility criteria. For full terms and conditions and to determine the eligibility of your project for warranty visit www.bluescopesteel.com.au/warranties or call BlueScope on 1800 064 384.



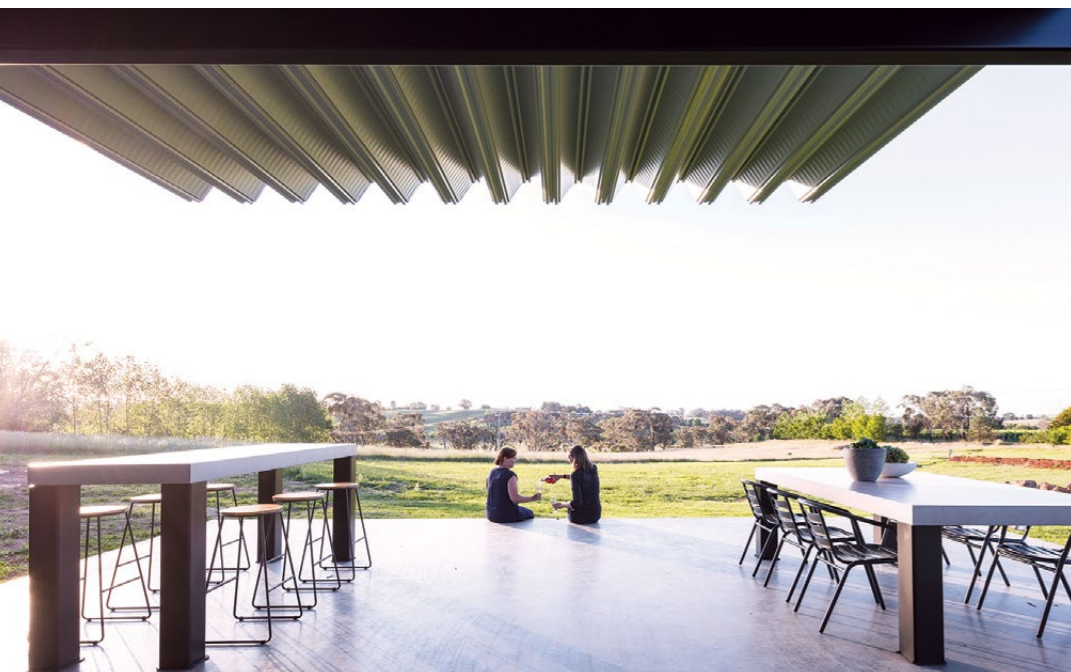
WEST ELEVATION



EAST ELEVATION

BELOW: Creating an indoor-outdoor gathering space was a central design concept.





PANEL SAYS

This small and clever pavilion uses roofing made from ZINCALUME® steel to great effect. The material's strength and character lend gravitas to the modest footprint, helping to draw the attention of passing traffic and providing a bold identity for this boutique winery, located near Orange in New South Wales. In the past we've featured larger and more complex uses of roofs made from ZINCALUME® steel in Fielders ARAMAX FreeSpan profile, but this bespoke project relies on a simple diagram that results in an understated structure, which is exceedingly well-resolved. It sits beautifully in this bucolic landscape, elevating what might be considered an industrial material into something quite transcendent.

ABOVE: The wine store at the building's south-eastern corner uses passive design to avoid artificial climate-control.

FAR LEFT: The design takes advantage of valley views to the west, with the large cantilevered roof providing shade for visitors in the hotter summer months.

TOP RIGHT: Vigneron Bob Derrick's brief was for a cellar door that reflected Montoro's prestige brand. He and many-an architect and engineer marvel at the building's deceptive resolve.

BOTTOM RIGHT: The entire building – including cut coils of ZINCALUME® steel in Fielders ARAMAX FreeSpan profile were prefabricated off site and reassembled at the winery.

PROJECT Montoro Cellar Door **CLIENT** Bob and Jenny Derrick **ARCHITECTS** Source Architects **PROJECT TEAM** Sally Sutherland, David Sutherland, Sam Roberts **STRUCTURAL CONSULTANT** Cook & Roe Engineers **BUILDER & CLADDING CONTRACTOR** L-Con Construction **STEEL FABRICATOR** ICR Engineering **PLUMBER** JKS Plumbing **PRINCIPAL STEEL COMPONENTS** Roofing made from 3.8 tonnes of 1.2mm BMT ZINCALUME® steel, in Fielders ARAMAX FreeSpan profile **PROJECT TIMEFRAME** January 2017 – November 2017 (construction four months) **AWARDS** 2018 Australian Institute of Architects New South Wales Chapter Awards – Small Project Architecture. 2018 Australian Institute of Architects New South Wales Country Division Awards – James Barnett Award, Commercial Architecture **AWARD** Floor area 120m² **TOTAL PROJECT COST** \$300,000

Bringing the roll-forming machine to site at the estimated time of roofing proved unworkable, too. In the end, the 24-metre lengths of roofing made from ZINCALUME® steel were roll-formed into Fielders ARAMAX FreeSpan profile at steel fabricator ICR Engineering's site, in advance. The spans were pre-fabricated under cover, with all services integrated, to avoid the delays associated with construction during a rainy Central West winter.

That still presented the issue of transporting the steel roofing from ICR Engineering's shed in Blayney, to the vineyard thirty minutes away. Sally Sutherland only has words of praise for the builder, L-Con Construction, and steel fabricator ICR Engineering who worked closely with Source Architects to overcome the difficulties associated with moving and then re-assembling the material.

"The fabricator custom-designed a support to take each sheet of ARAMAX FreeSpan off the roll-former and stack it in a pile for transportation. Then he made another support structure for when three sheets were connected on site and then craned from the ground up onto the roof. He then increased the strength of the



"What I was amazed with was the concept and the vision for placement and style. From both angles it had the maximum time that people could see it from the road, that was probably the first thing that impressed me."

brackets that the sheets of ARAMAX FreeSpan were attached to for the required wind and snow loadings," Sutherland says.

The technical effort that has gone into the building has also attracted a new audience of admirers for the vineyard, with Bob Derrick reporting that architects and engineers frequently stop in to look and ask questions, particularly about the roof. For his part, Derrick has been delighted with the end result and discovering the subtleties of good design.

"What I was amazed with was the concept and the vision for placement and style," Derrick says. "From both angles it had the maximum time that people could see it from the road, that was probably the first thing that impressed me. Secondly the site levels, so it looks onto the vineyard but has the beautiful view down the valley to the west. And the fact that it's perfectly designed for this locale. Orange has extremes of weather, particularly extremes of cold, but this is a great heat sink. I can't remember if we've ever turned the heating on, it's very suited to this climate in every way."

Another achievement of the purpose-built design's environmental performance is that the wine store doesn't require artificial climate control, thanks to a clever mix of positioning and materials.

"It's located on the south-eastern side of the building so it's protected and sheltered," says Sutherland. "There's also an isolation pad between the steel frame and the cladding and the fixings, so that helps too, and the fly-roof does a lot of it as well."

There's a charming circularity to this project – an increasing number of unexpected visitors at a family home next to a vineyard led the owner to make an impromptu call at an architect's office and now an increasing number of architects are dropping in to enjoy the end result of the combined endeavours at that same vineyard. There's a beautiful mirroring between two age-old processes here as well, in that the design allows the key roofing material, ZINCALUME® steel, to 'shine' – providing a deceptive simplicity of experience for the end-user, but one which is underpinned by years of technical skill and a good dash of imagination on the part of the maker. Just like a good wine. **SP**

This multipurpose residential studio – wrapped in cladding made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument® – perches assuredly on slender steel 'branches' that let it reach out into the air.

Words **Rob Gillam** Photography **Bob Seary; Paul Bradshaw; Keith McInnes**

TOP DECK

ARCHITECT
Matt Thitchener Architect

PROJECT
North Avoca Studio

LOCATION
North Avoca, New South Wales



Owner, Tony Palmer, says that when he and wife Danielle bought the Central Coast property as a holiday house, he had an inkling that they might one day take more permanent advantage of the panoramic view over the suburb and South Pacific Ocean from the site's steeply sloping rear border. "At first, the rear of the site seemed pretty useless," says Palmer. "But I climbed up there to find it captured more views than I expected."

Enjoying their holiday house one Sunday and reluctant to re-join Sydney's rat-race, the couple discussed making a life-change. "We thought maybe we had things the wrong way around. We wanted to create a lifestyle for ourselves that felt like we were on holidays all the time. We didn't need to be in Sydney any more, so we sold our business and made North Avoca our full-time home."

With both Tony and Danielle working from home in creative industries, they soon found need to

Did he ever think such an impressive and substantial architectural achievement was possible on the site? "No, we knew the challenges we faced with such a heavily sloped block. And with only 900mm-wide access, we had no ability to bring machinery onto the hill. So I went into it knowing the idea might not be feasible. Luckily, Matt saw it as a challenge that could be solved by getting it up off the ground and into the air."

Matt Thitchener concurs. "I don't mind difficult sites because it drives the creativity and guides the outcome," says Thitchener. "My father is the engineer for this project and I had worked for him previously, before I got into architecture. We always like pushing cantilevers and trying to do interesting things, structurally. I'm always looking to do something clever and sublime."

Architect and client were pondering solutions when the core idea was born of a 'box' resting

"I'm an advocate for sustainability and sometimes that's not just about a building's fabric but how you use it and the things you're *not* doing. My commute to work is now 36 steps."

emancipate house from office. "If you're working in the place you live, you feel like you're more often on your computer or phone, than on holiday," he says.

"I had a little office tucked under the house but it was like a shoebox. It had no aspect and was hot in summer and pretty horrible in winter. Before contacting Matt Thitchener, I was talking to agents about buying office space. The studio ended up costing about the same as a small office in Gosford, but I'm so glad we did it this way. Building a studio specific to our needs has so many advantages.

"I'm an advocate for sustainability and sometimes that's not just about a building's fabric but how you use it and the things you're *not* doing. My commute to work is now 36 steps."

its back on an off-form elevated concrete beam, supported in the middle by a stilt frame made from steel. But first, they had to hit rock.

Initial signs from the geotechnical survey indicated bedrock might be only a few metres away – "I think they hit some floating rocks," says Palmer – but we eventually found it at 6-7.5 metres below ground level.

All four piers had to be dug out by hand, with bucket and spade. "We had two guys and they were so far down we lost sight of them," says Palmer. "There's basically a double-axle truck's-worth of concrete – 6 cubic metres – in each pier."

Knowing that such effort and expense was a possibility, Thitchener adapted his design early to minimise the number of piers necessary and devised the structural supports, or piloti, made from 89.9mm

ABOVE: The wall cladding made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument®, wraps under the studio's soffit.
RIGHT: The CHS piloti also provide cross-bracing for the overall structure, resulting in a clean aesthetic.



Outside surfaces are hard – quite raw and masculine. Deliberately windowless, the south-west wall creates a screen to the view that is broken only via the front door.



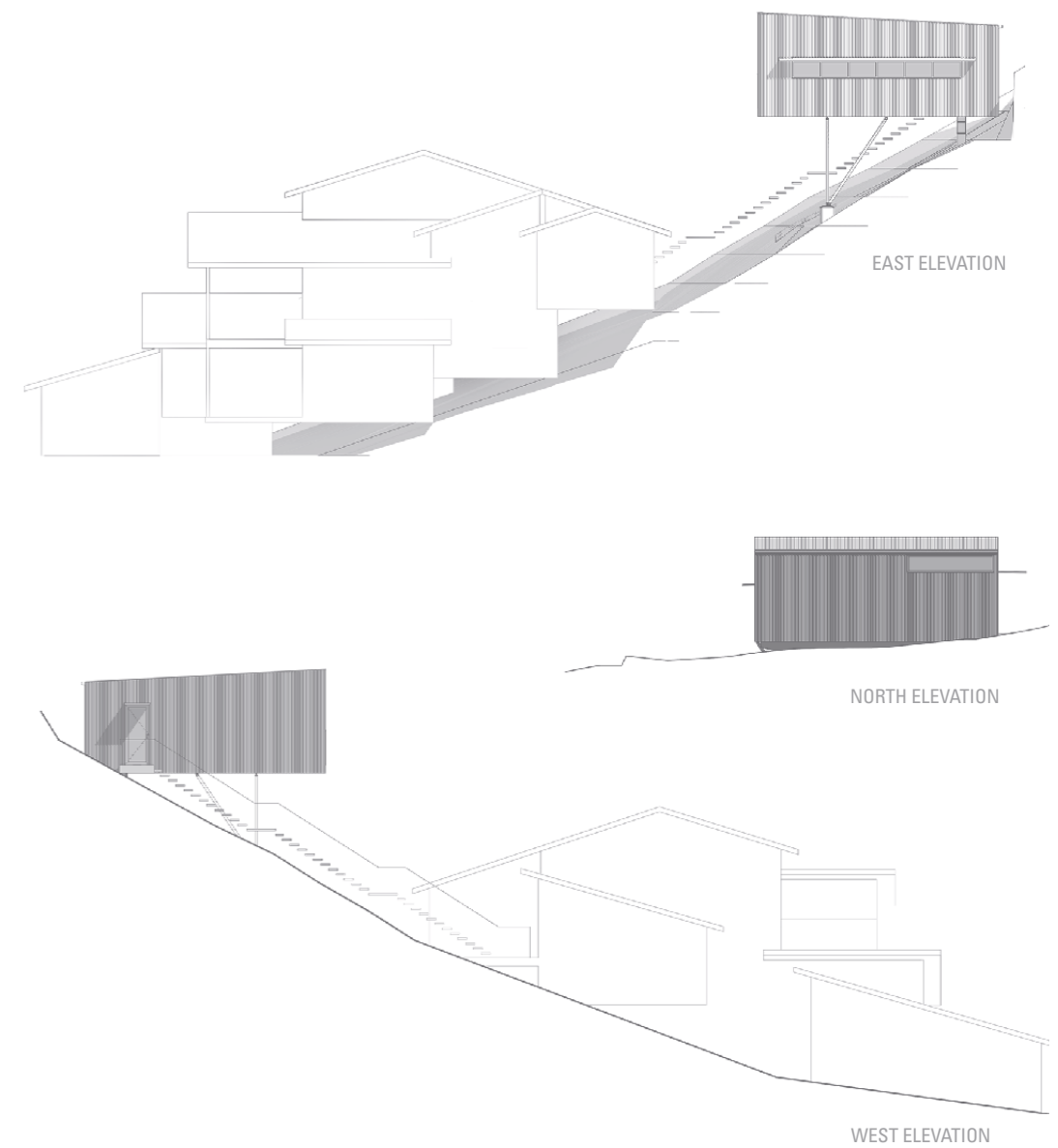
circular hollow section (CHS) steel. “The piloti were always going to be made from steel. It’s the natural choice,” he says. “Once you reach a certain span-size it doesn’t make any sense to attempt construction with other materials.

“Size-wise, you aren’t going to get the slenderness that steel has out of timber, and concrete would have been just too heavy.”

Thitchener put his steel piloti design through the engineering modelling process and discovered there was the potential for the CHS to be thinner. “But we decided that would look a little bit too thin. Aesthetically, I preferred the wider 89.9mm-diameter selected, for a stronger appearance. That also allowed for more room to fit all the plates and bolts at the end.”

The CHS piloti also provide cross-bracing for the overall structure, resulting in a clean aesthetic. “Had we just used simple vertical columns, we would still have needed lateral cross-bracing in between them and it would have been much busier underneath,” he says. “It was just a better way of doing it, structurally, for the rigidity of the building and was so much simpler in construction. We were basically building a small space-frame.”

Sitting atop each pier footing is a circular 200mm-thick custom-made steel base plate with cleats connecting the CHS piloti. Another cleat at the top of each piloti connects it to one of three main steel floor bearers running front-to-back. The floor bearers are 310mm universal beams concealed within the floor space – one running through the middle and one under either side of the building. These are connected by 89.9mm CHS and 180mm UB tie beams that span side-to-side. All the connections are pinned together.



“Size-wise, you aren’t going to get the slenderness that steel has out of timber, and concrete would have been just too heavy.”

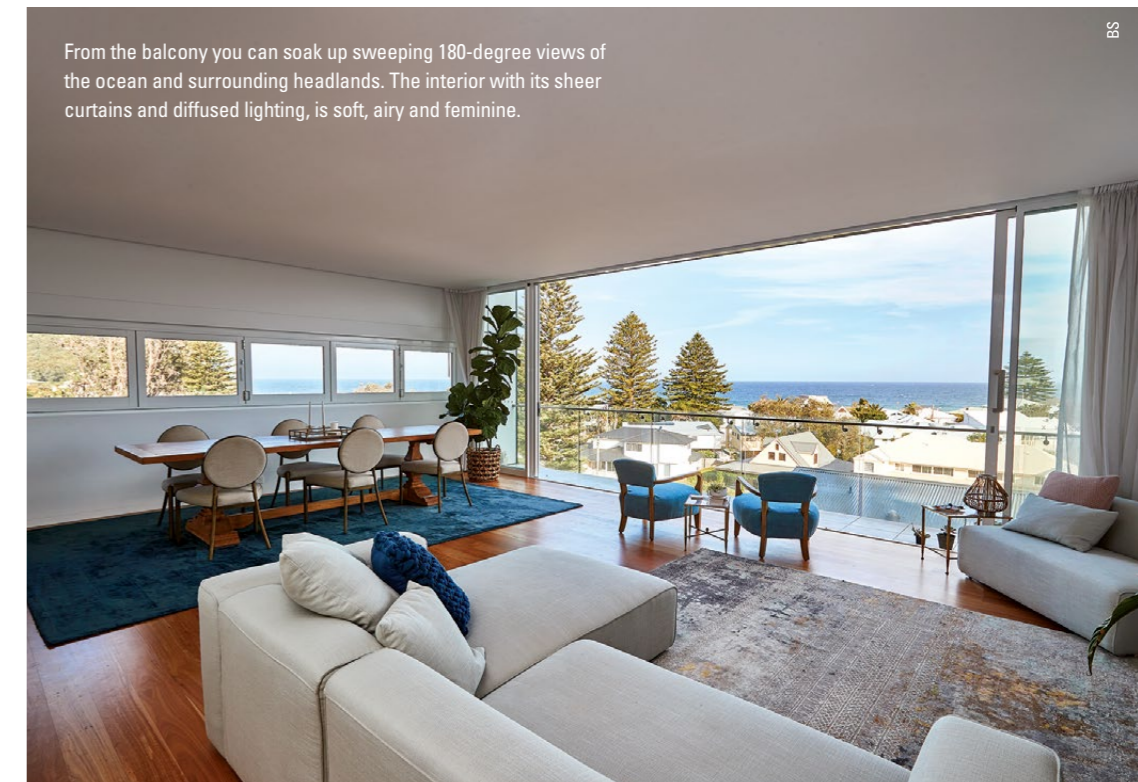
Sitting atop the universal floor beams are vertical columns made from rectangular hollow section (RHS) steel and square hollow section (SHS) steel that support the roof structure and the cantilevered awnings. A long-span universal beam supports the roof trusses over the sliding doors, and another smaller universal beam supports the roof trusses at the heel end.

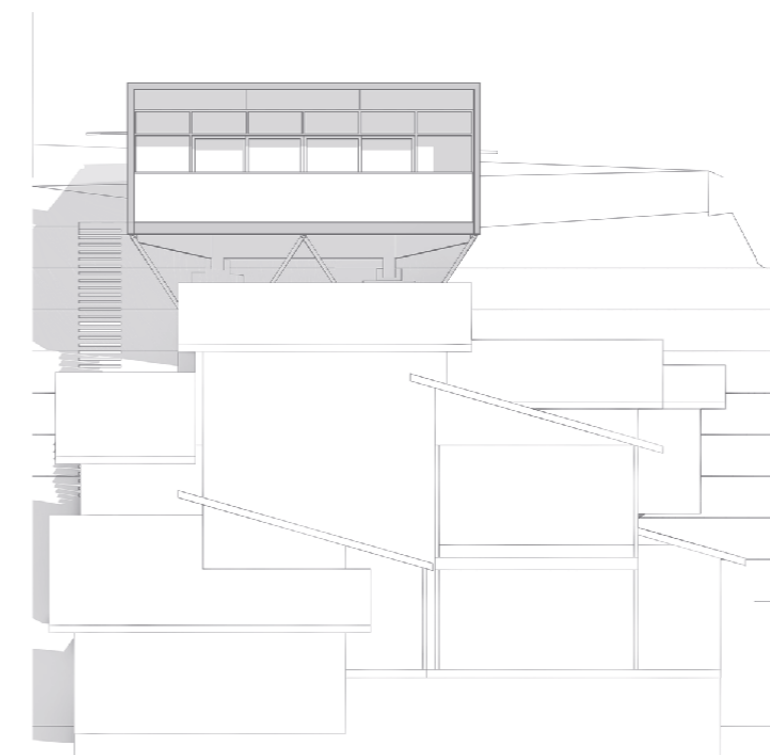
All structural steel was prefabricated for speed-of-installation and craned onto site. “We had to lift from the street, up over the powerlines and the house, to start building our working platform,” says Thitchener. “In a single day, all the scaffolding was erected and the main structural steel frame bolted together.”

Palmer says he was immediately taken with the view from the in-construction studio. “Pretty much as soon as the frame went up and a floor was on, I walked out onto that platform and thought, ‘Wow!’. I knew we had something special.”

With structure and insulation complete, the studio was finished with wall cladding made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument®.

From the balcony you can soak up sweeping 180-degree views of the ocean and surrounding headlands. The interior with its sheer curtains and diffused lighting, is soft, airy and feminine.





WEST ELEVATION



Given the studio is located near the ocean, COLORBOND® Ultra steel was specified rather than standard COLORBOND® steel, due to it being more suitable for this type of coast environment*.

The wall cladding made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument® wraps under the studio's soffit. Precise detailing is evident in the perfect alignment of the LYSAGHT SPANDEK® profile between the soffit and walls.

TRIMDEK® profile was chosen for its low (two degree) pitch for gathering rainwater – used to irrigate the fern garden planted under the studio – and the colour Windspray® for its lower solar absorbance than the darker-coloured Monument®.

Virtually the entire 60 square-metre roof is covered in solar panels which generate enough power to comfortably run the studio and also the main residence, with excess electricity being stored in a battery.

“Even inside the studio, there’s a keen sense of floating above the sea and drifting amongst the clouds.”

Thitchener says the colour Monument® was chosen to clad the studio to help it recede into the background. “We considered other colour options but we didn’t want to draw too much attention to the building. We decided it best to go with a darker colour which helps hide it away. It’s quite effective: people don’t tend to notice the studio unless you point it out to them.”

Cladding made from COLORBOND® Ultra steel was also chosen with maintenance in mind. “That was a primary consideration,” says Thitchener. “We didn’t want something that we were going to have to keep painting every few years. Steel is just much easier to look after. With COLORBOND® steel, it can be as easy as hosing it down to keep it in condition. There is also decent access to reach the soffit from below and wash it down with a soft brush and detergent.”

The building envelope is completed with roofing made from COLORBOND® Ultra steel in LYSAGHT TRIMDEK® profile, in the colour in Windspray®. The LYSAGHT

The studio is accessed via a detached industrial staircase made from galvanised steel, which ties in visually with the CHS piloti. Ascending, the intricate geometries of the piloti come sharply into focus, as does the meticulous detailing of the soffit and southern wall cladding made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument®. Deliberately windowless, the south-west wall creates a screen to the view that is broken only via the front door. “The outside surfaces are hard – quite raw and masculine,” says Palmer. “Contrastingly, the interior with its sheer curtains and diffused lighting, is quite soft, airy and feminine – which is just as well because my wife shares the space with me.”

Wall-to-wall and floor-to-ceiling sliding glass doors in the south-east wall – along with commercial bi-fold windows which span the entire north-east wall – open up the studio up and invite the outside in.

PANEL SAYS

This tiny studio – perched high above a beach on the New South Wales Central Coast – is a thing to behold: a ‘box’ wrapped entirely in cladding made from COLORBOND® Ultra steel, resting upon a finely engineered ‘web’ of structural steel supports. Significant design effort has produced meticulous detailing, from the way the wall profile meets that of the undercroft, to the entry sequence. Reducing the amount of piers for the piloti structure helped minimise disturbance of the sloping site. The same rigour continues inside, where the clarity of the concept becomes evident. It’s all about the elevated position and the view, and the two windows capture the eastern and northern outlooks handsomely. This is a beautifully resolved and restrained example of how architecture can in-fill existing suburbs to meet the growing demand for more diverse housing types.

ABOVE: The colour Monument® was chosen to help the studio recede into the background.

OPPOSITE TOP: Precise detailing is evident in the perfect alignment of the LYSAGHT SPANDEK® profile between the soffit and walls.

OPPOSITE BOTTOM: A darker colour helps hide away the building. Owner Tony Palmer says people don’t tend to notice the studio from the street unless it’s pointed out to them.

*For details on steel roofing and walling product selection, please refer to BlueScope Technical Bulletin guides TB 01A and TB 01B or call BlueScope on 1800 064 384.

From the balcony you can soak up sweeping 180-degree views of the ocean and surrounding headlands. Even inside the deeper recesses of the studio, there’s a keen sense of floating above the sea and drifting amongst the clouds.

“It was our goal that once you stepped inside the space all the roof lines disappear in your peripheral vision and, suddenly, you’re part of the wider area. The building itself fades away into the background, leaving you engaged with the all-encompassing view.”

So what’s it like working in your very own studio in the sky? “I’m generally very productive up here but when the whales do a slow cruise past or there’s a bait-ball out there getting smashed by sharks, I’m probably the least productive. My favourite thing to do is sit in a particular chair and just watch the ocean,” Palmer says.

Generous breezes effectively negate the need for active air-conditioning and the space can just as easily be closed off to the storms that blow off the ocean.

No matter how violent the weather conditions, though, the studio never waivers. “It’s an incredibly stiff structure. You walk around on the floor up there and it just feels so *solid*. We’ve been there in the middle of the most brutal storms and there’s no movement in it, at all. It’s just an absolute pleasure.”



Floating ethereally in its panoramic coastal setting, the North Avoca Studio might at first glance appear a simple combination of two key elements. A closer inspection reveals a study in daring design and elegant execution, the result of which is greater than the sum of its parts.

How do architect and owners feel now the project is complete? “So much went into this project that no singular particular element stands out,” Thitchener says. “It’s a lot of little things that have come together to make it a successful whole. I’m always excited to see it in the flesh,

though. I get such a good feeling when I visit. I look at it and think: ‘I did that!’”

The building imparts a similar feeling in Palmer. “It really has exceeded all our expectations,” he says. “Functionally, it has met our lifestyle needs but beyond that there is such a wonderful feeling when you walk through the door. I never thought it would be so tangible and rewarding.

“Whatever could be going on outside, when I come up here it’s just serenity. Everything just feels right with the world. I feel complete.” SP

PROJECT North Avoca Studio **CLIENT** Tony and Danielle Palmer **ARCHITECT** Matt Thitchener Architect **PRINCIPAL STEEL COMPONENTS** Wall cladding and soffit made from COLORBOND® Ultra steel in LYSAGHT SPANDEK® profile, in the colour Monument®. Roofing made from COLORBOND® Ultra steel in LYSAGHT TRIMDEK® profile, in the colour in Windspray®. Flashings made from COLORBOND® Ultra steel flat sheet in the colour Monument®. Awnings made from BlueScope Sign Writing Panel prepainted steel in the colour SignWhite®. Structural steel including Piloti made from 88.9x5.9mm CHS. Flooring made from 310mm UB main beams with 180mm UB and 88.9x5.9mm CHS tie beams. Cantilevered deck flooring made from 200mm PFC & 200mm UB30. Walling made from 150x100x6.0mm RHS and 75x75x5.0mm SHS posts. Roof made from 410mm UB lintel, 230mm PFC roof support, 65x50x5mm UA cantilevered awning supports **BUILDER** Gil Kaltenbach **STEEL FABRICATOR** Davebilt Industries **STRUCTURAL ENGINEER** Thitchener Consulting **GEOTECH** Douglas Partners **LANDSCAPE ARCHITECTS** Nature’s Vision Landscapes **PROJECT TIMEFRAME** September 2016 to September 2017 **AWARDS** 2018 Australian Institute of Architects New South Wales Chapter Awards, COLORBOND® Award for Steel Architecture – Commendation; 2018 Australian Institute of Architects Newcastle Awards, COLORBOND® Award for Steel Architecture, Small Project Architecture – Commendation **BUILDING SIZE** 60m² **TOTAL PROJECT COST** \$450,000

BEYOND EXPECTATIONS

On the site of a former Aboriginal mission, this new health clinic by Kaunitz Yeung Architecture is a beacon that tells the story of the community's journey towards self-determination.

Words **Rachael Bernstone** Photography **Brett Boardman**

ARCHITECT
Kaunitz Yeung Architecture
PROJECT
Biripi Health Clinic
LOCATION
Taree, New South Wales

It's possible to read the history of the Biripi Aboriginal people since European settlement of their lands – centred around Taree on the New South Wales mid-north coast – through the evolution of their health facility buildings.

Designed by Kaunitz Yeung Architects and completed in 2017 the Biripi Health Clinic is the proud centrepiece of a newly created 'health campus', which uses built form to narrate the community's history. The new building has been carefully inserted amongst three existing structures – one of which has been transformed into a gallery – and together these pieces relate the story of the Biripi Aboriginal people since European settlement of their lands.

This small and inexpensive building packs a lot into its complex program. During early consultation with the clients and community, the four main expressed requests were that the building should incorporate stories from history and local artwork, and that it should include light-filled spaces and an outdoor waiting area. The brief also encapsulated bold ambitions to improve the health and wellbeing of local people by expanding their access to and usage of healthcare services.

The new structure connects with two existing buildings to form a cohesive health campus, which stands proudly on the site of the former Purfleet Mission.

The mission's first dedicated healthcare facility was a clinic for mothers and babies – a simple timber cottage built in the 1950s following advocacy by the Purfleet Advancement League. That project emerged against a backdrop of racism in the local health system, including segregation practices at the local hospital.

That baby clinic was still in use as an admin building until 2017 when this project commenced, and has been repurposed into a gallery that

describes how advances in healthcare have been a crucial part of the Biripi peoples' journey towards self-determination.

A major step in that journey occurred after the 'paternal oversight' of missionaries and the station management started to break down in the 1970s. In 1981, local Aboriginal people incorporated the Biripi Aboriginal Corporation Medical Centre to plan for and provide health services to their own population.

The Corporation was responsible for construction of the second project on this site – two simple buildings arranged in an L-shape – that were completed in the 1980s and remain in use as clinic and public health facilities.

This third project – again commissioned by the Corporation – benefited from the input of Kaunitz Yeung, an architecture firm based in Sydney that specialises in architecture for indigenous clients around Australia and others

The brief encapsulated bold ambitions to improve the health and wellbeing of local people by expanding their access to and usage of healthcare services.

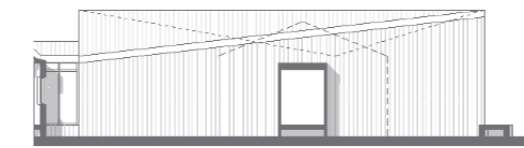


ABOVE: Biripi Health Clinic entry screen local artist, Eden Davis.

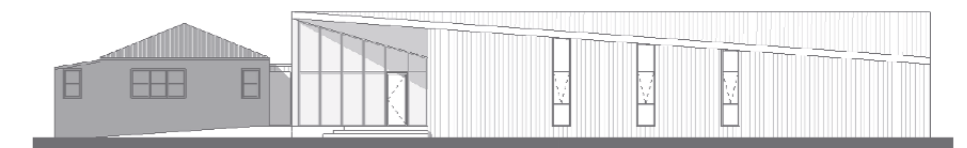


ABOVE: The integrated artwork performs several functions: it tells the story of the local community, invites people to enter the building, and provides security at the entrance.

BELOW: The use of roofing and wall cladding made from COLORBOND® steel in LYSAGHT LONGLINE 305® profile, in the colour Monument® contrasts with the other buildings on the campus, and accentuates the building's strong geometry.



WEST ELEVATION



SOUTH ELEVATION





throughout the South Pacific region. Founded by husband-and-wife architects David Kaunitz and Ka Wai Yeung in 2012, the firm builds on Kaunitz's earlier practice in London – where he ran a firm that delivered large public projects for five years – and subsequent post-disaster relief work in the Solomon Islands and The Philippines, amongst other places.

Kaunitz Yeung Architecture began working with the Biripi Corporation when this project was just a bold ambition. “Like a lot of these projects, we get on board early to help the clients do their funding applications, by undertaking pro bono work with the hope that they win funding to go ahead,” architect David Kaunitz explains. “In this case we prepared schematic drawings, visualisations and timelines, to make the proposal more professional and rigorous, because health centres don't have that type of expertise in-house.

“Once they received the first grant for a new training room with a funding allocation of \$300,000, they saw an opportunity to seek further funding,” he says. “Together, we then obtained funds for new consultation rooms for visiting specialists, which the corporation matched dollar-for-dollar, to arrive at a \$1 million build budget.”

With its distinctive skin made from COLORBOND® steel, this new L-shaped structure is strikingly different to its predecessors, yet it nestles comfortably amongst them. Its most visible feature sits at the new public entry – a laser-cut metal screen by local artist Eden Davis – which depicts the Saltwater-Freshwater Biripi people. Inside, reception and waiting spaces open up around a courtyard that shelters a significant, old jacaranda tree. Under its gracious boughs, weddings, births and major ceremonies have taken place over many years.

The wings of the building extend from the main reception area and comprise of consulting rooms, an office and a training room, which has become an important community asset.

The building's roof and walls are wrapped entirely in cladding made from COLORBOND® steel in LYSAGHT LONGLINE 305® profile, in the colour Monument®. The courtyard elevations boast floor-to-ceiling glazing which enhances connections to the landscape and creates a visual connection with the outdoor waiting area.

“We love COLORBOND® steel, we use a lot of it,” Kaunitz says. “It's hard to beat the durability and low maintenance, and the ease of installation. Particularly in remote clinics, there are few other materials as suited to withstanding the environmental rigours.

“The properties of the steel material – it's high quality and will last a long time – are ideal for health service applications, too, because those clients don't have a lot of money for ongoing maintenance,” he adds. “We could potentially use fibre cement sheet or another cladding material, but it would require paint or treatment in some way, and so from a practical aspect, COLORBOND® steel is ideal.”

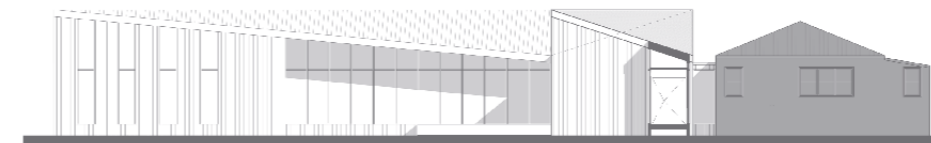
Kaunitz says he particularly chose the LYSAGHT LONGLINE 305® as the profile for its beautiful appearance. “The narrow rib and wide, flat pan – and the secret fixtures – all help to provide a really great modulation of the facade and shadow-play



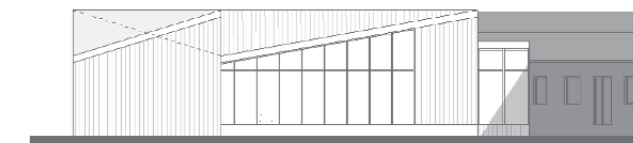
OPPOSITE: Downpipes and rain heads were mostly concealed within the walls and roof, apart from on this glazed elevation, which features customised steel versions.

LEFT: The clinic's waiting area spills out from the foyer into this courtyard to create a welcoming community gathering space.

BELOW AND BOTTOM: The new clinic was designed around a significant old jacaranda tree, where many weddings, births and major ceremonies have taken place over the years.



NORTH ELEVATION



EAST ELEVATION

“On these kinds of projects, where the prime objective is health delivery, you rely on strong geometric forms to make the buildings appealing, and COLORBOND® steel in the LONGLINE 305® profile really accentuates that geometry.”

throughout the day,” he says. “It agrees very well with our architectural style.

“On these kinds of projects, where the prime objective is health delivery, you rely on strong geometric forms to make the buildings appealing, and COLORBOND® steel in the LONGLINE 305® profile really accentuates that geometry.”

According to the project's commissioning CEO, Brett Cowling, and chair of the Corporation's Board, James Glass, this new building – an impressive piece of architecture delivered on a modest budget – represents an astonishing outcome. “Everyone is very pleased,” Glass says. “We come from humble beginnings and now we have a culturally appropriate health service – catered for by young people of our own community. We got it built for the good health of our community into the future, and it's good because it also commemorates all those who came before.”

The project won three major awards at the 2018 Australian Institute of Architects New South Wales Chapter Awards ceremony, including the state's COLORBOND® Award for Steel Architecture, the Premier's Prize for distinguished social merit and a Commercial Building Award. That haul made it one of the biggest winners on the night; yet another example of how this humble project has exceeded everyone's expectations.

The award juries particularly marvelled at the way the building has become a symbol of the community's sense of accomplishment around self-determination. “The Aboriginal-owned and run Biripi Clinic in regional Purfleet was another modest project with





ABOVE AND OPPOSITE: From the air, the careful placement of this building amongst its antecedents is readily apparent. It provides a distinctive entrance to the newly defined health campus.

a minimal budget that highlighted how architecture can be transformative at any scale,” the jury said.

“A place of community integration, clinical innovation and respect of social and cultural heritage, the Biripi Clinic is more than the joining of volumes, it is a testament to the journey of place, health, nature and people.”

Kaunitz was grateful for these accolades but says there is a much more important measure of the building’s success, and it has already become apparent within the community.

“With all of the clinic facilities we work on, the idea at the forefront is to create centres that will draw people in,” he says. “In every health building we’ve done, there are elements that go far beyond the architecture. In this case, the waiting room and entry hub act as community space, which is comfortable and connected to the landscape.

“At this clinic, presentation rates have gone up because people are proud of the place, which makes dispensing public and preventative health that much easier.”

With its distinctive skin made from COLORBOND® steel, this new L-shaped structure is strikingly different to its predecessors, yet it nestles comfortably amongst them.

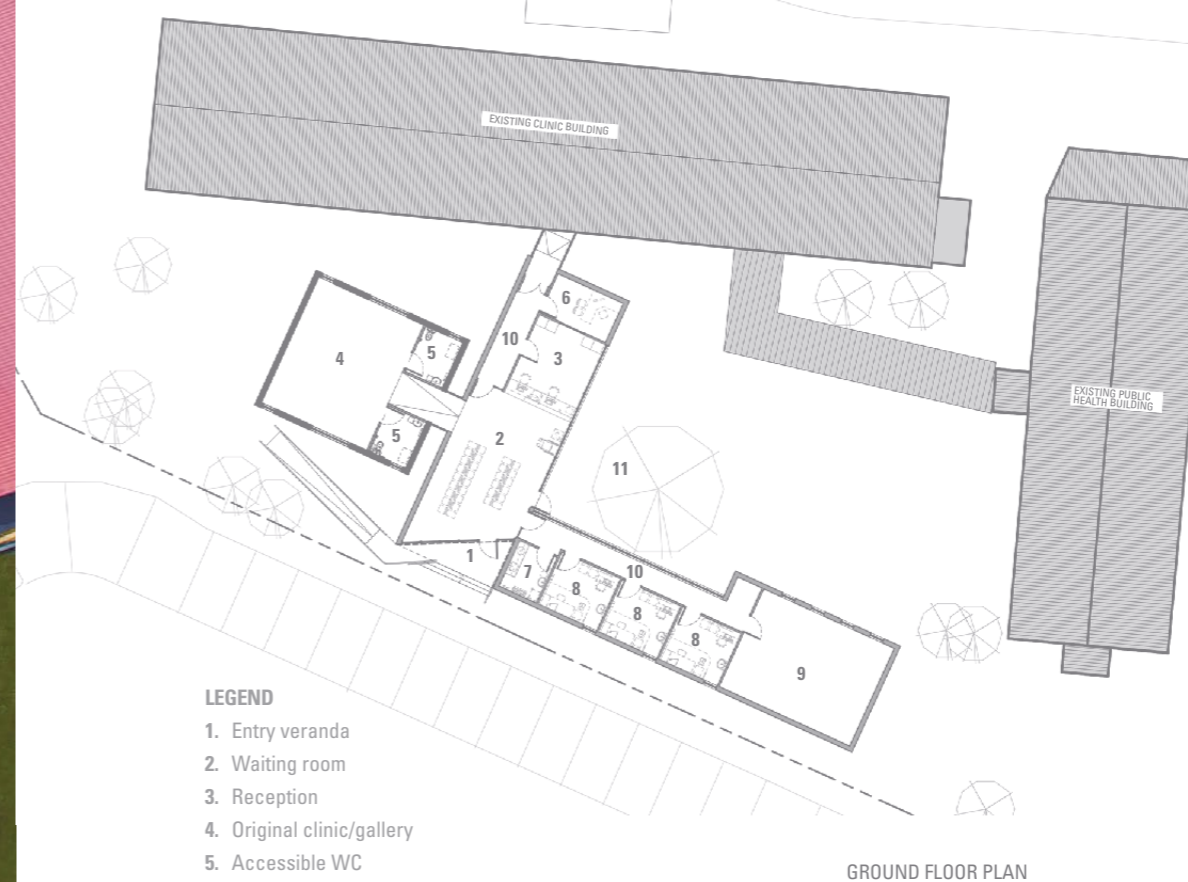
“The whole point of doing a project such as this is to provide a better standard of care, and to increase presentation rates at the clinic,” he says. “Aboriginal people tend to have complex co-morbidities, and the delivery of public and preventative health is a key element to ‘Closing the Gap’ [between indigenous and non-indigenous life expectancy, health, education and employment indicators].

The integration of artwork in the form of laser-cut screens at the entry is a key part of the building’s acceptance, Kaunitz says. “Art is an important way of Aboriginal people communicating culture, which is at the centre of their world,” he explains. “We could paint the building with murals, but we want to incorporate art in an integrated and long-term way, and that’s how the art screens came about.”

The main benefit lies in the fact there was little or no additional cost, he says. “If you didn’t have the art screen, you’d need a protective screen for the windows, and we’ve found that laser-cutting artwork has a similar cost, so it’s a way of integrating art with the building that has function and purpose.”

Kaunitz said his wife and practice partner Ka Wai Yeung joked that after their first successful art screen at Warnan in Western Australia, the firm perhaps shouldn’t install art screens on subsequent projects for fear of becoming known as a ‘one trick pony’, “But every time we do one, we have these unbelievable reactions because they are integrated in a meaningful way,” he says. “When [the artist] Eden turned up to see us on the day we took the photos, she burst into tears and was overwhelmed. It’s a beautiful thing to do.”

Building upon a body of work that aims to take architecture into unlikely places, and having undertaken extensive consultation with the local community, Aboriginal health workers, clinicians and health administrators, Kaunitz Yeung has produced a culturally-inclusive building that has broadened and improved health delivery, and increased presentation rates. Add to that a swag of architecture awards, and this project has exceeded in every conceivable measure. **SP**



LEGEND

- 1. Entry veranda
- 2. Waiting room
- 3. Reception
- 4. Original clinic/gallery
- 5. Accessible WC
- 6. Director office
- 7. Dirty utility
- 8. Consultation room
- 9. Training room
- 10. Corridor
- 11. Outdoor waiting area

GROUND FLOOR PLAN

PANEL SAYS

This new health facility may appear simple at first glance but in fact it is highly complex. It has been carefully inserted amongst existing structures – and cranks around a tree which holds great significance to the community – to create an outdoor waiting area and protected courtyard. The building’s roof and walls – wrapped entirely in cladding made from COLORBOND® steel in LYSAGHT LONGLINE 305® profile, in the colour Monument® – accentuate the architecture’s precise geometry and produces a building that recedes into the background: it is not the ‘hero’ here. Rather, the laser-cut artwork at the main entry – which performs so many functions, from ephemeral to pragmatic – is the visible symbol, and is imbued with layers of meaning. It announces the clinic’s strong links with indigenous culture and helps to make this new facility a welcoming gathering place, one that prioritises health and well-being.



PROJECT Biripi Health Clinic **CLIENT** Biripi Aboriginal Corporation Medical Centre **ARCHITECT** Kaunitz Yeung Architecture **PROJECT TEAM** David Kaunitz, Ka Wai Yeung, Louis Wong **STRUCTURAL ENGINEERING** Bruce Hutchison, Chapman Hutchison **ART SCREENS** Vashti Gonda, Di Emme **BUILDING SERVICES** Lucid Consulting **CIVIL** Coast Plan **PCA** Boyce Consulting **PRINCIPAL STEEL COMPONENTS** Roofing and cladding made from COLORBOND® steel in LYSAGHT LONGLINE 305® profile, in the colour Monument® **PROJECT TIMEFRAME** Commenced May 2016, completed March 2017 **AWARDS** 2018 Australian Institute of Architects New South Wales Chapter Awards: COLORBOND® Award for Steel Architecture; Premier’s Prize for distinguished social merit; Commercial Building Award. 2017 European Healthcare Design Award: Healthcare Design Award, and Infill or Conversion Award. 2017 World Architecture News Awards: Finalist, Healthcare **BUILDING SIZE** GFA: 275m² **TOTAL PROJECT COST** \$1 million, including GST

BUSH TUCKER

A new and colourful sight greets visitors to a new suburb in Australia's outback capital of Alice Springs, where a rich cultural history is mirrored in a multilayered and coloured fence made from COLORBOND® steel. Words **Glenn Morrison** Photography **Peter Barnes; Susan Dugdale & Associates**

At the southern entrance to Alice Springs, not far from the remote town's busy airport, is the recently-established suburb of Kilgariff.

All is generally quiet at the settlement, where there has been little to report since it welcomed residents in 2015 to the stunning landscapes of the Red Centre and the rich blue of its vast skies.

But the fence that encloses the suburb is now creating something of a stir, catching the attention of passers-by as well as those with an appreciation of architecture and craftsmanship.

The spectacle is all part of a clever and innovative design by Central Australian architects Susan Dugdale & Associates, a design which won them the 2018 Australian Institute of Architects Northern Territory Chapter 2018 COLORBOND® Award for Steel Architecture.

The fence depicts the humble bush passionfruit, a plant endemic to the river flats near the Alice Springs Airport, and an important part of the Indigenous cultures of the region.

To botanists, the bush passionfruit is known as *Capparis spinosa var. nummularia* and grows abundantly in the vicinity. To local Aboriginal group the Arrernte, the dense, spiky shrub is known as *Arrutnenge*, a widely-prized bush food.

Project architect Miriam Wallace used her pencil sketches of the plant to design the fence motif. "We wanted to do something that was 'of here'," says Ms Wallace. "Our fauna and flora are so different from everywhere else and bush passionfruit is all-around here."

A super-sized graphic of the bush passionfruit, brightly coloured and beautifully expressed in

"A super-sized graphic of the bush passionfruit, brightly coloured and beautifully expressed in steel, has been used to adorn the fence in the form of a repeating motif."

steel, has been used to adorn the fence in the form of a repeating motif.

The fence's base-level structure is designed for maximum material efficiency. Cladding made from made from COLORBOND® steel in LYSAGHT TRIMDEK® profile, in the colours Monument® and Surfemist®, runs the width of two full sheets, horizontally, spanning between cantilevered fence posts with no rails. The base colours underlap and overlap each other, variously.

A second layer of cut-to-shape cladding, also made from COLORBOND® steel in LYSAGHT TRIMDEK® profile, this time variously in the colours Mangrove®, Gully® and Paperbark®, overlays perfectly into the base layer, further building on the pattern and colour pallet – the latter of which represents the fruit's different growth stages.

The sheets of cladding made from COLORBOND® steel in LYSAGHT TRIMDEK® profile are butted neatly, aligning to create a smooth, clean finish at the fence's top and bottom. No flashings or trims were added to the edges or corners of the fence. Silicon sealant is used to prevent water reaching areas where the layers of cladding made from COLORBOND® steel in LYSAGHT TRIMDEK® profile overlap.

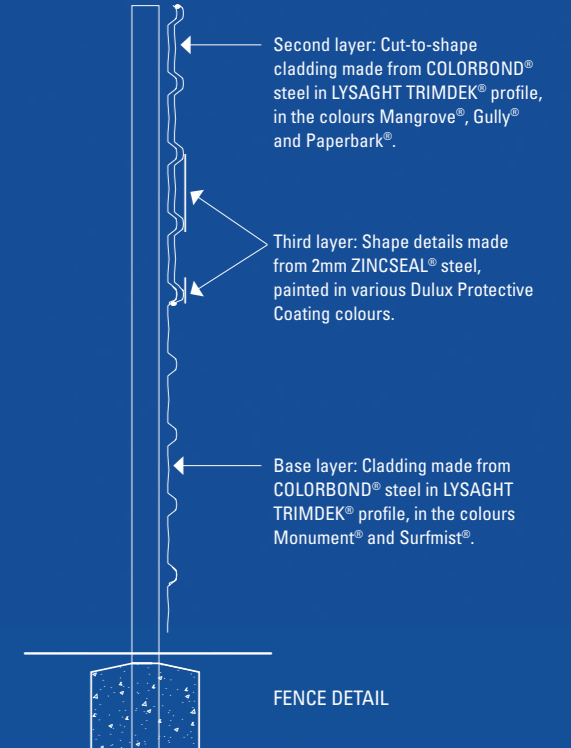
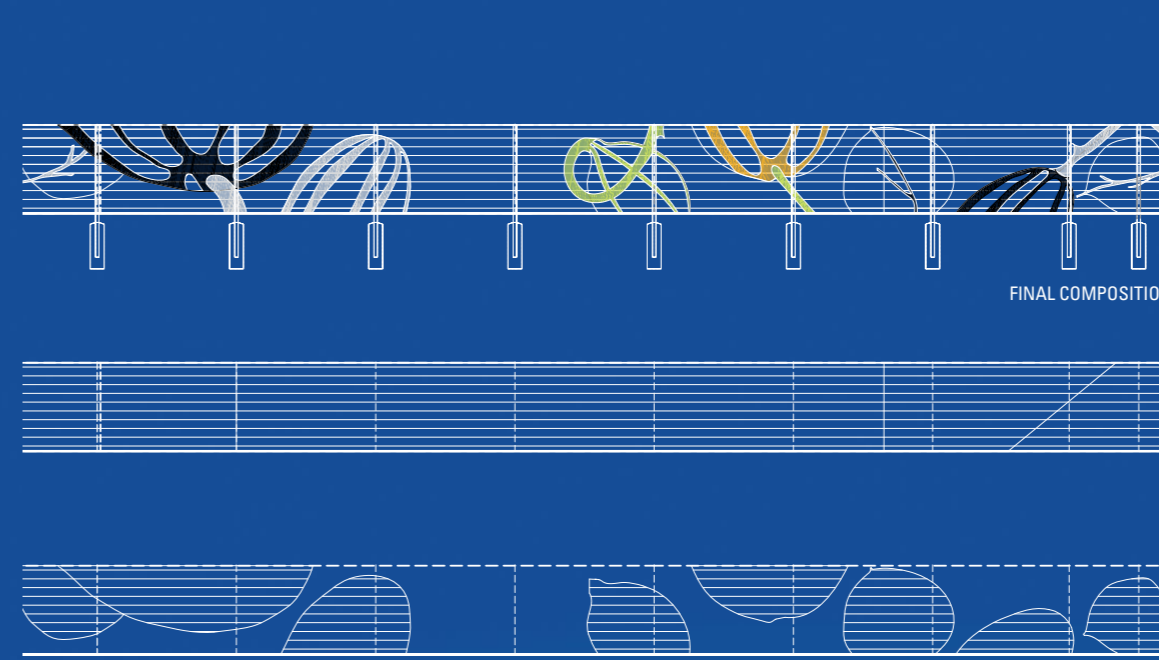
Ms Wallace gave her drawings to Alice Springs steel craftsman David Rilstone of Plazart, who specialises in cutting artistic forms.

Mr Rilstone cut the intricate shapes for the third and final layer of the fence, which is made from 2mm ZINCSEAL® steel, on a CNC plasma-cutter.

BlueScope ZINCSEAL® steel is a hot-dipped zinc/iron alloy-coated cold-rolled steel which has a smooth finish suitable for direct on-painting in critical surface applications. It was treated with a two-pack epoxy* and painted in various Dulux Protective Coating colours to form a final decorative overlay in the fence assembly.

The completed fence contributes an important sense of identity for the recently created suburb, its practicality wrapped in aesthetic flamboyance and its cultural significance providing a point of appreciation for those in observance of such kinetic beauty. **SP**

*The overpainting of BlueScope products will void any warranties issued by BlueScope. For details on overpainting and restoration of exterior steel products, please refer to BlueScope Technical Bulletin TB-2.



PROJECT Kilgariff Fence and Entry **CLIENT** Land Development Corporation **ARCHITECT** Susan Dugdale & Associates **PROJECT TEAM** Susan Dugdale, Miriam Wallace **PRINCIPAL STEEL COMPONENTS** Base layer: Cladding made from made from COLORBOND® steel in LYSAGHT TRIMDEK® profile, in the colours Monument® and Surfemist®. Second layer: Cut-to-shape cladding made from COLORBOND® steel in LYSAGHT TRIMDEK® profile, in the colours Mangrove®, Gully® and Paperbark®. Third layer: Shape details made from 2mm ZINCSEAL® steel, painted in various Dulux Protective Coating colours **BUILDER** Stage 1: Sitzler Bros. Stage 2: Patrick Homes & Construction **STEEL FABRICATOR** Plazart/Ross Engineering **STRUCTURAL & CIVIL ENGINEER** NJA Consulting Engineers **LANDSCAPE ARCHITECTS** Tony Parkin **PROJECT TIMEFRAME** April 2014 - August 2015 **AWARDS** 2018 Australian Institute of Architects Northern Territory Chapter 2018 COLORBOND® Award for Steel Architecture





STEEL PROFILE #129



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LOW CLEARANCE 2.25 METRES