STEEL PROFILE

ARCHITECTURAL INNOVATION WITH BLUESCOPE JULY 2025 134

JPE DESIGN STUDIO
SEATON HIGH SCHOOL LEARNING CENTRE

BKK ARCHITECTS AND KERSTIN THOMPSON ARCHITECTS
THE ROUND PERFORMING ARTS CENTRE

F2 ARCHITECTURE
FIVE VINEYARD

Clad in COLORBOND® steel, boutique Victorian winery Five Vineyard makes a bold architectural statement.

Editor’s letter

Welcome to STEEL PROFILE® Edition 134.

In this issue, we’re proud to showcase a diverse collection of projects that demonstrate the beauty, strength and versatility of steel. From major public works to a modest coastal retreat, each project reflects steel’s evolving role in contemporary architecture – not just in form and function but in its ability to respond to place, purpose and people.

Once considered a purely industrial material, steel has become a canvas for creativity – a design medium that can be coloured, rolled, folded, cut and curved into sculptural architectural forms. This edition celebrates steel’s transformation at the hands of those who shape it into something exceptional – architects and designers who bring depth, nuance and narrative to their work.

As always, STEEL PROFILE® places architects’ creativity front and centre. In addition to the five feature projects, we’re honoured to share insights from Ben Peake of Carter Williamson and Jennie Officer and Trent Woods of Officer Woods Architects — the acclaimed practice behind the award-winning Spinifex Hill Project Space, recipient of the 2024 COLORBOND® Award for Steel Architecture.

We’re always looking for stand-out projects that push the boundaries of what’s possible with steel. If you have a project you’d like us to consider for a future edition, we’d love to hear from you.

In the meantime, I hope you enjoy the carefully curated projects in STEEL PROFILE® Edition 134, each offering a glimpse into the innovative thinking and creative vision behind them. And explore previous editions for more inspiration.

BlueScope managing editor
Michelle Gissel

ISSUE 134

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PROJECT FIVE VINEYARD **LOCATION** MERNDA, VICTORIA

A Fine Vintage

Architect F2 Architecture
Words Mitchell Oakley Smith
Photography Daniela Fulford

On the outskirts of Melbourne, Five Vineyard pays tribute to the iconic Australian farm shed, where the modern lines of Mack Bros' Straightline 406 Roof Decking made from COLORBOND® steel bring the classic form firmly into the 21st century.

ABOVE The shed, elevated – that was the design thinking behind the striking main building that forms the centrepoint of Five Vineyard.

RIGHT The overhangs aren't just aesthetically pleasing: they create both expansive terraces for visitors to enjoy views and provide protection from the weather.

The typical architecture of the Australian farm shed is irrevocably etched in our collective cultural psyche, its open gable facade a familiar sight across an incredibly broad range of terrain and climates. That these structures are so prevalent owes much to their ease of construction, and the arrival of corrugated iron in Australia in the mid-19th century proved the perfect building material, providing strong yet lightweight protection against the elements. So, as the country's population grew in tandem with its agricultural prosperity, the shed became more and more ubiquitous within the Australian landscape.

It was this historical context that informed F2 Architecture's design approach to Five Vineyard, a boutique winery in Mernda, an hour's drive north of Melbourne. Looking for a modern interpretation of this classic form, F2 Architecture's design emphasises the clean lines of Mack Bros' Straightline 406 Roof Decking profile to create the building's roof and upper-exterior wall cladding. With its prominent rib and flat pan, and running in single sheets from the roof's peak to its eaves, the wall cladding forms a continuous, smooth outline against the skyline. The moody, near-black hue of the cladding – made from COLORBOND® steel in a Matt finish in the colour Monument® – provides both a stunning contrast to the green of the surrounding vineyards and an elevated sense of drama.

For Mathew Sheahan, managing director of roof plumbing company Sun Installations, a building like this, which so strongly references Australia's rich heritage of farm sheds, could only be crafted from one material – steel. "I love steel," says Sheahan enthusiastically, noting it was his early background in metallurgy that first exposed him to the material. "It's flexible, but then it's also so strong and it looks good."

Franco Fiorentini, founder of F2 Architecture, cites the many virtues of COLORBOND® steel – including its durability, recyclability and low maintenance – as reasons why it was specified for the project, but there was a higher purpose in his broader vision for Five Vineyard. "We allowed the landscape to flow underneath, connecting directly to the visitor spaces," he says. "The gesture is reinforced by the use of natural and more tactile materials like stone and timber. The generous overhangs also accommodate all the building services, concealed within to allow the roof to read as a simple, discrete form in the landscape, which results in a very elegant outcome."

Opened in 2023, a decade after planning first began, Five Vineyard plays with the nostalgic shape of the shed to craft a modern iteration of its form. In paying homage to the iconic building, it's also intended to celebrate the region's history. "The land is a remnant of what was once thriving farmland," says Fiorentini. "Surrounding the vineyard is a quarry to the west, the Hume Freeway and heavy industrial development to the east and the south, and very dense new residential development, so the whole area has changed dramatically.

“The owners had this idyllic remnant, a picturesque piece of land with a topography of rolling hills. Careful placement of the building disguised it from the presence of all those neighbours. For a moment, when you are there, you feel like you’ve escaped to the country.” The thoughtful siting provides a rich appreciation of the rural heritage of the area prior to urbanisation and provides a stunning vista to be enjoyed by the growing community surrounding the winery.

A winery is an incredibly complex composition of zones, particularly in the case of Five Vineyard, which doubles as a public space, too. It features a cellar door, 70-seat restaurant, private dining area, outdoor terrace bar and 100-person function venue, all sitting within the overarching 2,700-square-metre footprint. A consideration in the brief was the need for this small independent vineyard, so close to the city, to be a commercial success.

Given Fiorentini’s background, it stands to reason that the Vella family, the owners and operators, sought his expertise for the project. As founding director of F2 Architecture, which was established in 2002, Fiorentini has extensive experience in urban, civic and cultural design, as well as master planning – skills applied to great effect in the Five Vineyard project. Fiorentini recounts his experience as design director of the National Gallery of Victoria redevelopment more than two decades earlier, detailing the challenges in dealing with the public-private interface of major buildings. “Over time, it becomes intuitive to design the building and the setting simultaneously.”

Far from the random placement of an elaborate shed on a plot of land, Five Vineyard is the result of a comprehensive gestation period in which the site’s topography was mapped against the layout of vines, and every element of the working winery was deliberately considered to create a highly functional space.

From a distance, the gabled steel roof juts up towards the sky in a singular peak. Up close, the wall cladding, made from COLORBOND® steel, is elevated above ground-floor level to reveal a series of expansive, sun-drenched terraces on the north, east and west sides, capturing views across the vineyard.

“Generally, a shed isn’t very welcoming: it’s a shape with a door,” explains Fiorentini of the decision to intentionally thwart the traditionally anchored structure. “We thought that if we elevated it and let it hover above the ground, then we could bring the land in underneath it.” This approach has the benefit of providing protection from the intense sun and the driving rain while framing the best views of the vines from which Five Vineyard’s chardonnay and shiraz grapes are harvested.

The winemaking and cellaring zones are located underground, freeing up the ground floor for hospitality areas, enhancing the building’s welcoming presence and allowing visitors to navigate freely through the open spaces. The drama created by the captured light and views is emphasised with the contrasting shadows cast by the expansive overhangs, which also provide sheltered areas for relaxation and dining.

“We took the essence of the shed but abstracted it while preserving its simplicity,” Fiorentini says. “The shed’s underlying attraction is that while it’s crude and manmade, it is common in the rural landscape. It’s not trying too hard to be architecture and this is very important for Five Vineyard, which, after all, is a building about the land.”

The building operates and looks exactly the way it was intended to, no doubt due to the extensive master planning undertaken at the project’s outset. “I’m pleased,” says Fiorentini, “because I think we got the siting right: when you stand on the terrace, for example, you don’t see cars, you just see the vines in the distance.

“The views are where we planned them to be. When you look west, there’s a little hillside that disguises the view of the industrial areas. When it was all finished, the client looked at me and said, ‘It’s just like you said,’ so that’s pretty satisfying.”

Gary Robertson, the building’s construction project manager, noted in particular Fiorentini’s consistency of vision: “He was very, very specific about the finish and the look of the wall cladding on the outside, and that didn’t really change from day one. It’s built exactly the way it was planned.”

“The generous overhangs accommodate all of the building services, concealed within to allow the roof to read as a simple, discrete form in the landscape.”

FRANCO FIORENTINI F2 ARCHITECTURE

OPPOSITE The almost-black hue of the wall cladding – made from COLORBOND® steel in a Matt finish in the colour Monument® – not only brings drama to the site but provides a sublime contrast with the vineyards and landscaping.

STEEL DETAILS | A TECHNICAL DIVE INTO FIVE VINEYARD

Mack Bros' Straightline 406 Roof Decking, with its prominent rib and flat pans, uses concealed fixing clips, eliminating the need for unsightly screws, adding to the building's clean lines.

To avoid visual joins, single sheets of the profile run from the peak of Five Vineyard's roof to its eaves. While only 406 millimetres in width yet more than 20 metres in length, it was imperative that each sheet was laid precisely to measure.

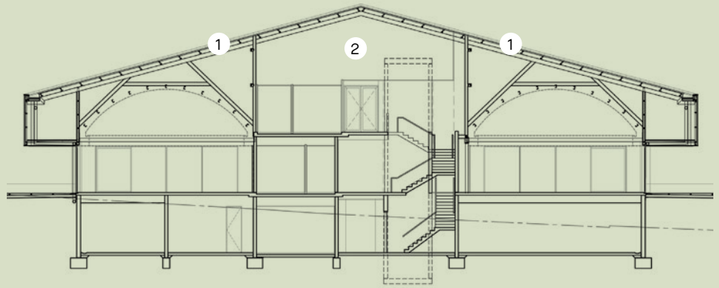
"You've only got to be two millimetres out on sheets and then you're 20 millimetres out," says Sun Installations' Mathew Sheahan, who oversaw the roof installation.

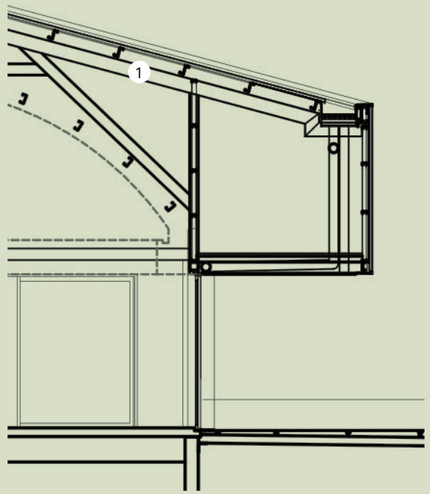
Another challenge posed by the length and lightness of the sheets was the wind, amplified by the exposed nature of the site, atop a hill. Architect Franco Fiorentini concedes that nature is one of the uncontrollable variables in a project like this. "The long, continuous sheets look great because you don't get ugly joins," he says. "However, it requires being really careful when lifting, but thankfully there weren't any dramatic unforeseen circumstances."

For Sheahan, there were more practical benefits to the use of Straightline 406 Roof Decking beyond its very pleasing aesthetic. The concealed-fix clips replace unsightly screws that perforate the surface of the wall cladding.

The roof sheets are ingeniously installed by easily clipping each sheet together as they are put down, the brackets concealed within the height of the 48-millimetre rib. This design has the added advantage of channelling water run-off, enabling installation on roofs pitched as low as one degree.

ABOVE "I think we got the siting right," says Fiorentini. "When you stand on the terrace, for example, you don't see cars, you just see the vines in the distance."





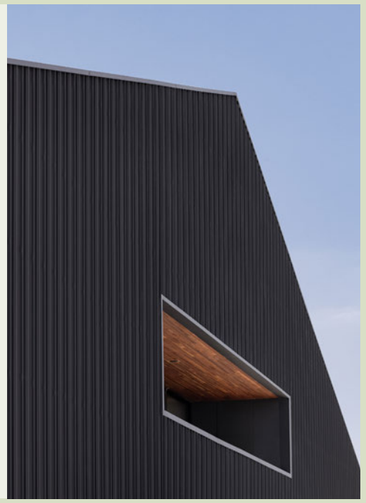
Principal steel components

1 *Roofing*
Mack Bros' Straightline 406 Roof Decking made from COLORBOND® steel in a Matt finish in the colour Monument®.

2 *Wall cladding*
COLORBOND® steel in a Matt finish in the colour Monument® in Mack Bros' Straightline 406 profile.

TOP An east-west sectional view of the building.

ABOVE A close-up of the overhanging roof structure.



PROJECT INFORMATION

Client
Five Vineyard

Architect
F2 Architecture

Project team
Franco Fiorentini, Matthew Montgomery, Vivienne Mackley, Jeffrey Domingo, Shin Yap, Gim Ong

Building size
2,840m^2

Landscape design
Davidson Design Studio

Cost consultant
Stephen J. Pitney & Associates

Structural engineer and civil consultant
KD Engineering

Services engineer
BESTEC

Construction team
CSM Building

Roofing contractor
Sun Installations

Roofing supplier
Mack Bros

PROJECT SEATON HIGH SCHOOL LEARNING CENTRE
LOCATION SEATON, SOUTH AUSTRALIA

The Future Is Bright

Architect JPE Design Studio
Words Shelley Tustin
Photography Sam Noonan

Tasked with creating an innovative learning environment which would also assert Seaton High School's identity as a progressive education centre, JPE Design Studio aimed high. Bold angles and lofty parapet walls, clad in COLORBOND® steel in the vertical-ribbed Fielders Prominence® 265 profile, reach for the sky – serving as a metaphor for the students' limitless potential.

Traditional school buildings aren't known for exciting design, but the Seaton High School Learning Centre is a worthy exception. From its fresh and adaptable interiors to the distinct angles of the facade – elegantly clad in COLORBOND® steel in a Metallic finish in the colour Conservatory®[1] – the architecture reflects the school's purpose as a leader in innovative education.

The project was born from a practical need: for additional space within the at-capacity Seaton High School, located in Adelaide. Meeting this brief required refurbishing some existing structures, constructing two new single-storey interconnected buildings, and delivering the jewel in the school's crown: the two-storey Learning Centre. This striking addition has visually revitalised the campus and earned accolades, including the Award for Educational Architecture at the 2023 South Australian Architecture Awards.

Seaton High School is one of five entrepreneurial schools in the state, designed for kids with one foot in the classroom and one foot reaching toward the adult world. An initiative of the South Australian Department for Education, entrepreneurial learning schools take a 'real-world' attitude, developing creativity and resourcefulness, and applying knowledge in a practical context. To deliver this objective, the students deserved a learning space that felt more inspiring and less like a classroom. "We wanted to create a playful atmosphere with adaptive and agile spaces to meet the needs of an entrepreneurial specialist school," explains JPE Design Studio lead architect James Dujmovic.

In contrast to the original school structures, the new buildings channel a modern view of educational environments. "There was a movement towards all open classrooms – everything was open, everything was glass, everything was flexible," Dujmovic says. "One of the things we've learnt over the past decade in education is that successful schools are actually the ones that have a variety [of traditional and open classrooms], because not all students learn and not all teachers teach the same."

Thus, the building plan is characterised by flexible spaces. Areas can be divided into smaller classrooms that extend into dynamic collaboration spaces. There are breakout zones for quiet study and generous open areas that lend themselves to community events. The latter was an essential feature; part of the specialist education program involves partnerships with the wider community, businesses and industries, so the Learning Centre needed to be designed with a wide range of users in mind.

The nature of the build – a new structure nestled among the original school buildings – meant that the project had to start with a sympathetic design that minimised the impact on the existing structures. "We wanted to make sure these new buildings weren't blocking the old buildings from natural light and ventilation – placement of the new buildings was key," says Dujmovic.

The shape and position of these secondary buildings were also determined by the site's existing trees – as JPE worked to protect the tree root zones – and visually incorporated the leafy canopy into the outlook from the upper storey. Starting with a simple 'L' shape, the building form was flexed into the open ground around the canopy of existing trees, hence a far more organic topology was created that connected harmoniously with the surrounding landscape.

In elevation, too, the building expresses a sense of playfulness and movement, with diverse angles around the windows, hiding and revealing pockets of the interior to an outside observer. From within, these angled apertures create a connection with nature and a sense of being cradled within the canopy. "We wanted to have certain areas that peeled up and expressed what was happening inside, but also looking out at the trees from that higher level, bringing them into the inside space."

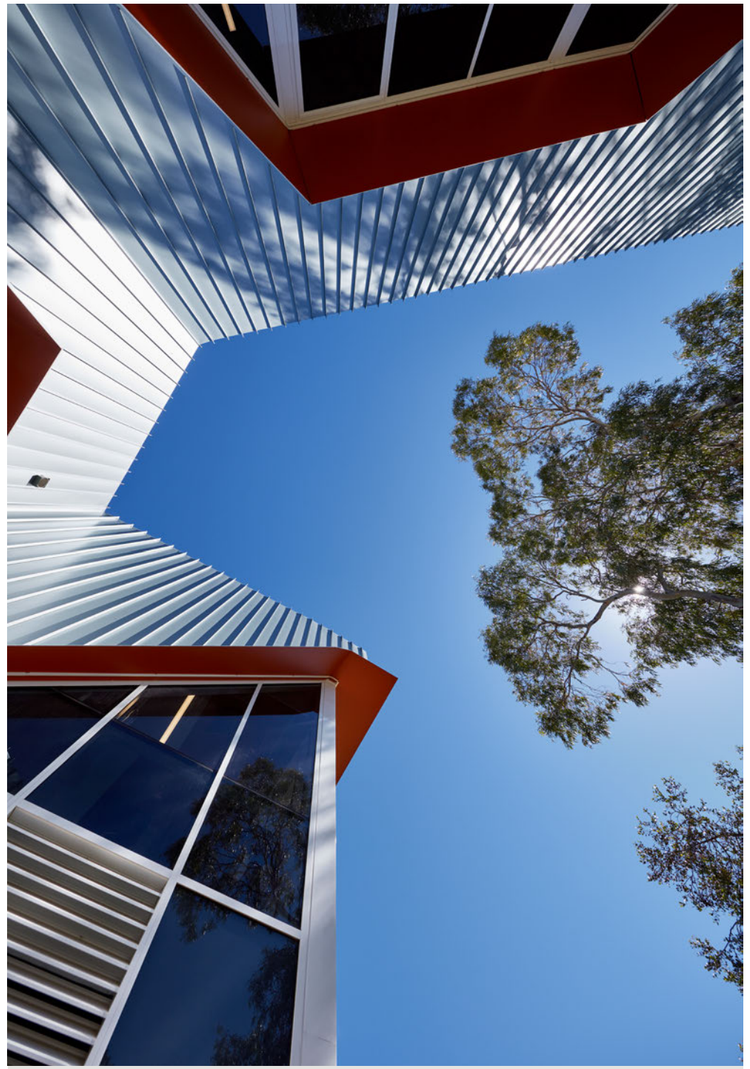
Dujmovic says the canopy casts an ever-changing pattern of shadows that works in perfect conjunction with the building's standout feature – wall cladding made from COLORBOND® steel in a Metallic® finish in the colour Conservatory®. The narrow ribs of the Fielders Prominence® profile cast shifting shadows across the varied angles and planes of the facade.

While lifecycle cost – the expense and effort of maintaining materials – is always an important factor, it's particularly relevant for public buildings, where these costs are drawn from public funds. Advising on these maintenance costs, project manager Alan Johnson of BADGE Constructions felt very comfortable recommending cladding made from COLORBOND® steel for the project.

"We have a requirement to provide maintenance information," Johnson says. "Metal cladding products normally offer a warranty and require minimal maintenance." The long-lasting aesthetic and functional durability of the cladding made from COLORBOND® steel help minimise maintenance costs, while the building remains looking fresh and sharp.

Aesthetics aside, design decisions on a large public project such as this often come down to the bottom line. "The cladding went up quite efficiently," Johnson says, "without the need for a lot of cutting and measuring, which is very time consuming."

The Fielders Prominence® wall cladding, with a 265 cover width, was manufactured in long sheets, allowing two people to position them during installation. "It was cost efficient as scaffold was not required," continues Johnson. The cladding installers, Impact Cladding Systems, were able to pass the nine-metre full-length sheets up the facade safely and efficiently. The choice of cladding allowed JPE and BADGE to create an inspiring sculptural structure – one that will engage students and capture their imaginations long into the future.



> "We wanted to create a playful atmosphere with adaptive and agile spaces to meet the needs of an entrepreneurial specialist school."
>
> **JAMES DUJMOVIC** JPE DESIGN STUDIO

OPPOSITE The school's expansive tree canopy casts lovely shadows across the exterior, highlighting the silvery hue of the COLORBOND® steel in a Metallic finish in the colour Conservatory®.

[1] The colour Conservatory® was discontinued in 2022. The closest equivalent in the COLORBOND® steel Studio range is Solstice®.

“We wanted to have certain areas that expressed what was happening inside, but also looking out at the trees ... bringing them into the inside space.”

JAMES DUJMOVIC JPE DESIGN STUDIO

ABOVE It was essential that the new learning centre sit congruously with Seaton High School’s existing buildings.

STEEL DETAILS | A TECHNICAL DIVE INTO SEATON HIGH SCHOOL LEARNING CENTRE

With its wealth of interesting angles, protrusions and concavities, the Learning Centre is an ensemble cast of focal points. And yet the cladding made from COLORBOND® steel stands out as the star character.

JPE Design Studio considered many different options – including an alternating mix of profiles – but ultimately chose wall cladding made from Fielders Prominence® 700 in COLORBOND® steel in a Metallic finish in the colour Conservatory®[1], which combines broad flat pans with sharp vertical ribs.

As project architect James Dujmovic explains, "This allowed us to have a kind of sharp, rigid detail, but also allowed a lot of flexibility when we changed angles and proportions and directions, draped around the building like a veil." The vertical rib enhances the detail of the parapet design further – the panel ribs extend past the building's summit, reaching for the sky and creating a seamless look, without a visible hard edge separating walls and roof.

"The architect wanted that sort of finned look, so as it returns over the roof, you see the fins rolling up and over," says project manager Alan Johnson.

Working closely with Fielders, a custom capping was developed for the parapet walls that is reminiscent of infinity edge detail, visually softening the finished edges of the wall cladding. Referred to as a mansard capping, Dujmovic explains that it was "trickier putting that detail on the angles, so we had to work harder to come up with a solution".

Invisible from the ground, the roof is made from COLORBOND® steel Shale Grey™ formed into Fielders KingKlip® 700 profile. Characterised by a strong rib appearance that rises from broad flat pans, this concealed-fix profile delivers strong, uninterrupted lines over long spans with the ability to accommodate thermal expansion.

Colour was also a carefully considered element in the choice of cladding, with a pale tone chosen to be more visually sympathetic to the site. The chosen hue – Conservatory®, which is a Metallic finish – also adds a dynamic element to the design.

"It's a pretty special product, in the way the metallic changes colour slightly," says the architect. "On days when it's a bit darker, it's more of a steely kind of blue. And then when the sun hits it, it goes into a little bit of a greeny tinge. It's a really active kind of facade."

[1] The colour Conservatory® was discontinued in 2022. The closest equivalent in the COLORBOND® steel Studio range is Solstice®.

Principal steel components

1 *Roofing*
COLORBOND® steel in the colour Shale Grey™ in Fielders KingKlip® concealed fix profile.

2 *Wall cladding*
COLORBOND® steel in a Metallic finish in the colour Conservatory® in Fielders Prominence® profile.

OPPOSITE, TOP AND MIDDLE The north and west elevations of the Learning Centre show the positioning of existing trees.

OPPOSITE, BELOW A longitudinal section of the new building.

PROJECT INFORMATION

Client
Department for Education South Australia and Seaton High School

Architect
JPE Design Studio

Project team
James Dujmovic, Josephine Evans, Michelle Male, Natasha Qiu, Andrew Staker, Kelsie Lafont-Hamon, Janelle Arbon

Building size
2,200m^2

Project timeframe
2.5 years

Project cost
$15.3 million

Builder
BADGE Constructions

Project managers
Department for Infrastructure and Transport – South Australia and BADGE Constructions

Roofing and cladding contractor
Impact Cladding Systems

Steel fabricator
Advanced Steel Fabrication

Structural and civil engineer
Wallbridge Gilbert Aztec

Building services engineer
BESTIC

Landscape architect
JPE Design Studio

Landscape contractor
Adelaide Innovative Landscaping

Awards
2023 AIA 2023 South Australian Awards, commendation for New Buildings or Facilities – Large

IN PROFILE

Ben Peake

Words Shelley Tustin
Photography Brett Boardman

Architect Ben Peake uses the contradictory properties of steel – rigidity and flexibility – to form striking shapes and create modern architectural icons.

How do you bring joy to a space? That's the question Carter Williamson architect Ben Peake asks as part of his design process on every project. And joy is indeed a signature element of the Sydneysider's work, which features whimsical shapes, supported by the strength and precision of steel.

Awarded the 2023 Australian Institute of Architects' National Emerging Architect Prize, Peake has already made quite an imprint on the architectural landscape, despite coming to it a little later than most. His path to architecture took a circuitous route through 10 years as a business analyst, a role in which he enjoyed professional success but not personal fulfilment. "Around that same time I was travelling – from Marrakesh to Paris – and I was really taken by the built environment, seeing the contrast between those places," says Peake. This reignited a dormant passion for architecture and – after much soul-searching – led him to enrol in an architecture degree just short of turning 30.

Switching fields would be a full-time challenge for most, but Peake's career to date has been notable not just for his award-winning projects with Sydney firm Carter Williamson but also for his advocacy work within the industry. Driven to promote representation and diversity, he is one of the co-founders of Architecture with Pride and a member of the Australian Institute of Architects National Committee for Gender Equity. "I came to this career a little bit later and I felt like I had time to make up for," he says. "I think that has motivated me to contribute and be engaged beyond what I'm employed to do."

He has taken a leadership role in the heritage conservation space, too, driving Sydney's Save Our Sirius campaign. The campaign fought to preserve the Sirius Building in The Rocks, which is not only a rare and striking example of brutalist architecture, but also a thoughtfully designed example of successful, community-focused public housing.

Peake's work on Save Our Sirius stamps him as a conservationist, but his attitude toward heritage buildings is more nuanced than absolute. "We've always said that not every building can be kept. But great examples of architecture need to be retained because they tell our story. We can't be a city with just beautiful sandstone colonial architecture and shiny new office buildings. Where is the stuff that happened through the middle, the mid-century stuff, the brutalist stuff? We should be keeping great examples of that."

This idea of architecture being a record of history similarly informs Peake's approach when working on existing heritage buildings, motivating him to preserve their period character, but with a contemporary twist that reflects the modern way of life of the current occupants. "It's the best of both worlds – the beauty and the detailing of the original, and then, in the addition, something that's very Sydney and very Australian, open to the landscape, the light and the air."

When creating this contemporary contrast, Peake frequently leans toward steel, which provides the flexibility and precision required for creative freedom. "We often use the word 'playful'. There's something in a lot of our

ABOVE The striking form of harbourside Wurrungwuri in Sydney unites concrete, glass, steel and stone.

projects that is a little step to the left or a little different to what you might expect," he says, explaining that there's always an intention to elevate the home and provide something special. "Of course it's providing a function in supporting the family, but it's also a little piece of architecture."

A good example of this dynamic contrast between old and new, established and avant-garde, is Wurrungwuri. The Carter Williamson project in Sydney's Birchgrove presents to the street as a quaint sandstone cottage, then unfolds into an expansive harbour-facing extension at the rear, characterised by two glazed wings that curve out towards the water, like pieces of ribbon. The custom, steel-framed windows are integral to this design, emphasising the gentle curve of the upper floor while providing a shield for the recessed glass panels. "They provide solar protection and also privacy to the neighbours while allowing views to the water."

The versatility of steel is illustrated in one of Peake's defining projects, the Woodcroft Neighbourhood Centre in Sydney's west, which is distinguished by a serpentine roof created with cladding made from ZINCALUME® steel in Fielders FreeForm® profile. The centre earned Carter Williamson a slew of awards, including the Fielders Made Design Award – Roofing and Walling.

The 'squiggle' line of the roof serves a practical purpose, with taller sections housing the double-height foyer and main hall and lower sections proportionally appropriate for the more intimate spaces within. Peake explains the further reasoning behind this whimsical design was that the previous public building had been destroyed by arson; thus, the intention here was to create a space that the community would connect with and be proud of. "Even at a distance, people can see that it's different to everything else in the neighbourhood and therefore conveys it as being a significant community place."

Steel was integral to the success of the design. Fielders FreeForm® was able to deal with the complex changes in geometry. Rollformed on site, sheets were profiled and shaped to the project's unique requirements. "We had the confidence that the profile would be able to be shaped without compromise to the design."

The precision and efficiency of steel when profiled to capture these extraordinary shapes with very little material wastage make it a fundamental material in Peake's design palette. Unsurprisingly, however, given his work on heritage buildings and architectural preservation, he also designs with an eye to the future and appreciates the longevity of steel. "We work in heritage areas quite a lot and if the building has been there for 100 or 150 years, if we're going to put in new architecture, we want to bring a sense of longevity." On the flip side, he adds, "Not all buildings have that lifespan in them, so it's also good to know that there's recycling and reuse of [steel] materials as an option if a building was to be demolished in the future."

While considering a project's potential end-of-life impact is good practice, Ben Peake looks set to make a lasting mark on the architectural landscape, as long-lasting as the steel products he designs with.

"We had the confidence that the profile would be able to be shaped without compromise to the design."

BEN PEAKE CARTER WILLIAMSON

OPPOSITE Woodcroft Neighbourhood Centre in Sydney's west is distinguished by a serpentine-like roof that reflects the flexibility of Fielders FreeForm®, made from ZINCALUME® steel.

THIS PAGE The roof's peaks and troughs reflect the different volumes of the interior.

PROJECT THE ROUND PERFORMING ARTS CENTRE **LOCATION** NUNAWADING, VICTORIA

In the Round

Architects BKK Architects and Kerstin Thompson Architects
Words Brad Scahill
Photography Daniela Fulford

Innovative light gauge steel framing made from TRUECORE® steel and a sculptural crown clad in COLORBOND® steel underpin the striking design of this multi-award-winning performing arts centre in Melbourne's east.

Located at the intersection of several community amenities in the Melbourne suburb of Nunawading, The Round Performing Arts Centre is a project of both local and civic significance. Designed collaboratively by BKK Architects and Kerstin Thompson Architects, The Round was envisioned to be a hub of community engagement, performance, entertainment and celebration for the area. Here, framing made from TRUECORE® steel and roofing and wall cladding made from COLORBOND® steel in a Metallic finish in the colour Callisto® have been applied in innovative ways to achieve a building of understated theatrics – a manifestation of the performances held within.

The project brief was to create a new performing arts centre to replace an existing building which, albeit beloved, was no longer fit for the demands of the wider community. "We didn't want to create a big corporate-feeling building," explains George Huon, principal of BKK Architects. "We were trying to make a building with the intimacy of the original, although it's a significantly larger facility."

RIGHT Solid masonry and steel form the harmonious materiality that underpins The Round Performing Arts Centre.

Huon alludes to the challenge of scale in what is essentially a suburban setting, a factor that defined much of the design process. Although part of an existing civic precinct close to several other community amenities, the site is somewhat separate, set back from the main road and located in a rich landscape of verdant parklands. The creation of a new multipurpose facility here would mean a building that would be exposed and visible on all sides and that would present its elevations in all directions. Hence, the design response, Huon says, needed to be addressed with the wider precinct in mind.

This strategy was underpinned by the concept of a building in the round – one with no distinct front or back, and which would address all edges of the parkland setting with equal importance. To the north and west, the area is largely residential, with larger-scale commercial, civic, retail and sporting facilities to the east and south. At a natural centre point, The Round would sit within a planted, open green space and would exist as a bridge between disparate architectural styles.

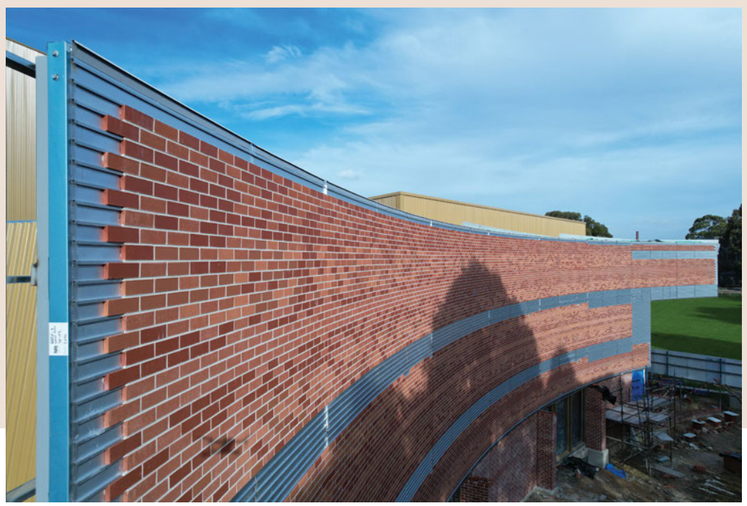
"The project needed to sensitively address each of these conditions," says Huon, explaining the important influences of the community context to the building's volume. "The geometry evolved in response to these precincts, shaping its final form. It was very much about drawing the full circle and then these smaller pockets, so there are big sweeping curves, which are much more about events, and then there are smaller, more discreet areas where there's bench seating integrated … more about human scale." Influenced by the existing context, the building began to take shape.

The two-storey facade of The Round is articulated as a series of sculptural, curving volumes that intersect with a sense of weightlessness, as your gaze moves from the solid masonry form to the sky and landscape beyond. Huon explains that the centre's materiality was influenced by both its residential setting as well as the historical use of brick and clay in the Nunawading area. "The building embraces the idea of the suburbs and the everyday through a reinterpretation of the red-brick vernacular. It uses a combination of traditional hand-laid brick and a lightweight brick system to optimise the use of prefabrication off-site … to deliver the curved, striated brick building envelope."

Here, Huon references the success of the framing used to streamline the construction process and mitigate challenges on site. Although the ground floor is finished with standard brick-and-mortar cladding, the upper storey was uses a lightweight brick slip installed within a custom track and affixed over prefabricated panels comprising lightweight, strong and versatile light gauge steel (LGS) framing made from TRUECORE® steel. In essence, the framing was key in enabling the striking, curved masonry facade to take shape.

> "The building embraces the idea of the suburbs and the everyday through a reinterpretation of the red-brick vernacular."
>
> **GEORGE HUON** BKK ARCHITECTS

OPPOSITE The building's curvaceous form was a response to the site, an open setting surrounded by parkland and diverse-use zones.



BELOW The upper storey's brick slips are affixed to prefabricated panels comprising light gauge steel framing made from TRUECORE® steel.

The application of this innovative solution achieved efficiencies on site without compromising the design narrative. "It very much feels like it's a real brick building," says Huon, reflecting on the successful illusion of the brick slip supported invisibly by the LGS framing. "Creating the impression of mass associated with masonry was quite important. We didn't want it to feel thin."

Although the material palette is anchored by the extensive use of brick, a selection of complementary finishes imbues The Round with a sense of elegance befitting a performing arts centre. Atop the building, extending in an upward curve and reaching beyond the roofline, is a golden crown in COLORBOND® steel in a Metallic finish in the colour Callisto®. Contrasting against the skyline, this distinctive form – a reflection of the fly tower for the 600-seat proscenium theatre – has become a local landmark. Additionally, the golden hues of Callisto® – from the COLORBOND® steel Studio range of 200-plus colours and finishes – have been woven into finishing elements of both the facade and interiors.

LYSAGHT SPANDEK® profile was shaped skilfully to create the impression of it being gently draped over the roof and wrapped around the edges of the fly tower. The profile of the roofing and wall cladding – and the striking Callisto® colour – creates a dynamic volume that appears to subtly move under varying light conditions. "It changes throughout the day," says Huon. "It's quite interesting in different lights – on a grey day, it can be fairly mute, but when it's sunny, it really sparkles."

The inherent challenge of a civic building like The Round is in the occupation of the interior spaces and the subsequent impact to the exterior. Integrating a proscenium theatre, a black box studio theatre as well as backstage and back-of-house facilities (in addition to many other functional areas) in a building without a back 'edge' requires a deft handling of space. The design places the interior zones along the building edges as components that shape the form of the architecture. Small intimate areas in the surrounding topography are anchored by a substantial garden amphitheatre, which enables the interior to open up via an operable stage door, connecting the performing arts with the parkland.

For BKK Architects and Kerstin Thompson Architects, the success of the arts centre is evident in the renewed vibrancy at the heart of the Nunawading community, alive with the comings and goings of informal use as much as festivals, shows and performances.

As a building defined by an iconic form that draws heavily from its context, the integration of frames made from TRUECORE® steel, with roofing and wall cladding made from COLORBOND® steel, was critical to the success of The Round Performing Arts Centre.

With the tones of Callisto® woven throughout, this beloved community centre has been completely reimagined, bringing a sense of richness and occasion to the experience of the arts.

STEEL DETAILS | A TECHNICAL DIVE INTO THE ROUND PERFORMING ARTS CENTRE

As a building defined by the sweeping curves of a sculptural form, The Round Performing Arts Centre presents an architectural language of solidity, with a collection of brick volumes often composed into moments of seemingly impossible weightlessness. Lightweight yet strong, the structural framing made from TRUECORE® steel was crucial in supporting the brick facade system above the ground level, enhancing both the design and construction outcomes to achieve an elegant and cohesive identity.

A collaboration between Kane Constructions, CMG Frames and Modular Masonry, the concave facades of The Round were identified early in the design process as an opportunity to streamline construction. Although the ground floor consists of traditional bricks and mortar, the upper storey presented the challenge of a typically heavy material in an unexpectedly lightweight composition. By way of a brick-slip cladding supported by light gauge structural framing made from TRUECORE® steel, the project team devised a prefabricated facade system that led to multiple efficiencies during construction.

"The build was a large-scale, complex project," says Dan Thomson, business development manager of CMG Frames, "which combined multiple curved and straight prefabricated wall panels to deliver a dynamic articulated form." The complexity of the building geometry required a response capable of navigating construction constraints without compromising the design narrative. Light gauge steel (LGS) frames were prefabricated from TRUECORE® steel over which a custom bracket system was fixed for the purpose of accommodating brick slips within tracks, preinstalled and lifted into place as modular panels.

The modular panels are exemplary of the innovative systems leveraged by a team committed to delivering an exceptional outcome. The panels – 162 across all facades of The Round – were 3D modelled to determine precise measurements, connection points and radii, and to avoid discrepancies on site during construction.

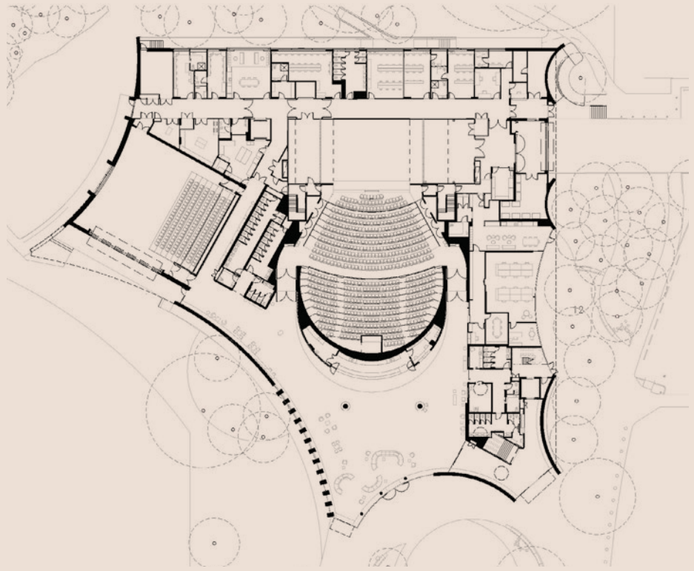
With such comprehensive data on hand, the engineering requirements of each panel could be resolved with confidence. Locally fabricated using TRUECORE® steel, the frames afforded a lightweight, versatile system with suitable strength to carry the brick cladding that finished the envelope. This same digital resource facilitated the fabrication of curved, profiled tracks, laser-cut and installed over the steel frames to accommodate the brickwork.

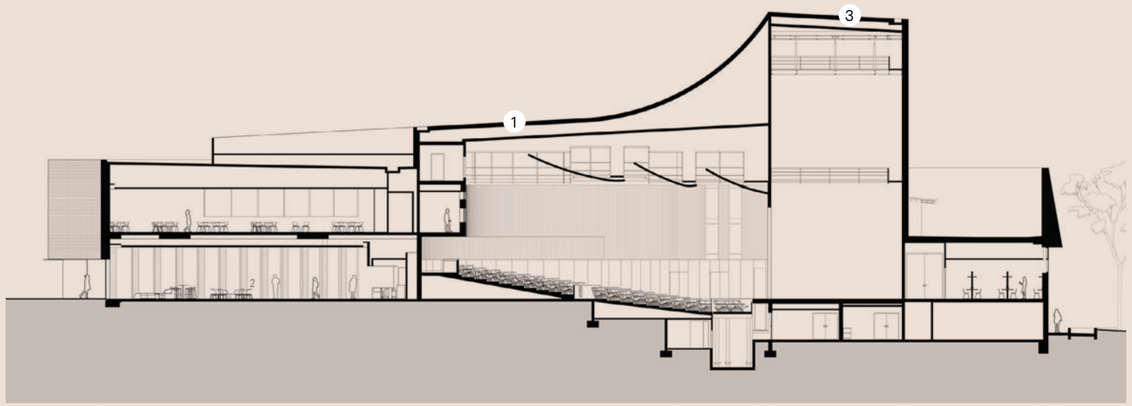
In addition to navigating the complexity of the architectural design, the LGS framing system enabled the installation of prefabricated panels in a matter of weeks rather than the months typically required for traditional brick construction. The use of mobile lifting equipment eliminated the need for scaffolding, allowing other trades and contractors to work concurrently.

Reflecting on the fabrication solution, Luke Cockerell, CMG Frames' managing director, comments on the importance of the collaborative process: "We're proud to have partnered with Kane Constructions and Modular Masonry to help deliver such an iconic civic structure."

For the sweeping roof geometry of the building, the roofing – made from COLORBOND® steel – afforded a solution that complemented the facade systems. To integrate the fly tower, a gentle curving plane connects the top of the tower to the roof proper, a shape that was achievable by way of adaptable, versatile cladding made from COLORBOND® steel in a Metallic finish in the colour Callisto® in LYSAGHT SPANDEK® profile. It was shaped and formed to achieve the radius of the design similar to the arcing walls of The Round.

The square-corrugated profile of SPANDEK® offered the project team a strong, lightweight solution that could be gently curved without compromising the design intent for such a prominent and visible part of the building. With the elegant Callisto® as the selected colour, the wall cladding was an essential product for finishing The Round to the standard expected of an exemplary contemporary performing arts centre.





Principal steel components

1 *Roofing*
COLORBOND® steel in a Metallic finish in the colour Callisto® in LYSAGHT SPANDEK® profile.

2 *Framing*
Light gauge steel made from TRUECORE® steel.

3 *Fly tower*
COLORBOND® steel in a Metallic finish in the colour Callisto® in LYSAGHT SPANDEK® profile.

TOP The ground-floor plan is dominated by the 600-plus-seat proscenium theatre.

ABOVE A render that exposes the framing made from TRUECORE® steel.

LEFT This sectional details the arrival sequence to the theatre.

PROJECT INFORMATION

Client
Whitehorse City Council

Architects
BKK Architects and Kerstin Thompson Architects

Project team
George Huon, Simon Knott, Jennifer Salter, Kerstin Thompson, Toby Pond, Claire Humphries, Sarah Cooper, Elizabeth Mason, James Flaherty, Lauren Garner, Chris Harber, Kelvin Chai, Ewan Carson, Georgia Hocking, Javier López-Menchero, Hilary Sleigh, Grant Dixon, Jack Lee, Lauren Dornau, Rob Kolak, Mario De Bem, Kanyanta Chipanta, Luke Tuckman, Deb Adams, Marc Sullivan, Ange Rosato, Margot Watson, Henry Russell, Ashlee Pukk, Jen Chen, Caleb Lee

Project timeframe
2018-2024

Building size
6,150m^2

Project cost
$78 million

Builder
Kane Constructions

Roof and facade contractor
Signal and Hobbs

Steel fabricator
Apex Steel

Engineering
WSP

Fabricator
CMG Frames

Landscape architect
ASPECT Studios

Awards
2024 AIA Victorian Chapter Awards, Public Architecture Commendation; 2024 AIA Victorian Chapter Awards, COLORBOND® Award for Steel Architecture Commendation; 2024 AIA Victorian Chapter Awards, Melbourne Prize Shortlist; 2024 Victorian Premier Design Awards, Architectural Design Finalist; 2024 Australian Interior Design Awards, Public Shortlist; 2024 INDE Awards, The Building Category Shortlist; 2024 Think Brick Awards, Shortlist; 2024 World Architectural Festival WAF, Cultural Category Shortlist; 2024 IPWEA Excellence Awards, Best Public Works Project over $5 million

IN PROFILE

Officer Woods

Words Shelley Tustin
Photography Robert Frith

The founding directors of Western Australian architecture studio Officer Woods discuss how steel helps them overcome the challenges of the state's beautiful but often unforgiving landscape.

Selecting materials is a task never taken lightly by Fremantle-based practice Officer Woods Architects. Yet, faced with challenges including dust, cyclonic winds, termites and unfathomably remote sites, steel is a game-changer and the backbone of many of the firm's multi-award-winning projects.

A love of the land is seared bone-deep into the DNA of founding directors Jennie Officer and Trent Woods. Both were raised in Western Australia, studied at The University of Western Australia (where they met and fell in love, and where Officer also works as a practitioner and academic) and built their careers here, before joining forces to establish their practice in 2007. It was the right time for the pair to strike out on their own, says Officer.

"Both of us got to a point in our careers where we started – probably quite annoyingly for employers – saying, 'I wouldn't do it that way if it was me.' Both of us felt a need to address those niggling questions: 'If you could do it another way, how would you do it?' 'What do you believe in and where is your compass, architecturally?'"

While Officer and Woods say they're not driven to break boundaries for the sake of it, having their own practice grants them much-appreciated freedom to choose their projects and engage with unique challenges. "We're interested in both the poetics and the technics of architecture – the pragmatism of where we come from and the materials that can be used, the DIY attitude that's

ABOVE The 'barcode' on the exterior wall of the shed-like East Pilbara Arts Centre in Newman, WA, is scannable: it reads, 'This Is a Big Thing.'

> “We wanted it to be an obscure, ambiguous object. Its shape changes as you go around it, and it’s kind of unknowable as a complete thing from any one side.”
>
> **TRENT WOODS** OFFICER WOODS

informed post-colonial Australia,” says Officer. “It’s the technical and pragmatic aspects of architecture that inform our ideas. We like the ‘working out’ of things.” There is certainly plenty of ‘working out’ to do, with many of Officer Woods’ projects throwing up challenges unique to Western Australia’s vast, stunningly beautiful but sometimes unforgiving landscape. The studio’s regional work, particularly, is well suited to steel, relying on its strength and durability and, fundamentally, its transportability.

“Steel suits our technical mode of practice,” says Trent Woods. “We 3D model everything, we’re highly accurate in the way we work and steel is a good material to work like that. We know that we can design something here, and even if it’s complex – like the girders for Spinifex [Hill Project Space], which had an interesting form and shape and could be manufactured within very, very small tolerances. We can see them as components within the model and know they’re all going to fit without complication at site or cost implications for the client.”

In addition, steel has been a pragmatic choice for ongoing maintenance: robust and easy to replace if needed. “If it does get hit by a bit of flying debris in a cyclone, you can take off a sheet [of steel] and replace it. And because it’s fixed with mechanical fixings, it’s not necessarily an expert’s job to maintain steel-clad buildings,” says Officer, pointing out that builders simply may not be available for such tasks in remote areas.

Steel has been not only a practical choice but also an aesthetic one, with its use extending beyond roofs (“Have we ever clad a roof that’s not steel?” muses Officer) to include cladding on both large-scale public buildings and single residential homes. A notable example of the latter is Rule Street House in Fremantle, which uses ZINCALUME® steel as a principal cladding material. It was shortlisted for the 2024 National Architecture Awards – Residential Architecture, Houses (New).

Both Officer and Woods express a particular love of steel, often taking this ubiquitous form and elevating it into a project-defining thing of beauty. “We love ZINCALUME® steel for its soft reflectivity – it takes on its surroundings in different light conditions. It can subtly reflect trees and shadows and dappled aspects of the world around it, and it’s often the colour of the sky,” says Officer.

Steel is used to most dramatic effect on their large-scale public buildings, including the Spinifex Hill Project Space in the Pilbara, which was awarded the 2024 COLORBOND® Award for Steel Architecture. This multipurpose exhibition space and cultural centre achieved a highly technical, cyclone-proof design, encased in a geometrically complex shell of steel, which seamlessly clads both roof and walls.

“We wanted it to be an obscure, ambiguous object,” reflects Woods. “Its shape changes as you go around it, and it’s kind of unknowable as a complete thing from any one side. Part of that is achieved by the roof and the walls being the same material, with no penetrations.”

Steel cladding also features prominently in the East Pilbara Arts Centre in Newman, one of Officer Woods’ defining projects, which earned the 2017 National Australian Institute of Architects Sir Zelman Cowen Award for Public Architecture. “We won it with quite a radical idea about building a massive shed, which tied into the industrial nature of the place and the remoteness of the building technology that was available,” says Officer, who describes the large steel-framed building as like a set of Russian dolls.

A gallery space is securely nestled at the heart of the structure, surrounded by multiple covered and uncovered, open and enclosed spaces to cater for the varied work of the Martumili Artists. The building also serves as a gathering space for the town of Newman, located on the traditional Country of the Nyiyaparli People.

“That’s a huge change in the psychology of that town and also for those people – to know that they are welcome there, that everyone is meeting effectively on their turf. Being part of that has been incredibly rewarding for us,” says Woods.

This idea of an architectural project contributing more than the sum of its parts is a recurring theme throughout the work of Officer Woods. Each design is considered for how it will not only meet the brief but also contribute to its context – visually, architecturally and culturally.

“One of the things we always try to do is identify how that project contributes to a broader spectrum,” explains Woods. “For instance, if you were to do a house – [you would ask] how does the house contribute to the street, how does the street contribute to the city? And the same goes with public buildings – what is the public building offering back to its direct address and its broader cultural context?”

While designing architecture – particularly in far-flung regions of Western Australia – comes with plenty of challenges, Officer reflects on “the grounding power of local cultures and landscapes” and the “spiritual satisfaction” of creating standout buildings within this context.

OPPOSITE The Spinifex Hill Project Space in the Pilbara was awarded the COLORBOND® Award for Steel Architecture in 2024.

ABOVE In North Fremantle, Rule Street House has been designed to connect to the ground, the street and garden.

PROJECT SUNKIDS MERMAID WATERS **LOCATION** GOLD COAST, QUEENSLAND

The Gathering

Architect RealSpace Creative
Words Riley Wilson
Photography Cieran Murphy

On the Gold Coast, Sunkids Mermaid Waters is redefining what a childcare centre can be, with a striking roof form made from COLORBOND® Ultra steel that creates a distinct sense of embrace.

Beneath an impressively large circular roof – supported by hundreds of bespoke, light gauge steel roof trusses, made from TRUECORE® steel – a new generation of imagination-fuelled Queensland kids is embraced in a cocoon of creativity.

Light spills in through the floor-to-ceiling windows at Sunkids Mermaid Waters, a state-of-the-art childcare centre on the Gold Coast, illuminating each learning area, activity room and amenity space. A cavernous double-storey foyer invites parents and local residents to gather and connect, and a tricycle path – designed to spark curiosity and support the inquisitiveness of the young attendees – weaves through lush plantings in the protected, shaded internal courtyard.

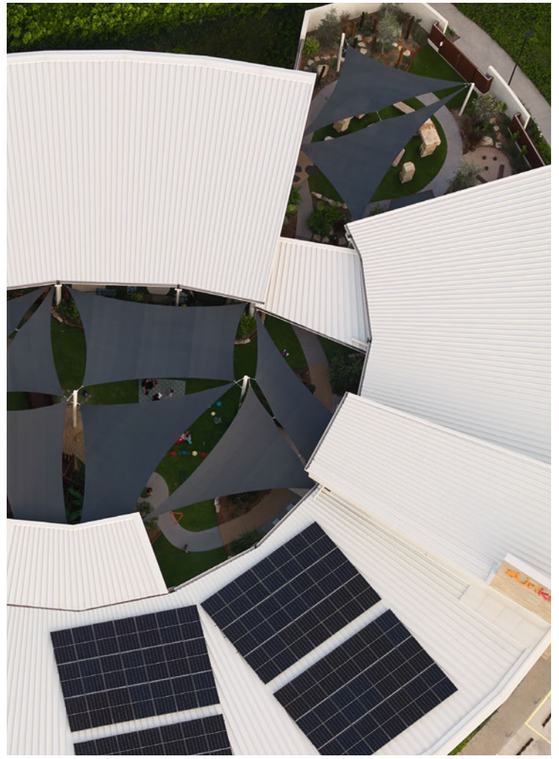
Viewed from above, the building appears as two sweeping curves that coalesce to encircle a central playscape that includes a miniature Stonehenge, timber play equipment, a vegetable garden and a roofed space – known as the piazza – designed for dining and group celebrations. Within the 1,183 square metres of internal space are nine age-specific activity rooms, radiating out from the community-centric lobby. Windows and doors are often left open to welcome coastal breezes and expose the children to the surrounding environment, gently heightening their awareness of the broader world.

“The warm embrace of a child is what inspired the shape of this building,” says architect Hooman Jaffar of RealSpace Creative. “For many children, the daycare centre is their first experience of life outside the home, so it was important that the building offered a nurturing environment – an extension of home – but was also a place of excitement, designed to both spark imaginations and challenge perceptions.”

While encapsulating the building’s core purpose of providing early education for 162 children, Jaffar designed the monolithic circular structure to echo its surroundings – a new residential precinct called The Lanes. The building’s circular form feels organic, softened by the absence of sharp corners and enriched with wide, open spaces.

“That’s why the building is strung along that curve, so every room has access to the playscape,” he says. “And it changes as you walk through the spaces and around the

THESE PAGES The centre’s sweeping roof enshrouds the play areas and internal courtyards. These zones are protected from Queensland’s ferocious sun by sail shades, connected to the main structure by a series of prefabricated custom steel connections.



"It changes as you walk through the spaces and around the building. You never see a true corner; it's always in motion, always fluid."

HOOMAN JAFFAR REALSPACE CREATIVE

building. You never see a true corner; it's always in motion, always fluid."

At the project's inception in 2016, a concrete form was originally considered; however, when the price was beyond the budget, the team switched to light gauge steel (LGS) framing for the structural elements of the build. Both the RealSpace team and Australian Framing Solutions (AFS) – the LGS framing consultant approached with the challenge of delivering the project on the tight budget – agreed that adjusting to a structure made from LGS frames which had been pre-fabricated off site would help to minimise on-site steel waste. With the frames being fabricated to exact specifications, as well as being light and easy to handle, the build program of the long-awaited project was also improved, without compromising the design intent.

AFS founder and CEO Jake Gundry estimated that switching to prefabricated LGS framing for the walling and roof trusses saved 90 days in the build program. "The originally conceived concrete bunker was transformed into a building made from lightweight framing crowned with a spectacular circular roof," he says. The elimination of 'wet trades' – such as the concreters who would have been originally required – helped reduce the delivery timeline, while the fast installation of the roof frames also accelerated the pace of the internal fit-out.

Environmental challenges associated with the coastal location were carefully considered at every stage of the build, from initial planning through to completion in 2024. Lightweight and termite-proof, TRUECORE® steel was the ideal material choice for the temperate coastal location. AFS fabricated the steel framing, including 300 individually designed roof trusses of bespoke lengths and shapes – each spanning more than 14 metres. The trusses were delivered in clearly marked packages for easy assembly and installed on site by five tradesmen in just eight days using mobile cranes.

The corrosion resistance provided by TRUECORE® steel's metallic coating with Activate® technology gave further peace of mind considering the property's proximity to a marine environment. An essential consideration was the effective integration of large shade sails designed to cover the internal courtyard. These sails needed to withstand the typical wind pressures experienced in the region. In collaboration with the architectural and engineering teams, AFS designed and prefabricated custom steel connections that secured the shade sails to the building while minimising horizontal and vertical movement being transferred to the main structure.

In this stunning but harsh environment, a durable roof that could withstand the conditions with minimal ongoing maintenance was required. COLORBOND® Ultra steel in the colour Surfmist® in Fielders FreeForm® profile was the ideal choice to create the roof, which covers 1,905 square metres.

The roof sheets were rolled into their shape on site and quickly adjusted and installed, providing an affordable and durable solution for the demands of the roof's radial design. The inherent flexibility of the FreeForm® profile accommodated the complexity of the tapered roof, enabling smooth transitions between the planes and other building elements, such as the roof's fascia, and ultimately delivering an uninterrupted roof form with high aesthetic appeal.

"The idea of breaking down the building into prefabricated components made things much easier with steel," Jaffar says. "The thin nature of steel at its edges was really exciting for us. We always imagined this building with a streamlined roof profile, but fine detail at the roof's extremities as it transitions effortlessly to the walls below was only possible with steel. Additionally, it was paramount for us to create something lasting and we wanted a building that would require only minimal maintenance. Washed with regular rainfall, a steel roof gives us that longevity and peace of mind."

With regular sea breezes, it was only logical, Jaffar explains, to maximise natural ventilation throughout the structure. Each room opens onto the internal courtyard, with commercially rated, tinted glazed windows supporting constant airflow. Combined with a substantial roof cavity filled with high-performance insulation, the natural ventilation helps reduce heat gain and enhance comfort throughout the building.

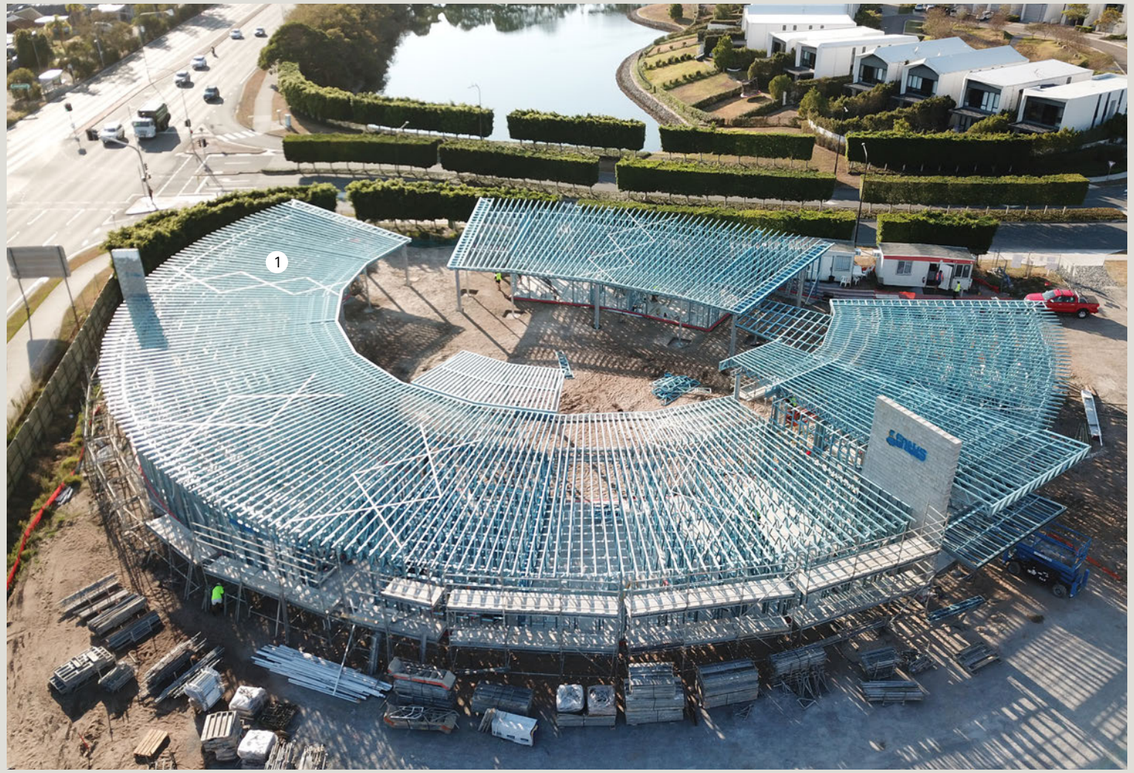
The expansive roof provided an ideal platform for solar, with photovoltaic panels installed to generate energy during daylight hours. Internally, hard-wearing, honed-concrete and durable, high-performance vinyl flooring were selected for their longevity and, ultimately, lower environmental impact. "All of the material choices," Jaffar says, "came together to create a thoughtfully designed building," one that provides its young residents with an enduring space to begin their journey to understand their impact on the environment.

Originally conceived as part of a broader community masterplan, the childcare centre now serves as a focal point for the surrounding residential and commercial development, standing as a benchmark for innovation in architecture and sustainability – delivering on material integrity, aesthetic intent and civic purpose.

"We are hoping Sunkids Mermaid Waters is a catalyst for some new thinking and some adjustments to the masterplan," says the architect. "It is quickly becoming a community icon."

ABOVE The building's welcoming facade features large expanses of glass.

OPPOSITE Sunkids Mermaid Waters is part of a larger residential and commercial precinct: architect Hooman Jaffar designed its monolithic circular shape to blend in with the development's design vernacular.



STEEL DETAILS | A TECHNICAL DIVE INTO SUNKIDS MERMAID WATERS

With a nearly 2,000-square-metre footprint, the expansive roof of Sunkids Mermaid Waters was thoughtfully considered from concept through to completion. Positioned at the heart of a residential neighbourhood, the roof was designed not only to contribute meaningfully to the urban landscape for decades to come, but also to withstand the challenges of its coastal setting.

'Cool roofs' combine high solar reflectivity and high thermal emittance to reduce the amount of heat absorbed by the roof, helping to lower internal temperatures. For the centre's roof, Jaffar and the team selected COLORBOND® Ultra steel in the colour Surfmist®, a gentle off-white shade with inbuilt Thermatech® solar reflectance technology that further reduces heat absorption. Surfmist® was also chosen for its high solar reflectance index of 81 as well as its visual harmony with the surrounding community. Additionally, COLORBOND® Ultra steel also offers enhanced corrosion resistance, ideal for the location.

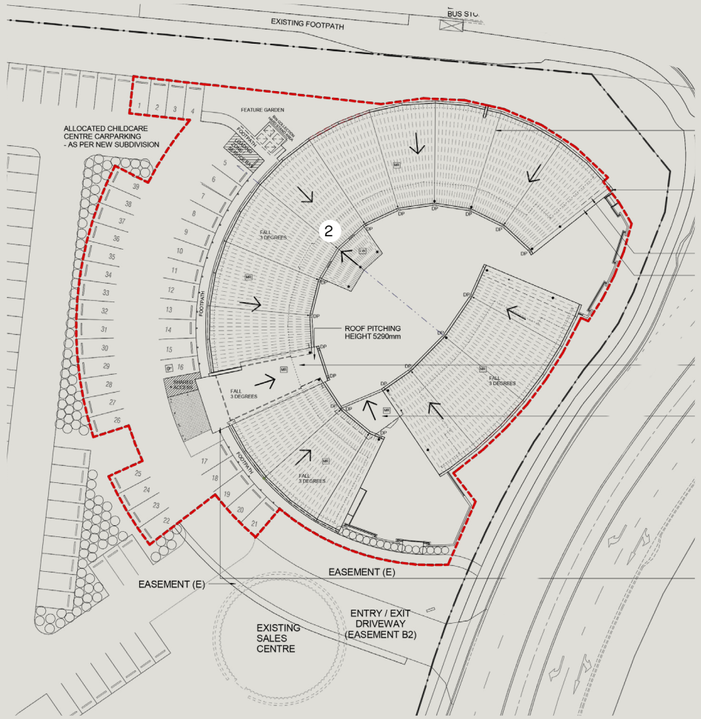
For the building's roof profile, the team opted for Fielders FreeForm®, a concealed, clip-fixed profile with distinctive standing-seam-style ribs that deliver strong visual appeal, especially when viewed from the surrounding elevated buildings. The profile was selected not just for its aesthetics but also for its ability to taper, allowing for complex roof configurations to be achieved in line with an architect's vision.

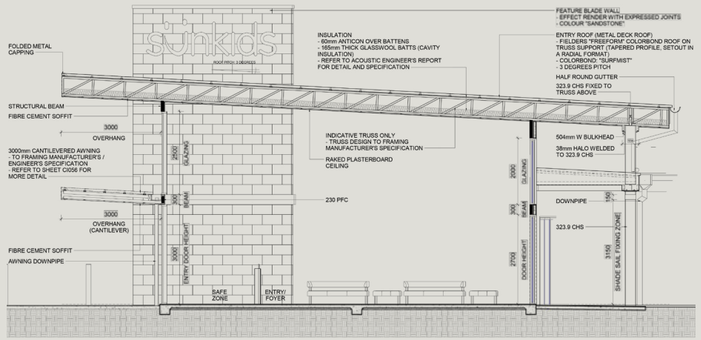
The use of the Fielders Mobile Mill® allowed the project's on-site team to make continuous micro-adjustments to the roof sheeting, aiding the efficient delivery of the complex circular footprint.

"The speed and efficiency of steel construction were primary factors in its selection for the project," Jaffar says. "Steel also allowed us to create a huge ceiling cavity that is capable of housing a substantial level of insulation," thereby reducing the reliance on artificial cooling.

Large sections of the roof were optimised for solar panels, producing enough energy that air-conditioning is only used nominally. The sunshade and verandah space also help to defer heat transfer into the main structure. The internal courtyard and open spaces required a substantial sunshade to protect the children and reduce heat gain. When the original design was conceived in concrete, attaching shade sails to the main building was a relatively simple engineering concept.

However, when the design shifted to lightweight steel, the architecture and engineering teams had to develop a solution that transmits lateral forces without transferring wind loads into the main structure. "Collaborating with the engineer and the architect, we designed an attachment for the structure that allowed the shade sails to move both horizontally and vertically without transferring the load back to the building's frame," says Jake Gundry of Australian Framing Solutions.





Principal steel components

1 *Framing*
Light gauge steel made from TRUECORE® steel.

2 *Roofing*
COLORBOND® Ultra steel in the colour Surfmist® in Fielders FreeForm® profile.

THIS PAGE Technical drawings detail the circular roof form (top) and the entry program in cross-section (above).

OPPOSITE A construction phase image shows the distinctive blue of the extensive TRUECORE® light gauge steel framing.

PROJECT INFORMATION

Client
Sunkids Early Learning

Architect
RealSpace Creative

Project team
Hooman Jaffar, Taylah Jardine

Project cost
$6 million

Project timeframe
2021-2024

Building size (internal)
1,183m²

Builder
9 Construction

Steel fabricator
Australian Framing Solutions

Roofing contractor
Gold Coast Metal Roofing

Structural engineer
EDGE Consulting Engineers

Civil engineer
Cozens Regan Group

Landscape architect
Vee Design

Awards
2024 Steel Excellence Awards, Queensland and Northern Territory Award for Innovative Cold Formed Steel Buildings

PROJECT ROSEDALE HOUSE **LOCATION** ROSEDALE, NEW SOUTH WALES

From the Ashes

Architect Scale Architecture
Words Che-Marie Trigg
Photography Felix Mooneeram

"We thought, 'How can we contribute our professional skills to the disaster recovery, rather than our mediocre fence-tying skills?'"

MATT CHAN SCALE ARCHITECTURE

A replacement for a much-loved family holiday home destroyed in the Black Summer bushfires of 2019-2020, Rosedale House celebrates both the aesthetics and functional attributes of steel. With a roof and external walls made from COLORBOND® steel in the colour Manor Red®, this elegantly rustic residence pays tribute to the modest coastal holiday shack.

Rosedale House, a small home with a big impact, is located in the beachside community of Rosedale in Yuin Country on the New South Wales South Coast. This modest yet stylishly crafted home seamlessly blends form and function within a striking COLORBOND® steel-clad exterior. The home rose from the ashes of the 2019-2020 Black Summer bushfires when the original residence – a small, brick-and-timber, Polish-style summer house used as a holiday abode by the same family for decades – fell victim to the flames.

Following the bushfires, the founding principal of Sydney's Scale Architecture, Matt Chan, and his team headed south to offer whatever help they could. "We did some volunteer work down in Cobargo … and we found ourselves as quasi-grief counsellors, quasi-fence repairers and quasi-social workers, but without the right skills," he recalls. "We thought, 'How can we contribute our professional skills to the disaster recovery rather than our mediocre fence-tying skills?'"

Serendipity stepped in and, through a friend of a friend, Chan and his team were connected with brothers Tom Zubrycki and John Zubrycki, whose father had built the now-razed holiday home in the 1960s. When Chan first arrived on the property, it was "a strange moonscape environment", splashed with fluoro pink and green fire retardant. The landscape was completely charred and the trees were bare of foliage.

The Zubryckis had received a small insurance payout and wanted to build a simple residence that would allow the family to continue to gather for holidays. Though their $400,000 budget wasn't large, neither were their requirements: a communal gathering space, a kitchen and dining area, two small bedrooms and a bathroom.

Importantly, there had to be space for an annual family tradition. Absent from the brief in the early stages was the need to accommodate a ping-pong tournament, a fierce battle between members of the extended family that occurs every summer. "Initially, all that was called for was a space underneath the house," Chan recalls. "It turned out that it was a space to conduct this ping-pong tournament. It was kind of delightful."

While many of the homes rebuilt in the area are project homes or larger houses that dominate the landscape, Scale's design is altogether more singular. It references the modest, metal-clad fishing shacks dotted up and down the east coast; and while its LYSAGHT CUSTOM ORB® cladding – made from COLORBOND® steel in the colour Manor Red® – is eye-catching, its rustic appearance and low-pitched roof seamlessly slot into the bush landscape. The humble size and simple design of Rosedale House sit comfortably among the tallowwoods and coastal blackbutts, but also helped the project to remain within the budget parameters.

Streamlining the process and keeping costs down for clients who had experienced the trauma of losing their house in the bushfires were major priorities for Chan and his team. Scale helped the clients apply for bushfire-recovery grants and worked with them to navigate the DA process and planning rules. "After you've suffered that sort of loss, you don't want to be dealing with council on top of everything else," says Chan. To make the project even more economical, Scale took on risks usually absorbed by builders: guiding the owners through an owner-builder course, ordering materials and taking responsibility for correct dimensions.

"We were trying to make it easier for them," he says. "After the development approval was granted, we sent out the documentation to a bunch of builders, but the prices came back significantly higher than what they could afford. That was just a non-starter. The only way that we could deliver this was to be more involved in a hands-on kind of way by assisting in the building process beyond what we would normally do.

"This was our way of contributing back to the bushfire effort. Offering this as a service saved the brothers from being thrown in the deep end with builders."

The main residence sits on an elevated platform, with a deck jutting out into the bushland. The prefabricated, hot-dip galvanised structural steel substructure, which continues through to the decking, allowed the team to quickly set up a level work site. Prefabricated components such as the floor cassettes – installed within hours of delivery – also contributed to the project's affordability. The project was delivered with builder Bruce Williams of Ambidextrous Projects, who would park his Kombi van on site, camping out to help issue instructions and co-ordinate trades.

ABOVE Rosedale House's floor plan is simple – a communal gathering space, kitchen and dining area, two bedrooms and a bathroom.

LEFT The dwelling sits unobtrusively in its bushland setting on the New South Wales South Coast, designed to emulate the modest beach shacks that dot the Australian coastline.

LEFT Scale Architecture's daring use of COLORBOND® steel for the roof and wall cladding adds visual interest to the simple design.

OPPOSITE A second deck extends from the living space, the perfect perch for a sun-loving pooch.

Cost was just one of many reasons for using COLORBOND® steel for both the wall and roof cladding, and structural steel for other aspects of the build; durability and bushfire protection were also major factors.

For the roof and wall cladding, Chan opted for COLORBOND® steel in the colour Manor Red® in CUSTOM ORB ACCENT® 21 profile, a slight variation on the traditional corrugated profile, with a rib height of 21 millimetres and material thickness of 0.48 millimetres. The daring use of the exterior cladding added visual complexity to the otherwise simple design. As well, the exterior walls and roof won't require painting, keeping costs low well into the future, thanks to the durability credentials of COLORBOND® steel.

Rosedale House is distinctly Australian. The rustic Manor Red® colour has traditionally been used in heritage homes and the LYSAGHT CUSTOM ORB® profile is immediately identifiable with local architecture, having been extensively used in traditional sheds and shacks across the country for its durability, affordability and simplicity. The home's hip roof, punctuated with a skylight, nods to the pitched roofs of classic Australian dwellings.

Steel was envisaged for the design almost from the beginning. The bushfire-prone area meant the house needed to comply with a BAL (Bushfire Attack Level) rating of 40, making COLORBOND® steel a logical choice for the cladding. Testing by the CSIRO has shown that COLORBOND® steel is suitable for use where non-combustible materials are required by the National Construction Code (NCC). "It's really difficult to imagine this project without the use of steel," says Chan. The simple design of the roof aimed to reduce the accumulation of leaves that could ignite from embers generated during a bushfire.

Choosing from COLORBOND® steel's core colour range helped keep the project within budget because the steel was readily available for prompt installation. Working from Scale's dimensioned drawings, precision-cut sheets of COLORBOND® steel ensured there was consistency in both the trims and flashings at installation, while on-site waste was minimised. This meticulous planning meant there were very few on-site dramas, and variations above the original budget were avoided.

Scale's determination to only use suppliers within a 200-kilometre radius of the site saved on both transport costs and reduced the project's carbon footprint. Using steel supplied from a local provider was attractive. "We were very conscious of the fact that it was a remote site and we didn't want to be shipping materials and all of the accessories, flashings and cappings from suppliers that were too far away," explains Chan. "It all needed to be able to be installed by a local roofer."

Scale kept sustainability front of mind in other ways, too. An open fire, a much-loved feature of the old house, was replaced with a modestly scaled yet highly effective combustion heater. Rosedale House is also heavily insulated to avoid heat loss in winter months and heat gain in summer. Cross-ventilation was incorporated to capture the benefit of the home's position at the top of a ridge. During summer, a north-east sea breeze keeps the home cool, and the residence also has rooftop solar panels.

While Chan's first visit to the site was to a blackened, lifeless 'moonscape', the property is now blossoming. Owner Tom Zubrycki says trees are starting to flourish again, and the family is beginning to plant shrubbery around the house. Finally, birds and possums are venturing back to the area. And the annual ping-pong tournament has returned with a vengeance.

Zubrycki says the finished home has exceeded expectations, from the striking cladding to the verandahs that bookend the residence and act to extend the home's communal areas. "We are quite taken by it," he reflects. "It's a house that stands out in this particular hamlet. It's the only one like it."

STEEL DETAILS | A TECHNICAL DIVE INTO ROSEDALE HOUSE

Two factors contributed to Rosedale House being assessed as having to comply with the requirements of a Bushfire Attack Level (BAL) 40. First, and most obviously, was the fact that the original house was destroyed in the Black Summer bushfires of 2019-2020; second, was its site among bushland.

The assessment is done using the Australian Standard for Construction of Buildings in Bushfire Prone Areas (AS 3959:2018), which takes into account, among other factors, the type of vegetation and topography within 100 metres of a property. It also measures the potential for ember attack, radiant heat and direct flame contact the building is likely to be exposed to in a bushfire event. While the Standard contains procedures for assessing the BAL level of a site, BALs are also determined by individual states: in New South Wales, this is done in accordance with the Rural Fire Service's Planning for Bushfire Protection resource.

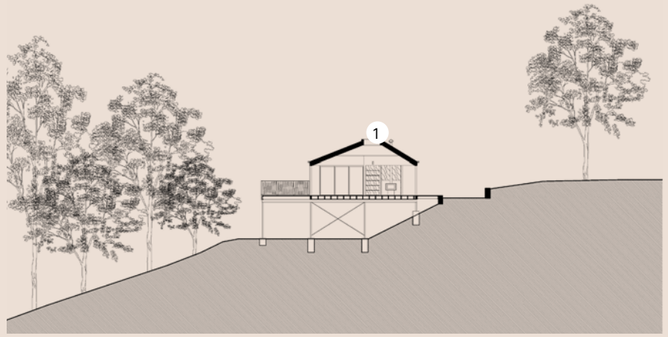
A BAL rating of 40 meant Rosedale House was considered a very high risk to be impacted by all of the above, including radiant heat between 29 and 40 kW/m^2 as well as exposure to flames from a fire front. For Scale and its client, using COLORBOND® steel for the external cladding and steel for the structure to meet the BAL 40 compliance requirements was integral from the beginning of the design.

"Using steel cladding was a way of achieving BAL 40 without too much complication," says Chan. "The COLORBOND® steel cladding has already been tested and can meet the requirements of the Australian Standard. So that was a reasonably expedient design solution around bushfire design that was available to us."

During the design process, Chan referred to the BlueScope Steel Product Solutions for Bushfire Areas – NASH Bushfire Standard document, which provides guidance for residential construction in bushfire-prone areas. This document was developed with reference to the National Association of Steel-framed Housing (NASH) standard for Steel Framed Construction in Bushfire Areas. The Standard offers simple solutions for cladding and framing.

Scale opted for cladding made from COLORBOND® steel in the colour Manor Red® in LYSAGHT CUSTOM ORB ACCENT® 21 profile. COLORBOND® steel meets the requirements of the Standard and won't contribute to the spread of fire or ignite if exposed to falling embers. After extensive testing in bushfire conditions by independent organisations such as the CSIRO and Rural Fire Service, the use of steel framing negates the need for sarking and other ember protection measures to be installed. For Rosedale House, this further contributed to the project's cost effectiveness. Additionally, the simple hip-roof design reduces the opportunity for leaves to accumulate in the valleys. It also takes advantage of a fire-resistant steel substructure to bolster its bushfire protection.

"Using well-established methods meant easier implementation of bushfire standards by local contractors who are familiar with the installation of these products," says Chan.



Principal steel components

1 *Roofing*
COLORBOND® steel in the colour Manor Red® in the profile LYSAGHT CUSTOM ORB® ACCENT 21.

2 *Wall cladding*
COLORBOND® steel in the colour Manor Red® in the profile LYSAGHT CUSTOM ORB® ACCENT 21.

TOP A sectional view shows the space under the house dedicated to the family's annual ping-pong tournament.

BOTTOM The street elevation drawing gives an excellent overview of how the LYSAGHT CUSTOM ORB® ACCENT 21 cladding has been incorporated.

PROJECT INFORMATION

Client
The Zubrycki family

Architect
Scale Architecture

Project team
Matt Chan, Georgia Forbes-Smith

Project timeline
2022-2023

Building size
88m^2

Project cost
$400,000

Builder
Bruce Williams Craftsman (Ambidextrous Projects)

Steel fabricators
South Coast Fabrications

Roofer
Bay & Coast Metal Roofing

Awards
2024 NSW Architecture Awards COLORBOND® Award for Steel in Architecture

STEEL PROFILE

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