Scott Gregory
BlueScope editor

EDITORIAL
We are, as always, proud to bring our readers a collection of the finest steel architecture in the country and some insights into the adventurous, creative minds behind it. It is telling that every major project featured in this issue has been recently recognised with a prestigious award. This includes many 2015 Australian Institute of Architects state Awards and COLORBOND® Awards for Steel Architecture. Congratulations to the architects.

This year saw BlueScope’s support for the Australian Institute of Architects as its Principal Corporate Partner reach 30 years, a milestone we celebrated at the National Architecture Conference in Melbourne, which explored the theme of risk.

The architectural profession is compelled to flirt with risk, to be daring and take a leap of faith in design in order to create something special and unique.

We approach risk through the products and product solutions we supply. We recognise we have a key role to play in risk-mitigation, by designing compliant products and solutions that support innovation in the architectural profession and contribute to its advancement.

We please feel free to share your thoughts with us via info@steelprofile.com.au.

Scott Gregory
BlueScope editor

EDITORIAL ADVISORY PANEL

FRANK STANISIC
Director, Stanisic Associates
Frank’s work is inspired 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 the Australian Institute of Architects’ Special Jury Award. His work has been featured in many national and international exhibitions and publications.

JAMES LODER
Graduate Architect, Jacobs
James’ work is inspired by the formal relationships between building and landscape with great consideration given to spatial expression and materiality.

ADAM HARDWIN
Graduate Architect, Johnson Architects
Adam is a director of Johnson Architects and an Australian Institute of Architects’ Young Architect of the Year 2013 for his work in the refurbishment of the Sir John Monash Centre in Melbourne. Adam’s other projects include the new Australian Embassy in Bangkok, the Arts House in the Argonaut Building and the recent K22 renovation.

JAMES Loder
Journalist
James is a journalist who has written extensively on architecture, design and culture. He has been a contributing editor to numerous publications and has worked with clients such as the Australian Institute of Architects and the Australian Centre for the Moving Image. He is also a regular radio contributor to the Melbourne’s ABC 89.9 FM station.

COMMENT

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

ADAM HARDWIN
JAMES LODER
FRANK STANISIC

ISSUE 121 CONTENTS

4

Spirit of place is embodied
in steel-and-in solids palette
hook-designed Aboriginal
aged care centre

JPM’s glorious steel and glass
crown for the roof of Macquarie
Group’s new headquarters
announces the building is no longer
– metaphorically, at least –
“looked down upon”

12

The dramatic, textured and
unusually shaped roof of this
house by Mike Pitchford
creates a distinctive marker
in rolling countryside on
South Australia’s Fleurieu Peninsula

18

Shep Architects’ co-founding
group Gregg Pasquarelli quit
a career in investment banking
to create architectures that
amalgamate solutions from
other industries such as finance,
technology, science and fine art.

22

A series of varying clay
exposed steel portal frames
by Andrew Maynard Architects
create a quirky inside-out
addition to an original timber cottage

28

Adelaide’s new SIEC has preserved
and revealed much of the skeleton
of the massive over-scaled
original building, showcasing
adaptive reuse and urban
regeneration through the
durability and adaptability
of steel construction

34

A finely crafted bowling club
bar sculpted by Callum Ivanov
Partnership from BlueScope.
XLERPLATE® steel boxes over
an off-form base like so much
melted chocolate

38

More than anything, he loves to design buildings
as an architect and urbanist. His work is fuelled by an evolving interest in the formal relationships between building and landscape with great consideration given to spatial expression and materiality.

Principal Corporate Partner

ISSUE 121

Scott Gregory
BlueScope editor

NUMBER 121, SEPTEMBER 2015

BlueScope Steel
Managing Editor
Rob Gillam
Associate Editor
Rachel Bernstone
Contributing Writers
Peter Bennetts, Brendan Finn, Sam Noonan, David Sievers
Contributing Photographers
Peter Bennetts, Brendan Finn, Brett Boardman, Paul Bradshaw, Sam Noonan, David Sievers

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Photographer
Rachael Bernstone

COnTRIBUTING WRITERS
Peter Bennetts, Brendan Finn, Sam Noonan, David Sievers

Art Director
Natalia Kramnic

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@blueScope.com.au

BlueScope Steel recommends the use of COLORBOND® steel or ZINCALUME® steel for the majority of external cladding applications. For technical advice on the right product to use contact your BlueScope representative. BlueScope recommends routine preventative maintenance for areas not subject to “invaded areas” of structures which may not be regularly cleaned by rainfall. For further information please contact your nearest BlueScope office or consult steel.com.au

BlueScope, COLORBOND®, LYSAGHT®, XLERPLATE®, Galvalume® and ® colour names are registered trademarks and “® colour names are trademarks of BlueScope Steel Limited. Shadowline™ and CGI are registered trademarks of Stratco (Australia) Pty Ltd. Bluedrake™ 305 is a registered trademark of Feldsia Australia Pty Ltd.

All materials are the copyright of BlueScope Steel Limited ABN 18 000 011 693. No part of this publication may be copied, reproduced or distributed without consent. BlueScope Steel Limited accepts no liability for any person or loss arising from reliance upon information contained in this publication. The views expressed in this magazine are those of the authors and do not necessarily reflect those of BlueScope Steel Limited.

ISSUE 121

architectural steel innovation

SP 121

PHOTOGRAPHER
Rachael Bernstone

CONTRIBUTING PHOTOGRAPHERS
Rachael Bernstone, Nick Green, Peter Hyatt, Micky Pinkerton, Alex Taylor

ISSUE 121

PHOTOGRAPHER
Rachael Bernstone

CONTRIBUTING PHOTOGRAPHERS
Rachael Bernstone, Nick Green, Peter Hyatt, Micky Pinkerton, Alex Taylor

ART DIRECTOR
Brett Boardman, Paul Bradshaw, Sam Noonan, David Sievers

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts

Cover Project
Walumba Elder Centre
Photographer
Peter Bennetts
One of the most significant aspects of Aboriginal culture is connection to country. At the new aged care centre for Warmun’s Gija people, spirit of the place is embodied in the design.

Words: Rachael Bernstone  Photography: Peter Bennetts
Warmun, in the far north-east of Western Australia, is a thriving remote community of about 300 people with one of the most successful aboriginal art centres in remote Australia. Situated on Turkey Creek in the East Kimberley, the entire town was devastated by an unprecedented flood in March 2011 when the creek rose nine metres in less than four hours.

After the waters subsided the following day, thankful with no loss of life, the full toll became apparent: 80 per cent of the town’s buildings were damaged or destroyed, including houses, the health clinic, aged care facility, school, early learning centre and new art centre. The Great Northern Highway was cut in both directions and the local airstrip was unusable, making road and plane access impossible. Helicopters from Darwin and Broome evacuated 275 Warmun residents to Kununurra, where they were housed in temporary accommodation for four months while their town was rebuilt.

The Warmun Re-establishment Taskforce and the Department of Finance, Building Management and Works engaged Perth-based architects Iredale Pedersen Hook (IPH) to reinstate the facility buildings. The Department of Housing rebuilt the community houses under a series of design and construct contracts, and the catholic school project was managed by Ergonex Architects. IPH Architects has worked in the Kimberley for 15 years, delivering housing projects, community facilities and, in collaboration with TAC Architects, the West Kimberley Regional Prison and Kununurra Courthouse. Director Finn Pedersen has worked throughout the region for more than 24 years, but this was the first time he had been involved in the reconstruction of an entire town.

The 2011 flood was deemed to be a one-in-200-year event, but its effects had wide-reaching impacts on subsequent town planning. Where possible, new buildings were re-erected on higher ground, or elevated on stilts. The Elders Centre was rebuilt in a new location adjacent to the school. “That site was chosen for several reasons,” Pedersen says. “The Gija people wanted their elders to be at the heart of the community—next to the school, where everyone can have easy access—to be able to celebrate their lives. Being in the middle of things means the residents can continue to communicate their law and cultural knowledge to the rest of the community.”

Aged care requirements were balanced against cultural needs around palliative care and funerary practices, which dictate that rooms must be left vacant for a prescribed period of time after a death before being used again. “We had to interpret the national aged care guidelines and design the facility to be future-proofed, with the potential to offer a higher level of care with more nurses if required. It was a very technical overlay,” Pedersen recalls. “That’s one of the reasons we used breakaways to separate each discrete section. It provides the perception of separation from the rest of the centre for those palliative care and high-care rooms, supports cultural gender separation and provides privacy for staff and residents.”

The building also responds to the site’s topography and climate. It is anchored to a newly created ‘beach-head’ at the western end, with two eastern wings that extend and hover above the landscape like floating piers. “The shape of the building is driven by the fact that the site is still in the flood zone,” Pedersen says. “The platform is three metres above the ground at its highest point, which is interesting when you need to deal with issues of universal access.”

“The shape of the building is driven by the fact that the site is still in the flood zone”

“We’ve done lots of remote area work and projects in the Kimberley: we know the place very well,” Pedersen says. “We know how to work closely with communities, and we are aware of the tensions and difficulties in providing solutions in the context of people wanting different things. We can navigate through the funding models and assist with that process.”

Reconstruction took place over three stages, with housing and essential services—power, water and wastewater—taking first priority. Residents returned to Warmun in July 2011—15 weeks after the flood—to find 20 refurbished homes, 17 new houses and a temporary village, including aged care. Construction of 56 new houses occurred in stage two, with community and infrastructure buildings making up stage three. A new aged care facility—the Warmun Elders Centre—was the final project to be completed in December 2014.

“We renovated a lot of the existing facility buildings—we couldn’t afford to replace them all,” Pedersen says. “We carried out a ‘soft flood renovation’: a refit that assumes a flood could come through again. Instead of plasterboard walls we installed IASIGHT PANEL®, and we used compact laminate for skirtings, architraves and cabinet work, and closed-cell foam for insulation. In the event of another flood you can hose all these materials off, and take off the skirtings and architraves to dry out the walls with fans.”

“We’ve done lots of remote area work and projects in the Kimberley: we know the place very well,” Pedersen says. “We know how to work closely with communities, and we are aware of the tensions and difficulties in providing solutions in the context of people wanting different things. We can navigate through the funding models and assist with that process.”

Reconstruction took place over three stages, with housing and essential services—power, water and wastewater—taking first priority. Residents returned to Warmun in July 2011—15 weeks after the flood—to find 20 refurbished homes, 17 new houses and a temporary village, including aged care. Construction of 56 new houses occurred in stage two, with community and infrastructure buildings making up stage three. A new aged care facility—the Warmun Elders Centre—was the final project to be completed in December 2014.

“We renovated a lot of the existing facility buildings—we couldn’t afford to replace them all,” Pedersen says. “We carried out a ‘soft flood renovation’; a refit that assumes a flood could come through again. Instead of plasterboard walls we installed IASIGHT PANEL®, and we used compact laminate for skirtings, architraves and cabinet work, and closed-cell foam for insulation. In the event of another flood, you can hose all these materials off, and take off the skirtings and architraves to dry out the walls with fans.”

“We’ve done lots of remote area work and projects in the Kimberley: we know the place very well,” Pedersen says. “We know how to work closely with communities, and we are aware of the tensions and difficulties in providing solutions in the context of people wanting different things. We can navigate through the funding models and assist with that process.”

Reconstruction took place over three stages, with housing and essential services—power, water and wastewater—taking first priority. Residents returned to Warmun in July 2011—15 weeks after the flood—to find 20 refurbished homes, 17 new houses and a temporary village, including aged care. Construction of 56 new houses occurred in stage two, with community and infrastructure buildings making up stage three. A new aged care facility—the Warmun Elders Centre—was the final project to be completed in December 2014.

“We renovated a lot of the existing facility buildings—we couldn’t afford to replace them all,” Pedersen says. “We carried out a ‘soft flood renovation’; a refit that assumes a flood could come through again. Instead of plasterboard walls we installed IASIGHT PANEL®, and we used compact laminate for skirtings, architraves and cabinet work, and closed-cell foam for insulation. In the event of another flood, you can hose all these materials off, and take off the skirtings and architraves to dry out the walls with fans.”

“We’ve done lots of remote area work and projects in the Kimberley: we know the place very well,” Pedersen says. “We know how to work closely with communities, and we are aware of the tensions and difficulties in providing solutions in the context of people wanting different things. We can navigate through the funding models and assist with that process.”

Reconstruction took place over three stages, with housing and essential services—power, water and wastewater—taking first priority. Residents returned to Warmun in July 2011—15 weeks after the flood—to find 20 refurbished homes, 17 new houses and a temporary village, including aged care. Construction of 56 new houses occurred in stage two, with community and infrastructure buildings making up stage three. A new aged care facility—the Warmun Elders Centre—was the final project to be completed in December 2014.

“We renovated a lot of the existing facility buildings—we couldn’t afford to replace them all,” Pedersen says. “We carried out a ‘soft flood renovation’; a refit that assumes a flood could come through again. Instead of plasterboard walls we installed IASIGHT PANEL®, and we used compact laminate for skirtings, architraves and cabinet work, and closed-cell foam for insulation. In the event of another flood, you can hose all these materials off, and take off the skirtings and architraves to dry out the walls with fans.”
“It’s like a lot of our projects in the north-west,” he says. “It’s a pavilion on a platform, with breezeway spaces between them, and a big hat in the form of a steel roof that sits over the top and makes it very liveable.”

The ‘platform’ consists of a blockwork retaining ‘hill’ and concrete columns, topped with a concrete slab. The ‘pavilion’ is framed with studwork wells made from 92mm BlueScope cold rolled steel, and CHS, RHS beams and SHS columns which are clad with Stratco CGI made from COLORBOND® steel in the colours Cove™, Paperbark®, Evening Haze®, Shale Grey™ and Dune®.

The undulating form of the ‘hat’ – topped with Stratco Smartspan® made from COLORBOND® steel in the colour Surfmist® – comprises a series of sliced gable roofs linked by six oversized 6mm steel box gutters. These were carefully placed to distribute rainfall evenly around the building: in heavy downpours they create artificial waterfalls.

“The roof works in several ways to keep the rain out and the sun off,” Pedersen says. “That’s one of the innovations of steel: it allows us to do big spans – this is not a cyclonic wind region – to create a strong architectural element.”

Underneath the ‘hat’, the distinctive soffit – Stratco CGI made from COLORBOND® steel in the colour Headland® – connects all of the verandah spaces so that the building seems to recede into the landscape. “Headland® is a beautiful colour, and is really great to use in the north-west because it matches the pindan colours,” Pedersen says. “The big roof becomes like a natural element in the landscape, because you are looking out into the treetops. It’s very green and welcoming, very dramatic.”

At ground level, the perimeter is fenced and access to the facility is via a ramped driveway for elders and a ramped walkway for visitors. The ramps land at a “porte-cochère” outside reception: a generous open space that seems to both hover above the flood plain and be firmly anchored to the ground, thanks to the full-height cylindrical drum that contains the laundry and public facilities. To the south, the commercial kitchen (where meals for residents and meals-on-wheels for home delivery are prepared) sits alongside a communal dining and activities area. It leads to a large verandah where residents can socialise, create artworks, or cook and eat outside.

“The building’s wings create a central courtyard that is dominated by an existing mahogany tree. “Shade is vital in this climate, and trees create their own microclimate in the ground: they de-water the ground and help to stabilise the ground during floods,” Pedersen says. “We added new trees in the landscaping, including snappy gum trees, whose leaves are used by the elders for smoking ceremonies.”
“As for the roof, cladding and soffit, steel cladding is easy to cut and adapt to shape, it’s very durable, so it’s still our material of choice for regional and remote area work.”

The centre features two outdoor fire pits – one in the courtyard and another on the verandah. “The fire pits are made from concrete sawdust full of river sand, so that elders and their families can cook a kangaroo, bush turkey or lizard,” Pedersen says. Staff accommodation and a suite of rooms that can be flexibly adapted for high-care, palliative or respite care occupy the north-west corner. Taking into account cultural sensitivities about gender separation, men are accommodated in the northern wing, and women in the southern side. “We included plenty of open verandahs and breezeways between the enclosed areas, and while all of the rooms have air conditioning, they are designed for natural cross-flow as well,” Pedersen says. Bedrooms also feature private balconies that look out into the tree canopy and landscape. Understanding the microclimate is vital to getting the breezeways in the right place, Pedersen says, “We are always in a privileged position to work with our clients, but particularly the opportunity to bring the elders back home,” Pedersen says. “We are always in a privileged position to work with our clients, but particularly in a client group like this one, that has lived through a disaster.”

The building was handed over to the community in December 2014, just as the seasonal monsoon arrived, and Pedersen was thrilled to see children playing in the waterfalls, just as he’d envisaged. “If I ended up in a place where I needed care, I wouldn’t want to be a burden to my family, but I would love to have the ability to share stories and continue to engage with people. A lot of aged care centres are not necessarily very nice places, but this doesn’t feel institutional,” Pedersen continues. “It’s an elder’s centre: a place for the whole community to gather and celebrate their elders. The building is lyrical and unusual looking: it reflects the community it was designed for.”

He’s extremely happy with the building’s appearance and performance, especially the way that outdoor spaces connect with the landscape. “I love aged care as being a chance to celebrate people’s lives, and to learn lessons about culture, knowledge and history,” he says. “There are all these ideas that we would like to take to another community or to the non-indigenous community.”

The centre features two outdoor fire pits – one in the courtyard and another on the verandah. “The fire pits are made from concrete sawdust full of river sand, so that elders and their families can cook a kangaroo, bush turkey or lizard,” Pedersen says. Staff accommodation and a suite of rooms that can be flexibly adapted for high-care, palliative or respite care occupy the north-west corner. Taking into account cultural sensitivities about gender separation, men are accommodated in the northern wing, and women in the southern side. “We included plenty of open verandahs and breezeways between the enclosed areas, and while all of the rooms have air conditioning, they are designed for natural cross-flow as well,” Pedersen says. Bedrooms also feature private balconies that look out into the tree canopy and landscape. Understanding the microclimate is vital to getting the breezeways in the right place, Pedersen says, “We are always in a privileged position to work with our clients, but particularly in a client group like this one, that has lived through a disaster.”

The building was handed over to the community in December 2014, just as the seasonal monsoon arrived, and Pedersen was thrilled to see children playing in the waterfalls, just as he’d envisaged. “If I ended up in a place where I needed care, I wouldn’t want to be a burden to my family, but I would love to have the ability to share stories and continue to engage with people. A lot of aged care centres are not necessarily very nice places, but this doesn’t feel institutional,” Pedersen continues. “It’s an elder’s centre: a place for the whole community to gather and celebrate their elders. The building is lyrical and unusual looking: it reflects the community it was designed for.”
A new house by Max Pritchard on South Australia’s Fleurieu Peninsula combines the best aspects of his clients’ expat experiences with local materials and forms that complement the stunning location.

Words Alex Taylor  Photography Sam Noonan
Recent retirees Arthur and Shirley Robertson revelled in the world during the course of their marriage. They set off from their home city of Melbourne with their two young children and lived in the Solomon Islands, Fiji and Papua New Guinea. In Australia, they resided in Sydney and Brisbane before coming to a stop in Adelaide.

With their children now grown up, and their working lives winding down, the Robertsons sought a fresh start. “Wherever we’ve lived, we always looked for land,” Arthur says. “We dreamed of buying acreage and wanted to build our own house.”

The couple explored the Adelaide Hills, up and down the coast, and the state’s famous winemaking regions before finding a small piece of paradise on the Fleurieu Peninsula. About one hour south of Adelaide, down a dirt road that leads to a small, isolated beach, they discovered a block of land for sale.

On the north-facing side of a steep slope, it offers incredible views across rolling hills. In the distance, bays and beaches curve around to the right, with Mount Lofty rising above the sweeping Gulf of St Vincent coastline. “When I saw this place, I just knew this was it,” Shirley recalls.

Just as the couple had carried out extensive research to find their magnificent site, their search for an architect was equally meticulous. “Before we even thought about building our own house, we saw the Balhannah House designed by Max Pritchard – which was for sale at the time – and we really liked it,” Shirley says. “But we interviewed other architects as well, before deciding to engage Max.”

The brief they gave Pritchard was informed by their peripatetic lifestyle, particularly their memories of a favourite house they’d occupied on the Solomon Islands. “We lived in a house that overlooked the ocean, and it was oblong-shaped with a massive chef’s kitchen, and a wall of glass that opened on the sea side,” Arthur says.

“We envisaged this as a long house with a flat roof, and a wall of glass,” Shirley says. “We also wanted high ceilings, a big family room and an open fire.” To us the bedrooms were secondary, although we wanted enough space for our children and friends to be able to come and stay.”

Pritchard says his design started as a simple linear plan. “We were lucky that the view and the solar orientation were in the same direction, but I wanted to angle the plan towards the view across that adjacent valley, too,” Pritchard says, pointing towards the hills in the east. “The triangular roof point developed from that decision.”

The unusually shaped roof – it resembles a folded pocket square, with its longest side facing the coastline – covers the house, an adjacent carport and elevated timber deck, and a small storage cupboard. It is one of the house’s most dramatic features, extending upwards from a single point that rests on a newly constructed berm at the southwestern corner, expanding out and beyond the northern elevation. A sweeping seven-metre cantilever provides a strong, sturdy gesture at the roof’s highest point, contrasting with the dynamic landscape of the surrounding hills.

For Pritchard, the roof was always going to be made of steel, and it had to be as spectacular as the site itself. He specified the locally roll-formed Revolution Roofing True Oak™ Superior Corrugated ‘Deep’ 21mm profile, made from COLORBOND® steel in the colour Windspray®, for several key reasons. “True Oak™ Deep has a more regular pitch than other corrugated profiles – it’s closer in shape to traditional steel roofs – and it creates more dramatic shadows,” says Pritchard. “This is a dramatic site with the rolling hills in every direction, and I wanted this roof to reflect that drama. Where the roof terminates in the berm, the slope echoes the gradient of the next hill in the background, so the plane of the roof allows the house to sit beautifully in the landscape.”

“This is a dramatic site with the rolling hills in every direction, and I wanted this roof to reflect that drama.”
six years ago they have established a garden and vegetable garden, which they grow apples, artichokes and stone fruits, and almonds and walnuts, and keep chickens for eggs. In a modern day story of self-sufficiency, they collect their own rainwater from flat trays, and generate solar power from a five kilowatt photovoltaic system mounted on the steel roof.

They have embraced sustainable land management practices too, taking advantage of a local scheme – the Adelaide and Mount Lofty Ranges Natural Resources Management Levy – to revegetate the former farmland by planting thousands of new trees and shrubs.

All of these activities require plenty of water, and to that end, the striking roof, which covers an area of about 420 square metres – plays an important functional role, because the property is not connected to main water.

“Every 10 millimetres of rain that falls produces about 3000 litres of water for our tanks. To us, the size of the roof was a material issue, it became a critical item in the design,” Arthur says. “It's a great roof and it endures and looks good. I’d certainly have a bird roof again.”

Rainwater runs off the corrugated profile into two 820mm-wide steel valley gutters. Its passage is slowed by two sections of equal angle steel near the base, which prevent overflowing. The water then passes over a roof-catcher into two large pipes that feed a 5000-litre tank set within the berm. “There is some logic in concentrating the water into two pipes, because these edges act like a valley,” Pritchard explains. “It will never become blocked.”

Rainwater is then channelled to a 10,000-litre rain water tank, made by Rhino Tanks using COLORBOND® steel, located just beyond the driveway and pumped to two 25,000-litre tanks further away which can gravity-feed back to the main tank if need be. Pritchard explains. “It will never become blocked.”

Despite the over-scaled nature of the roof, the house beneath it is of surprisingly modest proportions. It has three bedrooms, one bathroom and a single large open-plan living area. It may be compact but it’s not limited: the entrance and bedroom wing are framed with warm-toned, roughly shaped local stone. Like South Australia’s early settlers – who were forced to build with local stones due to the scarcity of timber – the Robertson’s collected all of this stone over the years.

The Robertson’s have plenty of tanks to keep them busy in retirement without having to worry about looking after the house. Since they bought the property

OPPOSITE LEFT: The triangular-shaped roof lifts up to the north where a wide eave provides shade in summer and solar access in winter. ABOVE: On approach, the spectacular roof is clearly visible in the landscape. BELOW: Pritchard incorporated a recessed gutter to deliberately expose the rippled edge of the roof made from COLORBOND® steel!

"Every 10 millimetres of rain that falls produces about 3000 litres of water for our tanks. To us, the size of the roof was a material issue, it became a critical item in the design"
HoP Architects’ co-founding partner Gregg Pasquarelli had another career before he decided to become an architect. When I meet him at the Risk Conference in Melbourne he laughs when recalling the mid-life crisis he suffered at the tender age of 25. “I was working in investment banking and I spent hours each day drawing on photocopier paper,” he says. “One day I pulled all the drawings out and looked at them, and 90 per cent were of buildings, so I quit the next day.”

His parents were horrified that he planned to give up a potentially lucrative career in finance to spend five years studying so he could become one of the lowest paid professionals in the property development industry, but it’s not a decision he regrets. He studied architecture at Columbia University in New York, where he remembers that undergraduates were asked to choose whether they would pursue careers in practice or academia. The architects who founded SHoP in 1997 – Pasquarelli and his wife Kimberly Holden, twin brothers Christopher and William Sharples and William’s wife Coren Sharples (the name represents initials from their surnames) – were determined to do both, simultaneously.

Partner Vishaan Chakrabarti joined in 2012, while former partner Jonathan Mallie joined in 1999 and left to set up his own consultancy in 2015. Collectively they came from backgrounds in art history and fine art, real estate and development, planning, science and engineering, and as practitioners they continued to engage with academia through teaching positions at universities around the world.

“We founded the practice basically on the premise that we could be both academics and an architectural firm that we could continue to do research and push the boundaries of design,” Pasquarelli says. “So we are incredibly interested in technology and finance, and all the things that go together to actually get a building built.”

SHoP functions like the extended family that it is, with a horizontal structure that sees partners and employees eating lunch together. The firm uses consensus decision-making techniques, which are underpinned by the partners’ shared Quaker beliefs. Their diverse former careers mean that SHoP architects look at architectural problems from multiple perspectives. “That gave us the means to freely adapt other methods of problem-solving from other industries and try to bring them to architecture,” Pasquarelli says.

Thanks to this approach, the firm has reclaimed some of the power many architects have inadvertently given away – thanks to the rise of project managers and the increasing use of contracts that disconnect architects from clients and end-users. SHoP has adopted some of the risks of financing, development, construction, marketing and sales functions, in addition to its central role of architectural design. However, experimenting with new business models hasn’t always paid off: the firm lost money on investments – and many of its fee-paying clients – during the global financial crisis. At other times, they have paid off: when the Porter House project in Manhattan was a success, the firm – which took equity in the development rather than architectural fees – shared the spoils.

“We are incredibly interested in technology and finance, and all the things that go together to actually get a building built.”
Another method SHoP used to differentiate itself was to abandon conventional representations of design. “Fifteen years ago we started getting rid of the idea of using plan, section and elevation as a way to build buildings, and we were fully modelling our projects instead, where every single piece was in the model,” Pasquarelli says. “We used drawings to tell the computer what to fabricate, and drawings that showed how to assemble those pieces. What we didn’t realise is that we were doing BIM (Building Information Modelling) before we even knew what BIM was, and we worked closely with the development of Revit, building design software tools.”

Yet another tool simplifies and speeds up the process of development, from acquisition of the site to projecting financial outcomes. “In NYC, the zoning code is 1,000 pages long (4,480 pages of rules and 800 pages of exceptions to those rules),” Pasquarelli says. “The first thing you do on a new building is pay a very expensive and smart zoning attorney or architect, and it takes six to eight hours to get the first massing model.”

“We developed a product called Envelope where you enter an address, it prompts you with a series of possible things that you’re allowed to do on that site, and within 60 seconds it will mass your building,” he explains. “You can output the model to BIM for EcoTec to run financial models, and you can click and play with options, and produce many versions in a few minutes.”

Envelope will soon be rolled out to other US capital cities with the use of venture capital funding. This ability to incorporate lateral thinking and new technology was particularly useful when SHoP won its first large-scale project, the Barclays Centre in Brooklyn. Architect Frank Gehry had previously drawn up plans for the site, known then as Atlantic Yards, but they were shelved in 2008 due to budget overruns and the global credit crunch.

Stadium experts Charles Bacevic delivered off-the-shelf plans for a multipurpose arena that could be built in a short timeframe, to enable the project to break ground before federal funding was due to expire at the end of 2009. In March of that year, SHoP was engaged by the City of New York to redesign the facade, not realising how advanced the project was. “We didn’t know they had ordered the steel, and then we said: ‘We are not doing a shit job on your building,’” he recalls. “But we had a great conversation with them, and said we’d think about it. My partner and I went out that night and started sketching and we thought: ‘Is there something we can do to pull this box apart and solve the problem?’”

SHoP’s redesign aimed to better connect the arena with its surroundings, both in plan and use of materials. “We aligned the concourse with the sidewalk, and added glass for a sense of connection,” Pasquarelli explains. “We then built a band of steel in the middle to connect with the height of the neighbouring brownstone buildings, and a second band of steel at the top, which becomes the floating iconic element on the skyline,” he says. “It has a grand civic gesture, thanks to the cast-ilevered trenched parapets that we like to the optics of (Roman Baroque architect) Bernini, but it’s hip-hop style, because this is Brooklyn.”

The building was redesigned in just seven weeks, and the arena opened in September 2012: a rapid programme that earned SHoP an award for “the most innovative architecture company in the world in 2014.” For its new large-scale work, SHoP uses computer-aided design as an internal tool, and it’s now working on four of 11 new towers that will alter the skyline of New York City. That shift from boutique firm to major player was one of the factors cited by Fast Company magazine when it named SHoP as the most innovative architecture practice in the world in 2014 (and #2 in its list of the world’s most innovative companies, alongside Google and Apple).

“Of course, it feels like forever, and I’m really 75,” Pasquarelli laughs, adding that he may have another career change in him yet. “Seriously though, the best part of being an architect is that you’re young until you’re 50, and I turned 50 two weeks ago, so I don’t know what I’m going to do next. We live so long now, but I do know that I’m not going to play golf.”

The Fast Company accolade was helpful because it restored architecture to its central place in development, in what Pasquarelli calls “a challenging political environment.” “Architects is the last great generalist profession: what we’ve so good at is taking a variety of things, to coalesce them and bring them together,” he says. “Yet somehow, we try to make ourselves image-makers.

“I believe we have so much more to give. We’ve got to engage those other things – technology and finance and politics and all the other elements – because if we don’t, we don’t have a seat at the table,” he concludes. “I believe in architecture, I believe in design, and I think that we have an incredible moment to really make a difference in our cities around the world.”
A purposefully fragmented steel shell is the hallmark of an idiosyncratic house in the heart of Melbourne’s western suburbs.

Words Peter Hyatt

Photography Peter Bennetts

SLICED, DICED & DELICIOUS

ARCHITECT
Andrew Maynard Architects

PROJECT
Cut Paw-Paw House

LOCATION
Seddon, Victoria
architect, Mark Austin. Even the name of this evocatively titled dwelling suggests an object of desire, ripe for the fruit salad bowl or dining table. Broken into a delicate structural rhythm, the addition flows from the original timber cottage to resemble a series of lightweight steel pods, or encampments, that reach deep into the backyard.

“Importantly we left the building incomplete,” Maynard enthuses. “The central space, between the dining area and the studio, is an unclad frame within and surrounded by a garden. It is both inside and outside, a new building and an old ruin, garden and home.”

Maynard himself is a juxtaposition, perhaps even enigma, like much of his architecture. Serious yet playful, driven yet calm, his designs contain enough ambiguity to constantly challenge perceptions and allow for occupant interpretations. His big constant is curiosity. Even his website reminds the cyberspace traveller how architects must leave their burrows to absorb, engage and generate.

While the firm’s work – he and co-director Mark Austin work with a small clutch of staff – is in general resistant to replication, it becomes a more thrilling high-wire act with the safety net abandoned. Such work eludes easy categorisation.

“As a practice we often imagine what a finished building will become, but,” he laments, “the magic of construction sites invariably ends in disappointment. Once houses are clad, the beautiful skeleton that held such potential and stirred the imagination is buried.”

In contrast, the Cut Paw-Paw House retains a skeletal incompleteness that blurs at the edges and dissolves into its backyard setting, thanks to the exposed steel frame and the simple steel skin that punctuates its length.

Maynard relishes steel’s ability to stretch with his imagination. “From a detailing viewpoint we loved the long span and 0.7-millimetre industrial profile of LYSAGHT LONGLINE® 305. We’re very interested in materiality and a return to craftsmanship that’s possible with prefabrication and steel,” he says. “That was really fun and executed beautifully at Cut Paw-Paw,” adding that he is especially pleased with the roof which he says was beautifully installed.

The expressed steelwork of galvanised steel I-beams supports a level for roofing and walls made from COLORBOND® steel in the colour Surfmist®, in LYSAGHT LONGLINE® 305 profile.

Off-site pre-fabrication involved workshop welding and bolting of various steel frames and components together, before dismantling them in the workshop and erecting them again onsite on a concrete slab and footings.

The first stroke on paper, or computer keyboard, can strike fear in the heart of an architect. Unless resorting to the refuge of formula, or old habits, truly inventive solutions can be daunting. How to grasp the end when you’re unsure of how or where to begin? Architecture is so often a game of snakes and ladders – with an overlay of chess just to keep the players fully alert. Problems come thick and fast – all demanding the right moves. Melbourne architect Andrew Maynard finds the big answers less in complex theory than relaxed client conversation. Despite a body of work charged with frisson and enigma, Maynard says it is his clients who inform his designs rather than a preconceived intent or, worse still, dogma. He has witnessed clients experience life-changing livability rather than glib, superficial change. It’s an appreciation that verifies that architecture, at its best, can affect lives profoundly.

“The first stroke on paper, or computer keyboard, can strike fear in the heart of an architect. Unless resorting to the refuge of formula, or old habits, truly inventive solutions can be daunting. How to grasp the end when you’re unsure of how or where to begin? Architecture is so often a game of snakes and ladders – with an overlay of chess just to keep the players fully alert. Problems come thick and fast – all demanding the right moves. Melbourne architect Andrew Maynard finds the big answers less in complex theory than relaxed client conversation. Despite a body of work charged with frisson and enigma, Maynard says it is his clients who inform his designs rather than a preconceived intent or, worse still, dogma. He has witnessed clients experience life-changing livability rather than glib, superficial change. It’s an appreciation that verifies that architecture, at its best, can affect lives profoundly.

Unless resorting to the refuge of formula, or old habits, truly inventive solutions can be daunting. How to grasp the end when you’re unsure of how or where to begin? Architecture is so often a game of snakes and ladders – with an overlay of chess just to keep the players fully alert. Problems come thick and fast – all demanding the right moves. Melbourne architect Andrew Maynard finds the big answers less in complex theory than relaxed client conversation. Despite a body of work charged with frisson and enigma, Maynard says it is his clients who inform his designs rather than a preconceived intent or, worse still, dogma. He has witnessed clients experience life-changing livability rather than glib, superficial change. It’s an appreciation that verifies that architecture, at its best, can affect lives profoundly.

Unless resorting to the refuge of formula, or old habits, truly inventive solutions can be daunting. How to grasp the end when you’re unsure of how or where to begin? Architecture is so often a game of snakes and ladders – with an overlay of chess just to keep the players fully alert. Problems come thick and fast – all demanding the right moves. Melbourne architect Andrew Maynard finds the big answers less in complex theory than relaxed client conversation. Despite a body of work charged with frisson and enigma, Maynard says it is his clients who inform his designs rather than a preconceived intent or, worse still, dogma. He has witnessed clients experience life-changing livability rather than glib, superficial change. It’s an appreciation that verifies that architecture, at its best, can affect lives profoundly.

Unless resorting to the refuge of formula, or old habits, truly inventive solutions can be daunting. How to grasp the end when you’re unsure of how or where to begin? Architecture is so often a game of snakes and ladders – with an overlay of chess just to keep the players fully alert. Problems come thick and fast – all demanding the right moves. Melbourne architect Andrew Maynard finds the big answers less in complex theory than relaxed client conversation. Despite a body of work charged with frisson and enigma, Maynard says it is his clients who inform his designs rather than a preconceived intent or, worse still, dogma. He has witnessed clients experience life-changing livability rather than glib, superficial change. It’s an appreciation that verifies that architecture, at its best, can affect lives profoundly.
“Sustainability,” says Maynard, “is at the core of Cut Paw-Paw. Rather than simply outsourcing the existing structure we have run the new form along the southern boundary so it is soaked with sunlight. The openings and windows are optimised for passive solar gain, thereby reducing demands on mechanical heating and cooling. All windows are double-glazed and the light-coloured roof helps reduce demands on active air-conditioning and its contribution to the surrounding urban heat sink which is summarised as the rise in temperature of built-up areas, often compared with a natural landscape.”

Maynard considers steel a vital part of his material palette, in keeping with his view of lightweight frame and the idiosyncratic. The Cut Paw-Paw House reveals his idiosyncratic, original voice: one that is emphatic but never dogmatic. There is no shortage of architects from diverse style tribes who would benefit from recognising this difference.

The method of attaching the extension to the existing house required careful thought and planning, too, Maynard says, describing the junction between old and new as a steel and glass sleeve. “We didn’t want to smash or crash new architecture into an existing building, so we sit next to the other with the steel and glass gently connecting the two areas.”

Informed risk-taking rather than the reckless variety is always a good starting point for those seeking the ideorphotic. The Cut Paw-Paw House reveals a distinctive, original voice: one that is emphatic but never dogmatic. There is no shortage of architects from diverse style tribes who would benefit from recognising this difference.

Obviously in this case, the clients’ initial idea was the starting point for a journey that led to a thrilling result. “I’m most proud of accepting and, I think, fulfilling the challenge Derek and Angela presented of making it ‘ridiculously inside out’,” Maynard says. “When we heard them say that we thought: ‘Well, we’re not just going to do a big sliding door onto a deck and say, the wall has disappeared.’ ‘Ridiculously inside out’ meant it’s actually challenging us to really blur those boundaries,” he adds. “A lot of people talk about blurring boundaries so I’m proud because I think that we nailed that one.”

This point was emphasised when the house appeared on a popular design blog recently. “One reader’s comment said it was irresponsible not to have weather protection between the kitchen, dining area and outside and that it needed walls or windows at some point,” Maynard recalls. “They had completely missed the idea that the sliding door comes down and meets the ground. They just assumed that there was no barrier, so that confusion is a small badge of honour for us.”

“We really enjoyed responding to the idea of ‘ridiculously inside out’, and giving that unfiltered appearance to the project,” Maynard continues. “When the plants eventually consume the central part of the building, there’s going to be a really lovely connection between that galvanised steel and the plants as they grow onto it. The way the steel and the greenery will co-exist is going to become a beautiful little dance.”

The openings and windows are optimised for passive solar gain, thereby reducing demands on mechanical heating and cooling. All windows are double-glazed and the light-coloured roof helps reduce demands on active air-conditioning and its contribution to the surrounding urban heat sink, which is summarised as the rise in temperature of built-up areas, often compared with a natural landscape.

Maynard considers steel a vital part of his material palette, in keeping with his view of lightweight frame and new as a steel and glass sleeve. “We didn’t want to smash or crash new architecture into an existing building, so we sit next to the other with the steel and glass gently connecting the two areas.”

Informed risk-taking rather than the reckless variety is always a good starting point for those seeking the ideorphotic. The Cut Paw-Paw House reveals a distinctive, original voice: one that is emphatic but never dogmatic. There is no shortage of architects from diverse style tribes who would benefit from recognising this difference.

Obviously in this case, the clients’ initial idea was the starting point for a journey that led to a thrilling result. “I’m most proud of accepting and, I think, fulfilling the challenge Derek and Angela presented of making it ‘ridiculously inside out’,” Maynard says. “When we heard them say that we thought: ‘Well, we’re not just going to do a big sliding door onto a deck and say, the wall has disappeared.’ ‘Ridiculously inside out’ meant it’s actually challenging us to really blur those boundaries,” he adds. “A lot of people talk about blurring boundaries so I’m proud because I think that we nailed that one.”

This point was emphasised when the house appeared on a popular design blog recently. “One reader’s comment said it was irresponsible not to have weather protection between the kitchen, dining area and outside and that it needed walls or windows at some point,” Maynard recalls. “They had completely missed the idea that the sliding door comes down and meets the ground. They just assumed that there was no barrier, so that confusion is a small badge of honour for us.”

“We really enjoyed responding to the idea of ‘ridiculously inside out’, and giving that unfiltered appearance to the project,” Maynard continues. “When the plants eventually consume the central part of the building, there’s going to be a really lovely connection between that galvanised steel and the plants as they grow onto it. The way the steel and the greenery will co-exist is going to become a beautiful little dance.”

The openings and windows are optimised for passive solar gain, thereby reducing demands on mechanical heating and cooling. All windows are double-glazed and the light-coloured roof helps reduce demands on active air-conditioning and its contribution to the surrounding urban heat sink, which is summarised as the rise in temperature of built-up areas, often compared with a natural landscape.

Maynard considers steel a vital part of his material palette, in keeping with his view of lightweight frame and new as a steel and glass sleeve. “We didn’t want to smash or crash new architecture into an existing building, so we sit next to the other with the steel and glass gently connecting the two areas.”

Informed risk-taking rather than the reckless variety is always a good starting point for those seeking the ideorphotic. The Cut Paw-Paw House reveals a distinctive, original voice: one that is emphatic but never dogmatic. There is no shortage of architects from diverse style tribes who would benefit from recognising this difference.
Steeped in Australian banking and design history, and possessing unrealised potential, this landmark building has been reinvigorated to facilitate the new custodian’s innovative workplace culture. Crowning the achievement is a meticulously resolved steel and glass addition.

Words Micky Pinkerton
Photography Peter Bennetts (PBB); Paul Bradshaw (PMB); Brett Boardman

ARCHITECT
Johnson Pilton Walker

PROJECT
50 Martin Place

LOCATION
Sydney, New South Wales

UNDER THE DOME
Staff entering Macquarie Group’s new global headquarters in Martin Place, Sydney, do so via a lobby which has retained the original barrel-domed ceiling of the former Government Savings Bank of New South Wales’ Grand Hall. If they care to look up – and it’s hard not to – they see a series of figurative stained glass panels depicting the industries that contributed to the country’s wealth in the early 20th century, from stonemasons to stevedores.

While Australia’s economy has changed markedly in the intervening years, the message hasn’t, and the building remains a powerful symbol of the integral place of our banking system in nation-building.

At the time, architects Ross & Rowe expressed this message not only in the decorative elements of the building, but in its function as well. Built between 1925 and 1928, the building was considered to be at the cutting-edge of office design and construction, and survives today as a rare example of Australian inter-war Beaux Arts architecture. For architects Paul van Ratingen and Matthew Morel, of Johnson Pilton Walker (JPW), the opportunity to explore the rich architectural legacy of the original building was part of the appeal of taking on the brief to adapt it for modern use.

“We have always loved the rigor and the intelligence of this building,” explains JPW director Paul van Ratingen. “There is innovation in its materiality, in its construction, its execution, its services and its thinking. It really is an exemplary building.”

JPW first became involved with new plans for the building when the previous owner engaged the practice to develop concepts for updating the 10 levels of existing office space. At that stage there was no dome on the drawing board, but when the building was sold to Macquarie Group in 2012, the architects were given an opportunity to discuss the proposals they had developed, and consider how they might re-shape them to meet the additional expectations the new owners had of the building.

The architects started with context. This building had once been one of the tallest in the city but was now dwarfed by the office block towers around it – many of which house Macquarie’s clients. Looking up at the facade from street level was impressive in 1928 and continues to be so today, but looking down on the building was a non-descript experience. JPW reasoned that the view from above had to be equally as striking as the visual narrative at ground level.

The dome had its genesis in those discussions: a lightweight structure clad in glass, a Beaux Arts-inspired addition which was sympathetic to the old, but made a confident and innovative statement about the future. The simplicity of the shape also provided a unifying motif for a space that was intended to accommodate a multiplicity of functions.

“Once we had established the form, how the building was going to be built was so important,” says van Ratingen. “We did look at concrete and timber and composites, but in the end steel was the most rational from the perspective of cost, serviceability, member size, logic, and legibility of a heritage building and a new addition.”

JPW reasoned that the view from above had to be equally as striking as the visual narrative at ground level.
ABOVE: Columns and rafters incorporate XLERPLATE® steel made by BlueScope.

the speakers, audiovisual equipment and a bespoke blind system hydraulics and storm water drainage, as well as being reticulation routes for wiring for

TOP RIGHT: The original atrium was widened by 70 per cent to allow natural light to filter signal within the heritage ground floor of the innovative and contemporary spaces above

TOP LEFT: Two bespoke steel and glass lifts link the lobby with the rooftop, providing a PBBPBB for vertical circulation and visual connection.

PANEL SAYS
In modernising this iconic 1928 Beaux Arts-style bank headquarters for Macquarie Bank, Johnson Pilton Walker has retained the cartoon-like ground-floor banking chamber while removing the building’s glazed roof to allow a new lease of life. The installation of a steel-framed glass dome is a minimal, innovative and elegant solution. It is the new atrium with natural light and open up the interior to create opportunities for vertical circulation and visual connection. On the roof, the skin of the conventional steel structure is contrasted perfectly with the original heavy masonry facade. Following our publication of the White Bay Cruise Terminal in SP18, this is another example of JPW’s ability to transform old buildings into contemporary spaces.

“Although a temporary roof deck was formed so that interior work could progress in parallel, the assembly of the dome was nonetheless on the critical path of the project. While the roof was being constructed, two additional insertions to the heritage building were taking shape below the opening of the atrium by 70 per cent, to improve natural light and circulation to the workspace areas below, and the design of two remarkable circular glass lifts, which link the lobby with the rooftop and provide clients with a memorable arrival moment. The project has attracted much praise. It won a 2015 Australian Institute of Architects New South Wales chapter Awards, including the COLORBOND® Award for Steel Architecture, the Sir Arthur G Stephenson Award for Commercial Architecture and a Commendation for Sustainable Architecture.

The most important undertaking, though, has come from Macquarie Group itself, with feedback indicating both staff and clients enjoy the building and that it successfully reinforces the company’s brand in a physical way.

Banking practice and workplace attitudes have changed so materially since 1928 that Ross & Rows might struggle to comprehended the cross-group collaboration and entrepreneurial culture of the new owners of 50 Martin Place. As architects, however, they would appreciate that hard work and opportunity can be enhanced by design, and that the cumulative effort of many can produce something exceptional. This has ultimately restored the building to its status it enjoyed when it first opened: an innovation project at the forefront of contemporary commercial design.”

SP "The steel of the structure is brought into the character of the spaces rather than being a structure that is high above you"
Adelaide’s new flagship TAFE at the Sustainable Industries Education Centre breathes new life into a proud remnant of the city’s industrial past.

Words: Alex Taylor  Photography: David Sievers

ARCHITECT
MPH Architects in Association with Architectus

PROJECT
Sustainable Industries Education Centre – Tonsley TAFE

LOCATION
Cloveley Park, South Australia
The new Sustainable Industries Education Centre (SIEC) at Clovelly Park in Adelaide is an exemplar in so many ways. It showcases adaptive reuse and urban regeneration, collaborative teaching methods across multiple disciplines, the durability and adaptability of steel construction, and straightforward building techniques that demonstrate the craft for students, yet it still manages to appear modest in photographs. It’s difficult to appreciate the massive over-scaled quality of its internal streets, lanes, teaching spaces and workshops – all sheltered inside an oversized industrial shed – without experiencing them first-hand.

The South Australian government acquired this 64-hectare site after the Chrysler/Mitsubishi factory stopped producing cars in 2008, and committed $253 million to its renewal with the aim of driving private investment across four key industries: mining and energy, clean technology, green construction and medical technologies. The SIEC occupies the southern end of the former plant’s motor assembly building (MAB), with a new tower for Flinders University bookending the northern end. The central section is currently being transformed into the precinct’s new town square.

“The MAB was reportedly the largest building of its kind in the southern hemisphere at one point, and it was synonymous with Chrysler and later Mitsubishi,” says Tony Materne, design director and principal at MPH Architects, who designed this project in association with Architectus. “It formed the core of Adelaide’s industrial past and the demise of car manufacturing hit the state hard, psychologically. In taking on this project, we wanted to preserve that industrial heritage in a building that embodied confidence in the future.

“I saw this project as an opportunity to celebrate the past, and didn’t want to strip the building of its industrial infrastructure,” Materne continues. “I’d only been on the job for three days, but I saw a lot of things worth salvaging – such as the grid references on the steel columns, which to me were useful and endearing – and I was able to convince our client to keep the last of several yellow steel gantry cranes, which now forms a striking feature in the main atrium.”

Images of this impressive central spine don’t adequately convey the immense height and breadth of the original steel columns and beams, which can still be seen marching across the old factory floor in regimented rows, nor the simple beauty in the repetitive geometry of the soaring sawtooth roof profiles, framed with delicate steel trusses. These were some of the attributes that Materne was keen to preserve and reveal in his design for the new centre.

He readily admits that the rational and unadorned skeletal steel frame of the MAB set the functional and aesthetic tone for the entire project, with the new insertions carefully slotted into the frame without obscuring the rigorous order.

SOUTH ELEVATION

The grand main street – looking south – imparts a civic scale to the project. The yellow gantry crane is a remnant from the Mitsubishi Assembly Building’s former era.

BELOW: On the ground floor of each new building, communal student spaces provide room to study, collaborate and conduct research via the virtual library. The provision of lockers, kitchen facilities and bathrooms all help students transition from work to study mode.
We like grids in Adelaide," he laughs. "We undertook an enormous amount of work to get the new grid to work within the framework of the existing steel skeleton."

His starting point was the original green painted steelwork – 90 per cent of which was retained, some of it still bearing engraved graffiti dating back to 1984 – and left just as it was, apart from locations where it could come into contact with people. In those cases, the steelwork was finished with an inorganic silicate paint, which was also used to demarcate the new steel members that were inserted into the skeletal frame, including PFCs, RHS and angles. These stiffen and brace the existing structure and support new suspended services throughout the building. They also conform to earthquake zone building codes.

Externally, the building’s original asbestos cladding was removed and replaced with a glazed facade at ground level and on the southern side – which will eventually become the centre’s main entrance.

A black ribbon of Fielders Shadowline™ 305 profile made from COLORBOND® steel in the colour Monument® – combined with black painted angles over glazed sections – encircles the building to define SIEC within the overall MAB skeleton. The parapet between the glazing and roofline was clad with a new skin of Fielders Shadowline™ 305 profile made from COLORBOND® steel in the colour Surfmist®. LYSAGHT KLIP-LOK 700 Hi-STRENGTH® made from COLORBOND® steel in the colour Surfmist® was used on the roof.

Inside, the $110 million TAFE brings together 26 construction trades that were previously scattered across six campuses throughout Adelaide, and delivers teaching and learning for the digital age. With no physical library onsite, students can access resources via the building’s wifi network, including lectures and course notes, and use online forums and groups to share information and projects among their peers.

Catering for about 6500 students a year, with up to 800 on campus each day, course delivery has been flexibly tailored to suit a range of student circumstances, including people working full-time or living remotely, and to provide life-long learning from apprentice level to advanced diploma. With a focus on green construction methods, the TAFE offers two new courses in renewable energy and water operations alongside the traditional trades of electrical, refrigeration and air-conditioning, plumbing, carpentry and joinery, furnishing and building, interior design and drafting, bricklaying, and plastering and tiling.

Balancing the different requirements of these disciplines – which include dust and noise separation, wet and dry workshops, and a carefully considered process for the delivery, storage and distribution of construction materials – was one of the key spatial planning challenges for the architects. With a total floor area of 43,000m², including a footprint of 28,000m², this project has a greater floor space than the tallest skyscraper in Adelaide’s CBD, a fact not lost on Materne.

“I saw this project as an opportunity to celebrate the past, and didn’t want to strip the building of its industrial infrastructure. I saw a lot of things worth salvaging such as the grid references on the steel columns”
In thinking about how to tackle this project, we had to start with an urban language,” he explains. “We carved out a new ‘main street’ through the middle of the MAB, with the grand double stair case marking the central hall, then we sited six separate ‘buildings’ off it, with smaller ‘laneways’ providing access to student learning spaces and social areas.

There is a high level of rigor across the space planning, structure of systems and building services,” Materne continues. “Once we established the planning and design rules, they applied to 80 per cent of the building. So after the first typical bay was designed, we were able to apply that across the site, on every level. We then custom-designed those areas that provided exceptions to the rule.”

Three different sawtooth roof heights – 15, 10, and six metres – dictated the types of spaces that could fit below them, with glass-fronted workshops beneath the lower roof and the unique building services installation (BSI) module occupying the tallest section. “The BSI was developed as a keystone-lane for our TAFE client,” Materne says. “It’s a vertical workshop that simulates working at heights, to teach multi-storey construction skills to all of the trades.”

Working in trenches below ground level, students can plan and coordinate services for water, gas, power, communications and gas, which will then be installed and commissioned by four floors in a controlled learning environment.

Bringing all of the trades together in a purpose-built facility under one roof offers better opportunities for interdisciplinary cooperation than ever before, and mimics the dynamic of real construction sites, Materne says. “There is a level of transparency and communication between different trades, and different types of learning – formal, semi-formal and applied – that breaks down the stereotypical barriers that exist between various construction trades, and to simulate the collaboration that goes on in the workplace,” he explains.

Another key aspect of the design was the notion of the entire building acting as a working model for the students within it. “This building itself acts as a demonstrator because we consciously decided to expose the structure and limit the finishes, so that students could see how the building was put together and how the systems work in harmony,” Materne says. “It's also a model of sustainability because we've applied an overlay of design awareness between the various trades, to foster best practice and to demonstrate the practicality of sustainable ideas and initiatives.”

In crafting and creating a building that pays respectful homage to its previous incarnation while maintaining its self-identified identity, Materne and his team have produced a facility that is sure to inspire and inform future generations. The original steel structure – whose influence on the new building is unmistakable, in both spatial planning and in the palette and character it lends to the spaces – plays a vital role in linking Adelaide’s proud manufacturing past with the TAFE campus of the future. The strength and clarity of the existing steelwork has been taken to its logical conclusion in the architect’s vision for SIEC, garnering praise from all quarters.

“I’ve been overwhelmed by the extraordinarily positive reactions I get from anyone who walks through the facility. I’m gob-smacked, frankly,” says Materne. “The industry feedback – from our peers both locally and internationally, as well as the students who use the building – has been incredible. People can be indelibly fluorescent to the spaces they occupy but this project generates passion for the building. And because it’s so big, it touches so many people’s lives and will have a major impact on the renewal of this whole area. The depth and breadth of the project’s reach has been astounding.”

“It’s an impressive result, for what is essentially a new TAFE campus in a big old steel shed.”

PANEL SAYS

This impressive adaptive reuse project is of a completely different scale and character to 50 Martin Place (page 28), but once again it demonstrates the durability and versatility of steel construction. The 50-year-old steel-framed shed was once a paragon of industry – for the former Assembly Works for Chrysler then Mitsubishi, but it was mothballed in 2008 when the car factory closed. By carefully amending the five buildings and a network of streets and lanes within its gable-end shell, MPH Architects has provided this enduring steel skeleton with new clothes. The ‘shed’ is now more a particular than an example of green-building best practice for the next generation of construction industry workers.

The rigidity of the original structure, and its different roof heights ranging from six to 15 metres, dictated the dimensions and placement of the new workshops (top), teaching spaces and offices (bottom left), and main circulation spaces (bottom right) within the existing envelope.
In the unassuming south-western Sydney suburb of St Johns Park, a finely crafted bar is the focal point of a two-year redevelopment of the local bowling club.

Uniquely cranked and folded in two and three-dimensions, the bar is sculpted from BlueScope XLERPLATE® steel that drapes across an off-form concrete base.

Both steel and concrete have deliberately been left in their raw state. Blasted, ground, burnt and heated, the blue/grey of the steel proudly displays the marks earned during its journey from 6mm XLERPLATE® steel sheet to an eclectic, free-form piece of furniture.

A coat of wax applied each week lubricates the steel from the rigours of patrons who attend the bar which is (virtually) always open.

With 16 metres of serving space (eight at the front and four on either side) the bar wraps around a full-height clear glass cabinet, also designed by Cullinan Ivanov Partnership, creating a lantern-like effect.

The bar’s 27 individual laser cut-outs are softly illuminated by concealed LEDs, furthering the intended impression of the steel oozing over its concrete base like so much melted chocolate.

Commissioned to design a number of spaces in the wider transformation of the club, Cullinan Ivanov Partnership set out to design and create a bar unlike any you would expect to find in a traditional bowling club.

“Bars can be a very standard thing in clubs – mostly functional rather than aesthetic, and ‘chopped and changed’ to accommodate more or less beer fonts, cashier points or meat-pie warmers,” says Cullinan Ivanov Partnership director, Vladimir Ivanov.

“We didn’t want to do a standard bar with a footprint, we wanted something that would last. We chose steel and concrete because they are solid, unyielding materials but we also tried to soften them so the bar would be like a beautiful sculpture.”

Steel fabrication for the project was undertaken by Ox Engineering.

“The hardest part was understanding how metal would move during bending and controlling that distortion,” says Ox Engineering owner Terry Tisdale.

“We made an extended prototype of the bar using our 3D modelling software, creating a whole corner section of it to ensure we could leave it in a raw finish.”

3D scanning capabilities allowed Ox to ensure that the installation of the project would be millimetre-correct and straightforward.

The XLERPLATE® steel was then folded and cranked using a 1000-tonne press. The unique cut-outs were produced with a nine-metre laser cutter before hard edges were removed with hand tools.

“Because of its compounding angles, it was fabricated in a number of different pieces and then welded together on site. It has quite a bit of braizing behind the scenes to keep it in place and ensure it is nice and square.”

The steel was built in two-metre sections and bolted to the top of the concrete. “They aren’t actually connected, as we didn’t want to hide the joins, and you can see each panel with a 5mm gap,” explains Ivanov. “The steel goes all the way through and gets bolted to the top of a fin that has been cut into shape and slotted into drilled concrete.

“It was a very difficult fabrication, but it is one of the best things we have ever done.”

Tisdale is also proud of the result. “It pushes the boundaries of taking raw metal materials and traditional square cutting and turning a bar into a free-form piece of furniture.”

Both Cullinan Ivanov Partnership and Ox Engineering report positive in-situ testing.

The bar is also a hit with patrons. “I love it and often you can barely see the bar from the amount of people there. Unfortunately it’s not in the city or I’d have drinks at ‘my’ bar more often,” says Ivanov.

“ ipt pushes the boundaries of taking raw metal materials and traditional square cutting... turning a bar into a free-form piece of furniture”