STEEL PROFILE

WOODS BAGOT & NHARCHITECTURE
MELBOURNE CONVENTION
AND EXHIBITION CENTRE

LOUIS LAYBOURNE SMITH
MT FRANKLIN VISITORS SHELTER

TROPO ARCHITECTS
NORTH ADELAIDE TERRACE
ADAM HADDOW

Adam is an elected Councillor of the NSW chapter of the Australian Institute of Architects and editor of SJB Architects in inner-city Sydney.

FELIM WILKINSON, AARON BLOOT AND FREDERICK ROMBERG

The panellists are:

Steel Profile has established an editorial advisory panel to ensure that only projects of the highest calibre are selected for publication. The panelists are:

FRANK STANISIC

Stanisic + Associates, founded by Frank Stanisic, is a Sydney-based architectural firm. His work is fuelled by an evolving interest in the diagram and frame as a basis for architectural invention, and the aesthetics of permeability. Frank’s projects have won numerous awards including Australian Institute of Architect’s Special Jury, Wilkinson, Aurum Bold and Frederick Romberg.

DANIEL GRIFFIN

Joint winner of the 2008 COLORBOND® Steel Sherrine Rose Prize, Daniel works for McBride Charles Ryan Architects and is currently teaching architecture at the University of Melbourne. His Award-winning architectural thesis at RMIT — where he is establishing a Humanitarian Design Program — examined the rehabilitation of Palestinian refugee camps.

We invite you to Steel Profile #105.

For the past three decades Steel Profile has tracked the accomplishments of Australia’s foremost steel-inspired architects. Over that time, the magazine has seen many changes, but one constant has been our relationship with Architects, which is fundamental to ensuring that the finest examples of steel-based architecture reach our pages.

As the Principal Corporate Partner of the Australian Institute of Architects, we know every architect will soon be submitting their projects to the 2010 National Architecture Awards Program. We wish that any appropriate steel-related projects be also submitted for consideration in Steel Profile. This can be done via our website: www.steelprofile.com.au

We trust you will enjoy this issue. Please feel free to share your thoughts via info@steelprofile.com.au.

Marc Sitten

BlueScope Steel editor

CONTENTS ISSUE 105

5

Woods Bagot and

McKee Architects’ six-star

Brown Star-rated Melbourne Convention and Exhibition Centre sets an international benchmark.

13

David Morris and Jason Osten-Hajeworth of University of South Australia are carefully guiding Australia’s future architects with a hands-on design and construction program.

17

The Mt Franklin Visitors Shelter, with its environment-engaging expanded form, is anything but a typical pitch hut.

25

Architect Louise Nettleton’s inspired use of steel has helped embody a WARR veteran’s vision to build a house as a legacy to his family.

33

The bold and uncompromising Government Services Centre building in Queensland showcases concrete construction for the drama of weathering steel.

39

Tropole Architects has masterfully reconciled the old and the new in its renovation of a North Adelaide Victorian-style cottage.

43

SJB Architects breathe new life into Melbourne’s Lonsdale Street with a brick building crowned in a delicate lantern of steel and aluminium.

Cover Project: Mt Franklin Visitors Shelter

Photographer: Ben Wragg

NUMBER 105, APRIL 2010

BLUESCOPE STEEL EDITORS: Mark Sitten, Kristin Camery

MANAGING EDITOR: Rob Gillam

ASSOCIATE EDITOR: Rachael Barnstorm

CONTRIBUTIONS: Nathan Carton, Ben Gill, Sophie Hamlett, Peter Hurst, Mark Lee, Paul Meddick

ART DIRECTOR: Natasha Kommetz

CORRESPONDENCE: Steel Profile, PO Box 813, Crown Post, NEW 163, AUSTRALIA

EMAIL: rob.gillam@steelprofile.com.au; rachael@steelprofile.com.au

SUBSCRIPTIONS: For all subscription enquiries please visit the Steel Profile website at www.steelprofile.com.au

BlueScope Steel recommends the use of COLORBOND®, COLORBOND® A2长城™ and ZINCALUME®, zinc-aluminium alloy coated steel for the majority of external cladding applications. For technical advice on the right product to use, contact your BlueScope Steel representative.

BlueScope Steel recommends routine preventative maintenance for eaves and other “unwashed areas” of structures which may not be regularly cleaned by rainfall. For further information please contact your nearest BlueScope office or consult www.bluescopesteel.com.au

BlueScope recommends the use of COLORBOND®-treated zinc/aluminium coated steel for the majority of internal cladding applications. For technical advice on the right product to use, contact your BlueScope Steel representative.

BlueScope, COLORBOND®, ZINCALUME®, XLERPLATE® and ® colour names are registered trademarks of BlueScope Steel Limited.

ALPEX-LIGHT™™ and ™ colour names are trademarks of BlueScope Steel Limited.

Copyright © BlueScope Steel Limited ABN 16 000 011 058. No part of this publication may be copied, reproduced or distributed without consent. BlueScope Steel Limited, to the extent permitted at law, is not liable to any person for loss or damage 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.

EDITORIAL ADVISORY PANEL

Steel Profile has established an editorial advisory panel to ensure that only projects of the highest calibre are selected for publication. The panelists are:

ADAM HADDOW

Frank Stanisic

FELIM WILKINSON

MARK SATCHELL

DANIEL GRIFFIN

Woods Bagot

David Morris

ADAM HADDOW

ANNE BIRKET

MARC SITTO"
A tour of the world’s key convention centres taught joint venture architects Woods Bagot and NHArchitecture ‘what not to do’. Their landmark response is the world-leading Melbourne Convention and Exhibition Centre.

Words: Toby Horrocks  Photography: Peter Bennetts
Market forces have helped create the world’s first six-star Green Star-rated convention centre; the Government’s brief for the new Melbourne Convention and Exhibition Centre (MCEC) called for only 4½ stars. The government sought new conference facilities that were “state of the art” and “world’s best practice.” In order to give these platitudes some teeth, the Plenary Group took MCEC joint design directors Hamish Lyon of NHArchitecture and Nikola Karalis of Woods Bagot on a tour of convention centres across Europe, America and Asia. “Generally we found ‘what not to do,’” says Lyon. “It’s a shame — you’re in some beautiful city like Berlin, and you’re in a building that could be anywhere, and then you go to Florida and you’re in the same building! So we set out to try and make the building represent Melbourne.”

To achieve this they buried the truck access and all the back-of-house areas underneath the foyer in a “vast catacomb labyrinth” below river level. An 18-metre-high glass facade supported by steel window mullions surrounds a naturally lit foyer that locates the visitor in relation to the city. There are several entry points. “You can arrive from any direction,” says Lyon. And once inside, unlike some international examples, there are no dead ends. “It’s like a game of Snakes and Ladders,” he says, “you can always find your way down, across or up.” The triangular site planning was coordinated in concert with bicycle and pedestrian routes. One tip of the dark, zinc-clad crystalline shape juts out 40 metres to the south, to create sheltered outdoor exhibition space next to the Exhibition Centre. “With this building you don’t see the enormous steel trusses — it’s all embedded. We’re not asking you to marvel at the physical power of the great cantilever but to realise that it is a formally coherent idea,” says Lyon in *The Private Life of Public Architecture*, a monograph on the design by Woods Bagot and NHArchitecture.

The roof, LYSAGHT KLIP-LOK 700 HI-STRENGTH® profile made from COLORBOND® Metallic steel in the colour Facade®, is an important part of the building’s public image. The Hilton Hotel tower and other city buildings overlook the MCEC, as do the ubiquitous satellite cameras providing Google images to virtual tourists. To line the 22,000 square metres of roof, a mobile roll-forming machine was brought on site by BlueScope LYSAGHT to mill lengths of KLIP-LOK® up to 75 metres long. “There’s not a single penetration in the entire roof,” says Lyon. “Private” in *The Private Life of Public Architecture* alludes to the Public-Private Partnership (PPP) procurement model used. In this model, instead of finding the funds to build the convention centre itself, the Government pays regular instalments to a private company in return for providing and servicing the building. The Plenary Group won the job in a competition that included not only the design but the entire financial package to develop, build, maintain and operate the MCEC for 30 years. According to Hamish Lyon, “a lot of the time private developers get a real beating for dumbing things down and the Government are always the great..."
To line the 22,000 square metres of roof, a mobile roll-forming machine was brought on site to mill lengths of KLIP-LOK® profile up to 75 metres long
A sub-floor space underneath the 5008 green and yellow seats in the Plenary Hall provides time-velocity conditioned air to the auditorium. Amazingly, a large proportion of the seats can fold and pivot away in less than 10 minutes to create a flat floor, so you’re able to get the air in through this floor, but then the floor goes flat, and then a truck can drive over the floor, explains Lyon. “There are facilities elsewhere that can subdivide, some that can have flat floor, but this is the first in the world at this scale that can do both of them.” There is even a black-water recycling plant in the basement.

The Melbourne Convention and Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

**AN ECONOMIC FLAGSHIP**

The Melbourne Convention and Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

VICTORIAN Premier John Brumby says the MCEC will generate $320 million a year for his state’s economy and create 2,300 new jobs over the next two decades.

The joint-opened convention facility already holds bookings for 55 international conventions and 200 local events to be held in the next five years. International conventions will attract more than 250,000 delegates, and local events another 270,000.

Competitive advantages the state has for the business convention market in focus, with state tourism minister Kerri-lyn Johnson estimating that of the 10 million business tourists who visited during its last survey period in 2007-2008, 20,000 return there for a conference or exhibition.

It’s a City of the new held tightly by Sydney’s landmark Convention and Exhibition Centre on the shores of Darling Harbour—one that Melbourne is now seeking.

Victorian Tourism and Major Events Minister Tim Holding says the $1.4 billion redevelopment of the South Wharf precinct, of which the MCEC is the centrepiece, was intended to “attract over 500,000 head of overseas business events and destination tourism.”

In fact the government invested $270 million in the Convention Centre. In order to leverage more than $5 billion in private sector investment in the precinct.

Brumby directly parallels the MCEC to its antecedent, the world heritage-listed Royal Exhibition Building opened in 1880. As Governor George Bowen, at the laying of the foundation stone for the Carlton Gardens in 1879, expressed the hope that the new Royal Exhibition Building would be a source of “permanent and ever-newing prosperity,” he says, “This specifically how I think of our investment in the Convention Centre.”

Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

In its design and ambition, Melbourne’s new Convention and Exhibition Centre rivals the world’s best, ensuring the city can compete on the global stage for lucrative professional and trade events. The expansive lobby space resembles an internal street that plays into both its historic setting, with stone and access to the wharves outside, and adjacent buildings such as the Hilton Hotel and South Wharf Retail Centre. The MCEC sets new benchmarks in terms of flexibility and sustainability. The main conference hall can accommodate 5000 delegates or be divided into three separate halls to be used concurrently. This is the world’s first Green Star convention centre, incorporating all displacement systems and blackwater mining.

sawyer, but one of the upside of the PPP is that the private companies own these buildings for a long time as they can actually match or exceed government in outback.”

One of the things Lyon is most pleased about is the public’s reaction to the project. “They come away saying: ‘That wasn’t what I thought a convention centre would be like’,” he says. Local Melbourne residents have been impressed by the building’s scale and shape, and particularly for the state economy and create 2500 new jobs over the next two decades.

The Melbourne Convention and Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

The Melbourne Convention and Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

Victorian Premier John Brumby says the MCEC will generate $320 million a year for his state’s economy and create 2,300 new jobs over the next two decades.

The joint-opened convention facility already holds bookings for 55 international conventions and 200 local events to be held in the next five years. International conventions will attract more than 250,000 delegates, and local events another 270,000.

Competitive advantages the state has for the business convention market in focus, with state tourism minister Kerri-lyn Johnson estimating that of the 10 million business tourists who visited during its last survey period in 2007-2008, 20,000 return there for a conference or exhibition.

It’s a City of the new held tightly by Sydney’s landmark Convention and Exhibition Centre on the shores of Darling Harbour—one that Melbourne is now seeking.

Victorian Tourism and Major Events Minister Tim Holding says the $1.4 billion redevelopment of the South Wharf precinct, of which the MCEC is the centrepiece, was intended to “attract over 500,000 head of overseas business events and destination tourism.”

In fact the government invested $270 million in the Convention Centre. In order to leverage more than $5 billion in private sector investment in the precinct.

Brumby directly parallels the MCEC to its antecedent, the world heritage-listed Royal Exhibition Building opened in 1880. As Governor George Bowen, at the laying of the foundation stone for the Carlton Gardens in 1879, expressed the hope that the new Royal Exhibition Building would be a source of “permanent and ever-newing prosperity,” he says, “This specifically how I think of our investment in the Convention Centre.”

Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

In its design and ambition, Melbourne’s new Convention and Exhibition Centre rivals the world’s best, ensuring the city can compete on the global stage for lucrative professional and trade events. The expansive lobby space resembles an internal street that plays into both its historic setting, with stone and access to the wharves outside, and adjacent buildings such as the Hilton Hotel and South Wharf Retail Centre. The MCEC sets new benchmarks in terms of flexibility and sustainability. The main conference hall can accommodate 5000 delegates or be divided into three separate halls to be used concurrently. This is the world’s first Green Star convention centre, incorporating all displacement systems and blackwater mining.

sawyer, but one of the upside of the PPP is that the private companies own these buildings for a long time as they can actually match or exceed government in outback.”

One of the things Lyon is most pleased about is the public’s reaction to the project. “They come away saying: ‘That wasn’t what I thought a convention centre would be like’,” he says. Local Melbourne residents have been impressed by the building’s scale and shape, and particularly for the state economy and create 2500 new jobs over the next two decades.

The Melbourne Convention and Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

Victorian Premier John Brumby says the MCEC will generate $320 million a year for his state’s economy and create 2,300 new jobs over the next two decades.

The joint-opened convention facility already holds bookings for 55 international conventions and 200 local events to be held in the next five years. International conventions will attract more than 250,000 delegates, and local events another 270,000.

Competitive advantages the state has for the business convention market in focus, with state tourism minister Kerri-lyn Johnson estimating that of the 10 million business tourists who visited during its last survey period in 2007-2008, 20,000 return there for a conference or exhibition.

It’s a City of the new held tightly by Sydney’s landmark Convention and Exhibition Centre on the shores of Darling Harbour—one that Melbourne is now seeking.

Victorian Tourism and Major Events Minister Tim Holding says the $1.4 billion redevelopment of the South Wharf precinct, of which the MCEC is the centrepiece, was intended to “attract over 500,000 head of overseas business events and destination tourism.”

In fact the government invested $270 million in the Convention Centre. In order to leverage more than $5 billion in private sector investment in the precinct.

Brumby directly parallels the MCEC to its antecedent, the world heritage-listed Royal Exhibition Building opened in 1880. As Governor George Bowen, at the laying of the foundation stone for the Carlton Gardens in 1879, expressed the hope that the new Royal Exhibition Building would be a source of “permanent and ever-newing prosperity,” he says, “This specifically how I think of our investment in the Convention Centre.”

Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

In its design and ambition, Melbourne’s new Convention and Exhibition Centre rivals the world’s best, ensuring the city can compete on the global stage for lucrative professional and trade events. The expansive lobby space resembles an internal street that plays into both its historic setting, with stone and access to the wharves outside, and adjacent buildings such as the Hilton Hotel and South Wharf Retail Centre. The MCEC sets new benchmarks in terms of flexibility and sustainability. The main conference hall can accommodate 5000 delegates or be divided into three separate halls to be used concurrently. This is the world’s first Green Star convention centre, incorporating all displacement systems and blackwater mining.

sawyer, but one of the upside of the PPP is that the private companies own these buildings for a long time as they can actually match or exceed government in outback.”

One of the things Lyon is most pleased about is the public’s reaction to the project. “They come away saying: ‘That wasn’t what I thought a convention centre would be like’,” he says. Local Melbourne residents have been impressed by the building’s scale and shape, and particularly for the state economy and create 2500 new jobs over the next two decades.

The Melbourne Convention and Exhibition Centre is a flagship in the battle to win major global conference business for Australia, and particularly for the state of Victoria. - Victor John Smalls

Victorian Premier John Brumby says the MCEC will generate $320 million a year for his state’s economy and create 2,300 new jobs over the next two decades.

The joint-opened convention facility already holds bookings for 55 international conventions and 200 local events to be held in the next five years. International conventions will attract more than 250,000 delegates, and local events another 270,000.

Competitive advantages the state has for the business convention market in focus, with state tourism minister Kerri-lyn Johnson estimating that of the 10 million business tourists who visited during its last survey period in 2007-2008, 20,000 return there for a conference or exhibition.

It’s a City of the new held tightly by Sydney’s landmark Convention and Exhibition Centre on the shores of Darling Harbour—one that Melbourne is now seeking.

Victorian Tourism and Major Events Minister Tim Holding says the $1.4 billion redevelopment of the South Wharf precinct, of which the MCEC is the centrepiece, was intended to “attract over 500,000 head of overseas business events and destination tourism.”

In fact the government invested $270 million in the Convention Centre. In order to leverage more than $5 billion in private sector investment in the precinct.
The University of South Australia’s design and construction program owes much of its success to the energy and determination of co-founder David Morris, who launched it with the late Nick Opie in 1993.

Since its inception in 1993, the program – involving architecture, interior architecture and industrial students – has completed four buildings, with a fifth currently under way. Morris entered the sometimes rarefied world of academia with plenty of practical know-how, and a desire to share his extensive experience with architects-in-training. He’d worked as a labourer and contract carpenter on residential and high-rise projects before studying sculpture at Canberra College of Advanced Education. He joined MGT Architects as a student architect, working on Canberra’s new Parliament House. In 1983, Morris graduated from the University of Sydney with a Bachelor of Architecture.

In partnership with Bruce Townsend, he ran an architecture/building practice in Canberra for five years before moving to Adelaide to teach at the South Australian Institute of Technology (SAIT), now UniSA. Morris and Opie’s first hands-on program saw students design and construct ablution facilities at Kanmantoo, a University-owned mine 50km east of Adelaide. Their second project – the Western Mining Corporation Visitor’s Centre near Moonta, about 160km northwest of Adelaide – won a Commendation in the New Buildings category at South Australia’s Australian Institute of Architects awards in 1999. Their third undertaking was bigger and further again from the city campus. In 2000, staff and students from UniSA, in collaboration with staff and students from the University of New South Wales, began work on a visitor and community arts centre at Patjarr, about 2400km from Adelaide, in the Gibson Desert of Western Australia.

During construction in 2002, Nick Opie sustained a stroke on site and was airlifted firstly to Alice Springs and then to Adelaide, where he passed away. “He died while we were at Patjarr building,” Morris says, “but the students elected to continue with the job because they felt that was what Nick would have wished.” The Patjarr Aboriginal Visitor’s Centre won Western Australia’s COLORBOND® Award for Steel Architecture in 2004, and that year Morris and Opie won a commendation in the Australian Institute of Architects’ Architectural Education Prize.

For several years after Opie’s sudden death, the program turned out smaller scale projects until it was relaunched in 2005 with a former student turned part-time teacher as co-ordinator. Following graduation, Jason Oaten-Hepworth had established a design/build practice producing residential alterations and additions in the suburbs, and new housing at Andamooka, an opal mining town 600km north of Adelaide.

“I was involved in workshops for the Patjarr project at school, and I went to the site for four weeks near the end of the construction as a volunteer: it was an amazing experience. Doing this sort of project work opens doors and your mind”
With a fresh leadership team in place, Morris and Oaten-Hepworth sought new work. In 2005 they approached Environment ACT, which administers Canberra’s national parks, with a view to refurbishing buildings lost in the bushfires of January 2003. Eventually the program was engaged by Namadgi National Park to produce a visitor shelter at Mt Franklin, which won the Small Project Architecture Award and the COLORBOND® Award for Steel Architecture at the Australian Institute of Architects. ACT Chapter awards in 2009 (see From the Ashes on page 17).

Students are now working on housing for 14 single men at Mimili, an Aboriginal community 1200km north-west of Adelaide, for South Australia’s Department of Families and Communities. In order to deliver suitable accommodation, staff and students have conducted in-depth research with the community’s residents. “We’re trying to respond to cultural preferences in our work, and in this case, we’re trying to replicate the tradition of having a single men’s camp, which is separate from the main family groupings,” Morris explains.

“When you walked at Patjarr we were amazed to see Western-style patterns of development in a place that couldn’t be more remote,” he adds. “I asked myself ‘Is it plausible that three-bedroom houses on quarter-acre blocks have any relevance here?’”

While each of the projects is different, they are all subjected to the same rigorous process.

“Every project starts with a design phase where students are briefed and undertake site surveys, before submitting sketch design proposals,” Morris explains. “The preferred sketch design is usually selected by the client, and then students participate in intensive design development courses where small groups of students and staff refine and document the projects.”

Morris and Oaten-Hepworth steer the projects through the planning and certification process, and once they are approved, students start building. “We do intensive two-week prefabrication sessions during student vacations, which limits the time we have to work on each project,” Morris says. “Also, the student cohort is different each time, requiring new students to pick up where previous students left off. Students document their work, which is handed on to the next group to continue. In this way students learn to appreciate the distinct roles of architect and builder. Students have to prepare to survive onsite for two distinct roles of architect and builder.

In this way students learn to appreciate the distinct roles of architect and builder. Students have to prepare to survive onsite for two weeks, organising food for cooking, rosters, camping equipment, communal items such as stoves and sinks for washing up, and showers and toilets. “It’s a huge strategic effort, much like an army camp, and students are engaged well before the course is undertaken to get organised,” Morris says. “The issue of running in a remote place for two or three weeks is a building and strategic experience in itself.”

The unusual project delivery method has resulted in some similarities across the projects, particularly in relation to material selection. “Steel absolutely suits the way we work,” Morris says. “Because we transport building components over long distances, weight is a consideration. We couldn’t build with such large spans in any other material.

“Steel has some extraordinary qualities, in that it’s durable, lightweight and strong, and its behaviour is predictable,” he adds. “It’s also termite resistant, which is essential in the remote desert sites. In addition, steel can be easily joined by bolting or welding, so it lends itself to portal and stal framing, and cladding and roofing.”

As a former graduate of the program who now helps to run it, Oaten-Hepworth is a great advertisement for its aspirations and achievements. “I was involved in workshops for the Patjarr project at school, and I went to the site for four weeks near the end of the construction as a volunteer: it was an amazing experience. Doing this sort of project opens doors and your mind.” Oaten-Hepworth says.

Morris adds that students absorb building and construction – and life – lessons, which give them an advantage. “Some of our students have started designing/building practices to become architects and builders working in both fields,” he says. “Often they don’t bother doing the usual apprenticeship with an architectural practice because they are confident about linking design skills with building skills.”

The $630,000 Mimili project is the program’s biggest test yet. The size and scale of the building means it requires 14 intensive two-week workshops, and six site visits by up to 25 students each time, which creates a significant demand on student numbers. Workshop enrolments have dropped to half their peak levels, forcing Morris to rethink the program’s future scope. “Our program is getting bigger, but our student elective options are getting smaller,” Morris says. “It’s a shame because this is the largest student construction program in Australia, and one of the largest in the world. We get feedback from a lot of universities in other countries, particularly Germany, telling us that what we are doing here is extraordinary.”

The feedback from students and graduates is usually positive, he says. “The reality of all stages of the process – the clients, the rigorous documentation, actually building both in prefabrication and on-site – is incredibly valuable to students,” Morris explains. “Being involved in building experience is one of the greatest preparations for architects, interior architects and industrial design students, who then go into practice and supervise and evaluate work done by others.”

As the program’s co-creator and chief steward, Morris is optimistic that it will continue to make a difference, both to the students who participate and the clients they build for. “We have already bridged the abyss between architectural theory and building practices, and I’d like to see similar outcomes between anthropological and cultural understandings of desert communities and innovative housing outcomes. That’s my pedagogical aspiration for the future.” SP
When the original Mt Franklin Chalet burnt down in the Canberra fires of 2003, National Parks ACT developed a unique partnership with the University of South Australia to rebuild on the site.

Words Rachael Bernstone  Photography Ben Wrigley and Paul Bradshaw
The devastating Canberra bushfires of January 2003 claimed four lives, razed more than 500 homes and severely damaged almost 70 per cent of the Australian Capital Territory’s pasture, pine plantations and nature parks. The fire also destroyed the 60-year-old Mt Franklin Chalet in Namadgi National Park, which had been enjoyed by generations of alpine enthusiasts.

After the fires, Namadgi National Park’s district manager Brett McNamara was approached by the University of South Australia (UniSA) to discuss plans for rebuilding. Staff and students at the University’s Louis Laybourne Smith School of Architecture and Design had already developed prototype designs for damaged huts for the Kosciuszko Huts Association. While these were never built, a fruitful collaboration between university and national parks began, and the new visitors centre was born.

Under the tutelage of design and construction program leaders David Morris and Jason Oaten-Hepworth (see Applied Architecture on page 12), UniSA architecture and design students designed four new buildings for the national park, including ranger accommodation, facility stores and workshops, hostel accommodation for visitors, and a visitor shelter. From the 26 resulting schemes, Brett McNamara, his colleagues and members of the Canberra Alpine Club jointly selected student Alexandra McCarthy’s visitor centre as the preferred design.

“We loved the way that Alex was able to incorporate what we had discussed at the briefing, in a way that was sympathetic to the environment, and paid respect to the old chalet,” McNamara says. “We love the roof with its flip top, which frames views of the mountain, and the fact that it’s a very modern, contemporary design.

“We were not looking to replicate the chalet but we wanted to pay homage to it, while providing shelter for visitors within a multi-functional building that could be used as a temporary headquarters, if we had to locate a lost bushwalker or deal with another fire, for example,” he adds.

During the students’ first site visit, McCarthy was inspired by the post-fire forest re-growth. “When snow gums are burnt, the new growth sprouts from the trunk, and I wanted to apply that philosophy to my design,” she says. “The chalet was a very special building for its users, and I wanted the new building to sprout out from the original footprint to signify a new chapter of growth.”

“The design evolved from the harsh site conditions: the potential for fire, strong winds, the sun, and obviously snow,” she continues. “The building has two steep skillion roofs that meet at a hip, which, combined with the southerly walls, form a back to the harsh winter winds. The north of the building embraces the original chalet site and opens to the sun, bringing in natural light and views of Mt Franklin.”

The covered timber deck provides amenities for day visitors and interpretive displays that tell the story of the former chalet.
Having observed the devastating effects of fire on the former chalet – a timber structure that was raised off the ground and had no stored water for fire-fighting purposes – McCarthy opted for a steel building from the outset. It helped that steel framing and cladding were the preferred materials for UniSA student constructions, which are prefabricated at university workshops in Adelaide, before being transported and assembled by students on site.

“My material selection was also influenced by the precedent of the high country huts, which were built from corrugated iron,” McCarthy says. “I chose galvanised LYSAHIT CUSTOM ORB® profile for the roof and walls as a memorial to the ashen silver landscape that the fire had created in the bush. As the bush regenerates with rich green vegetation, the roof will remain as a reminder of what the fire did to the landscape.”

After her proposal was selected during her third year of study, McCarthy worked alongside fellow students on design development during a summer vacation and undertook Construction in the Workshop elective (with about 25 other students at a time) over the subsequent year. She and her peers travelled to the site on excursions organised by David Morris and Jason Oaten-Hepworth, firstly to dig and pour concrete footings, and then to assemble the building.

“We had the most ideal weather for those two weeks, given that the climate on Mt Franklin is really changeable and fickle,” Morris says. “Even so, it wasn’t possible to complete the building in that timeframe because we had to camp offsite, so we returned in smaller groups over the winter to finish it. During those visits we were nearly always hit by extreme weather conditions and it was pretty miserable. I remember the only time I felt warm during some of those trips was when I was cocooned in my sleeping bag at night, fully clothed.”

The hostile environment places many demands on the building, which comprises two sections – a covered timber deck with amenities for day use, and an enclosed room where the Canberra Alpine Club exhibits artefacts from the chalet, and which can function as a search-and-rescue and fire coordination hub.

The building’s frame comprises square hollow sections for columns, and a combination of rectangular hollow sections and laminated veneer lumber forming composite walls and purlins, to mitigate thermal conduction between exterior and interior. Temperature extremes are countered by thickened bulk insulated walls and roofs, which are sealed internally and externally with reflective foil laminates. The internal walls are lined with plywood, while custom-built formply joinery and a combination-store create a cosy atmosphere, in contrast to the metallic coolness of the exterior.

“Utzon likened the Opera House to a walnut, with its hard outside shell and soft interior, and we tried to create strong and durable shells for our buildings, which are rich and warm inside,” Morris says.

One of the building’s most innovative features is its “snow gutter”, Morris says. “We used perforated corrugated steel which was placed over the gutter sections so that, in winter, the snow would slide off the roof without getting caught on the gutter, and in summer, rainwater would penetrate the perforations to enter the gutter,” he explains. “The gutters catch the substantial amount of rainwater that falls during spring, summer and autumn, and store it in tanks for use with a fire-fighting pump to defend the building in the event of a fire.”

The building also features steel shutters constructed with LYSAHIT CUSTOM ORB® profile made from COLORBOND® Metallic steel in the colour Skydrift®. They protect the windows when the building is not being used. “In extreme weather,” Morris says, “the shutters help to protect the building from strong winds and blizzards, and they also protect it from vandalism and fire.”

Thanks to its unique delivery method, the building cost significantly less than a similar structure might have, if procured commercially. “It’s likely that an equivalently detailed building built conventionally would have cost in excess of $600,000, and we built the Mt Franklin shelter for one-quarter of that,” Morris says. “Of course, it has very limited servicing – there is no water reticulation, wastewater or electrical services requirements are limited, we have a significant competitive edge over the commercial realities faced by building contractors.”

www.steelprofile.com.au
“The building cost doesn’t represent our University costs for items such as workshops and maintenance, and the students obviously work voluntarily,” he continues. “We use our competitive edge to gain our jobs, but it needs to be recognised that our clients carry some risk in terms of taking on students with limited skills to build for them, and the long construction time required.”

While much of the building’s appeal derives from its elegant simplicity, a closer examination reveals a level of detailed sophistication that sets it apart from similar structures elsewhere. “We have students who are willing to devote themselves to intricate detailing that would not be viable if undertaken commercially,” Morris says.

“We could use standard hinges and locks, for example, but we try where possible to manufacture our own hinges, sliding mechanisms, railings, and so on. If we can make it in our workshops, we will, which means that the detailing of our buildings is relatively rich.”

For the students involved with the design, development and construction of the visitor shelter, it was a rewarding experience that provided invaluable insight, says McCarthy, who has since established her own practice. “It was an amazing opportunity as a third-year student to be given a real project, to develop the concept and design, and present it to real clients, then follow it right through to development, prefabrication and erecting it on-site.

“Learning what actually happens in the construction of a building should be mandatory for all architecture students,” she asserts. “I couldn’t imagine not doing that – we learned what it is like for builders, what’s possible and what’s not, and important lessons about the use and application of materials.”

This award-winning building fulfills both practical and poetic roles. “Visitors to the new building comment that it is very different to its predecessor – it’s not the old chalet,” McNamara laughs, “but I think that’s very positive, and people can glean insight into the past via the interpretive materials.”

“The building cost doesn’t represent our University costs for items such as workshops and maintenance, and the students obviously work voluntarily,” he continues. “We use our competitive edge to gain our jobs, but it needs to be recognised that our clients carry some risk in terms of taking on students with limited skills to build for them, and the long construction time required.”

While much of the building’s appeal derives from its elegant simplicity, a closer examination reveals a level of detailed sophistication that sets it apart from similar structures elsewhere. “We have students who are willing to devote themselves to intricate detailing that would not be viable if undertaken commercially,” Morris says.

“We could use standard hinges and locks, for example, but we try where possible to manufacture our own hinges, sliding mechanisms, railings, and so on. If we can make it in our workshops, we will, which means that the detailing of our buildings is relatively rich.”

For the students involved with the design, development and construction of the visitor shelter, it was a rewarding experience that provided invaluable insight, says McCarthy, who has since established her own practice. “It was an amazing opportunity as a third-year student to be given a real project, to develop the concept and design, and present it to real clients, then follow it right through to development, prefabrication and erecting it on-site.

“Learning what actually happens in the construction of a building should be mandatory for all architecture students,” she asserts. “I couldn’t imagine not doing that – we learned what it is like for builders, what’s possible and what’s not, and important lessons about the use and application of materials.”

This award-winning building fulfills both practical and poetic roles. “Visitors to the new building comment that it is very different to its predecessor – it’s not the old chalet,” McNamara laughs, “but I think that’s very positive, and people can glean insight into the past via the interpretive materials.”
In the same spirit in which WWII veteran Ron Platter battled on the Kokoda Trail, the patriarch fought local council to build a home as a standing legacy for his family. Architect Louise Nettleton’s lavish and inspired use of steel has helped embody his wish.

Words Rob Gillam
Photography Paul Bradshaw

LIVING LEGACY

ARCHITECT Louise Nettleton Architect
PROJECT Foxground House
LOCATION Foxground, New South Wales
The Foxground area on the New South Wales South Coast is idyllically placed. Rolling pastures turned lush by rich basalt soil end in deep horizons of Pacific Ocean to form a border to the east, with the tail of Saddleback Mountain presiding over its western edge. Perched in the hinterland, this house is on land especially significant to Ron Platter’s family. He laid his wife’s ashes there and 20 years ago planted the now flourishing Australian Cedars in preparation for building a house that his children and grandchildren would share.

The parcel of land was at the tip of a wider land-holding, bounded by a road and creek, and offering, in Ron’s eyes, a logical case for subdivision. His local council, however, saw things differently and rejected Ron’s application. But, as a decorated World War II veteran, Ron knew how to fight.

1942: In a move that contributed to the eventual retreat of Japanese forces from Papua New Guinea, Ron and his severely depleted unit captured an enemy outpost on the Kokoda Trail. Fast-forward, and even aged 84, his resolve still burned. After four years of battling in the Land and Environment Court, Ron finally won permission to build, albeit with restrictions.

As architect Louise Nettleton says: “There was a partial clearing on the block and council virtually dictated the siting, there. The site area also determined the size of the house and the number of bedrooms we could build.”

The incline of the nominated site, sitting high on a hill, presented a challenge. Not so much for the architect, but in order to provide easy access for Ron, whose wartime knee injuries required his leg to be fused straight.

“Ron couldn’t bend his leg so it was difficult for him to walk between levels,” says Nettleton. “So apart from the garage, which is under the house, we put everything on the same level.

“Ron couldn’t bend his leg so it was difficult for him to walk between levels,” says Nettleton. “So apart from the garage, which is under the house, we put everything on the same level.

The brief was quite straightforward in that I knew the client’s accommodation wishes and what the council restrictions were. The bedrooms could only be a particular size and so mirror each other, except for an ensuite.”

Restrain was transformed into feature with the creation of a dedicated sleeping wing which comprises the main bedrooms at opposite ends. Between them is a bathroom and a third bedroom filled with bunks to accommodate the grandchildren.

Intersecting the sleeping area is a perpendicular northeast-facing living area that opens up to valley views. These distinct areas both open on to a gigantic outdoor deck.

For a house visited infrequently but by many different people, it was important that it be as low-maintenance as possible. After initially considering using weathering steel for exterior cladding, Nettleton instead chose LYSAGHT CUSTOM ORB® profile made from galvanised steel.

“From a practical point of view it’s perfect because it doesn’t require much looking after,” she says. “It’s a simple, inextravagant material that suits its semi-rural location.

“I also like the aesthetic of the galvanised finish. Its rawness provides colour separation against the dark micaceous oxide of the structural steel – it’s a very complementary palette – and provides a textural contrast to the bush surround.”

Nettleton says she has many reasons to favour steel for cladding.

“I use steel a lot in my buildings. What I love about it is that it has inherent strength yet also such a ‘fineness’ and slenderness,” she explains.

“For cladding, it’s not as precious as materials you have to join and seal in vertical and horizontal patterns. It’s easy to fix from a builder’s point of view because you can readily hide the joints with overlapping curves in the material. That crisp detailing is a real plus.”

The Foxground House cladding has been fixed quite simply. “Basically, just screwed into the wooden panels behind in a pretty standard way,” Nettleton says. “Where it meets a frame it isn’t butted...”
BELOW: Perpendicular living and sleeping areas are joined by a large outdoor deck. The wings can be closed off using door-length sliding window shutters also externally clad in LYSAGHT CUSTOM ORB® profile.

OPPOSITE RIGHT: Elevating the living area places occupants amongst the canopy of remnant rainforest and provides views beyond the tree-tops.

OPPOSITE BELOW: The shutters are internally clad with LYSAGHT CUSTOM ORB® profile made from galvanised steel.

straight into the timber, it has an angle in the steel that bends around to avoid a sharp face, and that becomes its end flashing. Where the CUSTOM ORB® profile abuts a column, we use foam filler and the end angle flashing."

An exception to the standard fixing is found in the inclusion of large, sliding window shutters, which are also clad externally in LYSAGHT CUSTOM ORB® profile made from galvanised steel, and internally in LYSAGHT MINI ORB® profile made from galvanised steel. Both profiles are fixed to an aluminium frame similar to the door and insect-screen frames that sit behind.

The steel shutters are multifunctional in that they provide additional security for the often unoccupied house by enabling entire sections to be completely closed off. They also help control temperatures in the naturally ventilated house by variously channelling or blocking sunlight and breeze. When closed, the shutters accentuate the linear design of the separate wings and give the house an almost bunker-like appearance.

Structural steel is also used liberally throughout. SHS columns hide within the walls and where they meet a window they have a 150 x 20mm steel flat welded to the top plate and left exposed. The base of the living wing terminates with a customised 250 PFC expressed externally, with the bottom flanges removed to prevent water ponding.

The living area, particularly, makes use of steel cross beams which brace the floor and assist with a cantilever that extends the northeast-facing main windows beyond the rest of the house.

A canopy of remnant rainforest would have obstructed views to the valley beyond it, had not Nettleton chosen to elevate the house above grade. “I tend to prefer to be above the ground, rather than right on it,” she says. “It’s beautiful being in tree canopies, rather than under trees, so put the main view and deck view in and around the canopy to take in views to the other side of the valley.”

Not all of Nettleton’s original plans for the house were ultimately realised. Progress stalled when Ron died and his four children were left to complete the project. Differing preferences and budget restraints meant certain aspects were revised.

“Mainly we had to rationalise the materials we had planned to work with, to keep costs down,” the architect explains. “We reduced the amount of internal MINI ORB® cladding used – including shutters that could have closed off the ends of the main bedrooms – and chose more affordable structural materials.

“We were going to use recycled timber columns but instead there are a lot of engineered beams internally and externally, which we’ve stained black."
LVLs are really not considered a finishing structural material – however I’m happy with their roughness, it adds to the robust nature of the building.”

Bathroom and kitchen joinery is form-ply, traditionally used for forming concrete. “We used a brown version, rather than the usual black, and stained the edges of it to complete the look,” Nettleton says.

The sleeping wing’s concrete substrate is exposed, and the flooring’s mottled patina has cues of wood-grain decking which appear intentional but are in fact coincidental. “It’s standard XRF concrete, which we’ve polished and sealed,” she continues. “There’s not even a screed topping.”

Nettleton acknowledges that the many unusual circumstances that she encountered in bringing her original client’s goal to fruition have helped to shape the end result. “Each project has its own life and tells its own story,” she says. “I don’t see how I could have a generic design ‘stamp’ because each client has a different set of requirements and I try to respond to those in a unique way.

“This house is unique because of a combination of factors. It was unusual to have such an elderly client and the timeframe – over 10 years from plans to completion – was exceptional. There’s also quite a romantic background in the house’s origins: that Ron wanted to leave a memorial for his wife and, in a way, a memorial of himself for his family.”

When asked to nominate her favourite features in the house, Nettleton responds: “I’m pleased that we’ve managed to achieve the original goals of accommodating the whole family and other key practical considerations. And the results we’ve produced for the revised budget are also quite impressive – there’s a lot of house for the money.

“I love that it was born of practicality because of Ron, and that the entire level is elevated to create an awareness of the different surroundings,” she adds. “It’s nice being up in the trees.

“Also, the materials really suit the kind of building that it is. It’s not precious, it’s a weekender and should be robust. So I suppose the simplicity of the plan is synonymous with the simplicity of the key chosen materials, chief amongst which is steel.”

“THE MATERIALS REALY SUIT THE KIND OF BUILDING THAT IT IS. IT’S NOT PRECIOUS, IT’S A WEEKENDER AND SHOULD BE ROBUST”
The bold roof planes and filigreed sunscreens of Queanbeyan’s new Government Services Centre make this a building very much of its time and place. An uncompromisingly contemporary building, it celebrates the town’s history and reasserts its civic pride.

Words: Paul McGillick  Photography: Tyrone Branigan and Paul Bradshaw

ARCHITECT Bates Smart
PROJECT NSW Government Services Centre
LOCATION Queanbeyan, New South Wales
The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there. The whole idea is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

Then, as the building was going up, there was debate in Council and the press. People wanted to know: “When are you going to paint it?” But the intendant at the police station opposite liked it and Project Architect Albert Gregori recalls that he was cornered by a photographer from the local newspaper at the opening in the building’s spectacular forecourt who confided: “I was sent down here to rubbish the building. But I can’t do it—I love it!”

The site plan shows how the two ‘bars’ are slipped to frame open space at either end of the building.

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”

“The whole idea,” he explains, “is to create framed views to open space. Queanbeyan is a very open town and we didn’t want a building that simply sat there.”
The detailing and naturally weathering steel cladding reference Queanbeyan’s townscape for focus when entering the school courtyard provides a natural anchor site. A large tuart tree in the central buildings in and around trees on the Hassell’s design wound the school.

The use of naturally weathering steel achieved a number of objectives for the architects. Its tough appearance echoes the rugged and windswept Monaro Plains, thus helping to anchor the building in its landscape context. Its patina will, over time, weather to reflect the historic brick buildings of Queanbeyan. Moreover, as a weathering material it does not require painting or a lot of maintenance.

The use of weathering steel also gave the architects the opportunity to create a rich palette. The interiors of the extruded folds are compressed white cement sheeting, creating a dramatic contrast—what Vivian refers to as a “rustic exterior and refined interior”—between the softs of the roof planes and the crisp interiors and spacious through walls.

The innovative aspect of the building, according to Vivian, is not so much the use of the material, but more to do with “the correct detailing and how the building was constructed”. The detailing, for example, prevents run-off from the sheets in areas which might affect the public.

“There was a needless concern,” says Gregori, “about people walking under the building coming into contact with oxidisation. However, it’s been detailed to address all such issues that have in the past arisen in the use of weathering steel.” Hence, the walls run down into a gravel-filled spoon drain so that any water coming down the walls is disposed there, rather than splashing onto the paving. The paving has also been partially pre-stained to camouflage any oxidisation that may fall on it. This mixture of bush-hammered, polished and honed stone also gives the paving a constantly changing texture.

The use of weathering steel serves a number of strategies—environmental, aesthetic, sustainable and contextual. The changing surface and materiality of the steel sets up an impressive counterpoint of colours and textures, while the white compressed cement interior planes, stone, the black anodised panels and anodised aluminium windows create a shaded “verandah-like space”. Customised weathering steel louvres are used on the western (street) facade, angled down and bolted to fine mild steel vertical pipes which—along with the slender off-form concrete columns—form a filigree referencing the interplay of horizontals and verticals in Queanbeyan’s historic verandahs. The public and break-out spaces are mixed-mode to allow for natural ventilation.

The building references its immediate and wider surroundings, and effortlessly integrates sustainable design initiatives to enhance occupant comfort. By far the most impressive feature, though, is the building’s grand entrance—where a massive awning shelters about people walking under the building coming into the school—which is certain to help shape a contemporary identity for historic Queanbeyan.

**CLIMATE**

Queanbeyan NSW Government Service Centre

**CONSULTANT TEAM**

Development & Project Manager: NSW Department of Commerce; (Interior Design Leaders), Ezabella Dalla, Jane Smeaton-Duke (Interior Designers)

**PRINCIPAL STEEL COMPONENTS**

- Roof: LYSAGHT KLIP-LOK® profile made from COLORBOND® steel in the colour Woodland Grey®
- Curtain Walling: 3mm thick weathering steel
- Foundation: Steel Foundation Plate

**GROUND FLOOR PLAN**

This is a refreshing new office building type, one that eschews concrete construction and opts instead for the drama of XLERPLATE LITE™ H0355 weathering steel. Vacing away from the ordinary and unremarkable, the architects have steered towards the bold and uncompromising. The resulting building references immediate and wider surroundings, and effortlessly integrates sustainable design initiatives to enhance occupant comfort. By far the most impressive feature, though, is the building’s grand entrance—where a massive awning shelters about people walking under the building coming into the school—which is certain to help shape a contemporary identity for historic Queanbeyan.

**GROUND FLOOR PLAN**
The North Adelaide Terrace is further example of the ‘embracing of place’ philosophy that drives Troppo Architects’ work. Lightly pinned to the rear of a classic, single-fronted Victorian dwelling, the practice has realised an exceptional level of craft to celebrate the old and new. There’s more than enough shine and polish in evidence to reveal the design DNA that has made Troppo a household name.

On the parkland fringes of North Adelaide, the house is a tale with a truly surprising ending. From the street elevation, there is little to indicate the modern transplant hinged off its rear. Discrete triangulations that flare from the roofline hint at the cleverness behind the house.

On such a small site it is usual to want to stretch everything to its limit. But,” qualifies Troppo founding partner Phil Harris, “not to the point where things fail in terms of regulations, budget, or a design that goes haywire.”

The firm’s residential work was so stripped back and spare that it polarised opinion. Founding partners Phil Harris and Adrian Welke — who hailed from Adelaide and Perth respectively, but established the firm together in Darwin— immediately generated attention for their desire to remove walls and dissolve boundaries, rather than create them.

“Darwin is the easiest climate in the world to design for,” Harris recalls. “Adelaide has more shades and seasons. In Darwin you hardly need a roof. You need a big wide hat to keep the sun off and its vegetation grows so quickly that it can provide another layer of shelter to mediate the climate. We were trying to work ourselves out of buildings in many ways by continually stripping out structure and cladding.”

Troppo was vigorously and vocally sustainable from its earliest days. Harris returned to Adelaide in 1989, and the practice now has offices throughout Australia. In these times of heightened environmental awareness, their work doesn’t simply adhere to fashionable community-mindedness, it’s still rooted in their full immersion in place.

The extension faces due north and incorporates a fine steel structure that enables maximum winter light penetration, yet acts as an effective solar shield. Broad midday and afternoon shade is provided by the angular LYSAGHT CUSTOM ORB® profile projection that scoops morning light into the house. The light surface colour of the lap pool also acts as a soft reflector to bounce light into the galvanized, rippled steel soffit and back into the body of the house.

The design provides well-lit, open flowing space throughout two levels, elegantly contrasting with the darker, more enclosed masonry rooms of the original villa. The master bedroom with ensuite occupies the mezzanine level. It provides elevated views across the city perimeter parklands and neighbouring rooftops, as well as to the northern backyard. A retained chimney is integrated as a focal element.

A 900mm-wide side yard on the east elevation has been judiciously incorporated to expand the floor-plan by an appreciable width. A Danpalon-roofed entrance hall to disguise and access the bathroom.

“On such a small site it is usual to want to stretch everything to its limit. But,” qualifies Troppo founding partner Phil Harris, “not to the point where things fail in terms of regulations, budget, or a design that goes haywire.”

Troppo was vigorously and vocally sustainable from its earliest days. Harris returned to Adelaide in 1989, and the practice now has offices throughout Australia. In these times of heightened environmental awareness, their work doesn’t simply adhere to fashionable community-mindedness, it’s still rooted in their full immersion in place.

The extension faces due north and incorporates a fine steel structure that enables maximum winter light penetration, yet acts as an effective solar shield. Broad midday and afternoon shade is provided by the angular LYSAGHT CUSTOM ORB® profile projection that scoops morning light into the house. The light surface colour of the lap pool also acts as a soft reflector to bounce light into the galvanized, rippled steel soffit and back into the body of the house.

The design provides well-lit, open flowing space throughout two levels, elegantly contrasting with the darker, more enclosed masonry rooms of the original villa. The master bedroom with ensuite occupies the mezzanine level. It provides elevated views across the city perimeter parklands and neighbouring rooftops, as well as to the northern backyard. A retained chimney is integrated as a focal element.

A 900mm-wide side yard on the east elevation has been judiciously incorporated to expand the floor-plan by an appreciable width. A Danpalon-roofed entrance hall to disguise and access the bathroom.
A lag pool at window-seat level concludes the entrance hall area. On this same axis, a small glass floor views and accesses the original brick cellar. Remodelling of the small backyard delivers a balance of deck, lawn and paved spaces that connects to a broadly opening lightweight framed carport. Rainwater storage is provided under the rear deck using natural stone levels.

The small dimensions of the site, combined with the need to open up and engage with the diverse external areas, posed serious design challenges, as old Harris’ desire to retain structural elements that required new supports when their myriad little walls were removed in line with his underlying ethos. The resulting space has a quality that transcends pragmatism, however, and boasts a distinctive and appealing interplay between old and new.

“The Council is strong on heritage,” observes Harris, “and reviving the old and the new is fully supported by it, so there was a willingness by the client to be brave.” Mostly pre-fabricated off site, the larger steel sections were craned in without any difficulty. Steel was critical to the result,” says Harris. It provided the slender support for the old structure. Because of the tight site, a more complex grid system was required than would normally be the case. We needed to make every square millimetre work and this meant some parts of the new needed to be off-set. If we tried it in timber and tiles, for instance, there would have been many more joints to be offset. If we tried it in steel, it could deliver the necessary elegance.”

“We selected steel early on,” he added. “We knew it provided the slender support for the old structure. Because of the tight site, a more complex grid system was required than would normally be the case. We needed to make every square millimetre work and this meant some parts of the new needed to be off-set. If we tried it in timber and tiles, for instance, there would have been many more joints to be offset. If we tried it in steel, it could deliver the necessary elegance.”

Harris is full of praise for clients George Kyprianou and Kylie Bramley. “George and Kylie had a good idea of what they wanted,” he says. “They were prepared to invest in modern difference rather than quaint replica. There’s boldness and vision there. People talk about doing it, but often don’t. And they refused to accept a diluted result. That’s important. It’s easy to lose sight of the original idea.”

“Once we saw the real deal go on,” says George Kyprianou, “we began to realise how good it was really was to be. Troppo’s approach to materials didn’t hold any fear for us. We wanted an extension that provided optimum space. Steel was instrumental in achieving such a slender envelope,” says Kyprianou who, until recently, headed one of the city’s leading cafés.

“A as a client you have the opportunity to contribute, in a small way, to the dynamic of your city. For us it was a chance to satisfy our own curiosity about living in a house that was different from most.”

“Once we saw the roof go on,” says George Kyprianou, “we began to realise how good it was really was to be. Troppo’s approach to materials didn’t hold any fear for us. We wanted an extension that provided optimum space. Steel was instrumental in achieving such a slender envelope,” says Kyprianou who, until recently, headed one of the city’s leading cafés.

“Invariably working with lightweight materials – notably cladding in LYSAUGHT Custom Orb® profile made from COLORBOND® steel – the practice has defined an archetypal tropical style that has influenced practitioners, clients and regulators around Australia.

The journey for architects is usually one of gradual maturation. One of Troppo’s biggest influences in Glenn Murcutt, who says Troppo’s approach to materials didn’t hold any fear for us. We wanted an extension that provided optimum space. Steel was instrumental in achieving such a slender envelope,” says Kyprianou who, until recently, headed one of the city’s leading cafés.

“Once we saw the roof go on,” says George Kyprianou, “we began to realise how good it was really was to be. Troppo’s approach to materials didn’t hold any fear for us. We wanted an extension that provided optimum space. Steel was instrumental in achieving such a slender envelope,” says Kyprianou who, until recently, headed one of the city’s leading cafés.

Invariably working with lightweight materials – notably cladding in LYSAUGHT Custom Orb® profile made from COLORBOND® steel – the practice has defined an archetypal tropical style that has influenced practitioners, clients and regulators around Australia.

The journey for architects is usually one of gradual maturation. One of Troppo’s biggest influences in Glenn Murcutt, who says Troppo’s approach to materials didn’t hold any fear for us. We wanted an extension that provided optimum space. Steel was instrumental in achieving such a slender envelope,” says Kyprianou who, until recently, headed one of the city’s leading cafés.
According to architect and SJB director Michael Bialek, the rooftop addition injects some of the liveliness of nearby markets into a dull part of the city. Designed to contrast with the heritage building below, the new corporate offices are cocooned to provide shade, controllable views, rooftop enclosure and outdoor access via a walkway. By projecting the steel-and-mesh structure off the facade, it appears to hang like a paper lantern from the sky, just skimming the rooftop.

To achieve these theatrics, seamless prefabricated steel members were vertically inclined and cleated off the end of outriggers with bolt fixings. This combination resolved considerations of form, site access, the adaptability and preservation of the existing building, and the ease and speed of construction, Bialek explains.

"Steel was in all cases here the obvious choice because it allowed us to reinforce the existing building to take the additional load, by bringing bits of structure in independently and bolting them onto the existing columns and walls," he says. "We could break the structure into smaller components and put it together so that the construction was manageable in stages over a short time."

Prefabricated steel members helped to forge a new application for industrial aluminium mesh installed on an angle, transforming it into a concertina skin that people, light and shadows can slip discreetly behind. The slim RHS members are ultimately anchored to large beams tucked away in the building envelope, and are wrapped closely in the tensioned skin. The steel silhouette is punctured by pronounced metal screws that bolt the mesh in place; drawing the skin directly over its ribs.

"Because of the shape of the external screen, steel was really the only material that could be cut and shaped and bent in a way which would allow us to get the industrial feel, and also provide the capacity to easily fix the screen," Bialek says. "Each panel was cut to size, allowing for a sufficient overlap, and then a screw-washer system was used to fix the panels (and prevent corrosion)."

The assembly of the prefabricated members was "tricky", Bialek adds, because independent members were bolted to angled outriggers "like a Meccano set". Simple yet clever detailing comprising a horizontal tension cable system that clasps the edge of the mesh and is strung between the more rigid vertical members – and the mesh itself – provided enough tolerance for the pieces to fit together. The resulting horizontal seams appear as delicate as crisp as paper folds, and help preserve views from the tenancies.

"The idea of the mesh stretching over the steel structure had to be tested with prototypes," Bialek adds. "It was also a process of doing appropriate shop drawings, fabricating the cranked members, bringing them onto site and aligning them in a typical manner. If there was a bit of variance – the screen could take that."

From the street, the soft folds of the lantern appear to float gently above the Romanesque base, but from within the new rooftop studios, the steel ribs that support the glowing mesh are proudly on display, stripping back the illusion and framing views across the treetops.

"Steel was really the only material that could be cut and shaped and bent in a way which would allow us to get the industrial feel"