IN PROFILE:
TROPOPO ARCHITECTS

HACHEM
ECOVILLE COMMUNITY CENTRE
IRDEALE PEDERSON HOOK
NANNUP HOLIDAY HOUSE

NOVEMBER 2014
ARCHITECTURAL STEEL INNOVATION WITH BLUESCOPE
Editorial Advisory Panel

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

Adam Hardoon
Editor in Chief
SJB Architects NSW

Frank Stanisic
Editor
AIA

James Loder
Assistant Editor

Issue 119 Contents

4
A diaphanous, cloud-like structure achieving breathtaking strings, Melbourne’s Eccoli Community Centre by Hachem proves that even with modest size and weight, design can have colossal gravity.

10
The zig-zagging form of indolable palisade hook Architects’ Nannup Holiday House deliberately and carefully entwines many different threads.

18
The distinctive stance of Tropos Architects founders Phil Harris and Adrian Wills’s architecture has marked the Australian landscape with elevated and open-to-breeze buildings covered by large, curved steel roofs.

28
Sitting atop a hill in a south-west Sydney botanic garden, Kennedy Associates’ public pavilion reads like an ancient Greek ruin, thanks to the slender steel columns that reach upwards past the roofline.

36
Cox Howlett & Bailey Woodland’s Perth Rectangular Stadium Redevelopment’s muscular steel shapes take on an athletic stance.

42
T&Z Architects has shielded students from the sun with an emotive perforated shade screen that is very much about its place.

Cover Project

Eccoli Community Centre

Photographer
Peter Haytk

Editorial

Welcome to Steel Profile 119.
BlueScope continues to support excellence in architecture as the Principal Corporate Partner of the 21OM National Architecture Awards in Darwin, at which Johnson Pilton Walker fittingly won the 2014 National COLOrbOnd® Award for Steel Architecture for its White Bay Cruise Terminal.

A story and a video of the project can be found at steel.com.au/steelprofile

We also wish to congratulate the state-based winners of the COLOrbOnd® Award for Steel Architecture, for buildings that exemplify inspirational and innovative design. Both the Nannup Holiday House by indolable palisade hook Architects and Cox Howlett & Bailey Woodland’s Perth Rectangular Stadium Redevelopment are amongst the winners and you can read more about them here.

This emphasises the great importance of architects innovating themselves in large-scale commercial and public buildings so that countless others can enjoy them in the future.

Lastly, this is my final issue after three years as BlueScope editor. This steel-filled journey has been immensely rewarding and I thank all our readers, the ever-inspiring EAP and countless others can enjoy them in the future.

As a director of SJB Architects NSW, he was awarded the 40th Anniversary Churchill Fellowship in 2006 to study alternatives to conventional models of urban design. SJB Architects recently won two Australian Institute of Architects AIA Awards for Multiple Housing.

More than anything, he loves to design buildings

Kristin Camery
BlueScope editor

Frank Stanisic
Editor

BlueScope editor

Kristin Camery
sharing in it.

AIA

James Loder
Assistant Editor

James Loder is a graduate architect working at John Wardle Architects. Graduating from RMIT with a Bachelor of Architecture (Honours) in 2012, James was awarded the 2013 BlueScope Steel Claran Marsh Student Prize.

His work explores the formal relationships between building and landscape with great consideration given to spatial expression and materials.

James Loder

AIA

Frank Stanisic

Steel Profile

Editor

BlueScope

Kristin Camery

Editorial Advisory Panel

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

Adam Hardoon
Editor in Chief
SJB Architects NSW

Frank Stanisic
Editor
AIA

James Loder
Assistant Editor

Editorial

Welcome to Steel Profile 119.
BlueScope continues to support excellence in architecture as the Principal Corporate Partner of the 21OM National Architecture Awards in Darwin, at which Johnson Pilton Walker fittingly won the 2014 National COLOrbOnd® Award for Steel Architecture for its White Bay Cruise Terminal.

A story and a video of the project can be found at steel.com.au/steelprofile

We also wish to congratulate the state-based winners of the COLOrbOnd® Award for Steel Architecture, for buildings that exemplify inspirational and innovative design. Both the Nannup Holiday House by indolable palisade hook Architects and Cox Howlett & Bailey Woodland’s Perth Rectangular Stadium Redevelopment are amongst the winners and you can read more about them here.

This emphasises the great importance of architects innovating themselves in large-scale commercial and public buildings so that countless others can enjoy them in the future.

Lastly, this is my final issue after three years as BlueScope editor. This steel-filled journey has been immensely rewarding and I thank all our readers, the ever-inspiring EAP and countless others can enjoy them in the future.

As a director of SJB Architects NSW, he was awarded the 40th Anniversary Churchill Fellowship in 2006 to study alternatives to conventional models of urban design. SJB Architects recently won two Australian Institute of Architects AIA Awards for Multiple Housing.

More than anything, he loves to design buildings

Kristin Camery
BlueScope editor

Frank Stanisic
Editor

BlueScope editor

Kristin Camery
sharing in it.

AIA

James Loder
Assistant Editor

James Loder is a graduate architect working at John Wardle Architects. Graduating from RMIT with a Bachelor of Architecture (Honours) in 2012, James was awarded the 2013 BlueScope Steel Claran Marsh Student Prize.

His work explores the formal relationships between building and landscape with great consideration given to spatial expression and materials.

James Loder

AIA

Frank Stanisic

Steel Profile

Editor

BlueScope

Kristin Camery

Editorial Advisory Panel

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

Adam Hardoon
Editor in Chief
SJB Architects NSW

Frank Stanisic
Editor
AIA

James Loder
Assistant Editor

Editorial

Welcome to Steel Profile 119.
BlueScope continues to support excellence in architecture as the Principal Corporate Partner of the 21OM National Architecture Awards in Darwin, at which Johnson Pilton Walker fittingly won the 2014 National COLOrbOnd® Award for Steel Architecture for its White Bay Cruise Terminal.

A story and a video of the project can be found at steel.com.au/steelprofile

We also wish to congratulate the state-based winners of the COLOrbOnd® Award for Steel Architecture, for buildings that exemplify inspirational and innovative design. Both the Nannup Holiday House by indolable palisade hook Architects and Cox Howlett & Bailey Woodland’s Perth Rectangular Stadium Redevelopment are amongst the winners and you can read more about them here.

This emphasises the great importance of architects innovating themselves in large-scale commercial and public buildings so that countless others can enjoy them in the future.

Lastly, this is my final issue after three years as BlueScope editor. This steel-filled journey has been immensely rewarding and I thank all our readers, the ever-inspiring EAP and countless others can enjoy them in the future.

As a director of SJB Architects NSW, he was awarded the 40th Anniversary Churchill Fellowship in 2006 to study alternatives to conventional models of urban design. SJB Architects recently won two Australian Institute of Architects AIA Awards for Multiple Housing.

More than anything, he loves to design buildings

Kristin Camery
BlueScope editor

Frank Stanisic
Editor

BlueScope editor

Kristin Camery
sharing in it.

AIA

James Loder
Assistant Editor

James Loder is a graduate architect working at John Wardle Architects. Graduating from RMIT with a Bachelor of Architecture (Honours) in 2012, James was awarded the 2013 BlueScope Steel Claran Marsh Student Prize.

His work explores the formal relationships between building and landscape with great consideration given to spatial expression and materials.

James Loder

AIA

Frank Stanisic

Steel Profile

Editor

BlueScope

Kristin Camery

Editorial Advisory Panel

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

Adam Hardoon
Editor in Chief
SJB Architects NSW

Frank Stanisic
Editor
AIA

James Loder
Assistant Editor

Editorial

Welcome to Steel Profile 119.
BlueScope continues to support excellence in architecture as the Principal Corporate Partner of the 21OM National Architecture Awards in Darwin, at which Johnson Pilton Walker fittingly won the 2014 National COLOrbOnd® Award for Steel Architecture for its White Bay Cruise Terminal.

A story and a video of the project can be found at steel.com.au/steelprofile

We also wish to congratulate the state-based winners of the COLOrbOnd® Award for Steel Architecture, for buildings that exemplify inspirational and innovative design. Both the Nannup Holiday House by indolable palisade hook Architects and Cox Howlett & Bailey Woodland’s Perth Rectangular Stadium Redevelopment are amongst the winners and you can read more about them here.

This emphasises the great importance of architects innovating themselves in large-scale commercial and public buildings so that countless others can enjoy them in the future.

Lastly, this is my final issue after three years as BlueScope editor. This steel-filled journey has been immensely rewarding and I thank all our readers, the ever-inspiring EAP and countless others can enjoy them in the future.

As a director of SJB Architects NSW, he was awarded the 40th Anniversary Churchill Fellowship in 2006 to study alternatives to conventional models of urban design. SJB Architects recently won two Australian Institute of Architects AIA Awards for Multiple Housing.

More than anything, he loves to design buildings

Kristin Camery
BlueScope editor

Frank Stanisic
Editor

BlueScope editor

Kristin Camery
sharing in it.

AIA

James Loder
Assistant Editor

James Loder is a graduate architect working at John Wardle Architects. Graduating from RMIT with a Bachelor of Architecture (Honours) in 2012, James was awarded the 2013 BlueScope Steel Claran Marsh Student Prize.

His work explores the formal relationships between building and landscape with great consideration given to spatial expression and materials.

James Loder

AIA

Frank Stanisic

Steel Profile

Editor

BlueScope
Demonstrating that supermodel looks and sharp IQ really can go together, Melbourne’s Ecoville Community Centre achieves the rare double of inspired form and precise function.

Words: Peter Hyatt
Photography: Peter Hyatt; Shania Shegodyn
P
orotypes aren’t for the faint-hearted, especially when you're called upon as a test pilot. Understandably, most clients lack the nerve to sponsor inventions that break new ground. But most developments aren’t quite this black and white. By definition, the best architecture reveals the impressive, rather than the bureaucratic. Hachem principal Fady Hachem is no stranger to proposing wild ideas and different approaches. He once tried to sell the idea of a strawberry farm to Melbourne’s District’s Authority. Real architecture considered from that bird’s eye view – above the sprawling metropolis – is a rare sight indeed. Which is why the presence in Melbourne’s unlikely sounding Ecoville is such a beacon, enough to extract a double-take from even the most casual passer-by.

Located in Tarneit, a heartland of high-speed suburban growth thirty kilometres to Melbourne’s west, this community centre is intended as a kind of social glue for the state’s fastest-growing municipality. In an age where citizens rarely have the luxury of time or opportunity to enjoy true neighbourliness, such projects act as a rare catalyst.

Fady knows a great deal about the role of good design for “community wellbeing and sense of neighbourhood”. The project incorporates pavilions, barbecue and picnic areas, tennis courts, a large and sheltered amphitheatre, and a children’s playground. Even if such modernity isn’t to everyone’s taste, he says that “at least it’s recognisable and you understand how it comes together and stands up.”

The early reaction from council, Fady recalls, was a big “no”. “Their argument was that they couldn’t benchmark it against anything else. My response was ‘Well, let this be the benchmark. Let this set a new benchmark and others will follow’. That seemed to strike a chord.”

With his project Fady has steered a course of providing not only amenity for people but to stimulate their curiosity. “We asked the question: ‘How could it help the community?’ That was our starting point,” Fady explains. “We took a chance. We could have met expectations and café, for example – but the great strength of this project is in the quality of the public space it creates

That was our starting point,” Fady explains. “Now estates tend to be isolating. There’s no instant community and little infrastructure, so these centres can really provide the necessary community hub.

“We took a chance. We could have met expectations and café, for example – but the great strength of this project is in the quality of the public space it creates. We asked the question: ‘How could it help the community?’ That was our starting point,” Fady explains. “We took a chance. We could have met expectations and café, for example – but the great strength of this project is in the quality of the public space it creates. We asked the question: ‘How could it help the community?’ That was our starting point,” Fady explains. “We took a chance. We could have met expectations and café, for example – but the great strength of this project is in the quality of the public space it creates. We asked the question: ‘How could it help the community?’ That was our starting point,”

Fady’s design appears highly organic and fluid, and yet it’s all underwritten with honest rigor that’s apparent in the centre’s rhythmic steel sweep and flowing grid. The design is legible and clear, and even if such modernity isn’t to everyone’s taste he says that “at least it’s recognisable and you understand how it comes together and stands up.”

The canopy acts as a development anchor and investment in infrastructure that precedes a new suburb, and the entire project demonstrates deft resolution. We admire the slender battens that immerse the amphitheatre in a strong pattern of sunlight and the fine details – in the junctions between column and beam, and between canopy and café, for example – but the great strength of this project is in the quality of the public space it creates.

“...I’d like to think there is an almost spiritual feeling stepping into that space, as if visitors are released and opened to the elements”

Panel says

The elegance of this structure is almost fabric-like – a canopy made up of a series of fine threads on a frame – which refines an existing outdoor space. The canopy acts as a development anchor and investment in infrastructure that precedes a new suburb, and the entire project demonstrates deft resolution. We admire the slender battens that immerse the amphitheatre in a strong pattern of sunlight and the fine details – in the junctions between column and beam, and between canopy and café, for example – but the great strength of this project is in the quality of the public space it creates.

“I was innovative and different and my project had a client who finally saw the benefits of our proposal,” he says. “It took 12 months to convince their MD Aziz Kheir,” Fady says. “Then, he stood alone and really I wasn’t still much later that his leadership group came around and heaped praise on the achievement. Aziz believed in this great centrepiece. It fits in his credit because he had to work hard to convince his fellow directors to take a different approach.”

Despite support for the community centre, the Hachem team was less successful at influencing design for any of the 300-plus new houses that form the wider estate. Fady recalls his director of architecture, Brendan Shanahan, was particularly disappointed.

Fady says, “I’d like to think there is an almost spiritual feeling stepping into that space, as if visitors are released and opened to the elements”

Panel says

The elegance of this structure is almost fabric-like – a canopy made up of a series of fine threads on a frame – which refines an existing outdoor space. The canopy acts as a development anchor and investment in infrastructure that precedes a new suburb, and the entire project demonstrates deft resolution. We admire the slender battens that immerse the amphitheatre in a strong pattern of sunlight and the fine details – in the junctions between column and beam, and between canopy and café, for example – but the great strength of this project is in the quality of the public space it creates.
While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“They are mostly standard brick and tile and do not echo the Community Centre’s innovation,” Shannon laments. “Too many community facilities in estates are low-grade structures. We didn’t want to repeat any of those. Just because a lot of the new houses are fairly basic doesn’t mean you have to design down to that level.”

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections. Fady believes that the potential for error with such fabrication and construction tends to make many building professionals uncomfortable.

“Our early conversation had to explain it in the simplest, clearest possible manner,” Fady says. “The builder has to understand the concept before he can build anything.”

“Basically a builder is conscious in the critical differences between creating with brick and steelwork. “It’s a whole other language and skill-set,” he adds.

Originally designed with a floating concrete roof, the architects finally settled on steel—a decision that Fady believes was “a much better choice”. “It’s ready gorgeous,” he enthuses. “It’s a new structure that we love, and it’s in parlour which actually softens it off a little.”

“Our initial design was less bulky, but the engineer’s first attempt resulted in a much bulkier appearance,” he continues. “We kept negotiating with the engineer to see how slimmer and refined it could become. One of the biggest challenges was to reduce the size of the steel purlins and refine those to such a point that they seem hardly to exist.”

Such fine profiling can realistically be achieved only with steel and Fady explains that pre-fabrication helped immensely, enabling parts to arrive on site to be fitted and 3D drawing. Rather than the ubiquitous revit and 3D drawing, the ribboned steel purlins require low-maintenance but offer far greater permanence.

“Once we learned here was that the steel supplier and builder aren’t necessarily on the same page,” he says. “The steel manufacturer was very in tune with what we wanted. We had to explain the issues and we still discovered some of those issues a little late. We learned a lot about the steelwork details such as the cleat connections that must come from hand sketches rather than problem-solving everything on computers with CAD.”

“If you go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins. The project’s stratified shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.

While the canopy boasts a bold and dynamic form, it was a fundamentally simple structure, with the potential achilles heel being the assembly joints and connections.

“The engine of each of those purlin ends and elevated connections meant there was almost no margin for error,” he adds. “Because the design runs out in plan, a lot of reworking and care was required to make sure we retained that precise accuracy. Had we miscalculated, the effect would be obvious and the result terrible. Because a beautiful symmetry is achieved, it spins.

“The project’s strated shade quality is a definite feature and reason that functionally helps to sell the project. You go in and argue the case purely on aesthetics you can end up in trouble. Because a beautiful symmetry is achieved, it spins.
This house on the edge of a forest by Iredale Pedersen Hook Architects brings together many narratives about places, buildings and sustainable design.

Words: Alex Taylor
Photography: Peter Bennetts
exploring the elevated house type, as part of “to me, this project offered a chance to continue a really strong and secluded quality. the most of experiencing it, in terms of having nannup is fantastic, and they wanted to make a similar quality,” Iredale recalls. “their site at they liked the idea of building a holiday house with perched above and looking out over rolling scenery. that earlier COLOMB® steel-clad V-shaped form, according to Iredale, they liked the simplicity of Steel Profile 103.

of iph architects to design it after admiring his retreat from city life. they engaged adrian Iredale adjacent farm – with the intention of building a 47-hectare site in 2009 – subdivided from an the house was the dream of a perth-based couple are completely integrated with the architecture.

journeys through a series of elevated houses by the series that started in 2000 with my parents’ house at dawesville,” he says. Whereas Gidgegannup is located 40 kilometres north-east of Perth, Nannup is 200 kilometres south, and the journey by car takes about three-and-a-half hours: a factor that inspired Iredale from the outset. “We saw the experience as being not just about hours: a factor that inspired Iredale from the outset. “you drive through the town itself, then zig-zag a bit more until you reach the site. so to me, part journeys through a series of elevated houses by architects. and lastly, the journey toward holistic sustainability, where green design attributes are completely integrated with the architecture.

The plan then cranks by another 45 degrees, arching hallways altogether for the open plan living/dining/kitchen space, beyond which is the master suite. Outside, the deck gives way to a narrow balcony that hugs the southern elevation like a ribbon, terminating abruptly in yet another turn – this time a 90-degree switch to the right – returning to the ground plane via another 20 metre-long ramp.

Much of the house was constructed using steel, which was chosen for its ability to withstand fire and flood, among other reasons. “for the structure, we used a roll-form steel option of house sub-structure with an off-the-shelf road connector that could be screwed on site, to get the right height for the RHS beams to come in at,” Iredale says. “for ease of delivery and construction, we used all-off-the-shelf products such as Weatherguard® mesh for the rain screen and floor of the crowsnest, weathering steel for the sunshades, and galvanised steel tube for the external handrails; because these steel products gave us a lot of opportunities to prefabricate. That helped to minimise construction time on site and the risk of potential damage to the site, and allowed the durability and low maintenance that we wanted for the future.”

The steel colours were carefully considered all of the building’s horizontal elements – ramps, sunshades and handrails, result from weathering steel and galvanised steel – reference the red dirt of the ground, while the vertical elements - columns and cladding, in the COLOMB® colour Monument® – unfold as an extension of that

“these steel products gave us a lot of opportunity to prefabricate. That helped to minimise construction time on site and the risk of potential damage to the site.”

A ll houses have a story about their making. Some have a couple. This house by Iredale Pedersen Hook Architects (iph), however, weaves together the stories of at least three different journeys. Mandering journeys from cities, through forests, to this house, which was designed to represent a continuation of that path. Deliberate, thoughtful journeys through a series of elevated houses by architect Adrian Iredale. And lastly, the journey toward holistic sustainability, where green design attributes are completely integrated with the architecture.

The house was the dream of a Perth-based couple who had two primary school-aged sons and bought the 47-hectare site in 2009 – subdivided from an adjacent farm – with the intention of building a retreat from city life. They engaged Adrian Iredale of iph Architects to design it after admiring his Gidgegannup House in Steel Profile 103.

According to Iredale, they liked the simplicity of that earlier COLOMB® steel-clad V-shaped form, perched above and looking out over rolling scenery. “They really liked Gidgegannup because it was on a similarly-avoided site to theirs at Nannup, and they liked the idea of a building a holiday house with a similar quality,” Iredale recalls. “Their site at Nannup is fantastic, and they wanted to make the most of experiencing it, in terms of having a really strong and secluded quality.

“So me, this project offered a chance to continue exploring the elevated house type, as part of the series that started in 2000 with my parents’ house at Dawesville,” he says. Whereas Gidgegannup is located 40 kilometres north-east of Perth, Nannup is 200 kilometres south, and the journey by car takes about three-and-a-half hours: a factor that inspired Iredale from the outset. “We saw the experience as being not just about hours: a factor that inspired Iredale from the outset. “you drive through the town itself, then zig-zag a bit more until you reach the site. so to me, part of the experience of being on holiday there is the collection of experiences along the way.”

The resulting house – wrapped entirely in LysaGHt TrimDek® and LysaGHt Custom Orib® profiles made from COLOMB® steel in the colour Monument® – unfolds as an extension of that zig-zagging expedition. Accessed via a 20-metre-long ramp that gently ascends to the front door, one enters a dark and moody hallway, passing guest quarters and a drying deck, before arriving at the main ‘elbow’ where a covered deck with glass balustrade provides a deliberately ambiguous indoor/outdoor room from which to enjoy the view, protected from western sun and prevailing winds.

The steel colours were carefully considered all of the building’s horizontal elements – ramps, sunshades and handrails, result from weathering steel and galvanised steel – reference the red dirt of the ground, while the vertical elements - columns and cladding, in the COLOMB® colour Monument® – blend into the forest, allowing the house to read as a shadow in the landscape from a distance. The dark cladding also performs a functional role by absorbing and containing heat. “People are usually fearful of using these dark colours for all-over cladding because of the potential for heat build-up, but we wanted to capture that quality in this cool climate,” Iredale says. “In this environment, Monument® performs well in terms of sustainable design.”

Iredale opted to take the dark-coloured steel inside as well, where internal balustrades and handrails are made of black mild steel, treated with a Danish wax finish to prevent oxidisation. “There is a synergy between the use of steel outside and inside,” he says. “Externally the steel is allowed to weather, but internally it’s maintained in its raw state.”

The resulting house – wrapped entirely in LysaGHt TrimDek® and LysaGHt Custom Orib® profiles made from COLOMB® steel in the colour Monument® – unfolds as an extension of that zig-zagging expedition. Accessed via a 20-metre-long ramp that gently ascends to the front door, one enters a dark and moody hallway, passing guest quarters and a drying deck, before arriving at the main ‘elbow’ where a covered deck with glass balustrade provides a deliberately ambiguous indoor/outdoor room from which to enjoy the view, protected from western sun and prevailing winds.

The resulting house – wrapped entirely in LysaGHt TrimDek® and LysaGHt Custom Orib® profiles made from COLOMB® steel in the colour Monument® – unfolds as an extension of that zig-zagging expedition. Accessed via a 20-metre-long ramp that gently ascends to the front door, one enters a dark and moody hallway, passing guest quarters and a drying deck, before arriving at the main ‘elbow’ where a covered deck with glass balustrade provides a deliberately ambiguous indoor/outdoor room from which to enjoy the view, protected from western sun and prevailing winds.
In a nod to the home’s location on the edge of a significant tract of forest, Iredale used recycled jarrah on surfaces where people are likely to make contact – such as on the exterior decks – and where the skin of the COLOBOND® steel has been revealed in the elevations. “Nannup is a timber town with a history of forestry and logging, so we wanted to maintain that connection too,” he explains.

Reflecting on the development of this dwelling as the latest iteration in Iredale’s series of elevated houses, this zig-zag plan demonstrates the architect’s growing maturity and confidence. The consideration of prospect and refuge from so many vantage points and angles in the cranked plan provides the occupants with total immersion in this unique and varied landscape.

“The form is a zig-zag as a way of experiencing the different qualities of the site; of capturing the site in a new way,” Iredale says. “The house sits on a fragile line between forest and floodplain, and one side looks back towards the trees while the other side looks out towards the undulating hills on the horizon.”

Iredale’s manipulation of ceiling heights, roof treatments and internal voids all add to that rich atmosphere. “The section of the building undulates in response to the forest behind, creating a hierarchy of spaces within,” Iredale says. “The high point is on the deck, which contrasts with the experience of lying in bed, where the roof folds down to frame a magical view of the forest. Every room has a different experience because of the section which creates great spatial variety, and there is a duality or ‘Jekyll and Hyde’ quality in the spaces too, thanks to the contrast of dark and light.”

From a green design perspective, the house builds on ideas the architect first explored at Dawesville 15 years earlier, where both on-ground technologies complement passive solar design principles. Dawesville housed photovoltaic solar energy, stormwater reticulation to feed the native garden under the house during rain, and gravity-fed recycling of laundry water for the garden. Iredale is proud of those achievements, which pushed sustainable design further than typical projects at that time. “The house won the 2002 Australian Institute of Architects WA Chapter Energy Conservation Award, and it was also audited by the government to determine if the ESD (ecologically sustainable development) attributes could be improved. The answer was no,” he says. At Nannup, the house seamlessly integrates green design attributes such as natural light and cross-ventilation in every room, thanks to the careful placement of windows and doors on opposite sides of the skinny plan. The long form roof is used to great effect to maximise water collection, which is stored in large tanks beneath the house. These also play a role in the approach sequence, concealing and then revealing the ground floor entrance and cars parked in the carport. A grey water recycling system treats water for irrigation, while the solar hot water heater back-up instantaneous gas is located close to areas of water use to minimise wait.

Photovoltaic cells produce sufficient energy – over the course of a year – to easily cover consumption requirements, which are minimised thanks to the

**The form is a zig-zag as a way of experiencing the different qualities of the site, of capturing the site in a new way**
installation of energy-efficient equipment and a combination of LED and compact fluorescent globes.

And site disturbances were kept to a minimum by quarrying gravel and sand from the site for the dual-purpose access road and firebreak, then replanting them at the urban fringe – with local and indigenous species.

Iredale notes that a point of difference between the Dawesville and Nannup projects is his expanded definition of sustainability. “Now I would extend the concept of ecologically sustainable development to include a sense of intimacy with and respect for the landscape,” he says. “‘zine, the notion of experiencing landscape takes on physical and emotional components now that I wasn’t necessarily aware of when I was younger.’

‘We also included a study so that they could work there, over the longer term.’

The total mastery of this design was recognised at the 2014 Australian Institute of Architects’ WA Chapter Awards, with the project collecting the Marshall Clifton Award – the institute’s highest honour for housing. It’s the second time this accolade has been awarded to this studio, following the win for Florida Beach House in 2011 (see ‘Detail’ P11).

The Jury said of Nannup: ‘Floating lightly over the landscape on slender stilts, the house forms part of a meandering path through the landscape. Its grated steel access ramps, cranked linear plan and carefully choreographed sequence of spaces and views provide protection, shelter and an intimate appreciation of environment. The use of robust agricultural materials, simple detailing and a practical approach to the provision of basic utilities provide a home that is confident, unpretentious, functional, sustainable and very much in harmony with the raw natural and pioneer spirit of the south-west.’

From the outset, the clients intended that this holiday house might one day become a second home, allowing them to eventually split their time between the city and the country. Iredale recalls, ‘They wanted a level of comfort so that they could visit for long periods of time, and as guests could come and still maintain a sense of privacy,’ he explains. ‘So on one hand, this story is complete, but on the other, it’s only just beginning...’

The final word on distinctive journeys and previous experiences to ensure that the house to blends into its landscape and become a backdrop for new and different stories – anecdotes about family holidays, getaways with friends, or, even, potentially, new chapters arising from a two-career transformation. So on one hand, this story is complete, but on the other, it’s only just beginning....’

Below and above right: The main deck of the house is protected from the elements but still provides a connection to the landscape.

Panel says

The long, thin, zig-zag plan of this house with its two access ramps is an innovative response to the contoured landscape, where remnant bushland meets floodplain. Often, the architect might have designed a linear house, he’s opted instead to crank the plan to maximise outlook and provide a variety of perspectives to the bush. The clever incorporation of terraces in the oblique spaces and the careful placement of corridors so as to emphasise different sightlines highlights the merits of having removed from – yet at one with – the landscape. This small house on a large piece of land is extraordinarily modern, but thanks to the use of COLORBOND® steel in the colour Monument®, steel girders and weathering steel, it is completely at peace with its natural surroundings.

Above: A contrast between dark and light treatments internally creates a Jekyll and Hyde atmosphere, which shifts the focus of attention from interiors to landscape.

<table>
<thead>
<tr>
<th>Awards</th>
</tr>
</thead>
</table>
Since its inception in Darwin in 1981, Troppo Architects has pushed boundaries and agitated for change. So it’s no surprise to learn that this year’s Bluescope-sponsored Australian Institute of Architects Gold Medalists — co-founders Phil Harris and Adrian Welke — are concerned about regulations that actively hinder their common-sense approach.

Words: Rachael Bernstone

PHIL HARRIS & ADRIAN WELKE

As friends at university, Phil Harris and Adrian Welke didn’t follow the prescribed path. In late 1977, when fourth-year students were supposed to gain internships at established firms, they drove around the country in a Kombi-van for four months with fellow students Justin Hill and Jim Hayter. Back at university, they produced a report — self-published on recycled newsprint and sold for 50 cents a copy — about their travels. Influenced by Regional Architects, described variants and themes in vernacular buildings, taking in a broad sweep from Eschewing the Institute’s eponymous naming protocol, they instead chose a term that conjured up images of people gone mad as a result of the oppressive heat and humidity of the build-up, which is relieved only by the drenching rains of the monsoon.

Their focus on designing for weather patterns and climatic conditions set their work apart from the outset, and led to the development of an identifiable ‘Troppo’ quality. It’s evident in their earliest works such as the Green Can, one of 11 winners of a Low Cost House competition (built at Karama in 1982) and the Kaiplinger House (D landscaped House competition (built at Karama in 1982) — and the practice’s latest award-winning project, the Ninemile House, winner of the Tracy Memorial Award and an Award for Residential Architecture — Houses (Alterations and Additions) at the Northern Territory Australian Institute of Architects Awards in 2014.

These houses are all the more striking when one considers the incongruous project homes built in Darwin over the course of Troppo’s lifetime. After Cyclone Tracy nearly destroyed the city’s northern suburbs in 1974, the new houses were mostly ground-huggers, built from in-situ or precast concrete panels, featuring small window openings and screwed metal roofs. The real crime here though is in how poorly those houses perform in the tropics, and how they force their occupants to rely on air-conditioning to maintain comfort in the build-up and wet seasons.

By contrast, Troppo houses are mostly elevated, open to the breezes with louvred walls and windows, protected from heat and rain by external/venetian shutters and wide verandahs, and covered by large curved steel roofs. They are characterised by an economy and robustness of materials that reflect the remote location, but they also mesh easily with efficiency and extensive wastes.

“We tried to get the Institute to award the Gold Medal to Troppo Architects, not just Phil and I, because the contribution that the whole collection of 100 or more people make is not only important, but inspiring for us to see,” Welke says. “We have always worked collaboratively and collectively, and when we were in Darwin young people were the only ones who could attract us to go up there: their graduate programs were becoming competitive and we were keen to come up and get involved. They have been the mainstay of the practice. Some have stayed with us and others have gone on to set up their own firms.”

Harris attributes their enthusiasm for nurturing the careers of young architects to the pair’s own relative youth when they established the practice 33 years ago. “We started young,” he explains. “We each had less than a year of work experience after graduation, but inspiring for us to see,” Welke says. “We each had less than a year of work experience after graduation, but inspiring for us to see,” Welke says. “In addition, the steel industry is wonderfully organised and competent, which offers the means of quickly getting the bones of a building up — there is a cost-effectiveness, speed and orderliness in terms of getting more complex things built”
Having found success in the Top End, the practice established satellite offices in Townsville and later Byron Bay, and Harris returned to Adelaide in 2000 and Welke moved to Fremantle in 2001, giving Troppo Architects a broader geographical and climatic range. Supported by teams in the Top End, the founders still work on projects in the Top End rural locations around Australia as well. In spite of this expanded scope, there is still an unmistakable ‘Troppo-ness’ to all their projects, but it’s much more subtle and rooted in history and research than a signature style might be: “There is an identifiable thing called Troppo, and it’s the way in which the buildings respond to their setting,” says Welke.

“We like to think there’s an honesty, a straightforwardness and a humble selection of materials,” Harris explains. “But first and foremost we are dealing with shelter. It’s not about show – it’s about making something work for the climate and the place in which we are building.” From the outset, steel has played a pivotal role in achieving their objectives because it allowed them to experiment in an efficient and economic way. “If you go back to the Green Can and other early buildings, the whole objective was to achieve openness – the ability to play with large openings – so they relied upon a post-and-beam structure that was influenced by Japanese house principles,” Welke explains. “We liked the simplicity and lightness of steel, and that strength and lightness have been central components of our structural steel frames.”

The same method is equally valid in southern locations, where the climate offers the opportunity for more glazing than in the tropics, Harris adds. “Working down south, there is a similar requirement for a readily carried out framing system, and steel is also excellent for achieving large cantilevers, such as roofs for shading purposes.” In addition, the steel industry is wonderfully organised and competent, which offers the means of quickly getting the bones of a building up. “There is a cost-effectiveness, speed and orderliness in terms of getting more complex things built,” Harris says.

The jury said the pair “…pioneered a unique approach to Australian architecture: irreverent but sophisticated, inventive with a tinge of larrikin spirit…”

The Kaiplinger House at Coconut Grove features curved steel roofs that became synonymous with Troppo’s elegantly detailed use of robust and efficient materials. The jury said the pair “pioneered a unique approach to Australian architecture: irreverent but sophisticated, inventive with a tinge of larrikin spirit…”

It’s about making something work for the climate and the place in which we are building.” From the outset, steel has played a pivotal role in achieving their objectives because it allowed them to experiment in an efficient and economic way. “If you go back to the Green Can and other early buildings, the whole objective was to achieve openness – the ability to play with large openings – so they relied upon a post-and-beam structure that was influenced by Japanese house principles,” Welke explains. “We liked the simplicity and lightness of steel, and that strength and lightness have been central components of our structural steel frames.”

The same method is equally valid in southern locations, where the climate offers the opportunity for more glazing than in the tropics, Harris adds. “Working down south, there is a similar requirement for a readily carried out framing system, and steel is also excellent for achieving large cantilevers, such as roofs for shading purposes.” In addition, the steel industry is wonderfully organised and competent, which offers the means of quickly getting the bones of a building up. “There is a cost-effectiveness, speed and orderliness in terms of getting more complex things built,” Harris says.

The Rozak House is a case in point. Located south of Darwin, it typifies the firm’s ethos of providing maximum shelter with minimum effort, using ZINCALUME® steel for wall and roof cladding, and galvanised steel framing to perch above the landscape. It won several Australian Institute of Architecture awards in 2002: including a Sustainable Architecture Award and Commendation in the Housing category at the National awards, and the NT’s Sustainable Architecture prize and Barnett Award for Housing.

Having played such an instrumental role in the profession, the jury said the pair “pioneered a unique approach to Australian architecture: irreverent but sophisticated, inventive with a tinge of larrikin spirit…” and having built up a deep knowledge of what works best in different places (cities versus remote locations, tropical versus urban climates, single family homes in the suburbs versus employee housing on indigenous communities) Welke and Harris added to feeling disenchanted by the current regulatory environment that stifles the sort of innovation they’ve become famous for.

“Ever since the building code introduced energy efficiency measures and created the star-rating requirements for housing, that has been a real problem for us in the tropics,” Welke says. “It was counter to what you needed – the idea of creating an insulated box – when actually you can get by with shade and air movement in the daytime, and a way of dispersing the heat at night.”

“The more strict the building code has become, the less likely one of our early houses could be built,” he adds, “but they are still good Troppo houses: so is there something wrong with them, or something wrong with the code? The code makes an assumption that everything will be heated or cooled, whereas some people can be comfortable without either.”

Welke says that Troppo has been forced to work more closely with certifiers to ensure its current designs conform to the code, but as a result, “every project is an argument and a battle to get over the line”.

Having played such an instrumental role in the profession, the jury said the pair “pioneered a unique approach to Australian architecture: irreverent but sophisticated, inventive with a tinge of larrikin spirit…” and having built up a deep knowledge of what works best in different places (cities versus remote locations, tropical versus urban climates, single family homes in the suburbs versus employee housing on indigenous communities) Welke and Harris added to feeling disenchanted by the current regulatory environment that stifles the sort of innovation they’ve become famous for.

“The code should more seriously promote solar passive design, and provide an advantage for those people who seek to employ it.”

That would result in buildings that are a lot more dynamic: able to open up with shutters and blinds or, in the case of Darwin, the ultimate tropical house has no walls at all,” he says. “If people want to live in the bush, in a shed, with a possum-skin coat in winter and a singlet and stubbies in summer, those people who are happy to live with less should be rewarded, but there is a cost to all of us for that choice in the long term.”

The code makes an assumption that everything will be heated or cooled, whereas some people can be comfortable without either.”

Welke says that Troppo has been forced to work more closely with certifiers to ensure its current designs conform to the code, but as a result, “every project is an argument and a battle to get over the line”.

Having played such an instrumental role in the profession, the jury said the pair “pioneered a unique approach to Australian architecture: irreverent but sophisticated, inventive with a tinge of larrikin spirit…” and having built up a deep knowledge of what works best in different places (cities versus remote locations, tropical versus urban climates, single family homes in the suburbs versus employee housing on indigenous communities) Welke and Harris added to feeling disenchanted by the current regulatory environment that stifles the sort of innovation they’ve become famous for.

“The code should more seriously promote solar passive design, and provide an advantage for those people who seek to employ it.”

That would result in buildings that are a lot more dynamic: able to open up with shutters and blinds or, in the case of Darwin, the ultimate tropical house has no walls at all,” he says. “If people want to live in the bush, in a shed, with a possum-skin coat in winter and a singlet and stubbies in summer, those people who are happy to live with less should be rewarded, but they are heavily penalised at present.”

When asked how Troppo manages to get around the myriad and often conflicting requirements, and what they have learned over three decades of practice that young architects may not yet know – he responds with a laugh that “the Troppo approach is to be flexible, yet legal,” SP

We like to think there’s an honesty, a straightforwardness and a humble selection of materials,” Harris explains. “But first and foremost we are dealing with shelter. It’s not about show –
It is not quite a case of turning a sow’s ear into a silk purse, but the re-invention of this degraded industrial waterfront site in Hobart is a remarkable transformation.

Words: Paul McGillick
Photography: Ben Hosking, Paul Bradshaw

ARCHITECT
Wear 17

PROJECT
Glenorchy Art and Sculpture Park (GASP), Stage 2

LOCATION
Glenorchy, Tasmania
Panel Says

This sublime project in Hobart could not have been realised without the use of steel to carry the cantilevered structure out over the bay. As a community pavilion, this project is bold and subtle in equal measure, at once containing and reaching out to the landscape.

Architects, Room 11, worked on Stage 1 which involved the landscaping: defining the foreshore and constructing a steel-framed pedestrian bridge to curve around its edge, and re-vegetation. Lead architect on the project, Thomas Bailey, does not speak so much of architecture, but of providing the infrastructure to facilitate Pippa Dixon’s vision. The infrastructure, he says, was to be done in an “artful way” to reflect the purpose of the park which was to host permanent sculptures, temporary installations and events.

Stage 2 was to provide a sheltered space with a barbeque area and the flexibility to accommodate a pop-up café – hence, the steel bollards for power and light. For this stage, Room 11 worked with landscape architects McGregor Coxal, a firm...
“The drive was to create a relationship with the topography and use the infrastructure to promote an understanding of that reading of the place.”

The site of the pavilion is on Williamson Point where the Derwent River kinks around, offering views back towards Hobart, across the river to Mount Direction. Further up the river and across Matthewson Bay along the foreshore towards Glenorchy and MONA.

A ferry terminal there is a plaque which refers back to the 1837 disaster where a barge was lost, carried accidentally round into the Tasman Bridge. The Bonow Bridge, north of the Tasman, was built between 1896 and 1898 as insurance against any future accidents, and the GASP site is where 80 metre-long steel girders were constructed, to be ferried up the Derwent to the Bonow Bridge site.

The pavilion precisely replicates the narrow industrial concrete apron, retaining its character while still providing the amenity required. At the same time it adds another layer of history to the site. “The drive,” says Bailey, “was to create a relationship with the topography and use the infrastructure to promote an understanding of that reading of the place.”

The result is a fascinating diversity of orientation where the spectacular rich landscape and marinescape is brought into focus by various reading of the place.”

Drumming Room 11’s approach to the selection and use of materials, Bailey comments “Using standard industrial products in an interesting and innovative way is what good design should be.”

The cantilever, says Bailey, was only one of two options: either concrete or steel. This is a combination of the two – “a nice, efficient way of achieving the gesture we were after,” he says.

C pavilions made from GALVASPAL® steel act as a steel lie with “a gargantuan amount of concrete and piling underneath.” The wall in the facing panel which pans the cantilever to that huge cantilever. The cantilever is effectively hung from the top, from the pavilion.

“Originally we tried to pin the structure into rock with a post-tensioned type of anchor, which didn’t work. Then we basically went for mass–for shear weight to hold it up. It’s all about scale.”

Bailey says that it would not have been possible to make the structure without using steel. He describes it as “a pretty courageous piece of engineering” and he credits structural engineer, Jim Gandy, for pulling it off.

The steel, he says, is essential to the structural solution. But architecturally it forms a dialogue with the various forms of concrete. This dialogue is continued with the thin custom-folded tray roofing using C purlins and COLORBOND® Ultra steel. Although only the ribbing in visible, the decision to customise the roofing was about very cost-effective and waterproof. Working something out from scratch like this, says Bailey, is always more complex than simply specifying an off-the-shelf product, but the result is more satisfying.

Inside, the ceiling is customised 218 stainless steel cladding an eroded mirror reflective property of the stainless steel plays a key role because it engages in a dialogue with the concrete which ranges from the raw industrial to the smoothly finished – sometimes mixed, as with the outdoor area which are concrete pavers both polished rapid recovered from the bay.

Ultimately, the pavilion is highly sophisticated in an understated way. The constraint of the industrial heritage was seen as an opportunity, as was the very small budget (comparable with the cost of building a waterside house in Sydney, according to Bailey) and the tight three-month turnaround from commission to completed documentation.

The approach is using the curving walkway, across a raised colonnade, steel-framed pedestrian bridge set on a concrete retaining wall, and past a 40 metre-long, 800mm-thick finished concrete wall which shelters visitors from the chilly westerly winds that sweep across the bay from Mount Wellington. The visitor then enters the sheltered space of the pavilion along a feature screen/inclusive entrance.

Whereas the courtyard is oriented towards Mount Direction, the cantilever engages in a dialogue with the water. To create such a bold cantilever, says Bailey, there were only two options: either concrete or steel. This is a combination of the two – “a nice, efficient way of achieving the gesture we were after,” he says.

“Project Team

Architects: Thomas Bailey (lead architect), Josh Fitzgerald, Megan Saynor, James Wilson, Nathan Crump, Georgie Wettenhall (Design Flow)

Structural Engineer: Jim Gandy, Gandy and Roberts

Builder: Fairbrother

Steel Fabricator: Fame Foley, Corner Valley Engineering

Drawing Contractor: Fairbrother

Concrete Contractor:W. Duggans

Landscape Architects: Mark Haycox (McGregor Coxall) in collaboration with ROOM 11

Principal Steel Components: Custom folded steel made from COLORBOND® Ultra Steel, supplied by The Roofing Centre and assembled on site by Fairbrother Pty Ltd. C purlins made from GALVASPAL® steel.

Project Timeline

Awarded GASPT 1 in 2002, Urbia Design Awards, The Australian Institute of Architects Tasmanian Chapter and National Architecture Awards in 2013. GASPT 2 received the Dinkin Award for Urban Design at the 2014 Tasmanian Chapter Australian Institute of Architects Awards.

Building Size: 330m² (Internal). Entire site is 800 metres long. TOTAL PROJECT COST (including landscapes works) $2.4 Million.
The new AGL Lakeside Pavillon at Mount Annan shares more than a passing similarity with great English garden follies.

Words: Rachael Bernstone
Photography: Peter Bennetts (PBB); Paul Bradshaw (PMB)
One of the great delights of visiting majestic landscaped parks and gardens—especially in England—is the discovery of a folly, a romantic building in the shape of a rotunda or tower. Made famous by 18th century landscape designer Lancelot ‘Capability’ Brown, follies enhance one’s enjoyment of the garden by improving vistas thanks to their careful placement among sculpted rolling hills and serpentine lakes. While the tradition of placing follies in gardens didn’t translate readily to Australia, a new structure at the Australian Botanic Garden, Mount Annan, calls to mind those early garden ornaments.

Situated on a rise overlooking two lakes, it commands superlative views across a vast sweep of the grounds and proclaims its presence in the landscape. From a distance, and on approach, it reads like a temple, thanks to the slender steel columns that reach upwards past the roofline, like an ancient Greek ruin.

The building is the AG Lakeside Pavilion, and it heralds a new direction for the Garden, which was first mooted in 1984 and opened as a bicentenary project in 1988. Early buildings—co-located at the centre of the 416-hectare site, including visitor amenities, a café and garden shop—were bland and generic, some were demountables.

“They were bland and generic, some were demountables,” says Kennedy Associates director Anthony Nolan. “But as the garden has matured it has developed a unique identity as an important botanical and cultural precinct in south western Sydney, and the new buildings are really important expression of that identity.”

In recent years, Nolan and his fellow director Steve Kennedy have both noticed a touch of 18th-century English landscape architect, ‘Capability’ Brown, creeping into the Garden. “Capability Brown was known for saying, ‘That hill is in the way, we’ll move it,’” Kennedy says. Of course, some things can’t be moved and some things are historically really important, but the client has different priorities for different plants.

“We noticed that the landscape varied quite considerably at times during this project, when entire sections of garden would just disappear overnight, always to good effect and for good reason,” Nolan adds. “The garden is far from static as plants reach maturity and are replaced; priorities change and garden beds are realigned. During the early stages, every tree felt sacred, but we now have a realisation that— as an Australian native garden— some of the plants are representational but not rare, and some will regrow within five years, so they can be replaced. For that reason, it’s a good time to be working in the Garden.”

Another building that explores the unique identity of the Garden is the recently completed PlantBank, designed by BVN Donovan Hill and completed in mid-2013 to mark the Garden’s 25th anniversary. It accommodates Garden staff and researchers and occupies a prominent site overlooking the main entry drive, and it won an Architecture Award at the Australian Institute of Architects’ New South Wales Chapter Awards this year.

“Even though there is an incredibly rigorous geometry—which includes a double ridge in the roofline so that the building presents faces on multiple sides—there is a sense of quirkiness, too”
“One of the remarkable things about building with steel is that once the base is done, there’s a structure there and it’s often very dramatic. In this case, there was just one week of steel work required on site.”

Kennedy says the building has a unique and deliberate presence, similar to the Acropolis in Athens or a praying mantis climbing over the hill.

Whereas PlantBank is a research facility and therefore closed to the public, the aGL Lakeside Pavilion was always intended to welcome everyone. It’s the largest of a suite of new facilities designed by Kennedy Associates – including picnic shelters and public toilets – and it shares a similar aesthetic with them, and the Bowden Centre.

GROUNDF PLAN

While the use of steel gives the building an honest, almost agricultural aesthetic, the exceptional geometry means it transcends rudimentary farm buildings. The complexity of the steel structure was born of trial and error in the design phase, with Nolan discarding many iterations along the way. Recalling that lengthy and arduous process, Kennedy says it helped to reveal and nurture the building’s own willful character.

“This is a raw muscular shed, where nothing is hidden, nothing is covered and nothing is painted, yet there is an allowance for the structure to do what it needs to do,” he says. “Even though there is an incredibly rigorous geometry – which includes a double ridge in the roofline so that the building presents facades on multiple sides – there is a sense of quirkiness, too.

“In one sense the building is very geometrical, very symmetrical and very formal, and yet at the same time the structure is just doing what it wants to do,” Kennedy continues. “We allowed those two approaches to crash together and talk to each other, such as where the perforated screen meets the roof at the entrance verandah.”

The time spent refining the design helped to ensure the building was inexpensive to construct. Nolan says, “In the interests of economy we set ourselves an agenda of reducing any duplication, so that if two things were near each other and they could do the same job, we would combine them,” he explains.

“For example, some of the column lines shift and step sideways, which allowed a beam to do its job. We’ve made a virtue of that quality throughout the design by exposing it all, and letting the building dictate to us where we could put things.”

Like Capability Brown’s follies, this building was designed to be approached from all four directions, although the ‘verandah’ on the north-western edge doubles as a welcoming entry portal and the best location for a bar at a formal catered event. Nolan originally set out the building around the dimensions of a 200-person marquee, and the ghost of a tent-like structure can be read in its slender steel 150mm SHS columns and 200mm UB Roof Beams covered with a thin and lightweight roof. Nolan specified Ritek Ecotek™ Roof Panel 130mm made from COLORBOND® steel, in the colour Bushland® on both sides, for the roof.

“The edges of the roof are thin and they cantilever away from the structural steel frame, and we couldn’t have achieved that cantilever with any other material of that thinness without a lot of extra structural support,” Nolan says. “If you...
Welded base plate bolted to slab
Welded t-bolting plate welded to SHS bolt on post and rafter
ub to match rafter welded to SHS 200mm purlin in line with rafter
screen Cosset battens on steel RHs frame
Cranked ub rafter with end bolting plates
Valley gutter
roof panel system
ritek Ecotek™ 130mm custom-folded

LEGEND
1. 150 SHS with top capped
2. Ritek Ecotek™ 120mm custom folded roof panel system
3. Valley gutter
5. Welded T-bolting plate welded to SHS bolted to PFC screen bearer
6. Screen Cotrim bottom on steel RHS frame
230mm parapet in line with wall
11. UB to match rafter welded to SHS
15. PFCs as support base gutter bolted to create an out and return
19. Welded T-bolting plate welded to SHS bolted to PFC screen bearer

The builder and steel fabricator were excellent; everything is crisp and how we wanted it to be.”

“...The Prairie pavilion..."
Lacking an Olympic timeframe or funding, the design of this new sports venue steers clear of the exaggerated theatrics of many recent stadia, and the result is no less thrilling.

Words: Micky Pinkerton  Photography: Alison Paine
I was perhaps more an evolution than a revolution but at some point in the past decade the professional sporting industry went from super to mega in character. The eight-figure salary was passed over for nine, TV rights were negotiated in the billions rather than the millions, and players started wearing fabrics made in laboratories that made them look like they had stepped straight from a Marvel comic.

Needless to say this mega world demanded architecture to match; another fantastical element to remind the more mortals passing through the turnstiles that they were about to enter a world of heroes and gods. And the design profession did not hold back: we’ve seen bird’s nests in Beijing, sporty spaceships in Belarus and inflatable boats in Bavaria. All this creativity has become known as Perth Rectangular Stadium.

The structure of the new eastern and southern grandstands deliberately responds to that shape on the ground. Architect Steve Woodland’s visual reading is perhaps more on message, given the project’s main purpose. “The shaping of the steel almost takes an athletic stance,” says Woodland. “It has a muscular quality to it, like someone ready to sprint. We were seeking to achieve a sense of the dynamic in the structure, rather than just a simple steel assembly, and we wanted the steelwork to become a sculptural piece in its own right.” So there was a gridded response to the rectangular form of the pitch, but then in section there’s a very organic shaping of the steelwork: firstly to respond to its structural needs in generating a single major cantilever, and secondly in the dynamic look of ‘legs’ on the ground.”

A series of tapered and shaped steel frames support the roof and the seating, and create a generous concourse. To the naked eye these frames, made from hot-rolled sections of Bluescope steel, look like enormous boomerangs. In section they could be an army of praying mantises poised to pounce, or a flock of cranes about to take flight. Architect Steve Woodland’s visual reading is perhaps more on message, given the project’s main purpose. “The shaping of the steel almost takes an athletic stance,” says Woodland. “It has a muscular quality to it, like someone ready to sprint. We were seeking to achieve a sense of the dynamic in the structure, rather than just a simple steel assembly, and we wanted the steelwork to become a sculptural piece in its own right.” So there was a gridded response to the rectangular form of the pitch, but then in section there’s a very organic shaping of the steelwork: firstly to respond to its structural needs in generating a single major cantilever, and secondly in the dynamic look of ‘legs’ on the ground.”

The motif of a sprinter has further meaning for the project – the brief stipulated an extremely tight nine-month program to have the stadium substantially delivered between sporting seasons. That ruled out major in situ concrete work, or a design dependent on separate elements of the building being produced in succession. Woodland draws on the practice’s past experience of public projects with punishing timelines, and in particular its legacy of rail projects which used skeletal steel framed buildings in order to construct new stations quickly on active sites.

“We needed to have the components manufactured in parallel, not in sequence,” says Woodland. “So all the large frames were effectively manufactured off-site and brought to site and assembled as a kit. The assembly process was very important and carefully informed the design concept in the first place, and it meant that while ground works were being done the structure could progress on a separate stream of activity.”

Just how quickly the structure was erected is shown in a time-lapse video on the client’s website and steel.com.au/steelprofile. The first third of the film shows ground works before a crane arrives on site, and suddenly the skeletal frame goes up in a matter of days. Pre-fabrication of the steel elements had further advantages for Woodland in that the quality of the finish that can be achieved in a workshop is substantially greater than what can be achieved on site. However, it also brought with it challenges in terms of planning and execution. “When things are component driven and factory-made you can achieve a lot of things in a complex and high-finished way but you then have to be particularly careful that the assembly on site is as simple as possible. This is a very different circumstance from unfinished steel work, where if something doesn’t quite fit you hit it with a hammer and force it into place. “That’s OK when it’s put up in a roof space and no-one is going to see it, but it’s a long way from what we were aspiring to achieve here where the steel work is not only structure, but it is also a finished piece of architecture. So the joints and assembly have to occur in a manner where it’s all looking together, in a guided and organised manner and without too much complexity, to still create a beautiful joint.”

**“The shaping of the steel almost takes an athletic stance. It has a muscular quality to it, like someone ready to sprint”**
The project therefore demanded an even greater collaborative design and construction process than usual. Woodland and his team invested a lot of time working with the fabricators to plan the production and delivery of the columns and rafters to site with as little movement of the components as possible, to avoid damage to the finished item.

With the columns weighing 25 tonnes, being 38 metres in length and fabricated in one piece from mild steel, that task might have seemed gargantuan, but forohanEicke of Phillips Engineering the scale of the project was no problem. The company works predominantly on large industrial projects, from mining conveyors and off-shore rigs to medals columns to heavy lifts ships. However, with a high spec, three-coat finish to the rectangular stadium’s rafters and columns, moving items via the usual method of hooks and chains had to be reconsidered and an alternative developed with the architect.

“We actually ended up screwing a lifting eye into it so we didn’t chain up around the unit, which would have destroyed the paint,” says Eicke. “The lifting eyes were screwed into the ends of the columns, which was then raised up. Then it was unscrewed back out and that little thread area was plugged, with no damage to the paint. We also had to fabricate the units in such a way so that they were in the correct position, so they didn’t need to be turned, which would have also risked damaging the finish.”

Eicke and his team have since applied this knowledge on Perth’s rectangular stadium to other projects. With many conveyor components weighing up to 90 tonnes and exceeding the capacity of the company’s overhead crane, Phillips Engineering is now planning fabrication to reduce component movement, so the point where pieces can be jacked-up and hoisted off trucks into their final resting position without the need for rotary at any stage.

The knowledge transfer between architect and fabricator flowed both ways. The initial design had not fully appreciated the welding requirements for fabrication and the accessibility needed to be able to avoid the internal stiffening for the columns and rafters. Eicke produced a mock-up, task-loading one column in one rafter to physically show the difficulties to the fabricator. Eicke notes that “the repetitive placement of the tapered steel battens, articulation of the roof modules via the insertion of glass strips and the connection of all components with comparatively slender steel connectors resulted in a large structure that ended up visually light.”

The new stands have been equally well received by the client, the two professional teams using the stadium and their fans, who have praised the extensive experience. Rob Didcoe, director of facilities and camps for the Department of Sport and Recreation, is delighted by the awards the project has won.

As the client, it is pleasing to have the entire project is planned, designed and constructed with such superior components. Woodland concurs. “Having those conversations with the fabricator, the contractor and the transport guys early on meant that everyone worked well together... When there’s a good team spirit and when people understand what you are trying to achieve they do things with care and get pride out of it as well.”

Woodland’s other key take-out from the project is the flexibility provided by the hot-rolled steel to sculpt and shape those steel frames,” he says.

“When I think of a dimension of steelwork that sometimes gets lost, that the fluidity of being able to work with that material means you’re not bound by the extruded shapes in that sense, it can be almost hand-sculpted as well as respond efficiently to the structure. That is one of the great successes of the project and offers a great amount of potential going forward.”

That dimension did go unnoticed during the VM-Australian Institute of Architects awards, with the project winning the COLORBOND® Award for Steel Architecture. The jury acknowledged the lightness of structure and elemental elegance enabled by the use of steel. “The repetitive placement of the tapered steel battens, articulation of the roof modules via the insertion of glass strips and the connection of all components with comparatively slender steel connectors resulted in a large structure that ended up visually light.”

The new stands have been equally well received by the client, the two professional teams using the stadium and their fans, who have praised the extensive experience. Rob Didcoe, director of facilities and camps for the Department of Sport and Recreation is delighted by the awards the project has won.

“The client is pleased to have the entire project team recognized for the quality of work that went into the planning, design and construction of the stadium upgrades,” says Didcoe. “More importantly, the end result is an innovative, quality elite sport and entertainment venue that will serve the needs of the WA community for decades to come.”

**Panel says**

There is a real clarity in the way steel has been used to construct this stadium. From the bracing that carries the raked seating, to roof supports. On all incredibly well-integrated. The logic and rhythm of the design concept is clearly legible in the sketches and carried through in the built form, which juxtaposes a poetic tension between lightness and prospect, and feeling grounded and secure. the clever handling of the steelwork means there is no loss in the structure, thereby providing uninterrupted views from every seat. The spectator experience is dramatically improved by the crafted and sensitive use of steel.
Driven to design a school in a Pilbara town that is inspiring and comfortable for students, and attractive to parents, T&Z architects has applied some deft architectural and artistic touches.

Words Rob Gillam Photography Robert Frith

The shading screens made from XLERPLATE® weathering steel are mindful of the earthen ground plane.

“They form a series of layers and planes, both in the reading and walking. These were architectural using a range of different colours which we drew from the environment around the school, including rock formations and plants.”

In addition to various BlueScope structural steel sections and studwork for framing, several types of roof, wall and soffit cladding made from CORUSS® steel in LYSAGHT CUSTOM ORE® profile and LYSAGHT SPANDER® profile feature throughout, including in the colours Bushland®, Windspray®, Ironstone® and Evening Haze®.

The architects have in places folded down the roof to meet the ground plane and peeled down the back corners of wall planes to avoid solid segments. Offering further permeability are a series of sun shades that overhang progressively deep walkways providing thoroughfares and gathering spaces protected from the often extreme summer temperatures.

The steel columns supporting the shading panels are angled in an abstract fashion, similar to the rare sporadically occurring rock shards.

Mindful of the earthen ground plane, the architect specified that the sun shading screens be made from XLERPLATE® weathering steel, a material also chosen by artist Tim Macfarlane Reid to make freestanding sculptures that adorn the grounds.

Artist Rick Vermey was engaged to ensure the shade screens were both practical and creative. Like Quartermaine, Vermey draws on the landscape for the mural-style artwork’s motifs. Pondering his favourite quality of the shade screens, he cites the constantly variable imagery cast by changing light and shadow.

“There are moments when you observe something completely afresh. You can chance upon some detail you’ve never noticed in a month of walking past it. I aspire to create experiences that linger in memory and stimulate quiet contemplation. In the instance of the hills, the rocks, the heat and the intensity, light and shade directly contribute to this experience.”

STEEL DETAILS

HOLE LOTTA LOVE

Previously at the epicentre of a natural resources boom, the town of Karratha has had to diversify in the wake of that industry’s economic braking. This is exemplified in the state department of Education’s desire to improve the perception and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“My design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“Our design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“Our design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“Our design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“Our design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“Our design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.

Balanced against the Pilbara region’s enduring rugged beauty is a sometimes unwelcome remoteness, sometimes merciless climate and prosperity prices some city-folk would baulk at.

Project architect and T&Z Architects director Brad Quartermaine says the region includes the major town of Karratha struggles to retain population and that T&Z’s design for the school was aimed at helping to stem that flow. “It’s hard to keep people here who is important for the community to have retention strategies for the population. We want parents to stay once kids reach school age, for kids to be educated here and to take jobs that keep them in the local economy.

“Our design was very much about creating an environment that staff and students want to remain in, and we think the building and touches such as the artwork greatly contribute to that.”

The region’s climate and natural surrounds had a strong hand in shaping the building’s character and application of public education and was a cornerstone of T&Z Architects’ brief when designing the second stage of Karratha Senior High School.