STEEL PROFILE

HEFFERNAN BUTTON VOSS ARCHITECTS
TRANSEND PRIMARY STORE

IN PROFILE:
HAMISH LYON

ROOM11
ALLENS RIVULET HOUSE
EDITORIAL

Welcome to Steel Profile #107

In our customary support of Australian architecture, BlueScope Steel is proud to sponsor the Australian Institute of Architects National Architecture Awards. We have been impressed by the standard of this year’s Architectural Awards winners and particularly wish to congratulate Wood Marsh for receiving the National COLORBOND® Award for Steel Architecture, for the Australian Pavilion at Shanghai World Expo.

This monumental design statement has used weathering steel on a massive scale to evoke the distinctive landforms of our Red Centre, and the world has truly marvelled.

We are delighted to have showcased the Australian Pavilion in a previous issue (August 2010) and to now also provide another collection of those areas most innovative steel architecture.

Please feel free to share your thoughts via info@steelprofile.com.au

Menu Silvans

BlueScope Steel editor

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
A director of SJB Architects Sydney, Adam attempts to re-frame architecture so that it positively activates urban and individual environments. More than anything, he loves to design and construct buildings that are not only resilient, but also have an essential role to play in shaping our future urban landscape.

FRANK STANISIC
Stanisic Associates founder Frank Stanisic is a Sydney-based architect and urbanist. His work is fuelled by an ongoing interest in the diagram and都市 as a basis for architectural invention, and the aesthetics of permeability. Frank’s projects have won numerous awards including Australian Institute of Architects’ Special Jury, Wilkerson, Aaron Bolot and Frederick Romberg.

DANIEL GRIFFIN
Joint winner of the 2008 COLORBOND® Steel成员单位 Prime, Daniel’s award-winning architectural thesis at RMIT examined the urbanisation of Melbourne’s Victoria Square. He has taught at the University of Melbourne, the University of Wollongong and currently lectures with The Gielisse Studio in India. Daniel recently opened his architectural practice Bower Architectural.

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BlueScope recommends the use of COLORBOND® prepainted steel or 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.
Big doesn’t necessarily equal boring when it comes to industrial structures designed by Heffernan Button Voss Architects. The brief for the firm’s latest project was driven by functional requirements but the Transend Primary Store at Bridgewater near Hobart, is anything but mundane.

Words Rachael Bernstone | Photography Paul Bradshaw, Ray Joyce
Sitting among banal sheds that house farm machinery dealers, hardware stores and bulky goods outlets, the new Transend Primary Store at Bridgewater, 22 kilometres north of Hobart, is a modern marvel. The facility consolidates central storage for Transend Networks – which owns and operates Tasmania’s electricity transmission system – and houses about $10 million worth of equipment for repairs and maintenance. Transend also operates three stores at Burnie, Palmerston and Trevallyn substations, to ensure rapid emergency response.

Prior to undertaking this project, architects at HBV had established a 10-year working partnership with Transend, and design work at Transend’s head office campus at Lenah Valley is ongoing. HBV has also completed work for other energy sector clients, notably Aurora Energy’s Southern Operations Facility at nearby Cambridge, which won the Australian Institute of Architects’ national COLORBOND® Award for Steel Architecture in 2008 and was published in Steel Profile #102.

For that project – which featured a 40m-wide roof with 12m overhang – architects Paul Newman, Charles Voss and Jim Jones, together with Mathew Hinds worked with structural engineer Jim Gandy to devise a post-and-rod tension system to suspend the 7,000m2 LYSAGHT SPANDEK® profile roof made from COLORBOND® steel, without the need for interior columns.

By comparison, the enclosed floor area of the Transend Primary Store is slightly smaller – about 5,000m2 – but at 54m wide, the roof span is approaching bridge-like proportions, which called for an alternative design strategy. “We experimented with methods of producing huge spans without interior columns, and consulted with Jim Gandy about how to achieve that in an economical and practical way,” HBV director Paul Newman says. “Jim suggested that a lightweight external truss would be more economical than a bulky internal steel portal system, so we came up with a steel solution that references high voltage electricity transmission towers – and the loop of power lines slung between them – for the roof trusses and columns.”

The building’s exo-skeleton consists of nine column-and-truss frames in a tapering triangular form, made from circular hollow core steel sections, which references both power transmission lines and agricultural pivot sprinklers. The roof made from COLORBOND® steel is suspended below the curving roof trusses, which reduced the external wall area by about 900m2 to achieve significant cost savings.

The apparent simplicity of the structure belies the complexity of its assembly, which was exacerbated by the size of the individual elements, including the longest continuous steel sheeting used in Tasmania to date. The roof cladding – Fielders HIKlip® 630 made from COLORBOND® steel in the colour Shale Grey™ – was selected for its tray height and the fact that it could be roll-formed onsite. Expansion and contraction is controlled by a mobile flashing system with no mechanical fixings, to side-lap junctions at each truss. The hollow-core steel truss segments were fabricated by Crisp Bros in Launceston and transported to site by road, before being bolted together onsite by local construction company Hazell Bros. “Each truss was assembled on the ground together with its purlins and suspended roof sheeting, before being craned into position, because that was easier than fixing the 54m-long lengths in mid-air,” Newman explains. “Once all of the trusses were upright, the remaining roof sections were laid in-between.”

The structural steel exo-skeleton – comprising nine column-and-truss frames in a tapering triangular form, made from circular hollow core steel sections – references both power transmission lines and agricultural pivot sprinklers.
The COLORBOND® steel roof was rolled formed on-site and cut to 54m lengths, to provide continuous coverage.

The modular nature of the steel frame means the building can be easily and economically extended at the southern end in future, should Transend’s needs change.

The precast concrete walls were quickly fixed into place, with construction taking place over nine months. The modular nature of the steel frame has an additional benefit in that the building can be easily and economically extended in future, if required, by removing the southern end wall, adding new trusses and infill sections in 12-metre-wide increments, and reinstating the wall.

The walls are made from precast concrete panels with upper-level glazing around the entire perimeter to allow plenty of natural light to enter the building. At the north and south ends, six steel columns brace the walls against lateral movement.

Set into the eastern and western elevations, four high bay roller shutters provide access for semi-trailers to enter and exit the building, while the post-tensioned concrete floor with minimal construction joints provides for smooth forklift operations and to minimise potential damage to the slab over time.

Internally, the eastern part of the building is divided into linear storage bays with floor-to-ceiling racking, with the office, tea room and staff amenities clustered into the north-east corner. On the western side – where giant drum rolls of cable, circuit breakers and voltage transformers are stored – a gantry crane runs along the building’s full-length.

Outside, the facility is surrounded by 10,000m² of concrete hardstand for level and easy vehicular access, and is secured by an electrified perimeter fence. Landscaping around the building using endemic plant species and grasses aims to reconnect the site to its semi-rural environment while reducing the need for irrigation.

As an energy supply company, Transend is committed to sustainable business practices – and this building demonstrates its willingness to continually improve its green credentials. Energy efficiency measures include natural daylighting inside, an automatic time control schedule for external lighting, and solar panels for domestic hot water supply. In addition, water consumption is reduced by harvesting and storing roof stormwater for toilet flushing, truck washing and landscape irrigation. A sophisticated first-flush water treatment system directs surface rainwater to a controlled silt and oil arrestor system before discharging it from the site.

While addressing the functional requirements and promoting environmental best practice were important elements of client brief, Transend also wanted a building that would underscore its reputation as an innovator in energy supply. Newman says steel was pivotal to realising that vision.

“It was always going to be a steel-trussed building, although we originally explored the possibilities of using a portal frame,” he explains. “But Jim Gandy informed us that a portal frame would be an expensive option, and that a lightweight structure could achieve all of the client’s requirements. It was a joint effort to arrive at this result.”
Transend’s facilities and administration officer Samantha Pascoe says that the new building has been well received by employees and the drivers and suppliers who regularly visit, adding that it is a marked improvement to previous storage facilities which were riddled with asbestos, subject to leaks and difficult to manage efficiently. “The completion of the new building coincided with an overhaul of Transend’s inventory management system, and that, combined with the fact that everything is now stored in one place, has definitely streamlined the way we operate,” she says.

The building has drawn praise from the architectural profession too, garnering two major accolades at the Australian Institute of Architects 2010 Tasmania Chapter awards, including the Commercial Architecture Award and the COLORBOND® Award for Steel Architecture. The jury said: “Within a newly-developed industrial ‘estate’, in which most of the buildings are primarily storage facilities, it is unusual to discover a building which has a distinctly individual identity and makes a significant aesthetic statement.”

The jury concluded that the design team’s desire to create a completely open and flexible space without roof supports imparted a “great sculptural character” to the building. It is this quality – of a delicate building hovering ethereally on a gentle rise – that sets it apart from the monotonous and lacklustre sheds nearby, and across Australia for that matter.

One can count just a handful of other large-scale industrial projects – among them Peter Stutchbury’s Deepwater Woolshed, Lacoste and Stevenson’s Barcode and HBV’s earlier Southern Operations Facility – that aim to transcend economic and utilitarian design to realise buildings that are inherently useful, but also delightful and imbued with meaning. “This project can be viewed as an extension of the long relationship we have had with engineer Jim Gandy and this client,” Newman says. “Each time we work together we push ourselves to produce something special. These projects require an intellectual process – it’s not pattern book design – and that journey is so much more enjoyable than if we were producing an ordinary building.”

HiKlip® is a registered trademark of Fielders Steel Roofing Pty Ltd.

BELLOW: Each truss was assembled on the ground together with its purlins and suspended roof sheeting, before being craned into position

www.steelprofile.com.au
Pared steelwork, floating structure and a full engagement with site re-write the possibilities as a contemporary extension breathes a new life into a c.1918 Edwardian timber bungalow.

Words: Peter Hyatt  Photography: Earl Carter
“Every time I said less steel, less concrete, my engineer laughed and said: ‘Albert, nothing will satisfy you except a skyhook’,” says project architect and key initial in the practice, Albert Mo of EAT.

The Elm & Willow House in Canterbury, Melbourne, ignites memories of another time in its quest to become an eco-modern tree-house. The extension features steel, glass and concrete fused in a potent reminder of why mid-20th century modernity remains so influential.

An architectural practice with the acronym EAT should be ideally suited to restaurant and hospitality design. EAT was conceived in 1996 by Eid, Albert and Thomas, their first names. Apart from its pursuit of the culinary – it participated in the 2009 ‘Baking Architecture Exhibition’ at the State of Design Festival – EAT also serves up a tasty range of residential and commercial solutions.

EAT trimmed down with the departure of Thomas, but his ‘T’ remains part of the branding plus. And, as the Elm & Willow House proves, ‘two out of three ain’t bad’.

The new structure of the Elm & Willow House is a light-footed, delicately boned creation. A desire to avoid damaging the critical root zones of specimen trees informed the arrangement of the addition, which suspends rooms by floating above them. The result is a U-shaped plan enclosing a north-facing courtyard.

A lightweight steel frame and slender steel Mullions support the suspended concrete floor and roof to appear barely there. This quality is enhanced by a skeletal structure in which the non-load-bearing glass sliding windows become a flexible, permeable skin.

“They understood the language, the style, the great polish that could be achieved. Pre-fabrication and lightweight materials marked one of the great high points of 20th century design” Mo says of the Modernist movement whose bookends were Mies’ Barcelona Pavilion of 1928 and John Lautner’s mid- to late-20th century marvels.

It can be a revelation, even for informed clients, to experience such spaces that de-materialise into something barely more than the struts of a parasol. It’s a reminder of architecture’s potential to be transformative and create a resounding environmental connection. “It’s a house that really embodies that philosophy of being open to the garden and the sky,” observes Mo.

Internal planning is an interplay of inner and outer sequences of space that link the old and new. Transparent borders allow the eye to perceive other elements that create the spatial order: fences, trees, stones, woods, clouds and borrowed landscape beyond the fence line.

Louvre windows and sliding doors promote cross ventilation. The concrete structure provides thermal mass to the house, with the sails further insulated to minimize heat loss. All glazing is double-skinned to maintain interior comfort, and the deciduous trees provide essential shade during summer. Energy and water-saving fittings have been used throughout, and rainwater is harvested for garden use. A new carport with grid-connect solar panels is planned.

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The role of steel and glass in achieving this sense of weightlessness is difficult to overestimate. Transparent walls slide as effortlessly as Japanese rice paper screens to produce varying spatial relationships, or to capture breezes. Courtyard and lounge, or kitchen and deck, or another partial combination, generates a flowing, adjustable design destiny.

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This highly considered design demeanor flows through to furnishings and to details such as slender, taut cabinetry.

Despite Mo’s preoccupation with straight lines, the Elm & Willow House is rooted in organic architecture. It’s a curious irony in an age when curves are considered so de rigueur to achieve Green cred.

Mo enjoys playing straight. He acknowledges his ingrained prejudice: “I was raised on straight lines. As a matter of fact,” he confesses, “I can’t even draw a curve. Every time I see one I turn it into a straight line.” An ardent admirer of California’s Case Study houses, his aesthetic is influenced as much by the classic Japanese pavilion as a Richard Neutra hilltop dream home.

“Slide the floor-to-ceiling doors open and suddenly you are almost sitting in a Japanese tea pavilion looking at the trees,” Mo notes about the calm and insouciance such options provide.

His uncanny knack for reduction, of stripping away to an astringent necessity, raises other issues: “Just because you slender-ise and subtract, doesn’t mean you automatically arrive at the right point,” he says. “It’s difficult to produce a really simple building. Attention to detail to make junctions work is tough, and while it appears to be easy, it remains one of the most difficult houses we have attempted.

“Every connection here becomes really apparent because there is nothing else to look at. There’s nowhere to hide,” Mo adds. “Any faults in the steel detailing, for instance, would be obvious, so you need contractors who share your commitment.”

Mo asserts that in buildings like this, dialogue between engineer and architect is essential. “Of course I can say without him we couldn’t do this house, but on the other hand without us, the engineering solution would not appear as it does,” he explains. “We have practised for 10 years now and never done a concrete roof, or a suspended structure, so it was a case of working very closely.

Part of the brief was for this quiet, meditative space. Then, not long after we finished the house, they had their first child! So much for the meditative space,” Mo laughs. “But good design allows flexibility. It permits certain interaction and opportunities not possible in a poorly designed space.”

Steel columns that support the slab contrast with the heavy concrete elements. “In this case we have made something heavy ‘float’, Mo says. “We wanted something light to make that happen – and that is part of steel’s great compressive strength.

Steel has that magical ability to achieve extraordinary thinness and efficiency. These columns are galvanised and painted on site, and connected to the concrete slabs via another set of secondary horizontal members. The columns are set back from the edge of the slabs by 75mm to accommodate the framework of the concrete, which in turn allows the slabs to appear even lighter.”

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“It’s a house of surprises. No-one expects this sort of pavilion behind an old bungalow”
“Being largely an off-the-shelf item, steel is also economical and doesn’t require a secondary element to dress it up, and so it stands on its own terms as a beautiful material.”

Steel not only supports the floor slabs and steel frame roof, but does so on a mere 200 UC, which Mo describes as “an achievement in itself”. Steel decking made from LYSAGHT BONDEK® profile lined with Styrofoam provides the insulated ‘underlay’ of the ground slab. Simple, off-form concrete creates the roof.

Mo believes a building’s scale and detailing imbues it with vital qualities. “The skill is the combination of elements, ceiling heights, door handles. Those details – rather than the use of curtains or sofas to make it feel like a house – really help to humanise a space.”

The translation of so-called industrial or commercial materials into a house is a challenge. Mo believes scale provides much of the solution. “Human comfort often relates to physiology. Here, it was the size of the human palm that approximates the size of the steel column. A large 500 universal beam for instance would represent something else and never work.”

Mo says there was never a ‘light bulb’ moment in the design process, so much as a gradual awakening. He subscribes to the idea of high compression and finesse – as opposed to the unduly busy or overworked solution: “By integrating the trees and garden we were able to convince the clients that not only could they have the house, but the existing garden. That was the turning point. That outcome was a sequential process rather than a split-second idea.”

Such houses reward the senses of sight, sound and smell. The suburban dream, so often painted in grim and slapstick ways, is far from dead. Here the aim of soft environmental impact is achieved without cliché. The Elm & Willow house is just one example of how suburbia can better recognise the opportunities that exist right in its very own backyard.

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PANEL SAYS
The scale of this extension is very modest, but it boasts a terrific plan that provides intensely calming and picturesque connections between the house and the mature garden. In addition, the relationship between the new rooms – separated by the existing elm tree, yet linked by the louvred breezeway – is very well resolved. The clearly expressed and finely resolved application of structural steel – both seen and unseen, in the form of slender columns and the floor slab supports – contributes to a sense of elegance and lightness that makes this project very appealing.
NH Architecture is one of Australia’s liveliest contributors to a new urbanism. The firm eschews the leaden box in preference for design as a strong social and cultural experience. Lightweight steel cladding is an instrumental part of a vocabulary that in one stroke achieves restraint and impact.

Visitors to Australia’s pavilion at this year’s Venice Biennale could be forgiven for believing NH Architecture’s entry is a homage to the host city. With its competition entry titled ‘Aquatown’, it could be seen as a grand irony.

Practice principal Hamish Lyon swears it isn’t so. “Entirely coincidental,” he smiles with a mischievous, trademark grin. “No, it’s about Australia and how we imagine a future much more shaped by water. We are surrounded by it and yet in many areas were also running desperately short of it – and that irony and opportunity has to be addressed.”

Australia’s 15 entries at this year’s Biennale were encouraged to think big and consider the nation in 2050. “The recurrent themes of our entry were ecology, population growth, and urban density, and overriding all of that is water,” Lyon says. “Water really stands out. It’s so critical. With rising sea levels we considered the future of the Gold Coast and Darwin. We wanted to imagine a future where, in some instances, we are living on the water.”

In the broader scheme NH Architecture has grown into one of the more readily discernible Australian practices. Only medium-sized, it typically punches above its weight and is able to impart a bespoke quality to even the largest of projects. Typically, beyond a certain size, buildings become monolithic, but NH appears to have inoculated itself from the ‘blandeur’ that afflicts many large public/private architectural commissions.

Lyon rattles off a list of pivotal Melbourne projects with the practice’s signature – The Queen Victoria redevelopment, Carlton Brewery, Myer redevelopment (due for completion late 2010), Melbourne Convention Centre, Costco and CBW corner.

The Melbourne-based firm is renowned for its spearing, seductive geometries. The recently completed Melbourne Convention Centre, designed in association with Woods Bagot, has been honoured with just about every award going, including the 2010 Victorian Architecture Medal. With automatic elevation into this year’s national awards, the gold rush isn’t likely to end there. MCEC’s giant black box is anything but an introverted carapace, with its luminous interiors and faceted elegance suggesting computer whizzery is finally realising a fully human dimension. The centre has also achieved the rare 6-Star Green Star Rating – the first issued for a convention centre anywhere in the world.

“If you’re into steel, you can easily spot the 22,000m² of LYSAGHT KLIP-LOK 700HI-STRENGTH® roofing from space. Google Earth means there’s no hiding any unloved or embarrassing parts,” says Lyon. “It delivered a refined, economical roof ‘facade’ rather than an ugly collection of services. Google means there’s no hiding any unloved or embarrassing parts.”

In a compositional sense the firm’s work is a contrast of playful yet highly disciplined ideas. Like the best architecture it’s always working and singing, neither lazy, inert nor unresponsive to the eye.

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HAMISH LYON

NH Architecture principal Hamish Lyon’s influence is shaping opinion in his role as architect and educator. His expansive attitude towards neighbourhood and city-making proves real sustainability requires poetics rather than mere utility.

Words Peter Hyatt
Photography Peter Hyatt; Paul Bradshaw

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“MCEC is a major piece of public infrastructure work resulting from the public-private partnership program,” Lyon says. “We’re proud of it not just for the architecture, but because it is so environmentally sustainable and contributes to Melbournians’ pride of place.” He points to the connection of pedestrian and bicycle paths around the project as a small, vital detail that assists project traction.

“The main building was conceived with steel from the outset and it was the only material that would deliver the 30-metre clear spans,” he adds, explaining that its 18m-high walls in the main auditorium are the tallest operable walls in the world. “They’re beautiful. They break into their three components and deliver amazing flexibility.” Not to be subsumed, the folded walls open out over the river, where vertical steel ribs combine with glass for optimum transparency.

“You have a beautiful setback with 97 individual strong-backs, and the geometry of each one is different,” Lyon says. “Dave was hugely important there. It reads as the primary skeletal draped with glass. The auditorium is designed as a building within the building. Steel allowed us to open up the interior rather than create a claustrophobic appearance.”

And what about the firm’s signature? Lyon raises his eyes as if to say: “Uh-oh, here we go again.” “I guess some of our work is recognisable.” It’s said in a confidential tone of someone who knows style can be as much a trap as a marketing tool. “I’m sure some of our work is recognisable.” It’s one of Lyon’s tricks: He raises the bar, then subverts it. Steel was hugely important from the days when the culture of architecture simply required a standard black uniform. “We’re a practice focused on sustainability and community building or factory has little or no appeal. Students take some convincing. Their eyes just glaze over. The idea of working on hospital, school, community building or factory has little or no appeal.”

People have talked down the global financial crisis as though it has been an unmitigated disaster, he says. “It has been a burden on the profession and slowed down the workflow and dollars. This upgrade is a slightly calmer environment where work can be more carefully considered. During the boom the profession ran at a furious pace. You wouldn’t want to keep going at that speed for the rest of your life.”

He says NH Architecture is now working to a more orderly program. “We’re also open to work on a smaller scale. We’re well known for larger public infrastructure projects, but at the moment we have a library, community centre and town planning work. In a way it’s like coming full circle. As an architect you tend to start off small and it’s a good reminder to keep a community focus.”

As a part-time university lecturer, Lyon enjoys testing the ambition of his students. “They invariably want to design a beach house on a windswept coastline or a house in a vineyard, and for them that’s the essence of great architecture,” he says. “I remind them that Corbusier and Mies, for example, built houses, but towards the end of their lives they were designing schools and hospitals and university buildings. Students take some convincing. Their eyes just glaze over. The idea of working on hospital, school, community building or factory has little or no appeal.”

“We’re a practice focused on sustainability and of course there is the pure environmental science of sustainability, but we do a lot of urban planning and large-scale infrastructure work,” he continues. “For us, social sustainability is the key issue.”

To reinforce this, NH Architecture has its own Manager of People and Culture – a role long way from the days when the culture of architecture simply required a standard black uniform. Lyon believes public perceptions of architecture have been warped by the run-away wealth train that has characterised the past decade.

“People have talked down the global financial crisis as though it has been an unmitigated disaster,” he says. “It has been a burden on the profession and slowed down the workflow and dollars. This upgrade is a slightly calmer environment where work can be more carefully considered. During the boom the profession ran at a furious pace. You wouldn’t want to keep going at that speed for the rest of your life.”

He cites the success of recycling Melbourne’s Queen Victoria Hospital into a commercial hub almost a decade ago as a turning point for the practice.

“We’re a Melbourne-based studio and while we work across Australia, understanding the history of Melbourne, the urban morphologies of the city and how our practice works within this city have been very fundamental,” Lyon says. “The Queen Victoria redevelopment set a new agenda for urban renewal which showed some respect to the urban fabric of 19th Century Melbourne. Until then, if you had a big site then it was go for it, build it all. In some ways you could say QV appears slightly old-fashioned because it’s 10 years old. But at the time it was radical because we chose not to simply build on every square inch of the site. It’s a level of generosity that understands the inter-connecting spaces around a building are every bit as important as the enclosed space.

“The QV project isn’t fixed in time. It’s constantly being renewed and redeveloped,” he says. “It means that it can be redeveloped incrementally and progressively rather than $100 million at a time. I suspect that it will evolve organically and in 50 years it will reveal a continuous round of incremental modifications.”

In 1993, when Lyon was a young architect working with Axel Asjöen an interior architect, the pair won the national Robin Boyd medal for their own house. It reminded him that a small project doesn’t necessarily need a small agenda.

“There’s always a public agenda and we’re unusual in that we’re a medium-sized practice that doesn’t specialise,” he says. “Clients often come to us with complex problems because they have heard we are good at dealing with complexity. As architects that is what you have to solve: complexity.

“NH Architecture is an altogether different work environment where the partners have a common purpose. It was preferable to working at the table, often alone. I needed the interaction.”

Lyon argues against the solitary, star-chitect glamour that once romanticised the way cities were designed and built.

“It’s over. The business is much more complicated and multi-disciplinary now. Besides,” he laughs, “I enjoy the collaborative process. I like a bit of a chat.”
Confronted with strict council regulations governing a sensitive coastal lot, Paul Uhlmann Architects devised a delicate, tent-like solution for a residence that presents as a visual and experiential feast.

Words: Rob Gillam  Photography: David Sandison
However unlikely it seems, you could leave this house in the morning, return in the evening and find it gone.

Sitting 100 metres from the beach in the New South Wales haven of Byron Bay, The Annex is subject to local council stipulations that it can be removed within 12 hours, should the ocean tide come within 50 metres of its boundary. As principal Paul Uhlmann explains: "Council determines where it thinks the ocean might end up in 50 or 100 years. Our client’s block was in what council deemed to be the worst potential erosion zone, so the house had to be demountable."

Rather than built as a single structure, the house had to be separated into three sections, or ‘pods’, to be truck-transportable with relative ease. "Each one is on a self-supporting steel frame so you can unbolt them, put them on the back of a 4x4 truck and tow them away – it's not unusual to see sets of wheels stored underneath such buildings," Uhlmann says.

"Small-scale demountable buildings don’t provide a lot of square metres and can present their own complications," he says. "So most people put them in the too hard basket and just renovate the existing building. Our client’s previous house on the block was 40-50 years old, though, and pretty run down. Still, kudos to the owners for being open to our ideas and taking a bold step."

Working with his colleagues David Currie and Jim Mullins, Uhlmann opened up the predominantly steel pods and linked them with more temporary materials to create a central ‘outdoor’ space and larger whole.

"We looked to the perimeters of the block and decided to space the pods apart," he says. "We think the distances are proportionate, but if the pods were any further apart you’d risk isolating them from each other."

Extensive elevated timber decking connects the pods at floor level, while a giant sail roof creates a new living space by enclosing the deck area. "Because the pods are so small, we wanted to extend the living area and also provide an enclosed corridor between the two bedroom wings. We couldn’t do it traditionally so we used a fabric roof to create vertical space."

As well as providing shelter to the deck, the sail roof houses the pods’ LYSAHGT CUSTOM ORB® rails made from COLORBOND® Metallic steel in the colour Citi®.

If the Pacific Ocean happened to reach within 50 metres of the property, The Annex’s decking areas and fabric roof – being deemed ‘sacrificial’ – could remain, so long as the pods were removed. Uhlmann says the transportability of the pods is an advantage if the town is threatened by severe storms: Byron Bay was ravaged by cyclones in 1939 and 1954.

To withstand the brackish coastal conditions, galvanised 100x100mm hollow section steel was chosen to form the pod skeletons and sail frames. The frames are bolted into stainless steel columns, or “stumps”, set in concrete footings.

Uhlmann says the practice has commonly used galvanised steel framing on ocean fronts over extensive periods and the material has never faltered.

A conscious decision was made to express the building’s vertical steel structure, which combines a commercial window framing system with alternating glass and wood panels and a glass and customised wood panel system. To ensure the thermal compliance of the latter, insulation is sandwiched between exterior rough-sawn plywood and hoop pine interior.
In a conscious mix of materials, the expressed structural steel combines with alternate wood and glass panels to create variation in the wall cladding. "Having used it on the pod roofs, we could have gone with swaths of CUSTOM ORB® as walling, but a singular material can be overwhelming," Uhlmann says. "I like the contrast between the timber and the steel and the aesthetic balance it provides."

"Also, the COLORBOND® Metallic steel ties in nicely with the exposed galvanised SHES, metal flashings and stainless-steel stampings, gutters and down-pipes." This consistent metal theme dances across the building in the sunlight.

The fabric sail roof – which conveys a sense that the home could, at any moment, set course for the horizon – also owes its form to galvanised 100x100 SHS.

Uhlmann says the frame could not have been efficiently realised in a material other than steel. "It wasn’t typical for the engineers to be working with those elements, so making the loading and deflection calculations for the fabric structures was quite an in-depth process, and steel ideally met those requirements when other materials could not."

Uhlmann applied shipwright-like understanding to the structure to ensure it remained waterproof. "We had to carefully consider water movement and account for it both running and flying in," he says. Commercial-grade PVC vinyl is run through a yacht track at one end and then laced tight to the roof of the structure. The sail roof is lashed to the galvanised steel sub-frame, which in turn supported by a stub column to the main building’s steel structure. The stub column has a De Witte collar at the roof penetration, similar to a roof vent pipe. "We fixed the fabric roof structure on this and allowed enough overlap to provide adequate weather protection for external ducting below," Uhlmann explains.

The roof also oriented to help orchestrate the elements. "The bad weather up here usually comes from the south-west, so essentially the pavilions are laid out so that all the roofs lie back to the south to protect the living spaces – kind of like pitching a tent entry away from the worst side of the weather."

The roof slopes up to the north and a wide overhang helps shut light back into some of the covered areas, opening them up to the winter sun.

"There’s tranquillity in the space between the pods that is quite special... that sense of holiday is noticeably present"
Bushell’s Place in Sydney’s Rocks area is a tiny but prominent corner site. For years its potential as a public space remained unfulfilled. Architect Terroir has now reinvented it with a steel and glass canopy of remarkable delicacy.

Words Paul McGillick  Photography Brett Boardman; Paul Bradshaw

It is hard to imagine today that Sydney’s Rocks precinct – originally carved from a narrow sandstone ridge, now in the shadow of the Sydney Harbour Bridge – was threatened with wholesale demolition in the early 1970s. It was famously saved by the Green Bans – bans on demolition imposed by the building workers’ union – which not only preserved the microcosm of Sydney’s early colonial heritage, but which also helped drive national and state-based heritage legislation passed in 1975-77.

Of course, one of the inconvenient ironies of this now long-established sensitivity to our built heritage is that it has imposed considerable constraints on all forms of new building, good or bad, and the vilal and on-going program to reconcile our past with our present. In architectural terms, it strongly inhibits a local understanding of how contemporary forms and materials can complement our architectural history. Instead, for some, any form of contemporary intervention into historical sites is seen as sacrilege. But this conservationist bias can also be seen as an opportunity, so long as there is a predisposition to at least explore how new forays can be made into the existing historical fabric and conceivably enhance it. As Terroir design director Gerard Reinmuth comments regarding his firm’s re-invention of Bushell’s Place: “The Sydney Harbour Foreshore Authority had a particular interest in sustainability and an innovative design approach – not a heritage pastiche type of thing, but actually trying to do something modern and fresh down there.”

Modern European precedents show that the most fruitful resolution of this conflict between the old and the new starts with acknowledging the difference rather than denying it by resorting to facadism, and sentimental mimicry. The most generative solutions come from a bold contrast between the past and the present. In perceptual matters, understanding and insight spring from the process of reconciling two apparently contrasting things.

The Rocks is a concentrated urban precinct of early colonial buildings. But it is not just the building forms which are important. Just as important are the materials from which these buildings were made. Like all colonial architecture in Australia, the built environment was made from local materials, and it is this material character – and the way the precinct has been carved out of sandstone – which helps make The Rocks so distinctive. It follows that any new contribution, if it is to preserve this sense of place, needs to acknowledge the elements which have created it. This can’t be done by imitating those features, because we live in a different age (hand-cutting sandstone blocks, for example, is clearly uneconomic today). Rather, that sense of place and complementarily is achieved by understanding the underlying process. As the late Harry Seidler said: “It is not a matter of style, but of attitude.”

Sydney-based architectural practice Terroir had worked for Sydney Harbour Foreshore Authority (SHFA) previously on The Rocks Centre. In 2005, the SHFA invited Terroir to lodge an Expression of Interest for the make-over of Bushell’s Place, which occupies a crucial site at the forked intersection of George Street and Hickson Road. Here the existing small plaza in front of a café had not resolved the sharp change in street level, resulting in an isolated and uninviting space which worked neither for the café nor as a genuine public domain. The brief was to create a sheltered public space, as well as relishing the adjacent heritage building (Bushell’s Place) effectively treated as a separate project.

ABOVE: The junction of Hickson Road and George Street forms the triangulated site

LEFT: The patterned canopy structure creates complex rhythms of light and shade on the plaza and footpath below.

ARCHITECT Terroir
PROJECT 88 George Street Canopy
LOCATION The Rocks (Bushell’s Place), New South Wales
The canopy connects seamlessly to the heritage building to provide protection for the café while framing the view east to the Harbour Bridge.

The steel structure “carps” on to the building and the concrete podium.

The Hickson Road elevation forms a vertical sculptural element to complement the sculptural concrete podium.

The steel structure “clamps” the café while framing the view out to the Harbour Bridge.

The canopy makes a bold contemporary statement in a largely historical context. We particularly like the way the structural steel connects with the facade without puncturing it, and the almost frivolous form it takes as it cascades away from the host structure. Although the brief—which called for a canopy to provide shelter for café patrons and to enliven the public space—that had the potential to generate “heritage-pastiche”, this project exhibits enormous integrity, and the visible strength of the steel plane’s key role in transmitting the architects’ intentions.

The angular patterned RHS canopy structure responds to the pitched roof lines typical of the Rocks area.

Donnellan responded that: “to get the form we were looking at, there was no other material from which we could have created the base structure”. “The canopy,” says Gerard Reinmuth, “was very much drawn out of the idea of the pitched roof lines that are typical down in The Rocks. But it is also a reflection of the area’s industrial heritage.”

So, if the use of steel was essential for the functionality of the canopy, it was just as essential in achieving the aesthetic aims of the architects. The steel frame is not just a reference to the industrial past of The Rocks, but is a material and visual link to the nearby Sydney Harbour Bridge, even being adorned in the International Paints bridge paint system to give it the same patina.

The steel structure “claps” on to the building and the concrete podium. This is a brilliant example of urban acupuncture: where the sculptural possibilities of structural steel provide a magnificent contract with the solidity of the surrounding buildings. The new canopy makes a bold contemporary statement in a largely historical context.

The canopy connects seamlessly to the Heritage building to provide protection for the café while framing the view east to the Harbour Bridge. The steel structure “carps” on to the building and the concrete podium. The Hickson Road elevation forms a vertical sculptural element to complement the sculptural concrete podium.
In his 1851 treatise *The Four Elements of Architecture*, Gottfried Semper placed the hearth at the centre of domestic architecture. A contemporary interpretation of Semper’s ideas – the Allens Rivulet House by Room11 Architects – produces an extremely welcoming and happy home.

Words: Rachael Bernstone  Photography: Paul Bradshaw; Ben Hosking
On a steep site at Allens Rivulet, about 30 kilometres south of Hobart, a new house appears like a black ribbon drawn across the brow of the hill. The land was originally cleared for apple orchards and hops plantations – so it offers excellent views across the valley to the sandstone cliff on the opposite flank – yet old-growth forest still abounds alongside the rivulet that flows down the eastern slope after heavy rain.

The owners – a former local who met his South African-born wife when they both lived and worked in London – purchased the land in 2002. They camped on the property before appointing architect Aaron Roberts of Room 11 – an old school friend whom they bumped into in the street – to help them overcome the unique challenges of building there. “I have a fine arts degree, and so I’m very keen to work with people who are specialists in their field,” one of the owners says. “It was also important to engage an architect because our site is not the easiest to work with, and designing a house in Tasmania can be challenging too. Although you usually have access to a great view, there are inevitably strong winds to deal with and that can make it hard to get the passive solar elements right.”

Because the site sits within an environmental protection zone, the couple opted to build on a north-facing section that had been previously cleared, which boasted views of nearby Mt Wellington and the dense bushland on their property. They asked Roberts to design a house with three bedrooms, open-plan living spaces, a studio and garage, and most importantly, to position the kitchen at its centre. “For me, the kitchen is the heart of the house,” the owner says. “No-one sits in dining rooms or formal lounge rooms, and when you go to prepare food or drink, everyone gravitates towards the kitchen. We wanted to put it at the middle of our house, and make it large enough to be inclusive.”

Roberts took the clients’ instructions literally and generated the entire plan from the inside out. He devised a five-by-three grid, and arranged living spaces and bedrooms, bathrooms and utility areas, and decks and voids around the central kitchen. The grid-like arrangement allowed him to optimise functionality and circulation, sightlines and cross-ventilation, and enclosure and release. “The way the entry and outdoor rooms are seemingly carved out of the black object that is the body of the house, revealing an inner material that is soft and warm, is the best feature of the house,” Roberts says. “These spaces were designed to allow outdoor living in multiple weather conditions. “There is a gradation of enclosure and protection in these spaces ranging from semi-enclosed spaces to open-air courtyards,” he explains. “These offer protection from the wind, or the sun, depending on the time of the year. In Tasmania you have four seasons in one day, so these external spaces allow those seasonal shifts to be mediated.”

To emphasise the contrast between exterior and interior rooms, Roberts specified cladding made from COLORBOND® steel: Night Sky® for the roof and LYSAGHT PANELRIB® profile for the walls – and locally grown celery-top pine for the decks. “In Tasmania you have four seasons in one day, so these external spaces allow those seasonal shifts to be mediated.”
Aesthetically, the dark steel cladding ensures that the house blends easily into the hillside when viewed from a distance. Functionally, it provides resistance to bushfires. “The cladding is completely sealed on the roof and underneath the house, so there is no possibility for embers to enter,” the owner says. “Also, the fact that we have internal guttering means we can plug the gutters and flood the roof as part of our fire response plan, if we need to.”

From a financial perspective, the use of COLORBOND® steel for the roof and walls enabled the project to conform to the owners’ tight budget. “Steel was used as the cladding because it was the most cost-effective material, and it had a very low maintenance schedule, something the clients were very keen on,” Roberts says. “We looked into other forms of cladding, and for similar cost and maintenance performance, there wasn’t any real alternative.

“…polished concrete floors withstand the punishment meted out by two dogs, the owners’ muddy boots and the wheelbarrow they bring in to restock the firewood – but despite the toughness of its materials, the house feels incredibly comfortable”
... while the roof, enclosure and mound may be secondary concerns, their careful organisation around the central ‘hearth’ results in a house that is both sympathetically sited in its landscape and a warm and generous abode...”
DEER PARK BYPASS
PROJECT
VicRoads

"Our idea was to not make it like a thin, one-dimensional fence, but like a sculptural ribbon."

Peter Elliott Architecture+UrbanDesign has applied a material usually reserved for forming concrete to create a bold new addition to Melbourne’s illustrious freeway architecture. Words: Rob Gillam  Photography: John Gollings

Making across the outer-Melbourne suburb of Deer Park, the nine-kilometre bypass is flanked by striking, chameleon-like noise walls clad in – of all things – steel bridge decking.

Such a bold structure was necessitated by unremarkable surroundings, explains principal Peter Elliott. "Although the landscape is becoming more subdivided as it is populated, when it was handed to us it was a pretty raw environment," he says. "Because of the flat terrain and low rainfall not much grows there. Essentially it was just rough, open paddocks."

Elliott’s response was to break up the flat landscape with distinctive, three-dimensional forms. "We felt that the noise walls had to have a strong sculptural presence in their own right and not be reliant on the landscape," he says. “Our idea was to not make it like a thin, one-dimensional fence, but like a sculptural ribbon."

The walls, and panels, particularly, take on three-dimensional form by dramatically folding back to the ground or rearing up into the sky. The walls are built quite simply – being fixed to the ground or rearing up into the sky.

Elliott is pleased that such a utilitarian material has successfully created a sophisticated effect. “We have taken a single steel element and transformed it by changing its context," he says. "That is something architects love doing: taking something simple and using it in a new way that changes its purpose, appearance and impact."

"Melbourne is extraordinary for its quality of urban design over the last several years – and we felt challenged to make a worthy contribution," he adds. "Our response takes a simple idea and produces a memorable result."

"It has deep 80mm ribs that create a shadowing effect and absorbs sound," he adds. "It’s strong enough to withstand considerable wind loads and it’s tough so you can span long distances with fewer posts. In short, it has all the properties that engineers love."

More than 65,000 square metres of profiled sheets made from GALVABOND® steel in 1.4mm and 1.6mm thicknesses now adorn the Deer Park Bypass. The majority is laid horizontally but, to contrast, some are used vertically. While most are simply galvanised, vibrant color is also dramatically introduced to add visual interest and mark particular locations in the landscape.

"Melbourne is extraordinary for its quality of urban design over the last several years – and we felt challenged to make a worthy contribution," he adds. "Our response takes a simple idea and produces a memorable result."

"It’s an old ‘bridge deck’ profile, originally designed for bridge spans," Elliott says. "Usually, the steel is laid down as lost formwork – where it remains as part of the deck. In this application, though, we liked its over-scaled dimensions which could be easily adapted as noise-wall cladding."

"It has deep 80mm ribs that create a shadowing effect and absorbs sound," he adds. "It’s strong enough to withstand considerable wind loads and it’s tough so you can span long distances with fewer posts. In short, it has all the properties that engineers love."

"Melbourne is extraordinary for its quality of urban design over the last several years – and we felt challenged to make a worthy contribution," he adds. "Our response takes a simple idea and produces a memorable result."

"It objects are strong enough in their own right, then they perform more than one role. We did not want this project to be just about noise walls." ±

PROJECT
DEER PARK Bypass
CLIENT
VicRoads
ARCHITECT
Peter Elliott Architecture+UrbanDesign
PROJECT TEAM
Peter Elliott, Glenn Irwin, John Cherrey, Sean van der Velden

STRUCTURAL ENGINEER
ARM (concept), GHD (concept)

LIGHTING ENGINEER
Webb Australia (concept)

BUILDERS
Lightning Contractors

STEEL FABRICATOR
CP Engineering, Arm (concept)

LANDSCAPE ARCHITECTS
Steve Wallbrink & Associates (concept)

INNOVATION CONSULTANTS
Paul Consultants

PRINCIPAL STEEL COMPONENTS
Steel profiled cladding made from GALVABOND® steel, 1.4mm and 1.6mm thicknesses, 90mm ribs, 3.2mm GALVABOND® steel in 2.4mm and 1.6mm thicknesses.

TOTAL PROJECT COST
$330 million

AWARDS
Australian Institute of Architects – 2010 Victorian Architecture Awards – COLORBOND® Award for Steel Architecture; Australian Institute of Architects – 2010 Victoria Architecture Awards – Urban Architecture Design Award; 2010 ASI Steel Clad Structures Building Design Award; 2010 ASI Creative Innovations Steel Design Award; TOTAL PROJECT COST $330 million

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