113
NOVEMBER 2012
ARCHITECTURAL
**STEEL INNOVATION**
WITH BLUESCOPE STEEL

# STEEL PROFILE

**ARCHITECTUS &**
**INGENHOVEN ARCHITECTS**
1 BLIGH STREET

**CO-AP ARCHITECTS**
ANNANDALE HOUSE

**IN PROFILE:**
MAX PRITCHARD

# EDITORIAL

Welcome to *Steel Profile* #113.

We are, as always, proud to bring you our latest selection of architecture that harnesses the strength and adaptability of steel, and some insights into the inspired minds behind it.

This issue blends a range of projects, some of which differ vastly in scale yet which all share intrinsic qualities that leave a ringing mark on the architectural landscape.

Some of these buildings have been formally recognised by The Australian Institute of Architects – of which BlueScope Steel is a Principal Corporate Partner – at the 2012 National Architecture Awards.

We offer our congratulations to those whose efforts have been acknowledged in this year's State and National Awards.

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

*Kristin Camery*
*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 panellists are:

ADAM HADDOW

Adam is 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 NSW Awards for Multiple Housing.

More than anything, he loves to design buildings

FRANK STANISIC

Stanisic Associates founder Frank Stanisic is a Sydney-based architect and urbanist.

His work is fuelled by an evolving interest in the diagram and frame as a basis for architectural invention, and the aesthetics of permeability.

Frank's projects have won numerous awards including Australian Institute of Architects' Special Jury, Wilkinson, Aaron Bolot and Frederick Romberg

SAM BRESNEHAN

Sam Bresnehan is a graduate architect with Melbourne-based architectural and urban design practice, McGauran Giannini Soon Architects (MGS).

Graduating from the University of Tasmania with a Master of Architecture (First Class Honours) in 2010, Sam was awarded the 2011 BlueScope Steel Glenn Murcutt Student Prize

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1 Bligh Street

**PHOTOGRAPHER**
Hans-Georg Esch


**NUMBER 113, NOVEMBER 2012**

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# OPEN HEART

Generous, light-filled and optimistic, 1 Bligh Street exudes quite astonishing karma. A restrained material palette and sculptor's eye fillet a form as open door, rather than blank wall. The result is a small tower with a huge heart.

Words **Peter Hyatt** Photography **Hans-Georg Esch; Peter Hyatt**

**ARCHITECT** Architectus and Ingenhoven Architects
**PROJECT** 1 Bligh Street
**LOCATION** Sydney CBD, New South Wales

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Sydney's 1 Bligh Street is an absolute surprise in a city hardly renowned for high-rise of global distinction. Of course those two harbour-side icons immediately spring to mind but Sydney towers, with one or two exceptions, are disappointingly ho-hum. At just 28 levels, 1 Bligh is barely visible amongst the city's soaring slabs of stone and glass. There is a sense that this project could so easily have been dwarfed.

Short it may be, but so bristling is it with innovation that 1 Bligh soars past its neighbours – if not in body, then in 'mind'.

In an age of towers probing the stratosphere, the $272 million 1 Bligh is a counter-intuitive triumph of quality before quantity. Architects Christoph Ingenhoven and Ray Brown have achieved a seamless singularity between Dusseldorf and Sydney; Europe and the Antipodes. Ingenhoven's passion for the outdoors captures Sydney Harbour and, more specifically, Circular Quay's bustle and insouciance. Ray Brown ensured their creativity remained true to the initial sketches made on café napkins after he invited Ingenhoven's office to join with Architectus for their competition pitch.

Brown knew of Ingenhoven's experience with double-skinned facade systems and understood how this would strengthen a competition entry for the redevelopment of a cluttered, congested site opposite Farrer Place.

Their design entry quickly aroused the jury's curiosity and soon enough, won it over. Hatched in 2006 before the economic upheaval of the global financial crisis, the project could have easily been shelved, or so eroded by economic shocks and client nerves as to render the original vision worthless.

Noel Coward lampooned skyscrapers claiming 'the higher the building, the lower the morals'. Coward was right: many are a riddle of ambiguities – false walls, false ceilings and contrivances that suggest something but mean (or conceal) something else. Coward's alarm should perhaps be a warning to any architect or developer believing height is an end in itself.

Architects no longer hold sway on matters of design integrity and public amenity. Value management analysis frequently distorts the dream and determines a building's fate. It needs clients of courage and conviction to see big ideas safely through, which is why 1 Bligh's client team was instrumental in a building true to its competition entry. For their unshakable belief in tough times, Dexus Property Group and Cbus Property can take a bow.

This confidence in their architects has paid off with a string of awards, including Best Tall Building for 2012 in the Asia Pacific region by the Council for Tall Buildings and Urban Habitat. Others include three Australian Institute of Architects New South Wales Awards: for Commercial Building, Sustainability and Urban Design. It always seemed destined for national honours and these were realised in the form of the Harry Seidler Award for Commercial Architecture and National Award for Sustainable Architecture at the 2012 Australian Institute of Architects National Conference.

Christoph Ingenhoven was keen to maintain fidelity with a local architecture. “When we first came here the reference point was always the Opera House,” he says. “Another reference point was the harbour, the bridge, the public domain and then the modern architecture of… Harry Seidler and Glenn Murcutt. We wanted to be part of that reference point and add something even a little more into our time and facing a little more into the future – into the next 20–30 years. That honesty of form and construction – we are part of that culture and family of modern-movement architecture.”

Ray Brown’s message about sustainability isn’t just doing more with less, but about an environment that is easy to live with and is socially sustainable. “Most of the year round Sydney offers this beautiful climate,” says Brown. “You don’t need to shut it out. 1 Bligh brings the best inside so that you experience the temperature, sea breezes and sounds. All of those invisible qualities can be harnessed rather than rejected.”

Many office towers are barely more than gated communities but 1 Bligh is counter-intuitive: being inclusive rather than exclusive. The project’s undoubted masterstroke is its avoidance of the obvious square-set shoulder view to the northerly Bent Street frontage and harbour. The elliptical design rotated on axis ensures optimum orientation. In the process the ground floor plane opens virtually as an undercroft to encourage daylight, air and, most of all, people.

No induction is needed to appreciate its unorthodox site use, or plan, that dispenses with the standard central core in favour of a central light-filled volume. Such permeable qualities are invitational rather than institutional. Welcoming rather than intimidating. The bravura moment for most is the heart-shaped, 130 metre-high atrium. It’s every bit as breathtaking as a grand cathedral, or monumental dome. Great buildings throughout the ages revered natural light and this attitude of direct and indirect light informs this result.

PH

“Viewed from on high, 1 Bligh’s grid-shell steel and glazed roof resembles a faceted precious stone rather than the usual box-top clutter of mechanical services“

RIGHT: A detailed elegance is apparent throughout. The veiled childcare centre creates an exquisite interplay of light, shade and privacy without the more conventional solid barriers

FAR RIGHT: 1 Bligh's highly regarded 'fifth facade'. The elliptical form echoes in the sinuous steel arc of the expansive roof deck that replaces the usual box-top of mechanical plant

BELOW: Formed from so many tiny stainless steel links, the chainmail-type childcare screen suspends like a beautiful garment. A steel staircase connects pedestrians on O'Connell St to the Green Wall garden


PH


HGE


PH

A small tower can easily appear stumpy but 1 Bligh suggests something much larger – especially so from within the atrium. The tower's verticality has an almost cinematic sensation as steel-and-glass lift-cars rise and fall from its sublimely elegant steel superstructure.

1 Bligh is in the spirit of the best modernist buildings. Its X-Ray construction rejects artifice in preference for direct expression. A palette of concrete, steel and glass is vividly expressed throughout – from the lift motor room housings to mid-level mechanical plant room revealed like a Ferrari engine.

The quality of lightweight steel expression is fully realised throughout. With retractable, bi-fold doors and adjustable louvres, the ground-floor plane

## PANEL SAYS

"This project is outstanding in so many ways and ticks all the boxes. It clearly demonstrates inspired leadership from every aspect – workplace, urban design and sustainability included. Making a private domain public, it transforms Farrer Place from a space previously travelled through to a destination. One of the great strengths of this project is the intelligent use of materials, and the way in which steel, glass and concrete are combined to create a distinctive character and atmosphere. There are many memorable features, including the chain mail screen at ground level and forecourt sculpture, which are particularly inventive."

becomes even more extroverted and immersive during warmer months. Split service cores pushed to the building's rear south-east and western edges contribute to a tremendous spatial efficiency. Steel mullions frame the ground-floor/rooftop bi-fold doors and taper to minimise visual impact and outlook. Fire-escape stairs, usually to be avoided except for emergencies, are treated at 1 Bligh as sculptural, daylight-filled elements and part of the entire composition.

A grand steel staircase rises from the lower O'Connell Street, above the car-park entry and bridges to the Bligh Street plaza and Green Wall café. Great care was given to the detailing of the central tubular stringer, the cantilevered treads and the pair of tapered struts which support the stair down to ground level.

The ground floor crèche signifies a sea-change between working parents and workplace. Deftly tucked under the lobby and fronting O'Connell Street, the crèche is signified by a soaring stainless-steel veil that provides valuable sun-shading and privacy for the children's play area. The effect provides a couturier's touch – much like a beautiful flowing gown. The prominence of childcare as part of the public ground floor is one of 1 Bligh's most endearing qualities. The architects saw the steel mesh as inviting curiosity. Passers-by frequently walk up and touch it as if to confirm the choice of material.

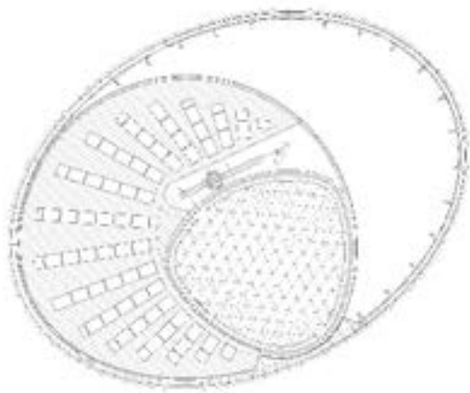
The intended architectural form of the geometry is curved to generally follow the building's elliptical shape, superimposed with a series of waves at approximately 0.5m centres. This shape is defined by curved rails top and bottom, anchored at each wave to the ground floor, and to a curved CHS at high level, hung from Level 1. Adjustment of hanger details impart tension in the mesh.

John Hewitt, senior associate with Arup Sydney, was largely responsible along with Enstruct for the refined steelwork that so comprehensively slenderises edges and liberates openings. He explains that the perimeter and edge beam of 273mm CHS resolved the edge conditions and transfers load onto steel posts at approximately 3.5-metre spacing around the perimeter.

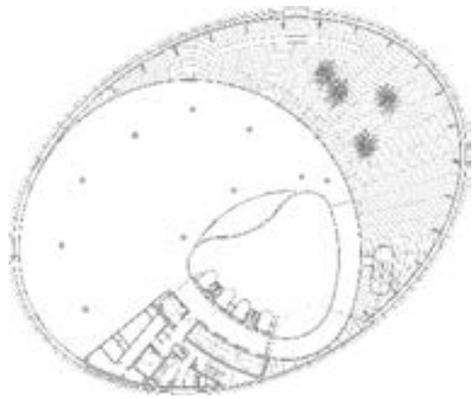
"The atrium roof is not constrained laterally by the building, but is free to expand with only the minimum lateral restraint provided to locate it and resist lateral forces," says Hewitt. "All internal arch forces are resolved by the grillage and edge beam. The resulting dome structure was found to be very stiff, and capable of carrying a wide variety of uniform and non-uniform loads, including point loads due to maintenance. It was also checked for buckling stability and found to have a load factor of at least seven, against elastic buckling.

"Around the edge beam, there are also a series of cantilevered elements that support the gutter and ceiling framing beneath. For construction, the frame was divided into a series of welded subpanels, joined on site by bolted joints concealed by cover plates within the profile of the CHS members."

Twin lift banks within the atrium, each with four high-speed glass lifts, provide gravity-defying travel envisaged by *The Jetsons*. Lifts glide ceremoniously between levels helping to realise whole new workplace connections. Floor-plates embrace work pods and meeting areas around the atrium perimeter to encourage informal staff meetings, study and recreation.

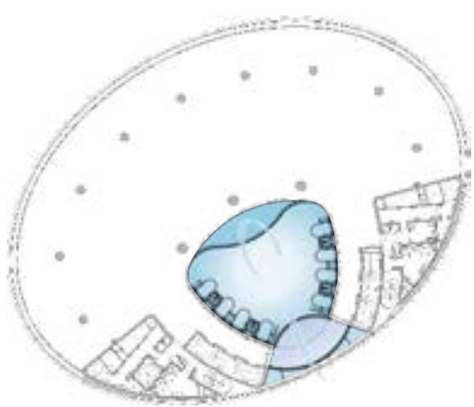


ROOF PLAN



LEVEL 28 FLOOR PLAN

LEVEL 15 FLOOR PLAN



LOW RISE FLOOR PLAN
NATURALLY VENTILATED BALCONIES

HGE

## Transparent high-speed elevators glide ceremoniously between levels, realising new ways of workplace connection

WEST ELEVATION

EAST ELEVATION

NORTH ELEVATION

LEFT: Twin banks of atrium lifts service the lower and upper half of the tower at speeds of around eight metres per second

BELOW: A pedestrian-friendly ground plane is also permeable to natural ventilation and daylight

Expressed steel lift rails, framing and motor rooms are vital in the building's modernist ambition to give structure human dimension and meaning. The north-facing office floor plan arc springs from a 16-metre centre span with six-metre cantilevers to minimise obstructions.

Tower rooftops, usually blunt with an unlovely cluster of mechanical services should heed this function and form. The whole ensemble is signatured by a chrysalis of glass and steel. A parapet screen encloses the roof perimeter to shelter an external terrace and is formed from a series of cantilevered and tapered steel mullions, each around three storeys, linked by three levels of steel transoms.

HGE

The atrium facade is supported at each level from L1 to L28, on curved transoms that span approximately 17 metres. These transoms are quite shallow with box sections 250mm wide and 200mm deep. The high span-to-depth ratio of 85 for vertical bending was achieved by creating rigid welded joints into plates cast into the concrete cores, and forming the members as box sections comprising 150x250 RHS, with additional 25mm plates welded to the top and bottom, creating a stiff but shallow box section with relatively thick top and bottom flanges.

Green buildings aren't necessarily wonderful workplaces, but 1 Bligh combines remarkable performance and lustrous amenity. Its six-star Green Star endorsement makes it a pin-up for sustainable building groups including Australia's Green Building Council.

The project attracted maximum energy rating points for the naturally ventilated double skin, a hybrid tri-generation gas-fired power plant, absorption chillers, solar cooling, tempered interiors and a full-height naturally ventilated atrium.

Stuart Clark, chief operating officer and managing partner international of anchor tenant Clayton Utz Sydney, enthuses about the firm's relocation. "We've moved just across the road, but we've also moved into the 21st century."

Clark represents more than 850 legal staff who now call the lower half – 23,000 square metres of premium office space – 'home'. "It's already a landmark," says Clark, taking pride in the number of tourists, visitors and passers-by who respond to the curvy super-model among the Lego block towers.

Bates Smart's fit-out for Clayton Utz integrates sympathetic, understated finishes established by Ingenhoven and Architectus. Legal floors are ringed with highly transparent perimeter offices enabling the clear glazed external facade to admit maximum light to work areas. "Its design includes a dramatic feature steel staircase at the building's mid height," says Bates Smart joint managing director Simon Swaney. The stairs echo the elliptical floor-plan and provide a key staff circulation link. "The interiors respond to the base building materials so that they will read as a single entity while still giving a unique character to define a strong identity," Swaney says.

For such a green project, it is remarkably restrained – lacking the stylistic manners or devices that shout 'Look at me!'. Green aspirants commonly bristle with fandangles that billboard a politically correct eco-friendly agenda, yet fall short in the critical areas of workplace amenity.

"We are absolutely overjoyed by the way this building has worked out for us," says Ray Brown. "We're building a business that's sustainable – economically and environmentally. Our clients are grappling with issues of climate change and our staff are committed to doing their part. For us to move into this building really indicates a commitment that we are going to do our part."

Staff and public have quickly adopted the ground-floor plane and cascading arc of stairs, or Spanish Steps, as they've been dubbed, that flow towards the wonderful triangular oasis of Farrer Place. The steps and Wintergarden café catch low winter sunlight and provide a shaded perch during summer months. Behind to the south, the Green Wall café features a 28 metre-long, drip-fed vertical garden with 11,000 native and exotic plants.

1 Bligh's clear glass facade uses 18,000 computer-controlled blinds to rise, and fall in response to solar loadings. An added benefit is a reduction of air-conditioning and energy consumption with savings of up to 50 per cent. The blinds feather across the building all day and contribute to a highly active facade system comprising a vented curtain-wall exterior and inner clear glass window with a 0.9 metre central cavity. "The key," says facade engineer Tim Elgood of ESD specialist Cundall's, "is that 1 Bligh's facade performance measures 0.15, so it's twice as efficient as a typical facade by allowing twice the amount of light and only half the amount of heat."

The project's green credentials include solar panels to reduce grid-strain by 25 per cent. Blackwater harvesting from the city sewers recycles up to 150,000 litres of treated water daily – all returned for toilet and garden use. Construction material usage involved more than 50 per cent of recycled steel content and the re-use of 94 per cent of construction waste.

The building's 500m$^2$ of rooftop solar collectors are essentially a high-tech version of solar power heating and create energy through steam to provide cost-effective heating in areas such as the foyer's sub-floor. Viewed from on high, 1 Bligh's grid-shell steel and glazed roof resembles a faceted precious stone rather than the usual box-top clutter of mechanical services. Its rooftop garden terrace to the north is backed up by its array of solar collectors.

Stuart Clark says evidence of the firm's relocation is already overwhelming. "We've moved into a state-of-the art, environmentally sustainable building and there is a real buzz. There was a real excitement when we moved in and that's continued. You can see that in the reaction of passers-by and the reaction of tourists," Clark enthuses. "You come out of the building at lunchtime and see tourists taking photographs. People wander into the foyer and take photographs as they look up into the atrium. There's a real fascination with the building and its technology. It's becoming a real Sydney landmark."

Architecture can represent a clenched fist, or welcoming hand. 1 Bligh transcends the private and corporate domain with a genuine civic gesture. Connecting so fluently to place, it avoids the typical separation between 'them' and 'us', privacy and privilege. In the process it realises architecture as the people's art.

If 1 Bligh is largely about a more contented, productive workforce, it also demonstrates how a tower, so well connected at its roots, quickly becomes part of the urban fabric. In a city bereft of truly grand towers, here is a modern classic. **SP**

*Peter Hyatt has directed and produced a documentary on 1 Bligh Street, available at steelprofile.com.au*


PH

LEFT: Transparent high-speed elevators glide between levels, realising new ways of workplace connection

RIGHT AND BELOW: Bligh's popular 'Spanish Steps' flow towards Farrer Place opposite and connect the ground floor Wintergarden café

BOTTOM LEFT: Staff enjoy a democratic floor-plan that provides high amenity throughout

BOTTOM RIGHT: Ingenhoven's passions include the easily-observed Harbour Bridge and Circular Quay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**PROJECT** 1 Bligh Street **CLIENT** DEXUS Property Group, DEXUS Wholesale Property Fund, Cbus Property **ARCHITECT** Architectus and Ingenhoven Architects **PROJECT TEAM** Christoph Ingenhoven, Ray Brown, Martin Reuter, Mark Curzon, Christian Kawe, Simon Zou **STRUCTURAL ENGINEER** Enstruct **BUILDER** Grocon **STEEL FABRICATOR AND FACADES** Sharvain **ESD CONSULTANT** Cundall **PRINCIPAL STEEL COMPONENTS** Custom fabrication components – atrium facade is supported at each level from L1 to L28, on curved transoms that span approximately 17 metres. These transoms with box sections are 250mm wide and 200mm deep. The high span-to-depth ratio of 85 for vertical bending was achieved by creating rigid-welded joints into plates cast into the concrete cores to form box sections comprising 150x250 RHS, with additional 25mm plates welded to the top and bottom box section. BlueScope steel plate framework formed with RHS 250x150x9mm is used for the entire glass facade. Childcare Centre – stainless steel mesh screen. Atrium roof – all internal arch forces are resolved by the grillage and edge beam. The resulting dome structure carries variety of uniform and non-uniform loads, including point loads due to maintenance. The edge beam cantilevered elements support the gutter and ceiling framing beneath. The frame is divided into a series of welded sub-panels, joined on site by bolted joints concealed by cover plates within the profile of the CHS members **PROJECT TIMEFRAME CONSTRUCTION** 2009-2011 **AWARDS** DEXUS/City of Sydney design competition winner; Australian Institute of Architects (NSW) Sir Arthur G. Stephenson Award – Commercial Architecture 2012; Australian Institute of Architects (NSW) Milo Dunphy Award – Sustainable Architecture 2012; Australian Institute of Architects (NSW) Urban Design – Architecture Award 2012; Council on Tall Buildings and Urban Habitat Best Tall Building Asia & Australasia 2012; UDIA NSW Awards for Excellence Retail/Commercial Development 2011; Asia Pacific International Property Awards Highly Commended – Office Architecture + Office Development 2011; Chicago Athenaeum International Architecture Award 2008; Australian Institute of Architects Harry Seidler Award for Commercial Architecture and National Award for Sustainable Architecture 2012 **BUILDING SIZE** 42,700m² **PROJECT BUDGET** $272 million

# MAX PRITCHARD

Renowned in South Australia mostly for sculptural, highly resolved residential work, Max Pritchard is branching beyond his state, and country, with a raft of new projects. Words **Trisha Croaker** Photography **Paul Bradshaw (portrait)**

This time last year, South Australian-based architect Max Pritchard was leading a relatively quiet, but architecturally rewarding life. As one of the State's most revered architects, with three decades worth of award-winning residential projects in and around Adelaide, work was steady, and life was good. He was humbly, calmly, almost self-effacingly enjoying what anyone would regard as a most fortunate life.

Skip 12 months ahead, and how his life has changed. Max – with the help of his assistant, Andrew Gunner, graduate daughter Tess and wife Wendy – is now juggling a workload guaranteed to test the efficiency of all but the largest of practices. On the drawing board, or currently under construction, are at least five tourism projects. Eco-tourism lodges on Dirk Hartog Island in Western Australia; a bed and breakfast project in the Barossa Valley for repeat client and celebrity chef Maggie Beer; a lodge on the Great Ocean Road in Victoria for former clients; a resort on the Murray River for new Chinese clients; and the masterplan for Seppeltsfield Winery in the Barossa, creator of some of the nation's best ports.

Meanwhile, residential clients continue to queue, with eight new houses currently being built in and around Adelaide, another eight to 10 at design stage, new houses in Sydney and Canberra and, to top it off, a 'desert retreat' near Abu Dhabi for the royal family of the United Arab Emirates (UAE), keen to reconnect with their Bedouin roots when royal duties abate.

Central to the current surge of commissions is Kangaroo Island, Max's childhood home, where he enjoyed a boyhood rich in adventure and exploration, developing an early understanding of place, nature and climate, the value of inventiveness and creative freedom. He was delighted when asked to design eco-tourism accommodation there five years ago. Documented and completed in a little over a year, the award-winning Southern Ocean Lodge attracted coverage in major travel and lifestyle magazines internationally. And, not surprisingly, celebrity guests and future clients followed.

Late last year, it was the UAE royal family. They liked what they saw, understood Max's efforts to protect and honour the landscape, his use of pared back simple materials, and desire to allow nature to remain the key element. Soon after, he was approached to design a desert retreat half a world away but based on similar principles. The retreat needed to house royal family members and entourage in a series of discreet spaces, with up to 40 staying at any one time, and men and women needing separate accommodation.

Plans for a series of eight dune-shaped pavilions nestled in the sandhills and featuring steel roofs, timber floors and large walls of glass have now been presented and revised, with the go-ahead imminent. The scheme represents a dramatic departure from the area's dominant architecture and building materials – largely concrete boxes disconnected from their environment.

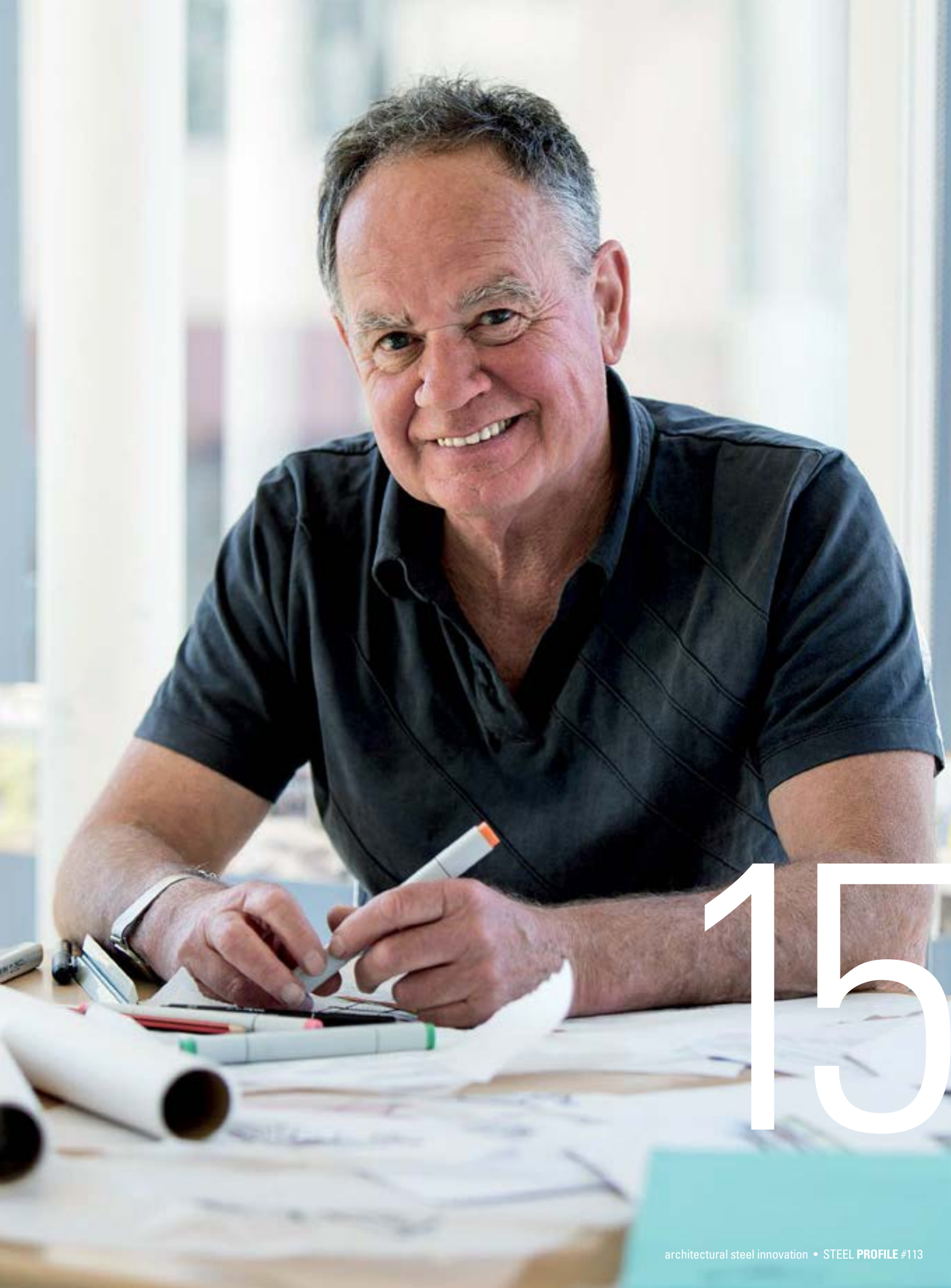
"You might say it's another world," Pritchard says. "And that it's ridiculously indulgent, but by getting movers and shakers like the royal family – one of the wealthiest families in the world – into a natural environment, by doing something sensitively, we have the potential for this awareness to be transferred and spread. Maybe their next commission will be to do some housing of a different, more sensitive form than the current one? There's the real potential to effect change."

Plans for the desert pavilions show promise of built forms achieving a simple, quiet beauty that – as in many of his projects – reinforces rather than detracts from the wonder of their unspoilt site.

"I think it's wonderful if I can do buildings that people want to go back to"

Southern Ocean Lodge (2009)

GEORGE APOSTOLIDIS



Southern Ocean Lodge (2009)

GEORGE APOSTOLIDIS

"I think it's wonderful if I can do buildings that people want to go back to – that make them feel how beautiful that building is when they arrive home. I find a lot of architecture not trying to be beautiful, but trying to be cleverly aggressive."

He lists a handful of completed works as his favourite to date, admitting that possibly more than many architects he continues to design a fairly diverse range of buildings. "You'll see a very strong thread in some architects, a strong design basis they're repeating. For better or worse, I approach each project with a clean slate. I seem able to free myself up to approach each job as if it's my first. So it means I'm not locked in to details or materials. The weakness is that I'm not getting the refinement that some architects get by consistently developing a system."

He starts with his own home, the Pritchard House, completed in 1989 on a steeply sloping site near the sea. "This was quite ambitious to do as an early project. Reasonably daring, structurally, with an exposed steel frame elevated from two-and-a-half metres to eight metres above the ground. It's long and thin, facing north – a nice house to live in. We get sun in winter and breezes in summer. It was an early project that we've lived in happily for a long time."

Twenty years later, the Bridge House (see *Steel Profile* #104) was completed. Suspended lightly over a gully on a quiet rural property in South Australia, this is one of Max's most celebrated projects. Two steel trusses form the primary structure and were fabricated off-site before being erected by two men and a crane in two days. They were anchored by four small concrete piers, poured each side of the creek. Spanning between the trusses is a concrete floor slab on steel decking with a layer of rigid insulation.

"I'm often seeking the drama that you can get with steel, its ability to span large distances with small sections, cantilevers and the like," says Pritchard. "The Bridge House, my house and others get some dynamics from the use of cantilevering steel."

The Paul Richards House in the Adelaide Hills is another favourite, designed over three levels on a small six by six-metre footprint to minimise onsite damage and fit among large onsite eucalypts. The Della Torre House is also on Pritchard's list as are the Sandhill Pavilions on Kangaroo Island, designed for a couple with five children.

"I'm often seeking the drama that you can get with steel, its ability to span large distances with small sections, cantilevers and the like"

Accommodation and living areas in the latter is split over three separate pavilions connected with open breezeways. Steel framed, clad with COLORBOND® steel and featuring timber decks, the pods are designed as camping tents sitting delicately in their fragile coastal setting.

The Southern Ocean Lodge, Max's largest project, represented a "huge challenge". But, of it he says, "beautiful site, beautiful brief, nice clients" and he's "not quite sure how we pulled it off". The built form had to accommodate 40 guests and 20 staff in luxurious surroundings, while complementing the unique pristine natural environment overlooking the Great Southern Ocean, with materials and construction methods chosen to minimise site impact.

Despite the current workload, Max has no plans to expand (or retire) now that he's heading – as he says, tongue clearly in cheek – "an international practice that's gone global".

He's had a go at designing economical housing, listing his efforts to design affordable housing with the State's largest volume home builder, Hickinbotham Homes, as both his major career achievement, and a "failure" due to marketing issues and the maturity of the market.

"This is an area that really needs architectural input. Most people live in this sort of housing. It concerns me that architects aren't having much to do with how the majority of people live. We have something to offer, we should be in there."

While Pritchard's roots probably remain in housing, he guesses "there's a good chance there'll be more tourism projects, and I do enjoy them". He's no fan of process-driven projects, saying he doesn't know how to 'play the game' required to win this sort of work. And, as he says: "No-one's ever asked me to design an office block or a public building". But one wonders what the acceptance of such an invitation might result in. The nation would surely be richer for it. **SP**

Della Torre House (2008)

BEN DELLA TORRE




TOP: Sandhill Pavilions (2009)

ABOVE AND LEFT: Bridge House (2009)

LEFT BELOW: Paul Richards House (1998)

RIGHT BELOW: Pritchard House (1989)


Two houses, one idea, and a spiralling steel staircase work wonders for Smart Design Studio's treatment of an inner city Sydney residence.

Words **Trisha Croaker** Photography **Sharrin Rees**

# HEAVENLY STAIRWAY

**ARCHITECT** Smart Design Studio
**PROJECT** Tusculum Street Residence
**LOCATION** Potts Point, Sydney, New South Wales


"We wanted to create lightness in the back of the house, and to observe and feel the change in light"

William Smart, of Smart Design Studio, is standing with restrained excitement in front of a large model and drawings of an inner-city residential project currently engaging much of the office – one that promises to be a landmark venture for the Sydney-based firm.

Known enticingly as 'Indigo Slam', after the cult detective novel, this strikingly original concrete, glass and steel home is to be built in a highly visible public location for one of Sydney's best-known arts patrons and gallery owners.

Industrial in scale, with a grandness of street presence, it appears initially to bear little resemblance to the practice's much celebrated recent residential project – the multi-award-winning Tusculum Street Residence in Sydney's Potts Point. And yet, the latter modestly sized alterations and additions project with a discreet public face relies heavily on Smart's impressive and inventive use of the same core materials.

Smart's involvement with Tusculum Street began four years ago, when a couple who'd lived in and loved Hong Kong found a turn-of-the-century terrace row house in Potts Point that they felt offered a once-in-a-lifetime opportunity. Located in a quiet, tree-lined street with a demure heritage-listed 1907 facade, behind closed doors it was a noisy mishmash of rooms forming four separate apartments. Smart was brought in to turn the jumble into a cohesive, streamlined whole.

His brief was to create a 'modern, minimalist, contemporary, oriental' home for two people and two dogs (one being almost pony- sized), with a strong connection between indoor and outdoor spaces.

Agreeing on the need to gut the existing house and construct a 'light, contemporary' addition, Smart's first move was to design a sculptural three-storey spiral steel staircase, sitting at the houses' very centre. Acting as an exposed spine, it would interconnect all rooms divided over six split levels.

"In every project, there should be a simple idea that holds it together," Smart said. "In this house, we've got two houses grafted together – the reconstructed, more formal 'old' part and the 'new' contemporary and more minimal addition, designed in a sympathetic but new language, using the stairs to graft both elements."

OPPOSITE: A sculptural three-storey spiral steel staircase sits at the heart of the house, acting as an exposed spine interconnecting all rooms divided over six split levels

LEFT: A large concealed truss on the solid side of the house affords a 12-metre clear span for the three-storey extension and only three visible fine columns

"We wanted to create lightness in the back of the house, and to observe and feel the change in light. And that took us to a very neutral palette. We didn't have that opportunity to sculpt light in the front of the house, so we worked with colour and detail in the front. It has a very different spirit. At the rear, all the detail was removed. It was all about light and the way light bled into the rooms."

To do this most effectively, Smart framed the new house in steel to ensure a minimal aesthetic, a lightness of structure, thin window frames, a thinness of walls and sharpness of square corners. "The beauty of steel is what it can do for architecture and interior design. We need it to achieve our seamless and reduced design aesthetic.

"In this project, steel is expressed in a few, but prominent, locations and concealed where it's doing the 'heavy lifting' that makes our work look light and effortless through cantilevered floors, very large spans or column-free voids.

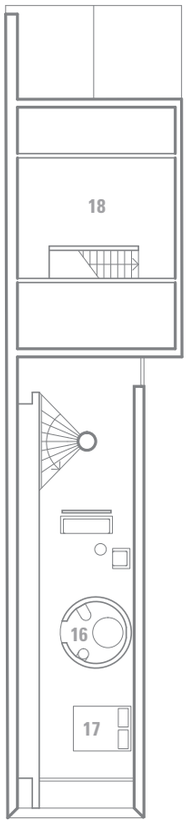
"This isn't a project about expressing steel. This is very much about using steel as your ally to achieve something extraordinary," Smart says.

The walls on the new construction were thin, well insulated and space-efficient. The steel frame also allowed for a range of finishing options, including a fibro-cement facade to the outside and plasterboard to the inside. These economies of base construction allowed for other parts of the house to be finished to a high standard while still maintaining the overall budget.

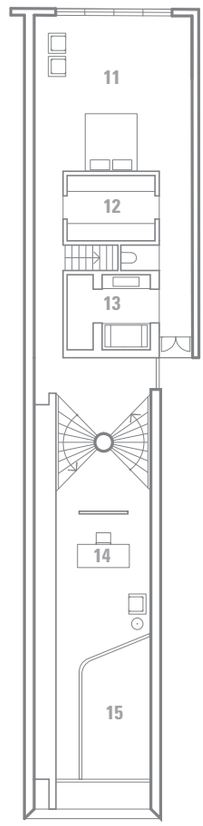
The staircase was key, and would have been illogical in anything but steel, Smart says. Designed to span the width of the building, it features delicate fan-like steel treads cantilevered from a central steel column. As you climb, one spacious living area or bedroom is revealed per level, alternating between the three 'old building' levels and three 'new building' levels.

"We made the staircase with Ken Newport, a boat builder from Woodburn on the NSW North Coast, after establishing a relationship with him when he built an extraordinary boat, the *Starship Sydney*, for us.

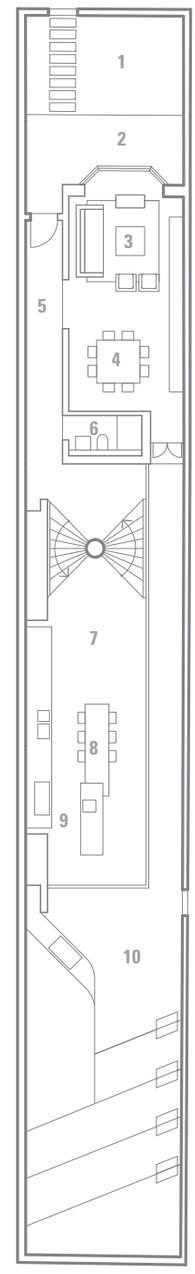
"Building the boat with him opened my eyes to the liberties afforded through steel plate, laser cutting and 3D software design and construction technology.




SECOND FLOOR




FIRST FLOOR




GROUND FLOOR

**LEGEND**

**1.** Forecourt
**2.** Porch
**3.** Formal lounge
**4.** Dining
**5.** Entry hall
**6.** Powder room
**7.** Living
**8.** Dining
**9.** Kitchen
**10.** Rear garden
**11.** Master bedroom
**12.** Robe
**13.** Ensuite
**14.** Study
**15.** Void
**16.** Bathroom
**17.** Bedroom
**18.** Attic

TOP LEFT: The new house is framed in steel to ensure a lightness of structure

RIGHT: Cantilevered and spanning the width of the building, the staircase required full 3D modelling and laser cutting to produce the precise shapes needed to make it as much a piece of sculpture as a way to connect spaces

## PANEL SAYS

This alteration and addition to a 100-year-old inner city terrace is sophisticated, light and seamless. Respecting the heritage-listed facade and 'old' brick house at the front, the architects have used steel to create a very modern, delicate and light rear pavilion – each half complementing the other. The panel especially liked the use of a stunning fan-like spiral steel plate staircase at the very heart of this project. It forms the house's spine, vertically connecting all six split levels over three storeys in a fluid, seamless motion, and horizontally binding new and old."

"This isn't a project about expressing steel. This is very much about using steel as your ally to achieve something extraordinary"

LEFT: The spiral stair treads are cantilevered from a central post and don't touch the perimeter walls

BELOW: The owners have remained faithful to the original 1907 facade

BOTTOM: Thin steel window frames provide sharp, square corners

ABOVE: Interior spaces run seamlessly into a tiered Japanese pocket garden, designed in keeping with the clients' brief for a contemporary, oriental, minimalist and modern home

"The stair was conceived as the element that grafts the contemporary and new minimal structure to the refined, trimmed and formal older portion of the dwelling"

"In this house, the spiral stair is the focus and spans the full width of about four metres. The stair treads don't touch the perimeter walls and are cantilevered from the central post. Treads are tapered in plan and section, and use mitre-cut steel to create finely detailed edges.

"Radiating from a central point to an orthogonal room, the treads are all different and required full 3D modelling and laser-cutting to produce the precise shapes that are needed to make this into a piece of sculpture, as much as a way of moving through the house."

In total, 200 pieces of steel were individually designed and cut to complete the treads, with each featuring a blackbutt infill. The whole structure was then coated with boat paint, the same as that used on the hulls of marine craft. "To get the finish we wanted, we spray-painted on site, and then polished it back as if we were lacquering the body of a car. It was then buffed by hand, sprayed again, buffed, and sprayed."

Despite initial scepticism regarding the success of the process, Smart was delighted with the final look, describing it as "the same as on the body of a car – continuous, glossy and really smooth".

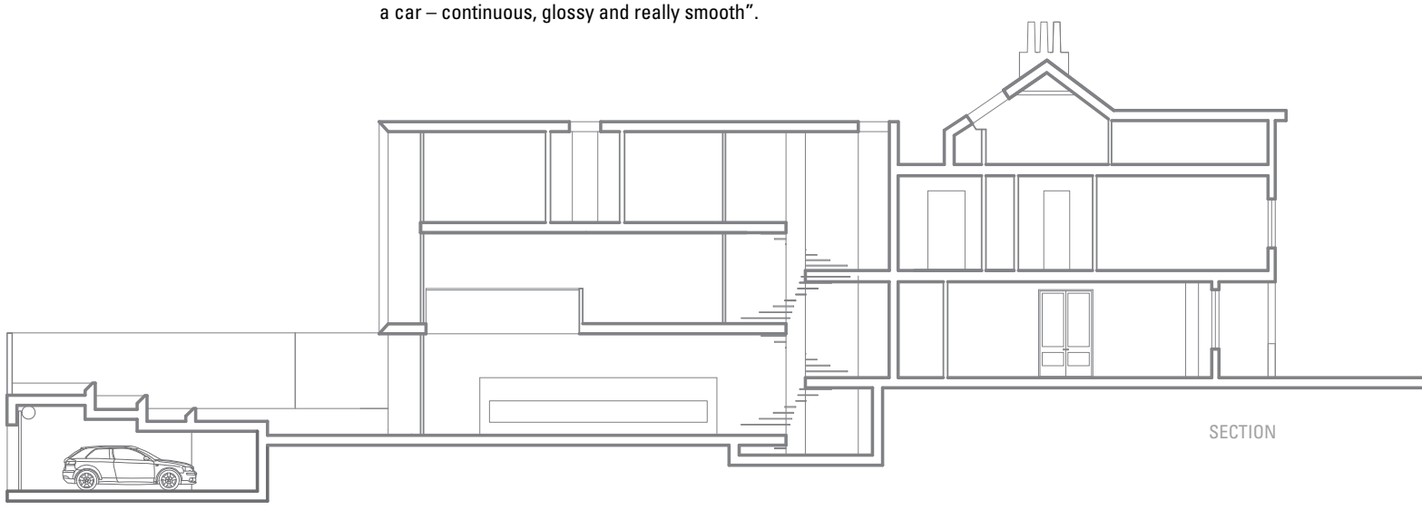
The same could be said of much of the house. Smart's use of materials and treatments are designed to differentiate the 'old' and the 'new' while ensuring a seamless, cohesive feel to all spaces. In the old section, finishes are contemporary but in keeping with a stripped classical style – deep, flush skirting boards, panelled doors, wide gloss white-painted floorboards and lusciously rich coloured set plaster walls.

In the new section, white and black feature prominently – white floorboards, with floor-to-ceiling black-stained American Ash joinery are used on all three levels. Bronze window frames, ironmongery and trims unite both sections.

The new rear parts of the terrace are steel-framed, light and contemporary. This approach is both aesthetic and technological, through careful engineering. A large concealed truss on the solid side of the house affords a 12-metre span for the three-storey extension and only three visible fine columns, which have seamless cleats and junctions.

Through the use of mitred steel and flood-welding the steel prior to filling and painting, this house has square-perfect steel corners throughout, particularly evident in the staircase.

Externally, the connection to the outdoors is accentuated through a 13-metre clear span wall of sliding doors that overlooks a terraced Japanese pocket garden (complete with mature pepper tree), which also forms the garage roof. Not surprisingly the garden, like the house, speaks of one 'simple' idea executed to perfection. From front gate to rear back wall, this project's fine detailing and sculptural beauty evoke a sense of liberating calmness and well-being. SP



SECTION

**PROJECT** Tusculum Street Residence **ARCHITECT** Smart Design Studio **PROJECT TEAM** director, William Smart; team leader, Victoria Judge; interior design, Marie Burgess; project architects, Edmund Spencer and Richard Storey; assistant architect, Troy Melville **STRUCTURAL & CIVIL ENGINEER** Benvenuti S C **BUILDER** Hodge Wright Constructions **STEEL FABRICATOR** Swan Bay Marine **SHOP DRAWING CONTRACTOR** Demcox **SHOP DRAWING CONTRACTOR (STAIRS)** Mark Williamson Design **CLADDING CONTRACTOR** Composite Fabrications **LANDSCAPE ARCHITECTS** Signature Landscape & Design **PRINCIPAL STEEL COMPONENTS** Roofing, gutters and flashing made from COLORBOND® steel; RHS and UB; Staircase: 16mm-thick laser-cut plate steel with mitred corners. Custom-rolled cylindrical central column **PROJECT TIMEFRAME** 2007-2011 **AWARDS** 2012 Australian Institute of Architects Architecture Award, Interior Architecture; 2012 Australian Institute of Architects Commendation, Residential Architecture – Alterations & Additions; 2012 Australian Interior Design Awards – Best Residential Design; 2012 Australian Interior Design Awards – Best Colour In Residential Design; 2012 Belle Coco Republic Interior Design Awards – Best Residential Interior; 2012 Houses High Commendation – House Alteration & Addition Over 200m² **BUILDING SIZE** 325m²

# RIBBONS OF STEEL

Peeling back the layers of this unusually large block in inner-city Sydney allowed Co-Ap Architects to challenge the norms of Australian residential architecture and test new ideas of materiality.

Words **Micky Pinkerton** Photography **Ross Honeysett**

**ARCHITECT** Co-Ap Architects
**PROJECT** Annandale House
**LOCATION** Sydney, New South Wales

The history of the site on which this Annandale residence is built sparks visions of a surreal film set. Don't be fooled by the sedate Victorian Terrace at the front of the block – beyond it was once clustered a group of lean-tos and sheds which at various stages housed a Christmas decorations store, artists studios and a carpet warehouse. Then there's an imposing heritage wall on one boundary, upon which the artists painted a rather large and very existential black square, and on the other side of that wall a hundred preening eyes look down from the converted piano factory apartments next door.

You half expect Fellini to arrive with a boisterous cast of showgirls, hermaphrodites and beatniks, but instead Will Fung of Co-Ap Architects greets you at the door, which is something of a relief. As the director of this show, he has taken on all that back-story and some major site constraints to produce a quiet, sophisticated and very liveable home for a young family.

Located a few hundred metres from the bustle of Parramatta Road, the clients bought this exceptionally long and narrow block in 2009. Drawn to Co-Ap by the minimalist pedigree of Fung's colleague Tina Engelen, the clients' initial brief hoped for a modernist 'white box' addition to the terrace. However, with residential units to the south-west such an approach would create over-shadowing issues, and would also have placed the living areas in full view of the apartments to the north. Add to that a sloping site requiring soil remediation, the imposing heritage wall casting its own significant shadow on the block – it's 12 metres at its highest point – and the architects had to think outside of several boxes to solve these site dilemmas. Co-Ap created a number of physical models as part of this process, eventually arriving at a design for the extension where new floor levels hug the natural topography of the site, creating a series of split levels and pocket courtyards. Luckily the clients – one of whom works as a project manager in the construction industry and supervised the build – were open to new ideas and appreciated what the architects were trying to convey.

"We flipped the idea of what people usually do with an Australian house in that we didn't want to just open everything up with big glass sliding doors," says Fung. "We turned it around, so fixed walls are clear glass and the opening parts are solid. Because we aren't getting much sunlight here we could afford to do that and the lean, glazed hallway becomes a little sun trap so that when the sun comes in, it warms up and the heat travels through the house. In summer, blinds come down and the whole thing gets shaded."

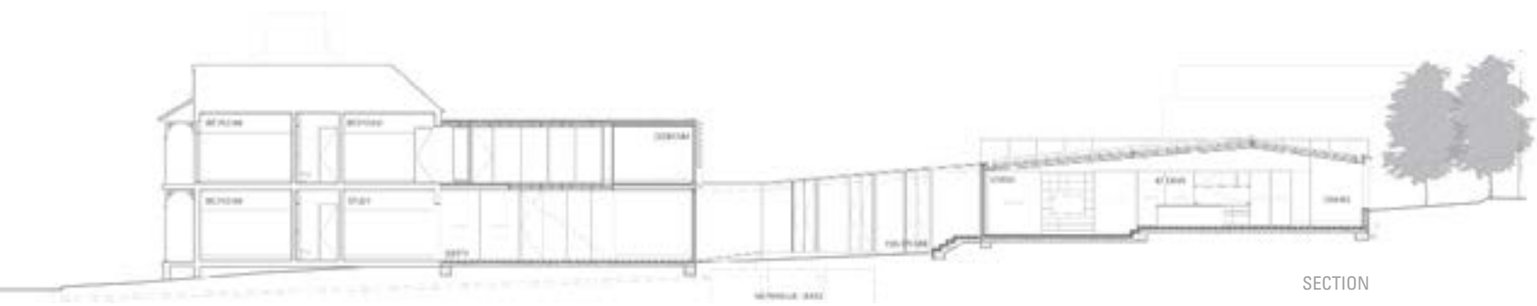
The design also afforded the opportunity for Co-Ap to work with steel in new ways, both internally and externally. "Usually we would express the steel structurally, and then the facade becomes a secondary element to the structure in that the facade is within the steel structure," says Fung. "Whereas in this case the steel is recessive. It's not obvious but it's definitely there. The fine roof detailing is something we haven't done before and that helped with reducing the bulkiness of the building, and so you are really just reading a facade element and the roof kind of disappears."

This roof detail – a ribbon of metal made from 12mm-thick galvanised steel plate in the colour Manor Red® – weaves it way along the length of the addition and acts as a unifying element. It is allowed to subtly preside over the facade, as all guttering has been hidden within a parallel flange channel made from a range of 250PFC, 200PFC and 150PFC galvanised steel. The roof that 'disappears' beyond it is made from LYSAGHT LONGLINE 305® and LYSAGHT CUSTOM ORB® profile roofing cladding made from ZINCALUME® steel.

The overall effect is one of a lightness-of-being, particularly along the hallway which opens onto the lawn courtyard. At this point the structure almost feels hand-drawn, and stands in great contrast to the solidity of the heritage wall opposite.

Internally the genius of the combination of the split levels, angled glass walls and garden insertions becomes apparent. You feel surrounded by nature

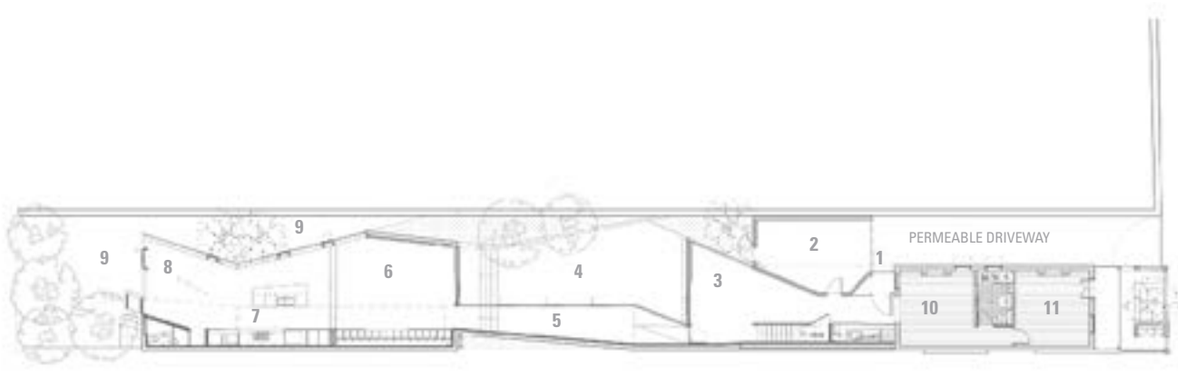
ABOVE: A heritage-listed wall and overlooking apartments are two of several constraints the architects faced in the design and construction of this inner-city Sydney addition



SECTION

"We flipped the idea of what people usually do with an Australian house in that we didn't want to just open everything up with big glass sliding doors"

A lean, glazed hallway follows the topography of the site, linking the original terrace's bedrooms and study to the new living areas at the rear




**LEGEND**
**1.** Entry
**2.** Garage
**3.** TV room
**4.** Lawn courtyard
**5.** Loggia
**6.** Living
**7.** Kitchen
**8.** Dining
**9.** Courtyard
**10.** Study
**11.** Bedroom

GROUND FLOOR PLAN

and completely protected from the elements and the neighbours' sight-lines. In the kitchen/dining section of the house (partially set into the ground thanks to the soil remediation exercise) the opaque timber windows open out at ground height onto a narrow fernery. The owners' young children regularly escape up and out through these doors-cum-windows into the garden and run a delightful circuit around and through the house. Fung describes it as like being in a terrarium.

Steel was integral in achieving this, with 76CHS, 65CHS and 89SHS columns made from galvanised steel taking roof weight, to allow the window-walls to create a glasshouse feel.

"Because of the unusual geometry where we have windows meeting windows at corners, we couldn't just use regular SHS or CHS," explains Fung. "So the structural engineer had to invent a new section which is basically two plates of steel welded together to form an angled column. The project's best attributes would be the way that we handled the facades. The constraints ultimately allowed us to look differently at windows and doors, and how they open out to spaces."

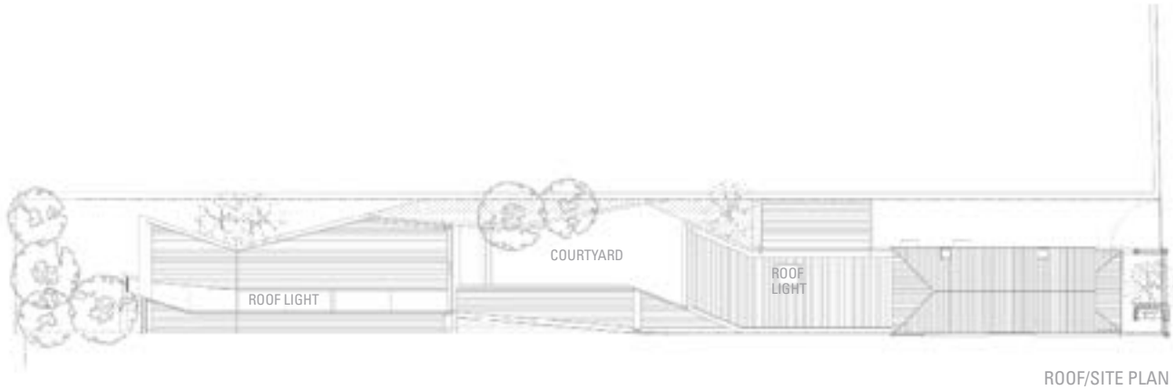
When asked to nominate the single biggest site issue that shaped the design and material choice, Fung does not hesitate: "It's the wall. Because

A sliver of ferns joins the two courtyards, creating a glasshouse effect. Various CHS and SHS columns made from galvanised steel structurally support the roof, allowing large glass panels to meet at unusual angles

it's so strong, so raw, so honest, everything we put in here had to be a response to it in some way. Even the FC sheet cladding at the front of the house; it's just got a clear sealer on it. We didn't want to paint or treat it. We wanted to keep it raw. That idea runs through the house, such as in the polished concrete floor and the plywood joinery. It's all fairly naked."

To acknowledge its significance and celebrate the site's history, Co-Ap proposed to leave the wall as is, including the big black canvas left by the artists, and the more recent concrete splatters left by subcontractors on this build. A further nod to the layering idea can be found in the colour that was chosen for the 'ribbon of steel' element, with its rusty hue deliberately reminiscent of primer paint. Eschewing more fashionable shades, it's a further example of the thoughtful approach that is so evident in every aspect of this project.

Ultimately, all architecture has to moderate the space between landscape, memory and materiality. This house is an exemplary embodiment of that aim. Turning constraints into opportunities, Co-Ap has provided an alternative model for updating the inner-city terrace house which will serve as a reference point for the profession for years to come. **SP**




ROOF/SITE PLAN

## PANEL SAYS

"This light alteration and addition to a 1880s terrace is like a stretched lean-to. The new work is respectful of the old, and delightful. The architects have resolved a range of challenging constraints and turned them into opportunities, with the resulting home showing an elegance and fineness of hand. This was a tough, long and narrow site, bordered by warehouse apartments and a high heritage wall. By unfolding the addition along the length of the site, and wrapping it around a courtyard, they've produced a delicate, light-filled series of spaces perfectly balancing and complementing the strength of the existing structure. This is a quiet, sophisticated and very liveable home."

OPPOSITE LEFT: The living areas feel protected and intimate, despite the overlooking apartments to the east and townhouses to the north west

ABOVE LEFT: The residence presents as a composed and classic terrace, with only the merest hint of the more contemporary geometry of the recent addition visible from the street

LEFT: The hallway gallery with 12mm-thick steel plate 'ribbon' roof edge detail, under construction


WILL FUNG


WILL FUNG

**PROJECT** Annandale House **CLIENT** Robert & Susan Feltaous **ARCHITECT** CO-AP Architects **PROJECT TEAM** Will Fung, Tina Engelen, Patrik Braun **STRUCTURAL & CIVIL ENGINEER** James Taylor & Associates **BUILDER** Owner-builder **STEEL FABRICATOR AND SHOP DRAWING CONTRACTOR** Rondalee **CLADDING** Contractor Citybuilt **LANDSCAPE CONTRACTOR** Bates Landscaping **PRINCIPAL STEEL COMPONENTS** Roofing: LYSAGHT LONGLINE 305® made from ZINCALUME® steel and LYSAGHT CUSTOM ORB® profile made from ZINCALUME® steel, 12mm-thick galvanised steel plate in the colour Manor Red®; Structural: 250PFC; 200PFC; 150PFC; 76CHS; 65SHS; 89SHS, 25mm plate used to form custom columns and edge plates for roofing **PROJECT TIMEFRAME** 16-month build. 20-month design & council approvals **AWARDS** Australian Institute of Architects NSW 2012 Residential Houses, Alterations and Additions (shortlisted); 2012 Houses Awards, Alteration & Addition over 200m² **BUILDING SIZE** 296.85m²

# CULTURAL CANVASS

**ARCHITECT** Searle x Waldron Architecture
**PROJECT** Art Gallery of Ballarat Annexe
**LOCATION** Ballarat, Victoria

When the architects of this ambitious project were asked by their structural engineer if a column could be placed in a corner, the short answer was 'no' and the outcome of the entire project pivoted on this point. Words **Christine Phillips** Photography **John Gollings**

# 33

Resting on a plinth, the annexe steps down to activate the plaza space

Leonard French's kaleidoscopic stained glass ceiling at the National Gallery of Victoria (1967) is a magical Melbourne space. There is something wonderful about lying down and staring up at that ceiling.

Searle x Waldron Architecture has continued this lineage with its multi award-winning design for the new Annexe to the Art Gallery of Ballarat. A tiny job in comparison, but this new addition also shares a dazzling ceiling. This is lined in black and white banded timber struts that fold up to captivatingly capture light. The new addition functions as a multi-purpose space for both the gallery and community but also provides a new public presence in Alfred Deakin Plaza and the adjacent heritage precinct of Camp Street.

Searle x Waldron Architecture is not a new kid on the block. The talented young duo of Nick Searle and Suzannah Waldron formed practice after their extraordinary international competition win for MoCAPE – the Museum of Contemporary Art and Planning Exhibition, a large-scale competition project of 80,000m$^2$ in Shenzhen, China, in which Searle x Waldron Architecture was a first-round winner. The firm has since had projects published and exhibited in Australia, Europe and Asia, and both partners teach at RMIT University.

The client's brief called for a 'permanent marquee', a multi-purpose addition that would expand the gallery's existing function spaces. The architects "expanded the brief during the initial design stage to incorporate three modes of operation as a public hall, verandah and bandstand – formally and programmatically recalling local typologies."

The Annexe exists as a discreet one-room pavilion, structurally independent to the existing heritage-listed gallery. It is a steel-structured space with a timber-lined interior enclosed by black, steel-framed moveable glazing panels that open out onto Alfred Deakin Plaza. The architects selected steel "for its lightweight versatility, rapid assembly and ability to be accurately tailored to the existing conditions." The roof cleverly folds in on itself to create multiple facets of light within, and overhangs on the outside where it forms two large awnings that address both the plaza and adjacent historic Huyghue House. Resting on a plinth, it steps down to further activate the plaza space and adjacent buildings.

"One of the biggest challenges for the job was to provide a column-free space to enable the usage flexibility"

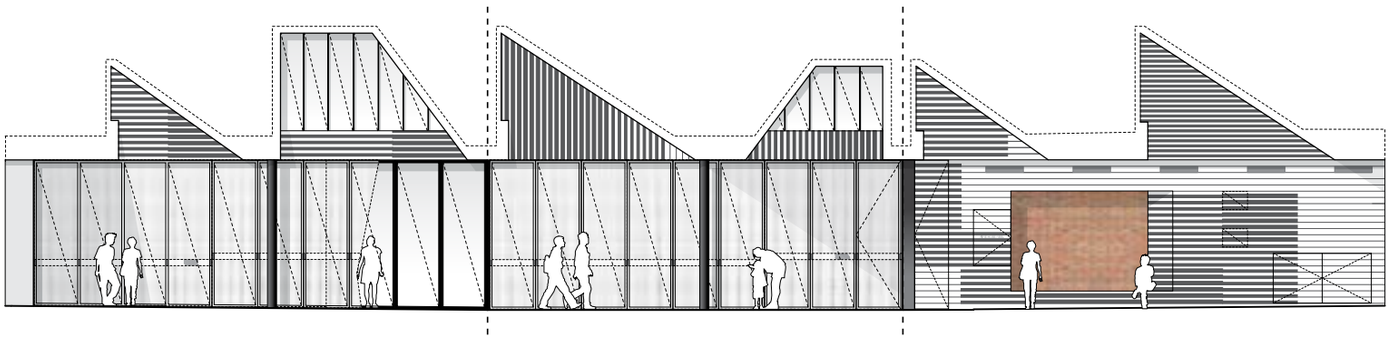
One of the biggest challenges for the job was to provide a column-free space to enable the usage flexibility required for the space. Searle and Waldron were asked by their structural engineer from TGM group if there could be a column in the corner; 'no' was the short answer. The outcome of the whole project pivoted on this point. With a dual five-metre cantilever to the corner, the structure was designed to allow open space and flexible program shifts. "We conceived it to be a simple structure but this was complicated by the performance criteria," says Waldron. "Fourteen moveable steel glazing panels weighing 2800 kilograms had to be held exactly 20 millimetres from the ground, with as little defection possible. Thanks to Jim, our structural engineer, there was no corner column," she adds.

Internally, the ceiling and storage wall are lined in black and white struts that graphically echo the optical works of Bridget Riley, the Dazzle camouflage ships of World War I and a little dash of Harold Desbrow Annear. The boards are striated in three standard widths that shift from solid to open at the extreme awning edges. Searle and Waldron explain: "The painted timber linings recall 19th Century back-of-house spaces." The striated patterning, along with the high ceiling and multiple skylights creates a lovely spaciousness for this relatively small area.

To give the gallery and community some clues on how the Annexe might be used in a variety of ways, Searle x Waldron Architecture hosted a few different events in the space. These included the practice's 2011 State of Design Camp Street Camp Out event, where they invited the public to pitch their tents in order to recreate Ballarat as a tent city. They also designed a lookout installation to re-create a historic view of the 1850s goldfields from the Camp Street Arts Precinct. This successfully captivated the community who have since been occupying it in a myriad of ways. Searle and Waldron said the Annexe is booked out most days with diverse events ranging from rock concerts for kids to a memorial service for a venerable community member, and installations, workshops and talks. It recently starred in a local hip-hop video and the local parkour outfit even use it as an urban obstacle course. Gallery director Gordon Morrison confirms that "The Annexe is not only a beautiful and elegant addition to the Gallery, it is an extremely practical space which has been a hugely worthwhile investment."

Searle and Waldron believe in "Applying the same design ambition to all scales and typologies" and their Annexe design is testimony to this. Layered with historical references, urban connections and a sense of community spirit, this small yet ambitious project is a great example of successfully resolved civic space. **SP**

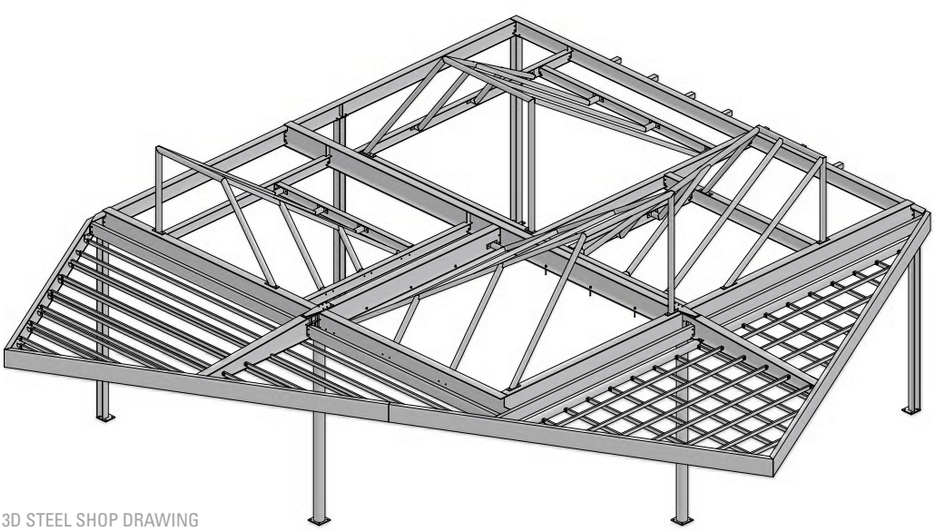
Black and white struts graphically echo the optical works of Bridget Riley, Dazzle camouflage ships and Harold Desbrow Annear



EAST INTERNAL ELEVATION SOUTH INTERNAL ELEVATION WEST INTERNAL ELEVATION

ABOVE LEFT: The large awnings not only provide shelter and shade but address both the plaza and adjacent historic Huyghue House

ABOVE RIGHT: The striated ceiling cleverly folds in on itself to create multiple facets of light within



COURTESY OF ICE ENGINEERING

3D STEEL SHOP DRAWING

## PANEL SAYS

"Referencing local typologies, this building is a little bit public hall, little bit verandah and a touch bandstand – and one of the first great contemporary structures in Ballarat. The architects have sensitively combined materials in a sophisticated yet playful form. We particularly like the lightness of this structure – two slender circular steel columns support large cantilevers – and the white timberwork banding complementing banding in the original brickwork. The bones of this project are steel – it's a great example of how to use this material in an appropriate way to form up and frame public spaces. It's a modern structure that reveals and respects the area's past."

**PROJECT** Art Gallery of Ballarat Annexe **CLIENT** Art Gallery of Ballarat, City of Ballarat **ARCHITECT** Searle x Waldron **ARCHITECTURE PROJECT TEAM** Nick Searle, Suzannah Waldron **STRUCTURAL ENGINEER** TGM Group **BUILDER** Nicholson Construction **PRINCIPAL STEEL COMPONENTS** Structural steel: 380PFC awning edge, 460 perimeter beam, 200 CHS columns; Plate steel cladding: 16mm steel flat plate section (terminating glazing), 3mm steel cladding to East and South facades; Steel-framed windows: 3.6m-high full-height steel-framed. **PROJECT TIMEFRAME** 2010–2011 **AWARDS** Australian Institute of Architects Victoria 2012 COLORBOND® Award for Steel Architecture, Australian Institute of Architects Victoria 2012 Public Architecture, Alterations and Additions Award **BUILDING SIZE** 131m² footprint/187m² covered area **TOTAL PROJECT COST** $550,000

# ARMOURED EDWARDIAN

In an age of premature obsolescence and disposable style, this home echoes the old but is clearly modern. Emphatic in its materiality, a confident steel cloak speaks of a big idea made small for a new generation in search of stylish sustainability.

Words **Peter Hyatt** Photography **Peter Hyatt**

**ARCHITECT** Rexroth Mannasmann Collective
**PROJECT** Myrtle Street Residence
**LOCATION** St Kilda West, Victoria

Housing is architecture's equivalent of staple bread and butter pudding that can rise to the quality of crème brulee. It is where nearly all practitioners learn the rules of engagement: planning regulations and client psychology, construction and assembly. And survival. Some practitioners are so drawn to the field that they find themselves mired as if in The Eagles' Hotel California – "You can check out any time you like, but you can never leave". Housing is frequently a love/hate relationship, intensely personal and, invariably, engaging.

The Rexroth Mannasmann Collective sounds like an eastern European workers' union, or socialist arts movement. The 'collective' is the brainchild of Brenton Weisert, Giles Lawson and Kirsty Fletcher – apt, given the trio's strong social conscience. Based in the urban fabric of inner-city Richmond, the practice's location seems to highlight the strengths and weaknesses of dense living.

The firm's strategy of understanding client and place puts it on the path to a highly-tuned form and space. The Australian suburbs inspire good, grand and often ugly interpretations. Robin Boyd lamented the trend towards bloated featurism, preferring the restrained modernist aesthetic to the replica world of ancient Greece and Tuscany parachuted onto quarter-acre allotments.

Suburban housing can either be stereotype, or prototype. Boyd leaned heavily – no, leapt – towards the prototype. He understood the beauty of the bespoke model specific enough for the client, yet universal enough to endure for generations. He helped his colleagues find courage and their voice.

Weisert and Lawson's 'collective' suggests revolution, but, rather, delivers pleasing evolution. The pair, along with third partner Kirsty Fletcher, spends much of their time researching the suburbs for ways of building community, rather than dividing it. The trio's work is simple, direct and tailored to circumstance.

"Steel is a great tool for abstracting form... It provides a hard, durable skin while internally there's a sense of warm invitation"

OPPOSITE: A white knight's light-weight armour resonates with the Edwardian streetscape

RIGHT: A carefully detailed window links the front, upper-level bedroom

Sitting in a narrow street, in an area characterised by compact allotments of Edwardian heritage, the Myrtle Street Residence presents an emphatic, unequivocal materiality – a confident steel cloak no less – that is worlds away from the site's disfigured Bavarian predecessor.

The new house is designed for a family of five relocating from Wheelers Hill – a suburb widely considered the embodiment of Melbourne's brick veneer set. The family, whose size had not changed, moved from a 370 square metre house on a site of 1000m$^2$ to a new 200m$^2$ home on a site the size of their previous abode.

The brief required flexible room functions and accommodation for 'boomerang' children. The family needed a home/office, bedroom spaces and acoustic separation for a drummer's budding musical career.

While the new house is slightly smaller than the 214m$^2$ average new Australian home, the challenge of condensing the brief into a smaller dwelling on a much smaller allotment raised expectations.

Lawson describes the project as having a steep learning curve. "It taught us about budget but there is also the whole issue of the clients' spatial expectations too. They had a huge house at Wheelers Hill and were dropping in size from 1,000 square metres to 300. How do you do that without them feeling they have lost something?"

He reminds us that Australians' penchant for size results in the largest houses on average anywhere in the world. While some trends driven by speculators and developers head in one direction, many shrewd punters are seeking design efficiency. He explains the firm's preference for "an improved quality of space where that relationship between spaces and rooms is tightened and circulation more disciplined.

"This family decided to downsize their home but not their life. There was a conscious desire for a smaller footprint and a more sustainable home," he observes. "Our clients wanted a high-performance dwelling that exploited the passive solar siting opportunities," adds Weisert. He points out how the concrete block core "orders internal spaces, provides centered vertical circulation and stack-effect venting, as well as mitigating thermal fluctuations to the second storey".

Edwardian houses are typically compartmentalised and daylight-resistant, whereas this interpretation opens itself in the critical areas of family living spaces.

EAST ELEVATION

NORTH ELEVATION

TOP: The concrete block core orders internal spaces, providing centered vertical circulation and stack-effect venting

ABOVE: Windows in the main staircase

ABOVE RIGHT: View from the main bedroom framed by pristine corrugations of LYSAGHT SPANDEK® profile made from COLORBOND® steel in the colour Shale Grey™

RIGHT: The backyard reveals sustainability aspirations

## PANEL SAYS

"This is a simple house in inner-city Melbourne to which some really thoughtful things have been done. From the street, we found the form of this contemporary re-interpretation of an Edwardian building to be respectful of its neighbourhood. The materiality inverts the reading of the form and contributes to an understanding of the historical nature of the street. Internally, we like the way the architects have brought sunlight in through the roof. And the way the interior has been manipulated to accommodate spatial complexity."

"The massing, siting and the external disposition of materials we used respond to characteristics surrounding Edwardian dwellings. Neighbouring housing forms have been abstracted towards a simple expression of material richness concentrated around window and door openings. The entry arrangement, big roof and heavily crafted entry relate the new house to the neighbourhood," notes Weisert, aware that while a replica might have pleased arch conservatives and that the contemporary interpretation generated some initial resistance, "this has been replaced by support for what the house represents".

The previous house had had all eaves stripped away, windows moved and trimmed with aluminum. Living areas were placed on the south and bedrooms to the north. The final indignity was an entire cladding program in asbestos brick sheet.

Weisert, Lawson and Fletcher's reversal of the Bavarian model now orientates living areas along the northern edge to increase solar opportunity. And other strategies are at work. The central stairwell for instance is used to bring breezes through, up and out via three operable skylights that efficiently draw air in warmer months.

"This is a very stripped building in comparison with a lot of our work," Weisert observes. "The materials here are very flat and slender – even the roof is thin. It's a very budget-driven project that demanded a certain ingenuity. It's not grand and there's no trophy kitchen," he adds of the floor plan that has a concrete block thermal core at the heart of the building to moderate temperature/stability.

"It's a very budget-driven project that demanded a certain ingenuity. It's not grand and there's no trophy kitchen"

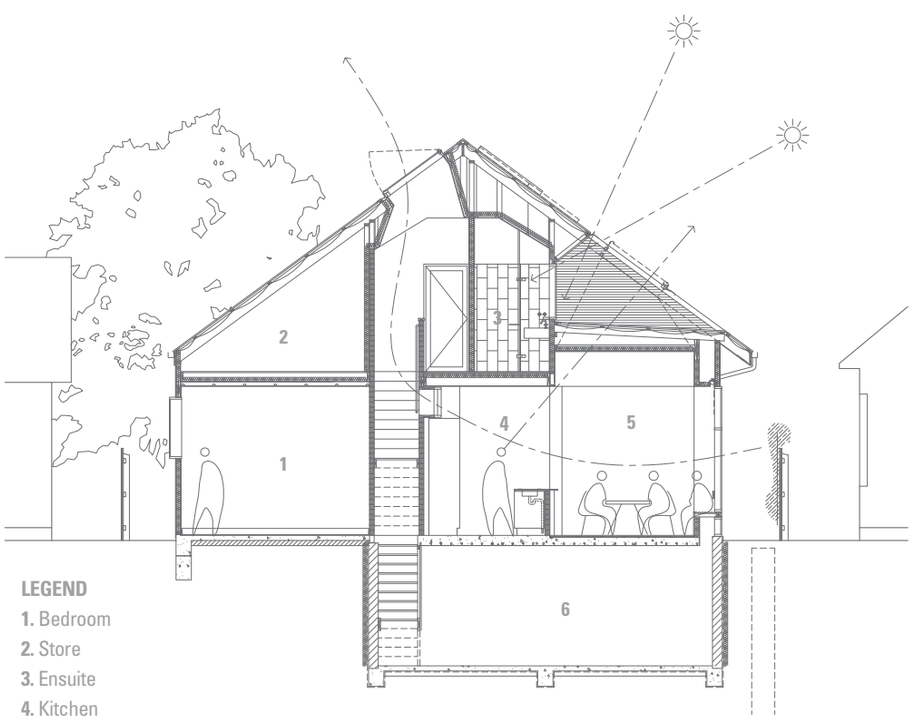
"It's really a project about a big roof, a big top. Steel is an obvious fit here because it is very affordable and if not quite archetypal, then it's typical of the area and highly legible." The choice of LYSAGHT SPANDEK® profile made from COLORBOND® steel in the colour Shale Grey™ provides a sharp, geometric edge with sufficient profile to distinguish it from traditional eaves.

The roof softly gleams and shimmers in response to light, capping an architecture of optimism. "The material's general tone," says Fletcher, "generates plenty of life and light. The Shale Grey COLORBOND colour plays with the sky's colour and is very mutable. It changes continually, responding to the sky and weather conditions.

"Steel is a great tool for abstracting form," Fletcher points out. "It provides a hard, durable skin while internally there's a sense of warm invitation. Australians have this fascination with sheds and we've touched on that, but it's removed from the more typical design of, say, Glenn Murcutt. Here it's almost that archetypal child's drawing of a house rather than the heroic vernacular." And like Murcutt's housing, Myrtle Street exploits the elements to create a micro-climate for bare-feet on stone, eye-catching textures and the aural qualities of rain on roof.

"There's an expectation now about design and how it can improve a client's life domestically. People are definitely more informed and can see the benefits of architecture and are more willing to hand-over a project. There's an understanding that you're trying to connect rather than separate."

In an age of premature obsolescence and disposable style, the Myrtle Street Residence echoes the old but is clearly modern. It speaks of the big idea made small for an informed new generation in search of stylish sustainability. Such stirrings in our inner cities reveal a whole new sense of discovery and enthusiasm for 'green' without resorting to self-composting billboards. SP




SECTION

**LEGEND**
**1.** Bedroom
**2.** Store
**3.** Ensuite
**4.** Kitchen
**5.** Dining
**6.** Cellar

**PROJECT** Myrtle Street Residence **ARCHITECT** Rexroth Mannasmann Collective **PROJECT TEAM** Brenton Weisert, Giles Lawson, Kirsty Fletcher **STRUCTURAL & CIVIL ENGINEER** Clive Steel Partners **BUILDING SURVEYOR** Anthony Middling and Associates **BUILDER** Melbourne Homes of Distinction **ENERGY CONSULTANTS** Floyd Energy **PRINCIPAL STEEL COMPONENTS** Roofing and cladding: LYSAGHT SPANDEK® profile made from COLORBOND® steel in the colour Shale Grey™ **PROJECT TIMEFRAME** Nine months construction. Twelve months design **BUILDING SIZE** 200m² **TOTAL PROJECT COST** $650k

# BEST FACE FORWARD

The addition of a slender steel balcony facade has transformed a previously stunted post-WWII Sydney apartment block and directly connected it to stunning water views. Words **Rob Gillam** Photography **Katherine Lu**

Tribe Studio Architects has used a simple design to correct a slew of wrongs. Its shimmering steel addition has made elegant what was once red, brick and ugly ("ill-considered", as the architects more delicately put it).

Each of the seven apartments in the wealthy Sydney suburb has an entire floor, ending in views across Double Bay and encompassing Point Piper and North Head.

Such a glorious vantage was betrayed, though, by a pitiful balcony running half the width of the frontage and just 900mm deep. "The old balcony had one little hinge door to it and it was only deep enough to step out onto," says architect Hannah Tribe. "It also had a lot of fixed glass so would heat right up. It was quite desperate."

An economic case was made to update the building and harness more indoor and, crucially, outdoor living area. "Even though we ended up only extending the internal floor area outwards by 40mm, combined with three extra metres of balcony the apartments' liveability and value have increased significantly," she says.

Some residents, however, were unconvinced. To help reduce impact during construction, Tribe prioritised speed-of-construction in the design response. "It was a big issue because all the residents stayed during construction and we had boarded off their rooms, blocking their views.

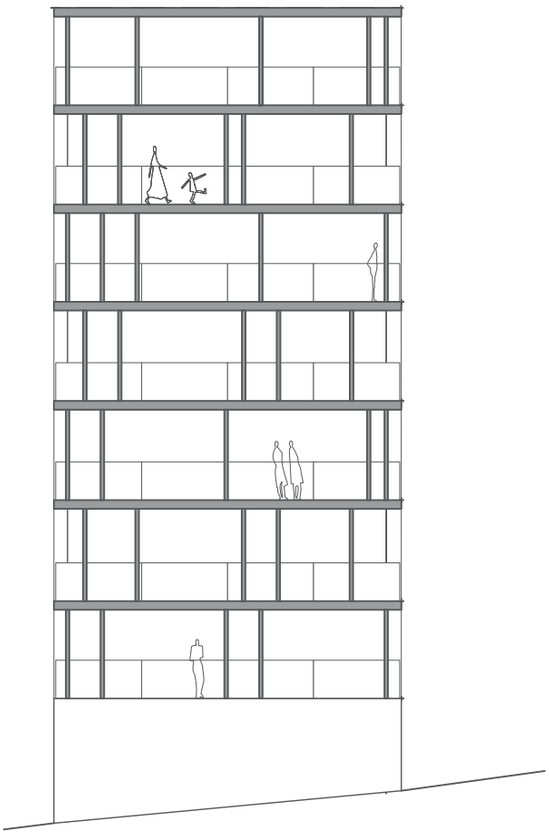
"That is one of the reasons we chose steel: it can be cut-to-size beforehand and brought in easily. And it's clean. We haven't used any concrete in the construction, apart from the footings, which meant the residents weren't exposed to any dust."

Tribe explains the building solution: "Working closely with the structural engineer, Damian Hadley of Cantilever Consulting Engineers, we were able to balance the architectural intent with the structural requirements. Damian and I collaborated to achieve the lateral stability to the balconies using a very simple structure. We also played with the vertical arrangement of the columns, which allowed us to keep the sections small.

"The structure is built from new footings and concrete platform which forms the lower terrace. The new perimeter columns carry most of the load from the new balconies as a separate structure and soft-attach to the existing concrete-framed building.

"Through this collaboration, Damian recommended that we remove some of the new columns that were in our original design. These decisions not only saved our client money but allowed for a cleaner result."

Apart from a long PFC beam per balcony, which had to be craned in, materials were brought in and assembled by hand. "It was a steep site that limited our ability to crane and we didn't want to barge in materials. The steel system meant most of it could be assembled with manpower. The smaller UB steel sections were so light that they could just be manually positioned and bolted into place. It was so quick. Four months was a really pleasing turnaround."



EAST ELEVATION

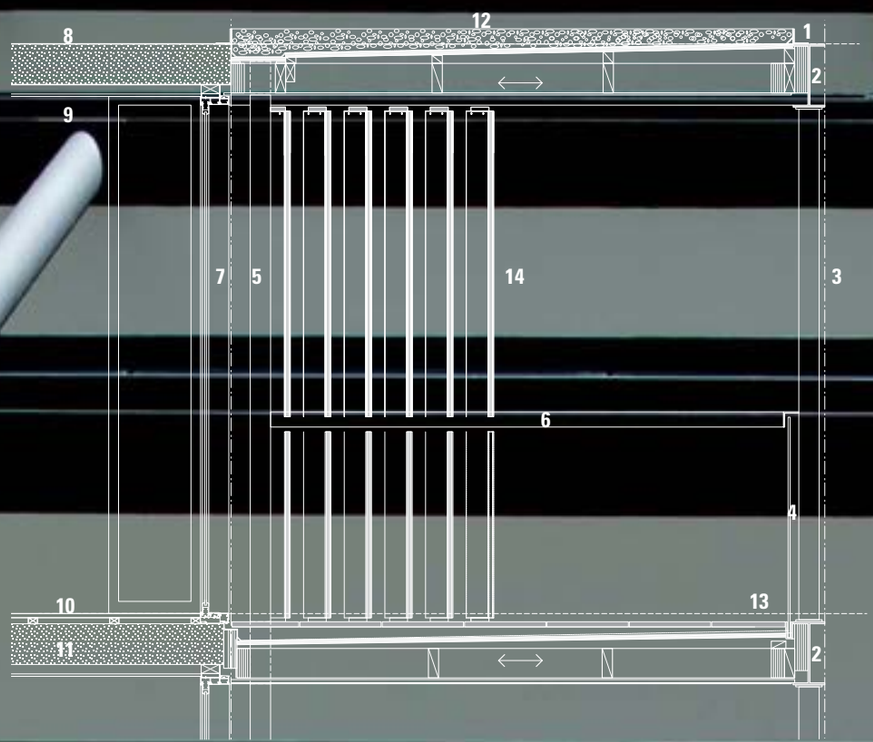
While the structure is simple in engineering terms, the architect sought a design that kept the steel members at a small diameter, and arranged them irregularly to create a dynamic elevation. "It's a very tall frontage so the idea of making them irregular was to break things up," Tribe says. "If the columns had been regular they would have looked very long and thin. It was about keeping the building in proportion and remaining gracious on the site.

"Also, by keeping the columns as fine as possible and using more of them, we were able to interrupt less of the view than would have been the case with, say, two big concrete columns blocking the corners."

Tribe Studio Architects' design response has resulted in an addition that has successfully reinvigorated the building and met an urban responsibility to the suburb. While this grande dame of a building should be entitled to her beauty secrets, Tribe Architects' masterful facelift is hard gossip to keep. SP

**PROJECT** Darling Point Apartments **CLIENT** Strata Executive Committee **ARCHITECT** Tribe Studio Architects **PROJECT TEAM** Hannah Tribe, Case Ornsby, Ricci Bloch **STRUCTURAL & CIVIL ENGINEER** Cantilever Consulting Engineers **BUILDER** Growthbuilt **PRINCIPAL STEEL COMPONENTS** Main edge beams: 300UB; Steel columns: 100 CHS; Finish: marine paint system **PROJECT TIMEFRAME** Four months construction **AWARDS** Nominated, Steel Design Awards, Small Project <$5 million **ADDITION SIZE** 5000m²

Regular columns would have looked very long and thin. It was about keeping the building in proportion and remaining gracious on the site




TYPICAL BALCONY EDGE DETAIL

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**LEGEND**

**1.** 75mm steel angle to contain ballast
**2.** Paint finish to edge beam
**3.** Paint finish to steel columns
**4.** Toughened glass balustrade top of channel to sit flush with steel edge beam
**5.** 100mm downpipe with custom RWH steel angle
**6.** Steel angle capping rail
**7.** Sliding door with single glazing
**8.** Existing roof
**9.** New ceilings
**10.** Existing balcony level up to existing floor level
**11.** Existing floor slab
**12.** Roofing membrane
**13.** 30mm tiles to sit flush
**14.** Privacy louvres

BLUESCOPE STEEL

STEEL **PROFILE** #113

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