# steelprofile

*Architectural steel innovation with BHP Steel Limited*

***number 83, june 2003***

# steelprofile

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Cover photograph: Structural steel and sandwich panels are not the regular idiom of residential construction. This Hunter Valley home is a notable and striking exception.

This page: Edward Duc's design incorporates COLORBOND® Metallic steel-clad sandwich panels which change hue as sun angles alter on this Hunter Valley home.

BHPSTEEL

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# 002

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|---|---|
| **Project** | Inclination Estate, Hunter Valley |
| **Architect** | Edward Duc |
| **Project team** | Edward Duc, Russell Ockendon |
| **Builder** | Andrew Brown Constructions P/L |
| **Structural Engineer** | Connell Wagner, Newcastle |

## SUNRISE INDUSTRY

**Newcastle-based Edward Duc has a simple driver behind his architecture - "If a building has been loved during its design, then it shows." His design for a house in NSW's Hunter Valley is evidence.**

Big on ideas, low on energy consumption, this is one of only a handful of houses ever designed by the talented Mr.Duc. Its gleaming, metallic form reflects heavy industry and needlepoint precision.

It comes with gymnasium, wine-cellar, lap pool and the kind of views that remind you life is good.

The modern day housing estate is an oxymoron. No amount of new fangled, or high-tech, gadgetry disguises the unassailable truth that the real static is not on plasma television screens, but the cheek to jowl housing stock of emerging suburbs. Despite being stuffed with everything from ferociously powerful computers and jelly-bean shaped vacuum cleaners, the brick-veneer is hopelessly trapped in an award-winning time warp.

As Australian architecture exhibits a new restless energy, its housing-estate cousins have become the poignantly entertaining stage for Kath and Kim. Which is why Edward Duc's design - a lightweight assembly

The subtle, reflective quality of COLORBOND® Metallic steel is picked up in this poolside view that echoes an elegant industrial vernacular.

(above) The modernist classic set on a grassy knoll.

(below) Views south of the rear verandah and beyond to the Brokenback Ranges.

(opposite) Views north from the gymnasium across the pool patio.

of steel and glass is a model of aspirational restraint.

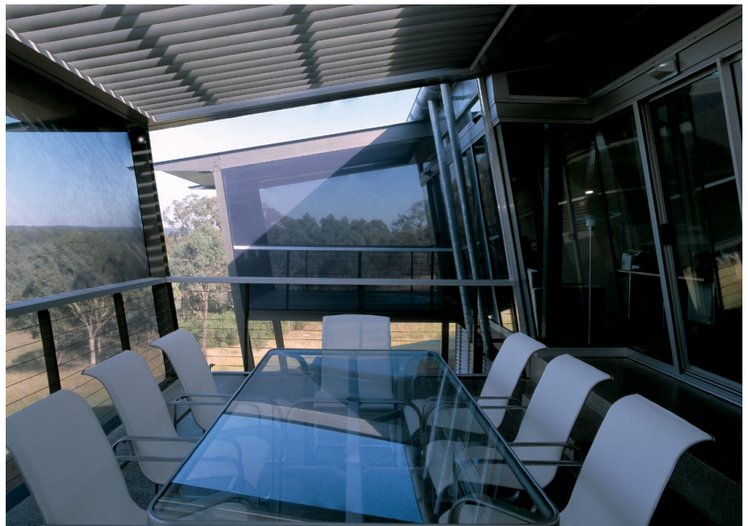
Duc's work here steals the site and steals the show. Off the shelf components have been carefully and convincingly assembled. Unobtrusive yet wholly engaging, it could easily be adapted to a higher density estate without serious compromise. Let's not hold our breath. No prizes for being ahead of your time. Amazingly, it's one of the few residential designs he has produced. Why? Few have ever asked.

"The design philosophy," says Duc, "has roots going back almost 30 years. The concept of my buildings satisfies the three 'L's' and has long been a foundation - long-life, loose-fit, low-energy buildings are even more relevant today than 1975. These buildings are robust and flexible, use energy efficient and recyclable materials, and observe passive and active climate control methodologies."

Situated on 40 rolling hectares in the wine producing belt between Cessnock and Maitland, the house had its genesis in the clients' willingness to buy a house of difference. Through enquiries they discovered Duc whose first response was: "I don't do Federation". From here, architect's and clients' needs dovetailed handsomely.

The owners discovered their 40 hectare block three years ago and were won over by the views across tree tops to the Brokenback Range. The property already had a three hectare vineyard of semillon grapes. Having worked in cities as diverse as Canberra, Sydney and Tokyo, they decided to call the property Inclination Estate because of their "inclination to escape from the crowded city".

The clients' primary requirements were for an open-plan living area, three bedrooms - two self-contained guests rooms, each with ensuite, a sitting room, gym and cellar. They also wanted a building as environmentally friendly as possible.

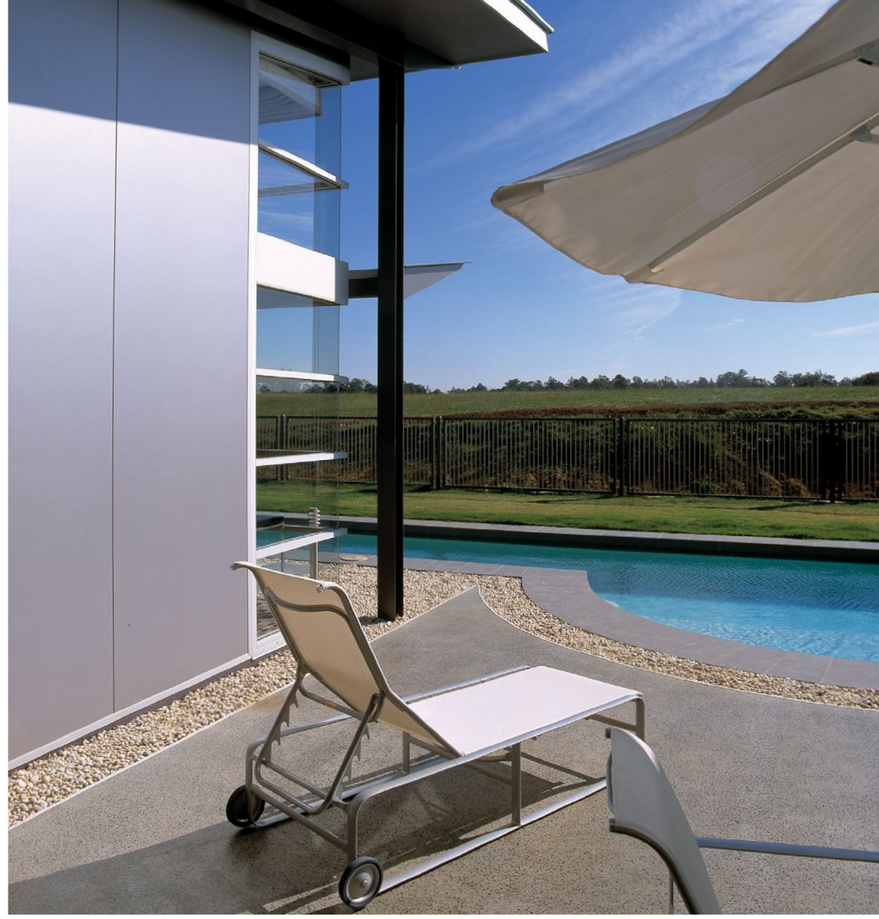


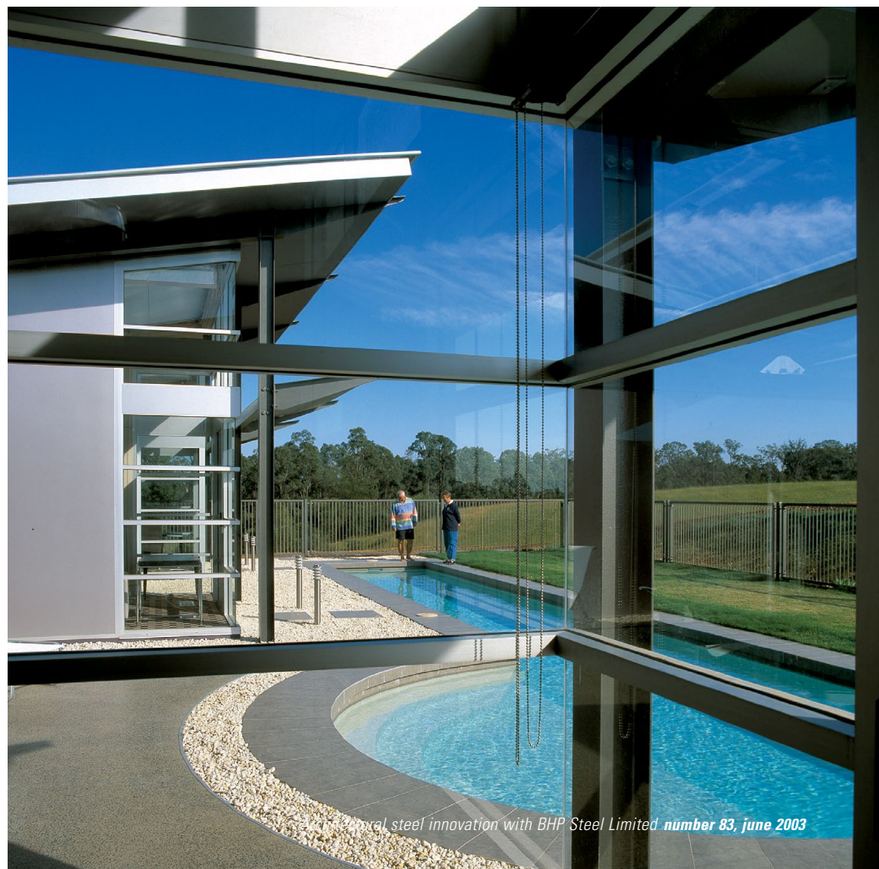
Better known for his commercial and industrial architecture, Duc demonstrates how to work a 'kit of parts'. A simple portal frame married to a panelised system of COLORBOND® Metallic steel in the colour Citi®, results in a lustrous, gem of a building. The architect's expertise and familiarity with an industrial vocabulary allows him to make the transition from heavy duty grunt to needle-point refinement. Duc appropriates the steel skin from the world of commercial and industrial practice and, by doing so, is among the first to make residential use of architectural panels finished in COLORBOND® Metallic steel.

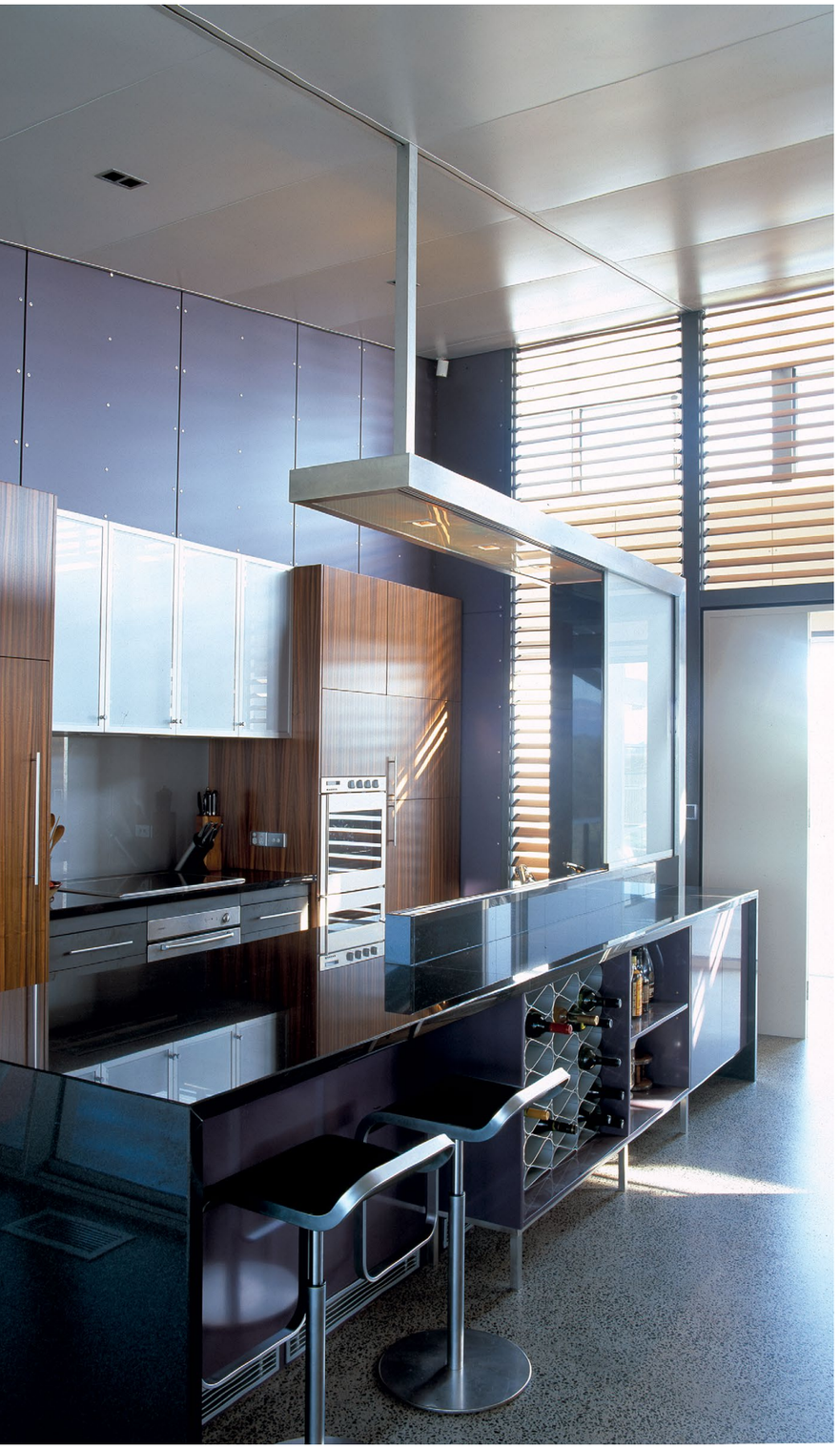
"There's a life that comes from the sheet steel that we didn't really anticipate," says Duc. "I knew about its insulation qualities, but the response to changing light conditions... it varies from silver to bronze and purple, is fantastic."

The house is sited just below the crest of a substantial rise on the property. Over the rise to the north is the Great Northern Railway Line, and earth mounds have been placed on the north rise to protect the house from train-generated noise and to create wind protection for the lap-pool.

Varying glimpses of the house are offered on approach from the entry to the property. The sense of arrival is heightened at night, provided by a softly illuminated water tower at the entry to the house. The tower enables some energy-free water pressure from the under-floor water tanks replenished by the roof catchment system. It also enables communication through satellite access and allows the building management system to collect and send data.







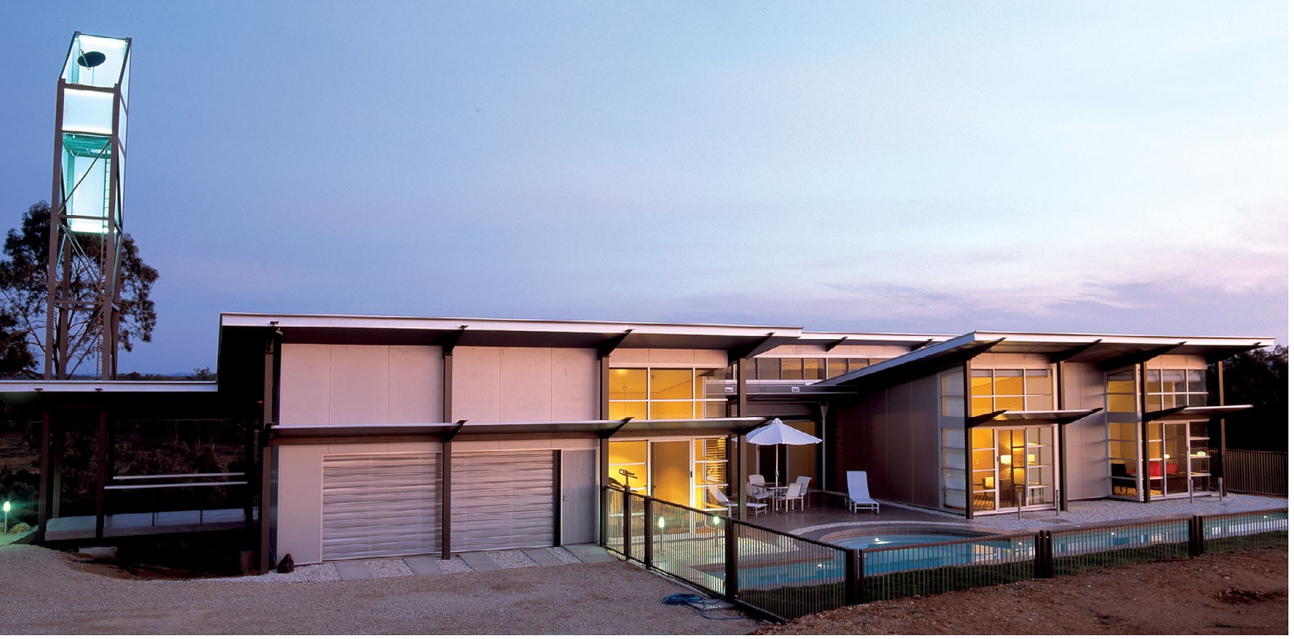
(above and opposite) Kitchen and central corridor are linked via a full-height wall of adjustable timber shutters while the clerestory glazing along the corridor is automatically adjusted to vent, or close in response to the central energy management system. Tech-screw secured wall and ceiling panels allow rapid service access.

The house was designed to sit lightly on the site and reflect the nature of the terrain. To achieve this, the structure of the house is expressed externally and generated by the slope. This is reflected on the south elevation by the inclined glazing of the main living spaces. An unrestricted aspect towards the Brokenback Ranges produces a landscape painter's composition.

Entry is also expressed as a bridge, and leads in a direct line to the gallery, which accesses all areas of the house. A post and beam structural system allows internal and external change with minimal disturbance and re-use of the building components. Internal and external walls are modular and panelised. Services remain flexible to permit addition of new technologies, or to retro-fit at any time without major works. With pre-finished components such as COLORBOND® Metallic steel insulated sandwich panels, hot-dip galvanised structural members and polished concrete floors, it is also designed for low maintenance.

The design provides a climatic environment to balance temperature extremes which can vary from below freezing to high 40 degrees. An Ultrafloor, concrete-based, flooring combined with careful solar control engenders passive thermal results. Floors are exposed to solar rays in winter and protected in summer by roof and blade overhangs.

Full height louvres to the gallery are adjustable to allow or preclude solar access. The same louvres on the north wall can be adjusted to exhaust air flow at a high level. Air circulation can be accelerated by pressurised airflow through floor vents and by drawing air over a pond on the south side of the house. Conditioned air vents, or air variations, are controlled by a building management system.



The changing mood of the silver skin reflects outback purple hues of the north elevation (top) and west elevation.

In winter, the gallery acts as a buffer air space. South walls are glazed and set at a 10 degrees angle to preserve the view by preventing reflections at night. The south wall is double-glazed. Louvres along the clerestory section are electronically operated to vent on hot days and electronically operated roof blinds allow daylight control along the south-facing verandah.

The roof is clad in ZINCALUME® steel in LYSAGHT CUSTOM ORB® profile for solar deflection and is insulated directly under the skin. The ceiling is an EPS sandwich panel faced with COLORBOND® steel and spans the structural module. Fans inhale and expel air to ventilate the 600mm void created between the roof and ceiling.

The external walls consist of 100mm thick EPS sandwich panels with a COLORBOND® Metallic steel external skin. Cross flow ventilation is provided to all spaces. East and west walls are the shortest walls and have few openings.

The internal walls have a quilted treatment using medium density fibre boards with exposed fixings for easy wall access. A similar system is used for the ceiling panels and flooring with ready access for new pipe, electric cable or computer leads.

The design means the house can be tuned to perform to different seasons. It has an energy management system that notes, amongst other things, when tank water levels need topping up.

The house has provision for air-conditioning using the energy efficient VRV heat-pump technology, but it shouldn't be needed except for the most extreme conditions," Edward Duc says. The ducting also supplies non-conditioned air to provide positive pressure to the spaces when required.

"It is important to the design that the solution should satisfy many issues," Duc emphasises. "Energy considerations should also be aesthetic ones. Functional solutions should engender enjoyment. It is a building that has been assembled with passion and it gives the owners a sense of managing issues such as light and temperature."

He recounts a recent round of golf with a prospective client and described how he planned to introduce an abundance of sunlight into a pair of units. "I don't want sunlight in my unit," came the retort. "Well," said Duc," revising his strategy, "at least we can do something with the other investment unit." The client responded that he did not want sunlight in that unit either.

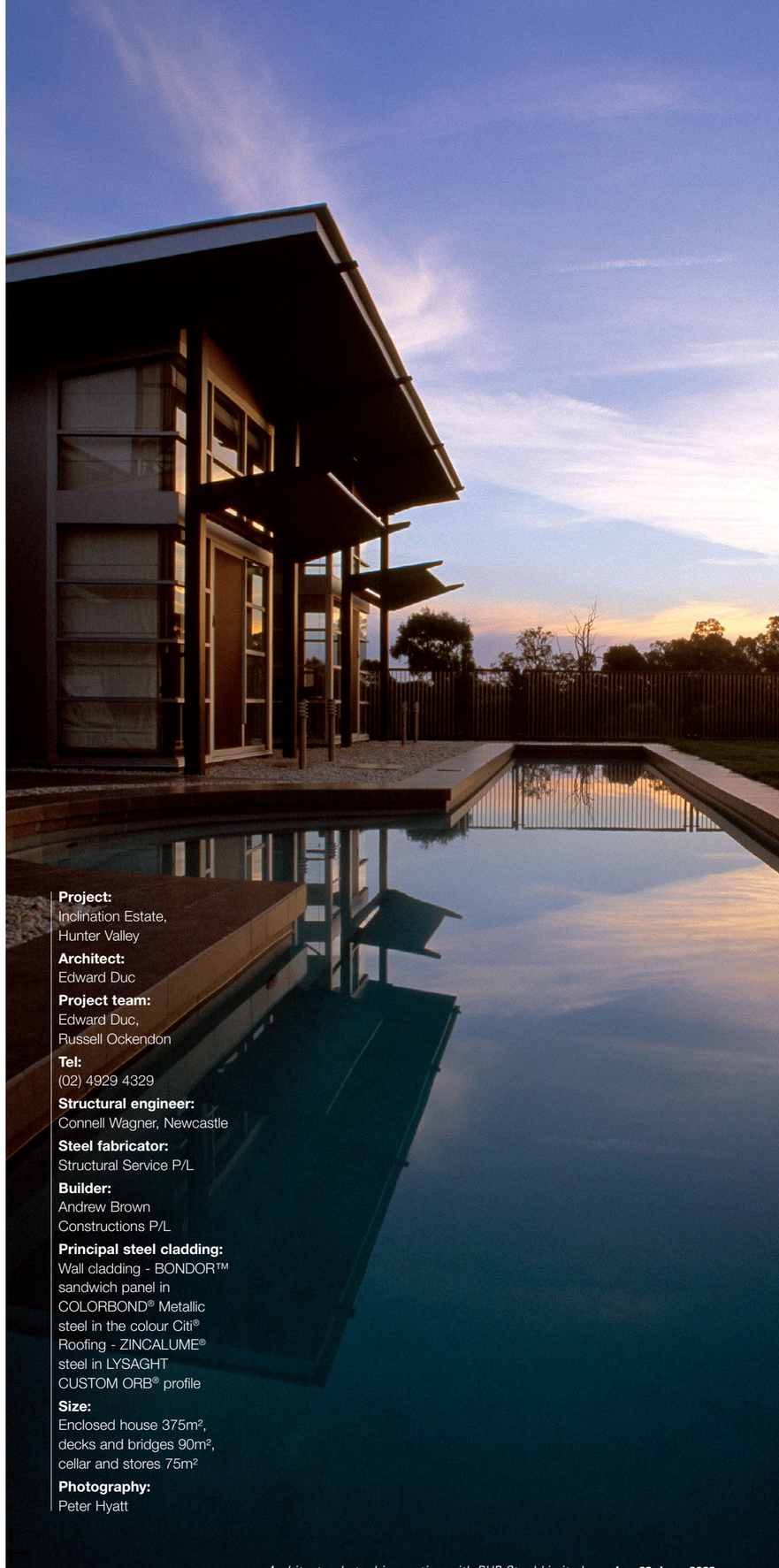
"That was pretty well it," Duc muses. "We hardly spoke for the rest of the game."

He says the story illustrates the need to be on the same wave-length.

"In total contrast, my clients on this house were instrumental to the result. They knew we would take some well calculated risks and were prepared for an adventure. As a result they have a house they love."

If architecture is to be treated seriously as habitable sculpture, it must be convincing in all respects. Who wants luxury finishes and imported gadgets if the essential qualities of space and place are missing? Ed Duc's work is modern vintage. It demonstrates how architecture can set the tempo for change. It represents a huge reward for effort and client faith.

**Peter Hyatt**



**Project:**
Inclination Estate,
Hunter Valley

**Architect:**
Edward Duc

**Project team:**
Edward Duc,
Russell Ockendon

**Tel:**
(02) 4929 4329

**Structural engineer:**
Connell Wagner, Newcastle

**Steel fabricator:**
Structural Service P/L

**Builder:**
Andrew Brown
Constructions P/L

**Principal steel cladding:**
Wall cladding - BONDOR™ sandwich panel in COLORBOND® Metallic steel in the colour Citi®
Roofing - ZINCALUME® steel in LYSAGHT CUSTOM ORB® profile

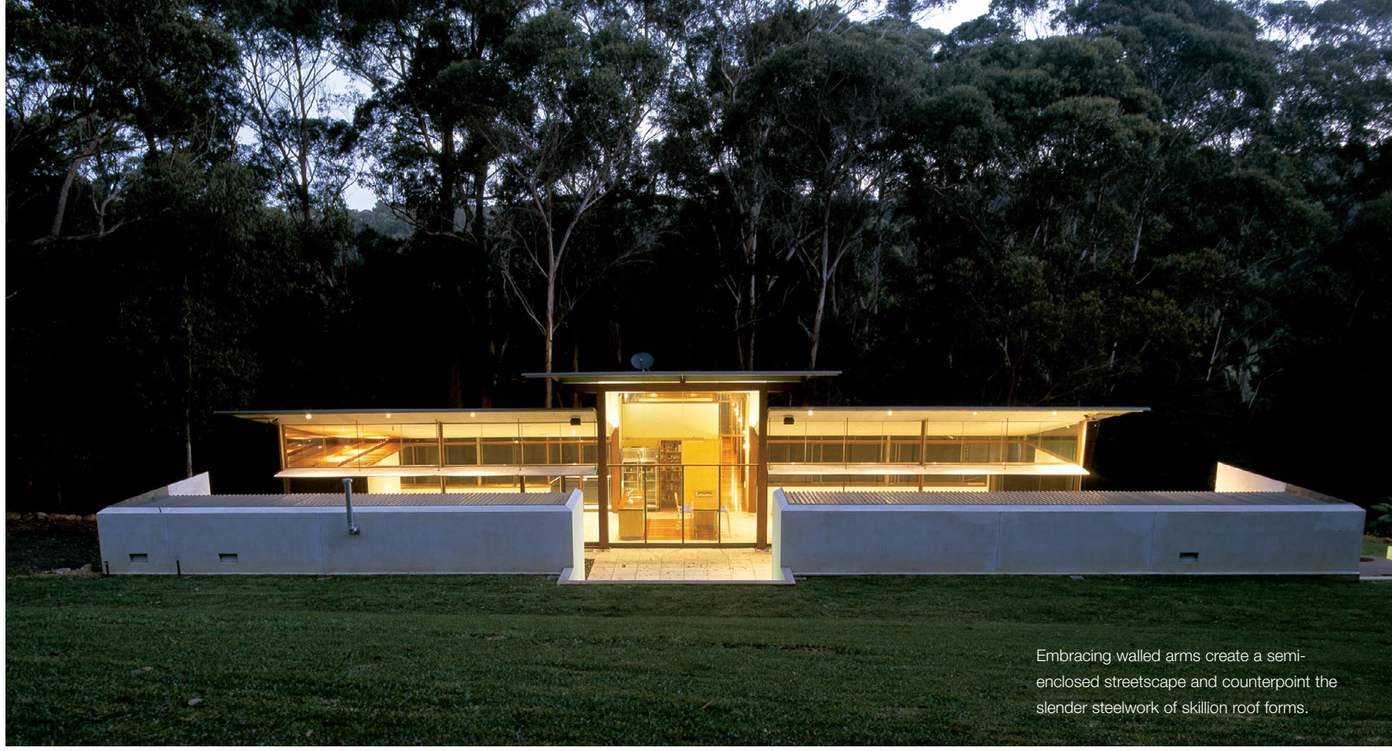
**Size:**
Enclosed house 375m²,
decks and bridges 90m²,
cellar and stores 75m²

**Photography:**
Peter Hyatt

# 010

**Project** Glade House
**Architect** Stutchbury and Pape
**Project Team** Peter Stutchbury, Fergus Scott, Richard Smith
**Builder** Glenn Cochran, Glen Boekman

## GLADE HOUSE



Embracing walled arms create a semi-enclosed streetscape and counterpoint the slender steelwork of skillion roof forms.

**Stutchbury & Pape's design for the Glade House at McMasters Beach, near Gosford, 70 kilometres north of Sydney, is the slashing diagram set into sub-tropical rainforest. In keen response to the bigger canvas, the project step-ladders from its steeply-sloping site. Part cave, part tree-house, the design speaks of a reverence for place. It is also resolved with devilish detail.**

Modernism is enjoying a renaissance in the quest for passionate authenticity and Stutchbury's work provides a distinctive vernacular twist. Based on utility and economical materials, presence or 'status' is achieved through intrinsic form, in preference to a hybrid flourish or lurid finishes. Robust yet delicate and finely-tuned. Stutchbury sees his 'style' as 'futuristic yet humanistic'.

Environmentally sustainable design is increasingly treated as a regulation fix rather than a holistic approach. Stutchbury, like Glenn Murcutt, frequently finds himself working in pristine environments where architecture is translated into a delicate presence. Stutchbury's reputation for an intuitive touch produces a mastery of matching architecture to its setting.

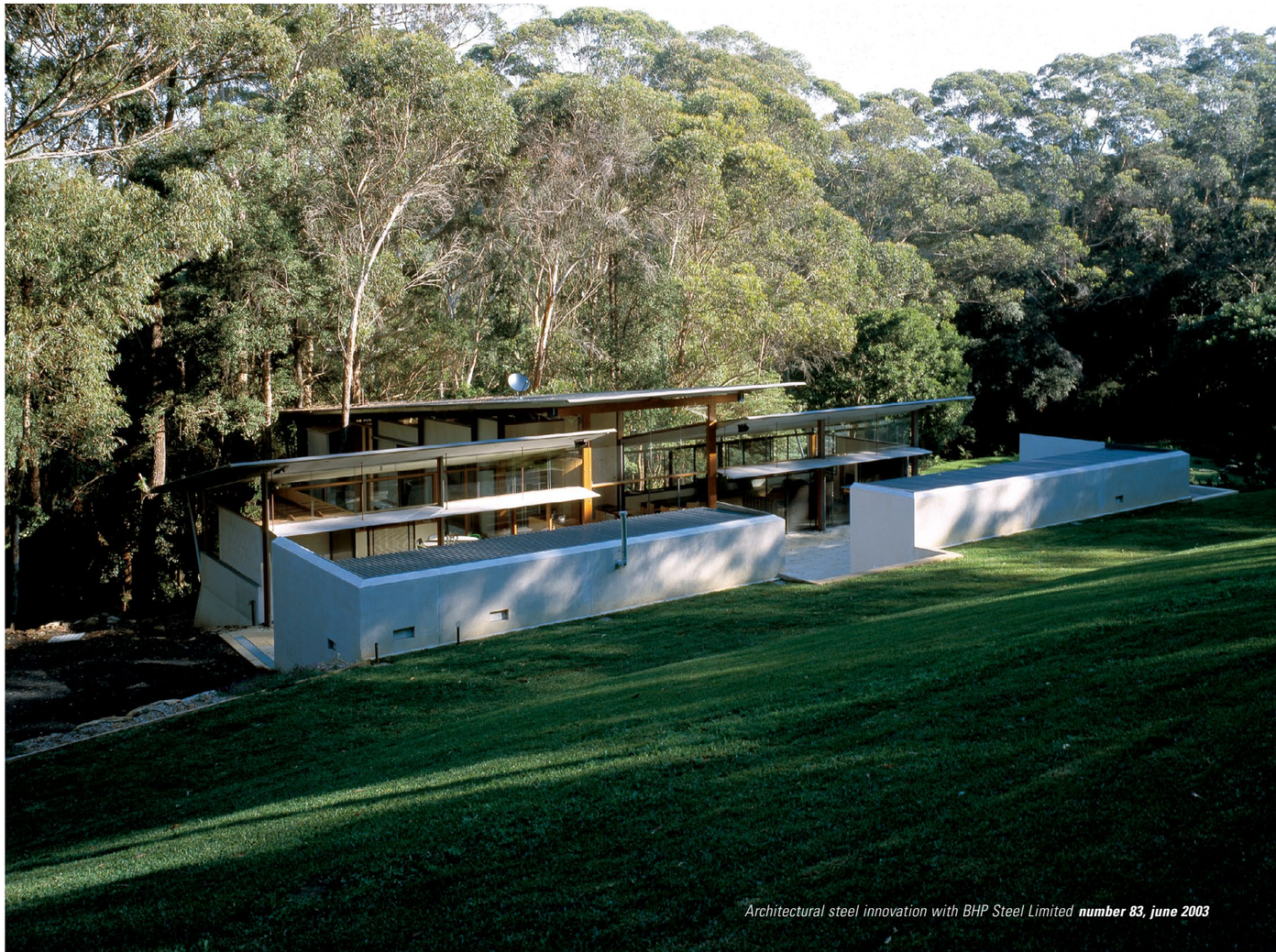
The Glade House is an Arcadian adventure that offers the opportunity for a rich variety of experiences - glade house, blade house and play house. Stutchbury taps into the psyche of the land and of his clients like few others. He tells contributing editor Peter Hyatt about the process and journey from initial client meeting to hand over:

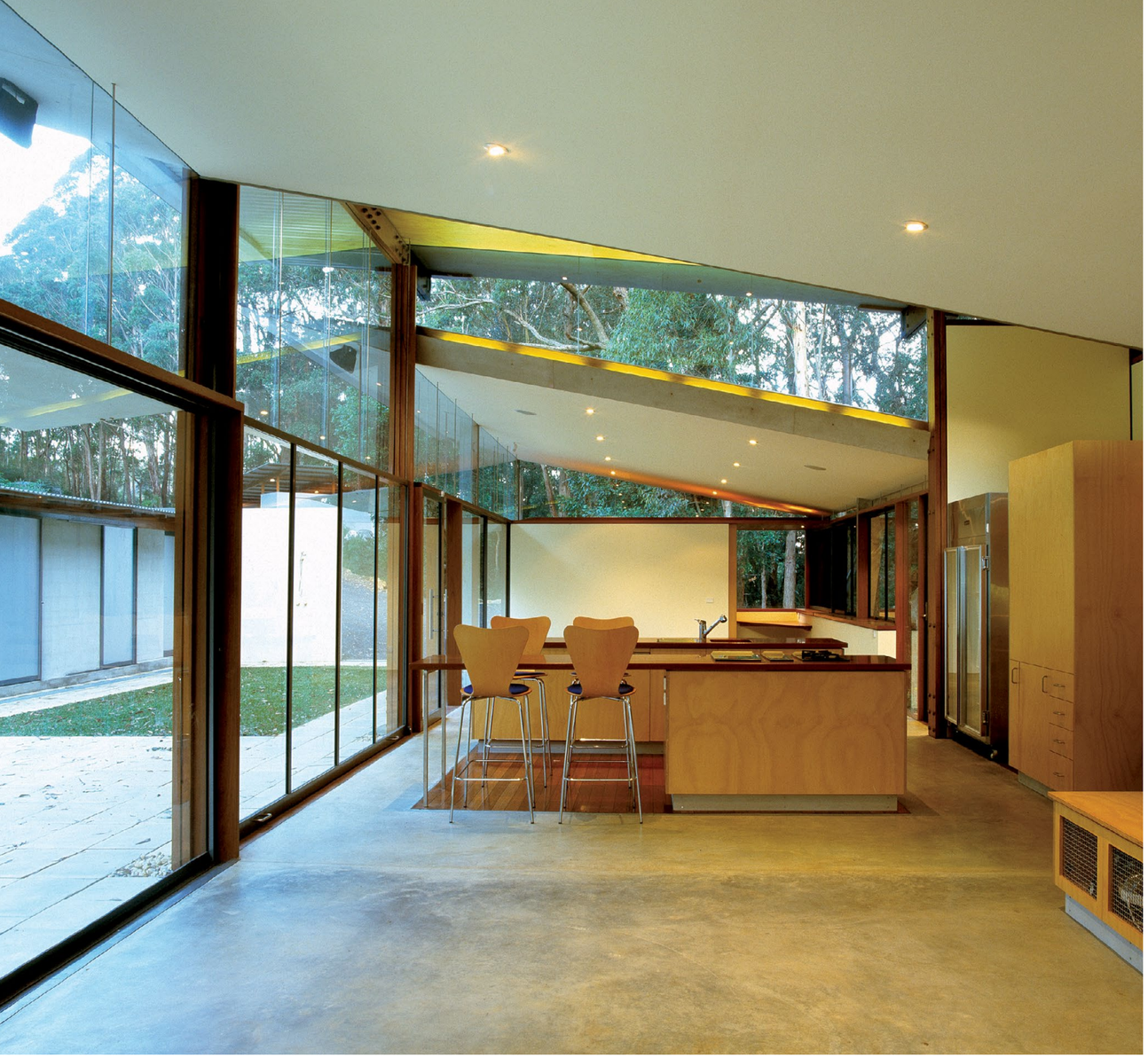
***What is the absolute constant in your architecture?***

The need to reveal the layers of a site, reveal the spirit of the place and uncover, or discover, where you are. That might sound very simple, but is it? I am very concerned and preoccupied with the value of our buildings; not the monetary value, but the spiritual or emotional value of buildings. That is much more important. People who use our buildings are given back values of understanding, given values of aesthetics, continuity and perception. Ultimately we include as many values as possible in a controlled, mathematical architecture.

***But you need to give it traction and make it real.***

The value of architecture is being able to see beyond the architecture. I'm finding great ease in that as you gather knowledge it becomes easier, but you have to tease it out and develop it.





View through main living/ dining areas reveals Stutchbury's preoccupation with dynamically floating roof lines and multiple apertures for framed views and natural light.

***And trust?***

People sometimes come to you with their life-savings and that is a huge responsibility. Unless I feel confident I can give them everything they entrusted to us, then I would question my practice.

***What influences your architecture most of all?***

There's the overall ambience of the place that can be translated by the building. That's the great beauty of architecture, that everyone has a slightly different translation. Our translation happens to have a fundamental respect for land and people.

I am always very concerned about the manner of the building in its relationship to the land.

***What influences outside of architecture impact your work?***

I had a very important meeting with an Aboriginal elder called Rex Harrison who spent four or five hours with me explaining the spirit lines of place. That is something I had an intuitive sense about, but he explained it in a way that made great common sense and reinforced much of what I do.

***You mention clients. What do they contribute, apart from paying the bills?***

The clients I work with, across the board, are my most influential educators. I'm blessed to be working with some leaders in their fields and they educate me beyond the discipline of architecture. They educate me because I'm now able to listen a lot more than I once could. I don't have the insecurities you tend to have as a younger architect. They are informing our thinking and our work in an abundance of ways.

***You've described your work as futuristic yet humanistic, yet those two characteristics can be difficult to reconcile.***

Exactly. And it's got so much to do with the people. I embrace sitting down and listening to my clients. It's probably the most profound part of the experience. Then I have to come up with something they will embrace. Seeing the look in their eyes when you show a client that first idea is why I do architecture.

***What is the most satisfying aspect of the Glade House?***

The siting of the house is well thought through. The scale of the resulting building survives. There's that idea that you run a set of timber portals down the hill and catch the sun at the top of them and where you catch the sun becomes your living environment and the portals becomes this wonderful change of scale of bedroom, bathroom wing that are almost dormitory like - but of course not, because of the wonderful opening to the east and the morning light. That utilitarian approach put into the idea works very well.

***The 'patio' space is almost a small street between a major wall and floating elements.***

Part of stepping into the bush for us was making outside rooms. The major on-going development of this building was how you develop that thought that a lot of our activities can work quite externally to the rest of the building. Families will use the house - parents and their three grown-up children and their families.

***Circulation through the house is a process of contrasts, but you always remain connected to the soaring tree-trunks and dappled shade.***

I would hope that as you walk into the house that you always get a sense of the forest. It sounds simple enough, but the quality of light is influenced by the openings. If you notice where the light comes from, you will see that all the skillion roofs are held off walls with infill glazing. Beyond that the timber portals have timber blocks on top of them along the bedroom wing. This further lifts weight off the building and it becomes a roof that floats above the portals. That is very satisfying and I hope quite beautiful.

***One really enjoyable aspect of the house is this very rigorous, clear, diagram that produces beautifully ordered spaces. But there's more. You start to see this tremendous detail and connections such as the laminated hand-railing, roof raised off the portals and strategically placed glazing that makes the bush larger than life. Those aspects elevate it well beyond just a shed.***

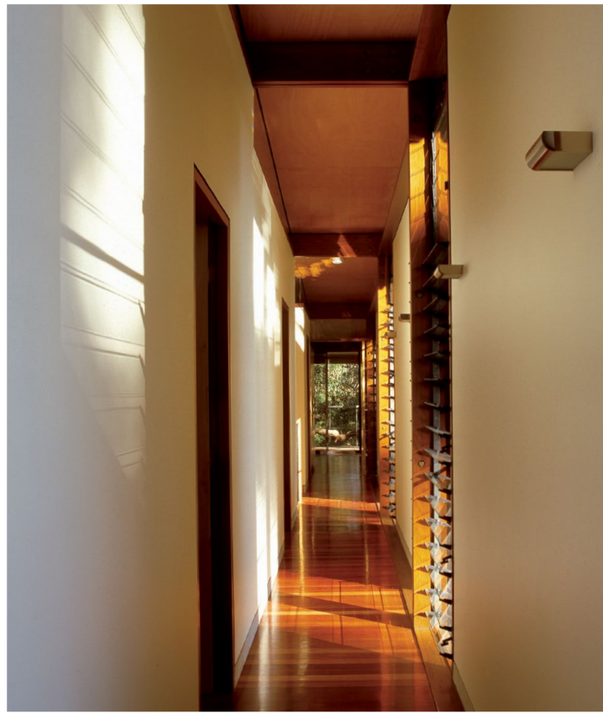
The mystery of architecture is how you launch it beyond the diagram. How do you give it hope? Unless you give it refinement of thought then surely your thinking is never completed for a particular project. Refinement in many ways determines completion. It's an interesting balance because it is budget dependent, emotionally dependent and priority dependent.

***The Glade House really explains itself directly as thoughtful ESD.***

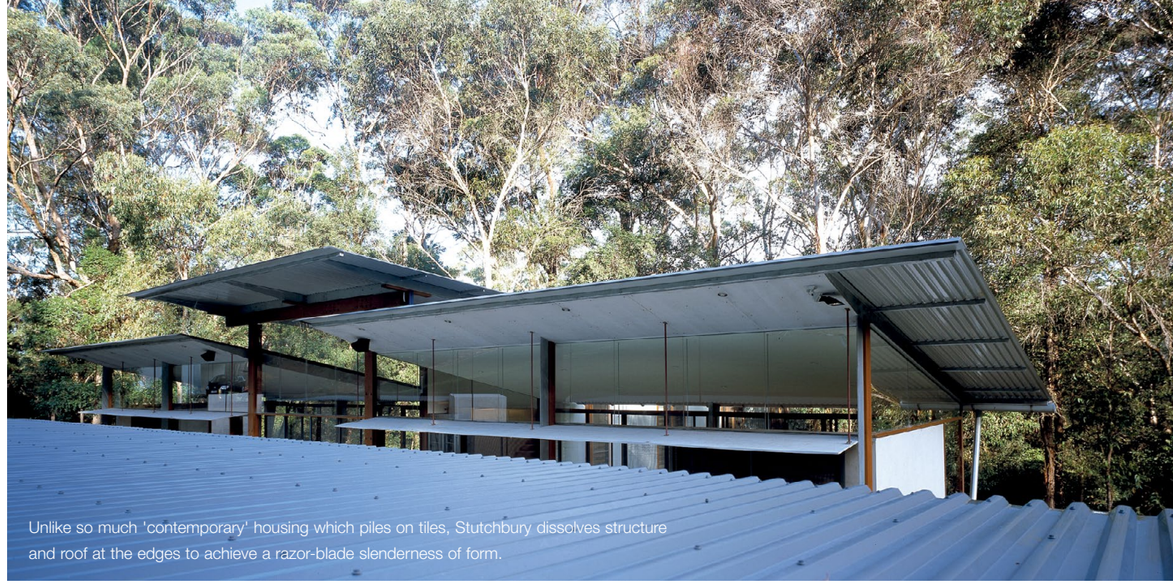
As long as you've got thermal mass relative to thermal exposure and you can evacuate the heat and keep it in when needed, then you've got a balanced house. We use that principle extensively and it is proved by the Reeves House in Clareville. It works equally well in summer or winter.

***Is there a downside in the rush towards ESD?***

It's easy to fall back on the principles of ESD without looking at the opportunities of architecture.



ZINCALUME® coated panels 'hang' to create an elegant, silver garmen. Backed only with insulation, the steel sheet contributes to an overall luminosity.



Unlike so much 'contemporary' housing which piles on tiles, Stutchbury dissolves structure and roof at the edges to achieve a razor-blade slenderness of form.

***You have sited the house in the least likely of places - at the bottom of the property.***

There is a tall stand of trees to the north, along the ridge-line, so this was the only way we could capture direct sunlight. Had we built higher up the hill we couldn't have stepped the house into the bush or achieved the same levels of natural light.

***Your skillion roofs are razor blade thin and light. Is that a part of steel's appeal - that thinness of edge; its floating umbrella lightness almost becomes a disappearing trick?***

Steel is such a manageable material. It is as logical as it gets. If you use steel regularly and learn about its stress capacities and bending and sectional sizes related to stiffness and so on, you can do buildings that are incredibly explanatory.

On the Glade House all our walls are 0.48mm ZINCALUME® steel fixed onto studs. There isn't even backing material and it performs remarkably well because it's hung on the wall. Once you understand how to 'hang it out to dry' as it were, do reverse brick veneer with insulation behind it, then this system is probably the most efficient on the building.

***In the 2002 national architecture awards 11 of the 14 category projects were largely, or totally steel based. Is this becoming a definer of difference between the lightness of architecture and heaviness of building?***

Fashion is driving it and I'd say Glenn Murcutt is a part of it. It has other advantages such as economies and appropriateness. Architectural tools rather than engineering tools are driving it.

***Minimalism has really re-surfaced with a vengeance and steel seems highly suited to that spareness and utility where the function drives the form.***

There seems to be a renaissance and it's as much to do with an awakening of people wanting to discover different living from what they have been forced into. If you buy into the Sydney market you've really got very few choices other than position. You've got the three bedroom bungalow or '60s number and you're so often stuck.

***Making clients feel comfortable and secure is one thing, making them feel connected to, and positive about place, is another. Are there any other qualities you try to deliver?***

The Glade House is extraordinarily refined and contained. That says much about the clients. We've just finished a house in Newcastle and that is really 'tigerish' and refined, but so are the clients. One we're doing in Port Stephens is exploratory and again, so are the clients. I could appropriate the building for the client through my eyes and that was a big step. People often say those buildings appear very different from each other but if you put a string line through the whole lot you will see the heritage. What they share is an informed language and that continues.

***Is architecture getting easier or harder?***

The emotion behind it is getting easier to communicate. The practice is becoming burdened by growing litigation, over-riding councils and insurance availability that means builders can't afford to do their job. But for me each job is an incredible joy to anticipate.

***Do you have a dream client in mind?***

All of my clients have been dream clients. Mind you though, we travel through a lot to start a building. Both parties need to confirm commitment.

***What has been the biggest and best lesson you've learned from architecture?***

To listen.

**Project:**
The Glade House

**Architect:**
Stutchbury and Pape

**Project team:**
Peter Stutchbury, Fergus Scott, Richard Smith

**Tel:**
(02) 9979 5030

**Structural engineer:**
Professor Max Irvine

**Steel fabricator:**
Mecha Engineering

**Builder:**
Glenn Cochran, Glen Boekman

**Principal steel cladding:**
Flat sheet ZINCALUME® steel (0.48mm) Roof cladding-COLORBOND® steel in LYSAGHT SPANDEK® profile

**Size:**
502m²

**Building cost:**
$2,500m²

**Photography:**
Peter Hyatt

# 016

**Project** 6 Uralla Court, Blackwood, Adelaide, South Australia
**Architect** Jason Pruszinski
**Builder** Jason and Melanie Pruszinski

## VIEW POINT

**Architect Jason Pruszinski thought he would never take his work home. Then, as house-hunters, he and his wife Melanie found that the homes on offer called for a change of plans.**

"I never intended to build my own home," says the South Australian architect of Woodhead International. "But when my wife and I started looking at homes we couldn't find anything that responded to the local climate. We found that the spaces within most houses did not relate to each other or their external environment."

Pruszinski and wife Melanie decided to choose their own site then design and build their own home - one that would be open and flexible to suit their changing needs. "We decided to find the right piece of land and build on that," Jason explains. "And this was the first bit of land we set foot on - we both agreed it was perfect."

The views from the 1039 square metre block are big. Set in Blackwood, in the Adelaide foothills, the land was sold off by the local Scout group when it moved sites. The north-facing block slopes downward towards the bottom of a valley, offering uninterrupted views of the native bush surrounds.

Nestled in the bush surrounds, the home in the Adelaide foothills has been designed to minimise disturbance to the native surrounds and maximise the views.

Pruszinski is an architect who believes that Australian architecture should capture the incredible views afforded by the Australian landscape, and Melanie, who grew up in the area, readily agreed that any design had to maximise the views and minimise disturbance to the site.

Hand drawing the designs rather than using CAD, Pruszinski was able to produce plans that he describes as a "photograph" of what now stands on the site. "It's true in architecture that what you draw is exactly what you get," he says. "If it doesn't look good on paper then it won't look good full-stop."

But the plans, for Pruszinski wearing his architect's hat, were the easy part. To minimise costs and to ensure they achieved the result they wanted, he and his wife decided to build the house themselves, working nights and weekends - "long weekends"- to make the plans a reality. Over 18 months, Pruszinski the builder came to the fore as he built the home from the ground up. Apart from some assistance from a plumber and electrician for specific jobs, the couple did it all themselves - from preparing the footings to putting in the kitchen sink.

Entry is via a suspended walkway, with the home opening up to the spectacular bush views

The house that now stands on the site is spectacular. Architecturally the design is brave and bold in terms of both aesthetic appeal and the materials used. As you drive down the winding road to the end of the cul-de-sac, the house is confronting amid the suburban brick and tiled roof homes. Its most striking feature - the suspended pitched roof - provides a visually distinctive presence.

"Initially there were some concerns about the eye-catching design," says Pruszinski, "but the building has been extremely well received by neighbours and passers-by alike" - to the extent that over a dozen people have knocked on the door, commented on the design and asked who the architect was.

"One of the design features of the house was to orient it away from the street to provide both a shield from the hot western sun and a visual screen," explains Pruszinski .You enter the front door from a suspended walkway to reveal uninterrupted and spectacular bushland views from within. The street wall filters out any other development, providing the interior with a sense of tranquility and privacy.

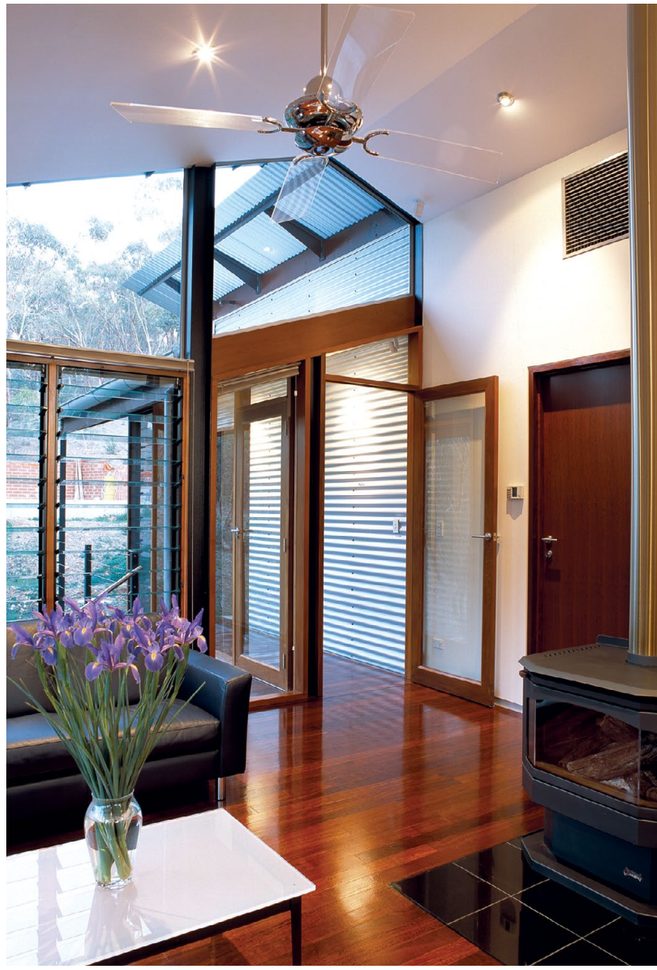
The design relies heavily on ZINCALUME® steel for external walls and roof cladding, giving it a distinctive "Australian" look and offering environmental benefits. "The use of steel cladding is becoming increasingly popular as people become more and more informed about environmental design issues and passive solar design," Pruszinski says. "In many cases lightweight clad, insulated walling and roofing perform far better and provide a more responsive solution to Australia's unique environment than heavyweight masonry walls or tiled roofs. Steel is a great option for lightweight walling and roofing and it has a unique Australian identity."

But Pruszinski, the architect, does not use any one material just to make an expository statement. "All of the primary structural elements are exposed and appropriate materials selected so that they are themselves attractive features," he explains. "There are  no stuck on elements for decoration - what you see is what you get. Things like the industrial beams and extended eaves are actual structural features, but also give a certain visual appeal to the home."

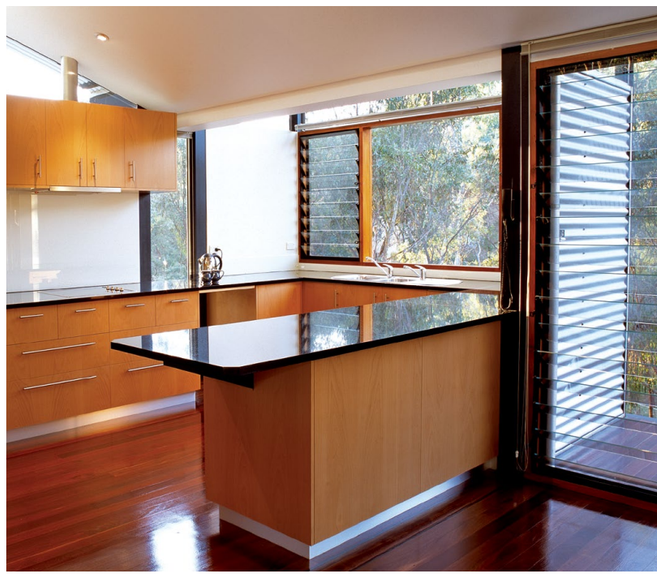
The use of steel beams as the basis for the 'shell' of the home not only allowed easier construction but also gave Jason and Melanie Pruszinski the freedom to create large single-span open spaces within the home and large cantilever overhangs to the northern balcony. "We relied heavily on steel because of its lightness and strength," Jason says. "Also, no other material could endure the extremes of weather that this structure faces."

In terms of design, the home's most arresting feature is undoubtedly its roof - which has been created to address both the effects of the sun and to capture rainwater. The main roof, pitched at a 19 degree angle, runs down into a box gutter that carries all the rainwater into a 22,500 litre rainwater tank made from AQUAPLATE® steel.

"When we rolled in the 22,500 litre water tank - the largest size that can be constructed off-site



The home has been left intentionally uncluttered with the redgum floorboards running throughout the living area (above) and the kitchen (below).



and transported in - I thought it would take months to fill up. But it was full after the first rain we had. It's plumbed to both the laundry and kitchen so we are well on the way to being self-sufficient in water," Pruszinski said.

The AQUAPLATE® steel tank also acts as a defence against bushfires. The area, only 15 minutes from Adelaide's CBD, hasn't been hit by bushfires for over 30 years, but the lush green canopy and dense bushland of the Adelaide Hills mean it nevertheless remains susceptible to their impact. The tank is linked by a petrol-driven pump to a concealed firefighting sprinkler system within the walls and roof of the home.

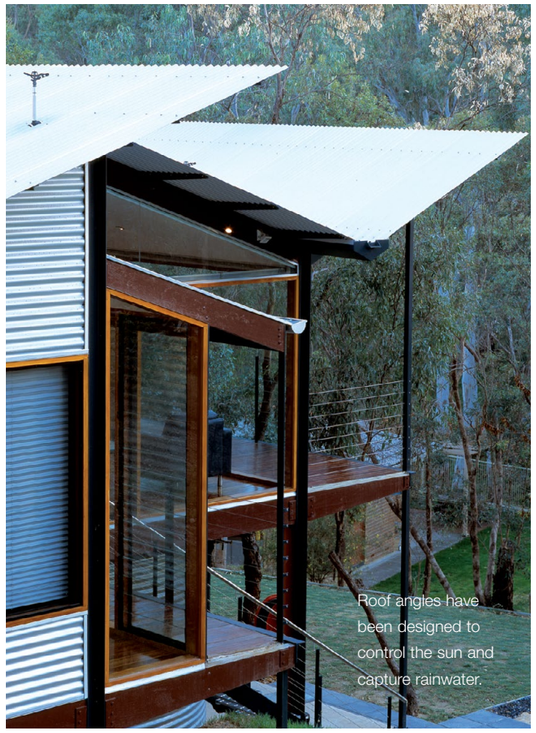
The north-facing side of the house opens up to the spectacular views - the roof slopes upwards at an unusual 25 degree angle with the eaves extending for almost three metres beyond the roof. "Rather than have a verandah roof that slopes down and covers the balcony, the upward sloping eaves enable uninterrupted views," Pruszinski says. "It is also very comfortable, temperature-wise, throughout the year. The extended eaves are angled to block the sun in the summer months, while in winter, the lower sun angle floods the interior with warmth."

The thermal properties of steel cladding combined with the high density insulation are effective in controlling the extremes of temperature. There are also cleverly concealed pleated thermal blinds for winter nights to retain the warmth, a wood heater and even underfloor heating in the bathroom.

Back to that view, and the home features a spacious, open planned "public" zone that houses the living, dining and kitchen areas and overlooks the surrounding bushland,

Large floor-to-ceiling glass doors open up to bring the outside in.

The design relies heavily on ZINCALUME® steel for both the wall and roof cladding - providing a distinctive "Australian" look.




which is brought "inside" by the use of large panels of floor-to-ceiling fixed glass, louvre windows and glass doors. A second "private" zone, incorporating two bedrooms, bathroom and laundry is embedded in the upper side of the slope to provide privacy and security. While this whole living area covers only 140 square metres, the open-planned design and the blurring of the inside/outside realms creates the feeling of space to spare.

Living areas have been left intentionally uncluttered - to reinforce this sense of space and modernity. Pruszinski has even custom designed the furniture - including steel framed tables - to complement the design.

Redgum floorboards run across the internal floors and extend through to the balcony - which itself is roomy, covering 25 square metres. Cedar frames around the windows and doors mark a stark contrast to the steel elements. The external walkways and staircases use steel mesh to continue the overall modern, steel feel of the home and to allow rain to drip through and nourish the vegetation underneath.

An internal ZINCALUME® steel-clad wall on the far-end of the 'private' zone marks a separation between the end of the open living room and the start of a more private master bedroom. "By continuing the exterior ZINCALUME® steel cladding to the inside," explains Pruszinski, "I have managed to create an enclosed verandah, so as to accentuate the transition from the public living space to private bedroom quarters."

While this is where the home now ends, Pruszinski, the builder, plans more. Looking from the glass-enclosed hallway out onto a concrete slab a few metres away, he explains that stage two - two more bedrooms and an ensuite in the same steel style - is on the drawing board.

"This enclosed verandah will continue and form a bridge over a natural water course which runs between the two stages," he says. "We didn't want to take on too much at once so that's why we completed the main home first. But it was always the plan to build a second pavilion once our family started growing - as it is now."

Back outside Pruszinski points out the landscaping that he and his wife also did themselves. A small lawn was created at the rear and all the rocks excavated during the initial construction phase were retained by Jason and Melanie and used to build a feature dry-stone wall along the driveway - "a back-breaking job," according to Jason, "and one I probably wouldn't do again."

While few trees were cut down to build the home, Melanie and Jason proceeded to plant more than 60 in their front and back yard to bring the bush even closer. "We extensively researched and sourced local indigenous seedlings native specifically to this area in order to match the local climate and soil conditions," Pruszinski says. "We wanted to retain the character of the locality as this was the very thing that attracted us here in the first place. The choice of local plants meant that no additional watering has been required."

Leaving the house as dusk rapidly swallows the valley in darkness, the reality of the home Pruszinski created from his original hand drawings is genuinely impressive. But while the look was what was most striking on first impressions, and remains so at departure, it is the functionality of the design that provides the more enduring impression. The control of the sun and rain, the simplicity of form and the adaptability to the site have all been very carefully and painstakingly thought through. Add to this the fact that the couple built the home themselves from the stone walls to the rooftops, and you are looking at a remarkable achievement indeed.

**Paul Cheal**

**Project:**
6 Uralla Court, Blackwood, Adelaide, South Australia

**Architect:**
Jason Pruszinski

**Builder:**
Jason and Melanie Pruszinski

**Landscape:**
Jason and Melanie Pruszinski

**Rollformer:**
Fielders

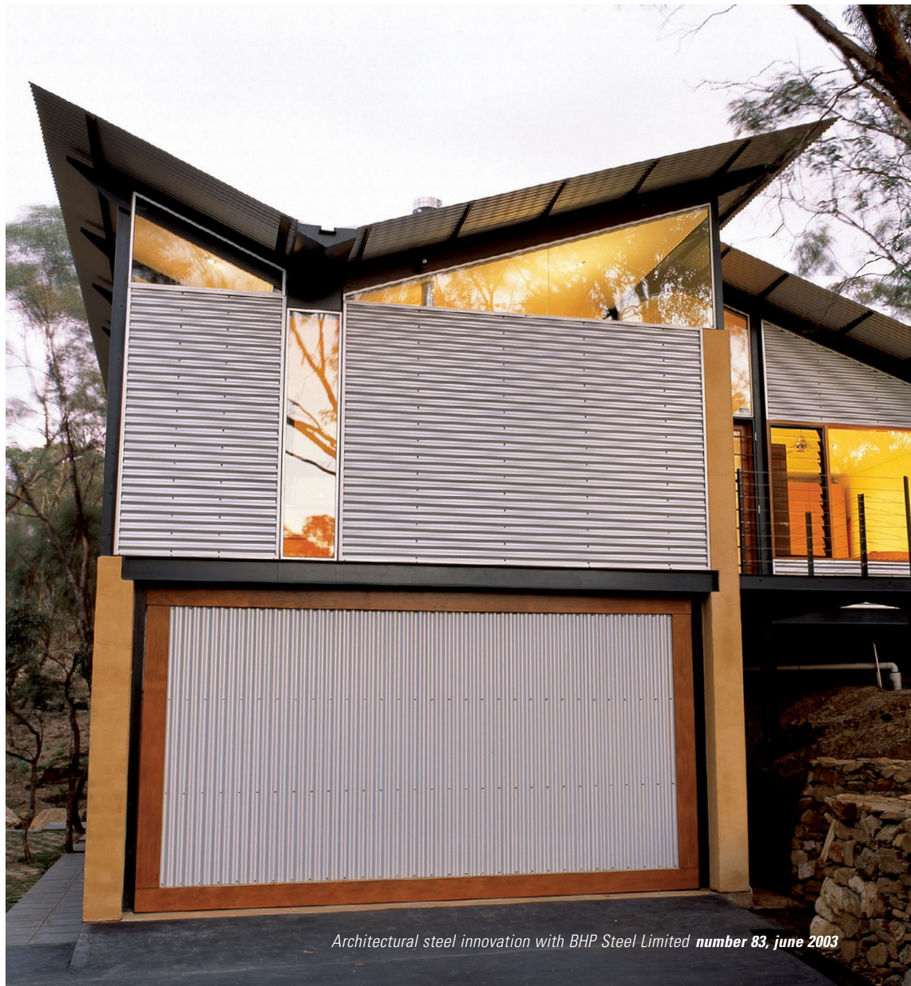
**Size:**
240m²

**Cost:**
$710m²

**Principal steel materials:**
Corrugated ZINCALUME® steel used as roof and wall cladding. AQUAPLATE® steel rainwater tank - 22,500 litres Structural steel members - Class 2.5 Blast Clean & Inorganic Zinc Silicate with acrylic top-coat.

**Photography:**
Paul Bradshaw

From the street: rather than conform to convention, the home is orientated away from the street to provide both a shield from the hot west sun and a visual screen.

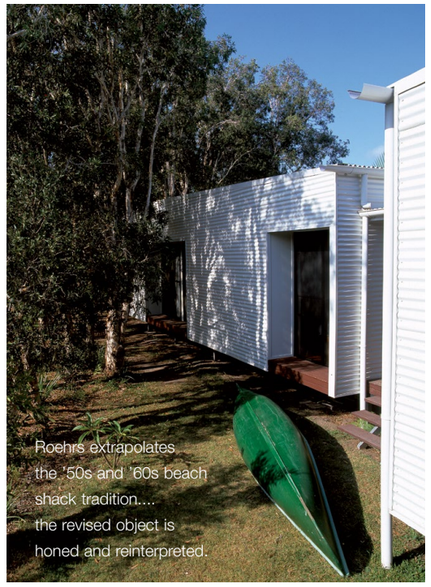


# 024

**Project** Lake Currimundi House
**Architect** Mark Roehrs
**Project team** Steffen Tuck and Mark Roehrs (design), Alan Rogers (documentation)
**Builder** A. Rolley & Sons

## SAND WEDGE

**Situated at the edge of Queensland's Lake Currimundi on the Sunshine Coast, the Roehrs House navigates the potentially dangerous waters of family/ professional relationships.**



Roehrs extrapolates the '50s and '60s beach shack tradition.... the revised object is honed and reinterpreted.

Designed by Mark Roehrs for his parents Wendy and Rudi, projects such as this run the risk of becoming the perfect storm. Blood ties can easily lead to strained relations. Doctors, lawyers and architects, conscious of entanglements with immediate family, often prefer to disengage early.

As an associate director of Daryl Jackson, Roehrs is more attuned to the demands of major institutional projects. The challenge, shift in scale, and very individual expectations of a house for one's parents, is a huge leap from the $105 million bio/science laboratory at the University of Queensland he recently handled.

The Roehrs clan ran the gauntlet and survived the process with relatively few tense moments. "I've got a pretty good relationship with my parents. They were active participants in the design process and appreciate the importance and integrity of the design idea. They didn't hold back on critique so I provided far more design options and alternatives than you would ever do in normal circumstances," Roehrs explains.

"Our biggest disagreement was that my mother wanted to add an upper level. I convinced her that the advantage in terms of view was almost negligible. I suggested that the relationship of the house and accessibility to the ground was more important," he says. "She eventually saw that the flow of people through the house to and from the lake was what mattered."

His parents had previously commissioned houses designed by Noel Robinson and Clare Design, so were comfortable with the process of 'buying' architecture. "I guess you could say my parents had no small part in my becoming an architect. They always had an appreciation of good design."

Roehrs extrapolates the '50s and '60s beach shack tradition of simple fibre cement forms that remain along the Sunshine Coast. The revised object is honed and reinterpreted from an essentially featureless box into a more sophisticated volume and articulated with a rippled steel skin.

The slender treatment and detail of walls are exemplified between access to the wet deck and the elevated front 'verandah'.

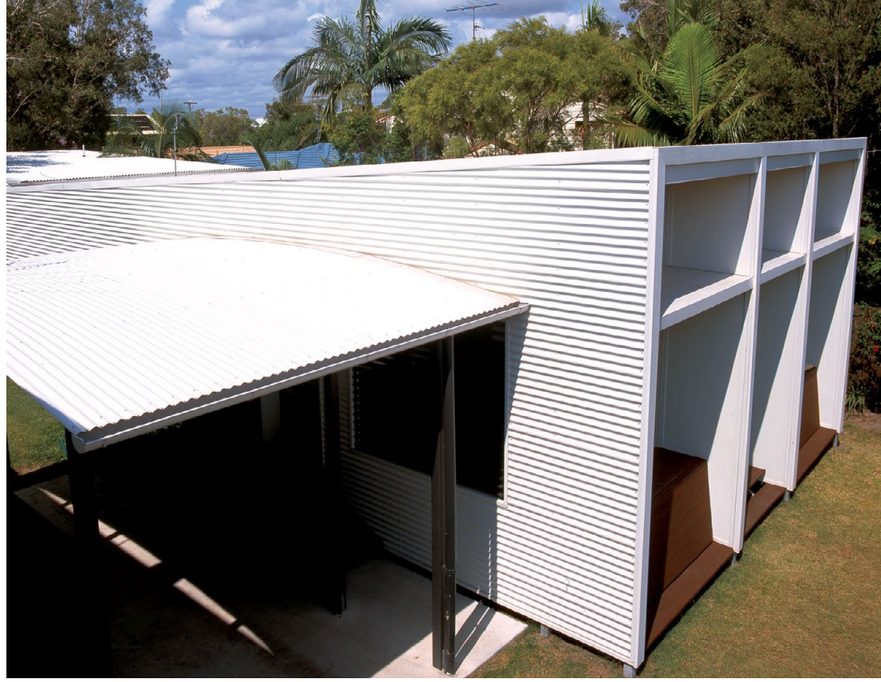
Set almost a kilometre from the main surf beach, the residence is a response to the lifestyle provided by being on the shores of a tidal lake. "It's the big swimming pool in the front-yard where everyone canoes, kayaks, swims and fishes," he says of his visits to the home which has to cater for up to four families at one time.

Separated from Lake Currimundi by a little used roadway, the property is defined as a pair of white corrugated steel wedges among a grove of paperbark trees. Each wedge has a specific purpose - one for living, the other for sleeping quarters. These 'float' amongst the paperbarks at lake's edge. Reminiscent of the beach shack, the simple crisp forms contain flexible open living spaces comfortably catering for two or for extended family gatherings.

"Apart from site response, economies were a key driver of the result. A simple portal frame is clad entirely in corrugated COLORBOND® steel and the economies at about $700 a square metre are remarkable," he adds."Cost savings were also achieved without compromise to thermal efficiencies by trimming projections and screening devices from the design."

"I intentionally avoided some of the Queenslander traditions of higher degrees of complexity on external facades with roof overhangs and extensive battening of windows for sun-shading. They're more expensive tactics. So here the idea was to make the exterior facade very simple - to take the cubic form and cut it, slice it and erode it - and that creates the sun-shading. It's a basic modernist tactic applied to a beach house that makes some direct Corbusian references." Battening, for instance, is restricted to three key locations - the breezeway that links the centre of the house and the western elevation where the battens form part of the wall plane.

The holiday house quality is a very deliberate reference.



(above) "...the idea was to make the exterior facade very simple - to take the cubic form and cut it, slice it and erode it - and that creates the sun-shading."

(left and opposite) Simple, inexpensive materials carefully crafted provide an authentic beach kiosk feel without the need for kitsch nautical or maritime references.

The formality and grid form of the front elevation is highly accessible.

Built-in seating and sun protecting brise-soleil draw occupants to the lakeside aspect.

"The last thing my parents wanted was endless chores and maintenance. The advantage of COLORBOND® steel is that you don't have to re-paint. It will be washed down every 12 months and that's about it. Fortunately conditions by the lake are quite benign and protected compared to the surf coast."

Set 800mm above the ground, the house is elevated enough to 'float' and provide an improved aspect across the lake.

The Roehrs family had a number of goals in mind when they arrived at this pair of shells by the lake near the sea. Because the pavilion also evokes beach kiosk, the formality and grid form of the front elevation is highly accessible. Built-in seating and sun-protecting brise-soleil draw occupants to the lakeside aspect. This extended verandah space provides a primary entertaining and relating zone on warm days and balmy nights. Large slatted windows on each wall help screen views towards neighbours while directing breezes. The wedges rise to north and south to engage the landscape and air movement.

A stackable glazed wall allows seamless flow from inner living to the outer deck. A screened breezeway connects the wedges as a wet deck entry point. Retreating further into the front wedge of the house is the more traditional living, dining space and kitchen. Roehrs repeats the use of glass louvres and timber shutters to provide ventilation flexibility and comfort levels.

The house uses a simple timber frame with steel purlins and steel portals. Fins along the north and south face of each wedge are subtle when viewed from the inside. They provide an economy of means to span the six metres of the living space via steel purlins with welded end-plates bolted directly into the timber frame. The ceiling in hoop-pine ply provides a tonal warmth.

The structural and environmental strategy includes timber floor and wall framing with steel roof purlins for optimum spans at lowest cost. Insulated east and west walls clad in corrugated COLORBOND® steel provide a minimal maintenance, thermally controlled, economical solution with windows recessed for shading and rain protection.

Essentially one room wide, the house is the extended verandah as an extruded timber and steel container. The front wedge of the house is expressed as a grid of blades which direct views and breezes while maintaining privacy. This simple aesthetic device essentially defines the character of the design. Retractable glass doors and timber shutters further mediate the engaging northerly aspect. The rear metal wedge has a short passageway connecting to ensuite and two bedrooms.

Roehrs has devised a family home high on practicality and function. A sharp clarity of form, open flexible space, and engagement with landscape is achieved with economical precision.

With growing prosperity, the Sunshine Coast has developed a love affair with money and size. The Roehrs House returns to simpler times when the surfer's shack and beach kiosk sat easily under pandanus palms. A pair of sculptured lean bodies, this twenty first century beach shack recalls an era and place when the Beach Boys were in their prime and a 'pipeline' had nothing to do with plumbers.

**Peter Hyatt**

**Project:**
Lake Currimundi House
**Architect:**
Mark Roehrs
**Project team:**
Steffen Tuck and
Mark Roehrs (design),
Alan Rogers (documentation)
**Tel:**
(07) 3832 0666
**Structural engineer:**
Taylor Associates P/L
**Builder:**
A. Rolley & Sons
**Principal steel cladding:**
Wall cladding and roofing -
COLORBOND® steel in
LYSAGHT CUSTOM
ORB® profile
**Size:**
235m²
**Building cost:**
$712m² - $168,000
**Photography:**
Peter Hyatt

steelprofile

**My inspiration**

I draw inspiration from a site's surroundings - gaining an understanding of each site's own inherent and unique features. I do not try to be different or clever for the sake of it, but have attempted to achieve architecture that is relevant and accessible to the general public. It is about being respectful of place.

I have worked extremely hard at maintaining simplicity and getting the basics right. These are the things in particular, that many Australian houses do not take advantage of.

I work at things like capturing the unique Australian light, exploiting the views, relating building form to the site, connecting interior spaces with the outside, being responsive to climate and ensuring flexibility to accommodate changing needs.

*Jason Pruszinski*

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