



TENT PITCHED

Beside the fringe of Garigal National Park, the glass and steel house architect Ed Lippmann designed for a

Sydney engineer makes a light touchdown atop its rocky site **Story by Philip Drew Photography by Willem Rethmeier**

THE QUESTION of weight or lightness is ancient. The Greek philosopher Parmenides divided the world into dualistic pairs, a system which viewed lightness as positive and weight as negative. Today, we seem to be very much in agreement with Parmenides. But was he correct? Author Milan Kundera once asked whether heaviness is truly deplorable and lightness splendid. Should our houses be heavy or light?

Surrounded by its collar of bushland, the Carfrae house proffers a suggestion. From the outside, it seems as light as a tent. Inside, it is equally free. You might consider it a fixed tent, its glass skin much the same as a Bedouin tent, measured according to the number of cloths that make up its same airy weightlessness.

Sydney's climate is benign much of the year. We do not require dwellings that double as heavy defensive structures. The arrival of modernism in Australia introduced the pavilion, a light garden structure of steel and glass, which challenged architects to experiment with the materiality of the house and pare it back to see how much of it is truly necessary in a temperate climate.

As a structural engineer, client Tristram Carfrae is continually in conversation with architects, and was uniquely placed to respond to Ed Lippmann's desire to make a minimal structure. Sited below the street, the two-storey steel frame stands directly atop sandstone ledges, a lightweight shelter under a gently inclined, mono-pitched steel roof.

On arrival, an uptilted roof salutes the visitor in counterpoint to the main roof, which yawns in the opposite direction toward the canopy of trees in adjacent Garigal National Park. External colours are generally understated with a gentle emphasis on light greys and browns to reflect the palette of surrounding angophoras and eucalypts.

From the carport, the two levels are reached by a single stair, its glass risers adding to its transparency, which steps down across the pond into the ground floor living area. Within the house, on the main day living level, the space spreads effortlessly out into the bush beyond, but remains anchored to the site. Turn around and on the high street side there is a view of rock ledges and the pond. The house orientation is slightly east of north, and in the summer sun reaches into the south face. "The site's northern boundary with the national park allowed the two floors below the street to maintain a minimal profile," Ed says.

"No excavation was required and all of the established native trees were retained."

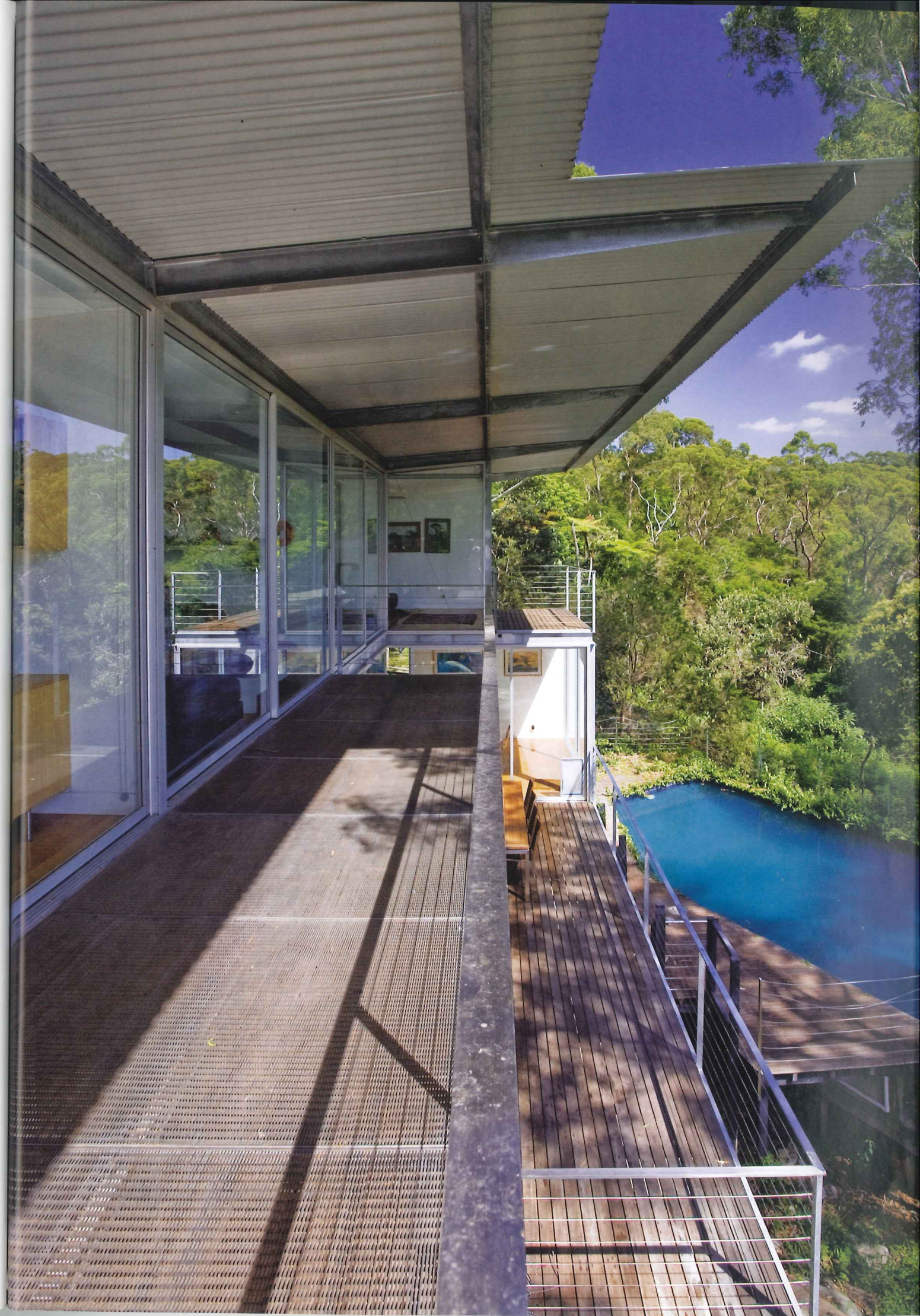
A triple-track system of sliding glass walls introduces the interior to the outside, with circulation at the back and front. Roof gutters have been eliminated; rainwater falls directly into a rock pond, over which cooling breezes pass into the house. The pond empties across the sandstone following its natural pattern into the bushland below.

Downstairs, eye-catching bright yellow cabinets put a brake on the linear movement from the open living and dining areas through to the rumpus room at the opposite end. Across the north front, a timber deck extends the interior to the outdoors. The night areas upstairs are organized differently; ensuite bathroom, linen storage and storage cabinets cluster along the south wall, leaving the north edge bedrooms and study unencumbered. A lightweight metal roof shoots forward overhead, engaging the trees and pulling back in places to admit winter sunlight or advancing to shade the foredeck extension of the living space below. "Natural daylighting is combined with compact fluorescent lighting, which has been used throughout the house," Ed explains.

Supported on particleboard sheets, the timber floors are practical and enhance acoustic isolation from the noisy day areas. An open stainless steel floor deck interposes itself lightly between the bedrooms above and the hardwood outdoor deck underneath. Tristram reduced the galvanized steel columns to be so minimal that one almost doesn't see them, in a deliberate opposition with the large ceiling planes. He recalls the pleasures of the house during summer. "When you open all these doors on a warm night, it is most glorious," Tristram recalls. "You spill onto this deck with the bush beyond and the garden behind you; these spaces are slightly delineated but not really separated. It's just brilliant."

Just how much house is really necessary? The Carfraes and their architect have achieved a lightweight refuge that touches gently upon the ground and reaches outward to the expanse of green surrounding it. Henry David Thoreau, the American nature writer, recalls the simplicity of human life in primitive ages when humans "dwelt, as it were in a tent in this world." There is a great deal of this present in the Carfrae house. It's a dwelling that leaves its inhabitants unencumbered, and able to live directly in nature, not as prisoners behind walls, but liberated and sheltered. H

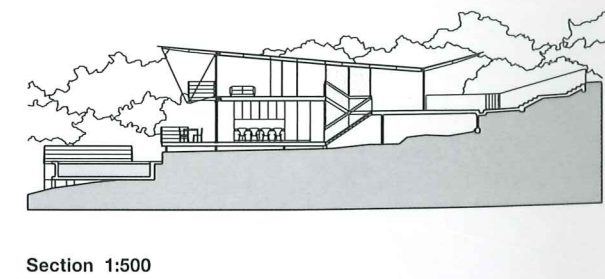
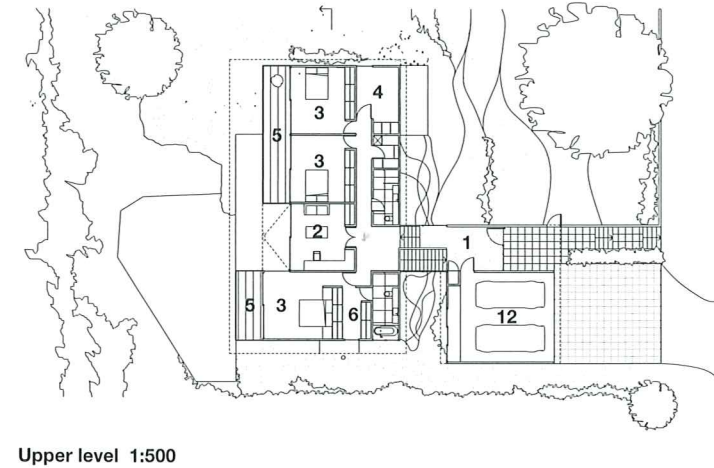
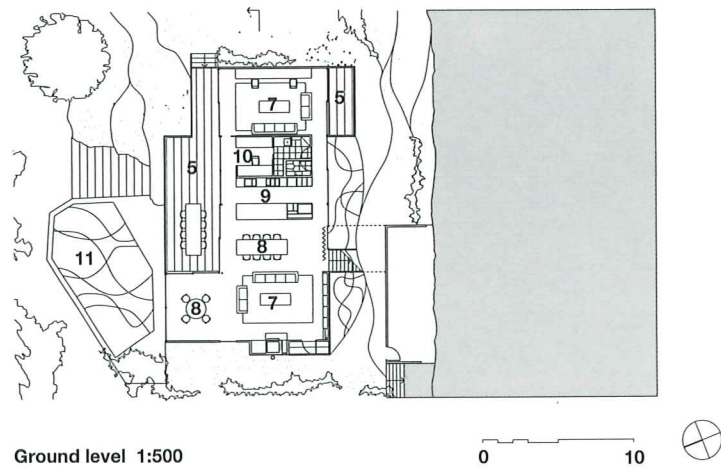
PREVIOUS PAGES: The building is akin to a tent stitched together from 4.5 metre sheets of glass and pegged to the rocky, sandstone site by steel columns. **OPPOSITE:** The existing pool, accessible from the lower deck, was central to the new design. Bedrooms run the length of the upper deck.



BELOW: Stacking doors can be pulled back like the flaps of a tent in the summer to make the house a lengthy breezeway. Bright gloss yellow joinery offers a colourful counterpoint to the subdued greys, browns and whites in the construction and the surrounding angophoras and eucalypts.



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|-----------|------------------|
| 1 Entry | 7 Living |
| 2 Study | 8 Dining |
| 3 Bedroom | 9 Kitchen |
| 4 Store | 10 Studio |
| 5 Deck | 11 Swimming pool |
| 6 Robe | 12 Garage |





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PRACTICE PROFILE
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PROJECT TEAM
Ed Lippmann, Rolf Ockert, Jason Wedesweiler

BUILDER
JF Constructions

CONSULTANTS
Engineer ARUP
Landscaping Sue Barnsley
Interiors Lippmann Partnership
Lighting Lippmann Partnership

PRODUCTS

Roofing Colorbond custom orb
External walls James Hardie expressed joint fibre cement, painted; G. James clear anodized aluminium-framed glazing
Internal walls CSR plasterboard steel-framed stud walls, painted
Windows Stacking glass, floor-to-ceiling sliding and fixed glass
Doors Aluminium frame with solid core
Flooring Structural steel with steel purlins and plywood T&G floor bands
Lighting Low-energy compact fluorescent fittings
Kitchen Amani stainless steel double fridge; St George stainless steel cooktop and wall oven; Panasonic microwave oven; Miele dishwasher; stainless steel benchtop with integrated sinks; Intamix chrome-plated gooseneck spout
Bathroom Ceramic tiles; stainless steel joinery with integrated sink; Rogerseller Logic tapware; Caroma wall-hung pan with Water Wafer in-wall cistern
External elements Blackbutt decking; galvanized steel mesh (elevated bedroom decks); stormwater pond formed into rock landscape and provided with overflow pipes to retention tanks

FLOOR AREA
240 m²

PROJECT COST
\$800,000

TIME SCHEDULE
Design, documentation 12 months
Construction 12 months

LEFT: Along the southern side of the house thrives a microclimate of native flora and ornamental carp. It's fed by roof water runoff, which flows into a sandstone escarpment, then overflows into stormwater retention tanks.

architecture of its time





ARCHITECT'S STATEMENT

The site is accessible from a gravel track concealed by dense vegetation and provides direct access to a beach to the east and public nature reserve to the north and west.

The house contains three bedrooms and a guest room/study, with generous casual living areas providing access to decks. The house was conceived as an open plan glazed pavilion, which could easily expand into extensive external decks and living areas. As the house is used mostly in summer, all living rooms and bedrooms face east to the ocean.

A service spine runs along the western rear zone. The eastern facade is completely glazed and the western entry facade is wrapped in plywood panelling to provide privacy and reflect the solidity of the mountain ranges to the west.

High bay louvred glass provides cross-ventilation and heat reduction during summer while a slow combustion steel fireplace provides winter heating.

successes. It was a hard way to learn, but probably a good way to learn. Since then, over time, I have built many houses.

KS: What would you consider to be the ideal client/architect relationship?

EL: There are three types of clients. Firstly, there are clients that don't know much about what we do, just call out of the blue. They're the most difficult clients to work with because sometimes there's a big gap in their expectation about design and my approach to design. The second type just says, right, here's our site, here's our budget, just do it – and in my experience that's quite rare. The third sort of client is one who works *with* you. This is generally the most rewarding situation for both parties. It's really important that the architecture is the hallmark of this office, but also that the people with whom we work, or perhaps *for* whom we work, are satisfied with the result – it's not just another design, stamped out of here.

KS: So you prefer a more collaborative relationship?

EL: Renzo Piano has said much about architects serving their clients. Sometimes we think that a project is an exercise in developing our design approach, but we shouldn't lose sight of the fact that the design is for the client, and ultimately it needs to serve their needs and desires.

KS: What are the principles that you work to when designing a house?

EL: Some of the principles I work to probably won't change much. They're fundamental ideas. For example, the attitude to space and the relationship between inside and outside is fundamental.

KS: A lot of people say what they recognise in your work is the steel and glass.

EL: The real reason for using those materials is that it provides the capability to de-materialise spaces, so the barrier between inside and outside becomes minimal. The transparency of my houses is really a response to the Sydney climate and the landscape. In Sydney there's a great opportunity to create limitless space where inside becomes outside. The distinction between living areas and bedroom areas, private and public, is also important.

KS: Why do you like to work with steel?

EL: The nature of steel is that it is very strong and light, which means it is useful for achieving long spans using very little material. The idea of limitless space without walls and barriers that separate rooms is wonderful. In my case, it's not just an aesthetic, it comes from a desire to achieve certain spatial relationships and the material is just a way of doing it. At this point in time, steel is the best material for achieving that dematerialisation, but there may well be other things we use in the future.

KS: Are there elements of your work that are specifically drawn from the Sydney landscape and natural geography or are you more influenced by the urban environment?

EL: I think architecture needs to belong to its place. In the first 10 years, virtually all my projects were around the city. A lot of them were in urban

Project Team:
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PHOTOGRAPHY:
Farshid Assassi

TAYLOR HOUSE, MOSMAN, SYDNEY, 1994-96



ARCHITECT'S STATEMENT

The site is on a steep slope offering views to the west of the city skyline and over Sirius Cove, a small harbour inlet. A two-level design was developed with three bedrooms on the upper level. Living, dining, kitchen and family room were located on the lower level. The north-western aspect over Sirius Cove and the city is a panoramic vista which generated the form of the internal volume. The upper level was hollowed out providing a generous two-storey living room which was overlooked by the bedroom mezzanine. The organisation of the house is revealed in the roof profile, consisting of three vaulted forms corresponding to children's bedrooms/family room, service stack, master bedroom/living. Substantial use of glass stacking and sliding doors is used to provide continuity of internal space to external gardens and decks. The two-storey living room is wrapped on two sides by a timber deck and enjoys the western view through a two storey glass wall. A bank of motorised fabric blinds prevents the intrusion of afternoon sun in the summer. Substantial use of louvres also restricts north facing sun in summer.

IN PROFILE DESIGN LEADERS

and heritage conservation areas, so there wasn't a landscape to relate to. They were urban houses and the issues were to do with privacy, security, and the expansion of space within very tight constraints, where neighbours were terrace houses. All of those early jobs were very small spaces. They were good projects to cut my teeth on because you have to make the most of very little means, which requires skill. When you've got a big site with trees around it, it's a lot easier in many ways.

In 1993 I had a project in Wombarra, outside of the city, and that was wonderful. It was this spectacular site overlooking the Pacific Ocean and a totally different concept in context. The relationship was to the mountains and sea ... I like the city but I also appreciate nature. I don't think it's appropriate to design the same house in the city as you would in a natural environment.

KS: A lot of people would see the use of steel and glass in your houses as a very industrial aesthetic. Can you explain about how you integrate this aesthetic into a more natural environment?


EL: Well, I don't see steel and glass as an industrial aesthetic. What is happening now is we're domesticating those materials so that we can achieve high quality steelwork, which is acceptable to look at. In fact it can be beautifully crafted. A steel staircase like the one in the house in Paddington, is actually quite a beautiful piece of industrial design, so the term 'industrial aesthetic' hopefully doesn't have a negative connotation. In 1982 I wrote a thesis about advanced technology in architecture and I was very interested in work of Norman Foster and Richard Rogers and Renzo Piano. I was interested in the capability of new materials and structures and pushing the limits of technology, and I've been exploring those ideas through the work of my office. It's interesting that I'm now returning to the use of natural, organic materials, which are being used in conjunction with 'synthetic' materials ... But it's a matter of finding the appropriate materials and the appropriate technology. I guess I have a reputation for using modern materials, but crafting them really well.

KS: What about environmental considerations?

EL: They are important. Our general approach to the Sydney climate is that we shouldn't have to air-condition a house. The temperature variation between winter and summer is not that great, and so we are developing our designs so that there's sufficient overhang with the right orientation so we get shade in the summer and enough sun in winter to provide natural heating. We can also provide stack cooling so that natural ventilation is easily achieved. When you use lightweight materials there is a risk that houses are going to be very uncomfortable to live in, so it's important to make them work.

KS: You talk about making connections between the inside and the outside. How do you actually go about doing this in the design of your houses? I know that the Tree House was particularly successful in this regard.

EL: Well, it's a question of relating to the context, understanding the site physically. The orientation is very important, the fall across the site, the



THE TREE HOUSE, MOSMAN, SYDNEY, 1995-98

Project Team:
Gerhard Abel, Scott Lester,
Ed Lippmann

PHOTOGRAPHY:
Ross Honeysett



ARCHITECT'S STATEMENT

This steeply sloped site is located in a thickly wooded reserve in close proximity to Middle Harbour in the northern suburbs of Sydney. Access from a gravel track at the top of a steep slope allowed all the living areas and bedrooms to fan out to the sun and views. The house relates to the terrain, stepping down and across the site over five levels. On the top floor the master bedroom and office float in the tree-tops. The entry level accommodates kitchen, dining, sun-room with a living area on a sunken/split level. A two-car garage is also provided at this level. Two split lower levels accommodate the children's bedrooms and play areas. All living areas are oriented to the north with substantial timber decks adding a further extension of space into the trees. To minimise the intrusion on the site, a steel framing system was developed which allowed the house to hover above the terrain. The structure and envelope – the skin and bones – are intentionally separated to give the house greater legibility.

vegetation, also the ambience of the site, the nature of it, whether it's the city or the country. The Tree House was actually in many ways unusual, the house was isolated from the ground and I provided it with a lot of outdoor spaces, which were decks, hovering above the ground, which is the most dramatic way to observe nature, it offers great surveillance. For a whole lot of other reasons it was better to elevate the house, let the water run underneath.

KS: I'd like you to describe your working methods for developing design concepts?

EL: There isn't a project that comes into my office that I don't personally work on. I tend to do most of the design work, and depending on the size of the project, in conjunction with other staff. Generating the early sketches, discussions with the client, and negotiations with Council. When we get into the stage of working drawings I pass it on to my assistants, but I don't leave it, I'm checking everything, I'm very involved the detailing and construction stages. I'm particular about detail, I spend a lot of time getting it right.

KS: The title of your monograph is *Architecture for the New Millennium* – I'd like you to explain what you mean by this.

EL: I think that good architecture should respond to the conditions of the day. Social conditions, technical conditions, materials, and that goes for any period of time. One can look back at the Renaissance or the Gothic period and the finest examples of architecture at that time were the ones where the architect was pushing the boundaries, aesthetically, structurally, technically and spatially. Significantly, at this stage in history, at the beginning of the new millennium, we have the potential to produce revolutionary and innovative solutions to our environmental requirements. I hope that the work that I do will be seen as architecturally responsive to its time, historically relevant and evolutionary.

KS: You talk about the importance of architecture 'of its time'. I'd like to then to ask you about historical context. When you were commissioned to design the King George V Sports Centre in the Rocks precinct in Sydney, how did your design respond to the surrounding historical context?

EL: I'm very much of the view that cities are a living entity and they grow and evolve. If one goes to Barcelona or Paris, one can experience such rich cultures. There are so many buildings of many periods which constitute the fabric of the city, and that's what makes these cities valuable. They're not boring, they're not a repetition of 17th or 18th century attitudes.

A lot of people thought the Sports Centre should look like a stone bond store, but that was totally unsuitable. As well, we had the Harbour Bridge, which was built in the 30s ... Some of the local authorities were very blinkered and didn't really see the context as fully as I wanted them to ... But it wasn't really about the materials, it was more about how to develop architecture, which is human and is 'respectful' of its context. Because it was never my view that we should go in there and demolish The Rocks, but I think it's totally appropriate that we should add to it in a modern way. So I looked at the streetscape, the height of the buildings, it was important

Project Team:
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PHOTOGRAPHY:
Ross Honeysett

DJUDIN HOUSE, PADDINGTON, SYDNEY, 1998-2000



ARCHITECT'S STATEMENT

The design of this terrace house in Paddington is an inner-city reinvention. A transformation of space in old housing stock has made the house more pleasurable and workable for a modern lifestyle. The fundamental aim was to bring light and a sense of space into a narrow, cramped environment. Originally a working class house that has become gentrified, the client's expectations of comfort needed to be addressed. The new work is intended to maximise natural light and ventilation and create a sense of spatial generosity.

that the scale of the building shouldn't belittle the other buildings, which it doesn't. It's quite an intricate piece of design and I compare that to the detailing of brickwork and stonework in the other buildings around it. It was a matter of trying to interpret that and not just imitate it. When it was being built there was a lot of negative press and it was criticised as being, an 'act of vandalism', but it actually won the 1999 Urban Design Award.

KS: You seem to be entering a new phase with the design of your own house with the use of more natural materials. Can you explain how your design philosophy is changing or evolving?

EL: I think I'm starting to appreciate more the importance of the human response to the environment. I've always explored in my houses a sort of plastic quality, a three dimensional aspect of volume and the manipulation of space. Now I'm moving away from a kind of minimalism, a very limited range of materials where everything is white and silver. I'm still incorporating that, but I'm expanding the repertoire.

A lot of architecture is unfortunately to do with a language that only architects appreciate. The litmus test is the unintellectual human response – a person who knows nothing about modern architecture can come into a space and experience the elevation of their spirit. That's more important than whether or not you've got the right light fittings and furniture. There's got to be something fundamental that we humans respond to and feel enriched by. That's what I'm trying to identify. I'm studying the nature of space, the idea that space has an energy.

KS: The criticism a lot of people have about modern houses – the archetypal modern house – is that they are too austere. How do you react to this criticism?

EL: I can understand the criticism. Because I understand the language of Modernism and with my formative experiences working in Marcel Breuer's office, I understand the philosophy and I appreciate it. But I can also understand somebody who hasn't had that training. We've got to be a bit more inclusive. Some modern architecture has been very exclusive.

KS: So do you think architecture is still too elitist in this country?

EL: I think there's a healthy energy in Sydney particularly. Sydney is a very international city and it has become very open-minded. So design is something which is being embraced and recognised here. Not just the houses we live in but the urban landscape as well. People are starting to appreciate that design is something that does affect their day-to-day existence. A few years ago I developed an idea of low cost housing, which was another reason for using so-called industrial materials. They can be pre-fabricated, which means they're economical and not expensive, labour-intensive buildings ... Unfortunately we didn't get these alternative project homes off the ground, although the idea is a very valid one, because I think good design should be affordable for everybody.

KS: It's a shame.

EL: I agree. The reality is that most people, 95 percent of the population

LIPPMANN HOUSE, VAUCLUSE, SYDNEY, 1997-2000



Project Team:
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PHOTOGRAPHY:
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