

# VISION

Ocean Pearl

Palm Beach,  
Sydney.

Illawarra

Flame House

Green world-beater.

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## Ocean Pearl

The Palm Beach House is a work of sublime seduction. It guides the visitor from an understated street-frontage to a cinematic climax across the treetops towards the Pacific Ocean.



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Viridian was one of the key material sponsors behind Australia's winning entry in the Solar Decathlon, open to universities from around the world.

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THE CRAFT OF ARCHITECTURE INVOLVES SUCH AN EYE FOR  
DETAIL THAT MANY HARDLY NOTICE HOW EFFORTLESSLY IT ALL  
FALLS INTO PLACE. AT LEAST THIS IS THE CASE WITH SYDNEY  
ARCHITECT SHAHE SIMONIAN WHOSE PALM BEACH HOUSE  
DESIGN IS A MOSAIC OF METICULOUS CONSIDERATION.

Palm Beach House

Principal glazing resource:  
Viridian ComfortPlus™ Clear.  
Viridian ThermoTech™ IGU incorporating  
EnergyTech™ Clear and VTough™ Clear.

Architect:  
Shahe Simonian Architects

Text: Peter Hyatt.  
Images: Trevor Mein, Peter Hyatt  
and Jennifer Hyatt



**Left**

Front entrance view picks up courtyard, cranked plan and ocean vista.

The Palm Beach House is a work of sublime seduction. It guides the visitor from an understated street-frontage to a cinematic climax across the treetops towards the Pacific Ocean. Forty kilometres to Sydney's north, the design is a stripped-down model of glass, concrete and stone. The grand disappearing trick of glass as barely there enhances the spectacle, while streamlined interiors allow light and breeze to flow easily throughout.

The craft of architecture involves such an eye for detail that many hardly notice how effortlessly it all falls into place. At least this is the case with Sydney architect Shahe Simonian whose Palm Beach House design is a mosaic of meticulous consideration.

Simonian's work has a molded, interlocking sensuality with subtle shifts of perspective. A curved, full-height courtyard glass wall provides a beautiful veil and one of the most elegant light-catchers imaginable. A cranked floor plan almost imperceptibly asks us to re-align our expectations. Rather than rectangular box, the architecture conjures a convincing organic spatial flow.

"THEY ASKED, 'WILL IT BE LIKE  
STANDING ON THE EDGE OF A CLIFF?'  
WE RESPONDED: 'YES IT WILL'"

Shahe Simonian,  
architect.

Beach houses are typically more relaxed than the average suburban dwelling. Or at least they should be. They have the opportunity to live up to the promise of sunshine, sand and sea rather than asphalt and garage. The best examples make this connection without falling for the forced, or clichéd' idea of beach house. And they don't have interior designers run riot to create a stage-set pastiche of Florida Quays.

In this regard Simonian allows the broad design to speak. The result yields to the Pacific Ocean's grand theatre, allowing sunlight to splinter and wash its way throughout the house like a good spring clean.



**Below**

Light-filled interiors link to Pacific and sheltered courtyard.





Viridian's energy efficient ComfortPlus™ and ThermoTech™ insulated glass units incorporating Low E are a crucial part of the design vocabulary. It's a language of rare environmental eloquence.

Circulation up and down the main staircase for instance could become a daily drudge, but Simonian makes it a pleasure with a soaring, five-metre tall window that yields a vista he describes as resembling a Fred Williams canvas on the vertical. The result is a tall sky and softly cascading light captured in a single, uninterrupted frame. At the top of the stairs another window awaits – this one shapes the eye on the horizontal to edit neighbouring rooftops and open towards the sea and emerald headland.

The Palm Beach House feels convincing. It feels right. If its owners reaction is anything to go by then the architect has delivered more than they could have hoped for. They admit to being demanding clients and yet Simonian praises their contribution to the process.

He tells Vision's Peter Hyatt how his design lifts its sights beyond the obvious.

#### **What was your response upon first site visit?**

I thought it was fantastic. The allotment sat on the ocean side of a knife-edge ridge road. To the east there is a wildly changing view of Whale Beach, and west, a calmer bay.

#### **Do you recall any specific client challenges?**

They asked: 'Will it be like standing on the edge of a cliff?' We responded: 'Yes it will'. We shared the idea that accentuated the feeling of being on the edge. Glass is really integral to that sense of such an exceptional vantage point offered high above the ocean.

**The site is demanding. It's steep and quite small and so the temptation must have been to fully cover it with house and yet you resisted. You found space.**

Space is critical and reflects how the house responds. The site provides a fluid bridge between the two outlooks – east and west – and is represented in the built form both in plan and section. Despite the topography, the entry, living areas, courtyard and rear gardens are connected

by a seemingly uninterrupted sequence of external spaces. If the house was a metaphor of this landscape, then the sheltered courtyard acts as the bay protected by the curvaceous arm of the lounge as it extends around it.

#### **How crucial is the courtyard?**

The cranked plan provides this sheltered courtyard that faces north and it's really like an arm that provides an embrace. The owners love the shape and what it offers. It's much more exaggerated in real life than on the plan. The crank enabled greater separation between this house and the heritage house immediately to the north. It provided better context and an opportunity to attract more northerly light than otherwise possible.

**You overcome the one-trick pony hero vista with a series of fragmented views and slot windows. That's handled horizontally and vertically – especially with that huge vertical window viewed from the staircase.**

That window really reminds me of Fred Williams' painting because it reveals all aspects of the sky with the landscape in the distance and in the foreground. To see from earth to sky almost as 180 degrees is an amazing view and to do that mullion-less is quite an achievement.

**Your insistence on this tall single section makes it that much more unobtrusive.**

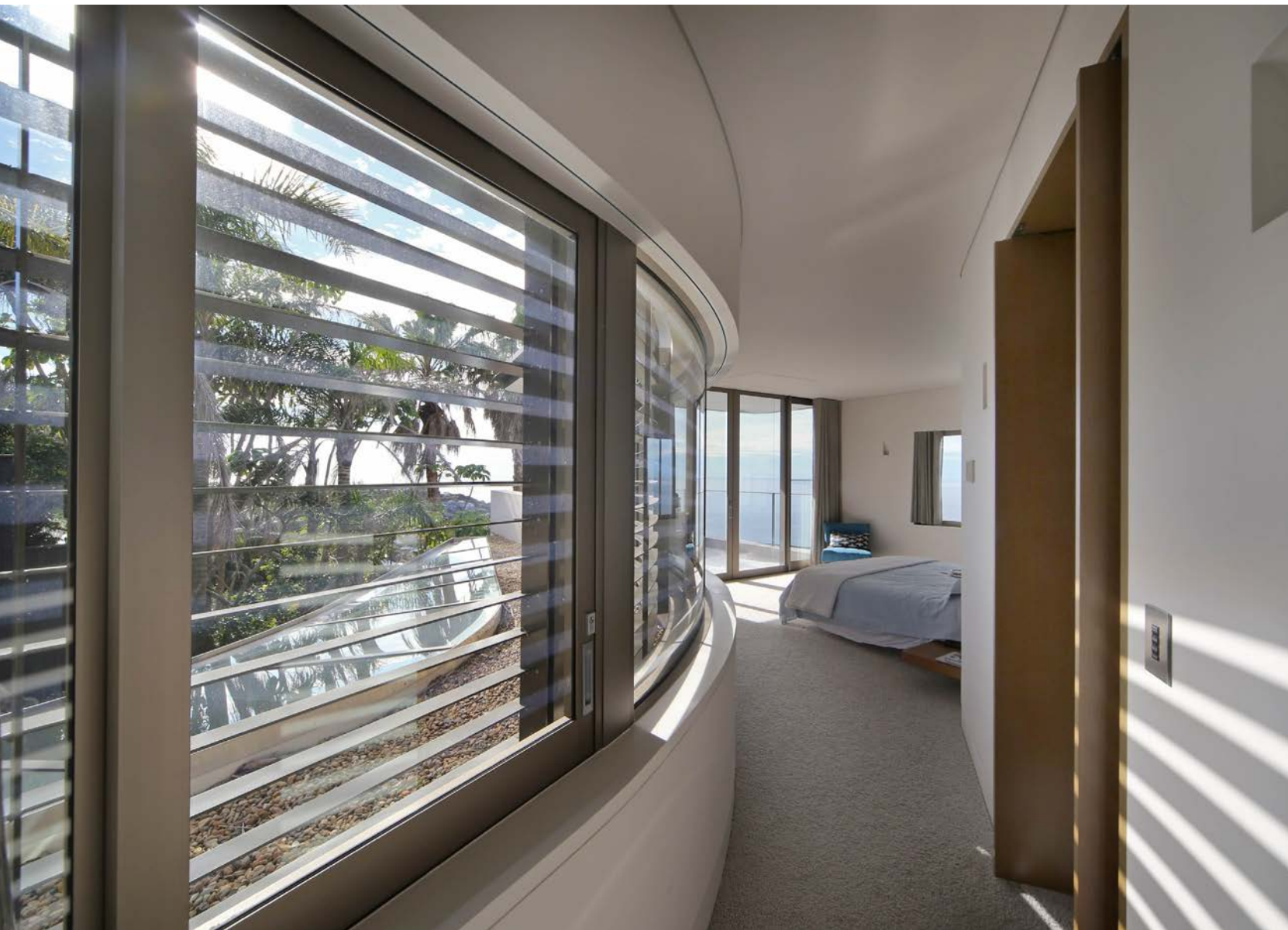
At the top of the stairs you look to the right and get this view positioned in such a way to reveal this horizontal distant view that contrasts that extraordinary piece of vertical glass rising up from the foot of the stairs. Because of building height limits we had a constricted ceiling and building envelope but hopefully that window adds to the experience.

#### **Right**

Sweep of retractable glazing produces effortless circulation.

“GLASS ALSO ACCENTUATES  
THE DESIGN’S SCULPTURAL QUALITIES  
AND EMPHASIZES THE RHYTHM  
AND PLAY OF LIGHT.”

Shahe Simonian,  
architect.





**Left**  
Soaring five metre window viewed from main staircase.

**Right**  
Retractable/adjustable louvres permit exceptional privacy and prospect.

**Below**  
Library/study catches afternoon light.



Ocean Pearl









**Above**  
Courtyard forms the exceptional outdoor 'room'.

### Did the clients push you in ways you didn't expect?

They have very keen eyes. They could certainly spot any aspect of the building or fit-out that appeared out of plumb, yet they were open-minded and appreciate good design aesthetics. Facing east the house admits plenty of horizontal, early morning light that bounces off the living room ceiling. The speakers, lights and numerous other elements are concealed and 'eventless' as possible. All that is visible are a pendant light and two down-lights over the kitchen island. Everything is intended to accentuate the effect of light.

### Was there a perception glass could present solar or thermal issues?

That was why we chose high-performance ComfortPlus™ and ThermoTech™ double-glazing for the project. And it's working well. The house has been through a summer and winter and there have been no complaints or call-back.

### Any other benefits of glass?

With so much glazing we wanted the colour consistent performance of ComfortPlus™ throughout the project. Glass also accentuates the design's sculptural qualities and emphasizes the rhythm and play of light.

### Good architecture provides options - whether it's where you can perch, or entertain, or live and adjust with features such as lots of sliding walls. In less considered, more straight-jacketed houses, you see the options dry up.

We really wanted to provide a range of experiences. I know it's a bit of a cliché, the inside/outside business, but that glazing spine easily becomes a breezeway once opened and provides an additional room. The clients often hang out there which indicates how successful it is. You can find shelter or a sunny spot and so it's much less about air-conditioned luxury than being connected to the environment and knowing the time of day.

### What about sustainability?

The building footprint is oriented along the east/west axis, with the shorter elevations facing east/west. A 'cooling spine' along the southern boundary, draws cool air from the basement up through the house and through the shaded first floor windows. External shading with deep eaves, retractable and fixed external blinds moderate east/west (and summer's northern) sun. A roof garden also provides effective insulation. Obviously we see Viridian double-glazing as a huge contributor to bringing in the very best of the climate and setting and keeping away the worst.

### Is there a standout space for you?

For me it's the courtyard. The timber battens cast shadows across the windows and floor and that pattern-play occurs throughout winter and summer. Cocooned next to the library and bookcases you can sit there with a book and look clean through the lounge-room to the ocean beyond. That's a really beautiful place. My clients have told me how much they love it and, in the end, that is the crucial test.

### Credits

#### Project

Palm Beach House

#### Architect

Shahe Simonian Architects

#### Builder

FS Hough P/L

#### Structural Engineer

NB Consulting P/L

#### Glazier

Award Aluminium P/L

#### Principal Glass Provider

Viridian

#### Principal Glazing

Viridian ComfortPlus™ Clear  
Viridian ThermoTech™ IGU  
incorporating EnergyTech™  
Clear and VTough™ Clear.



# SUPRE



CORE PRODUCTS



ENERGY



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STRUCTURAL



STORM



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ME

GREEN



‘THE ILLAWARRA FLAME HOUSE’ MIGHT WELL HAVE CAUSED CONSTERNATION WHEN TRANSLATED FOR THE HOST NATION’S JUDGES. THE FLAME HOUSE IS MUCH LESS THE SELF-COMBUSTIBLE ABODE THAN INSPIRED BOTANICAL SIGNATURE DEDICATED TO A CLASSIC TIME-CAPSULE OF AUSSIE SUBURBIA.

The Illawarra Flame House  
Principal glazing resource:  
Viridian PerformaTech E™ IGU  
with dual Low E coating

Text: Peter Hyatt  
Images: Rui Yan, Team UOW

Viridian was one of the key material sponsors behind Australia's winning entry in the Solar Decathlon, open to universities from around the world. The awards in Datong, China, saw victory for a re-energised version of Australia's low-rent '50s vernacular – the suburban fibro box. Thanks to clever design and astute material selection, the result delivers a knockout environmental performance.

The Illawarra Flame House' might well have caused consternation when translated for the host nation's judges. The Flame House is much less the self-combustible abode than inspired botanical signature dedicated to a classic time-capsule of Aussie suburbia.

The team's audacious effort to re-boot such a once popular, yet progressively discredited, perennial was rewarded with a top score of 957.6 out of a possible 1,000 points. Australia's entry from the University of Wollongong (UOW) and TAFE Illawarra claimed first prize for their re-modeling of a notoriously inefficient design to deliver net zero energy consumption.

Open to tertiary institutions from around the world, the US Solar Decathlon competition was established in 2002 to recognize innovative Green residential design. The Datong, China event attracted half a million visitors while its website generated an impressive 900 million hits. The solar-powered home build/design competition required entrants to submit their work as fully designed, documented and constructed projects. UOW's winning entry includes pre-fabricated energy efficient pods for heating, ventilation and air conditioning as well as water recycling and photo-voltaic electrical systems.

"The 'fibro' delivered inherent environmental and financial economies by working from the available platform and shell," according to Jack Breen, spokesman for the team's entry. He tells Vision's Peter Hyatt how the humble fibro went from obscurity to star thanks to Green turbo-charging.

### **The jury loved your work – what appealed to them above all else?**

They loved the idea of the retro-fit. It was the first such entry and we demonstrated that it could become much more than the original and a really energy efficient, net zero energy home.

### **When did the idea for the house first come about?**

Prof. Paul Cooper, Director of the Sustainable Buildings Research Centre at UOW recommended we investigate retrofitting. That vision really took hold. The center's primary research goal is its retrofitting work. The competition finals involved 20 university teams that were mostly partnership linked between major universities from around the world. In our case we don't have an architecture school and so we sought industry advice for certain areas on the design, including from our sponsors such as Viridian. Drafting students lent a hand so there was some improvisation, but it paid off.

### **What was it about retrofitting that gave you the necessary belief?**

Sustainability has an edge when you utilize existing materials and building platforms so it's really a story of recycling. We felt it was an under-recognized area. If you can make existing houses energy efficient then there's a huge opening for major environmental improvement.

### **How daunting a prospect was it to ramp up and commit to such a venture?**

It's the most ambitious student-led project the University and TAFE Illawarra have ever entered into but it's also been the most cross-disciplinary and the reason is that it requires a very broad range of skills. The Decathlon's ten equally weighted concepts include architecture, engineering and design. Then there are areas such as communications and that meant we had to make promotional videos, a group website and a brand for the house to leverage off. Another contest is entertainment and we had to demonstrate that the house has real livability and can comfortably accommodate a certain number of guests for example.



“THAT VISION REALLY TOOK HOLD.  
THE CENTER’S PRIMARY RESEARCH GOAL  
IS ITS RETROFITTING WORK.”

Jack Breen  
University of Wollongong  
(UOW) and TAFE

**Above**

The Decathlon’s ten equally weighted concepts include architecture, engineering and design.



**Above**  
Team UOW Illawarra Flame House  
Animated Walk-through

**Right**  
The victors receiving their  
award at Datong, China



**What are the 10 categories that define the decathlon?**

Each one is judged as a separate contest: There's architecture, market appeal, engineering, communications, solar application, comfort zone, hot water, appliances, home entertainment and energy balance.

**How many staff and students were involved?**

There were more than 50 students and faculty members. There were specialists from marketing to graphics, construction through to hospitality.

**Who do you see as the most likely market for your house?**

It's primarily aimed at retirees and downsizing empty-nesters. It doesn't have a huge footprint and that's part of the future for plenty of people to live in houses that are a better fit.

IT'S A TOP-LEVEL  
PERFORMANCE GLAZING SYSTEM  
THAT ALLOWED US TO BE EXPANSIVE  
RATHER THAN INTROVERTED

Jack Breen  
University of Wollongong  
(UOW) and TAFE

**What are some of the major alterations you made to the old fibro standard?**

At first glance you would never pick that it had been a fibro home. It's really a quite major conversion that had to be livable and energy efficient. We knocked out walls to convert three very small bedrooms into a more spacious two-bedroom home with a separate kitchen, living and dining rooms. We also connected with the outdoors using windows and doors incorporating Viridian PerformaTech E™ double-glazing. We also removed two sections of wall and added clip-on pods manufactured off site and added to the house.







More than half a million visitors



**The premise of using an existing ‘shell’ seems fundamentally sound.**

There is a lot of embodied energy lost if you simply start designing and building from scratch. The philosophy of recycling is a major strength of this entry. Of course the clip on end pods are new but we retain enough of the original to make major savings for the buyer and in energy consumption during construction and operation.

**Given you had to ship the house to China, presumably it demanded absolute simplicity and a really modular, pre-fabricated construction?**

It had to be broken into around 27 major pieces and quickly re-assembled Meccano-like. The concept is that we can do this even more easily in Australia to an existing house and that it can be implemented using a tiered approach with various extents of the retrofit, affecting the cost and payback periods. The winning model is fully optioned and comes with ‘the works’.

**One of the challenges of successful Green design is to strike the balance between amenity and a wide range of technical performance criteria. How do you find that right balance?**

That was really crucial at every step. It had to work, look good and feel like a terrific place to be. You work towards that balance of performance and amenity and an ability to connect with the environment. It’s trying to overcome the best technical solution with a very acceptable aesthetic solution. One needs to convincingly complement the other.

**What other strategies did you use to reduce embodied energy usage for example?**

All of the materials used already existed or were locally sourced such as Viridian’s double-glazed units for windows and doors. That definitely helped our sustainability cause because it reduced the embedded energy costs of transport and inherent energy production. It’s a top-level performance glazing system that allowed us to be expansive rather than introverted. We definitely relied on sponsors to help get this over the line and ensure the prototype worked so well.

**Was there a point when you felt you finally cracked the design?**

I don’t think we were ever overly confident because retrofitting hadn’t been done before and of course we wondered what the judges would make of it. Once we began to receive media coverage we realized we were on the right track and perhaps stood some sort of chance.

**What about price for such a house?**

A full retro-fit of this scale would cost around \$300K but this can be significantly reduced if commercialized. This is the ultimate solution and there are many tiers to the retro-fit and so there are various budget options that can be made to fit and stretch.

**Any other benefits to flow from your success?**

It shows what you can achieve when so many people share the same goal. Everyone involved learned so much from such hands-on experience and to have it recognized in this way is really beyond our wildest dreams. Actually that’s a good point - it taught us to dream the big dream.

**Credits**

**Project**

The Illawarra Flame House

**Builder**

Team UOW - with support from Matt Jolley Builders

**Structural Engineer**

Scott Redwood.

**Service Engineer**

Michael Whitehouse

**Other CSR products used**

Gyprock Supaceil™  
Plasterboard

**Principal Glass Provider**

Viridian

**Principal Glazing**

Double-glazed doors and windows Viridian PerformaTech E™ IGU with dual Low E coating

**Right**

Viridian double-glazing was critical to achieving such high energy performance.





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**Congratulations to those shortlisted in the Sustainability category.**

Austinmer Beach House – Alexander Symes Architect in association with g+v architecture.

House in a Warehouse – Splinter Society Architecture P/L.

Mihaus Studio – Sue Harper Architects.

Stead Street Residence – K20 Architecture.

Waverley House – Anderson Architecture.

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