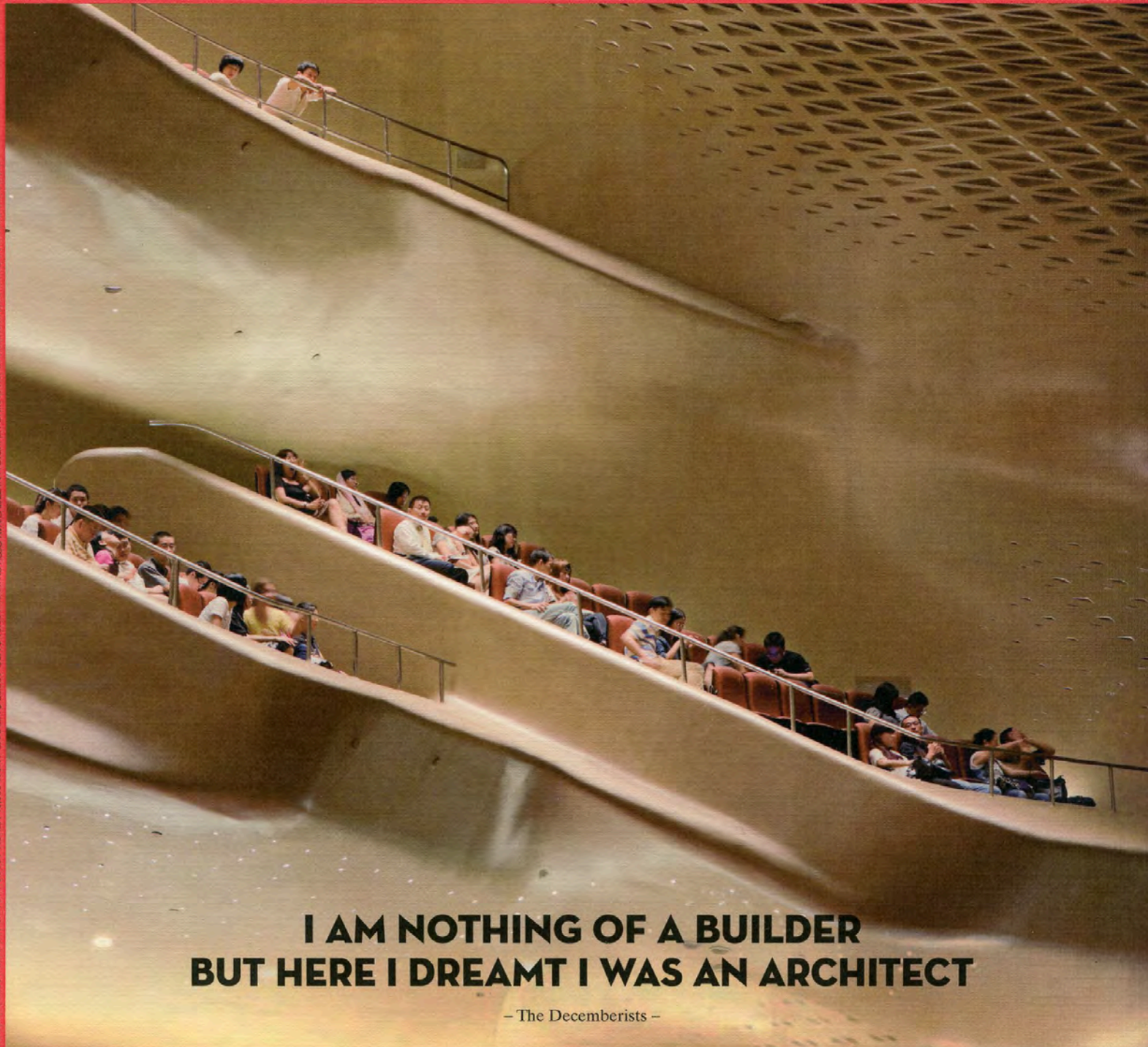


# MARK

MARK NO 29  
DECEMBER 10 . JANUARY 11

— ANOTHER ARCHITECTURE —

MMBB SÃO PAULO - ANDRÉS JAQUE MADRID - BIG COPENHAGEN - ZAHA HADID GUANGZHOU - NINA LIBESKIND NEW YORK - MANUEL HER  
MAINZ - DAVID HERTZ MALIBU - ARCHITECTURE AND MUSIC - LOT-EK ANYANG - 3XN MIDDELFART - TREE HOTEL HARADS - LETTER FROM VENIC  
JUERGEN NOGAÍ LOS ANGELES - CHUCK HOBERMAN NEW YORK



**I AM NOTHING OF A BUILDER  
BUT HERE I DREAMT I WAS AN ARCHITECT**

— The Decemberists —

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# WINGS OVER MALIBU

**After using refrigerator panels and sailing boats as building materials, David Hertz tries his luck with the wings of a Boeing 747.**

Text Michael Webb / Photos Caleb Coppola

AIRCRAFT PARTS THAT WERE REUSED IN WING HOUSE WERE CARRIED BY CHINOOK HELICOPTER TO THE BUILDING SITE. PHOTO STUDIO OF ENVIRONMENTAL ARCHITECTURE





A new Boeing 747 costs around €180 million, but the stripped shells of discarded models are cut up and sold as scrap for as little as €22,000 – an amount that made it feasible to transport wings and other sections from an aircraft graveyard in the southern California desert to a remote site in the Santa Monica Mountains and recycle them as habitable sculptures. The complex is called the Wing House. It was designed by architect David Hertz, an ardent surfer and sailor whose passion for the environment was spurred by the pollution of Santa Monica Bay. Throughout his 25-year practice, he has recycled industrial materials to conserve energy and natural resources. Giving new life to an aeroplane was a logical culmination of his earlier efforts.

Chance played a big role in this six-year project. Francie Rehwald, who had inherited her father's Mercedes dealership, bought the Malibu ranch of Tony Duquette, a brilliant eccentric who designed movies and follies built from scavenged objects. A brush fire devastated the estate in 1995, and Rehwald went searching for a Los Angeles architect to create her dream house in a setting of wild natural beauty. She called Hertz as he was about to leave for a family holiday in Scotland and drove him around her rugged 22 hectares on a quad she could barely control. 'I had to hold on for dear life, but I took it as

an initiation test,' says Hertz. 'The next day she walked around my house in Venice, telling me that she loved what I had done but found it too angular, blocky and masculine for her taste. "I want something that's curvilinear and feminine," she said, and gave me the commission.'

In Scotland, Hertz began to sketch swooping roofs, just as his mentor, John Lautner, used to do. 'Like him, I imagined myself standing on a ridge beneath a canopy that floated above a membrane of clear glass,' he recalls. 'I drew an ellipse inspired by a sailboat or a surfboard, and it reminded me of the laminar flow of air over an airplane wing. Then it struck me: why not use a real wing?' As a kid he had marvelled at the rows of airliners mothballed on the tarmac at Mojave, and the idea took root. On the trip back to LA he photographed details of aeroplanes, focusing on their curvaceous geometry, shaped by engineers in response to natural forces. Planes have evolved, like birds and sea mammals, to function with maximum efficiency in their chosen element. They are light, strong, durable and precisely engineered. Those qualities allied to their functional beauty convinced the Mercedes-driving client to embrace her architect's vision.

Before anything could be ordered or built, Hertz had to win over 17 official agencies and secure a stack of permits. The chief plan-checker



**01 WING HOUSE CONSISTS OF THREE SEPARATE BUILDINGS: GUEST WING, MAIN WING AND TAIL WING.**

**02 AFTER YEARS OF PREPARATIONS AND DELAYS, WING HOUSE IS NOW FINALLY NEARING COMPLETION.**



conceded that nothing in the building code prohibited using a wing for a roof, but he demanded to know how it would fare in a high wind. 'These aircraft carry 200,000 kg of fuel and up to 400 passengers at 1000 kph through the jet stream; I think they'll withstand a Malibu gale,' declared an aviation expert whom Hertz had brought to the meeting. However, to sign off on the project his engineer needed to know more about the inner structure of the wing than Boeing was willing to share. Repeated calls to the company's legal department prompted a visit from US Department of Homeland Security officials, anxious to know whether the architect was part of a terrorist cell. Reassured that his intentions were peaceful, they offered their technical expertise in analyzing air flow on their Cray supercomputer.

Then followed an encounter that would be eliminated, as wildly implausible, from any movie script. Hertz was taking his kids around the International Spy Museum in Washington, DC. Later that day, he kept his appointment with a Homeland Security official, who met him in the foyer of the hotel next door, handed him a CD containing the analysis, whispered 'I don't exist' and took off. That gave the engineer the data he needed to confirm that each of the two wings could be supported, like a tabletop, on four slender columns. More prosaically, Hertz had to

remedy a sheaf of code violations on the property, for Duquette had never troubled to secure any permits. Though the architect had decided to reuse the existing pads on the ridge, first he had to add caissons and re-pour the concrete, re-grade the access roads, drill a well, and install new electrical conduits and a septic tank.

Meanwhile the design was fleshed out. Hertz discovered that the 39-x-15-m wings of a 747-200 were a good fit for the ridge, their angles framing views of mountains and ocean. He set the master bedroom at the top, with the two horizontal stabilizers joined to form a butterfly roof, and stepped the wings down the slope. From the side they appear as thin silvery slivers that are a far better fit for the site than the big boxes that dot neighbouring hilltops. From the top of the slope, you look down onto the cantilevered wings and imagine you are flying. Hertz has always been inspired by the frugality of Native Americans, who once used every part of the buffalo they hunted – before being driven from their ancestral lands. In a second phase of construction, he plans to use the nose cone as a meditation pavilion, the double-height business section as a guesthouse and dining pavilion, and a middle section as an art studio. The vertical tail section will canopy a viewing site. A few of Duquette's pagoda-like follies survived the fire, and these conduct a

lively dialogue with the latest exercise in adaptive reuse.

Four years after the client agreed to the concept, the permits were in hand and the site prepared. The wings were cut in two and trucked to the Camarillo Airport, from where a huge Chinook helicopter carried them to the site in four half-hour flights. They were set down on tires so that they could be craned into place once the concrete-block retaining walls and pipe columns were completed. The two-hour burst of carbon emissions from the helicopter, so Hertz states, was far less than the pollution potentially generated by trucks winding up narrow roads for two years to bring materials and workers to a conventional building site. Recurring delays pushed the budget higher, but the cost of building a dramatically curved roof from scratch was estimated at four times the price of flying in a wing. Smaller sections of the plane will be trucked in as they are needed.

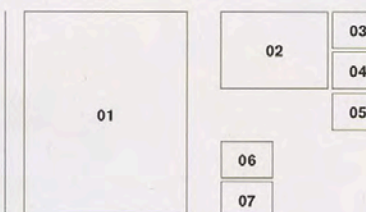
For Hertz, the challenge was to keep the structure as simple as possible to preserve the integrity of object and landscape – a juxtaposition that Richard Neutra called 'the machine in the garden'. Modernist pioneers idealized the functional beauty of the machine. Le Corbusier cited aeroplanes as his model and created a table base from the ovoid struts that linked the wings of »





‘THIS STRUCTURE RESPECTS AND EXPLOITS THE TECHNOLOGICAL SOPHISTICATED OF A 747’

- David Hertz -



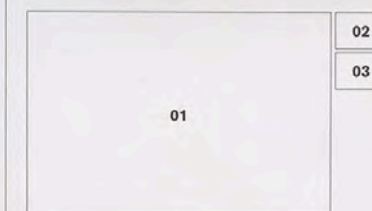
- 01 THE WING HOUSE CAPTURES THE LONG-FORGOTTEN ROMANCE OF FLIGHT AND THE AGE-OLD DREAM OF FREEING OUR BODIES FROM THE TUG OF GRAVITY.
- 02 CROSS SECTION.
- 03 ROOF.
- 04 AXONOMETRIC VIEW.
- 05 MASTER BEDROOM IN TAIL WING.
- 06 KITCHEN IN MAIN WING.
- 07 GARDEN BETWEEN MAIN WING AND GUEST WING.

engineers and artisans to produce an airplane. It seems a pity to chop that up for cans of peas that may end up in a landfill. This structure respects and exploits the technological sophistication of a 747.’

An aeroplane is easy to cut up with a laser saw, and it is incredibly light in relation to its strength. It’s prefabricated, requires no finishing and has a built-in eco system. The wing’s air cavity supplies insulation, the flaps offer shade and natural ventilation, and the thermal mass provides passive solar heating. Slip joints allow for thermal expansion, and the buildings sit lightly on the land. Glass sliders open the interiors to the native plantings and terraces. The county planner was quick to understand how appropriate this structure was – in contrast to the mediocre ‘Mediterranean’ mansions that she was customarily asked to approve. The Wing House captures the long-forgotten romance of flight and the age-old dream of freeing our bodies from the tug of gravity. «



THE HOMELAND SECURITY  
OFFICIAL WHISPERED  
'I DON'T EXIST' AND TOOK OFF



01 GUEST WING FACES AN OUTDOOR SWIMMING POOL.

02 TAIL WING HOUSES THE MASTER BEDROOM.

03 CLIENT FRANCIE REHWALD OVERLOOKING THE BUILDING SITE.

primitive biplanes. He would have shared Norman Foster's admiration of the 747, 'a structure that expresses the spirit of its time but responds to change . . . the ultimate technological building site', as he described it in a BBC documentary. In contrast to Foster, Hertz is more earthy than high-tech, and he regards the machine as a tool, not a fetish. For him, it's all about tactility and common sense, rather than formal aesthetics. He has clad houses in refrigerator panels and is roofing a house in Nova Scotia with the sleek hulls of abandoned sailing boats. Industry and craft are given equal weight.

At the start of his 25-year practice, Hertz developed Syndcrete, a lightweight mix of cement and carpet fibre that can be enhanced with ground-up metal and plastic waste to create a type of terrazzo for cladding and counter tops. His love of the ocean has led him to devise an artificial wave in a Florida shopping mall and to collaborate with a champion surfer to create a wave that will flow around a circular course. The Wing House is the most ambitious of his many environmentally sensitive projects. As Hertz observes: 'Aluminum requires a lot of energy to produce, and it takes an army of skilled »