

# BILL'S HOUSE

**Location** Ispra, Italy

**Client** Comitato per il padiglione informativo sui progetti per la città

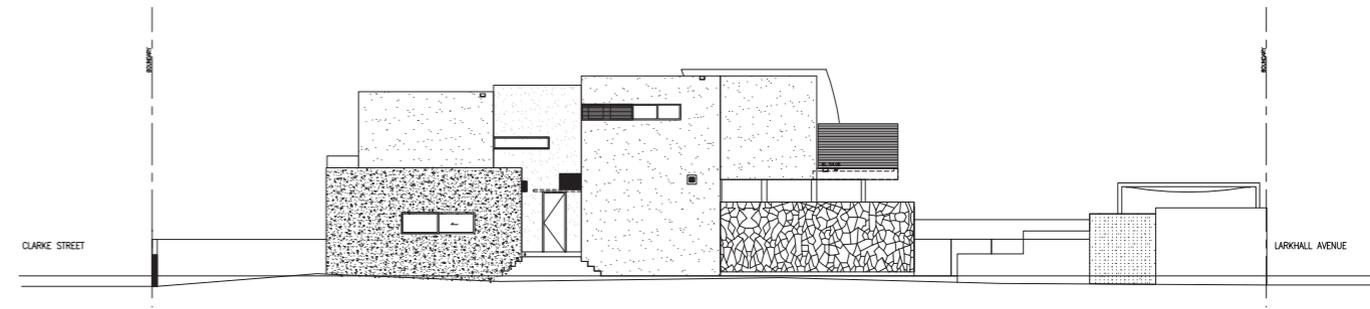
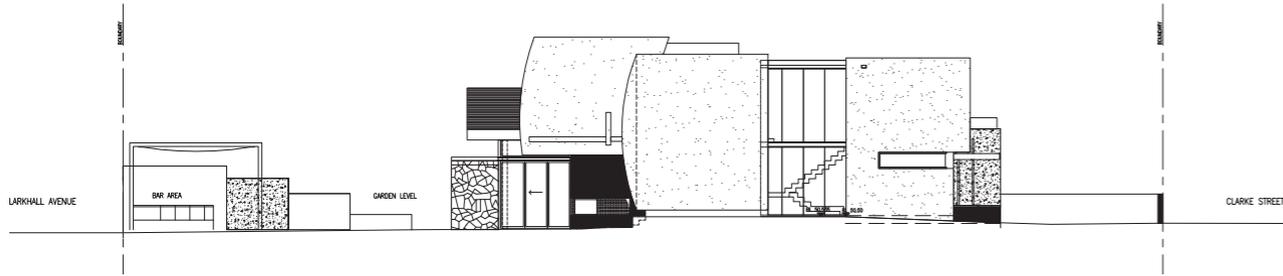
**Surface Area** 1.000 sqm

**Team** Mario Cucinella, David Hirsch, Elena La Vezzo, Davide Paolini, Eva Cantwell

With collaboration of Fabio Andreotti, Matteo Lucchi, Andrea Lardosi

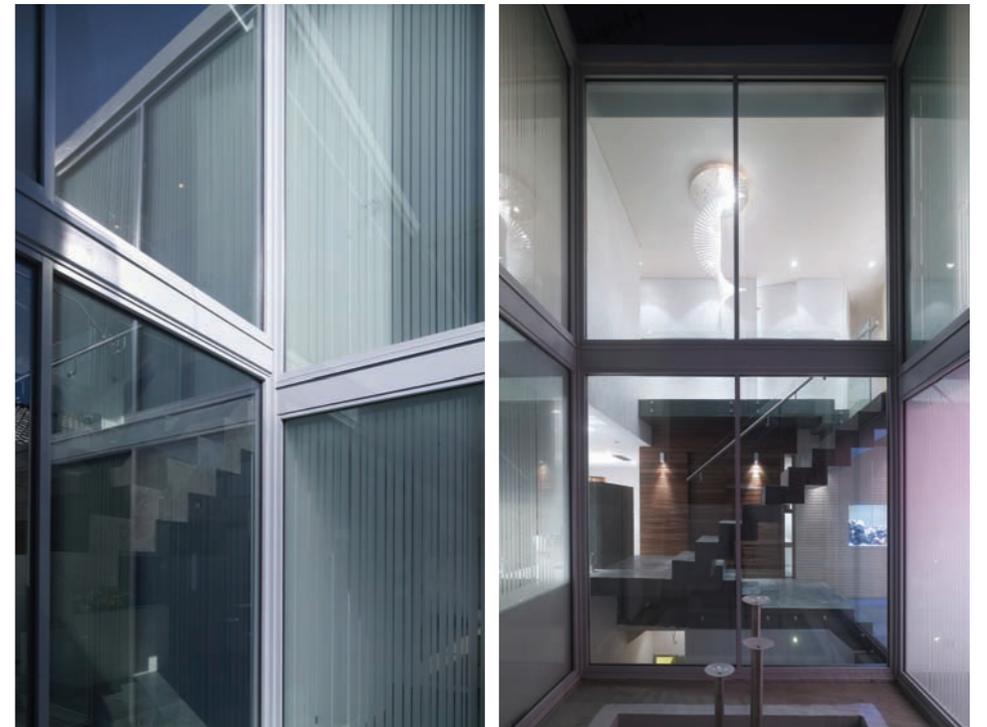
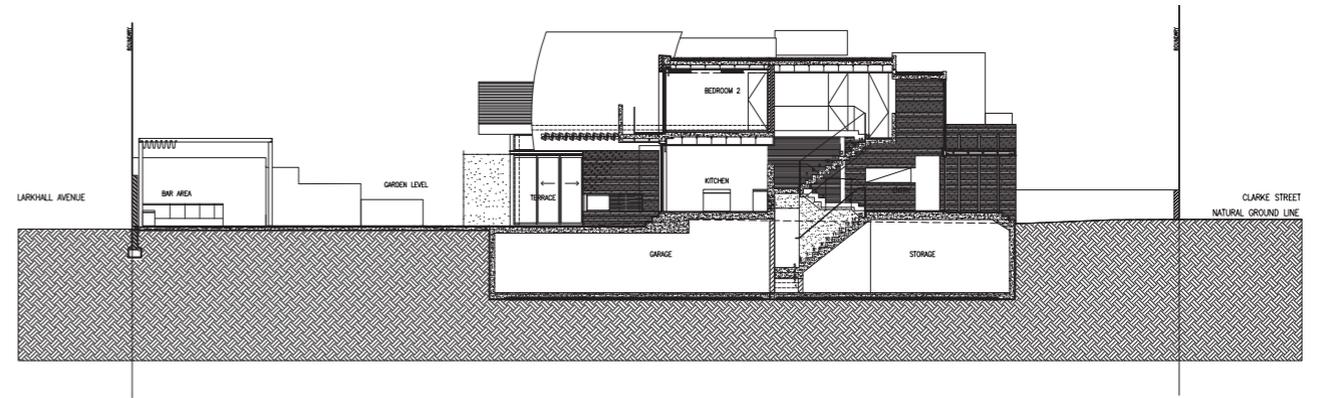
**Photographers** Jean de Calan, Mario Nanni, MCA Archive



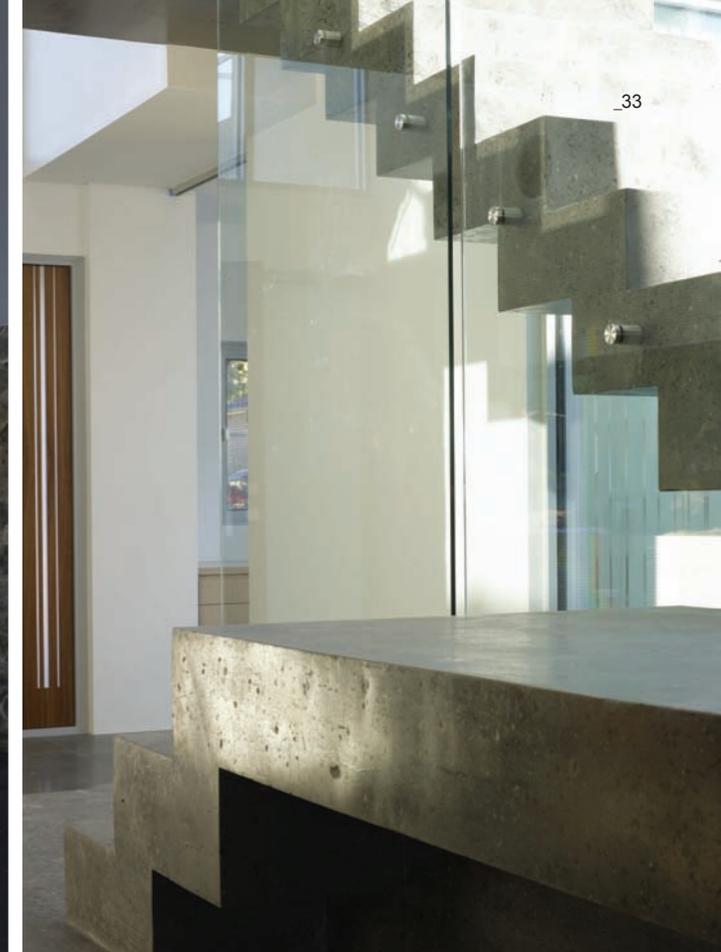
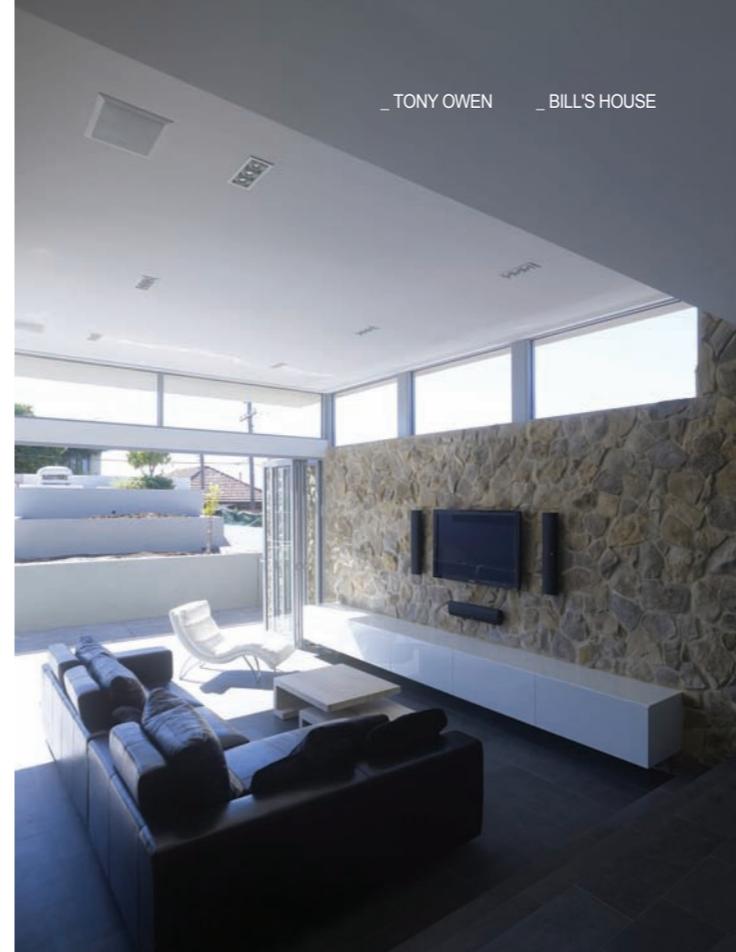
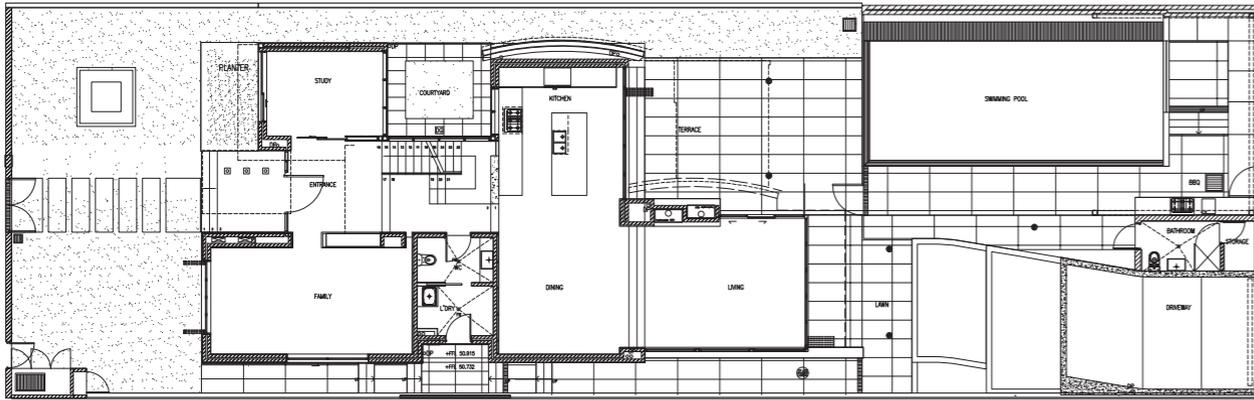
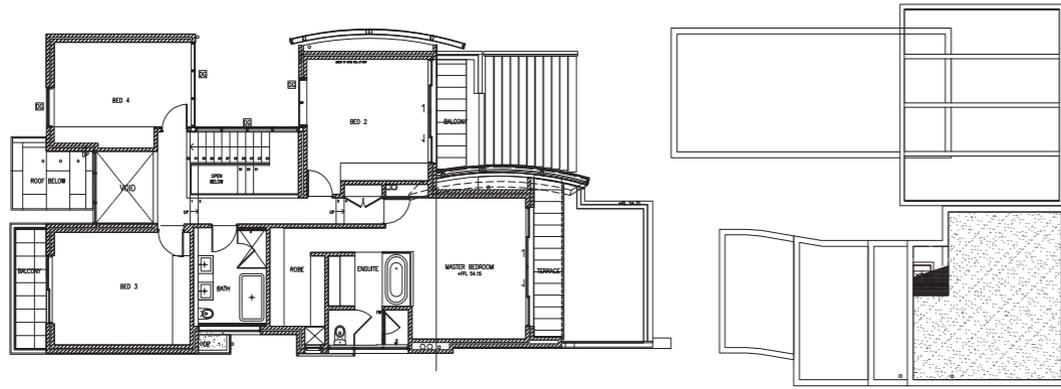


This house was designed for a client in Sydney's inner west. The client is a concrete contractor who planned to build the house himself. As a result the house was designed to make maximum use of concrete and solid construction. Because of the client's heritage, the design was influenced by the materials and forms of Mediterranean Architecture. The curved shell forms reflect the sails of the fishing boats from the Greek Islands. In addition the client does a lot of entertaining and wanted a house which maximized the connection to a large outdoor space. The client's brief was to create a unique and iconic home. This presented challenges as the site is situated in a fairly homogenous suburban location. As a result, the house has been designed as a series of blocks which modulate the scale and minimize the impact of the house to the surrounding areas. It consists of a series of different internal levels, which step up progressively from the street. The house is quite solid from the street and progressively opens up to be completely open to the rear. These changes in levels created an opportunity for the strongly stepped external massing as well as the complex interplay of the stairs in the central internal spaces. The house has an 'L-shaped' configuration to maximize the solar aspect for the living spaces. There is also a central courtyard to the west which allows for light to penetrate the middle of the house and also serves to break up the massing of the facade. A feature of the house is the large central staircase element. The original idea for this stair came from the James Bond movie 'Never Say Never Again'. This stair adjoins the central courtyard so it is always bathed in light. The stair connects the various level changes in a single fluid sculptural element in dark polished concrete. The dominant feature of the house is the curved sail-like rear white walls. These walls soften the massing and bring a lightness to the house. The walls break up the space and progressively dematerialize the house into a series of cantilevered vertical and horizontal planes to the rear. The kitchen and living areas of the house finally dissolve into a large outdoor room for entertaining. This space contains a glass swimming pool with a pool bar and an minimalist outdoor seating enclosure. This structure has more the feel of a lounge area or bar with reclining daybeds and fabric clad structures. The use of mirrors and chandeliers enhances the luxurious lounge feel. The rear space also contains a terraced market garden which enhances the European character of the space. The living room and outdoor areas are connected by an indoor/outdoor fireplace. The spaces revolve around this element and further blur the line between inside and out. The complex geometries of the curved structures were resolved in 3-D by computer. Like all of our projects, this house, was designed entirely using 3-D computer modelling software. This allows the architect to see the influences of the site and spatial relationships on the design. This technique is called parametric design and you can see in real time how the design changes as you adjust to changing environmental variables.









# MOEBIUS HOUSE



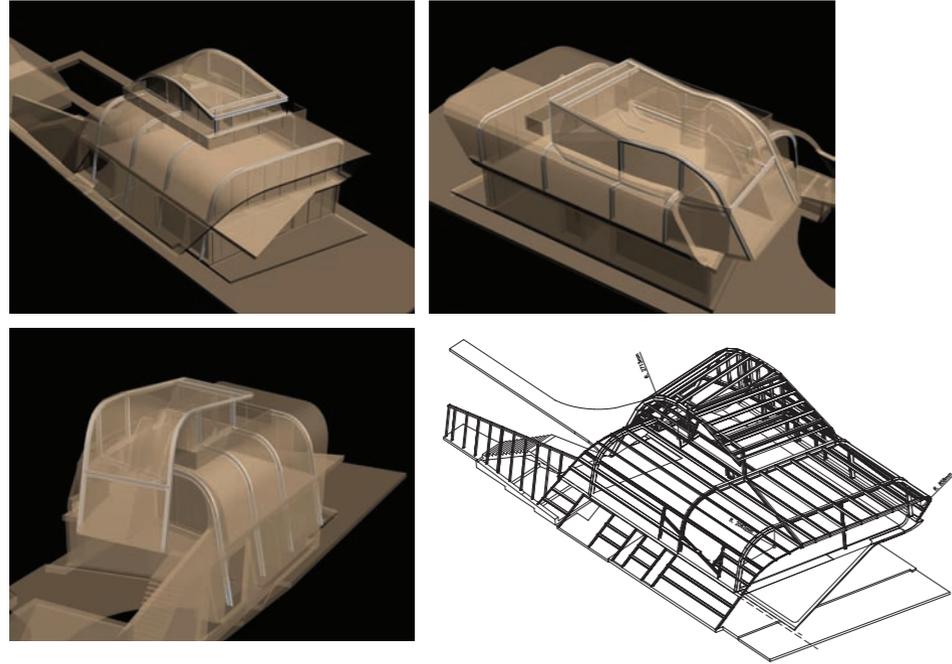
**Architect** Tony Owen Partners

**Team** Tony Owen, Sumir Diwan, Joseph Fok, Lawrence Loh, Mansia Lam

**Structure** Steel Frame

**Floors** Reinforced Concrete

**Photographers** Brett Boardman



This family house faces onto views of the Sydney Opera House and Harbour Bridge. The house explores a more environmentally sensitive form of design called 'micro design'. Micro design utilises parametric modelling software which can respond to very small changes to design input criteria. The unique form is a response to the requirements to maintain view and solar corridors. We started by responding to the site with a series of movements which folded and twisted the space in order to maximise the changes of level, view opportunities and potential for connectivity to outside spaces at various ground planes. We created a dynamic model capable of responding to changes in these variables and allowed the models to run in real time. We then stopped the model when we felt we had a model which satisfied our concerns. The house has a fluidity of space which is a direct result of having a strong relationship with the surrounding landscape.

**Automotive Assembly Process**

Due to the complex geometry of this house and the need for such fine tolerances, we had to evolve a completely new system of fabrication and assembly for this house. We started off designing a house, but in the end the construction process more closely resembles that of a car. Early on it became apparent that this house would have to be detailed and documented entirely in 3 dimensions. The steel frame house is being clad in metal panels which are being pre-cut in China. The complex curving structure is like the ribs of the human body and must fit within a very slim cladding zone. The tolerances are very tight so if anything is out by even a few millimetres, the ribs will stick out from the skin. It took about 12 months to finalise the steel chasis. This involved developing the structure as a 3 dimensional model and continually checking it by inserting it onto the 3-dimensional to make sure it fit. This model was continually checked against the computer model being prepared by the steel fabricators until it was identical and all junctions were resolved. In a traditional house the floor and walls are built first and the roof is added. The Moebius House is being assembled around a chasis like a car would be. First the chasis is assembled on site. Then the pre-formed metal cladding panels are attached to the chasis to create a monocoque shell. The house is wired and plumbed like a car, with the electrical, air conditioning and services all wired through the chasis. The kitchen even resembles a dash board.

**Elastic Architecture**

We are exploring an architecture which is more responsive to the environment, We refer to this as 'Elastic Design'. This is architecture that is pliant, yet has an inherent structure and ordering principle. Elastic Architecture is an architecture that is capable of responding to all manner of changing variables. This includes spatial, programmatic, environmental and structural issues. We are designing spaces which expand to allow greater connectivity to the exterior environment to maximise light, air and movement flows, or retract for greater privacy and differentiation of uses. These are spaces which respond not just to program and uses, but to patterns of behaviour which change through time. We are envisioning dynamic buildings which respond to variations in inputs and relationships. The result is an architecture which is 'future focused' in thinking, open and responsive in approach, and experimental in nature. This is an architecture which is supple and responsive, reactive to changing variables and assisted by new technology.



