

double-up with prefab

A crumbling beach house is now a light-filled home that's twice the size – thanks to a prefab solution that dealt with the challenges of an awkwardly shaped block, tight timeframe and modest budget.



When asked to double the size of this quintessentially Australian beach house in the NSW central coast suburb of MacMasters Beach, while at the same time retaining the home's generous garden area, architect Dianna Thomas knew the project would be a challenge.

"The house needed to grow, and quickly," Thomas says. "There were a number of challenges that needed to be overcome including a triangular shaped block bordered by a main road, western orientation, and working with the existing kit home, which was far from a high quality building to start with."

Her solution was to custom design a modular addition, prefabricated in a factory by Parkwood Homes in nearby Somersby. Delivered to site on the back of a truck and craned into place, Thomas says the transport logistics presented yet another challenge.

"We were all holding our breath as the prefab was lifted over the roof of the existing house – the guys who operate the cranes are pretty amazing. It created quite a spectacle when the prefab was being craned into place, and all the locals were out on the street watching," she says.



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Renovation rationale

With the home just a stone’s throw from the picturesque waters of MacMasters Beach, it’s no surprise owners Cherie Castaing and Bryce Aitchison decided to renovate rather than sell up and move elsewhere.

“As our family grew from two to five we outgrew our original three bedroom kit home. The house was not only too small but badly in need of either renovating or pulling down,” Castaing says. “We also love the walk to the beach, the local community and our native garden.”

Castaing explains that both budget and the need to live onsite throughout the renovation led them to opt for the prefabricated extension option.

“It solved all our concerns,” she says, “and the thrill of having a crane lift the prefab over our existing house and eucalypts was unforgettable. We moved in within days, which freed up our old place for renovating.”

The total cost of the extension was \$244,000; the prefab pavilion was \$102,000, while renovating the existing building and constructing the connection between them came to \$142,000.

“Our impression was not using prefab was going to add at least a further \$15,000,” Castaing says. “Once we told our builders what the quoted prefab cost was they quickly said they couldn’t match it.”

The ability to live onsite during construction also saved the family big dollars in rent. “We managed to avoid paying around \$10,000, and also avoided the hassle of moving and finding alternative accommodation,” says Castaing.

green living

By using passive solar design, compartmentalisation and the correct insulation, the lightweight extension is particularly energy efficient compared to an average project home. In winter, for example, the doors at each end of the breezeway contain the heat from the wood fire in the living areas.

The beach house includes a solar hot water system and large rainwater tank that supplies all the toilets in the home as well as the gardens. The lightweight materials used are also low in embodied energy.

Parkwood Homes order materials to size leaving minimal waste, while any material left after installation is brought back and either reused or recycled.

“All material that we do dispose of is picked up by SITA which then tips it out and recycles what they can,” says Parkwood Homes’ Brendan King. “We believe they’re able to recycle around 80% of the materials.”



The unconventional build

While the MacMasters Beach House was Thomas' first prefab, she was definitely prepared. She chose a prefab factory only 40 minutes from the site, giving herself and her team the opportunity to make several visits throughout the construction process. It also gave her first-hand experience of the challenges of prefab building.

"Prefabs are built so quickly so there's no time to make any changes," she says. "It was a very different to our normal experience building on site with a builder who will call up with questions, or will invite you to go and have a look at something before it's completed."

From a design point of view it's also a far cry from heavy construction according to Thomas, because the building must be framed and light in weight; a masonry house cannot be transported.

"There are many other parameters to do with engineering, assembly and the whole factory process," she explains. "And of course, the dimensions have to fit on the back of a truck."

The short timeframe means there's also virtually no construction site. "In this project the concrete footings were poured and a couple of weeks later the building arrived and the owners could move in."

Classy connection

The transition zone set up between the new prefab cabin and the existing house was both the most challenging as well as the most striking aspect of the project, according to Thomas.

"We were juggling with a lot of different geometries in connecting everything together," she says. "The transitional connecting piece really anchors the two pavilions to the site and has some interesting ceiling heights as it steps up from the existing driveway level."

And, to stay true aesthetically to the original and simple beach house flavour, HardieFlex™ sheet was used on the eaves and walls with timber cover battens. "It's a terrific substrate for a colorful painted exterior," says Thomas.

Transformed lifestyle

Thomas says the addition to the beachfront home had the potential to transform the owners' way of life and family dynamic. And Castaing agrees.

She says, "The prefab extension and renovation of the existing house has dramatically improved our lifestyle beyond what I had hoped for."

She says that with the kitchen now in the middle of the house, where it captures the breeze from the beach and welcomes in loads of natural light, the home is "a joy to be in".

And, with teenagers at home, the fact that the bedrooms in the prefab extension can be separated from the main living area by simply closing the kitchen door is a welcome bonus.

"I also like the story the house now tells as we move from the old original house through the bridging area and into the prefab," Castaing says.

design innovations

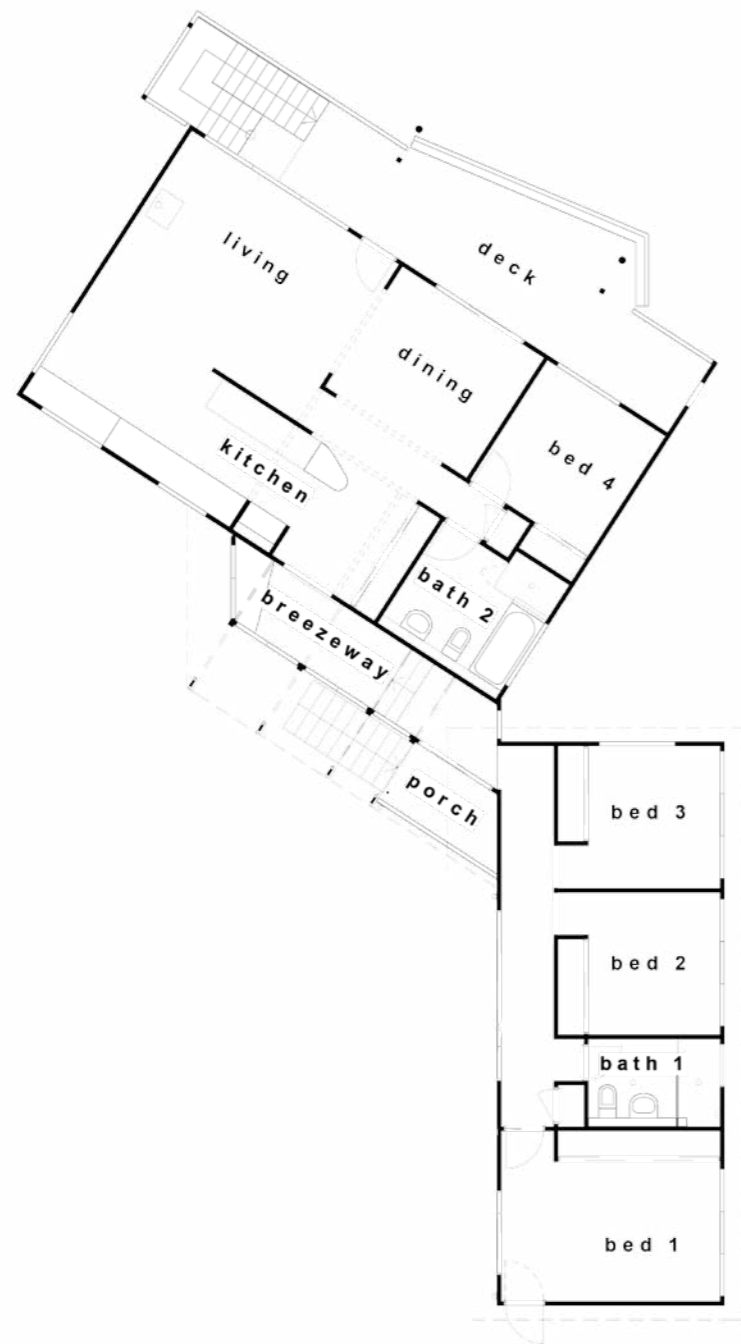
The transportation of the prefab module presented a number of challenges, due to the size of the block and the location of the extension, according to Thomas.

"Getting the module into the back garden was an interesting exercise of artistry from the point of view from the man driving the crane," she says. "We had to lift the pavilion over the roof of the existing house."

Thomas explains the most innovative design aspect of the newly renovated beach house is the transitional zone that joins the original house with the prefab. She says the transition was limited by a level change and low eave heights.

"The prefab pavilion had to relate closely to the rear garden and not loom over the top of it," Thomas says. "This would have been the case if we kept everything at the same floor height."

In addition, the low eave height on the existing house – also the attachment point for the prefab module – meant that Thomas had to juggle a number of different geometries.



Architect: Dianna Thomas, Dianna Thomas Architect.
www.diannathomasarchitect.com

Builder: Prefab - Parkwood Homes, www.parkwoodhomes.com.au
Site builder - Ross Holloway.

Existing house size: 96 sqm.

Addition: 72 sqm (prefab 57.6sqm and breezeway 14.4sqm).

External walls: HardieFlex™ sheet with timber cover battens.

Roofing: Lysaght Customorb.

Internal walls: Timber framed, insulated, 10mm plasterboard.

Windows: Aluminium framed, clear glazed.

Flooring: Addition - locally available hardwood, tongue and groove, polished. Existing house - existing cypress floorboards, re-sanded and polished.

Kitchen: Ikea cabinets, stainless steel and timber benchtops fabricated locally.

Outside decking and stairs: Locally available hardwood, tung oil finish.

Water management: Existing 10,000L rainwater tank supplied to all gutters, connected to toilets and garden taps.

Energy management: Evacuated tube solar hot water system, designed for optimum natural ventilation and natural lighting; generous eaves and

verandas for summer shade as well as winter solar penetration. Ceiling fans throughout bedrooms and living areas; wood heater to living area, limited unshaded external hard surfaces plus garden surroundings reduce summer heat build up on property; compartmentalised floor plan, which contains warmth in main house and bedroom wing.

Budgeted cost for build: \$200,000.

Actual Cost: \$244,000.

Long-term cost reductions: Energy efficient to live in, flexible planning to enable a blended family to live in the same house at different stages of life.

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