

MORNINGTON PENINSULA HOLIDAY HOME BY MODSCAPE COMPRISES FIVE HOUSING AND FIVE DECK MODULES [IMAGE BY PETER GLENANE PHOTOGRAPHY]

PREFABULOUS HOMES: MORE THAN GOOD CENTS

THERE'S A SLOW EMERGING MOVEMENT ON AUSTRALIAN SHORES OF ARCHITECTURAL DESIGNED PREFABRICATED HOUSING PROVIDING COST EFFECTIVE, QUALITY, SUSTAINABLE RESIDENTIAL, HOLIDAY AND TOURISM SOLUTIONS WITH DIVERSE APPLICATION POTENTIAL. **MARG HEARN** SPEAKS WITH FOUR AUSTRALIAN INNOVATORS AND TAKES A PEEK OVERSEAS.

Worlds apart from DIY kit homes, there is now an excellent selection of factory prefabricated housing and accommodation options as either completely finished modules that can be delivered as whole entities or in parts for on-site construction by the manufacturer.

The emphasis is on architectural integrity, aesthetics, and innovation in environmentally sustainable design using quality, enduring materials. For clients, there are the advantages of design flexibility, customisation to individual taste, quality control from go to woe, and an end result that's ready to occupy within two-four months from planning approval. Cost savings beckon at every corner from less labour, consultant and contractor fees, travel, waste, mistakes, surprises, weather delays and risks. The product can be added to, relocated, sold off or recycled.

People can enjoy holiday getaways and living surrounds that reduce environmental impact even in the most remote locations. With greater prefab take up, costs can be further slashed, making holiday housing more accessible to a host of market segments.

TAKEAWAY™

Construction: 12 weeks from signing a contract to occupation ready subject to standard council approvals

Installation: 5-6 days modular, 4-6 weeks flat pack construction

Prices: From \$63,325 studio house (21.3m²) through to \$316,807 5 bed (177m²) fully installed with an array of 1-4 bedroom designs in between. Standard options can be produced more cost effectively; custom designs within the system are possible \$2,000m²

Inclusions: All fittings, pre-wired, pre-plumbed, internal & external finishes, bathroom, kitchen, laundry, decks, colour scheme choice, termite protection, on-site labor to construct flat packs, services connection included up to 12 metres

Options: From standard C2 to C3 wind rating; landscape; driveway garage, carport



TAKEAWAY™ IS THE CULMINATION OF 30 YEARS OF RESEARCH AND DEVELOPMENT

TAKEAWAY™

According to Gabriel Poole, whose innovative architecture was recognised by the Royal Australian Institute of Architects Gold Medal in 1998, the broad adoption of prefabricated housing still has a way to go in Australia.

"I don't think people appreciate that you can get well designed and beautifully built houses out of factory construction," Mr Poole said.

Mr Poole's Takeaway™ series of prefabricated housing is the culmination of his research and development for over 30 years before its realisation in 2005 through collaboration with Cairns based builders Jim and Penny Margach of Gateway Constructions.

Their designs fit comfortably in rainforest settings, hillside blocks or any remote location for residential or holiday use, with discussions underway for tourism projects in far North Queensland and offshore. A multi-townhouse designed for Keswick Developments to be transported to Keswick Island at the Great Barrier Reef will provide specialist tourist accommodation.

They are also making indigenous housing.

"It's one of the things that's needed most," said Mr Poole, who is also working on a disabled housing concept.

Sensibly sized

The 'systems development', rather than a 'cutting-edge architecture' approach to Takeaway™ is testament that prefabrication can deliver quality architecture that's affordable, climate and client responsive, sustainable, and sensibly sized.

"My whole philosophy is that the sort of houses people have been building until this downturn came along are for people to show off - not for people to live in," said Mr Poole.

"People don't need 400-600 square metres of house."

A timber framing system is a distinguishing feature of the design, which is available as either a fully constructed factory built module for transporting onsite, or flat packed factory built panels, sized to fit into a container.

The revolutionary passive design breathing wall and pivoting ventilation systems achieves thermal comfort without air-conditioning as hot air is pulled from under the house, through the walls and out through the ceiling.



FLINDERS ISLAND BEACH HOUSE: FIVE PODS ARE LINKED BY A GALLERY WALKWAY TAKING IN SPECTACULAR VIEW [IMAGE COURTESY OF ECOSHELTA]

ECOSHELTA

Take-up of factory-manufactured housing in Australia is quite weak relative to overseas, believes Stephen Sainsbury, architect and designer of Ecoshelta prefabricated modular dwelling construction system.

But the potential is immense.

In a catch-22, prices reduce dramatically as numbers increase.

"When we have the production line in full swing we can produce houses for about a quarter of the cost of individual units, and we know we can get down to one tenth of the cost and still keep manufacture in Australia," Mr Sainsbury said.

"Comparing apples with apples, a one-off architect designed residence in a similar remote location would be more than double the cost."

Chopper dropper

Difficult sites and those with access problems are a forte of the robust Ecoshelta, which has an independent aluminium structural frame and modular walling system that allows for a choice in roof forms, layouts and fit-outs.

The small e.pod version (3.6 metre module grid) can be delivered

ECOSHELTA

Construction: e-pod basic parts in stock, 4-12 weeks for Bigpods and custom orders. Manufacture by building partnership with Wonders Building Company Pty Ltd

On-site installation: 1 day basic pod plus 1-2 day fit out

Prices: \$1500m²-2500m² Basic e.pod (with frame wall and roof elements) from \$29,450, Bigpod from \$32,450, ensuite extension from \$8,800, kitchen extension from \$16,450

Inclusions: Assembly, standard single curved roof

via helicopter. The Bigpod (4.8 metre module grid), while more suited to multi-pod residential use, is similarly able to withstand a gamut of extreme weather conditions.

Originally conceived as emergency disaster relief housing over 20 years ago, today their niche is in upmarket holiday home and tourism village applications.

Diverse installations include a five pod beach house on Flinders Island, a 15 pod coastal eco-tourism village, a 14 pod house in Canberra, a 10 pod steep water frontage in Sydney, an upstairs extension on an existing house, a research station in the Kimberley and a garden bathhouse in Hong Kong.

A remote mining village concept is also planned which borders the notion of resort lifestyle.

“For employers wanting to attract staff, offering reasonable accommodation can encourage people to stay longer, increase productivity and reduce recruitment costs,” Mr Sainsbury said.

MODSCAPE

An eye to the holiday and lifestyle market that extends approximately 150 to 200 kilometres beyond a city’s radius was the catalyst for Modscape’s emergence in 2006 as a provider of architect designed prefabricated modular homes.

Director Jan Gyrn, who has a building and design background, says Modscape’s focus is on functionality, quality finish, aesthetics, sustainability and convenience at a “cost-controlled” price. Demand has been equally divided between the anticipated market, tourism projects and urban-based new homes, extensions and even an inner city penthouse rooftop addition.

MODSCAPE

Construction: 12 weeks from council approval

Installation: 1 day

Price: Average \$2200m2

Inclusions: Building permit, bathroom, kitchen, laundry, delivery up to 150 kilometres (ex-Melbourne), installation, low VOC paints, chemical free joinery and wood products, double glazing to 80% of windows, LED or compact fluro lighting systems, multiboard internal walls with enhanced fire retardant and acoustic properties

“Off-site manufacture reduces the on-site disruption of a traditional build of 10 to 12 months to more of a one to two day spectacle without negatively impacting business.”

A typical single steel framed module size is 15 metres x 4.35 metres, but the sky is the limit in design flexibility by adjusting the number and sizes of modules and how they relate. In-house architects work with clients to customise individual solutions as well as collaboration with external project specific architects.

A single team overseeing the entire process from design, construction to installation, endows clients with the choice of as much or as little service as they want.

PREBUILT

To fill an opportunity in the Australian market for architectural-led, prefabricated house and commercial construction solutions, engineer Rob Colquhoun, and Christiana Colquhoun, a former asset manager, started Prebuilt six years ago.

An increase in market momentum has been experienced in the last three years partly attributed to a growth of players in the space

PREBUILT

Construction: 8-10 weeks from planning approval

Installation: 1-2 days

Prices: From \$100,000 - \$1.2m plus, or \$1600m²-\$2200m².

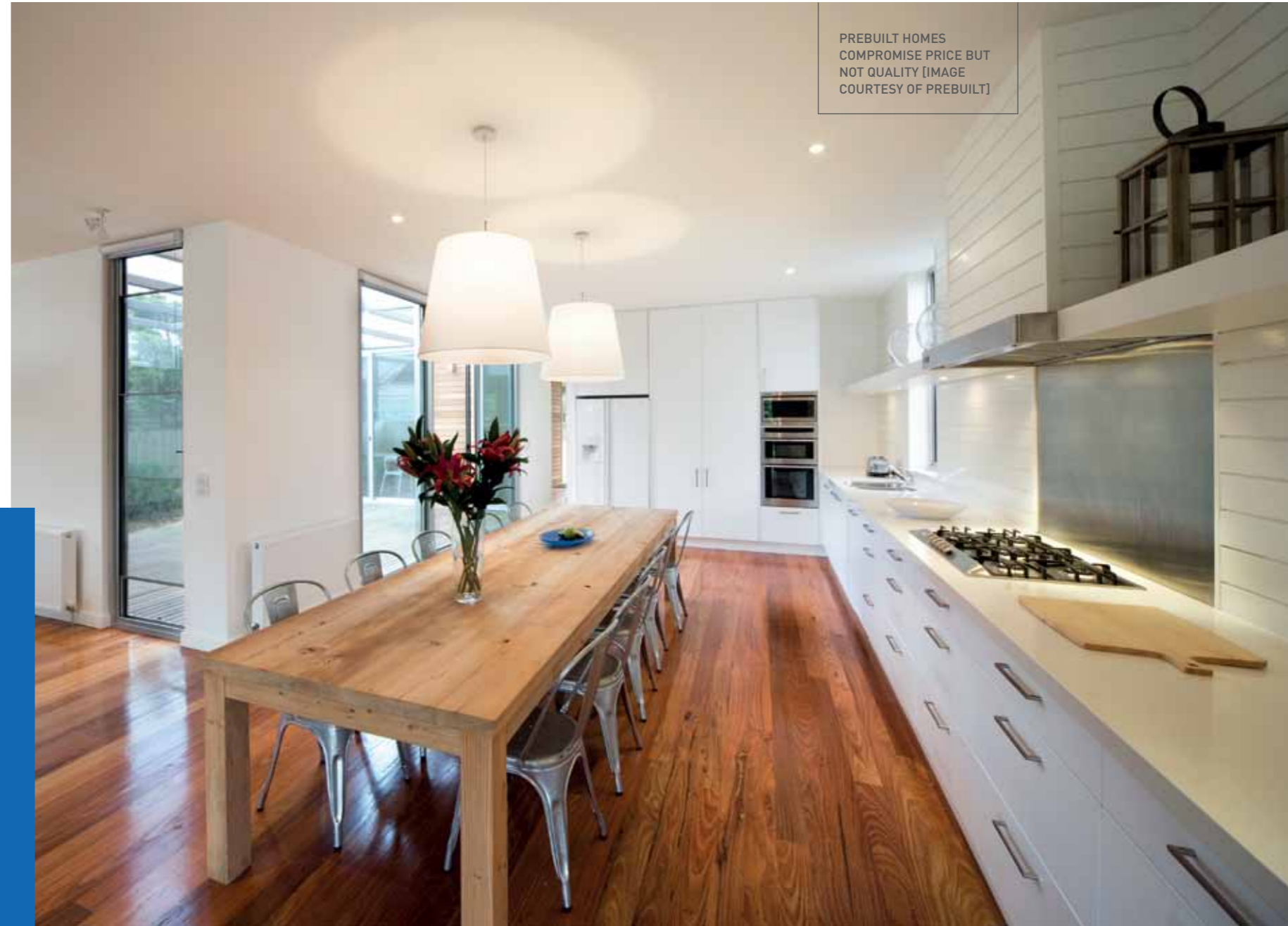
Sizes: From 60m² to 320m²

Inclusions: Kitchen, bathroom, laundry, pre-plumbing, pre-wiring, selected delivery, site works, an agreed level of finish

Extras: Floor coverings, internal paint, services connection by local trades

which is encouraging prefab take-up as a “more mainstream” choice, beyond the early adopters, Ms Colquhoun says. Conditioning via the car industry has also enabled people to picture architectural prefab “as an upmarket Ikea type of concept.” The regional market, country and coastal, has been strong.

People seeking to build a holiday home generally want to contain costs,



PREBUILT HOMES COMPROMISE PRICE BUT NOT QUALITY (IMAGE COURTESY OF PREBUILT)

avoid hassles and use their home sooner rather than later - prefab offers that comfort of knowing “what you’re getting and when you’re getting it.”

Tourism installations have ranged from caravan parks to B&Bs, and there are several architect/client boutique concepts on the drawing board.

Prebuilt’s range of six fully factory built and customisable house types include: Freedom designed in collaboration with Susie

Leeton Architects; Pod, ideal as a single holiday cabin or like the pavilion style Mod, which was designed in partnership with Pleysier Perkins architects; Retreat - a popular option for country and high country settings, and Escape which has been embraced by the first homebuyer and holiday markets. Mod is delivered as a complete unit, other designs literally fold in half, to significantly reduce transport costs.



THE BOCAGES CUBIC SHAPED CARRÉ D'ETOILES FEATURES A TRANSPARENT OVERHEAD DOME FOR STAR GAZING [IMAGE COURTESY OF CARRÉ D'ETOILES]

Double glazing, insulation, water saving fittings energy efficient appliances and footing systems act to minimise site impact.

INTERNATIONAL TRENDS

Groundbreaking prefabricated modular design responses have also evolved internationally.

Stargazing in France

In France, a shift in tourist preferences during the nineties for upmarket accommodation in the countryside away from mass tourism prompted Bocages, leaders in quality “get-away-from-it-all” countryside holidays, to design the distinctive cubic shaped Carré d’Etoiles.

Featuring a transparent overhead dome for star gazing, the 2.5 tonne prefab integrates shower, toilet, sleeping area, storage, kitchen corner lounge, flat screen television and telescope into a compact nine square metre space.

A single Carré d’Etoiles starts at 29,000€ excluding works. ▲

*Prices current as at 1 October 2009 and GST inclusive
 *For inclusions, extras, sustainable design features, materials, standard and customisation elements, delivery, site works, installation, please refer to each individual manufacturer for a comprehensive specification and options list
 *Each of the above Australian designs requires local council planning approval and can be delivered Australia-wide

INFRASTRUCTURE CHARGES AND THEIR IMPACT ON HOUSING AFFORDABILITY

AS THE COSTS OF DEVELOPMENT CONTINUE TO RISE, SO DO HOUSEHOLD PRICES AND RECORD LEVELS OF DEBT. IN ORDER TO DETERMINE WHY HOUSING CONTINUES TO COST MORE TO DELIVER, THE RESIDENTIAL DEVELOPMENT COUNCIL (RDC) COMMISSIONED RESEARCH TO INVESTIGATE THE DRIVERS OF HOUSING DEVELOPMENT COSTS IN AUSTRALIA.

The resulting reports examines costs from actual housing developments in cities in Australia, drawing on what can be learnt from real housing projects, building real homes.

The study examines housing in the following 15 major residential growth markets:

- Sydney
- Melbourne
- Brisbane
- Perth
- Adelaide
- Canberra-Queanbeyan
- Hobart
- Darwin
- Newcastle
- Tweed
- Sunshine Coast
- Gold Coast
- Ipswich
- Redland
- Mandurah

THE COST OF DEVELOPMENT IN AUSTRALIA’S GROWTH CENTRES

What was clear from the onset was a wide range of taxes and charges that are applied to residential developments in Australia. These are levied at all three levels of government in Australia as well as by agencies of governments and government owned businesses providing utility and other services.

The main results of the study point to significant problems inherent in infrastructure charges adding to the cost burden of paying for many government interventions in housing developments.



A WIDE RANGE OF TAXES AND CHARGES ARE APPLIED TO RESIDENTIAL DEVELOPMENTS IN AUSTRALIA