

MEDIA RELEASE
May 2024

Australia's housing industrialisation revolution: why modular design needs to think big for true affordability

Authored by Plus Architecture Director, Ian Briggs

Australia is caught in a perfect storm of rising property prices, a shrinking pipeline of new builds and a chronic affordability crisis. Across Asia-Pacific, there is simply not time, materials or trades available to meet the rapidly accelerating demand for housing with our current construction models. It's clear we need to think outside the box on housing delivery – and modular design can, and should, be part of the solution.

Prefabricated modular construction has been long recognised as a sustainable alternative to traditional building methods. In traditional modular systems, prefabricated housing modules are built offsite in a controlled factory environment and then transported to site for swift assembly as a single module or combined and stacked with other modules.

The potential benefits of modular are manyfold, helping to reduce some of the carbon emissions generated by the construction and building operations sector – which contributes [more than 40%](#) of the emissions driving global warming. A controlled offsite construction environment minimises safety risks, results in a high level of quality assurance, and has the potential to be 30-40% more cost-effective than traditional building methods. Standardised designs also help reduce construction waste and better enable 'Passive House' insulation levels, resulting in a healthier, more comfortable and efficient building.

Seen as a strong alternative to traditional construction for uses like social housing, student housing, hotels and hospitality, new developments in modular systems offer a far greater level of flexibility and design expression than ever before.

Across the world, and particularly in geographic regions like New Zealand where most buildings are timber and can't be recycled like steel or concrete, modular also provides much better outcomes in relation to Whole Building Life Cycle Assessment, as modular building elements can be recycled after use.

But even as modular design enters an exciting new era, the traditional evocation of the 'shipping container residence' remains: a single modular house transported on the back of a truck, with limited ceiling heights and flexibility. Limited public understanding of modular housing, alongside a lack of investment and regulatory challenges, is holding back the sector from its full potential.

We need to think bigger and look beyond the shipping container residence to fully embrace the possibilities of new modular technology for more efficient and cost-effective housing delivery.

A new horizon for modular design

Modular designs offer us new opportunities to express architecture in exciting ways, able to be assembled and combined in unique ways for boundless structural variety and innovation.

Across Australia and New Zealand, Plus Architecture is helping to develop a series of modular construction systems that offer flexible, custom-made solutions to individual sites, briefs and budgets. These

forward-thinking design principles and typologies seek to establish practical applications for modular buildings suitable for use on a variety of sites.

A collaboration with PowerHouse Homes Founder & CEO Waco Tao is forging new territory in modular design, powered by automotive style supply chain integration, with Plus Architecture developing a series of large-scale modular housing concepts including a 19-storey affordable apartment development on the Gold Coast that can be built in one tenth of the time and 40% less of a traditional build.

In Sydney, Plus Architecture has recently adopted a 'kit of parts approach,' – a set of universal design principles that define how prefabricated pods can be used to deliver durable and high-quality apartments. Thanks to a focus on sustainable, large-scale affordable and social housing models, the potential impact of this framework on Sydney's housing crisis is significant.

Plus Architecture further has five modular projects in the pipeline in New Zealand – a mix of five-storey apartments and hotels that are breaking new ground in aiming for 100% modular construction. This approach is significantly more cost and time effective than modular buildings where lifts, lobbies and stair access have to be constructed separately.

Embracing the future of modular

After more than 2,000 years of building homes in much the same way, it's time we fully embraced highly automated and controlled 21st century construction methods. Widespread acceptance of modular systems can offer us a revolution in time, quality and cost efficiency, but the current volume of modular housing delivery is not high enough to meet Australia's housing needs.

By ramping up the delivery of more flexible and larger scale modular housing viability, we can open up more opportunities for onshore construction, which holds huge potential benefits for regional communities. Additional funding and regulatory support from governments and banks can help us overcome current barriers in the sector and allow modular housing to emerge as an invaluable cornerstone of Australia's construction future.

At the same time, as designers we need to give greater consideration to modular requirements and funding, as modular stages are different to standard building stages and require a different financial plan often with more upfront investment, but with significant cost and time benefits over the lifecycle of a building.

While there will always be a place for 'traditional' building, modular is an important part of a mix of solutions to our current construction challenges. Together, we can demand more sustainable and efficient construction methods, delivering modular buildings that are resilient, flexible and thoughtful.

About Plus Architecture Director, Ian Briggs

A Director at Plus Architecture and expert on modular design and construction, Ian will be a guest speaker at the [Modular for Affordable Housing Summit](#) in Sydney in June and the [Modular for Affordable Housing Summit](#) in Auckland in July.

Ian is acknowledged as an accomplished designer with the ability to transform ideas into inspired design outcomes that challenge convention. His master planning and design expertise is evidenced through his lasting work which has helped to define many prominent precincts and created urban markers across the

cities in which they stand. Connectivity is critical in Ian's work, designing tactile, environmentally, and socially responsive architecture sympathetic to its surrounds.

ENDS

Editor's note:

Imagery can be downloaded [here](#).

Plus Architecture Director Ian Briggs is available for further commentary on the modular design and construction sector.

For commentary on modular design in New Zealand, Plus Architecture Director Matthew Charles is available.

Media contact:

Isabel Campbell
Communications Collective
isabel@communicationscollective.com.au
+61 493 673 172

About Plus Architecture

Plus Architecture is a dynamic master planning, architecture, interior design and visualisation practice dedicated to delivering inspiring, impactful projects. Underpinning each project is community-responsive and energy efficient designs that are beautifully crafted around the habits and lifestyles of real people. Since opening their doors in 1997, Plus Architecture have won and been shortlisted for multiple awards including the AIA Awards, Property Council Awards, and Australian Interior Design Awards. With studios across Australia and New Zealand, Plus Architecture draws on inspiration from around the world to push design boundaries and create innovative architectural solutions, tailored to the individual requirements of each brief.

www.plusarchitecture.com.au

About PowerHouse Homes

Founded in 2009 by Waco Tao, PowerHouse Homes is a Melbourne-based prefab housing pioneer that specialises in R&D, manufacturing, and construction of innovative prefabricated buildings for residential and commercial markets. By adopting an automotive supply chain model, the company offers sustainable, affordable, and architecturally designed homes, with a swift eight-week turnaround from order to completion, providing a timely solution to address worsening housing shortage and supplies. Powered by circular economy principles, PowerHouse Homes strives to harmonise business growth with environmental stewardship. By decoupling growth from resource depletion and waste generation, PowerHouse Homes pioneers a sustainable and regenerative future. This synergy aligns with the global momentum towards responsible construction practices, fuelling innovation to tackle the escalating housing crisis and create a better future for all.

www.powerhousehomes.com.au