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Modern Methods of Construction

Accelerating Australia's Housing Supply

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Executive Summary

The Federal Government, along with state and territory governments, has set an aspirational target to deliver 1.2 million new well-located homes over five years – an average of 240,000 homes per year. The Accord has helped drive accountability across all levels of government and sharpened the focus on supply-side solutions.

Achieving this target will be difficult. For context, the residential construction sector has only once delivered 220,000 dwellings annually over four consecutive years – in the late 2010s. And it comes at a time when the capacity of the construction industry is already stretched. The challenge is compounded by lagging productivity across the sector.

The overarching objective, therefore, must extend beyond short-term targets and aim to build long-term, enduring supply capacity and solutions.

There are several ways to accelerate housing delivery. Increasing the number of multi-density projects, such as those now being prioritised by the NSW Government around transport hubs, is one. Another is fostering greater diffusion and adoption of innovative technologies to help build more homes faster.

Recent advances in building construction have shown promise in improving delivery speed. Yet, industry take-up has been slow. Building contracting is inherently risky: firms must comply with standards while achieving returns that reflect project risk. Adding further uncertainty, adopting new construction technologies is often seen as costly and a step too far – even when those technologies are proven, compliant with the National Construction Code, & manufactured to Australian standards.

Despite these challenges, accelerating the uptake of modern methods of construction (MMC) remains one of the most promising ways to lift productivity and deliver more homes, more quickly.

This paper aims to quantify the potential supply uplift from increased MMC adoption via two plausible scenarios based on a range of government and industry actions. It also examines recent advances in construction technology, identifies barriers to uptake, and outlines the relative benefits of MMC methods versus traditional building.

Key Findings

Based on policy and private sector-led actions to address key barriers to MMC, an MMC Acceleration Scenario could enable the delivery of around 122,000 additional homes over 20 years (31,000 in the first 10 years, and 91,000 in years 10–20).

Under more ambitious policy & private sector-led action, an MMC Acceleration Plus Scenario could support 192,000 additional homes over 20 years (44,000 in the first 10 years, and 148,000 in years 10–20).

The MMC Acceleration Scenario could unlock an estimated $14 billion in additional economic output and housing investment over 10 years, or $55 billion over 20 years. The MMC Acceleration Plus Scenario could deliver approximately $20 billion over 10 years, or $87 billion over 20 years, in additional economic output through higher housing investment.

Australia lags many global peers in MMC uptake, estimated at around 5%, compared to Sweden (~45%), Japan (~15–20%), New Zealand (~10%), and Canada (~4%).

The primary benefits of MMC are its ability to deliver homes in up to half the time of traditional methods, using fewer on-site resources, more predictable workforce, and generating up to 80% less construction waste. While there is currently no material cost advantage in using MMC over traditional builds, greater scale is expected to unlock cost efficiencies over time.

Seeding the pipeline is likely to be the single most important short-term lever to accelerate MMC adoption. Addressing finance constraints, enabling greater product customisation, streamlining regulatory certification, and building a fit-for-purpose workforce are also key to unlocking growth.

Unlike traditional construction, MMC relies more heavily on efficient freight networks, integrated supply chains, access to capital, and imported manufactured components. The expressed appetite for greater use of MMC at the recent Economic Roundtables could help kick-start the regulatory and policy changes needed to support MMC growth and improve construction industry productivity.

There isn't Enough Housing, a Generational Problem

The structural decline in inflation and interest rates that began in the early 1990s has now run its course. In 1990 — just before the early 1990s recession — the average mortgage rate in Australia was 17%. By the time of the COVID-19 pandemic, it had fallen to just 4.52%, according to RBA data[1]. This long-run decline was mirrored across most advanced economies and had consequences for the Australian housing market.

For homeowners, falling interest rates contributed to a significant windfall: the median Sydney house price increased more than elevenfold over the 30-year period. For prospective buyers, however, affordability worsened as prices consistently outpaced incomes.

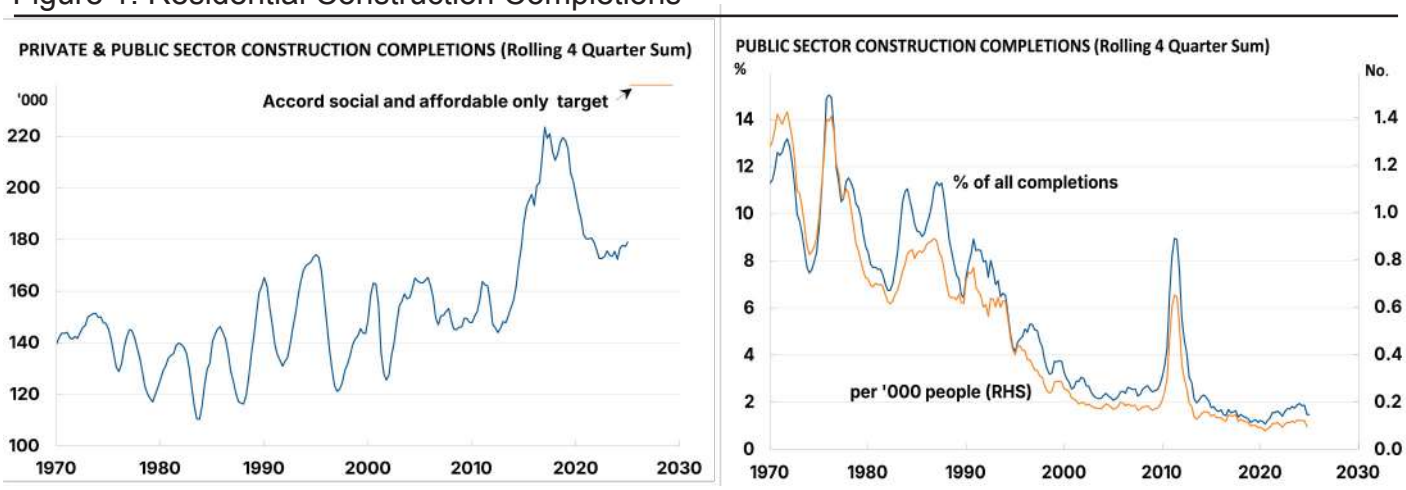
In response, successive state and Federal governments have sought to boost first home buyers' purchasing power — typically through direct subsidies or grants. Most recently, the Federal Government has introduced a shared equity scheme. While these interventions have helped some first home buyers enter the market, the broader evidence suggests they have largely been capitalised into prices, creating a large financial impediment for the next marginal buyer.

More positively, the current Federal Government has taken a more proactive role in supporting housing supply, particularly via the social and affordable segments, through initiatives such as the Housing Accord and the Housing Australia Future Fund (HAFF), which together aim to deliver 20,000 social & 20,000 affordable dwellings.

The Housing Accord was designed to bring together all levels of government, institutional investors, community housing providers, and the construction sector to boost medium-term supply. In its second phase, governments have raised their collective ambition from 1 million to 1.2 million well-located homes over five years, beginning mid-2024.

This target — averaging 240,000 completions per year — is highly ambitious. Australia has never delivered housing at this pace, let alone in a coordinated way across public and private segments. Still, setting a stretch target sends a clear signal to market participants and can help align planning, investment, and delivery.

Figure 1: Residential Construction Completions



Source: ABS Cat 8752

[1] See Cash Rate Target Overview | RBA

Prefabricated and Modular Housing can be a Part of the Solution

Productivity in residential construction is a problem in Australia

Australia's construction industry has consistently underperformed on productivity compared to the broader economy[2]. While the sector is often criticised for being slow to adopt new technology, the nature of building contracting itself creates structural barriers to innovation.

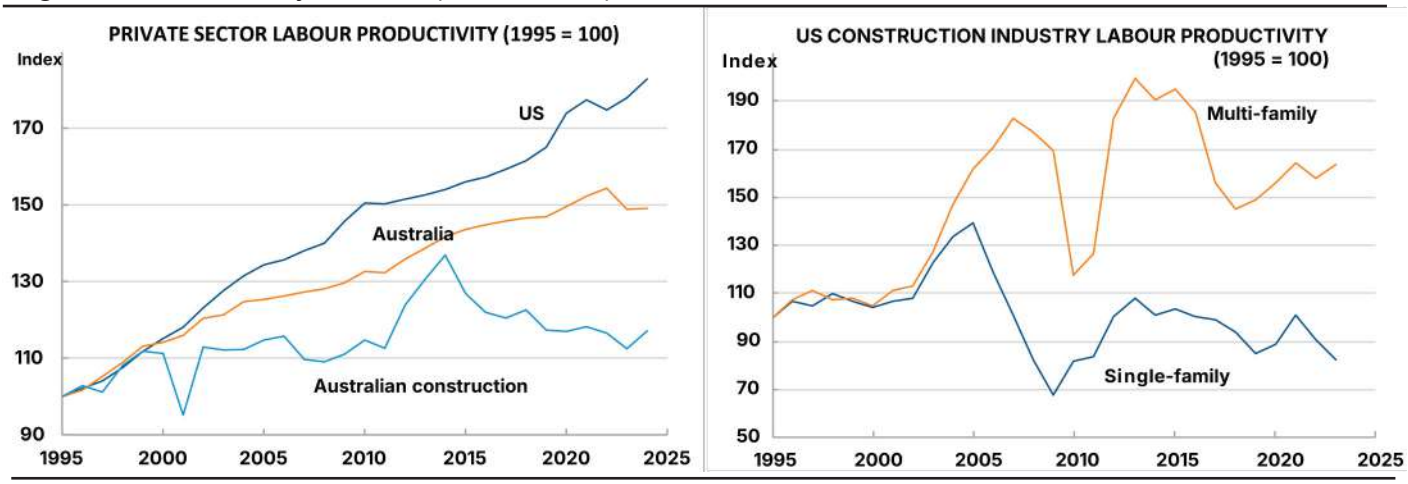
ABS data illustrates the scale of the challenge. Over the past couple of decades, productivity in the Australian construction industry has remained weak (see Figure 2). Unfortunately, detailed productivity data across different construction segments — such as detached housing, multi-density residential, infrastructure, and commercial buildings — is not available.

However, insights from the United States provide a useful reference point. In the US, labour productivity in multi-family residential construction has been materially stronger than in the single family segment. This difference reflects the different style of construction and site logistics used in each sector.

Multi-family construction benefits from more efficient worksite dynamics. Tower cranes and vertical build systems streamline material handling, and scheduling trades across multiple, similar dwellings reduces downtime. In contrast, single-family builds often involve dispersed sites, requiring trades to set up and pack down for each individual property, adding time and cost.

Additionally, the economics of multi-family development improve significantly in urban areas where land is scarce. Higher-density developments allow more households to be housed on the same land footprint, making more efficient use of both labour and land.

Figure 2: Productivity Growth (1995 = 100)



Source: ABS Cat 5204 US NBER. Labour productivity is measured as gross value added per hour worked

Lump sum contracting, where a builder agrees to complete the entire project for a fixed price regardless of the actual costs incurred during construction, remains the dominant model for new residential construction. Under this arrangement, the builder assumes most of the construction risk and creates a strong bias toward using familiar materials and proven processes. As a result, many contractors are reluctant to adopt new technologies or building methods, which also explains the slow uptake of MMC across the industry.

[2] Productivity in residential construction refers to the efficiency with which inputs — particularly labour and capital — are used to produce new housing. Labour productivity measures the amount of construction outpu per hour worked, while multifactor productivity captures the combined efficiency of labour and capital inputs (such as machinery, equipment and technology) in generating output.

Understanding the assembly process

To properly understand how productivity can be improved in residential construction, it's worth understanding the tasks that need to be undertaken to build a residential construction project. Residential construction involves completing many assembly tasks that have traditionally been undertaken on-site.

For example, reinforced concrete foundations are built by first excavating the foundations, then placing reinforcement into the excavation before pouring concrete.

Walls are built by first constructing frames on-site using timber or steel transported to the site, erecting the frames in position, fixing external cladding using materials transported to the site, installing insulation into the wall framing, & fixing internal cladding using materials also transported to the site.

Figure 3 shows the full list of tasks that need to be undertaken to complete a detached dwelling construction project. Technological advances mean that many tasks can now be undertaken off-site, and these are highlighted in bold.

Figure 3: Typical detached dwelling residential construction tasks

- Site clearance
- Foundation excavation
- Placement of slab reinforcement
- Placement of slab concrete
- **Wall frame construction and erection**
- **Roof frame construction**
- **Fixing of roof sheeting**
- **External cladding**
- **Services rough-in**
- **Window and door insulation**
- **Insulation and internal cladding**
- Painting
- Services connection
- Floor covering and cabinetry
- Landscaping

Source: Macro Strategy Advisors. Tasks completed off-site using modular construction typically include the items listed in bold. It may also include painting, service connections, floor covering, and cabinetry.

What is prefabricated and modular housing

Improvements in manufacturing technology have been the catalyst for moving many of the on-site assembly tasks off-site. By taking these tasks into a factory environment, economies of scale can be achieved and the marginal cost of production can be reduced.

According to the Housing Industry Association[3], prefabricated and modular housing can provide projects with the following benefits:

- Reduced on-site construction time
- Increased labour productivity through a factory-style assembly line approach
- Improved cost control — a well-defined delivery schedule is easier to meet in a controlled factory manufacturing process
- Improved quality control — it is easier to control the quality of a manufactured product in a factory than it is for a product assembled on-site and exposed to weather
- Less waste — on-site construction creates a lot of waste that normally ends up in landfill
- Safer work environment — it is easier to provide a safe work environment in a factory than on a construction site, where temporary scaffolding and other equipment need to be installed furthermore, on-site work is highly dependent on the weather, particularly for tasks that need to be completed prior to "lock-up."

[3] See Pre-fab and modular construction

There are three types of prefabricated building components:

1D

Linear (1-Dimensional / 1D)

1D involves moving a relatively small component to the site and fixing it into position. This uses traditional methods of erection. For example, a steel beam or truss is manufactured off-site and then fixed into place on-site.

2D

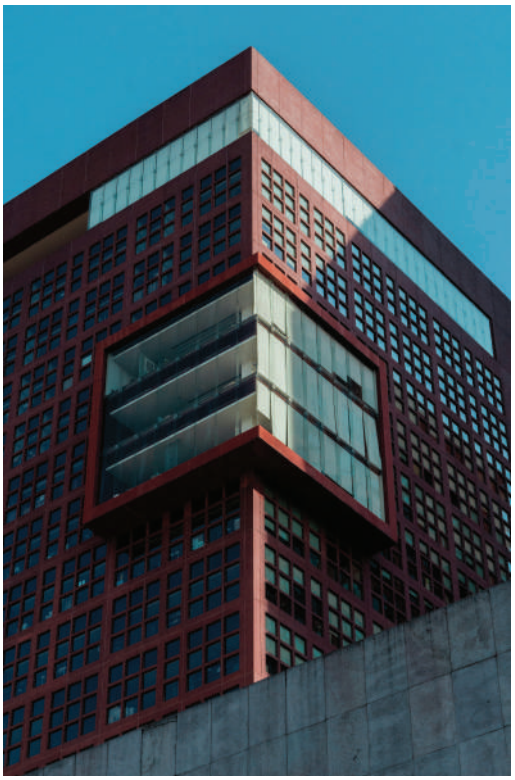
2-Dimensional (2D)

2D prefabrication involves manufacturing a wall, roof, or floor panel off-site and transporting it to the site for erection. A significant portion of the manufacturing work is completed off-site, rather than on-site using traditional construction methods.

3D

3 dimensional (3D)

3D prefabrication involves manufacturing fully formed building components such as a bedroom module or bathroom pod off-site, transporting them to the site, and installing them into position.



MMC is not a single approach to construction, rather it is a collection of 'methods' to plan, design, and build that differ from traditional onsite builds. This paper is primarily focused on modular offsite manufacturing where a material proportion (typically more than 50%) of construction is completed offsite, in a controlled factory environment, using pre-manufactured components. However, MMC also includes new technologies such as 3D printing robotics artificial intelligence (AI).

Box 1: History of Prefabricated and Modular Housing

Prefabricated and modular housing has a long history, dating back to the 1830s, when London carpenter John Manning built a prefabricated home for his son migrating to Australia. The home was constructed in England, shipped to Sydney, and assembled on-site.

In the United States, prefabricated housing emerged in the 1840s to meet the demand created by the California Gold Rush. A notable early example was the Crystal Palace, built for Britain's Great Exhibition in 1851 — designed in less than two weeks and constructed in just a few months before being dismantled and reassembled at a new site.

Significant growth followed in the early 20th century, particularly in the US, where Sears, Roebuck and Co. sold over 500,000 prefabricated homes between 1908 and the 1940s. These catalogue homes were marketed directly to consumers and cost roughly two-thirds less than traditional builds, with many still standing today.

Another major wave of modular construction occurred after World War II, as countries like the US, Japan, and several in Europe used prefabricated housing to meet the surge in demand from returning soldiers — delivering homes at scale, quickly, and at a lower cost than conventional methods.

The Australian MMC Industry

In the early 20th century — prefabricated construction gained momentum as part of broader industrialisation. By the 1920s, "Federation Homes" had become popular across Australia, incorporating modular design elements such as standardised components and factory-built items.

Following World War II, demand for demountable and relocatable buildings surged, particularly in Europe and Japan, where there was an urgent need to rebuild urban areas. Prefabrication methods were well-suited to meet this demand quickly and efficiently.

The turn of the 21st century brought renewed interest in modular construction, driven by technological advancements and a growing awareness of its benefits. The industry began to embrace innovative building materials, digital design tools, and advanced manufacturing techniques, leading to improvements in construction quality, sustainability, and the ability to deliver more customised solutions.

In 2014, Melbourne's Acute Services Building, part of the Monash Medical Centre, was completed using modular construction. The $76 million project comprised more than 15,000 modules and demonstrated how speed and quality could be achieved at scale.

Recent innovations, such as flat-pack modular systems, have expanded design versatility, enabling modular buildings to evolve from traditional rectangular configurations into more architecturally diverse structures that better reflect client preferences.

A lack of systematic data collection makes it difficult to measure exactly how much MMC is being delivered in Australia. Consultation with industry, government, and other stakeholders suggests that between 3%–5% of all dwellings (currently equivalent to 6,000 to 9,000 dwellings per annum) are built using MMC.

Despite these advances, modular construction still carries some stigma in Australia, where it is often viewed as cheap, transportable, and semi-permanent accommodation. In reality, many of these homes are constructed on residential blocks using similar materials and designs to conventionally built dwellings.

For this report, MMC is defined as dwellings where the work done off site includes wall, floor, and roof framing; electrical and plumbing rough-in and fit-out; internal cladding and insulation; external cladding; and floor lining. Groundwork, slabs, and foundations, along with external work, are done on MMC-defined projects as well, but also when traditional construction methods are used. Similarly, items such as floor finishing, joinery, painting, and light fittings are completed on site when MMC is used, but also by builders using traditional construction methods.

Figure 4: Some suppliers of modular residential housing in Australia	
Modscape	One of Australia's leading experts in offsite construction, using the latest robotic technology. They have constructed prefabricated housing for single-residential homes, schools, hotels, and a wide range of other sectors.
Shawood	A subsidiary of Japanese home builder Sekisui House. They are expanding their market with community style development in many areas all over Australia such as Castle Hill. Community buildings are developed using modular technology, but single-family home product is also developed.
UniPlan	UniPlan is a company based in Armidale, NSW, established in 1999. It has delivered over 2,800 MMC properties across Australia.
Parkwood modular buildings	Provides a range of standard designs, including 1–2 bedroom granny flats, Smart Pods, 2-bedroom, 3-bedroom, and 4–6-bedroom homes. Some solutions are transportable.
Fleetwood Australia	The Building Solutions Unit operates exclusively in the multi-home project market (not standalone). It offers standard design solutions for residential developments, lifestyle villages, key worker accommodation, and social and affordable housing.
Anchor homes	Provides modular homes to the Victoria and Southern NSW markets. It offers standard designs for both single and multi-home projects.
JMB Modular buildings	Provides standard design modular homes to the Victoria market. Homes are generally smaller, ranging from 1 to 3 bedrooms.
Westbuilt homes	A QLD-based business providing modular homes to the South-East QLD and Northern NSW markets. It offers standard designs for single or multi-home projects. A wide range of home sizes is available.
EcoLiv	A regional Victorian manufacturer of standard design modular homes that can be delivered across Australia.
ArchiBlox	A Victorian manufacturer of custom-designed modular homes servicing the NSW, VIC, QLD, SA, ACT, and TAS markets. The company also provides commercial building solutions.
Hickory	Hickory is a VIC-based medium- to high-rise contractor that uses modular techniques and offsite manufacturing to speed up the construction program by around 30%. The business doesn't build single-home projects; it specialises in multi-density or commercial high-rise projects.
Habitech Systems	A VIC designer and manufacturer of custom-designed modular homes servicing mainly VIC market.
Source: Macro Strategy Advisors	

An academic study of the Swedish and Australian prefabricated building industries concluded that a focused and coordinated industry association is essential to support industry growth during its early stages. In Australia, the prefabrication and modular housing sector is represented by its own dedicated body – PrefabAUS. With over 300 members nationally (including both corporate and individual stakeholders), PrefabAUS supports the sector through events, learning opportunities, and advocacy. It aims to improve safety and efficiency in construction by promoting digital technologies, advanced materials, and modern systems.

However, having proactive industry body does not automatically translate to widespread disruption in a complex product like residential construction, where many manufactured components are traditionally assembled on-site.

Nonetheless, MMC is gaining increasing attention from policymakers. In the 2024–25 Federal Budget, the Commonwealth Government committed $54 million to accelerate MMC adoption. An additional $120 million has been allocated from the National Productivity Fund to incentivise states and territories to remove regulatory barriers that inhibit MMC uptake. These reforms aim to speed up home construction across Australia. At the state level, the NSW Government has committed $10 million to pilot the use of modular housing for social housing delivery, with projects planned in Wollongong and Lake Macquarie, and construction expected to be completed in 2025.

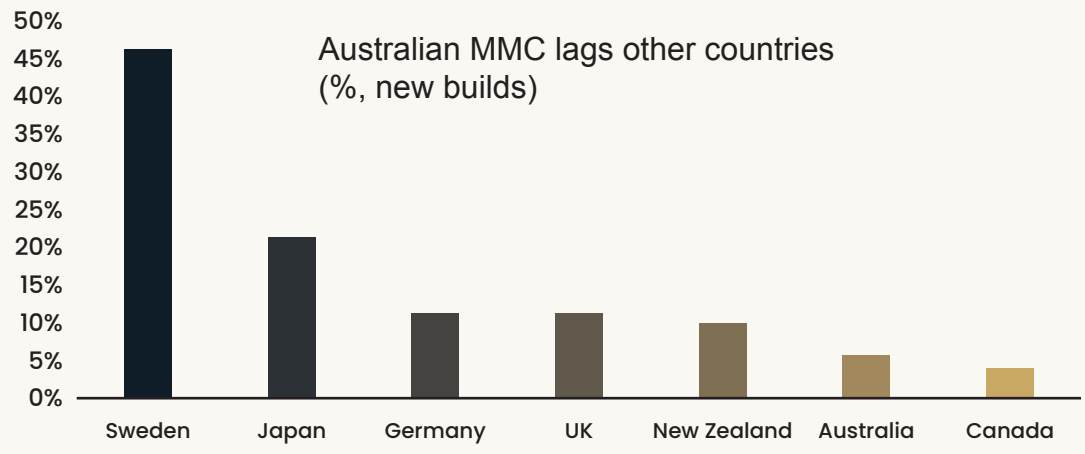
The Rest of the World Uses it, So why Shouldn't Australia

International comparisons provide useful context for understanding where Australia sits on the MMC adoption and innovation curve. A review of countries including Sweden, Japan, and the UK highlights that Australia is currently lagging global peers.

Sweden is the global leader, with approximately 45%[4] of detached homes and 95% of all multi-density residential buildings constructed using prefabrication methods[5]. Japan is also a global leader, with 15–20% of homes constructed using MMC. Japan is home to Sekisui House – the world's largest homebuilder – which employs modular manufacturing techniques at scale. Its factories can produce up to 4,000 homes per year and delivered 10,000 homes between 2019 and 2022, demonstrating the capacity and speed MMC can unlock.

In the United Kingdom, around 10% of all residential construction is done using MMC, but more recently, targeted government procurement has accelerated the take-up of MMC. For example, its primary social and affordable housing funding program includes a Strategic Partnerships program that requires at least 25% of new homes be delivered using MMC[6]. Industry is also playing a leading role, with the UK's largest homebuilder, Barratt Developments, aiming to construct 30% of its homes using MMC by 2025[7].

Figure 4: Some suppliers of modular residential housing in Australia[8]



Source: Hartigan & Associates analysis from a range of publicly available sources

[4] All figures in this section should be considered estimates only due to the lack of widely available data.

[5] See Issues_paper_Manufacturer_Certification_Scheme_for_Modern_Methods_of_Construction.pdf

[6] Capital Funding Guide - 9. Procurement and Scheme Issues - Guidance - GOV.UK

[7] Barratt Ramps Up MMC Homes Target To 30% By 2025 - London Build 2025

[8] These figures have been drawn from publicly available information and should be considered indicative only. They largely reflect MMC associated with detached and duplexes.

In New Zealand, around 9–10% of new residential buildings are completed using MMC[9]. Similar to the UK, the New Zealand Government is using its social and affordable housing authority, Kāinga Ora, to promote and demonstrate the benefits of MMC to the broader housing industry. Projects supported by Kāinga Ora have demonstrated how cost-efficient imported manufactured goods can help deliver housing at a lower cost.

MMC growth in Japan and Sweden hasn't been driven by government initiatives or direct investment in housing. Instead, it has been led by the private sector, supported by favourable building codes and regulations, market structures dominated by large firms able to invest at scale, and strong consumer confidence in quality.

A comprehensive country by country analysis, including broader considerations such as regulations, can be seen in the Appendix.

[9] See Issues_paper_Manufacturer_Certification_Scheme_for_Modern_Methods_of_Construction.pdf

Benefits of MMC Relative to Traditional Methods

Before modelling MMC's potential to boost overall housing supply, it is useful to examine the specific factors that make it a more productive method of construction. This section draws on both qualitative insights and quantitative evidence to assess the benefits, such as time savings, cost efficiencies, labour requirements, economic impacts, and waste reduction.

Time savings stand out as the most significant productivity advantage. MMC homes can typically be delivered in half the time required for traditional builds. The cost savings achievable through MMC will vary widely and are shaped by multiple factors, including the scale of production, transport and freight distances, and efficiency of supply chains. Cost savings to date are not significant, with some studies suggesting costs are higher and remain the key barrier to uptake[10], although other studies suggest cost savings of 10–20% are possible[11]. However, efficiencies are expected to improve as MMC grow. Labour is also more manageable using MMC because coordination of subcontractors is not needed and weather is not disruptive to the manufacturing being done.

Figure 6: MMC versus Traditional Construction

Impact Area	Traditional Construction	MMC
Time Savings	~9–12 months typical completion timeframe, ~50 days lost to bad weather	Up to 30-50% faster[12] (completion in ~4–6 months), due to off-site manufacturing and parallel site preparation, negligible days lost to bad weather
Cost Savings	Subject to high variability and cost blowouts	Insignificant cost efficiencies currently, although some studies suggest up to 20% of cost savings are possible[13] Cost advantages likely to be greater in areas with capacity constraints (e.g. regional)
Labour Impacts	Subcontractor management and weather sensitivity makes traditional construction difficult. It's also difficult finding labour in regional and remote areas	Work done by subcontractors can be done by staff at the factory. This reduces the amount of work done on site and associated management complexities
Economic Impacts	Lower productivity, less scalable and slower to stimulate housing supply	Higher productivity, can support faster housing deployment
Waste Savings	High construction waste (up to 30% of materials unused or discarded)	Up to 80% waste reduction[14], due to precision cutting and reuse incontrolled factory environments

Source: Hartigan & Associates analysis from a range of publicly available sources

[10] See 2023 ARCOM Proceedings

[11] See Issues_paper_Manufacturer_Certification_Scheme_for_Modern_Methods_of_Construction.pdf

[12] See Prefabs in the North of England: Technological, Environmental and Social Innovations, and Modular Construction: Revolutionizing Efficiency, Sustainability and Cost Effectiveness in Modern Development – Mann Report, although some studies suggest less time efficiencies see 2023 ARCOM Proceedings

[13] See Issues_paper_Manufacturer_Certification_Scheme_for_Modern_Methods_of_Construction.pdf

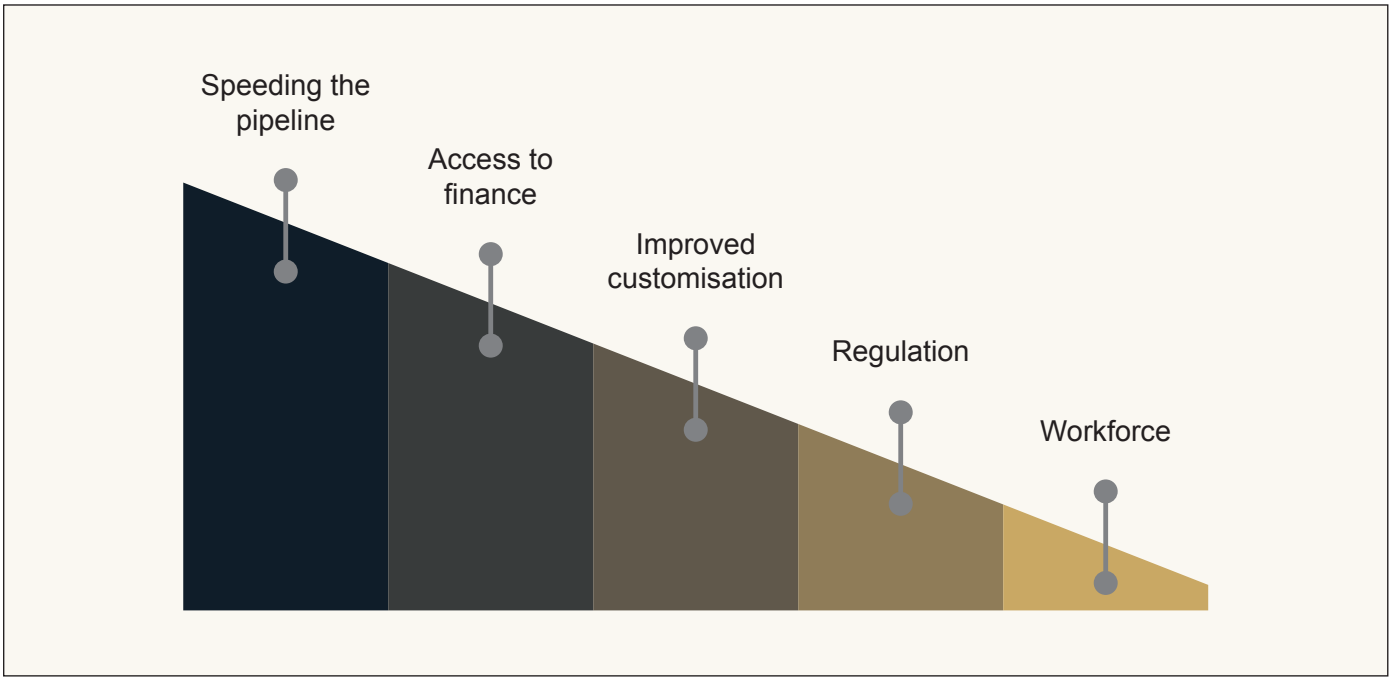
[14] See Economic Impact and Environmental Benefits of Modular Design

Addressing Barriers to Unlock MMC

Amplify has identified three priority areas that need to be addressed to accelerate the uptake of MMC: scalability (seeding the pipeline), modernising regulations, and mobilising the workforce.

We assess the relative impact regarding dealing with these issues to accelerate MMC based on our research, together with discussions with stakeholders and industry. The analysis suggests that seeding the pipeline offers the greatest and most immediate impact in accelerating MMC adoption. A clearer and more consistent pipeline would give industry the confidence needed to invest and innovate, given the high upfront costs of establishing MMC capacity. Our liaison with some of the larger industry participants indicates that confidence in future pipeline is the key barrier to growth.

Notably, the Productivity Commission's consultations[15] highlighted "demand" as the most significant barrier to MMC adoption. This lack of demand does not in and of itself reflect a clear market failure that warrants government intervention. The perception of a cheap, semi-transportable home is a significant headwind for the industry to overcome, while the lack of demand is also likely due to construction costs having not fallen enough to encourage more widespread uptake.



There are several additional barriers hindering the uptake of MMC, as highlighted in the Productivity Commission's report on housing productivity. Access to finance remains a key constraint, as MMC presents a different risk profile compared to traditional construction. However, recent moves by the Commonwealth Bank and its subsidiary to offer construction finance for modular homes are promising.

[15] See Housing construction productivity: Can we fix it?

Consumer preferences also pose a challenge. The Productivity Commission explicitly stated that "Australian consumers" apparent preference for customised housing products, and limited knowledge and understanding of prefabricated construction may lead to a lack of comfort with the product, leading to low levels of demand."[16] Many Australians favour customised housing options, so improving the level of product customisation would better align MMC offerings with consumer expectations.

Removing regulatory barriers such as aligning the certification process to suit a significant portion of the work done off site is important to promote MMC growth. This isn't without precedent, with Canada redesigning its certification standards to accommodate MMC.

MMC's reliance on freight, transport logistics, and coordinated supply chains means that improvements in infrastructure and reductions in regulatory and investment frictions (such as via foreign investment rules) could deliver outsized payoffs when it comes to improving nationwide productivity.

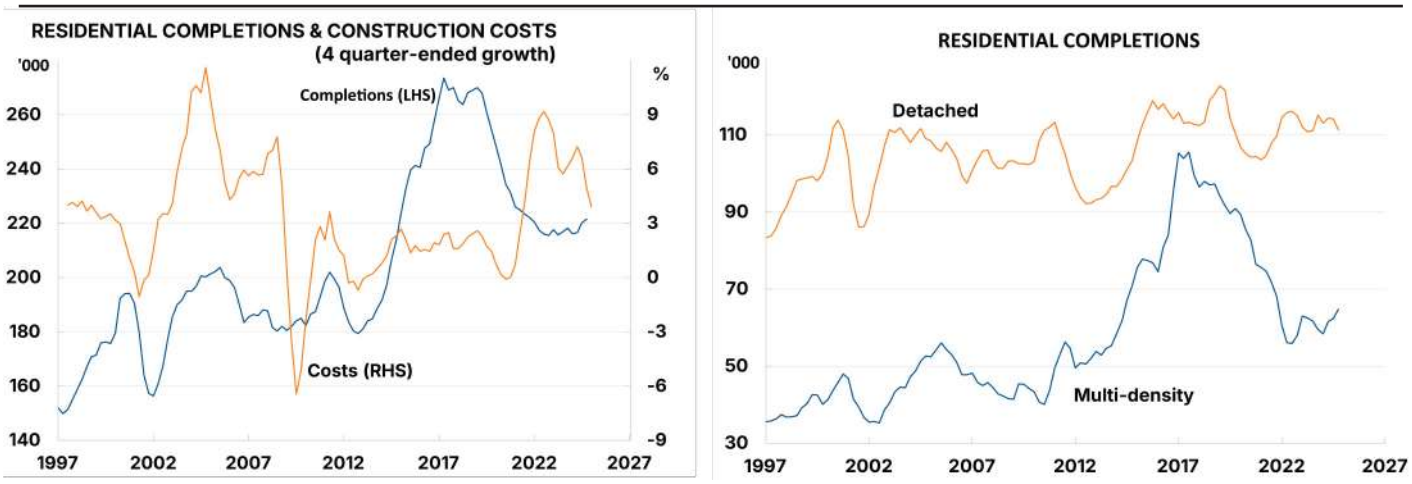
[16] See Housing construction productivity: Can we fix it?

Quantifying the Possibilities

This section of the report attempts to assess the ability of MMC to contribute to Australia's housing supply.

The Australian residential construction industry was able to build 670,000 dwellings between 2016 and 2018, or an average of 223,000 per annum, without creating excessive pressure on resources or cost pressures. (Figure 7 - LHS). However, it is important to note that to reach this milestone, the composition of dwellings constructed was evenly shared between detached and multi-density dwellings. This demonstrates that more dwellings can be built by multi-density development over detached development within a fixed time period.

Figure 7: Residential Construction



Source: ABS 5204 US NBER. Labour productivity is measdured as gross value added per hour worked

Multi-density construction allows more homes to be built over a defined period for two key reasons:

Greater land use efficiency. More homes can be built over a defined period using multi-density construction. For example, acquiring an area of land for a 100-home multi-density project is more efficient than acquiring and developing an area of land large enough for a housing estate for 100 blocks of land for detached housing. This is also reflected in a lower per-unit land cost because it is shared over a larger number of properties.

More efficient use of labour and materials during construction. Subcontractors such as concreters and form workers perform their specialist tasks on a building, but with multi-density construction, that task is done over multiple properties. For example, the post-tensioned floor slab is formed and poured for, say, 15 properties when the subcontractor is on site, but with detached housing, the ground slab is formed and poured for just one property.

» *Modelling assumptions*

- The scenarios model the marginal increase in MMC dwelling output associated with each policy mix, relative to an indicative baseline. These estimates represent output additional to what is currently being delivered, rather than total MMC delivery.
- There are inherent challenges in attributing changes in housing output to specific policy interventions or industry actions. Therefore, these scenarios reflect a set of plausible outcomes based on professional judgement, designed to illustrate the potential scale of uplift rather than to predict precise outcomes.

- We assume that the broader housing market is growing at the average pace of underlying demand or the average pace of household formation (over the last 20 years), which is currently around 180,000 dwellings per year. For the baseline, using ABS data[17], we calculate the trend growth of housing completions in each state by building type and project it out over the projection period. This is equivalent to the trend growth in underlying demand over the period.
- There is no system-wide MMC data, but industry and government estimates suggest MMC is around 3–5% of new builds. In 2024, the starting point for the projections, for both scenarios we've assumed that MMC is 5% of all construction (detached and multi-density) in each state, which would equate to around 9,000 dwellings across Australia in 2025. The output isn't overly sensitive to the baseline assumption because the estimate is calculated from a relatively large base, and additional output from each scenario is calculated as a difference.
- The total MMC construction market share is split between detached and multi-density. There is no data available to quantify the split, but industry contacts indicate that the multi-density share is very small. We assume the MMC breakdown by building type is detached (80%) and multi-density (20%).
- The plausible scenarios modelled and outlined below have been informed by consulting with six industry participants. Industry consultations suggest a doubling of capacity over the next 5–10 years would be possible if there were a strong pipeline of demand and other government and industry barriers were addressed.
- The final MMC output numbers reflect construction approaches where a material proportion (typically more than 50%) of the build process is completed off-site, in a controlled factory environment, using pre-manufactured components.
- To calculate the additional dwellings constructed, we calculate the difference between the MMC market share moving from the "no new policy" baseline to being mobilised owing to the more modest and aggressive policy mixes. The splits between the detached and multi-density contributions are then calculated.
- The modelling assumes that under the more modest scenario, the industry doubles its capacity and dwelling output by year 10 (from 5% to 10%), while the ambitious scenario sees the industry more than double its capacity from 5% to 12%.
- Greater scale is likely to deliver cost efficiencies and accelerate MMC uptake further. While this hasn't been explicitly modelled, it is reflected in the Acceleration Plus scenario, as MMC accelerates at a faster rate from year 10 (moving from 12% to 22% in year 20).
- We take no account of interest rate and house price movements because they are more important in the short term and not in the long term.

To assess the potential increase in supply benefits, we model an MMC Acceleration and an MMC Acceleration Plus scenario based on two sets of government policy and industry changes that could be used to accelerate the uptake of MMC. These scenarios don't represent policy recommendations; rather, they illustrate the key areas where coordinated effort is needed by governments and industry to accelerate the use of MMC.

[17] ABS Building Activity, Australia Publication

MMC Acceleration Scenario

Figure 8: MMC versus Traditional Construction

Policy and industry changes	Issue addressed
An MMC National Action Plan[18] would ensure whole-of-government coordination to address supply-side impediments (e.g. workforce) and provide an MMC roadmap that sends a strong signal to the market. The MMC Action Plan includes an aspirational target of achieving 15% MMC by 2045.	Regulatory Friction, Workforce
Immediately address known and outstanding MMC regulatory and compliance pathways, such as building in new certification processes and providing better national guidance to support the accreditation of MMC solutions.	Regulatory Friction
Governments establish off-site regional knowledge-sharing hubs to demonstrate the value of MMC technologies, showcase where MMC is most viable, and identify production components most suitable for MMC. This would particularly assist smaller builders in identifying MMC opportunities.	Information Asymmetries, Education
Housing Australia should play a more explicit MMC market demonstration role, similar to the Clean Energy Finance Corporation, to unlock, commercialise, and deploy more MMC, helping to grow private sector investment.	Demonstration, Finance Constraints
10% additional (and ongoing) HAFF funding (or a minimum of 5–10 MMC builds annually) for Housing Australia as part of its social and affordable housing delivery, and 5% of the Government's 100,000 new homes for first-home buyers with state and industry developers to support new MMC construction across geographies.	Seeding Pipeline, Demand
States and Territories procuring a percentage of MMC as part of their social and affordable housing delivery programs.	Seeding Pipeline, Demand
At least two of the major banks making finance available for at least six industry participants using MMC.	Finance Constraints
At least six major industry participants offering custom-designed solutions using MMC.	Improving Alignment to Consumer Preferences

Source: Hartigan & Associates

Modelling assumptions

The results of the modelling are shown in Tables 1 and 2. Based on the policy mix specified in this scenario, we estimate the following (these figures reflect dwelling output above the baseline):

- An additional 31,000 homes could be built over 10 years and another 91,000 over the following 10 years, or 122,000 homes in total over the next 20 years. Most of the contribution comes from NSW, VIC, and QLD.
- Economic output and investment in housing would increase by around $14 billion over the 10-year period. This does not account for the multiplier effects on other industries, such as retail trade. Total economic output and investment could total $55 billion over the next 20 years.

[18] Ireland just released an MMC National Action Plan to help transform the construction sector see Modern Methods of Construction Action Plan.)

- The smaller states don't see a large benefit in our analysis. However, regional areas and dwelling supply in the smaller capital cities could easily increase more than in the scenario if policy efforts are focused on these areas because they are often located where construction costs are relatively higher than in the capital cities.
- Mandating that 10% of an additional HAFF pipeline use MMC would support around 6,000 social and affordable dwellings in the first decade, and about 12,000 over 20 years.

MMC Acceleration Plus Scenario

Figure 9: MMC Acceleration Plus Scenario: Policy and industry change required*

Additional policies	Issue addressed
The MMC National Action Plan should include a 20-year aspirational goal that Australia achieves 20% of new supply from MMC by 2045, setting clear ambitions for industry.	Seeding Pipeline, Demand
20% additional (and ongoing) HAFF funding for Housing Australia as part of its social and affordable housing delivery, and 10% of the Government's 100,000 new homes for first-home buyers with state and industry developers as MMC to support new MMC construction across geographies, helping to demonstrate viability, showcase MMC, and stimulate demand.	Seeding Pipeline, Demand
Broader government procurement of MMC (for things like schools, fire stations, flood and disaster responses, etc.) to generate positive spillovers for achieving scale (and lower cost) in MMC for housing.	Seeding Pipeline, Demand
All 4 of the major banks making finance available.	Finance Constraints
At least 10 industry participants offering custom designed solutions using MMC.	Improving Alignment to Consumer Preferences

Source: Hartigan & Associates * indicates changes to industry or policies required in addition to those in the Acceleration scenario

Results – MMC Acceleration Plus Scenario

The results of the modelling are shown in Tables 3 & 4. Based on the policy mix specified in this scenario, we estimate the following:

- An additional 44,000 homes could be built over 10 years and 148,000 over the following 10 years, with around 192,000 in total over the next 20 years. Most of the contribution comes from NSW, VIC, and QLD.
- Economic output and housing investment could increase by around $20 billion over the 10-year period and a further $67 billion over the following 10 years. Total economic output and investment could total $87 billion over the next 20 years. This does not account for the multiplier effects on other industries, such as retail trade, which would benefit from more residential construction output.
- Similar to the MMC Acceleration Scenario, the smaller states don't provide a large contribution to the national benefit in our analysis. However, MMC is particularly suited to regional areas and smaller capital cities, so the distribution of the modelled benefit could be higher in these areas.
- Mandating that 20% of an additional HAFF pipeline use MMC would support around 12,000 social and affordable dwellings in the first decade, and about 24,000 over 20 years.

Table 1: Additional dwelling completions MMC Acceleration scenario (No.)

Dwelling type by state	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total	Year 11-20 Total
NSW detached	105	220	336	451	566	681	797	912	1027	1142	6238	19719
multi-density	29	58	87	117	146	175	204	234	263	292	1604	5264
VIC detached	175	349	523	698	872	1046	1221	1395	1569	1744	9592	29345
multi-density	32	64	95	127	159	191	222	254	286	318	1748	5933
QLD detached	81	163	245	327	409	491	574	656	738	820	4504	11876
multi-density	1	13	28	42	57	71	86	100	115	129	643	2093
SA detached	84	112	140	168	196	223	251	279	307	335	2095	5226
multi-density	1	0	3	6	9	11	14	17	20	23	103	378
WA detached	136	174	212	249	287	325	362	400	438	475	3058	6483
multi-density	1	1	1	3	8	13	18	23	28	33	129	497
TAS detached	12	24	35	47	59	71	82	94	106	118	647	1957
multi-density	1	1	1	1	2	2	2	3	3	3	19	52
NT detached	1	1	5	5	9	10	13	15	18	20	95	291
multi-density	1	1	1	1	1	1	1	1	1	1	10	10
ACT detached	0	5	10	15	20	24	29	34	39	43	219	639
multi-density	1	7	12	17	23	28	34	39	45	50	257	945
Total	660	1192	1731	2274	2819	3365	3911	4457	5002	5548	30959	90706

Source: Macro Strategy Advisors

Note: Figures are presented to illustrate broad trends and should not be interpreted as precise estimates.

Table 2: Additional economic output MMC Acceleration scenario ($Am)

Dwelling type by state	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total	Year 11-20 Total
NSW detached	55	115	175	235	295	355	415	475	532	595	3249	10272
multi-density	13	27	40	54	68	81	95	108	122	135	744	2441
VIC detached	76	151	523	698	872	1046	1221	1395	1569	1744	4157	12719
multi-density	14	28	95	127	159	191	222	254	286	318	761	2584
QLD detached	76	151	227	302	378	454	529	605	680	756	4157	5354
multi-density	14	28	42	55	69	83	97	111	125	138	761	1241
SA detached	36	73	110	147	184	222	259	296	333	370	2030	1946
multi-density	1	8	16	25	34	42	51	60	68	77	381	122
WA detached	31	42	52	62	73	83	94	104	114	181	1165	2469
multi-density	0	0	1	2	3	5	7	8	10	12	47	181
TAS detached	5	10	15	19	24	29	34	39	44	48	266	806
multi-density	0	0	0	0	1	1	1	1	1	1	7	21
NT detached	0	0	1	3	4	5	6	7	8	10	45	137
multi-density	0	0	0	0	0	0	0	0	0	0	3	3
ACT detached	0	3	6	8	11	14	16	19	22	24	123	360
multi-density	0	2	4	6	8	10	12	14	16	18	94	347
Total	285	526	771	1017	1264	1511	1758	2005	2252	2499	13888	41002

Source: Macro Strategy Advisors

Note: Figures are presented to illustrate broad trends and should not be interpreted as precise estimates.

Table 3: Additional dwelling completions under Acceleration Plus scenario (No.)

Dwelling type by state	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total	Year 11-20 Total
NSW detached	162	335	507	679	852	1024	1197	1369	1541	1714	9380	33223
multi-density	29	58	87	117	146	175	204	234	263	292	1605	7239
VIC detached	262	523	785	1046	1308	1569	1831	2093	2354	2616	14387	49392
multi-density	32	64	95	127	159	191	222	254	286	318	1748	8184
QLD detached	122	245	368	491	614	738	861	984	1107	1230	6760	19860
multi-density	1	13	28	42	57	71	86	100	115	129	642	2848
SA detached	100	145	190	235	279	324	369	414	458	503	3017	8767
multi-density	1	0	3	6	9	11	14	17	20	23	104	517
WA detached	160	222	283	344	406	467	529	590	652	713	4366	10810
multi-density	1	1	1	3	8	13	18	23	28	33	129	670
TAS detached	18	35	53	71	88	106	123	141	159	176	970	3292
multi-density	1	1	1	1	2	2	2	3	3	3	19	70
NT detached	1	2	6	9	13	16	20	23	27	30	147	486
multi-density	1	1	1	1	1	1	1	1	1	1	10	10
ACT detached	3	10	16	23	30	37	44	51	58	65	337	1070
multi-density	1	7	12	17	23	28	34	39	45	50	256	1304
Total	894	1661	2436	3213	3994	4775	555	6336	7117	7897	43878	147743

Source: Macro Strategy Advisors

Note: Figures are presented to illustrate broad trends and should not be interpreted as precise estimates.

Table 4: Additional economic output Acceleration Plus Scenario ($Am)

Dwelling type by state	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total	Year 11-20 Total
NSW detached	85	174	264	345	444	534	623	713	803	493	4886	17306
multi-density	13	27	40	54	68	81	95	108	122	135	744	3357
VIC detached	113	227	340	454	567	680	794	907	1020	1134	6236	21408
multi-density	14	28	42	55	69	83	97	111	125	138	761	2564
QLD detached	55	110	166	221	277	332	388	444	499	555	3047	8953
multi-density	1	8	16	25	34	42	51	60	68	77	381	1688
SA detached	37	54	71	87	104	121	137	154	171	187	1123	3264
multi-density	0	0	1	2	3	4	5	5	6	7	33	166
WA detached	61	84	108	131	155	178	201	225	248	272	1663	4117
multi-density	0	0	0	1	3	5	7	8	10	12	47	244
TAS detached	7	15	22	29	36	44	51	58	65	73	400	1356
multi-density	0	0	0	0	1	1	1	1	1	1	7	28
NT detached	0	1	3	4	6	8	9	11	13	14	70	229
multi-density	0	0	0	0	0	0	0	0	0	0	3	3
ACT detached	1	5	9	13	17	21	25	29	33	37	191	603
multi-density	0	2	4	6	8	10	12	14	16	18	94	479
Total	390	737	1087	1439	1791	2144	2496	2849	3201	3554	19687	66767

Source: Macro Strategy Advisors

Note: Figures are presented to illustrate broad trends and should not be interpreted as precise estimates.

Apendix

» *International comparisons*

Sweden

- Around 45% of all new housing in Sweden is built using modular housing[19].
- Swedish research has shown that modular construction reduces carbon emissions by around 50% compared to on-site construction, where there is more building waste. Modular construction uses stud framing, which allows higher-quality insulation and energy performance compared to double-skin or solid brick.
- The industry began with single-family housing but is now predominantly affordable multifamily.
- The assessment and verification of construction products is done using a nationwide system and Swedish building regulations called Type Approval. Type approvals are also provided for products that are not covered by harmonised standards and European Technical Assessments (ETAs). These approvals are done by a third party, the Research Institute of Sweden (RISE).
- Research by Chang-Richards et al. (2019) showed that in Sweden, self-certification is followed by third-party inspection and certification of factory production processes and facilities, and manufacturing capacity. The research also showed that over time, Swedish modular housing manufacturers have developed a very high-quality focus and require less regulatory intervention because the technique is so widely used.

Japan

- Following the completion of WWII reconstruction, Japan began to focus on providing modular housing. The aim was to produce superior quality homes at a relatively low volume. Initially, these homes were around 8% more expensive than conventionally built homes. In particular, the homes were built to meet high standards of durability and were manufactured with advanced features, warranties, and post-occupation care. These homes were designed to withstand earthquakes and were required to pass stringent fire and water resistance tests.
- By 2019, 15%–20% of all new housing was built using modular construction.
- The largest home builder in the world is Sekisui House, which uses modular manufacturing techniques in many of its projects. In 2019, it decided to enter the UK market via a partnership with Urban Splash and the UK government's housing agency.
- The Sekisui House factory can build up to 4,000 homes a year. Between 2019 and 2022, it manufactured 10,000 homes, with up to 90% assigned a "zero energy home" energy rating. This implies that net emissions are zero during the manufacturing, construction, and operational stages of the development.
- Japanese manufacturers must adhere to the "Home Guarantee System" and "After Sales and Maintenance Service System," introduced in the 1960s. These systems provide consumers with services such as upgrades, renovations, and re-customization. Any defects must be fixed without additional costs to consumers.
- The Minister of Land, Infrastructure, Transport and Tourism (MLITT) put in place a housing performance labelling system that requires third-party certification from private companies once they have conducted assessments to issue a performance evaluation. A standard 20-year warranty comes with all modular houses, which includes after-sales service.

[19] See A Modern Approach to Construction | Savills Impacts

- An important step in the development of the approval process has been inspections by industry-specific trained professionals, both in the factory and on-site, rather than just relying on manufacturers to adhere to a general building code.

The UK

- Japan's successful adoption of modular housing had its origins in post-WWII reconstruction, and it had an important influence on the growth of modular housing in the UK.
- Ilke Homes was a UK company that manufactured homes not only in the UK, but also in Ireland and across Europe. It was liquidated in 2023, but most of its important assets were purchased by another firm, Home Space.
- In 2013, the Build Offsite Property Assurance Scheme (BOPAS) was introduced to encourage off-site construction. The scheme is a risk-based evaluation that provides assurances to lenders, developers, contractors, and homeowners that buildings designed, manufactured, and installed by accredited MMC providers will conform to industry best practice durability and system integrity. The scheme is also designed to ensure that buildings created will be readily mortgageable for a minimum of 60 years.
- The British Board of Agreement (BBA) issues certificates of assurance for construction products, subcontractors, and processes. They demonstrate a product's fitness for purpose and compliance with building regulations. Manufacturers may be audited to ensure adequate quality management systems. Repeated testing may be required.
- The UK modular industry is regulated by the same building codes as conventional construction.
- In the early 2000s, the government made it a requirement that 25% of homes funded by the Affordable Homes Program be built using MMC. However, this was dropped during the recession, which saw many developers cut back their limited use of MMC to save costs[20].
- Homes England has made supporting MMC a core part of their strategy through to 2022 23, and the 2021–26 Affordable Homes Program has made large grants conditional on the use of MMC in 25% of new housing.
- The UK's largest homebuilder is currently targeting around 30% of all new home builds to be built with MMC[21].

New Zealand

- In New Zealand, off-site manufactured housing accounts for around 10% of newly built homes[22].
- Similar to Australia, current NZ building consenting processes are best suited to traditional construction methods and can present barriers, duplication, and delays for more innovative products and methods. However, a voluntary manufacturing certification scheme was introduced in 2021 to help remedy some of these issues[23].
- The NZ Government is using its social and affordable Housing Authority – Kāinga Ora – to promote and demonstrate the benefits of MMC in its housing delivery.
- In August 2024, Kāinga Ora completed a significant social housing project in Auckland's Point Chevalier suburb, delivering 61 one-bedroom apartments designed for older individuals and those with health needs, demonstrating the efficiency and value of MMC[24]. The projects supported by Kāinga Ora are, in some circumstances, very deliberately integrating cost-efficient Chinese-made manufacturing goods to help deliver housing at lower cost.

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[20] See Policy Briefing - UK Government MMC Policies and Strategies v1 2022.pdf

[21] See Barratt Ramps Up MMC Homes Target To 30% By 2025 - London Build 2025

[22] See Auckland Market Opportunity – Modular Housing | Auckland Economic Development

[23] See Building Law Reform - Fact Sheet 3 - Modern Methods of Construction

[24] See Kaingaora Building a Better Future: The New Zealand Government's Strategy for Modular Housing Solutions Manufactured in China

- Kāinga Ora has also developed standardised designs for its homes to reduce complexity, duration, and costs across the build process, which offers increased opportunities for MMC[25].
- Studies have found that standardisation in off-shore products regarding the New Zealand Building Code remains the biggest challenge in the consenting process[26].

Singapore

- In Singapore, modular housing can only be approved if the builder can assure that the Prefabricated Prefinished Volumetric Construction (PPVC) system meets the building code performance requirements. An application for off-site manufacturing is then submitted to the Building Innovation Panel (BIP). The BIP seeks suitable regulatory authorities to provide feedback about the application.
- If approval is granted, In Principle Acceptance letters are issued to the supplier/manufacturer and are listed on the BCA's website.
- Additional accreditations are also required by the Pre-caster's Accreditation Scheme for PPVC shell production and the Prefabricated Pre-finished Volumetric Construction (PPVC) Manufacturer Accreditation Scheme (MAS) for fitting-out works. The PPVC MAS is managed by the Singapore Concrete Institute and the Structural Steel Society of Singapore. The scheme ensures quality assurance and control in the production of PPVC and sets the process for manufacturers to produce high-quality PPVC systems (Swinburne University of Technology, 2022).

Canada

- Some estimates put Canada's MMC at around 4%, similar to Australia's output[27].
- There are three Canadian Standards Association (CSA) standards that are directly related to the construction of modular housing:
  - **CSA A277-16 (R2021):** Specifies the procedure for the certification of prefabricated buildings, modules, and panels. This standard provides the procedure for certifying buildings, and partially or fully enclosed modules and panels for buildings of any occupancy. It provides requirements for certification of the factory quality program and the prefabricated product, auditing of the factory quality program, and in-factory inspection of the prefabricated product (Swinburne University of Technology, 2022).
  - **CSA Z240 MH Series-16 (R2021):** This standard provides general requirements for manufactured homes, including technical requirements, and requirements on quality control, markings, and provision of printed instructions (Swinburne University of Technology, 2022).
  - **CSA Z240.10.1:19:** This standard provides requirements for site preparation, foundation, and installation of buildings. The standard also provides requirements for permanent foundations, anchorages to resist overturning and pier toppling due to wind, connection of modules, and skirting (Swinburne University of Technology, 2022).
- In addition to national standards, prefab and modular buildings must comply with provincial and territory building code requirements. Additional certifications are used to quantify other aspects of modular buildings, including energy efficiency and sustainability (BC Housing, 2014).

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[25] See Kāinga Ora.pdf
[26] See (PDF) Development of a framework for quality assurance of off-site manufactured building components: A case study of the New Zealand housing sector
[27] See Issues Paper: Manufacturer Certification Scheme for Modern Methods of Construction.pdf

Barriers to Finance

In traditional single-home construction, milestone payments have been used to provide the client with cash flow to meet payments to the contractor. However, when using modular construction, this is not possible because a large portion of the work is being done off-site.

Banks have financed projects built using modular construction by making only two payments available to contractors: a deposit at the start of manufacturing and a payment at completion. This created significant cash flow pressures for builders.

In practice, modular builders negotiate with banks to adjust the standard payment terms. In some instances, the builder will find their own financing and use it to provide cash flow while the dwelling is being assembled in the factory. The cost of this is then passed on to the homeowner, and according to industry sources, it could be around 1.5% of the total cost of construction.

It is also possible that homeowners have sufficient equity in other assets to fund the manufacturing process, with the second traditional bank lending product available to refinance the equity upon completion of construction. A guarantor could also be used in a similar way.

Bankwest announced in December 2023 that it would increase its support for modular construction by allowing its customers to authorise an additional payment stage for up to 95% of the value of the land (90% for investment loans). The additional progress payment has been made available only for applications without Lenders Mortgage Insurance (LMI) and with a Loan to Value Ratio (LVR) equal to or lower than 80%. In January, CBA became the first major bank to offer lending to households hoping to build their home using modular construction. It provides finance for construction to a limited number of manufacturers and builders using this method of construction.

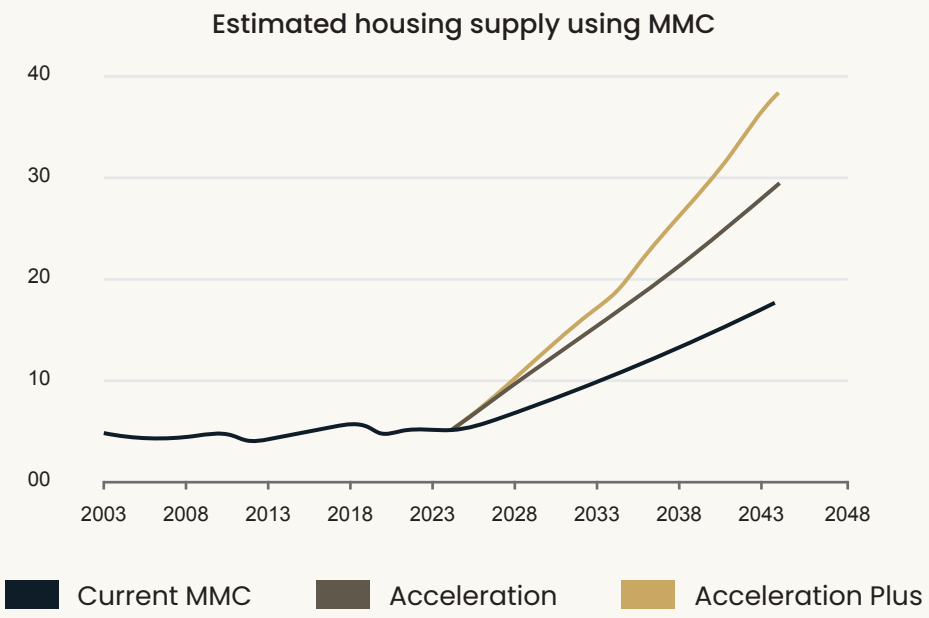
Modelling

The following section provides a more detailed explanation of how the modelling in this paper has been constructed, along with a simple interpretation of the figures in a broader housing context.

The modelling assumes that, in the absence of strong policy action, MMC uptake will continue to grow broadly in line with underlying housing demand. In the baseline scenario, growth is largely driven by demand for multi-density apartments. While only around 20% of the MMC contribution is assumed to be multi-density, the strong underlying demand for this building type means it makes a significant contribution to the baseline.

All dwelling outputs are expressed as MMC dwellings above the baseline (see Figure 10). The Acceleration and Acceleration Plus scenarios apply different policy mixes to generate this additional output. By Year 10, the Acceleration Scenario delivers around 6,000 dwellings annually above the baseline, while the Acceleration Plus Scenario delivers around 8,000 annually above the baseline. By Year 20, the Acceleration Plus Scenario reaches approximately 20,000 MMC dwellings above the baseline. The total output figures are distributed across states and territories in line with underlying demand (outlined in the methodology section).

Figure 10: Number of dwellings constructed using MMC



Source: ABS; Macro Strategy Advisors Pty Ltd. Projections for current MMC are calculated using the current industry contribution.

Given the challenges in attributing specific output levels to individual policies or industry actions, long-term projections rely on a higher degree of judgement, anchored in plausible industry capacity and growth assumptions.

Below is also a more detailed explainer and interpretation of the Acceleration Plus Scenario.

Figure 11: Explainer and Interpretation of Acceleration Plus Scenario		
Period (Years)	**Description of plausible scenario construction**	**Interpretation of the final numbers**
1-5	This period assumes that the share of MMC increases linearly from a starting point of around 5%, and more than doubles to approximately 12% within 10 years.	In the early years (1–5), growth is driven primarily by demand-pull levers, notably additional HAFF funding directed toward MMC delivery in the social and affordable housing segment. For context, a 20% increase in HAFF allocation to MMC (as specified in the current policy mix) would deliver an estimated 1,200 additional MMC dwellings annually, compared with the modelled average of ~1,700 additional dwellings per year over this period. Ensuring 10% of the Government's 100,000 new homes for first-home buyers with state and industry developers would also add to demand for MMC. Clear long-term targets and demand-pull measures provide industry with the certainty needed to commit capital, find new sites, obtain relevant approvals, expand capacity, and invest in skills and technology.
5-10		In the medium term (6–10 years), growth reflects industry consultations suggesting that, with the right policy signals such as ongoing strong demand from government procurement and improved customisation MMC capacity could plausibly double. By this stage, leading firms are assumed to have made significant investments, secured sites, and commissioned and built new factories. The strong policy environment would also likely attract new entrants. Across the decade, modelling indicates around 44,000 additional MMC dwellings above baseline, which would be a mix of ongoing demand via government procurement and industry actions. Over time, other elements of the policy mix such as improved product customisation, better matching of consumer preferences, and better access to finance progressively drive uptake.
10-20	By Year 20, MMC's share is projected to accelerate to approximately 22%.	At this point, annual MMC output is around 20,000 dwellings above the baseline, compared to 8,000 above the baseline in Year 10, with scale efficiencies supporting sustained higher-volume production. Across the 20-year period, this scenario indicates approximately 192,000 additional MMC dwellings above the baseline.

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