

Advancing timber construction in Australia

It is time to retire the propeller engine that has carried the timber industry for decades and transition to a modern jet. **By Afzal Laphir - Principal Engineer, Meyer Timber Pty Ltd.**

Over the past twelve months, the Future Framing Initiative (FFI) has made significant progress in charting a clear pathway for the growth of timber construction in Australia. Indeed, the industry has arguably advanced more in the last year than in the previous two decades - the jet engine has well and truly arrived.

Managed by Forest & Wood Products Australia (FWPA), the FFI is a national industry collaboration focused on making it easier for specifiers to adopt lightweight timber-framed construction. It aims to streamline compliance pathways across all building classes, not just residential - and to drive greater demand for timber framing through modern methods, including enhanced fixing systems, innovative design approaches, and prefabrication.

Thirteen leading companies from across the timber sector (Fig 1) are backing this collective effort, demonstrating a shared commitment to strengthening confidence in timber and expanding its role in delivering affordable, efficient, and sustainable buildings. These organisations are investing both financially and technically, with engineers and specialists dedicating substantial time to developing the next generation of timber design standards.

To support designers in specifying timber framing, the "FWPA Multi-Storey (up to 15m) Timber Framing Design Standard: Non-Cyclonic and Cyclonic" and associated reference standards are currently being developed by FFI's Technical Committee.



Above: Fig 2 – Evolution of Timber Framing Standards in Australia.

The aim is for this Standard to be referenced in the 2029 edition of the National Construction Code and/or adopted through state legislation.

Notably, the Technical Committee is also assisting Standards Australia with the revision of AS 1720.1 (Timber Structures Design Standard), which was last published in 2010.

A further key initiative of the FFI is to build technical capacity by transferring critical timber framing knowledge to the next generation of industry professionals, ensuring continuity in capability and leadership for years to come.

WHY A NEW STANDARD?

Timber framing is used extensively in the housing market. This means the timber industry is heavily exposed to, and continually influenced by, fluctuations in housing demand. Yet there are other building segments, with markets of similar size, that could also adopt timber framing.

To enter these segments efficiently and at low cost, builders, fabricators and regulators typically rely on prescriptive (simplified) building regulation. The constraint is that current prescriptive provisions (ag: AS 1684) are narrow in scope and do not support timber framing beyond today's geometric limits (e.g. more than two storeys).



Above: Fig 1 – The 13 companies that are investing both financially and technically for the future of timber construction.

Prescriptive provisions for timber framing have not been substantively updated since the mid-1990s, when MGP grades were introduced and a national Standard adopted. Before that, the last major overhaul followed Cyclone Tracy in the 1970s.

IT'S SCOPE

This proposed industry standard builds on current practices and users' familiarity with AS 1684. It is intended to support designers by clearly defining the limits of timber-framed construction, giving them confidence about how far a building can be expanded in size, height, or complexity before engineering input is needed.

As part of its development, the limitations of AS 1684 have been reviewed and the key parameters required to determine maximum building envelope and building use have been identified, specifically for non-engineer users.

This new Standard is intended to broaden the permitted use of lightweight timber-framed construction to buildings up to four storeys, and to a wider range of building classes, specifically Classes 1 to 10 as defined in Volumes One and Two of the Building Code of Australia. Typical applications are expected to include detached dwellings, townhouses, schools, aged care facilities and apartment buildings.

The Standard will specify the structural design and detailing requirements for this expanded scope, including rules for the selection and fixing of structural components.

It will also define accepted construction practices for sawn timber, engineered wood products and off-site manufactured timber elements.

WIND AND EARTHQUAKE LOADING

Because the scope sits outside the limits of AS 1684, the loading, particularly from wind and earthquake, requires greater emphasis. Current work is largely focused on developing simplified tables for determining wind and earthquake loads and then establishing a corresponding design methodology to resist them.

RESEARCH REQUIRED

The work will primarily build on historical, current, and international knowledge. A significant body of research already exists; however, most of it has not

yet progressed into the necessary next steps of market-specific specification development and codification. The project is not expected to be dependent on the completion of any current or future research. That said, some targeted "gap" research will likely be required to supplement or extend existing knowledge.

In this context, a detailed investigation into the shear wall capacities of plywood and OSB sheathing panels commenced last year at Queensland University of Technology (QUT). This program aims to establish design capacities for shear walls under both wind and seismic loading, and to evaluate alternative fixing methods, such as staples, in addition to conventional nail fixings.

In addition, the Australian Forest Wood Fibre Innovation (AWFI) program has initiated a project *Future Lightweight Timber Framing: Productivity* which has nine FFI-related research sub-projects. Early-stage researchers have actively engaged with fabricators, installers, builders and manufacturers at FTMA State Seminars and

through onsite visits to refine their research plans. You may have already encountered some of them in the field!

When the first edition of the industry standard is released, the research will not yet be fully complete. As new findings emerge, the standard will be progressively updated to reflect them.

The momentum behind the FFI marks an important step forward for timber construction in Australia. While the work is still underway, the initiative is laying the groundwork for a new design standard that will provide clearer guidance and stronger industry alignment. Designers, builders, and specifiers are encouraged to stay informed and engaged as this work progresses, helping ensure the industry is ready to take full advantage once the draft standard is released.

Now it's less about whether change will happen, and more about how quickly everyone can get on board and make the most of what's ahead. As we shift from propellers to jets, timber construction is clearly entering an exciting new era. **T**

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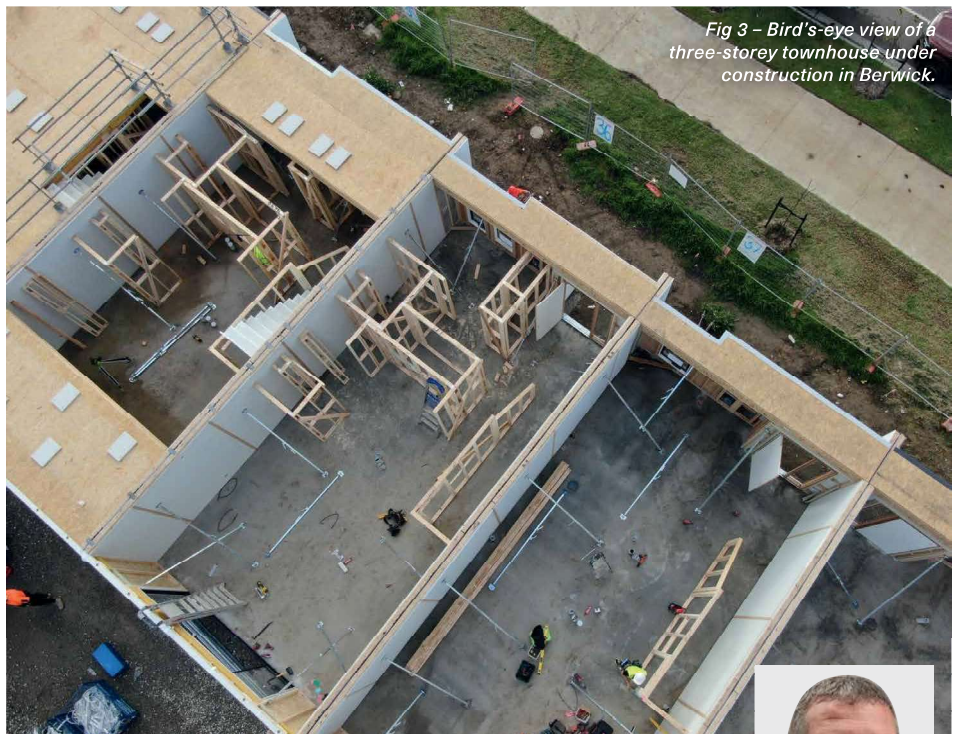


Fig 3 – Bird's-eye view of a three-storey townhouse under construction in Berwick.

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