

Building 4.0 CRC

Submission to Treasury - 27 February 2026

Streamlining and Modernising the National Construction Code

Improving Regulatory Efficiency, Consistency and Innovation in Australia's Building System

Building 4.0 CRC Background

Building 4.0 CRC is a research initiative co-funded by industry partners and the Australian Government. It is tasked with revolutionising how buildings are designed, constructed and operated to build faster, safer, more sustainably and at a lower cost. Building 4.0 CRC focuses on four research areas of Industrialisation, Digitalisation, Sustainability, and People, Practices and Culture, with a particular drive to create significant demonstration projects where industry, government and the community can experience first-hand those buildings created or retrofitted using innovation and new methods of construction.

Now in its sixth year (of seven), Building 4.0 CRC is working with industry and governments to achieve an 80% reduction in construction waste, a 50% cut in CO2 emissions and a 30% decrease in production costs through the development of a more industrialised approach to building. It is also impacting the training of 7,000 apprentices in preparation for the new ways we will build in the future, and the development of an internationally competitive, dynamic and thriving Australian advanced manufacturing sector, focused on building.

To date, Building 4.0 CRC has been involved in 96 collaborative research projects, either active or completed. Find out more about Building 4.0 CRC: <https://building4pointzero.org/>

Executive Summary

Australia's construction system is characterised by high regulatory complexity, fragmented implementation, and long approval timeframes. It has also grown over several decades to be long and complicated. While the National Construction Code (NCC) provides a nationally agreed technical framework, its practical application is shaped by state, territory, and local variations that undermine its effectiveness and increase cost, delay, and uncertainty. Despite consistent updating, modernisation and editing, the NCC is due for a significant overhaul, which will enable the delivery of key strategic imperatives such as increasing productivity in the sector and the achievement of national housing targets.

It is worth highlighting that the NCC is one of only a handful of construction codes globally that allow for Performance-Based Solutions (PBS). We want to underscore that this is a strength – not a weakness – and should not only be preserved but enhanced in any code modernisation.

Building 4.0 CRC's submission proposes a set of reforms to improve the operation of the NCC and its interaction with the broader building and planning system that serves the public interest through best practice in building. We also point out that we purposefully take an innovation perspective in preparing these recommendations. In summary, these include:

1. A Single, Unified National Code. Moving to a single, unified national code that can be applied in all state and territory jurisdictions while allowing for climatic variation.
2. Using New Technologies and AI to improve accessibility. Enabling digitalisation of the code to support automated and pre-emptive assessment
3. Establish an RDC for the Building Industry. Stimulating innovation in the building sector by articulating ‘best practice’ performance criteria with clear minimum standards through the establishment of a Research and Development Corporation for the building industry, and carrying out global benchmarking on building code reform.
4. Future-Proofing Industrialised Building Approaches. Recognising and incorporating modern, industrialised approaches to manufacturing, certification, and operation of buildings.

Recommendation 1: A Single Unified Construction Code

A core objective of the NCC is national consistency. However, state and territory variations undermine this objective by reintroducing jurisdiction-specific interpretation, increasing compliance and training costs, and reducing the scalability of building systems and products. For organisations operating across jurisdictions, these differences create unwanted regulatory complexity as well as time and cost inefficiencies. Particularly when the same building part has different requirements in different states and territories. For smaller firms, they raise barriers to entry and stifle innovation.

Moving to a single unified construction code should:

- Limit jurisdictional variations to only those strictly required by unique climatic or geographic conditions
- Strengthen intergovernmental commitments to consistent adoption and enforcement
- Encourage nationally consistent guidance, interpretations, and compliance pathways
- Open national supply chains that, in turn, improve productivity

The long-term objective should be a single national code in both form and application, supported by shared regulatory infrastructure and capability.

1.1 Reduce Regulatory Complexity Beyond the NCC: Planning and Local Government Interfaces

While planning regulation sits outside the NCC, its interaction with building regulation is a major source of inefficiency. In many cases, performance requirements are duplicated or contradicted, and discretionary planning controls override technically compliant solutions. Often, approval processes are sequential rather than parallel, and there is duplication of work. This creates delays that are often longer and more costly than construction itself. Reforms could:

- Improve alignment between planning controls and NCC performance objectives
- Encourage greater use of code-assessable and deemed-to-comply planning pathways where NCC compliance is demonstrated
- Promote shared digital submission and assessment platforms across planning and building regulation

Better coordination and clearer boundaries would significantly reduce regulatory burden and improve productivity.

1.2 Introduce Tiered NCC Complexity Levels

The technical requirements vary between a class one and a more complex Class 2 building, however, the regulatory approval process is similar for both. This limits the opportunity for proportional or risk-based assessment of different building typologies.

The NCC could adopt tiered compliance pathways. For example, low-risk, low-rise, repeatable buildings could be assessed proportionately to medium complexity buildings and again to high-risk or novel buildings. Each tier would have proportionate evidence requirements, and in the case of housing, simplified Deemed To Satisfy (DTS) options for low-risk cases. A tiered approach to regulatory assessment would improve productivity in the delivery of housing and focus regulatory effort where risk is highest. It would also reduce unnecessary consultant and professional fees.

1.3 National Interpretation and Precedent Register

The NCC is largely implemented by informal interpretations by local certifiers, with inconsistent advice across many jurisdictions. There is no authoritative or consistent way to resolve ambiguity.

In addition to having “one code” as outlined above, a national NCC precedent and interpretation register would publish binding/approved interpretations on contested clauses. The Australian Building Codes Board would maintain it and provide the sole body for interpretation and approval. The register could also record accepted performance solutions, providing precedent for regulators and industry. Having such a register would improve consistency, reduce disputes, redesign and build collective knowledge throughout the building industry.

These reforms would reduce compliance costs, shorten approval timeframes, improve regulatory certainty and productivity, and support innovation, while maintaining safety, performance, and public confidence in the built environment.

Recommendation 2: Using New Technologies and AI to Improve Accessibility

The NCC is currently published as a static document, with compliance assessed manually through drawings, specifications, and reports. This approach increasingly departs from current design and construction workflows, which are digital, data-rich, and model-based. There is an opportunity to make NCC requirements machine-readable and integrate them into digital design tools, enabling faster, more consistent compliance checking and earlier identification of issues during design development.

Large language models and rule-based systems make it feasible to develop AI-assisted tools that support NCC compliance assessment. This could include a nationally supported digital NCC platform with a plain-language query interface and automated pre-lodgement checks that flag likely non-compliances. Such tools would not replace certifiers or regulators, but would reduce routine checking effort, improve consistency, and allow regulatory focus to shift toward professional judgment and oversight. To deliver productivity benefits across the industry, such a tool would need to be available to everyone. The future capability of this tool would be to read drawings and models directly at the design stage to reduce rework later in the approval process.

2.1 Integrate Australian Standards

The NCC references hundreds of external Australian Standards, many of which are expensive to access, and which are updated independently of the NCC. Often, the Australian Standards contain overlapping or conflicting requirements with those set out in the NCC. This creates a secondary regulatory system.

Australian standards should be consolidated and rationalised to bring core technical requirements directly into the NCC where possible. In addition, all Australian Standards, which are effectively law, should be made free for public access and use. Doing this would improve quality, reduce time, increase transparency and reduce compliance costs. It would also provide clarity and ease regulatory checking when made available, and particularly so that they can integrate with digitised AI processes outlined above.

Recommendation 3: Establish an RDC for the Building Industry

The building industry has historically presented as the least innovative industry in Australia. In addition, the Productivity Commission found in 2025 that productivity in the construction industry has steadily declined over the last 30 years. Yet there is an immediate need to produce more houses quickly to meet the national shortfall.

The building industry in Australia would benefit greatly from establishing a National Research and Development Corporation to facilitate innovative solutions, accelerate technology adoption and help improve how buildings are produced for a more productive future. Such an entity could:

- Provide independent technical validation of new systems
- Support regulatory innovation, such as the voluntary certification scheme for MMC
- Develop and maintain building platforms for more certainty in construction
- Foster innovation in emerging methods of construction
- Assist in workforce skills and training readiness for future methods of construction
- Develop strategies to meet the incoming carbon reduction requirements in construction

To begin the establishment of a National Research and Development Corporation for Construction, Building 4.0 CRC suggests the following two proposals to assist with the establishment of such an entity:

Proposal 1

ABCB to engage the CRC to do an international benchmarking exercise reviewing progressive / best practice code alignment in the New Zealand, Singapore, Sweden, UK, Canada, and US jurisdictions such as California and Colorado. We are aware from our research and networks that these jurisdictions are working on similar issues and challenges – introducing code amendments - and we see much to be gained in drawing upon their experiences.

Proposal 2

ABCB to engage in one or more pilot projects which can explore, reflect, and validate approaches that can be enshrined in a modernised NCC. For example, in support of acute national need for affordable housing, a pilot that tests streamlined certification and compliance of 4-8 storey MMC procured Class 2 residential flats.

Recommendation 4: Future-Proofing Industrialised Building Approaches

Modern methods of construction, including prefabrication and offsite manufacturing, offer benefits and improvements to productivity, quality, safety, and sustainability. However, regulatory uncertainty and inconsistent acceptance slow their uptake. Australia needs an independent Research and Development Corporation for the advancement of modern methods of construction, and its use in building across the country (See Recommendation 3). Such a corporation could produce industry available content to improve building through research and development of materials, processes, components, contracts and all aspects pertaining to advanced manufacturing of future buildings.

Within the provisions of the current NCC, projects are assessed on a project-by-project basis, even where the same wall systems, modules, or building typologies are used repeatedly. Working this way creates unnecessary reassessment and penalises industrialised and system-based approaches. The NCC should include regulatory pathways that explicitly recognise repeatable systems, which would allow pre-certified building systems to be reused without full reassessment, while maintaining appropriate regulatory oversight. This would reduce duplicated compliance effort, improve productivity, and support scale, standardisation, and design-for-manufacture approaches, aligning with the broader objectives of modern methods of construction. It is noted that the voluntary certification scheme is a step towards this being incorporated into the NCC.

Conclusions

Treasury has an opportunity to make reforms that reduce regulatory burden while strengthening outcomes. The recommendations outlined in this submission provide details on how this can happen for a more productive future in the Australian building industry. Building 4.0 CRC has the expertise, experience, and knowledge base to support all of the above proposed reforms and would like to be an active participant in dialogues to advance the Australian building industry.

The measures above represent practical and achievable steps towards a better NCC that will have a significant positive impact. Australia is at a turning point, where construction innovation is required, and the government and industry are aligning to find ways to produce better buildings. This represents an important opportunity to overhaul the NCC to make it fit for the future of more innovative and productive building in Australia.