



24 February 2025

Building System Performance  
Ministry of Business, Innovation and Employment  
By email: [building@mbie.govt.nz](mailto:building@mbie.govt.nz)

Tēnā koutou

## **RE: INSULATION REQUIREMENTS IN HOUSING AND OTHER BUILDINGS**

Thank you for the opportunity to submit on the proposed changes to the Building Code acceptable solutions and verification methods for insulation and energy efficiency requirements.

This submission reflects the views of Engineering New Zealand and has been developed with support from members with experience using the H1 energy efficiency provisions.

Engineering New Zealand welcomes the Ministry of Building Innovation and Employment (MBIE) continued commitment to improve New Zealand's Building Code to support healthier and more energy efficient homes.

We support efforts to reduce ambiguity in the building system and improve energy modelling in New Zealand buildings. However, we consider this consultation could make broader improvements to H1 standards and address the need for strategic direction in building code updates, as discussed further below.

### **Strong support for reduced ambiguity and enhanced clarity**

We are aware that engineers can struggle with the ambiguity and complexity within the H1 acceptable solutions and verification methods. Engineering New Zealand strongly supports any effort to make standards more accessible for engineers. Future updates to building standards should continue to prioritise efforts to improve clarity and simplicity for professionals that use them. Reducing confusion and uncertainty will help improve quality design and reduce the risk of non-compliant buildings.

### **More accurate modelling**

We agree that removing the scheduling method is a good first step towards enhanced accuracy and a better understanding of how buildings will perform. To ensure the sector can adapt to this change, we recommend that MBIE provide guidance and resources.

The calculation method would benefit from a review to ensure that it is fit for purpose, particularly with a greater reliance on it. As an example, we feel the calculation method is missing the inclusion of mechanical systems (ie. heat pumps) in the methodology. This would help improve the accuracy of the method and ensure calculations reflect common situations.

Over time, there is an opportunity to move towards the full use of the modelling method. The modelling method provides the most accurate understanding of energy efficiency in buildings and will help the sector manage growing demand on design that considers the impact of climate change. The Government should indicate if it intends to move in this direction as soon as possible to give the sector confidence to continue to invest in this capability. If the modelling method was adopted as the sole method of calculation, we would support the transition period proposed by the New Zealand Green Building Council of 20 months.

### **Opportunity to make broader improvements to H1 standards**

We have heard from experts in the field that the H1 standard could be further improved, learning from overseas experiences.

Engineering New Zealand has previously submitted on the need to change the building performance index (BPI) to the kWh/m<sup>2</sup>/per year metric. The BPI metric is outdated and complex to use, where the kWh/m<sup>2</sup>/per year metric is simpler and commonly used overseas and in New Zealand (used by BRANZ and in Building for Climate Change material). It would also support families to understand the energy efficiency of their homes. kWh is commonly used in consumer products such as power bills and Energy Rating Labels on many appliances.

It is opportune for MBIE to review the H1 clause at a more systemic level. The H1 clause of the Building Code focusses on energy efficiency; however, the acceptable solutions and verification methods have become mixed between energy efficiency and thermal performance.

We consider there is a need to look at the intent of the H1 clause to see if it is fit-for-purpose. Consideration could be given to the possibility of splitting it into two clauses- one on energy efficiency and one on thermal performance. A thermal performance clause could provide an additional chance to introduce standards that help manage overheating and moisture related issues.

We have heard that many engineers commonly use international codes and standards because of the difficulties with the H1 standards. The H1 standards are misaligned to international standards and do not reflect common situations that occur.

### **Overheating and internal moisture**

Consistent improvements to energy efficiency and modern methods of construction have contributed to increasing concerns with overheating and internal moisture. As you know, there is a common misconception that insulation is to blame but this is not the case.

Houses with poor insulation rely on the sun's heat to mitigate thermal losses, which was historically the case in New Zealand. Improved insulation standards have dramatically reduced the losses in homes but building design can overlook solar gains.

The following could help address the problem:

- Further training and guidance to ensure houses are designed with solar gains in mind.
- Changes to glass specifications to improve solar aperture requirements.
- Improved ventilation requirements (mechanical or natural).
- Introduction of requirements on airtightness of buildings.
- Introduction of local guidance on topics such as overheating, ventilation, thermal bridging, moisture control, which is particularly important for large and complex projects.

There is established international practice that New Zealand can leverage on energy efficiency, thermal performance and ventilation that could help make healthier and more comfortable homes.

Adopting or aligning to well established international standards would also help provide legitimacy and support to the high-quality work that many engineers, who use these standards, are already doing.

### **Building code updates need strategic direction**

It can appear to the sector that updates to the building code are often ad hoc and lack strategic direction. Significant changes can take time for the sector to adapt and delays the benefits of improved standards.

We recommend that MBIE develop a clear strategic direction for building code updates that highlights priority areas of improvements and clearly signals where and when future changes will be. This would help support the sector to prepare for changes and adapt quicker.

Strategic direction would also help ensure that building code updates align with other parts of the building code, other pieces of work (ie. Building for Climate Change programme or Resource Management reform) and key objectives of the Government.

In Australia, the National Construction Code is updated every 3 years, with changes being publicly consulted on the year before the change. This approach helps provide confidence that things won't change in the interim and clearly sign posts when changes are coming.

### **Conclusion**

Engineering New Zealand supports efforts to make the building system more accessible for engineers and improve energy modelling in New Zealand buildings. However, there is still a need to make broader improvements to H1 standards and provide strategic direction in building code updates. These reforms need to go further to make New Zealanders warm, healthy, and comfortable in the buildings they use every day.

We always appreciate the opportunity to provide feedback and contribute to the development of better building standards.

If we can be of any further assistance or if you would like to discuss these issues with one of our members who has extensive experience in this area, please do not hesitate to contact us.

Nāku, nā

A handwritten signature in blue ink, appearing to read 'R. Templer', written in a cursive style.

**Dr Richard Templer**  
Chief Executive