Joint Submission

for

MBIE Building for Climate Change

From

New Zealand Timber Design Society (TDS)

and

Wood Processors and Manufacturers Association of New Zealand (WPMA)

To Whom It May Concern,

We are writing to provide input on the Building for Climate Change Framework that has been proposed by MBIE. We are writing as a joint submission of the New Zealand Timber Design Society (TDS) and the Wood Processors and Manufacturers Association of New Zealand (WPMA). The reason for the joint submission is that these organisations represent both the engineering practitioners who design timber buildings as well as the manufacturers who provide timber and engineered timber products to the New Zealand building industry. Both have a strong interest in contributing to the efforts in New Zealand around creating a sustainable future for all New Zealanders. Clearly these organisations are interested in promoting timber as a way forward to reduce carbon emissions and it is their belief that having pathways for increased inclusion of timber in larger buildings in New Zealand will be a way to do this.

While in general there is support for what MBIE is trying to achieve, the "Whole-of-life embodied carbon emissions reduction framework" document is very high level and therefore is only seen as providing very general information on what is planned. There are some concerns that the suggested strategy will be difficult to implement and may not in the end make the difference that is intended. As such, it raises some questions and issues to consider, including the following:

1) The proposal does not recognise the potential contribution of sequestered carbon in bio-based building materials to the design and construction of net zero carbon buildings.
2) Any framework must provide incentives for reducing carbon. Currently there is little incentive to move towards lower carbon buildings and therefore cost remains as the primary driver when selecting materials and building systems. Financial incentives will be a much more effective way to reduce carbon emissions, rather than caps on performance. Such incentives could be in the form of interest free loans, government grants or tax breaks.
3) There seems to be little to no consideration for carbon sequestration which is typically included for carbon analyses. This needs to be included especially as forest growing plays a pivotal role in NZ's strategy to meet its Paris Accord commitments as do Harvested Wood

Products which can then go on at (so called) end-of-life to provide feedstock for "waste-to-energy" (displacing fossil fuels) and potential for long term carbon capture in landfills. Rather than a cap, the goal should be net zero carbon buildings, where the carbon sequestered in the bio-based building materials offsets the embodied carbon emissions from manufacturing all the other materials in the building.

4) It appears that there is not a very good understanding of the timber industry and how it can evolve to be better placed to provide long-term solutions for a reduced carbon building industry. Groups like TDS and WPMA should be consulted and part of the team moving forward to develop low carbon solutions for the building industry.
5) There is no inclusion or provision for including imported timber products into New Zealand and how this can be included within an estimation of carbon reduction nor how this will fit with existing trade and competition provisions set out in Free Trade Agreements. This is a critical area and policy planning on this needs to occur at the outset of developing the Framework.
6) There should be more focus on increasing the understanding around carbon, how it can be reduced and what this means for the environment. In essence, there is a significant need for increasing "carbon literacy" throughout New Zealand and especially as it relates to the built environment. Information and education should be provided for both design practitioners (architects, engineers and specifiers) as well as the general public, as they represent the end users of the building and are hence the final decisions makers.
7) The framework should avoid higher costs for owners and developers. There are perceptions that by requiring a carbon analysis for consenting that costs will go up without any tangible benefits to those paying for the analysis. A new professional figure, specialized in carbon analysis, will likely be seen as a new hurdle to obtain consent and will also attract a consulting fee. It might be beneficial to provide a carbon analysis free of cost by councils by eco-advisers, which have been instated in several councils around the country.
8) When setting caps it is very important to understand how this is interwoven with incentives and what are the benefits of achieving greater performance rather than just achieving a benchmark which may make a significant difference when selecting materials and systems for buildings.
9) It would be good to have more information on how other countries around the world are addressing similar issues and also how effective different schemes have been. This is not a new topic and it would be beneficial to know what has worked in other places before committing to a plan of action in New Zealand.
10) Simple case studies are required as examples of how the framework could work.
11) Simple assessment methods will be required to make this framework a success. Are there overseas examples and sources that can contribute?
12) It is essential that all materials and systems are being evaluated in an equivalent manner so that the actual long-term benefits can be accurately predicted and understood.

TDS and WPMA understand that this is a complex and difficult task to undertake, but also acknowledge the importance of moving the building industry forward so that New Zealand can reap the benefits of a lower carbon future. These organisations have significant expertise and understanding of the implications of including more timber within the built environment and would

like to be included in discussions moving forward so that this knowledge can be incorporated in governmental decision making. More detail on the significant climate benefits of construction in timber can be found in the NZ Wood Design Guide: Timber, Carbon and the Environment (2020) and a link to this document is here: https://nzwooddesignguides.wpma.org.nz/members/design-guides/2-1-trees-carbon-and-the-environment/.

We would be happy to provide any additional information to assist.

Sincerely,

Jon Tanner, CEO, WPMA

David Carradine, President, TDS

10 October 2020

Submission Form

Building for Climate Change

1. Contact details (optional)

Name:	David Carradine
Company/organisation	BRANZ
Email address:	David.carradine@branz.co.nz

2. Are you making this submission on behalf of a business or organisation?

☐ No

☒ Yes (please tell us which Company/Organisation you are making this submission on behalf of)

New Zealand Timber Design Society (TDS) and Wood Processors and Manufacturers Association of New Zealand (WPMA)

3. Would you like to:

Remain anonymous in the published consultation summary report	☒ No	☐ Yes
Receive a copy of your own submission	☐ No	☒ Yes
Receive future updates on Building for Climate Change programme	☐ No	☒ Yes

4. Are you willing to be contacted in relation to your submission if MBIE has questions about your response?

☐ No ☒ Yes

5. The best way to describe your role is:

☐ Architect	☐ Building owner	☐ Geotechnical Engineer
☐ Building Consent Authority/Officer	☐ Electrician	☐ Structural Engineer
☐ Builder	☐ Engineer – other	☐ Plumber/Gasfitter/Drainlayer
☐ Building product/material supplier	☐ Fire Engineer	

☒ Other: Technical Society for Engineers (TDS) and Advocacy, Lobbying and Government Representation Association (WPMA)

To submit this form via email:
Once you have completed the form, you can email it to BfCC@mbie.govt.nz, with "Submission" in the subject line.

To submit a print copy of this form:
You can post or courier your submission to:

Via Courier:

Building System Performance
Ministry of Business, Innovation and Employment
Building for Climate Change Submission
15 Stout Street,
Wellington 6011

Via Post:

Building System Performance
Ministry of Business, Innovation and Employment
Building for Climate Change Submission
PO Box 1473
Wellington 6140

Overarching approach of the Building for Climate Change programme

6. Do you agree or disagree that the Building and Construction Sector needs to take action to reduce emissions?

☐ Strongly disagree ☐ Disagree ☐ Neither ☐ Agree ☒ Strongly agree

Please tell us why.

The building sector contributes a significant amount to carbon emissions and needs to understand what can be done to reduce them.

7. What support do you think you or your business would need to deliver the changes proposed in the frameworks?

Financial incentives to building owners to provide lower carbon buildings

8. Are there any barriers that are currently preventing (or discouraging) you, or your business, taking action to reduce emissions?

☐ No ☒ Yes

Please identify the main challenges.

Minimal incentive to building owners for reducing emissions

9. Do you think the Building for Climate Change work programme should include the following building classifications?

	No	Yes
Housing	☐	☒
Communal Residential	☐	☒
Communal Non-Residential	☐	☒
Commercial	☐	☒
Industrial	☐	☒

If you have indicated that you believe one, or more, building classifications **should not** be included, please tell us why

Framework: Transforming Operational Efficiency

10. Do you agree or disagree that the Building for Climate Change work programme should include measures to improve the operational efficiency of buildings in New Zealand?

Strongly disagree	Disagree	Neither	Agree	Strongly agree
☐	☐	☐	☐	☒

Please tell us why.

Embodied carbon is only part of the picture and operational efficiency needs to be understood to calculate the emissions over the life of a building.

11. The Framework proposes that operational efficiency requirements tighten in a series of steps to reduce emissions in the Building and Construction Sector, with the requirements for each step published at the outset and the final step being reached by 2035.

Do you support a gradual introduction of operational efficiency requirements, using a stepped approach?

☐ No ☒ Yes

12. Do you think the timeframe is appropriate?

☐ Yes ☐ No, it's too short ☒ No, it's too long

Please tell us your ideal timeframe if it's not by 2035.

2030

13. The Framework proposes that a number of building types will be exempt from operational emission reduction requirements.

Do you agree or disagree with the proposal to exclude the following from operational efficiency emission reduction requirements?

	No	Yes
Outbuildings	☐	☒
Ancillary buildings	☐	☒

Please tell us why.

Buildings too small and too difficult to police

Approach

14. The Framework proposes that operational efficiency requirements will only apply to new buildings initially with further work to look at requirements for existing buildings being undertaken at a later date.

Do you support this approach?

☒ No ☐ Yes

Please tell us why.

All buildings should be considered.

15. Do you support a limit on emissions from fossil fuel combustion to operate buildings (e.g. for space and water heating)?

☐ No ☒ Yes

Please tell us why.

To reduce carbon emissions

16. Do you think that new Thermal Performance requirements based on heating and cooling demand should be introduced to support increased operational efficiency of buildings?

☐ No ☒ Yes

Please tell us why.

To reduce carbon emissions.
Further, current requirements (i.e. NZBC, Healthy Homes Standards) are not fit for purpose and do not provide efficient buildings and do not provide healthy/comfortable living conditions for inhabitants. Current requirements do not meet international standards and many buildings fail to provide min and max temperatures as required by the WHO.

17. Detailed requirements for the efficiency of fixed services (such as heating and cooling systems, artificial lighting, hot water systems and appliances, ventilation systems etc) are not currently set out in the Building Code.

Do you think that Services Efficiency performance requirements should be introduced to support increased operational efficiency of buildings?

☒ No ☐ Yes

Please tell us why.

Too difficult to monitor and implement

18. The framework proposes that there are requirements for the plug loads for large buildings*, but not small buildings. Do you support this approach?

(*Large and small buildings as defined in the framework scope section)

☒ No ☐ Yes

Please tell us why.

Include all buildings

19. The Framework proposes that new buildings will not be required to include onsite renewable energy generation or energy storage capacity. Do you agree or disagree with this proposal?

Strongly disagree	Disagree	Neither	Agree	Strongly agree
☐	☐	☐	x☐	☐

Please tell us why.

It may be better to use energy from the grid rather than expensive and potentially inefficient on-site energy. Incentives for efficiency would likely be more effective.

20. The Framework currently proposes to exclude the following elements from the Building for Climate Change work programme. Which do you think should be included or excluded?

	Should be included	Should be excluded
Electrical appliance efficiency	☐	☒
On-site collection and storage of water	☐	☒
On-site waste water treatment	☐	☒

Please tell us why.

Beyond the framework scope

21. Buildings need to provide suitable indoor environmental quality (IEQ) for good occupant health and wellbeing outcomes. The Framework identifies the following critical IEQ parameters:

- Air temperature
- Relative or absolute humidity
- Ventilation rates
- Surface temperature
- Hygienic surface temperature (avoidance of mould)
- Daylight provision

If there are any additional elements that you think should be considered, please record them in the comment box below.

No

22. The Framework proposes that the Thermal Performance energy use intensity and services energy use intensity are considered during the consent application process, and when a Code Compliance Certificate is applied for.

Do you think this would impact you or your business/organisation?

☐ No ☐ Yes

Please tell us why.

Not sure

23. If there are any additional tools or support that you think you would need to implement this requirement, please tell us in the comment box below.

Not within our expertise

Framework: Whole of Life Embodied Carbon Emissions Reduction

24. Do you agree or disagree that the Building for Climate Change work programme should include initiatives to reduce whole-of-life embodied carbon in New Zealand buildings?

Strongly disagree	Disagree	Neither	Agree	Strongly agree
☐	☐	☐	☐	x☐

Please tell us why.

Embodied carbon will become more critical as operational energy usage becomes more efficient. Embodied carbon is a significant source of carbon.

To meet our emission reduction goals, a key objective of the framework is to increase building material efficiency, and reduce construction waste.

25. What measures, if any, do you think should be put in place to increase building material efficiency? (Select all that apply)

x☐ Update regulatory performance requirements to ensure they are appropriate

x☐ Incentivise 'lean design'

x☐ Remove barriers to the reuse of construction materials

x☐ Other (please specify)

Building material efficiency should be an objective, but only for polluting materials.
For bio-based materials, there is benefit in using greater amounts of material in each building, which is sometimes structurally inefficient, but will help the building to be net zero carbon (or a carbon sink) and should not be penalised.

26. What measures, if any, do you think should be put in place to reduce construction waste?

More efficient building systems including increased use of prefabricated systems
Increase the cost of dumping
Create a market for combustion of wood waste for energy
Need new technology for clean burning of treated wood

27. Using low carbon construction materials and products is identified as another option to reduce whole-of-life embodied carbon emissions.

How could we encourage the use of low carbon construction materials?

Financial incentives (i.e. form of interest free loans, government grants or tax breaks) including a carbon tax which would push up the cost of high carbon emitting materials.

The Framework proposes introducing reporting requirements for whole-of-life embodied carbon in buildings, followed by a cap on whole-of-life embodied carbon for new building projects.

28. Would you support a cap on whole-of-life embodied carbon for new building projects?

☐ Yes ☒ No

Please tell us why.

A cap would be easily met by bio-materials, without recognising their potential to contribute to zero carbon buildings. A significant change is only achievable with an incentive to use renewable bio-materials.
A cap might be set to accommodate carbon-polluting materials like steel and concrete, which have very little potential for a reduced carbon footprint. The end result will then be marginal.
The solution needs to be financial incentives which encourage significant reduction in the use of carbon-polluting materials, and increased use of carbon-sequestering bio-materials.

29. Do you think a data repository of embodied carbon from buildings should be established?

☒ Yes ☐ No

Please tell us why.

To provide an open exchange of information for evaluation and prediction

30. If a data repository was established, do you think this information should be able to be accessed by the public?

☒ Yes ☐ No

Please tell us why.

For an open and transparent understanding for all

31. Which, if any, of the following factors would make it difficult for people to report the whole-of-life embodied carbon of new buildings, and why?

☒ Lack of an agreed methodology ☒ Inadequate data quality and availability

☒ Lack of appropriate tools or software ☒ Administrative burden on businesses

☐ Other (please specify)

32. What support, if any, do you think will be needed to make reporting embodied carbon a standard part of the design and construction process for every new building project in New Zealand?

Rules included with a Building Consent. No consent without a simple report. A carbon analysis should (at least initially) be carried out free of charge by the council (i.e. by an Eco-advisor).

The framework proposes that reporting of whole-of-life embodied carbon for buildings would be carried out as part of the building consent application process.

33. What impact do you think this proposal will have on the Building and Construction sector?

Minimal, but it must be simple and easy to understand and implement

34. What additional tools or support would be needed to implement this requirement?

A simple list of carbon coefficients for the main building materials and simple tools for making the calculations

35. Do you think that requirements for embodied carbon calculations should only include the initial building life cycle stages (product and construction stage)?

☐ No ☒ Yes

Please tell us why.

It is currently impossible to predict the end-of-life of building materials 50 years or 100 years from now. There will be new materials developed by then. End-of-life can be addressed when and if the building is dismantled or re-used.

36. The Framework proposes limiting the type of building components that would be included in an embodied carbon assessment, excluding components with lower emissions (such as internal fittings).

Do you agree with this proposal?

☒ No ☐ Yes

Please tell us why.

All large volume permanent or semi-permanent materials should be included including ceilings, linings, non-structural internal walls and floating floors

37. Do you think that reporting on, and ultimately capping, embodied carbon should apply to new building projects only, not refurbishment or demolition projects?

☒ No ☐ Yes

Please tell us why.

Reporting should be required for significant refurbishment, otherwise people will try to be exempt by retaining a very small part of an old building and call it refurbishment. Demolition should be excluded

38. The Framework proposes that a simplified embodied carbon calculation tool could be used for small buildings but more detailed calculations would need to be provided for large buildings*.

(* Large and small buildings as defined in the framework scope section)

Do you agree with this proposal?

☐ No ☒ Yes

Please tell us why.

The process could be standardised for small buildings, possibly per square metre. Larger buildings are more complex and therefore need more sophisticated tools, but these need to be very simple for all buildings so that they can be easily used and understood.

39. Any other comments on the proposed frameworks?

Please see the letter at the beginning of this submittal from TDS and WPMA