



# Submission Form

## Building for Climate Change

### 1. Contact details (optional)

Name: Angela Bell Acting Group Manager Regulatory Services  
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### 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)

Kapiti Coast District Council

### 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: \_\_\_\_\_

**To submit this form via email:**

Once you have completed the form, you can email it to [BfCC@mbie.govt.nz](mailto: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 Kapiti Coast District Council agrees the building and construction sector needs to actively support the reduction of carbon emissions. For the scheme to be successful we consider building technology will need to transition from its current construction and operational practices, to new states which create fewer emissions.

The Council also acknowledges a voluntary approach from the sector will be unlikely to be consistent or successful because there is a view that to reduce emissions will be expensive and is something that should be picked up by future building users.

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

After reviewing the proposal, it is assumed Local authorities will be expected to implement the regulation of operational and embodied carbon for all building consents, on-site inspections and code of compliance certificates.

Local authorities will need to train building officers to include carbon metric assessment as part of the building consent process, however the Council believes responsibility to demonstrate compliance needs to remain with the building owner and their design team.

The inclusion of carbon data into the building consenting process is an opportunity for central government agencies to enable making carbon calculations as easy as possible. We support the development of a New Zealand centric industry standard to ensure any analysis is relevant to NZ conditions and construction standards.

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.

We believe a lack of carbon standards is a current barrier for the following reasons:

- A lack of existing carbon standards for building products is hindering designers' ability to introduce low carbon designs.
- A lack of standards means a BCA cannot assess building products
- A lack of clarity on how the introduction of low carbon design principals will align with the principals of a performance based building code is also a barrier.



The Council believes having the final cap in place 2035 is likely to be too short. Especially when you consider the building sector is starting from a low baseline on this programme.

Assuming existing buildings will be incorporated into the programme we would recommend new buildings to be meeting “full compliance “by 2040 and existing buildings to be fully integrated into the scheme by 2045.

Allowing extra time will mean the sector and the public have more time to understand what needs to be achieved and the tools and information necessary to ensure a successful outcome are also fully developed, tested and are in place.

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ancillary buildings	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please tell us why.

We agree in general, outbuildings and ancillary buildings be exempt from operational emission reduction requirements. Sheds and garages do not usually have temperature demands required by human habitation placed upon them.

However as noted in the consultation document, some ancillary buildings, such as indoor swimming pools will have substantial heating requirements and should be in the framework. Therefore, the reference or description of ancillary buildings in any supporting legislation and the Building Act 2004 needs to be refined in order to ensure ancillary buildings that have a use that produces high levels of carbon are recognised and captured by the proposed process.

We also recommend that where ancillary buildings include “office space’ or other features which means they are regularly used by people then these buildings will require heating/ cooling and need to be brought into the framework.

## 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.

In principal we agree with the approach of introducing new buildings 1<sup>st</sup>, however we also would suggest that where existing buildings are undergoing substantial renovations or change of use then these buildings should also be included in the scheme.

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.

In principal we agree with introducing a limit on fossil fuel emission for building operations. However, there is also a need to ensure the scheme does not introduce undue increases in home heating costs which makes new homes even more unaffordable.

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.

We agree with the introduction of new requirements, in particular focusing on:

**Passive Solar Design:** Passive solar principles are an extremely important factor for heating and cooling control in buildings. Once constructed, a building that is well designed to passively control and distribute heat from the sun will yield efficiencies and support a reduction in heating costs.

We support passive solar design even where there is no collector to release the energy after the sun goes down. Rooms with north facing windows will be warmer when the sun is out than south facing rooms in the same house. Heating may be required on the south side but not the north side during the day which will have an effect on overall energy consumption for the building.

However, we also acknowledge passive solar design will not be the silver bullet we need to lower our carbon footprint. Data on how solar heating will work can be complicated to compile when factoring in shading factors, such as hills, trees and other buildings. We understand these are currently outside the scope of BRANZ passive house calculation tool so further work is required to ensure advice is available for designers so they have better advice on how to identify and mitigate these issues.

**Airtight houses:** We support the principles of airtight design which reduces draughts and air leakage helping to keep heat inside the building. Airtight houses can, however, suffer from internal moisture problems due to the lack of air flow. Not everybody knows they need to open their windows to let out moisture from cooking, showering and other activities. This has been known to cause significant building damage in instances where the house has not been ventilated. We recommend this is given further consideration in any changes to the Building Act.

**R-values:** Thermal resistivity values (R-values) are successfully used now as a measure of heating and cooling performance of buildings in the building code. The higher the R-value the better the ability to slow down heat loss or heat gain from outside temperatures. We support the ongoing use of R-

values as an ancillary tool to support the proposed measures of energy per square metre.

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.

We support energy efficient performance of fixed service appliances and submit that regulation could be achieved via a combination of mandatory product certification by third parties, and mandatory efficiency performance standards.

We propose that independent third party certification would be required to manage the risks of self-certification or no independent testing of product performance.

Local authorities will need to add the checking of energy efficiency of fixed services to their regulatory functions which is likely to lead to higher compliance costs. Therefore, it will be important to ensure the benefits outweigh any detriments.

If there was a mandatory certification scheme in place, we would further suggest consideration is given to how this will be monitored once building work is completed. It is very likely an owner will work towards ensuring they meet any new performance requirements at time of signing off a new building. However, there is a need to ensure ongoing compliance otherwise these systems could become inefficient if not maintained or poorly operated. Consideration should be given to including these systems in the Building Warrant of Fitness regime that is currently in operation.

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.

Plug in load requirements will vary depending on the business or activity in the building and load limits would discriminate against certain businesses unfairly. Plug loads cannot be enforced easily after the consenting process is completed.

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

Please tell us why.

Requiring new buildings to include onsite generation or storage should be an option for building owners which in turn should be used to offset the carbon footprint for the new building.

We also consider including this requirement will enhance the overall resilience of the individual building and surround community.

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>
On-site collection and storage of water	<input checked="" type="checkbox"/>	<input type="checkbox"/>
On-site waste water treatment	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please tell us why.

**Onsite storage of rainwater:** We support the inclusion of on-site water collection (rainwater, or other means in the future) for potable and other uses. This directly links to the goal of decreasing water use. It would also add resilience to buildings and decrease infrastructure costs.

The Kapiti Coast District Council already requires new homes to include rainwater storage which is being used for flushing toilets and other non-potable activities.

This initiative means there has been a reduction in the demand for potable water from the council supplied system meaning greater resilience during dry weather and reduced need to develop new water supplies.

**Onsite greywater disposal:** We support the inclusion of grey water onsite collection, appropriate treatment and re-use onsite e.g. for watering of gardens. This will conserve water and decrease the wastewater demand on the infrastructure.

If onsite drinking water and/or grey water systems for individual buildings be included in the MBIE programme, we suggest consideration must be given to how these systems are regulated to minimise environmental and health risks or actual impacts.

Note: local authorities may not have the resources to regulate multitudes of properties, and recouping costs of inspection could be problematic, especially in financially vulnerable communities. Where there are national gains to be made, we propose the government assist local authorities.

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.

We do not consider any additional IEQ's are required.

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.

Local authorities will need additional time to assess and process carbon consenting information.

However, in order to improve efficiency in this process we would like to see carbon compliance statements provided to local authorities at the consenting stage, with a further compliance statement provided to the local authority from a suitably qualified person prior to issuing of the code compliance certificate.

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.

A consistent methodology and standard will be needed for designers and regulators. Local authorities will need designers to have the ability to provide compliance certainty when they put in their consent applications and also at the code of compliance stage.

## 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

Please tell us why.

We recommend consideration be given to the inclusion of whole-of-life embodied carbon in the proposals.

Building and product fabrication uses significant amounts of energy and emissions at the construction phase but can be reduced when being judicious with design, materials and methods of construction.

**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)

Update regulatory performance requirements to ensure they are appropriate

Incentivise 'lean design'

Remove barriers to the reuse of construction materials

Other (please specify)

We support putting measures in place to increase building material efficiency, however we would recommend clarifying the term "lean design". We are concerned this may be misrepresented as building to a lesser performance requirement that is currently set out in the NZ Building Code.

The Building Code is already a minimum requirement for the construction of buildings that amongst other criteria are dry, and safe for users. Introducing designs to reduce the carbon footprint may be counter intuitive to building users expectations on the long term use of NZ buildings.

We support the reuse of construction material but only under conditions that ensure as per the comments on lean design we do not end up with new buildings that in the long term are considered inferior to buildings constructed prior to the implementation of the proposed regime.

Building Regulations have specific requirements about the durability or minimum life performance expectations for products used in new construction. We support promoting the use of materials that with regular maintenance will continue to perform for the life of the bldg. rather than requiring replacement. An example would be the current use of certain metal cladding systems that will need to be replaced at a set point in time, vs using a more durable material such as timber cladding that will continue to perform for the life of new buildings if it is maintained. This should include the use of glulam (timber) beams for structural design in lieu of steel frames or beams.

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

A lot of construction waste occurs due to the current approach of many buildings being bespoke design which requires different sized panels to factory made panels or board sizes.

Better awareness by designers on minimising construction waste would improve design efficiencies. Manufacturers could also assist by improving their processes to keep up with demands for changes to their products.

Greater use of prefabricated modules may also limit wastage and reduce transport costs as building materials delivered haphazardly to various sites can be delivered to a single factory where the modules are fabricated.

A further measure could be for central government to promote the use of some building waste as an energy source for heating or power generation rather than be sent to land fill.

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?

As suggested by the SOLGM submission low carbon construction materials, eg, bio based or recycled/reused products could be identified by a rating system that is certified by an independent regulator, and data included in mandatory product information material.

This would be a cost effective way to provide information to the sector and for regulators to assess compliance.

**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.

We recommend consideration of a cap on whole of life embodied carbon for new building projects.

However, we consider more work needs to be done to determine where the embodied carbon loads are high before we know how they will be able to be reduced without compromising the performance and resilience of New Zealand buildings.

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

Yes

No

Please tell us why.

We support the creation of a mandatory product information database which would be available for designers to use as a source of truth on what products are available. The data could be captured at

the consenting stage.

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.

A data repository would be of use to the public if the data informed best practice that others could emulate.

There would have to be some consideration about the narration for existing buildings with high embodied carbon to avoid unintended consequences, such as demolition because they become unpopular to buy or lease. An example of this would be reuse of heritage buildings where the heritage aspects limits the ability of the building to reduce its carbon footprint.

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

X Other (please specify)

Lack of training of building owners and their agents is likely to be a barrier.

Complexity of bldgs. will be a barrier. Most bldgs. are bespoke design so there is no one size fits all design to assist with reporting.

Range of bldg. types- commercial, industrial, housing, apartments etc. likely to make reporting difficult.

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?

The general public and most people in the construction sector will require varying degrees of training for carbon data calculation and interpretation in order for the scheme to be successful.

In particular BCAs will require training and support in development of processes and systems to ensure the scheme has a regulatory process that will support delivery of the desired outcomes.

**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?

The extra requirements would be added to the design stage of the building. It also would add an additional review process to all the BCA consenting and compliance processes. To ensure the process is robust we would recommend certification is provided at consenting stage with final certification of the “as built” details before issuing of a code compliance certificate.

This dual certification process would be similar to the process used by design and supervising engineers involved in a bldg. consent. E.G. the designer/ certifier of the carbon footprint would issue a producer statement at consent stage confirming the bldg. will achieve X carbon footprint when it is built. At final stage the designer/ certifier issues another producer statement confirming the bldg. as built has a carbon footprint of X or X+ which may be different to the original approved design. The aim would be to receive confirmation the design that has been approved at consenting is at least the same (if not better) after the building is constructed.

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

Tools for the sector should include guides and carbon calculators. Start up and ongoing training will also be critical.  
Before the scheme is in place a monitoring regime should also be established. This is likely to be important where designers have fitted systems that ensure the building delivers on carbon reduction or neutrality over the life of the building.  
If local BCAs are expected to confirm compliance with new regulations, then training for officers will be required along with consideration on how the BCA will enforce the regulations if their breaches of the regulations during construction or after issuing of a code compliance certificate.

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.

We would not support limiting the assessment to the construction phases. The reason being for some buildings the initial carbon footprint will be high, however once possible mitigation strategies are operating such as rainwater harvesting, waste water mgt., power collection or generation the carbon footprint may be lowered.

We would also recommend the scheme look at promoting low damage design for new buildings. At the moment the Bldg. Regulations focuses on life safety. The aim of low damage design is to reduce the need for buildings to be repaired or demolished post a disaster meaning the overall carbon footprint for the building is reduced, even if the footprint for the initial build is higher.

Promoting low damage design will also improve community resilience following a disaster as well as help maintain insurers and financier’s confidence in regions where there is higher risk of natural disasters such as EQ, cyclones, or severe flooding.

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.

In principal we agree with this proposal if it is expected these components are introduced into the scheme at a later date.  
Some componentry such as internal fittings may have a high carbon footprint due to manufacturing or transportation factors. Not including these in a buildings overall assessment could unfairly penalise another building where its construction has a high footprint but a low interior component footprint.  
We would recommend further analysis is undertaken on the carbon footprint of items such as internal components- interior wall and floor linings/ coverings, cabinetry, fittings and fixtures before making a final decision to exclude these items.

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.

In the initial stage we would support this approach, however in the medium term we believe refurbishment and demolition should be included.  
  
Failing to not include renovations would not capture a large section of the national (annual) construction programme where existing buildings are refurbished to allow for new uses.  
  
Failing to not include demolition would mean this is not added to the overall carbon footprint for a site where a building is demolished and a new building takes its place. It could be argued the demolition is picked up as part of the new build however if demolition is excluded its likely developers will identify this loophole and demolish buildings separately to a new building consent application meaning the demolition is not assessed as part of the new build.

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.

We support smaller buildings having simplified methods which enable design, construction and consent with fewer compliance costs. Larger buildings are likely to have materials schedules produced by a team of experts who can readily collate the required information versus the owner of a small building undertaking this work themselves in order to keep down compliance costs.  
  
Therefore, we would recommend calculators that are developed for the scheme are easy to use with

good instructions so that homeowners or small commercial operators can undertake the calculations without the need to engage professionals.

39. Any other comments on the proposed frameworks?

While we support the framework we would want to be satisfied this scheme if introduced does not disadvantage regions if being compared to larger towns or cities.

Cities have scale and integrated infrastructure meaning a range of transport and supply options that are likely to see a reduced carbon footprint vs regional centres where the majority of products and services are delivered by road and quantity of product being provided is smaller leading to a higher carbon footprint.

We would also like to see more consideration in the scheme to a whole of life approach taken when assessing new buildings. Whole of life should not just focus on construction, operation and demolition of a building. We would suggest it should also consider the expected uses of the building over its life time with the aim of “building in flexibility in design” so there is less need for future renovations.

An example of this would be where homes/ apartments are designed in a way so that any user regardless of age or mobility is able to use the building without the need for major renovation.