CODE ADVISORY PANEL
MEETING REPORT FROM 5 MAY 2021

A meeting of the Code Advisory Panel was held on 5 May 2021 in Wellington and was attended by the following representatives of MBIE and the CAP:

MBIE
› Anna Cook, Acting Manager Building Performance and Engineering (Chair)
› Devin Glennie, Code Advisory Panel Secretariat
› Kiran Saligame, Acting Manager Engineering
› Richard London, Manager Building Performance
› Ross Wakefield, Senior Advisor Plumbing and Hydraulics (Observer)
› Saskia Holditch, Fire Engineer (Observer)

CAP members
› Bruce Curtain, NZIA
› Peter Laurenson, Auckland Council
› Ian McCauley, Tasman Council
› Ross Roberts, NZGS
› Michael James, SFPE
› Patrick Cummuskey, NZSEE
› Simon Davis, Fire and Emergency NZ
› Tania Williams, Engineering NZ
› Paul Campbell, SESOC
› Paul O'Brien, NZCIC

Apologies
› Mark Jones, BRANZ
› Cory Long, BOINZ

PRESENTATIONS FROM THIS MEETING

General updates

Overview

Members of the MBIE Building Performance and Engineering team presented to the Code Advisory Panel to update on topics raised at previous meetings.

Building Code consultation 2021

Devin Glennie provided an overview of the items currently in the 2021 consultation. Items discussed at past CAP meetings that were not consulted on include:

- B1 Structure – Low damage seismic design – This was a framework being developed as guidance with help from Engineering NZ. There has been a reset in the programme and the content is still being refined for future delivery.
- B1 Structure – Geotech modules 2-5. We have a draft of the modules but were unable to finalise before the consultation. We are looking at options to publish out of cycle or as part of next year's update.

A full view of the future work programme is available on building.govt.nz.

Fire programme

An update of the fire programme was presented by Saskia Holditch, Fire engineer. The strategic focus of the work programme includes:

- Continuing with urgent fixes to compliance pathway
- Supporting strategic priorities of facilitating higher density housing and Building for Climate Change
- Preparing for wider regulatory change.

The 2022 Building Code update will include several topics for consultation across multiple compliance pathways:

- **Fire protection for residential homes** – A comprehensive review of C/AS1 for use with simple residential homes by a wide variety of designers.
- **Fire safety systems and standards** – Proposals to cite the newest versions of many fire safety standards. One major proposed change would require domestic smoke alarms to be interconnected and provide better and more reliable coverage in new homes. Modern technology makes this less costly than it used to be. MBIE have also commissioned BRANZ to review the cited fire test standards as many of these have been updated as well.
- **Firefighting operations** – The requirements for firefighting operations have not been updated for decades. This was consulted on in 2020 but received mixed feedback. A CAP subgroup was developed with representation by affected stakeholders including FENZ, SFPE, BCA, IFE and FPANZ. The subgroup's second meeting was held end of March 2021.
- **Fire performance of external cladding** – MBIE are still reviewing the current cladding requirements to better understand the risk of timber framing in typical NZ construction cladding methods through test based evidence. BRANZ is currently testing cladding systems through an experimental plan.
- **Mass timber buildings** – The current fire compliance pathways do not contain specific requirements for mass timber buildings. Mass timber buildings was previously presented to BCTRAG in March 2019. A mass timber compartment fire has different design considerations than other traditional building construction types.

Advice

On these topics, the CAP provided the following advice:

- The annual cycle for Building Code consultation and release has provided stability to the sector.
- There is a huge industry pull for LDSD and geotech guidance. The transition period is important as is interim messaging to address a void in the information.
- Options for C/AS1 should also look at the affordability of housing.
- There is a lot of industry interest in mass timber. The connections for timber buildings are important and the fire requirements will have to consider how much detail to provide for mass timber.

Building System Assurance

BSA Strategy implementation

Simon Thomas, National Manager Building System Assurance, presented the BSA team's transformation programme and strategy. Details of what the BSA functions are provided on building.govt.nz.

Three years ago, BSA had 10 people for 10 functions. A transformation programme was initiated for the team's structure, people, and process. A big focus has been on the process of work and getting ISO 9001 accreditation to provide a similar level of quality assurance as the rest of the industry.

The team now has 36 people and the strategy was refreshed in 2020. The new strategy follows the Building for the Future Regulatory System Strategy and now looks at the next 3-5 years to be a world class regulator for its functions. Next year, BSA will review the strategy again.

During this presentation, the CAP discussed the role of BSA in occupational licensing, product regulation and risk based consenting. These topics sit within the Building Policy team to provide decisions and advice on.

Construction Sector Accord

Overview

Judy Zhang, Director of the Accord Transformation Unit, presented on the Accord Network and Construction Sector Transformation Plan. Further details on the Accord are available on constructionaccord.nz.

Accord Network

The vision for the Accord is for a partnership between New Zealanders, industry and government to create a high performing construction sector for a better New Zealand. The Accord network is to be launched in July 2021 to give a platform for embedding the principles with a wider group. Anyone joining the Network is asked to uphold a set of principles. The Accord Network sets out principles for how the sector wants to work but is not an accreditation body or regulator. The first step is to expand on the Accord principles and what each part of the sector needs to do to raise the bar.

Ministers are encouraging their agencies to join the Accord Network along with industry leaders encouraging businesses to get on board. MBIE are currently working on how building consent authorities can engage with it as well.

Transformation plan

The transformation plan workstreams that most relevant for the CAP are:

- Regulatory – what the building consent model can look like and other legislative changes that can be made
- Environment – identify opportunities and pathways to be a more sustainable sector and support Building for Climate Change.

Advice

On these topics, the CAP provided the following advice:

- The CAP is also interested in the procurement and risk workstream (promoting good procurement practices and providing fair and transparent contracts). There are issues with contracts that report compliance to NZS 3901 but contain amendments. There also issues with government agencies including special conditions in the contracts.
- There is a lot going on in the background for embracing the Accord. The developer side will be the last to pick it up since they may look to push liability down the chain.
- The Accord's work on Covid-19 provided re-assurance to the sector.

Digital reader pilot for the Building Code

Overview

Polly Martin-Case, Information and Education Manager, discussed the strategy for implementing a digital version of the Building Code.

Strategy for a digital Building Code

The general strategy is to move away from pdf documents which is a static format. The way forward is machine readable content. This allows for the information to be put into databases, from which digital tools can be built.

The strategy for the Building Code is to provide a platform and ensure that the Building Code can cope with digital consenting models. Other members of the sector would be able to lead further development.

Tekreader pilot

MBIE are currently piloting Tekreader for digital versions of the Building Code and includes the most widely used documents (B1, C/AS2, D1 and E2). This pilot is happening in tandem with Standards New Zealand's own pilot for digital versions of standards. Tekreader provides a document viewer as well as an xml database from which to build content. Currently, to access both the Building Code and standards pilots, you have to log into separate systems. The pilot version allows for feedback to be submitted on the use of the reader.

Advice

On these topics, the CAP provided the following advice:

- Digital readers for the Building Code are foundational for using the documents.
- If Tekreader is being used for both the Building Code and for Standards New Zealand, it would be useful to have these systems linked up so that one set of documents is talking to the other.
- Codehub is a useful tool and there is value in linking it up to that portal as well.
- Masterspec is also looking at a similar ways to provide digital formats so there are opportunities to link this up there as well.
- The next step for this work needs to look at making connections across the sector. Tekreader looks great but is still an interim step. The next step is linking with Councils, Masterspec and Standards New Zealand followed by asset management with as-builts, products and maintenance requirements. This allows for life cycle management of a building and potential to solve communication issues between different disciplines.
- The bigger question is what is the sector wide response to technology? The digital strategy for the building and construction sector may be a topic for future CAP discussion.

Implementing the Building for Climate Change Frameworks within the Building Code

Overview

Katie Symons, Principal Advisor Engineering, and Patrick Lindsay, Senior Policy Advisor, sought feedback on preliminary work investigating potential options to integrate the Building for Climate Change (BfCC) programme's mitigation frameworks into the Building Code. Ministers and Cabinet have made no decisions on implementation options or timeframes, and this discussion was intended to inform broader policy thinking and options.

Building for Climate Change frameworks

The BfCC programme consulted on two emissions mitigation frameworks in 2020:

› Transforming Operational Efficiency

› Whole-of Life-Embodied Carbon Reduction

A summary of the consultation is available on mbie.govt.nz.

From the 2020 consultation responses:

- › 92% of respondents agreed that the buildings and construction sector needs to take action to reduce emissions.
- › Over 90% of respondents agreed with the basis of the Operational efficiency framework (limiting fossil fuel use in buildings and requirements on heating and cooling demand)
- › 74% of respondents agreed caps on embodied carbon of buildings should be introduced.

Feedback from consultation has given a mandate to proceed with proposals, and valuable input to inform development of methodologies and regulatory options. The Building Code is the primary regulatory tool for setting performance requirements of buildings but is just one option to integrate the BfCC frameworks into the regulatory system. No decision has been made yet to do this and other options are being considered.

There are many things in the Building Code that already that do similar things to the requirements that could be set through the Transforming Operational Efficiency framework. However, whole of life embodied carbon would be a new concept for the Building Code.

Possible impacts on other parts of the Code

The performance requirements that could be used to integrate the BfCC frameworks into the system would interact with many of those that are already in place including, at a minimum, H1 Energy Efficiency and G5 Interior Environment. The goal is to minimise unnecessary confusion or disruption to existing system settings. The BfCC frameworks are intended to drive transformative, fundamental change in the system to deliver a step-change in the built environment's emissions. As such, some level of disruption is expected and necessary and has been recognised by stakeholder feedback.

Points for discussion

The CAP was asked to provide advice and feedback on the potential considerations and impacts if the Building Code were used to integrate the BfCC mitigation frameworks into the building regulatory system.

Advice

On these topics, the CAP provided the following advice:

- › Siteworks are done before building consent and can not be picked up in the Building Code. If the frameworks are incorporated into the Building Code alone, there is a risk is that additional carbon is driven into earthworks rather than into the foundation design.
- › For larger buildings that come with staged consenting (or fit outs), there can be issues as the total amount of embodied will not be known until the building is complete.
- › Product substitution is an issue as the same product can have different emissions based on where it comes from.
- › Trade-offs between the embodied carbon and operational carbon are needed to incentivise higher upfront investments such as heat recovery systems, which may have higher embodied carbon but present significant operational efficiency

opportunities. Without trade-offs, this could be accomplished in a building through waivers or modifications to the Building Code.

› The resilience of the building (ie. compliance with other aspects of the Building Code including life safety) has to be included as mandatory for the frameworks.

› The first check for a building design would have to be checking the carbon to ensure that these are met. This would have to be the first thing checked for compliance for a building consent application before a BCA reviews the rest of a design. If embodied carbon is the first thing to be met, it would be best as a standalone Building Code clause instead of being dispersed through many separate clauses.

› Operational efficiency requires knowledge of the use of the building. Once a building is built, it is difficult to stop people from using it for other uses. The level of performance for operational carbon may require integration into the Building Act as it requires compliance for the building going forward and regular monitoring (such as through a Building Warrant of Fitness). Building consent is already issued on the assumption of ongoing maintenance.

› The assessments for embodied carbon in the Building Code could only address things in the Building Code so it may be difficult to capture things such as carpet and finishes.

› Regulatory minimums may not be the driver – occupation and use of the building might drive change and demand for low emission products.

› Resource consenting stage could look at all parts of carbon including energy use.

User centric approach to plumbing

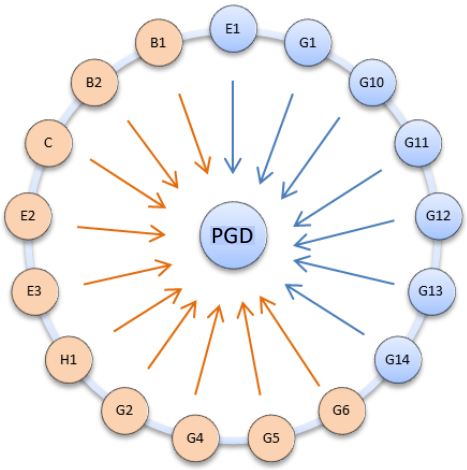
Overview

Ross Wakefield, Senior Advisor, presented on the fragmented nature of regulatory requirements for plumbing within the Building Code. MBIE have developed a Plumbing Strategy for developing the Building Code clauses and documents which support plumbing and drainage work. As part of the Plumbing Strategy, there are opportunities to improve consistency, clarity and certainty in these requirements and create a user centric approach to address the issues. Opportunities exist for user centric changes to be made that could support the plumbing sector to improve code compliance.

Plumbing requirements in the Building Code

There are a number of compliance requirements relevant to the plumbing sector which are fragmented between various Building Code clauses and their supporting compliance documents. Figure 1 shows all the different portions of the Building Code that contribute to compliance for plumbers, gasfitters and drainlayers. Requirements for the plumbing sector are scattered across various Building Code clauses. This makes it challenging for the plumbing sector to ensure designs and installations comply with all relevant aspects of the Building Code.

Figure 1. Portions of the Building Code that contribute to compliance of plumbers, gasfitters and drainlayers



User-centric approaches

User-centric approaches for plumbing requirements are those are centred around how the people use the documents and have to access information. This includes tradespeople, designers and building consent officers. The way the Building Code clauses are structured for plumbing is not user-centric.

Other countries have taken approaches to collate plumbing requirements into a separate document (plumbing codes).

These include:

Plumbing Code of Australia (NCC VOL 3)

International Plumbing Code (USA)

National Plumbing Code of Canada

Points for discussion

The CAP was asked to discuss the benefits of user centric approaches, what that might look like for the plumbing sector and what challenges may need to be overcome.

Advice

On these topics, the CAP provided the following advice:

- The current Building Code was designed in a very intentional way, and there were reasons for fragmenting and interspersing plumbing requirements across the Code.
- BSP could consider leveraging digital systems to enhance the user experience. User centric could mean making better use of the information we already have or the release of a new document. There are potential synergies with the work to pilot a digital version of the Building Code and BSP's digital strategy. It may be possible to use technology to filter and provide multiple views of the Building Code and associated compliance documents based on the user type or specialisation.
- The risk of separating out plumbing requirements is that you might miss the big picture of the building as a whole. If you move things from one place to another, you might miss one user versus another. A document titled 'plumbing code' may deter anyone but plumbers from looking at it.

› A component focus within Building Code and associated compliance documents would be useful to consider.

› There are potential benefits to an education piece for plumbers to learn where relevant information is contained within other parts of the code and associated compliance documents. Education needs to target the architects and plumbers directly and not be left to the building consent authorities to educate. Plumbers benefit from more images instead of text.

› The sector is moving to integrated building models. Users of the Building Code will want perspectives for integration as well as well as filtering. Systems do not exist by themselves and are integrated throughout the rest of the building.

› The starting point for plumbing may be a pilot project