

## BUILDING CODE TECHNICAL RISK ADVISORY GROUP (BCTRAG)

21 FEBRUARY 2020

### MEETING MINUTES

	<u>Attendee</u>	<u>Representing</u>	<u>Attendee</u>	<u>Representing</u>
<b>BCTRAG members</b>	Bryce Keogh	BCA	Matt Gerstenberger	GNS Science
	Peter Laurenson	BCA	Paul O'Brien	NZ Construction Industry Council
	Neil McLeod	BCA	Ross Roberts	NZ Geotechnical Society
	Ian McCauley	BCA	Bruce Curtain	NZ Institute of Architects
	Lynda Amitrano	BRANZ	David Whittaker	NZ Society for Earthquake Engineering
	Eleanor Laban	Engineering NZ	Michael James	Society for Fire Protection Engineering
	Tania Williams	Engineering NZ	Paul Campbell	Structural Engineering Society
	Simon Davis	Fire & Emergency NZ	Cory Lang	Building Officials Institute NZ
	Dave Robson	MBIE	Mike Kerr	MBIE ( <b>Chair</b> )
	Jennifer Critchley	MBIE	Jonna Morris	MBIE
<b>Apologies</b>	Richard London	MBIE		
<b>Guest Attendees</b>	Carmen Mak	Standards New Zealand (Partial)	Mark Jones	BRANZ
	Stanil Stanilov	Standards New Zealand (Partial)	Larry Bellamy	Department of Civil & Natural Resources Engineering University of Canterbury (Partial)
	Bruce Deam	MBIE	Saskia Holditch	MBIE (Partial)
	Richard Almand	MBIE (Partial)		

## **FOLLOW UP FROM LAST MEETING AND PROPOSED CHANGES TO FUTURE MEETINGS**

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The Chair noted the following:

- Committee membership changes:
  - Outgoing members: Lynda Amitrano (BRANZ) and Jayson Ellis (BOINZ)
  - Incoming members: Mark Jones (BRANZ) and Cory Lang (BOINZ)
- No new risks were received for this meeting other than the MBIE requests for discussions on airtight buildings causing moisture issues and battery fires that were distributed in the pre-meeting materials. Discussion on these topics is to focus on issues of rapid technological change, how BCTRAG assesses level of actual versus perceived risk and to recommend the approach to be taken for regulation (if any) e.g. prescriptive versus performance based. This discussion needs to avoid focusing just on technical issues.
- Presentation from Standards NZ follows on from the November 2019 discussion on use of Standards vs Guidance within the Building Code
- This is the 5<sup>th</sup> BCTRAG meeting. The number of risks received from BCTRAG members has reduced over time. Meeting format changes were discussed to improve the effectiveness of the BCTRAG
- Throughout the meeting, members were asked to consider how BCTRAG is currently operating, the value it delivers and what changes they recommend be considered. A more detailed discussion on meeting format changes was held at the end of the day

## **BUSINESS UPDATE**

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The Manager, Building Performance and Engineering (BPE) highlighted the following points.

### **Strategic priorities:**

- HD8 – Work continuing as per August 2019 BCTRAG update. A more detailed update will be presented at the next BCTRAG meeting with the technical programme update
- Climate Change – Refer more detailed comments below
- Accessibility (emerging issue) – Research is underway on this issue. More detailed consideration of this will form part of the next BCTRAG meeting

### **Technical programme:**

- To be updated in more detail at next BCTRAG meeting
- NZS 3604 Review – Bruce Deam from the BPE team is leading this for MBIE and updated separately in more detail. Dave Robson noted that a key requirement from MBIE is that the final revised document supports densified housing solutions and the ‘buildings for climate change’ programme

### **NZS3604 Review (Bruce Deam):**

- The NZS3604 scoping group has recently considered feedback on the draft scoping document at a meeting on 20th February 2020. Key points from that meeting include;
  - The current standard is for 2.5 storey standalone structures with a part storey in an attic or a basement

- The current plan is to write a semi-independent part for connected 3-storey structures
- There was initial concern from the committee on the 3 storey proposal but on review they are generally happy that risks can be mitigated through document design and other routes
- Bracing issues regarding manufactured systems are being addressed
- In response to queries at the BCTRAG meeting it was noted the NZS3604 working group is also taking into consideration;
  - Fire and noise separations and stability in fire – may require some adjustments to the Building Code to align with new standard
  - That the document is currently simple and complexity must be managed to keep the document useable
  - That the contribution of this Standard to compliance needs to be clear.
- 80 feedback submissions were received but it was noted that many submissions represented groups rather than individuals
- The CIC representative noted he is the lead for the commercial group within his organisation and he can seek feedback from his residential lead counterpart
- ACTIONS:
  - All BCTRAG members requested to pass feedback not already submitted as part of NZS3604 consultation onto Bruce Deam at Bruce.Deam@mbie.govt.nz

#### **Climate Change:**

- This workstream is driven by the zero carbon bill
- Advice on work required to support this is currently being formulated
- MBIE will soon be launching a high level overview of the long term Building for Climate Change programme. This work will show how MBIE will address the governments climate change goals for the Building and Construction Sector. The programme will address energy and water efficiency amongst other areas
- It is anticipated that there will be metrics and incentives and visibility of future target changes
- All buildings captured by the building act will be in-scope with regards to the climate change workstreams
- The BCTRAG noted that there was a lot of consideration and interest in climate change issues within the building industry community at present. A request was made that more visibility of the work in progress be given to BCTRAG so this message can be passed on
- A request was made that prioritisation of the different workstreams within climate change be discussed at BCTRAG – A more detailed presentation on the BPE technical programme at the next meeting
- Ideas are sought on how to get feedback from industry on prioritisation of BPE workstreams
- ACTIONS:
  - All BCTRAG members requested to provide suggestions to MBIE on how to engage with industry to get feedback on prioritisation with regard to the BPE climate change workstreams
  - MBIE to consider updating BCTRAG on work in progress and prioritisation of workstreams within climate change at the next BCTRAG

## **'TRANCHE 2' OF STANDARDS PRIORITISATION**

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Pre-read material for this presentation is available on the BCTRAG website.

Jenni Tipler presented an overview of the prioritisation process that is undertaken with input from Standards NZ to decide which Standards should be reviewed with MBIE support.

Discussion on the conclusions from this process included;

- Noted that it would be useful to see the prioritised standards in the context of the others that were considered but did not make the cut
- Visibility of the research underway or required to support the review of these Standards would also be useful
- There is concern that some standards are being withdrawn without good notification to industry
- BRANZ testing standards are very old and either need updating or reviewing and re-confirming
- Re-confirming a standard means the standard is reviewed for currency and if no changes are required, the date is updated and it is re-issued – to ask Carmen Mak, Manager of Standards NZ for more detail in following presentation
- AS/NZS joint standards are always considered but this is a different process
- Noted that recent bushfires expected to drive significant changes to Australian codes that NZ may not be interested in e.g. melting of underground pipes
- Auckland Council have issued modular building guidelines – is there a way to use that information as a basis of guidance or a standard?
- Noted that there are some issues where the Building Code sets a performance measure but the method to achieve compliance is not regulated e.g. timber preservation

ACTIONS:

- MBIE will provide BCTRAG with additional context when presenting standards prioritisation for discussion in the future

## **STANDARDS NEW ZEALAND – DEVELOPMENT OF STANDARDS**

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Carmen Mak, Manager of Standards NZ presented a review of what Standards New Zealand does, how Standards are developed, the new ways of working by Standards New Zealand and how industry can work with Standards NZ.

General issues addressed during the presentation (in addition to information in the presentation) were:

- The risk of biased committees is managed by four controls:
  - Membership and chair of the committee are approved by the independent Standards Approval Board
  - The committee needs to represent a balanced range of stakeholder interests.
  - The committee has to operate by consensus
  - All draft standards need to be publicly consulted

- Consensus for the purposes of the Standards NZ process does not have to mean unanimity of the committee
- Where a consensus decision is not reached, the facilitating project manager from Standards NZ will work with the chair to monitor how the committee is working and bring issues to the attention of the chair and the manager of SNZ
- Warnings can be issued to committee members who do not contribute appropriately or are not engaged in the process
- The Standards Approval Board can approve Standards where there has not been unanimity, and where there are some alternate positions on issues, particularly if those issues are minor. Any alternate positions need to be addressed, challenged and reasons for any lack of consensus reported to the Board
- Consensus should be seen as an asset as this assists in achieving industry engagement and uptake of a Standard once published
- If there is significant disagreement on issues within a proposed Standard, a Standard may not be the right solution for the subject
- Standards NZ prefer that representatives on committees are from industry organisations rather than individual manufacturers. This can be a challenge in some emerging sectors where there are no established organisations. The Standards Approval Board will review each committee and ensure they represent a broad range of views with representatives from the wider industry
- The AS/NZS joint standards development process differs from Standards NZ processes but New Zealand and Australia are both part of the International Standards Organisation (ISO) so processes are generally aligned
- Standards NZ aims to ensure appropriate nominating organisations are represented on AS/NZS joint standards working groups
- A suitable chair for a NZ committee could be identified during early working group meetings
- Australia has standing committees for their critical Standards. New Zealand Standards are currently commissioned on a case-by-case basis. Standards NZ would consider establishing standing committees and acknowledge that significant administration costs to support this would need to be funded
- Adoption of international standards should be considered where relevant. International Standards can be adopted in around 3-6 months (depending on the complexity of the material and reviews required) and is likely to cost a fraction of the development cost of a standalone NZ Standard
- Any change to the content of a Standard requires a committee process but this can be tailored to the scale of the changes. The Act that governs Standards NZ's work requires that a committee process is run

## **DRAFT STRATEGY PAPER ON NON-STRUCTURAL ELEMENTS. COMMISSIONED BY THE BUILDING INNOVATION PARTNERSHIP**

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Dr Larry Bellamy of University of Canterbury and Paul Campbell of WSP-Opus presented the preliminary findings and recommendations of an investigation into how fit for purpose building elements can be better delivered. This is work led by the Building Innovation Partnership (BIP), an industry led working group.

The presentation on this issue has not been made available for publication as it is based on a preliminary draft report and the issues identified and recommendations made are likely to change significantly before the report is finalised.

The report presented addressed the following general issues:

- Seismic performance of non-structural elements in recent earthquakes
- Non-structural elements not performing to public expectations
- Value placed on co-ordination by Owner/Project Manager
- Transfer of performance risk
- Timing and programme allowances for design, consenting, co-ordination and supervision

Discussion of the initial findings and recommendations focussed on;

- Problems are generally identified as a “system” issue rather than purely a design issue but there are some technical knowledge gaps and some information available may be outdated or conflicting
- The BCTRAG discussed the relative merits of compliance solutions for issues versus industry led initiatives that address wider issues such as constructability, process, co-ordination, roles and responsibilities, training etc.

The BCTRAG generally;

- Noted that a large proportion of the cost of a building is in the non-structural elements
- Noted there are quality assurance, supervision and co-ordination issues to some extent in all areas of the construction industry
- Noted there are a broad range of types on non-structural elements that require a range of specialist trade skills
- Recommended that the issue of product substitution be addressed by the report and any recommendations made by the report
- Recommended that the Construction Industry Council (CIC) guidelines be considered and/or integrated into any industry led recommendations or information
- Supported the recommendation in the report that the BIP develop a Code of Practice for the design and construction of non-structural elements
- Noted and agreed there is no current immediate need for a regulatory response

**ACTIONS:**

- The BCTRAG was requested to provide any further feedback on the draft strategy paper by the BIP on Non Structural Elements directly to Larry Bellamy and Paul Campbell

## **DISCUSSION ON NON STRUCTURAL ELEMENTS**

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Bruce Deam from the Building Performance and Engineering team at MBIE presented a review of how non-structural building elements are currently considered within the Building Code and where regulation can and cannot intervene.

The BCTRAG discussion on this topic is combined into the notes on the prior presentation as the discussion generally added to or expanded on points already made.

## **AIRTIGHT BUILDINGS CAUSING MOISTURE ISSUES**

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Richard Almand from the Building Performance and Engineering team at MBIE presented a review of the current thinking around these issues. This presentation was backed up by pre-read material that is available on the BCTRAG website. Information in the pre-read material or presentation is not reproduced in these minutes.

In the discussion on this topic the BCTRAG noted;

- The New Zealand statistics quoted in the pre-read material are based on a 5 year survey carried out by BRANZ. BRANZ noted they have also surveyed new houses and noted that some moisture issues are occurring in new building stock
- The WAVE programme (Weathertightness, Air Quality and Ventilation Engineering) by BRANZ investigated this topic. Information from this programme (and other BRANZ research) could be used as a source of information for regulatory settings
- This issue is relevant to the HD8 programme
- Any solutions need to address how we live in buildings as well as consider Building Code settings e.g. education's focus
- Solutions or guidance for both passive and mechanical ventilation design options could be developed
- There is anecdotal feedback that in some situations, designs complying with an acceptable solution may not meet the performance requirements of E3 which presents a compliance challenge for BCA's
- More research is needed on the extent that this issue affects existing building versus new buildings
- Addressing this issue has energy consumption as well as health benefits
- The cost-impact benefits of this issue sit within healthcare but the ability to affect change sits with MBIE
- Addressing existing buildings is out of scope for BCTRAG but it is noted that this is where a proportion impacts to health are currently occurring

The BCTRAG generally;

- Endorsed this topic as an area of focus for MBIE

## BATTERY FIRES

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Saskia Holditch from the Building Performance and Engineering team at MBIE presented a review of the current thinking around these issues. This presentation was backed up by pre-read material that is available on the BCTRAG website. Information in the pre-read material or presentation is not reproduced in these minutes.

In the discussion on this topic the BCTRAG noted;

- This is an example of rapid technological change
- Australia has developed a (joint) conservative standard in response to prior issues with Li-ion batteries. NFPA (USA, National Fire Protection Association) have also developed a Standard
- The Building Code is limited in the scope of what it can respond to. For example, the Building Code could theoretically be updated to mandate compliance requirements for a fixed charging station within a building but the Building Code cannot regulate the consumer electronics plugged into the charging station
- There are currently no Building Code regulations in this area. The use of Li-ion batteries does not fall under the NZBC, the storage of (large amounts of) Li-ion batteries is not addressed as a separate issue (nor are other commodities, typically), and the charging stations are assumed to be covered by electrical regulations
- The Building Code currently has a relatively narrow focus in terms of its consideration of energy sources in buildings
- The actual level of risk and impact is not yet well understood in the New Zealand context. It is a growing concern overseas, as well as with Fire and Emergency New Zealand. FENZ noted there are presently around 20-30 battery related fires/year in New Zealand\* with the expectation this number will increase as the application of these batteries becomes more prevalent
- It is possible that the number of battery related fires in New Zealand is higher than the statistics by Energy Safety NZ (ESNZ) or FENZ reflect, as incidents where FENZ intervention is not required are typically not recorded

The BCTRAG generally;

- Noted that co-ordination with electrical regulations is required
- Noted that future work by MBIE could look at energy sources in buildings as a generic risk
- Agreed there is no immediate need for a regulatory response

ACTIONS:

- The prioritisation of issues associated with energy sources within buildings is to be considered for a strategic discussion at the next BCTRAG

*\*Advice given verbally. It is noted that any numbers given have not been checked, may not be accurate and should not be relied upon.*



## OPEN FORUM

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### Proposed Meeting Changes:

Feedback on how BCTRAG members contribute to the forum was requested by the Chair.

In discussion on this topic the BCTRAG noted;

- The time between agreeing on risks and then discussion them does not allow BCTRAG members to consult members of their organisations. This risks BCTRAG members;
  - not being able to provide accurate and comprehensive representation of their member organisations
  - feeling they are being presented with conclusions to be ratified rather than being able to provide well researched and considered feedback on risks
- Suggestions for addressing the issue of preparation to provide representation of member organisations included;
  - MBIE identifying the risks or general risk areas they require guidance on earlier
  - Breaking out into smaller working groups during the day was discussed but the general consensus was that this would risk missing the wider conversations that enabled issues to be reviewed in context and against other priorities. An example of this would be the discussion on batteries. Energy sources in general rather than batteries were identified in discussion as being the issue to be addressed
  - Working groups that collaborate between meetings to prepare risks for presentation to the BCTRAG could be considered
  - The presentations during the meeting often raise BCTRAG's awareness of issues or provide context. It would be useful if BCTRAG members had a way to discuss issues raised at BCTRAG with their organisations and report back to BCTRAG rather than providing feedback straight away
  - It is noted that BCA's in particular are heavily relied upon by MBIE for feedback and consultation on a wide range of other issues outside of the BCTRAG focus. Enthusiasm could be encouraged by providing feedback on changes made or other actions arising from the meetings so the impact of the feedback is visible
- The issue of a diminishing number of risks being raised was also discussed. Suggestions for addressing this issue include;
  - Discussing issues raised at BCTRAG with BCTRAG member organisations may trigger the identification of other risks
  - It may be useful to devote part of the BTRAG meeting to identify the general risk areas to be considered at the next meeting. For example, consideration of topics related to Accessibility
  - The current definition of a "risk" may be too narrow. A review of the Terms of Reference may be useful
  - The risk submission form is useful guide to how to approach issues but this may be better approached as a second step rather than requiring this when a risk is tabled e.g. the risk is raised at BCTRAG and the BCTRAG discussion helps identify impacts, affected code clauses, prevalence and magnitude of a risk
  - Presentations on work in progress are also a useful trigger for early identification of risks and impacts associated with the work e.g. an update on recent discussions around the NSHM may trigger issues that GNS and MBIE may need to address
- Other general feedback included:

- The pre-read information is a useful tool to provide background to an issue and allows a better informed discussion on a topic
- The intent of the BCTRAG is not just as a forum for BCTRAG to raise issues but as a wider channel for industry feedback and input into regulation
- The interaction of BCTRAG with Building Advisory Panel (BAP) is not clear
- A check-in on the scope and recent discussions at BAP may be useful to re-inforce what is in/out of scope for BCTRAG
- Outcomes of issues need to be communicated back to interest groups. BCTRAG need to have focussed conversations where everyone in BCTRAG contributes
- High level responses are required from BCTRAG but the technical detail sometimes needs to be considered in order to support and inform these discussions
- Consideration of the representatives on BCTRAG may be useful e.g. should involvement by building surveyors, insurers, builders (Master Builders Association or Certified Builders)

MBIE noted the following points;

- The BAP is required by the Building Act. BAP discusses the code and legislative framework and has a broader remit than BCTRAG. BCTRAG is intended to have a more technical focus than BAP

ACTIONS:

- MBIE will consider the feedback from BCTRAG on how BCTRAG members contribute to the BCTRAG meeting and will;
  - Propose changes and request feedback on changes prior to the next BCTRAG meeting
  - Consider implementing some process changes prior to the next meeting

**The Chair thanked all members and closed the meeting at 3.30pm.**

## ACTION ITEMS

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The secretariat will:

- Distribute draft minutes from this meeting for comments
- Distribute the meeting presentation with the final minutes
- Send out a memo on proposed changes to BCTRAG for feedback/discussion prior to next BCTRAG meeting.

Actions for others:

- All BCTRAG members requested to pass feedback not already submitted as part of NZS3604 consultation onto Bruce Deam at Bruce.Deam@mbie.govt.nz
- All BCTRAG members requested to provide suggestions to MBIE on how to engage with industry to get feedback on prioritisation with regard to the BPE climate change workstreams
- MBIE to consider updating BCTRAG on work in progress and prioritisation of workstreams within climate change at the next BCTRAG
- MBIE will provide BCTRAG with additional context when presenting standards prioritisation for discussion in the future
- The BCTRAG was requested to provide any further feedback on the draft strategy paper by the BIP on Non Structural Elements directly to Larry Bellamy and Paul Campbell
- The prioritisation of issues associated with energy sources within buildings is to be considered for a strategic discussion at the next BCTRAG
- MBIE will consider the feedback from BCTRAG on how BCTRAG members contribute to the BCTRAG meeting and will;
  - Propose changes and request feedback on changes prior to the next BCTRAG meeting
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### Next Meeting:

<b>Date:</b>	TBC	<b>Time:</b>	9.30 am – 3.30 pm
<b>Venue:</b>	MBIE, 15 Stout Street, Wellington		