Terms of Reference
Projects 12 and 13 – Construction Monitoring, Passive Fire and Post Construction Compliance

OBJECTIVES

- To explore the relationship between liability, responsibility, reasonable grounds and construction monitoring with a view to agreeing roles and responsibility; and
- To promote robust and sustainable efficiencies within the certification and post construction phases of buildings to ensure that buildings fire safety measures remain adequate throughout their lifecycle.

BACKGROUND

Stakeholders have highlighted significant concerns regarding the adequacy of passive fire protection and information documenting passive fire protection in both new and existing buildings. The question of adequacy within the existing building stock is compounded by apparent inefficiencies in the ongoing inspection and maintenance of commercial buildings (i.e. the BWOF system). Stakeholders have also voiced concerns regarding the process of securing a code compliance certificate, bringing into question the relationship between construction monitoring, reasonable grounds, liability and responsibility.

The subjects to be tackled within these projects are not a result of the 2012 changes; s 9(2)(g)(i) Whilst diagnosis is presently unknown contributing factors are likely to include stakeholders' attempts to rebuff liability due largely to the "joint and several" principle; the ramifications of which appear only to compound, rather than alleviate the problem.

Past history has shown that the likelihood that problems in this space can be reduced or managed with guidance or policy is at best low. Rather it is more likely that MBIE needs to create an environment to stimulate, encourage, support and unite stakeholders to facilitate sector driven initiatives with MBIE in support. This is likely to be but one aspect of these projects to be tested by the Working Groups.

THE PROCESS

Construction monitoring, passive fire protection and post construction compliance are features of the fire regulatory system that are intrinsically linked. As such the probability that the different Working Groups will at some point in their lifecycle be identifying the exact same issues is extremely high, as are the risks associated with not putting in place a process to manage this eventuality.

Risk Management

Like all other projects under the Fire Programme it is proposed to form Working Groups to offer solution options to the FRSG. However, unlike most previous Working Groups, it is proposed to initially bring together a single Task Group to outline the problems associated with Passive Fire, (PF), Post Construction Compliance, (PCC), and Construction Monitoring, (CM). The Task Group's brief is to look holistically at the Fire Regulatory System identifying areas of possible improvement whilst considering cause and effect, dependency and interdependency. The Task Group's conclusions will then be fed into three separate Working Groups each expected to be working at a macro level within the scope and constraints set by the Task Group.

Utilising this methodology it is expected to limit the risk of overlaps in Steering Group recommendations. More importantly the direction the Task Group sets for each Working Group adds a level of robustness and value to the overall solution. A similar process albeit in a much smaller context was successfully adopted for project 2 ANARP, where a Task Group acted to identify the areas of dysfunction, thus allowing the Working Group to hone in directly on problematic aspects of the process. This enabled the ANARP Working Group to consider the problems at a root cause level rather than simply addressing the symptoms of the problem.

STAKEHOLDER GROUPS
Assembling a well-rounded mix of representative voices that characterise the views of each stakeholder groups is seen as a key aspect to these projects. Stakeholders relevant to the Task Group have been carefully considered and identified in Table 1 Appendix A. The proposed make-up of the Task Group is set out in Table 2.

TASK GROUP
Non Council Stakeholder Representation
The function of the Task Group is such that its members need to be respected leaders who can objectively and proactively air the views of the stakeholders they represent in the context of the totality of the fire regulatory system. They also need to be strategic thinkers who are unlikely to get bogged down in the detail yet regognise the richness and value detail can add. Such people are indeed rare and with this in mind it is proposed to invite those who head up the various facets of the applicable stakeholder groups listed in Table 1 Appendix A. The names in the table are indicative only, we have not approached the individuals or the organisations at this point.

BCA and TA Representation
With specific regard to BCA and TA representation it is proposed that in addition to a pool BCA Auckland Council, (AC), and Christchurch City Council, (CCC), are invited to join the Task Group. The disparate and fractured nature of the BCAs is briefly discussed later in this paper, but for the purposes of this aspect of the proposal the unique pressures facing AC and CCC forces them to implement processes to cope. As such they are seen by their peers as pioneering leaders and carry significant influence within the fire regulatory system. Because of this it would be folly not to bring their strategic insight and ability to shape the system to the table.

The Task Group as proposed can be found in Table 2 Appendix A

WORKING GROUPS
Working Group members need to fully understand the intricacies of the subject matter related to each Working Group. They also need to be able to work within the constraints set by the Task Group and in doing so have trust in their strategic direction. Equally important they also need to be well respected in their field of expertise and have the organisational mandate and peer respect that allows them to speak on behalf of their stakeholder groups.

With the exception of BCAs/TAs it is proposed to invite the various stakeholder groups listed in Table 1 Appendix A to nominate individuals to participate on the Working Groups.

BCAs and TAs
The input from this stakeholder group so far in our consultation has been representative of a sector that is not united and as such the weight we place on their input has been carefully balanced. To allow representation that speaks on behalf of this sector it is proposed to consult with the various clusters to seek representation. These cluster representatives can then be brought together to decide for themselves who among their number is best suited to represent their views in the various Groups. They would also be prompted to discuss and reach agreement on how the governance for this arrangement would be structured.

These clusters and proposed cluster representatives are listed below

Far North, (Ian McCaule, Kaipara)	Central, (Grant Rigby Palmerston North)
Waikato, (Chris Kryst man Hamilton)	Wellington, (Shane Taane Wellington)
East Coast, (Colin Hornet Hastings)	Mainland, (Wayne Roden, Christchurch and Kathy Stubs Waimakariri)
Lakes Coast, (Vinh Tran Western Bays)	Southern, (Neil McLeod, Dunedin)

CHAIRS
The selection of chair for these Working Groups is critical. It requires individuals who are independent, fully aware of the regulatory, statutory and commercial environments with excellent communication skills and an ability to manage highly technical people in a challenging environment. In essence we need chairs who have lost skin in the game, chairs with Mana and chairs who are objective. It is therefore proposed that we discuss the role of chair with the key parties starting with our internal key stakeholders prior to confirming chairs for each Working Group.

PEAK BODY NOMINATIONS

Throughout the life of the Fire Programme we have been reaching out to various stakeholder groups and individuals, discussing with them our work and encouraging them to formally express an interest if they believed they could add value to the Fire Programme. To date this methodology has been the predominant way in which we have put together the Working Groups. We have also been actively engaging with various peak bodies, encouraging them to discuss the programme with their members believing that this would stimulate interest in our work. Initially this approach was slow to produce results but gradually our message has gained traction and of late we have experienced an influx of interest in these three Working Groups. To maintain this momentum we requested, and received Working Group member nominations from the Association of Building Compliance, (ABC), Fire Protection Association of NZ, (FPANZ), and the Society of Fire Protection Engineers, (SFPE). These nominations have been included and highlighted in tables 3,4 and 5 Appendix 1.

GOVERNANCE STRUCTURE

The output from the Task Group will be formulated into discussion papers and submitted to the MBIE Fire Review Steering Group (FRSG) for approval. Once approved the project lead will feed this information into the Working Groups thus setting the scope and constraints for the individual projects. Outputs from the Working Groups will be proposed to the FPSG for approval.

Dependencies

- Project 2 Alterations to Existing Buildings
- Project 4 Consenting Process
- project 6, Alternative Solutions
- Project 7 Review of the Acceptable Solutions
- Project 10, Structural Stability
- Project 12, Passive Fire
- Project 13, Construction Monitoring

Milestones

- 13th June 2016 – Steering Group reviewed the proposed methodology and Approved to Proceed
- 18th July – BCA Cluster Groups to convene to agree how they are to be represented in the Task and Working Groups
- 25th July – Task group to convene to outline the problem statements and set scope and project restraints.
- 29th August – Steering Group to consider with a view to endorse the Task Groups recommendations.
- 31st August – Working Groups meet and refine problem statements
- 17th October 2016 – Steering Group to consider with a view to endorse problem statements
- 14th November – Working Group convene to prepare solution options for engagement
- 5th December – Steering Group review Solution with a view to approve

End Date

Involvement of the Groups will end;-

- BCA Cluster Group, ongoing throughout the life of the Task and Working Groups
- Task Group, 29th August 2016 (Project timeline permitting).
- Construction monitoring, 5th December 2016 (Project timeline permitting).
- Post Construction Compliance, 5th December 2016 (Project timeline permitting).
- Passive Fire 5th December 2016 (Project timeline permitting).

APPENDIX A

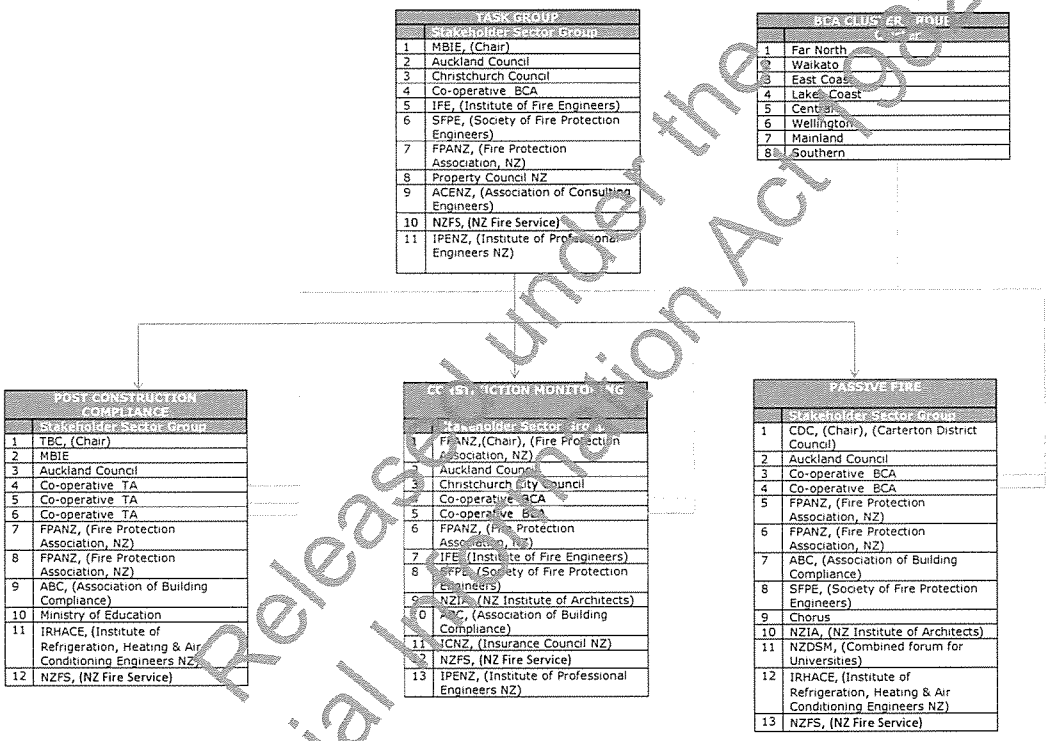
TABLE 1 STAKEHOLDER GROUPS		
Stakeholder	**Function**	**Fire Regulatory Actions**
BCA's	Regulatory	Grant building Consents and issue CCC's
TA's	Statutory	Enforce the ongoing fire safety compliance of existing buildings
Fire Engineers	Commercial	Design fire safety features in buildings
Designers	Commercial	Incorporate the Fire Engineers recommendations into their design
New Zealand Fire Service	Statutory	When required under s.46 provide advice to BCA's Notify and advise TA's regarding dangerous buildings Approve evacuation schemes.
Fire Protection Installers	Commercial	Install Fire Safety Systems
Fire Protection Maintenance Companies	Commercial	Maintain Fire Safety Systems
Fire Safety Advisors	Commercial	Advise on the ongoing management which needs to take into account the existing fire safety systems in buildings.
Independent Qualified People, (IQP's)	Commercial	Ensure for the ongoing legislative compliance of Fire Safety Systems in buildings
Main Contractors	Commercial	Responsible for Quality Assurance, i.e. ensuring that their employees and or sub-contractors undertake building work in accordance with the approved Building Consent
Sub-contractors, electricians, plumbers, telecommunications engineers etc.	Commercial	Undertake building work including making alterations to fire and smoke separations
Building Owners	Commercial	Ensure that their buildings are safe and sanitary
Insurers	Commercial	

TABLE 2 TASK GROUP			
	Stakeholder Sector Group	**Desired Representative**	s 9(2)(g)(i)
	MBIE	Mike Cox	
1	MBIE	Peter Laurenson	
2	Auckland Council	Doug Naylor	
3	Christchurch Council	Leonie Rae	
4	Pool BCA	Neil McLoed	
5	IFE	Mark Probert- Southern	
6	SFPE	Geoff Merryweather	
7	FPANZ	Scott Lawson	
8	Property Council NZ	Matt Paterson	
9	NZFS	Rob Dalton	
10	IPENZ	Graham Dilks	

TABLE 3 CONSTRUCTION MONITORING WORKING GROUP			
	Stakeholder Sector Group	Representative	s 9(2)(g)(i)
	MBIE	Mike Cox	
	MBIE	Rebekah Henderson	
1	FPANZ	Jason Godsmark	
2	Auckland Council	Rose McLauglan	
3	Christchurch City Council	Wayne Roden	
4	Co-operative BCA	Vinh Tran, (Lakes Coast)	
5	Co-operative BCA	Kathy Stubs, (Mainland)	
6	FPANZ	Nicky Marshall	
7	IFE	Michael Clifford	
8	SFPE	Geoff Merryweather	
9	ACENZ	Ant Walker	
10	ABC	Ron Green	
11	ICNZ	John Lucas	
12	NZFS	TBC	
13	IPENZ	Laura Stockton	

TABLE 4 POST CONSTRUCTION COMPLIANCE WORKING GROUP			
	Stakeholder Sector Group	Representative	s 9(2)(g)(i)
	MBIE	Rebekah Henderson	
	MBIE	Mike Cox	
1	Independent	TBC	
2	MBIE	Brad Hislop	
3	Auckland Council	Sally Grey	
4	Co-operative TA	Chris Krystman, (Waikato)	
5	Co-operative TA	Ian McCauley, (Far North)	
6	Co-operative TA	Ricky Kernohan, (Wellington)	
7	FPANZ	Charlie Loughnan	
8	FPANZ	Chris Mak	
9	ABC	Ian Saunders	
10	Ministry of Education	Mark Stallman	
11	IRHACE	Robert Maines	
12	NZFS	TBC	

TABLE 5 PASSIVE FIRE WORKING GROUP			
	Stakeholder Sector Group	Representative	s 9(2)(g)(i)
	MBIE	Mike Cox	
	MBIE	Rebekah Henderson	
1	CDC	Dave Gittings	
2	Auckland Council	Ed Claridge	
3	Co-operative BCA	Wayne Roden, (Mainland)	
4	Co-operative BCA	Grant Rigby, (Central)	
5	FPANZ	Jake Symes	
6	FPANZ	Paul Ryan	
7	ABC	Ron Green	
8	SFPE	Greg North	
9	Chorus	David Ong	
10	NZIA	TBC	
11	NZBSM	Rob Wilks	
12	IRHACE	Grant Price	
13	NZFS	TBC	



BUILDING PERFORMANCE

Fire Programme – Post Construction Compliance Working Group Meeting

Problem Definition Development

1 September 2016

The purpose of this paper is to present a proposed problem definition and set of issues for discussion and input from the working group.

Purpose and pre-meeting actions

Purpose and recommendations

The purpose of this document is to present a proposed problem definition and set of issues for discussion and input from the working group.

It is recommended that the working group:

a) consider the material in this paper (before 1 September)
b) provide feedback either before or during the meeting, and
c) agree on a problem definition and set of issues.

Pre-meeting considerations for the working group

In order to ensure we make the most of your time on 1 September, it is recommended that you consider, in terms of construction monitoring:

- What are your concerns?
- What issues are you experiencing?
- What evidence do you see in your work/current role that tells you there are issues in this area?
- What do you think causes these issues, or potential issues?
- Do you think we have the data and information we need in order to adequately define the problem?

Please feel free to forward any thoughts through to us before the 1st September (rebekah.henderson@mbie.govt.nz).

Background

Extensive engagement in late 2014

MBIE undertook an extensive stakeholder engagement programme with industry and sector groups in late 2014 to gather feedback on changes made in 2012 to the Building Code Clauses for Protection from Fire (and the supporting documents, Acceptable Solutions and Verification Method).

2012 changes did not directly affect post construction compliance

Whilst the 2012 changes did not directly affect post construction compliance, stakeholders raised concerns regarding the appropriateness of the current BWoF system. Feedback suggests that there may be an opportunity to update the regulatory settings, reduce the variability of the application of the system around the country, and encourage/require building owners to engage people with appropriate expertise to maintain the safety features of their buildings in an efficient and effective manner.

A number of long standing issues identified

The review identified a number of issues arising from the 2012 changes that need to be addressed. However, a number of long standing issues emerged from the stakeholder feedback that were not related to the 2012 changes:

- Passive Fire Protection measures
- Construction monitoring
- Post construction compliance processes
- The evacuation of persons with disabilities
- The alignment of the Building Act, HSNO regulations, the Fire Service Act and the Evacuation of Buildings regulations.

Three new working groups have been set up

Two of the fifteen projects under the fire programme are relevant to this particular work stream. Project 12, Passive Fire Protection Systems and Project 13 Construction Monitoring and Post Construction Compliance. These two projects have been split into three working groups.

- Passive Fire Protection
- Construction Monitoring
- Post Construction Compliance.

It is clear that various similarities exist within these three different topics. Hence, the same issues may be raised and the risk of duplication in any proposed solutions is high. With this in mind, a "Task Group" has been formed to set the direction for each of the working groups and decrease the risk of duplication.

Proposed Problem Definition

Proposed problem definition

The proposed problem definition for discussion, refinement and expansion as necessary is:

The BWoF system is applied inconsistency and inefficiently. The framework is not clear and does not provide adequate provisions for the purpose to be achieved.

This is a starting point only and in order to direct solutions, there will need to be a more detailed set of issues/concerns and root causes that support this.

Concerns raised to date

The concerns that have been raised in consultation (and since) that point to the above problem definition are as follows:

- Specified systems not being included on compliance schedules.
- Non-specified systems being included on compliance schedules.
- Building owners are not able to obtain BWoFs due to missed compliance schedule procedures.
- The quality and usefulness of the presentation and content of some compliance schedules is variable.
- Systems are often found to not be installed in accordance with the performance standards in their first year creating difficulty with inspections and the issue of the BWoF.
- Administration and application of the BWoF system is difficult for some tasks.
- Issues raised in a BWOF are missed if the building owner changes BWOF companies.
- Lack of documentation on the specified systems in the building – what they are and where they are.
- There may be special requirements (e.g. limited storage height) that need to be included but don't fall into a category or are overlooked.

Potential root causes and solutions

Potential root causes

Stakeholder feedback received in late 2014 contained views on what the potential root causes of the problem might be, namely:

- Lack of certainty about what systems are specified systems, coupled with varying beliefs about what should be a specified system resulting in inconsistencies.
- The retrospective nature of the present BWoF system dictates that where a compliance schedule procedure is missed the subsequent BWoF cannot be issued for that 12 month period
- Building owners lack or lose or never receive critical information regarding fire design parameters and other building design features contributing to the buildings compliance at the time of construction.
- Requirement to transfer information about specified systems from the consent/code compliance schedule process to the compliance schedule is not robust.
- There is no specified system commissioning tests, performance tests or immediate involvement with the IQP to establish whether systems are performing from the outset.
- The BWoF provisions in the Act are lacking and often do not provide adequate procedures for dealing with common scenarios.

Potential solutions for discussion

There has been a lot of recent consideration of the issues in this area and so there are a number of possible solutions that have been discussed. Here are some suggested questions and solutions for discussion:

- Creation of a high-level criteria and purpose statement about why we include something as a specified system. Followed by a subsequent review of the existing specified system list.
- Should the BWoF be issued based on current system performance to align with the BWoF purpose rather than based on the completion of retrospective compliance schedule procedures (form 12A documents)?
- Should IQP commissioning/performance checks be done in conjunction with the CCC issue and a BWoF be issued at that point (rather than waiting a year)?
- Do provisions around compliance schedule issue, enforcement and compliance schedule amendments need to be reviewed to ensure they provide robust processes?

Success factors

What success might look like	The working group should think about what success might look like – for instance it may be: • Having a robust, clear, consistent and flexible post construction compliance process where the outcomes add value, are proportionate to risk and don't act as a barrier. It would be useful to know how we might measure something like this to be able to determine whether we have been successful or not.

BUILDING PERFORMANCE

Fire Programme – Passive Fire Protection Working Group Meeting

Problem Definition Development

13 September 2016

The purpose of this paper is to present a proposed problem definition and set of issues for discussion and input from the working group.

Purpose and pre-meeting actions

Purpose and recommendations

The purpose of this document is to present a proposed problem definition and set of issues for discussion and input from the working group.

It is recommended that the working group:

a) consider the material in this paper (before 13 September)
b) provide feedback either before or during the meeting, and
c) agree on a problem definition and set of issues.

Pre-meeting considerations for the working group

In order to ensure we make the most of your time on 13 September, it is recommended that you consider, in terms of passive fire protection:

- What are your concerns?
- What issues are you experiencing?
- What evidence do you see in your work/current role that tells you there are issues in this area?
- What do you think causes these issues, or potential issues?
- Do you think we have the data and information we need in order to adequately define the problem? (If possible please canvas others' views and opinions to help validate and provide input from a wider audience than is possible at the work groups).

Please feel free to forward any thoughts through to us before the 13th September (rebekan.henderson@mbie.govt.nz).

Background

Extensive engagement in late 2014

MBIE undertook an extensive stakeholder engagement programme with industry and sector groups in late 2014 to gather feedback on changes made in 2012 to the Building Code Clauses for Protection from Fire (and the supporting documents, Acceptable Solutions and Verification Method).

A number of long standing issues identified

The review identified a number of issues arising from the 2012 changes that need to be addressed. However, a number of long standing issues emerged from the stakeholder feedback that were not related to the 2012 changes:

- Passive Fire Protection measures
- Construction monitoring
- Post-construction compliance processes
- The evacuation of persons with disabilities
- The alignment of the Building Act, HSNO regulations, the Fire Service Act and the Evacuation of Buildings regulations.

Three new working groups have been set up

Two of the fifteen projects under the fire programme are relevant to this particular work stream. Project 12, Passive Fire Protection Systems and Project 13 Construction Monitoring and Post Construction Compliance. These two projects have been split into three working groups.

- Passive Fire Protection
- Construction Monitoring
- Post Construction Compliance.

It is clear that various similarities exist within these three different topics. Hence, the same issues may be raised and the risk of duplication in any proposed solutions is high. With this in mind, a "Task Group" has been formed to set the direction for each of the working groups and decrease the risk of duplication.

Proposed Problem Definition

Proposed problem definition	The proposed problem definition for discussion, refinement and expansion as necessary is: **Stakeholders question the adequacy of passive fire protection within our existing building stock and for the construction of new buildings. Passive fire protection that is inadequate has the potential to make buildings unsafe.** This is a starting point only and in order to direct solutions there will need to be a more detailed set of issues/concerns and root causes that support this.
Concerns raised to date	The concerns that have been raised in consultation (and since) that point to the above problem definition include: • there is a lack of adequate passive fire protection measures in construction and maintenance of some multi residential and commercial buildings; • there are concerns about whether the specification, installation, inspection, and maintenance of passive fire protection features are always correct; and • IQPs are sometimes struggling to identify passive fire features within buildings. Recent media coverage of the passive fire protection issues uncovered in the course of weathertightness remediation work has indicated that the problems of the 1990s may not be restricted to weathertightness[1].

[1] http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11526638

Proposed Problem Definition, cont'd

Potential root causes

Stakeholder feedback received in late 2014 contained views on what the potential root causes of the problem might be, namely:

- Passive fire protection is an unregulated aspect of *Building Work*.
- It is sometimes unclear who is responsible for the design, installation, checking and maintenance of passive fire protection systems.
- Understanding of passive fire protection best practice and the current minimum requirements is low[2].
- Building Owners generally place much reliance upon various trades to undertake alteration work to their buildings in accordance with the Building Code, but there is often work undertaken which reduces compliance through poor knowledge
- Passive fire protection is only deemed specified as a consequence of a building having active fire protection – legislation may not adequately recognise the importance of passive fire protection.
- The current system assumes that all occupancies carry equal risk (eg, an office building must achieve the same standard of passive fire as a hospital).
- Whether we have the right settings for passive fire protection mechanisms in the Code. For example a fully compliant fire penetration may allow vast quantities of cold smoke to pass through it bringing into question the validity of the fire stopping.
- A lack of specification/standards around passive fire (and potentially a lack of understanding around what passive fire is (includes) and what it isn't (excludes)).

[2] This has been backed up by the 2008 BRANZ sponsored study which surveyed passive fire protection in 100 commercial buildings

Potential solutions

Potential solutions

Stakeholder feedback received in late 2014 also contained views on what some of the potential solutions might be, namely:

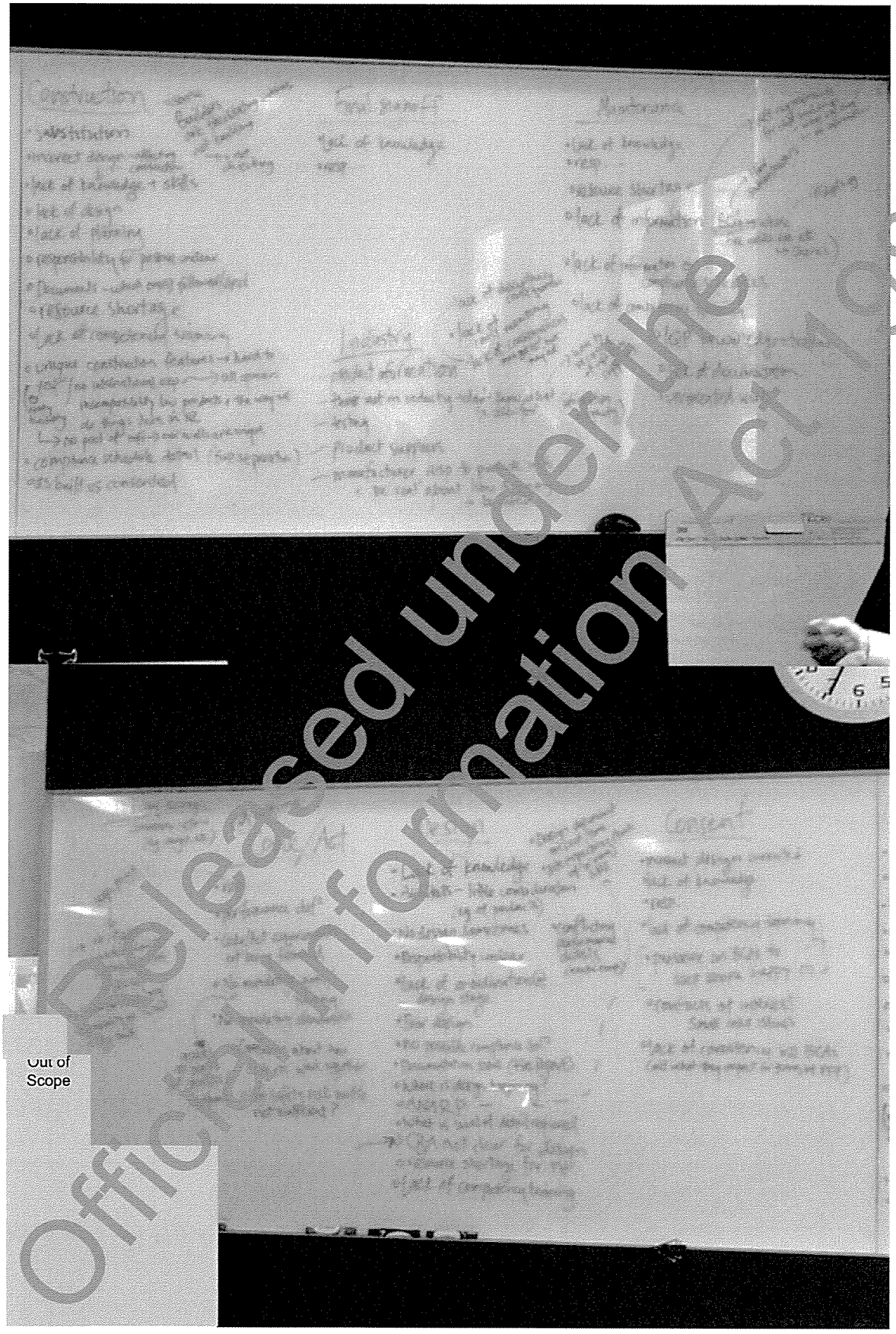
- An increased knowledge of passive fire protection systems and fire stopping systems (it has been suggested that more guidance is necessary, however this is already a lot of this in existence so it is debateable whether more guidance is the answer)
- A Code of Practice (rather than several product specific installation guides) for fire stopping that encompasses a holistic view from design to demolition (rather than several product specific installation guides).
- Potential changes to the Compliance Schedule / BWoF scheme to mandate a level of specificity relating to passive fire (note there is crossover in this area with the Post Construction compliance working group).

What success might look like

The working group should think about what success might look like – for instance it may be:

- Improved quality of construction, maintenance, inspection resulting in the continuing compliance of passive fire protection systems in buildings.

It would be useful to know how we might measure something like this to be able to determine whether we have been successful or not.



Out of Scope

Notes: Passive fire meeting #1 Tuesday 13th September

1. Chris R gave an overview of the fire programme explaining how passive fire fitted into the fire regulatory system. This process culminated in Chris inviting each working group member to introduce themselves and explaining the peak body they represented. Further discussions ensued led by MC regarding the need for each member to implement processes to feed back to their constituents and for their constituents to use their delegated members as a conduit to the working group. All members readily accepted agreed to this principle.
2. Pete L then expanded on the relationship between the working group and task group, explaining the process to date including how the task group has scoped the three projects in the 2nd tranche of projects in the fire programme. This resulted in general discussion with the working group members feeling their feet and exploring the boundaries. The outputs of the task group had previously been disseminated to the working group members showing the relationship between these three projects. This led to general discussion allowing the group to focus their attention to passive fire.
3. The remainder of the day was spent in 2 parts. The first was general discussions regarding the state of play in the passive fire industry. And the second resulted in the group basically writing their problem statements. The first part of the day was largely taken up by people recounting examples of bad practice. This was expected and is an important part of the healing process. When aspects of value came up I tried to hone in on these capturing them on the whiteboard as a stimulus for productive discussion. The second part of the day was much more productive and the outputs to our discussions were captured in real time on a whiteboard, periodically subjected to test by the group and agreed by all as being accurate prior to the group leaving. Throughout day the group understandably kept straying into ANARP and PCC. Whilst this was inevitable I stressed the importance of this group being forward focused and sticking to the task in hand. This was reinforced by PL who reiterated the scope provided to the working group by the task group.

BUILDING PERFORMANCE

Fire Programme – Construction Monitoring Working Group Meeting

Problem Definition Development

15 September 2016

The purpose of this paper is to present a proposed problem definition and set of issues for discussion and input from the working group.

Purpose and pre-meeting actions

Purpose and recommendations

The purpose of this document is to present a proposed problem definition and set of issues for discussion and input from the working group.

It is recommended that the working group:

a) consider the material in this paper (before 15 September)
b) provide feedback either before or during the meeting, and
c) agree on a problem definition and set of issues.

Pre-meeting considerations for the working group

In order to ensure we make the most of your time on 15 September, it is recommended that you consider, in terms of construction monitoring:

- What are your concerns?
- What issues are you experiencing?
- What evidence do you see in your work/current role that tells you there are issues in this area?
- What do you think causes these issues, or potential issues?
- Do you think we have the data and information we need in order to adequately define the problem? (If possible please canvas others' views and opinions to help validate and provide input from a wider audience than is possible at the work groups).

Please feel free to forward any thoughts through to us before the 15th September (rebekan.henderson@mbie.govt.nz).

Background

Extensive engagement in late 2014

MBIE undertook an extensive stakeholder engagement programme with industry and sector groups in late 2014 to gather feedback on changes made in 2012 to the Building Code Clauses for Protection from Fire (and the supporting documents, Acceptable Solutions and Verification Method).

Unintended consequence of the 2012 changes

Whilst the 2012 changes did not set out to influence an increased reliance on construction monitoring, stakeholder feedback suggests this to be an unintentional consequence. In the 2014 feedback, stakeholders questioned the role of construction monitoring in the consenting process stating that the current process often results in uncertainty in securing a Code Compliance Certificate.

A number of long standing issues identified

The review identified a number of issues arising from the 2012 changes that need to be addressed. However, a number of long standing issues emerged from the stakeholder feedback that were not related to the 2012 changes:

- Passive Fire Protection measures
- Construction monitoring
- Post-construction compliance processes
- The evacuation of persons with disabilities
- The alignment of the Building Act, HSNO regulations, the Fire Service Act and the Evacuation of Buildings regulations.

Three new working groups have been set up

Two of the fifteen projects under the fire programme are relevant to this particular work stream. Project 12, Passive Fire Protection Systems and Project 13 Construction Monitoring and Post Construction Compliance. These two projects have been split into three working groups.

- Passive Fire Protection
- Construction Monitoring
- Post Construction Compliance.

It is clear that various similarities exist within these three different topics. Hence, the same issues may be raised and the risk of duplication in any proposed solutions is high. With this in mind, a "Task Group" has been formed to set the direction for each of the working groups and decrease the risk of duplication.

There is a close link to the role of design related documentation (i.e. producer statements etc.) which is relied upon at the consenting stage. This is being addressed within the consent processing work programme. It is also recognised that these requirements relate to many other aspects of building code compliance (not just fire protection).

Proposed Problem Definition

Proposed problem definition

The proposed problem definition for discussion, refinement and expansion as necessary is:

The role that construction monitoring/observation plays within the overall consenting process is not clear. How does construction monitoring/observation fit into the wider Building Consent compliance framework?

This is a starting point only and in order to direct solutions, there will need to be a more detailed set of issues/concerns and root causes that support this.

Concerns raised to date

The concerns that have been raised in consultation (and since) that point to the above problem definition are as follows:

- There is a lack of clarity around roles and responsibilities within the industry in relation to determining compliance with the Building Code, of which construction monitoring/observation is one element.
- There is a lack of coordination by parties (eg architects, engineers, contractors, sub-contractors) to ensure that there are no gaps and that accountability is attributed appropriately.
- There is a need to educate clients/public around the need for and costs of compliance checking, including construction monitoring/observation, as part of the overall cost of building
- There needs to be consistency across all consenting authorities in applying the various compliance checking processes (including construction monitoring) and expectations around documentation (eg producer statements)
- There is a lack of clarity around responsibilities for determining material quality compliance, particularly in the fire engineering space.
- There is significant variation in the expectations by building consenting authorities as to levels of liability protection required to be carried by contractors and professionals.

Potential root causes

Stakeholder feedback received in late 2014 contained views on what the potential root causes of the problem might be, namely:

- There is a lack of clarity of roles and responsibilities which means that construction monitoring sits uncomfortably between designers, fire engineers and BCAs.
- Approaches to construction monitoring and the use of documentation to provide "reasonable grounds" within the consenting process varies across the country.

Potential solutions

Potential solutions

Stakeholder feedback received in late 2014 also contained views on what some of the potential solutions might be, namely, for the various industry players to:

- understand the various issues from the perspective of the other parties,
- reach agreement on the role that construction monitoring plays within the consenting process, and
- reach agreement on who does what and when, i.e. roles and responsibilities.

What success might look like

The working group should think about what success might look like – for instance it may be:

- The consenting process is robust, yet flexible
- Decisions are risk-informed
- Accountability and responsibility in the process is promoted

It would be useful to know how we might measure something like this to be able to determine whether we have been successful or not.

Fire Programme: Passive Fire Protection

Outcomes

Potentially divide into immediate/short term/ medium term/long term?

Improved quality of construction, maintenance, inspection resulting in the continuing compliance of passive fire protection systems in buildings

Black – formed as a result of the working group meeting
Green – From the pre-reading documents approved by Task Group

Implementation?

Interventions

Problems (causes)	There is no collective agreed view on the importance of passive fire protection outside of those that are close to it. It may only get priority should a major fire occur.	We do not have the right regulatory settings for passive fire protection	There is no commercial incentive to ensure there are adequate passive fire protection measures in place at construction stage (and that they remain in place)	There is a lack of coordination and clarity around roles and responsibilities for designing, specifying, procuring, installing and construction monitoring of passive fire protection requirements	There is a limited pool of passive fire protection knowledge and expertise
Issues identified/ Concerns/ Symptoms	• Indifference as to the importance of passive fire protection • Passive fire protection is not an exact science • Difficult to measure the scale and potential consequences of inadequate passive fire protection • There is a lack of robust discussion in the design phase (through a lack of knowledge?) *These fit along the bottom of a number of these problems and are the underlying concerns/ issues:* ◦ There is (perceived to be) a lack of adequate passive fire protection measures in construction and maintenance of some multi-residential and commercial buildings ◦ There are concerns about whether the designing, specification, installation, inspection, and maintenance of passive fire protection features are always correct • **There are inadequate passive fire protection measures in buildings that may make them unsafe *(evidence required)* – there is no risk based assessment method to gauge the risk of poor quality passive fire protection.**	• Indifference as to the importance of passive fire protection • The consenting process has to deal with varying levels of information from stakeholders with various levels of competence and expectations • No minimum requirements for people designing and installing passive fire protection • Stakeholders confuse the requirements of NZS 4332 with the Building Code and Building Act ◦ Passive fire installation is [illegible] aspect of *Building Work* ◦ Passive fire protection is only deemed specified as a consequence of a building having active fire protection – legislation may not adequately recognise the importance of passive fire protection ◦ The current system assumes that all occupancies carry equal risk (eg an office building must achieve the same standard of passive fire as a hospital) ◦ A fully compliant fire penetration may allow vast quantities of cold smoke to pass through it bringing into question the validity of the fire stopping *[note which may need to go back to the Task Group: This statement is about the adequacy of PF and belongs more in a standards review for proceduralists rather than what we are trying to achieve]*. ◦ Lack of specification/standards around passive fire (and potentially a lack of understanding around what passive fire is [illegible] and what it isn't (excluded))	*(This is intertwined with the 2nd problem but have separated it out)* • Indifference as to the importance of passive fire protection • Some building owners do not value the importance of good passive fire protection • One national organisation undertaking cable installation has brought their observations on poor passive protection to MBIE. Action on the issues they observe is contrary to their commercial interests. ◦ Some building owners place reliance upon ‘experts’ to undertake alteration work to their buildings in accordance with the Building Code, but there is often work undertaken which reduces compliance (ironically, it can mean that there are delays and costs that were not anticipated by Building Owners (Building Owners that focus on passive fire protection have usually been caught out before and understand the commercial reality, or have tenants that they rely on and understand the risk) • **There is a lack of robust discussion in the design phase** • **Time and energy is being wasted in the build phase *(which you would think would drive the commercial incentive – why not?)***	• The industry perceives that BCAs are imposing obligations upon them *(more explanation needed here – what are we observing here?)* • BCAs believe that the industry should be responsible for passive fire protection *(Who is responsible?)* • The inspection process does not have the checks to ensure passive fire protection is adequate ◦ It is sometimes unclear who is responsible for the design, installation, checking and maintenance of passive fire protection systems	• Poor design of passive fire protection • Buildings constructed with inadequately detailed passive fire protection • BCAs are unsure of what they are approving and unaware of the consequence of the requirements they are imposing • People in the industry do not know their limitations or simply ‘try and get away with it’ • Poor or inadequate procurement processes for passive fire protection ◦ Understanding of passive fire protection and the current minimum requirements is low (Backed up by 2008 BRANZ study) ◦ IQPS are struggling to identify passive fire features within buildings

Fire Programme: Post Construction Compliance Problem Statements

(**Black** – formed as a result of the working group meeting / Green – From the pre-reading documents approved by Task Group)

	Problem Statements	**Issues identified/concerns that have helped form the problem statements**
1.	Aspects of the BWOF system are prescriptive, inflexible and out of step with the way in which buildings are presently used and managed	• No flexibility when it may be warranted • Adversarial relationships **(between?)** • A risk based approach is not employed – so onerous reqs for low risk situations and minimal requirements for high risk situations • No exemptions for vacant buildings/ buildings marked for demolition/ low risk buildings • Limited ability to amend compliance schedules • NTF and offence provisions are inconsistent and in some cases hard to comply with • Cannot (legally) issue a compliance schedule where a building is occupied before CCC • Confusion when the building is progressively occupied • Administration and application of the BWOF system is difficult for some tasks • Issues raised in a BWOF are missed if the building owner changes BWOF companies • Building owners are not able to obtain BWOFs due to omitted compliance schedules • Common scenarios are not provided for in the Act's BWOF provisions
2.	Lack of certainty about what systems are specified systems, coupled with varying beliefs about what should be a specified system resulting in poor quality and incomplete compliance schedules	• Ongoing maintenance of systems that are not specified systems is dependent on the building owner when these systems may be fundamental to the safe operation of the building • What is counted as a specified system and included on compliance schedules caries between TAs *(to be explored and confirmed further what actual problem is here)* • Building owners are being incentivised to remove (or not install) specified systems due to ongoing compliance requirements • Interrelated testing is often overlooked, resulting in the overall system not being assessed and not performing as designed • Alternative solutions confusion on how to deal with these and how they are specified in the compliance schedule • Specified systems are not being included on compliance schedules • Non-specified systems are being included on compliance schedules • Lack of documentation on the specified systems in the building – what they are and where they are • Information about specified systems may not be transferred from the consent/code compliance schedule to the compliance schedule • We don't know whether specified systems are preforming from the outset

	Problem Statements	Issues identified/concerns that have helped form the problem statements
3.	The consenting process is not operating as intended, and CCCs are being issued for buildings with significant construction defects	• IQPs are being expected to manage construction defects • IQPs are refusing to issue a form 12A certificate because of construction defects • When building defects are discovered post CCC, the noncompliance continues, is fixed and then not consented, or addressed under a subsequent building consent (in which case the consenting process permits non-compliance (ANARP) or the BCA insists on the construction defects being fully rectified • The BWOF system is not designed to fix construction defects – there is a lack of clarity about how construction defects should be addressed.
4.	Lack of IQP capability and no standardised policy or process for IQP registers	• Regional IQP registers and different approaches between regions *(to be explored and confirmed further what actual problem is here)* • IQP capability • Lack of rigour in the way in which IQP registers are maintained and managed – inadequate checks, measures, and enforcement processes • Are councils under-resourced? • Differences across regions mean that IQPs who cross boundaries have to allocate resources to meet different requirements *(is this creating inefficiency? What is problem?)* • Building owners with a national portfolio have to deal with different requirements
5.	Some industry participants do not understand their obligations and lack the capability to deal with those obligations	• Poor decisions are being made • Building work is undertaken under the BWOF system rather than the consenting process • Building owners are not involved in the process • There is a lack of robust BWOF enforcement, which is sometimes influenced by external factors • There are industry participants that do not have an appreciation of the process, the systems in place and the legislation • Building Act obligations are not well understood by all parties • Building owners lack of info or never receive critical information regarding fire design parameters and other building design features contributing to the building's compliance at the time of construction
6.	The BWOF system sometimes places too much weight on previous compliance, rather than being risk based	

	Problem Statements	Issues identified/concerns that have helped form the problem statements
7.	There are inconsistencies between the prescribed forms and the Building Act and no prescribed form for compliance schedules	• The quality of compliance schedules issued with the CCC varies from good to poor • Some compliance schedules add little or no value to the BWOF process • Quality and usefulness of some compliance schedules is variable

Fire Programme: Construction Monitoring

Outcomes

Potentially divide into immediate/short term/ medium term/long term?

The consenting process is robust, yet flexible
Decisions are risk informed
Accountability and responsibility in the process is promoted

Implementation?

Interventions

Problems (causes)	Issues identified/ Concerns / Symptoms
1. There is a lack of coordination and clarity around roles and responsibilities for construction monitoring	• Participants have different expectations in terms of who does what and to what extent • The people responsible for designing the fire safety systems are often not involved in the construction process • Fire engineers are being asked to confirm that the fire safety systems required by their fire design have been correctly installed into the building. • There is a perception that parties are abdicating their responsibilities in the construction phase • There is currently building work being done that is not signed off by a suitably qualified, experienced person (which may be due to a lack of suitably qualified people) • Building owners and developers do not know what their obligations are • Contractual/professional arrangements are complex – eg third parties (agents) sitting between the Building Owner and the BCA) • Construction monitoring sits uncomfortably between designers, fire engineers, and BCAs • There is a lack of coordination by parties to ensure there are no gaps and that accountability is attributed appropriately • There is a lack of clarity around responsibilities for determining material quality compliance, particularly in the fire engineering space
2. Nervousness about liability and the fact that people are not doing a good job is driving risk averse behaviour rather than delivering safe and fit for purpose buildings	• The Producer Statement regime is not working for all parties and is potentially being relied on too heavily • There is reluctance from a few fire engineers to sign PS4s and to place reliance on PS3s provided by the tradesperson who carried out the work • There is a perception that designers are increasingly electing not to be involved in the design and on site validation process • BCAs are relying on fire engineers to confirm that the fire safety systems required by their fire design have been correctly installed into the building • Stakeholders are confusing reasonable grounds and proof • Producer Statements are sometimes held back until the contractor is paid • Builders are unable to get insurance – they can usually only get broad form insurance (?)
3. Not all developers or building owners recognise the commercial incentive to ensure construction monitoring occurs.	• Construction monitoring is not seen as adding value • This is causing a "race to the bottom" - contractors that understand the need for construction monitoring cannot compete on price • Price/cost wins over quality • There is little understanding that the commercial incentives are actually there to conduct construction monitoring, as problems become expensive and difficult to fix post-construction • Building owners are not incentivised to know that their obligations are, (these that are more than that have tenants that rely on those that have had bad experience in the past) • Developers are in existence for a finite period of time so are loathe to spend money – perception is they don't care Contractual obligations often conflict with consent requirements • Professionals (engineers) are feeling pressure to sign documentation to keep business – also value non-compliant work • Clients/the public do not understand the need for and costs of compliance checking, including construction monitoring/observation, as part of the overall cost of a building
4. It is unclear what the breadth and depth of Construction Monitoring needs to be – there are no effective guidelines or standards, no minimum requirements.	• This results in variance across BCAs • It is not clear what the differences between Construction Monitoring and inspections are – *building owner: "Why do we need Construction Monitoring, when I am paying the BCA for inspections?"* • Within the sector there is disagreement about the value of the AS/NZ Construction Monitoring guidelines • There is no consistency across all consenting authorities in applying the various compliance checking processes (including construction monitoring) and expectations around documentation (e.g. producer statements) • Approaches to construction monitoring and the use of documentation to provide "reasonable grounds" within the consenting process varies across the country • There is significant variation in the expectations by BCAs as to levels of liability protection required to be carried by contractors and professionals
5. The consenting process and the design-build approach do not work well together which impacts on what construction monitoring is actually done	• Applicants are seeking requirements by BCAs to comply with the Building Act and submit aspects of the design that are yet to be developed (and are therefore likely to alter) – One of reasons that consent is sought before tendering is so that if things change for compliance reasons, then don't have to re-tender • BCAs being presented with a vast amount of non-specific and irrelevant information
6. Some of the actual design and construction of fire safety systems is being done poorly which is increasing the need for, and reliance on construction monitoring	• There is a lack of knowledge, understanding and capability in the sector • There is a lack of design review post-consent and pre-construction in complex designs. • There is a culture of not caring enough and a "what can we get away with" mentality • There is also a culture of thinking that if the BCA issued a building consent it must be correct and holding the BCA responsible in spite of section 14 of the Building Act • Increased use of subcontractors (subbies) who have the "what can we get away with" mentality and do not do own QA • Degradation in installation is being picked up in Construction Monitoring • Everything is built to lowest common denominator (consenting process does not change this) • Passive fire protection is not actually designed, or not designed to the level of detail required • Product substitution is occurring • Contractors and consultants are often unaware of the limitations on their competence and regularly work outside their areas of competence • Poor supply of documentation • Builders/installers do not know how to build firewalls – lack of understanding • Issues include situations where residential builders (or mid tier builders) then move up to a small commercial building (for example a motel) and don't understand the difference in requirements • Builders/Installers have no qualifications • There is no come back to installers
7. Some of the current construction monitoring is being done poorly – the competence is low or they do not know what is 'right'	
8. Some BCAs do not have time nor access to the requisite level of experience to ensure that building work (fire safety systems) is satisfactorily undertaken	• BCAs struggle to employ staff with the skills, experience and capability necessary • There is confusion as to the distinction between 'proof' and 'reasonable grounds' • BCAs do not have time to ensure that everything is done in accord with the design • BCAs cannot inspect everything (some don't do fire inspections at all) • BCAs are getting too much information or it is not specific enough • Smaller BCAS do not have ready access to fire engineers/specialists in their locality and it would be a big cost to change this • Construction Monitoring can be expensive in smaller communities as no local resource is available. It is OK for big jobs to bring someone in, but 2-3 storied buildings are a problem • Obtaining a building consent is becoming increasingly difficult with BCAs increasing their focus on the approvals process • Reduced robustness within the process of building work validation • Increased costs and additional time constraints placed on the applicant to achieve blanket consenting requirements

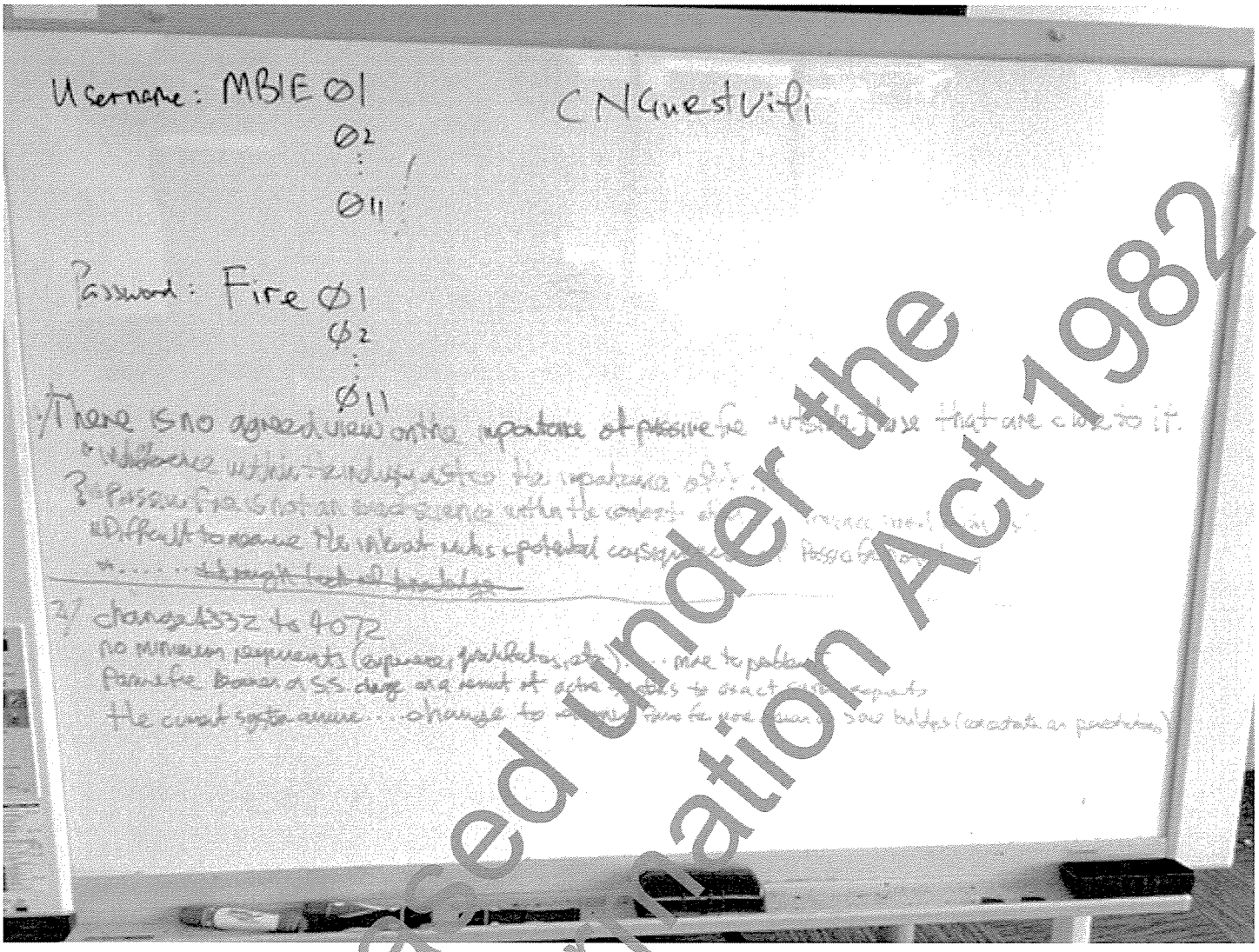
Fire Programme: Construction Monitoring

Outcomes	TBC – working group to have a think about outcomes/what success might look like							
Working group's actions	Should we think about what the best process might be? Views on where the responsibilities should sit? Or has this already been attempted in the CIC Guidelines?			Define the breadth and depth of construction monitoring required				
Possible Interventions	Canadian regime – co-ordinating registered professional (owner responsibility) etc Clerk of works	**PARKED – work being done elsewhere in MBIE re: liability**	Fire rating system – grade buildings for how they are built Education (for end users) on importance of construction monitoring Rating system for developers Introduce construction bonds	Define/determine when construction monitoring is actually required (to guide BCAs and other parties) Make construction monitoring compulsory for all 'at risk' buildings		Build it right in the first place (takes heat out of construction monitoring) Training and education system at all levels – architects, designers, BCAs, installers, tradespeople License those doing fire safety work so it becomes restricted building work. Must demonstrate competence, and CPD important. Disciplinary body required – need to be able to de-license. Include standards for documentation.		
Problems (root causes of issues being faced)	**1. Roles and responsibilities unclear**	**2. Nervousness about liability and quality of work being done**	**3. There is not always a commercial incentive to ensure construction monitoring occurs**	**4. It is unclear what the breadth and depth of construction monitoring needs to be**	**5. The consenting process and the design-build approach do not work well together**	**6. Poor quality design and construction of fire safety systems is increasing the need for, and reliance on, construction monitoring**	**7. Some construction monitoring is being done poorly**	**8. BCAs do not have the time or resource to ensure the building of fire safety systems is done properly**
Further explanation:	Parties do not know what their obligations are, or who should be doing what in the construction monitoring space. It sits uncomfortably between designers, fire engineers and BCAs.	This nervousness causes industry participants to focus on limiting liability rather than ensuring good construction monitoring is done. The Producer Statement regime is not working for all parties and is potentially being relied on too heavily.	Not all developers and building owners have a good understanding of the need for and cost of compliance checking, including construction monitoring. There is a "race to the bottom" - contractors that understand the need for construction monitoring cannot compete on price.	There are no effective guidelines or standards, and no minimum requirements for construction monitoring.	The ability to conduct effective construction monitoring is compromised by the mismatch between consenting and the design-build approach – e.g. aspects of the design that are yet to be tendered have to be submitted to BCAs.	There is a lack of knowledge, understanding, care and capability with regards to the installation of fire safety systems in the sector. The degradation in installation is being picked up in construction monitoring.	Construction monitoring is being done poorly because there is a lack of capability – sometimes professionals do not even know what is 'right'.	BCAs do not have the time to ensure that everything is done in accordance with the design and cannot inspect everything. They also struggle to employ staff with the necessary skills and experience.

Problems	Possible Interventions/Solutions	Working Group actions
1. Roles and responsibilities unclear Parties do not know what their obligations are, or who should be doing what in the construction monitoring space. It sits uncomfortably between designers, fire engineers and BCAs.	• Canadian regime • Clerk of works	Should we think about what the best process might be? Views on where the responsibilities should sit? Or has this already been attempted in the CIC Guidelines?
(Not sure I have this one right – need to relate directly to CM) **2. Nervousness about liability and quality of work being done** This nervousness causes industry participants to focus on limiting liability rather than ensuring good construction monitoring is done. The Producer Statement regime is not working for all parties and is potentially being relied on too heavily.	PARKED – work being done elsewhere in MBIE re: liability	
3. There is not always a commercial incentive to ensure construction monitoring occurs Not all developers and building owners have a good understanding of the need for and costs of compliance checking, including construction monitoring. There is a "race to the bottom" - contractors that understand the need for construction monitoring cannot compete on price.	• Fire rating system – grade buildings for how they are built • Education (for end users) on importance of construction monitoring • Rating system for developers • Introduce construction bonds	

Problems	Possible Interventions/Solutions	Working Group actions
4. It is unclear what the breadth and depth of construction monitoring needs to be. There are no effective guidelines or standards, and no minimum requirements for construction monitoring.	• Define/determine when construction monitoring is actually required (to guide BCAs and other parties) • Make construction monitoring compulsory for all 'at risk' buildings	Define the breadth and depth of construction monitoring required
5. The consenting process and the design-build approach do not work well together The ability to conduct effective construction monitoring is compromised by the mismatch between consenting and the design-build approach – e.g. aspects of the design that are yet to be tendered have to be submitted to BCAs.	• Define/determine when construction monitoring is actually required (to guide BCAs and other parties)	
6. Poor quality design and construction of fire safety systems is increasing the need for, and reliance on, construction monitoring There is a lack of knowledge, understanding, care and capability with regards to the installation of fire safety systems in the sector. The degradation in installation is being picked up in construction monitoring.	• Build it right in the first place (takes heat out of construction monitoring) • Training and education system at all levels – architects, designers, BCAs, installers, tradespeople • License those doing fire safety work so it becomes restricted building work. Must demonstrate competence, and CPD important. Disciplinary body required – need to be able to de-license. Include standards for documentation.	

Problems	Possible Interventions/Solutions	Working Group actions
7. Some construction monitoring is being done poorly Construction monitoring is being done poorly because there is a lack of capability – sometimes professionals do not even know what is 'right'.		
8. BCAs do not have the time or resource to ensure the building of fire safety systems is done properly BCAs do not have the time to ensure that everything is done in accordance with the design and cannot inspect everything. They also struggle to employ staff with the necessary skills and experience.		



Notes: Passive fire meeting #2 Tuesday 18th October

1. Prompted by their curiosity I relayed to the members an outline of the progress to date in the PCC and CM working groups. Some members of this group are also in others and they confirmed when necessary and at times led the discussions regarding the progress to date.
2. The agenda proved to be of little worth today as the group members were concerned that the draft problem statements they had received from Rebekah did not reflect the problem statements they had had outlined during the last meeting. I recognised this, apologised and recounted to them the process since we had last met. They accepted that this was an oversight led by a lack of subject matter understanding on Rebekah's part rather than something more sinister. The remainder of the day was taken up amending the MBIE flavoured problem statements to more accurately reflect their beliefs. This process led to general discussions throughout the day, most of which resulted in anecdotal accounts of bad practice. Nevertheless, these discussions were consistently turned around by the chair and myself to focus on the task in hand, fixing the problem statements. Again the day's work was captured in real time on a whiteboard, photographed by all and agreed to reflect their collective views and believes.

Fire Programme: Construction Monitoring

Outcomes — *Potentially divide into immediate/short term/ medium term/long term?*

The consenting process is robust, yet flexible
Decisions are risk informed
Accountability and responsibility in the process is promoted

Black – formed as a result of the working group meeting
Green – From the pre-reading documents approved by Task Group

	Problems (causes)	Issues identified/ Concerns / Symptoms	Interventions	Implementation?
1	There is a lack of coordination and clarity around roles and responsibilities for construction monitoring (Essentially the same wording as provided by the Task Group)	• Participants have different expectations in terms of who does what and to what extent • The people responsible for designing the fire safety systems are often not involved in the construction process • Fire engineers are being required to sign off the entire fire system when they have not been involved with the design • There is a perception that parties are abdicating their responsibilities in the construction phase • There is currently building work being done that is not signed off by a suitably qualified, experienced person (which may be due to a lack of suitably qualified people) • Building owners and developers do not know what their obligations are • Contractual/professional arrangements are complex – eg third parties (agents) sitting between the Building Owner and the BCA) ◦ Construction monitoring sits uncomfortably between designers, fire engineers, and BCAs ◦ There is a lack of coordination by parties to ensure there are no gaps and that accountability is attributed appropriately ◦ There is a lack of clarity around responsibilities for determining material quality compliance, particularly in the fire engineering space		
2	Nervousness about liability is driving risk averse behaviour rather than delivering safe and fit for purpose buildings	• The Producer Statement regime is not working for all parties and is potentially being relied on too heavily • There is resistance from fire engineers to signing PS3s and PS4s • There is a perception that designers are increasingly electing not to be involved in the design and on site validation process • BCAs are relying on fire engineers to validate the suitability of building work • Fire engineers are questioning the BCA methodology to establish reasonable grounds • Stakeholders are confusing reasonable grounds and proof • Producer Statements are sometimes held back until the contractor is paid		
3	There is no commercial incentive to ensure construction monitoring occurs.	• Construction monitoring is not seen as adding value • This is causing a "race to the bottom" - contractors that understand the need for construction monitoring cannot compete on price • Price/cost wins over quality • There is little understanding that the commercial incentives are actually there to conduct construction monitoring as problems become expensive and difficult to fix post construction • Building owners are not incentivised to know what their obligations are (those that are, are those that have tenants they rely on, or those that have had a bad experience in the past) • Developers are in existence for a finite period of time so are loathe to spend money – the perception is they don't care • Contractual obligations often conflict with consent requirements • Professionals (engineers) are feeling pressure to sign documentation to keep business and to validate non-compliant work • Owners/the public do not understand the need for and costs of compliance checking, including construction monitoring/observation, as part of the overall cost of a building		
4	It is unclear what the requirements for Construction Monitoring are – there are no effective guidelines or standards, no minimum requirements.	• This results in variance across BCAs • It is not clear what the differences between Construction Monitoring and inspections are – *Building owner: "Why do we need Construction Monitoring, when I am paying the BCA for inspections?"* • Within the sector there is disagreement about the value of the ACENZ Construction Monitoring guidelines ◦ There is no consistency across the consenting authorities in applying the various compliance checking processes (including construction monitoring) and expectations around documentation (e.g. producer statements) ◦ Approaches to construction monitoring and the use of documentation to provide "reasonable grounds" within the consenting process varies across the country ◦ There is significant variation in the expectations by BCAs as to levels of liability protection required to be carried by contractors and professionals		
5	The Building Requirements do not match the way the design and build process works in practice	• Applicants are being required by BCAs to submit aspects of the design that are yet to be tendered (and are therefore likely to alter) • BCAs being presented with a vast amount of non-specific and irrelevant information • "Dangerous building" is too blunt a tool		
6	The actual design and construction of fire safety systems is being done poorly which is increasing the need for, and reliance on, inspections/ construction monitoring	• There is a lack of knowledge, understanding and capability in the sector with regards to the design and construction of fire safety systems • There is a lack of design review post-consent and pre-construction in complex designs. • There is a culture of not caring enough and a "what can we get away with" mentality • Increased use of subcontractors (subbies) who have the "what can we get away with" mentality and do not do own QA • Degradation in installation is being picked up in Construction Monitoring • Everything is built to lowest common denominator (consenting process does not change this) • Passive fire protection is not actually designed, or not designed to the level of detail required • Product substitution is occurring • Change of use – fit-out companies do not advise building owners when a consent might be required • Contractors are often unaware of the limitations on their competence and regularly work outside their areas of competence		
7	BCAs do not have time nor access to the requisite level of experience to ensure that building work (fire safety systems) is satisfactorily undertaken	• BCAs struggle to employ staff with the skills, experience and capability necessary • There is confusion as to the distinction between 'proof' and 'reasonable grounds' • BCAs do not have time to ensure that everything is done in accord with the design • BCAs cannot inspect everything (some don't do fire inspections at all) • BCAs are getting too much information or it is not specific enough • Smaller BCAS do not have ready access to fire engineers/ specialists in their locality and it would be a big cost to change this • Construction Monitoring is expensive and time consuming, so local resource is required. It is OK for big jobs to bring someone in, but 2-3 storied buildings are a problem • Obtaining a building consent is becoming increasingly difficult with BCAs shifting their focus to the approvals process • Reduced robustness within the process of building work validation • Increased costs and additional time constraints placed on the applicant to achieve blanket consenting requirements		

Fire Programme: Post Construction Compliance

Outcomes

Potentially divide into immediate/short term/ medium term/long term?

The quality of information, inspection and auditing *(with regards to fire protection?)* is improved so that buildings continue to perform at the standard when they were constructed

Black – formed as a result of the working group meeting
Green – From the pre-reading documents approved by Task Group

Implementation?

Interventions

Problems (causes)	Aspects of the BWOF system are prescriptive, inflexible and out of step with the way in which buildings are presently used and managed	Lack of certainty about what systems are specified systems, coupled with varying beliefs about what should be a specified system resulting in poor quality and incomplete compliance schedules	The consenting process is not operating as intended, and CCCs are being issued for buildings with significant construction defects	Lack of IQP capability and no standardised policy or process for IQP registers	Some industry participants do not understand their obligations and lack the capability to deal with these obligations	The BWOF system sometimes places too much weight on previous compliance, rather than being risk based	There are inconsistencies between the prescribed forms and the Building Act and no prescribed form for compliance schedules
Issues identified / Concerns	• No flexibility when it may be warranted • Adversarial relationships **(between?)** • A risk based approach is not employed – so onerous reqs for low risk situations and minimal requirements for high risk situations • No exemptions for vacant buildings/ buildings marked for demolition/ low risk buildings • Limited ability to amend compliance schedules • NTF and offence provisions are inconsistent and in some cases hard to comply with • Cannot (legally) issue a compliance schedule where a building is occupied before CCC • Confusion when the building is progressively occupied • Administration and application of the BWOF system is difficult for some tasks • Issues raised in a BWOF are missed if the building owner changes BWOF companies • Building owners are not able to obtain BWOFs due to missed compliance schedules • Common scenarios are not provided for in the Act's BWOF provisions	• Ongoing maintenance of systems that are not specified systems is dependent on the building owner when these systems may be fundamental to the safe operation of the building • What is counted as a specified system and included on compliance schedules caries between TAs *(to be explored and confirmed further what actual problem is here)* • Building owners are being incentivised to remove (or not install) specified systems due to ongoing compliance requirements • Integrated testing is often overlooked, resulting in the overall system not being assessed and not performing as designed • Alternative solutions confusion on how to deal with these and how they are specified in the compliance schedule • Specified systems are not being included on compliance schedules • Non-specified systems are being included on compliance schedules • Lack of documentation on the specified systems in the building – what they are and where they are • Information about specified systems may not be transferred from the consent/code compliance schedule to the compliance schedule • We don't know whether specified systems are performing from the outset	• IQPs are being expected to manage construction defects • IQPs are refusing to issue a form 12A certificate because of construction defects • When building defects are discovered post CCC, the noncompliance continues, is fixed and then not considered, or addressed under subsequent building consent (in which case the consenting process provides non-compliance (NAR) for the BCA insists on the construction defects being fully rectified • The BWOF system is not designed to fix construction defects – there is a lack of clarity about how construction defects should be addressed.	• Regional IQP registers and different approaches between regions *(to be explored and confirmed further what actual problem is here)* • IQP capability Lack of rigour in the way in which IQP registers are maintained and managed – inadequate checks, measures, and management processes • Are councils under-resourced? • Differences across regions mean that IQPs who cross boundaries have to allocate resources to meet different requirements *(is this creating inefficiency? What is problem?)* • Building owners with a national portfolio have to deal with different requirements	• Poor decisions are being made • Building work is undertaken under the BWOF system rather than the consenting process • Building owners are not involved in the process • There is a lack of robust BWOF enforcement, which is sometimes influenced by external factors • There are industry participants that do not have an appreciation of the process, the systems in place and the legislation • Building Act obligations are not well understood by all parties • Building owners lack or lose or never receive critical information regarding fire design parameters and other building design features contributing to the building's compliance at the time of construction	•	• The quality of compliance schedules issued with the CCC varies from good to poor • Some compliance schedules add little or no value to the BWOF process • Quality and usefulness of some compliance schedules is variable

Purpose

You requested a briefing on Passive Fire Protection (PFP) measures in buildings.

This followed an article in the Weekend Herald on 10 October 2015 that highlighted multi-unit apartment buildings in Auckland with compromised PFP systems uncovered in the course of weathertightness remediation works.

What is PFP and why it is Important

PFP is the fire stopping of gaps and penetrations within and around fire separations. Limiting fire and smoke spread to its area of origin has significant benefit in allowing occupants more time to escape to safety, protecting occupants in other areas and protecting neighbouring property.

PFP systems and features prevent early spread of fire through cavities and premature failure of fire separation to other fire compartments. The components of PFP systems include; fire collars, sealants, dampers and intumescent paint.

Issues with PFP Systems in Multi-Unit Apartment Buildings in Auckland

The Home Owners and Buyers Association on NZ (HOBANZ) is managing the weathertightness remediation of at least three multi-unit apartment buildings in Auckland. In the course of the remediation works HOBANZ uncovered significant issues with the PFP measures in all three buildings.

HOBANZ have provided MBIE with information on the buildings illustrating the PFP issues they have uncovered. A copy of the HOBANZ material is attached and it includes photographs of compromised PFP measures including; unprotected penetrations through fire walls, structural beams not protected with intumescent paint, fire walls not extended to upper floors, ducts with no fire damper and fire walls with non-compliant GIB.

The three buildings in question were constructed between 1997 and 2002. The additional costs to fix the PFP systems in these buildings on top of the weathertightness remediation costs range from $1m - $3m.

How Widespread are the Problems with PFP Systems

The issues with the quality of PFP systems in high rise buildings are not new, the issue pre-dates the buildings HOBANZ has drawn attention to and anecdotal reporting indicates the issues are continuing to occur.

In 2008 The Fire Protection Association of NZ (FPANZ) was funded by BRANZ to investigate the quality of PFP in NZ buildings. A small number of buildings were inspected and in the majority the shortcomings in the potential effectiveness of the PFP systems were easily identified. The report concluded there were widespread problems due to poor knowledge, application, systems and processes. Not all of the buildings surveyed disclosed poor quality PFP systems, a small number of the buildings had very good PFP systems.

MBIE undertook a Stakeholder Engagement process at the end of 2014 to gauge stakeholders' views on the fire regulations. The feedback on PFP indicates the issues with PFP haven't changed markedly since the 2008 report.

We have informal advice of a number of instances of litigation relating to inadequate PFP system installations. This is an indicator of ongoing systemic issues with the design, installation, checking and maintenance of PFP systems.

What is the Risk when PFP Systems are compromised

Fires in high rise buildings in NZ and other comparable jurisdictions are rare. There hasn't been a fatality in a major building fire in NZ since the Ballantynes fire in November 1947 which claimed 41 lives.

PFP is not critical to life safety in high rise apartments as the first alert is the active systems such as automatic fire alarms and sprinklers. PFP measures are hidden behind structure and become critical only for very large fires that travel into the structure. The main function of PFP is protection of other property and assisting fire-fighting. NZ has not had a significant high rise building fire that has threatened the structure of a building.

Most high rise buildings in NZ are fitted with sprinkler systems. This contrasts with the United Kingdom where PFP systems are relied on and buildings, including hospitals, are not typically fitted with sprinkler systems. Sprinklers actively suppress a fire's development and in many situations they will extinguish the fire. Sprinklers ensure more time to escape and decrease the risk of fire affecting building structure.

Fires produce smoke and air contamination and the main cause of injury in a fire is smoke inhalation or being overcome by toxic gases. Effective PFP is important to ensure smoke and toxic gases are contained and excluded from the safe path escape routes.

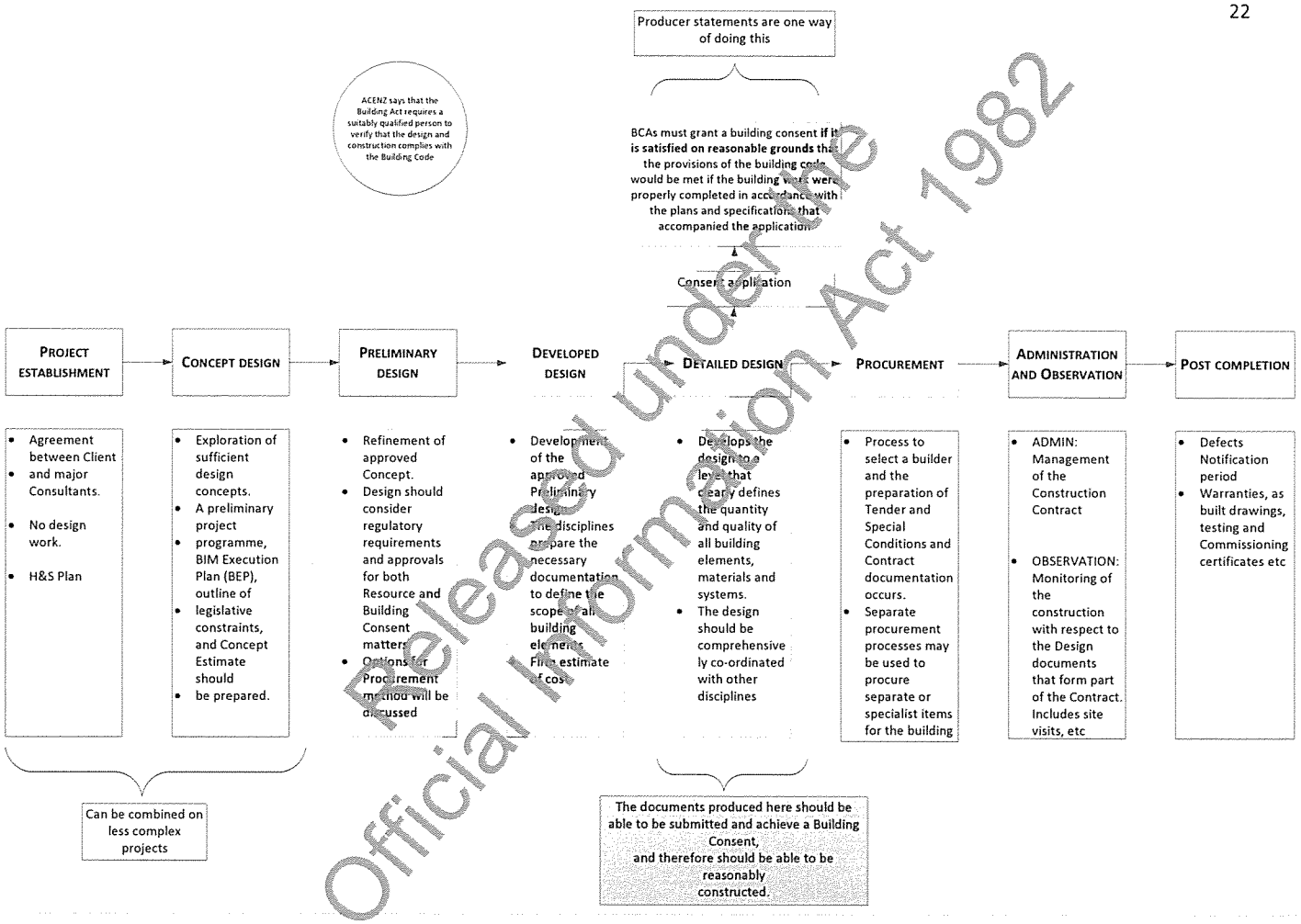
The risk of poor quality PFP systems in high rise buildings is considered low due to the presence of active fire protection systems. In the event of a fire in a high rise building with a sprinkler system operating effectively, the impact of compromised PFP systems could be mitigated to an acceptable level in many instances. However the quality of PFP systems in existing buildings and in some new buildings is not satisfactory and MBIE is addressing this concern.

Approach to Improve the Quality of PFP Systems

You have previously been briefed on the Fire Programme (Update on Post-Implementation Fire Review and Fire Regulation Development Programme, 8 July 2015, ref 005915-16). One of the projects in the Fire Programme addresses the issues with the quality of PFP systems in buildings. It will run in parallel with a project to address the related issue; Construction Monitoring and Post Construction Compliance (Building Warrant of Fitness (BWOF) and Independently Qualified Persons (IQPs)).

In 2012 when the Department of Building and Housing (DBH) made major changes to the fire regulatory system PFP was not addressed in the package of reforms. The Fire Programme is addressing issues arising from the 2012 reforms along with a number of long standing fire issues including the quality of PFP systems.

Improving the quality of PFP systems in existing and new buildings will require a partnership between MBIE and key stakeholders; fire designers, building owners/managers, installers, other trades, suppliers, BCAs and IQPs. We are currently working with FPANZ, the principal peak body for the parties involved in PFP, to form a Working Group with all of the parties involved to undertake this project.



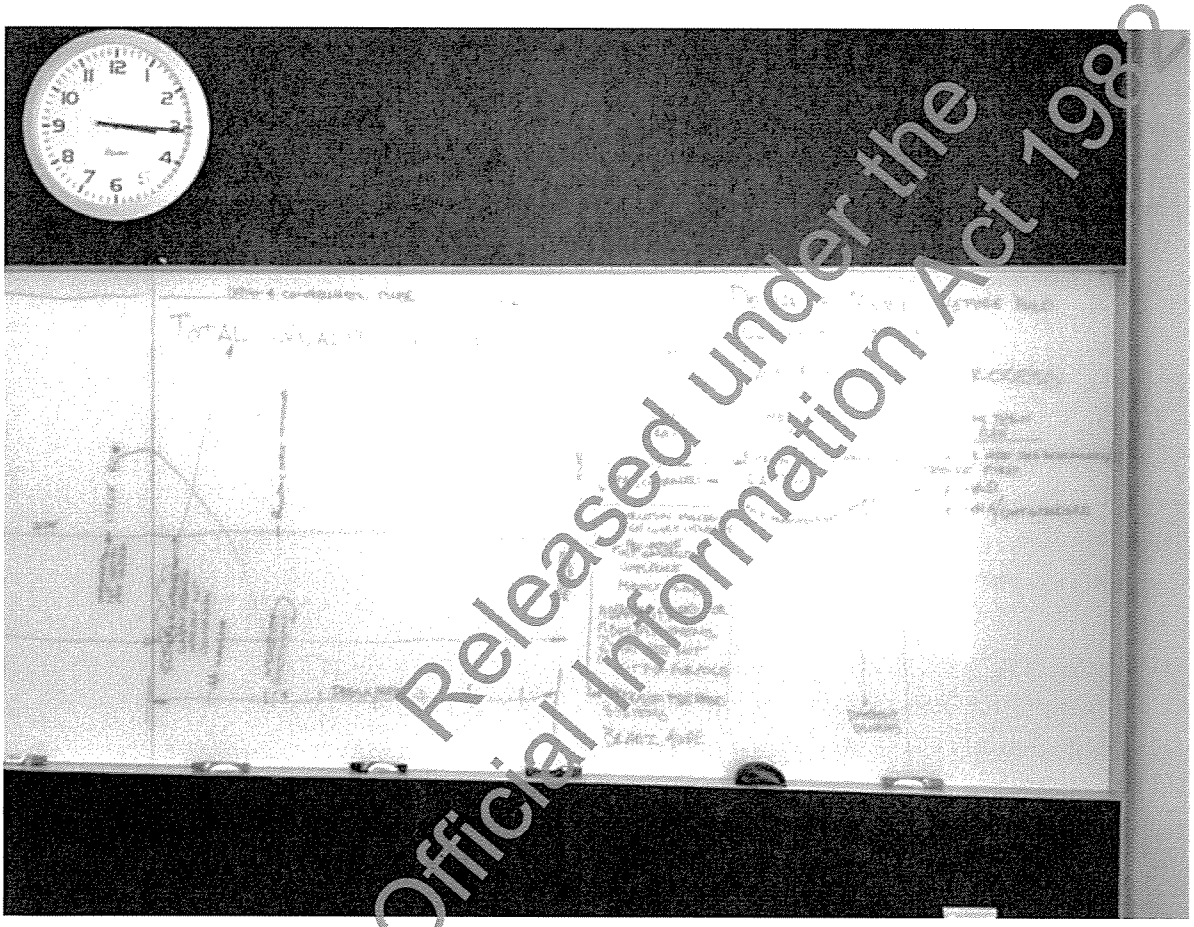
Fire Programme: Construction Monitoring Problem Statements

(**Black** – formed as a result of the working group meeting / Green – From the pre-reading documents approved by Task Group

	Problem Statements	**Issues identified/concerns that have helped form the problem statements**
1.	There is a lack of coordination and clarity around roles and responsibilities for construction monitoring (Essentially the same wording as provided by the Task Group)	• Participants have different expectations in terms of who does what and to what extent • The people responsible for designing the fire safety systems are often not involved in the construction process • Fire engineers are being required to sign off the entire fire system when they have not been involved with the design • There is a perception that parties are abdicating their responsibilities in the construction phase • There is currently building work being done that is not signed off by a suitably qualified, experienced person • Building owners and developers do not know what their obligations are • Contractual/professional arrangements are complex – eg third parties (agents) sitting between the Building Owner and the BCA • Construction monitoring sits uncomfortably between designers, fire engineers, and BCAs • There is a lack of coordination between the parties involved in design, Regulatory approval, construction and construction monitoring to ensure there are no gaps and that accountability is attributed appropriately • There is a lack of clarity around responsibilities for demonstrating material quality compliance, particularly in the fire engineering space
2.	Nervousness about liability is driving risk averse behaviour rather than delivering safe and fit for purpose buildings	• The Producer Statement regime is not working for all parties and is potentially still being relied on too heavily • There is resistance from fire engineers to signing PS3s and PS4s • There is a perception that designers are increasingly electing not to be involved in the design and on site validation process • BCAs are relying on fire engineers to validate the suitability of building work • Fire engineers are questioning the BCA methodology to establish reasonable grounds • Stakeholders are confusing 'reasonable grounds' and 'proof' Producer Statements are sometimes held back until the contractor has been paid

	Problem Statements	Issues identified/concerns that have helped form the problem statements
3.	There is no commercial incentive to ensure construction monitoring occurs	• Construction monitoring is not seen as adding value • This is causing a "race to the bottom" – contractors that understand the need for construction monitoring cannot compete on price • Price/cost wins over quality • There is little understanding that the commercial incentives are actually there to conduct construction monitoring, as problems become expensive and difficult to fix post-construction • Building owners are not incentivised to know what their obligations are (those that are, are those that have tenants they rely on, or those that have had a bad experience in the past) • Developers are in existence for a finite period of time so are loathe to spend money – the perception is they don't care • Clients/the public do not understand the need for and costs of compliance checking, including construction monitoring/observation, as part of the overall cost of a building • Contractual obligations often conflict with consent requirements • Professionals (engineers) are feeling pressure to sign documentation to keep business and to validate non-compliant work.
4.	It is unclear what the requirements for Construction Monitoring are – there are no standards, no minimum requirements. There is no agree industry code of practice for construction monitoring	• This results in variance across BCAs • It is not clear what the differences between Construction Monitoring and inspections are – *Building owner: "Why do we need Construction Monitoring when I am paying the BCA for inspections?"* • Within the sector there is disagreement about the value of the ACENZ Construction Monitoring guidelines. • There is no consistency across BCAs in how they apply the various compliance checking processes including construction monitoring and expectations around documentation (eg, producer statements) • Approaches to construction monitoring and the use of documentation to provide "reasonable grounds" within the consenting process varies across the country • There is significant variation in the expectations by BCAs as to levels of liability protection required to be carried out by contractors and professionals [The bullet point doesn't scan]
5.	The Building Act requirements do not fit with the way the design and build process works in practice	• Applicants are being required by BCAs to submit aspects of the design that are yet to be tendered (and are therefore likely to alter) • BCAs being presented with a vast amount of non-specific and irrelevant information • "Dangerous building" is too blunt a tool.

	Problem Statements	Issues identified/concerns that have helped form the problem statements
6.	The actual design and construction of fire safety systems is being done poorly which is increasing the need for, and reliance on, inspections/construction monitoring	• There is a lack of knowledge, understanding and capability in the sector with regards to the design and construction of fire safety systems • There is a culture of not caring enough and a "what can we get away with" mentality • Increased use of subcontractors (subbies) who have the "what can we get away with" mentality and who do not do their own QA • Degradation in installation is being picked up in Construction Monitoring • Everything is built to lowest common denominator (consenting process does not change this) • Passive fire protection is not actually designed, or not designed to the level of detail required • Product substitution is occuring • Change of use – fit-out companies do not advise the TA of change of use when a consent might be required • Contractors are often unaware of the limitations on their competence and regularly work outside their areas of competence
7.	BCAs do not have time nor access to the requisite level of experience to ensure that building work (fire safety systems) is satisfactorily undertaken	• BCAs struggle to employ staff with the skills, experience and capability necessary • There is confusion as to the distinction between 'proof' and 'reasonable grounds' • BCAs do not have time to ensure that everything is done in accord with the design • BCAs cannot inspect everything (some don't do fire inspections at all) • BCAs are getting too much information or it is not specific enough • Smaller BCAS do not have ready access to fire engineers/specialists in their locality and it would be a big cost to change this • Construction Monitoring is expensive and time consuming, so local resource is required. It is OK for big jobs to bring someone in, but 2-3 storied buildings are a problem • Obtaining a building consent is becoming increasingly difficult with BCAs shifting their focus to the approvals process • Reduced robustness within the process of building work validation • Increased costs and additional time constraints placed on the applicant to achieve blanket consenting requirements



Assumptions made to facilitate the solution options

- The procurement process it way out of line with the consenting process, (see fig 1), acting as a barrier for robust outcomes.
- Main contractors don't build anymore, they manage the supply of plant, labour and materials
- Quality is managed by a process of checking work completed. This leads to a high degree of defects, most of which go unchecked or unnoticed.
- The plans and specifications approved in the consent process have very little influence, (if any), in the tender process, (see fig 1), whilst he addenda to the building consent is very influential

Solution options

<u>Short to mid term</u>

The creation of a co-branded code of practice outlining expected practice.

FPANZ is expected to lead this work along with orginisations such as ABC, IFE, SFPE, Branz?, NZDSM, IRACE, Auckland Council, Christchurch City Council, some other form of BCA amalgamation?, etc. MBIE could support this creation with a view to endorse.

An industry driven accreditation process

A process of ascertaining the adequacy of passive fire designers, installers and inspectors and collating them on a central register; FPANZ is expected to lead this with other orginisations such as ABC, etc. in support. This is not something that can be directly endorsed, or even recognised by MBIE but MBIE may be able to provide support by other means? This, together with a CoP, would undoubtedly influence the process, opening up the possibility of building TQM into the consenting process.

Construction monitoring

The Nautilus judgement is a potential game changer for the way in which; building consents are issued including the role of reasonable grounds with construction monitoring. Whilst this brings with it the potential of adding additional layers of risk averseness to the process it could also open the door for a more robust yet flexible approach.

Warnings and bans, s26

This process could be explored to make BCA's aware by way of a warning, of the limitations of certain products being used in applications for which they are not suitable.

Aspects to be carried over to post construction compliance

- The marking of passive fire elements, (this is a requirement that could quite easily be brought into the acceptable solutions?)
- Having adequate details in the compliance schedule showing passive fire.

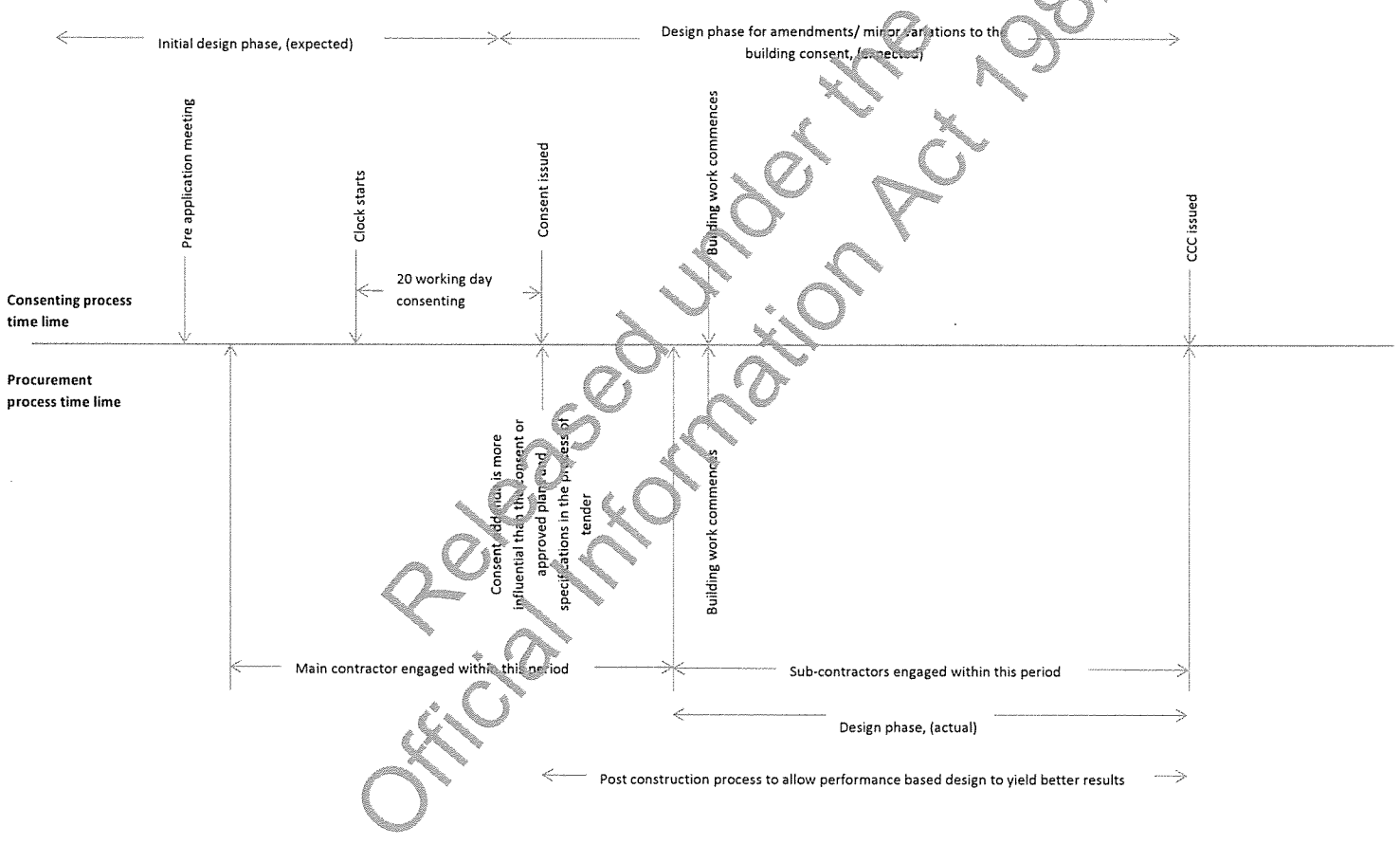
<u>Long term</u>

Legislation

- Amending the structure of the building code to acknowledge the importance of passive fire
- Creating a NZ standard to implement a structure comparable to the checks and measures contained within NZS 4512
- A licencing regime where only licensed passive fire contractors can undertake this aspect of building work.

Fig 1

Passive Fire design phase timeline

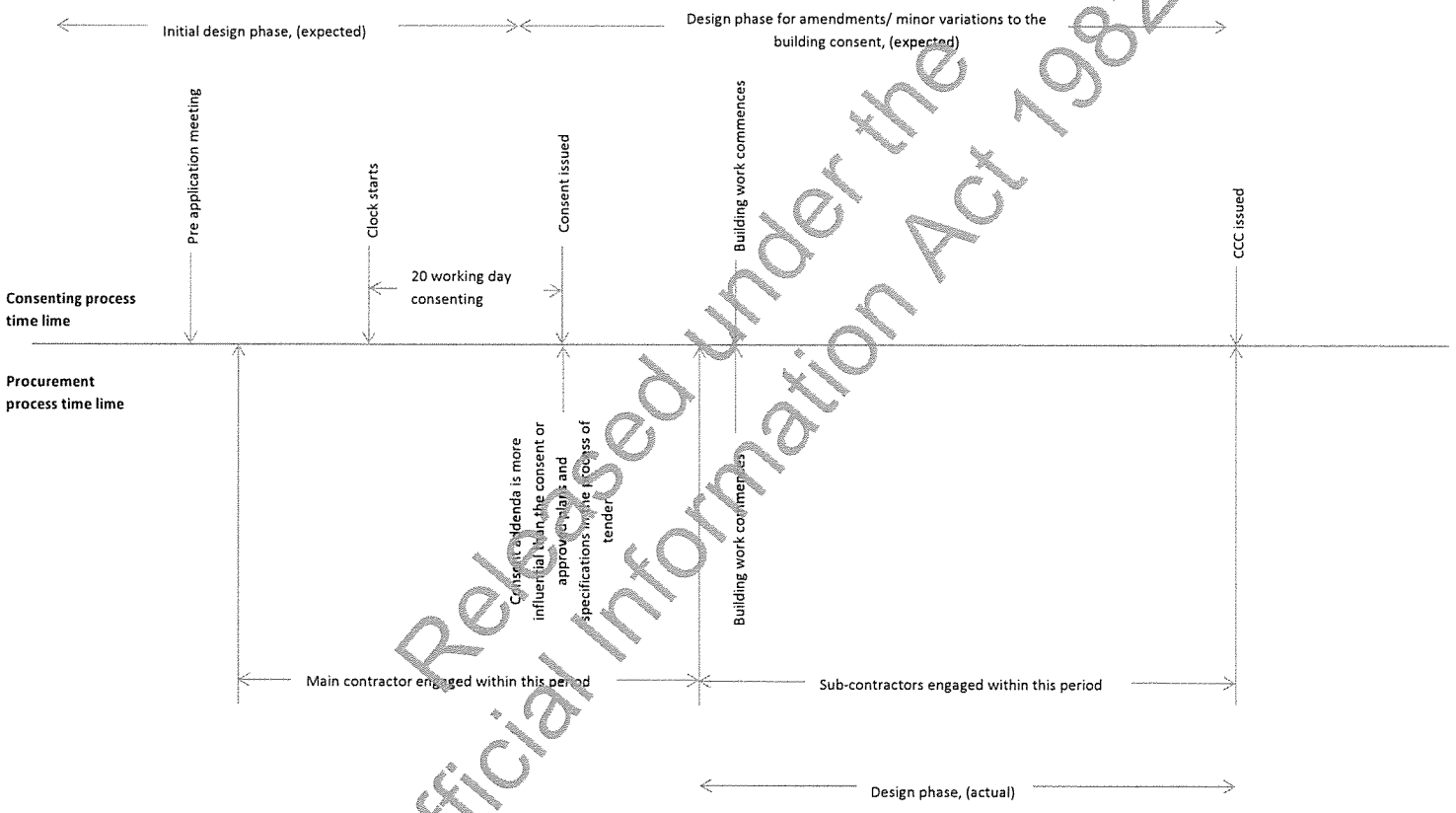


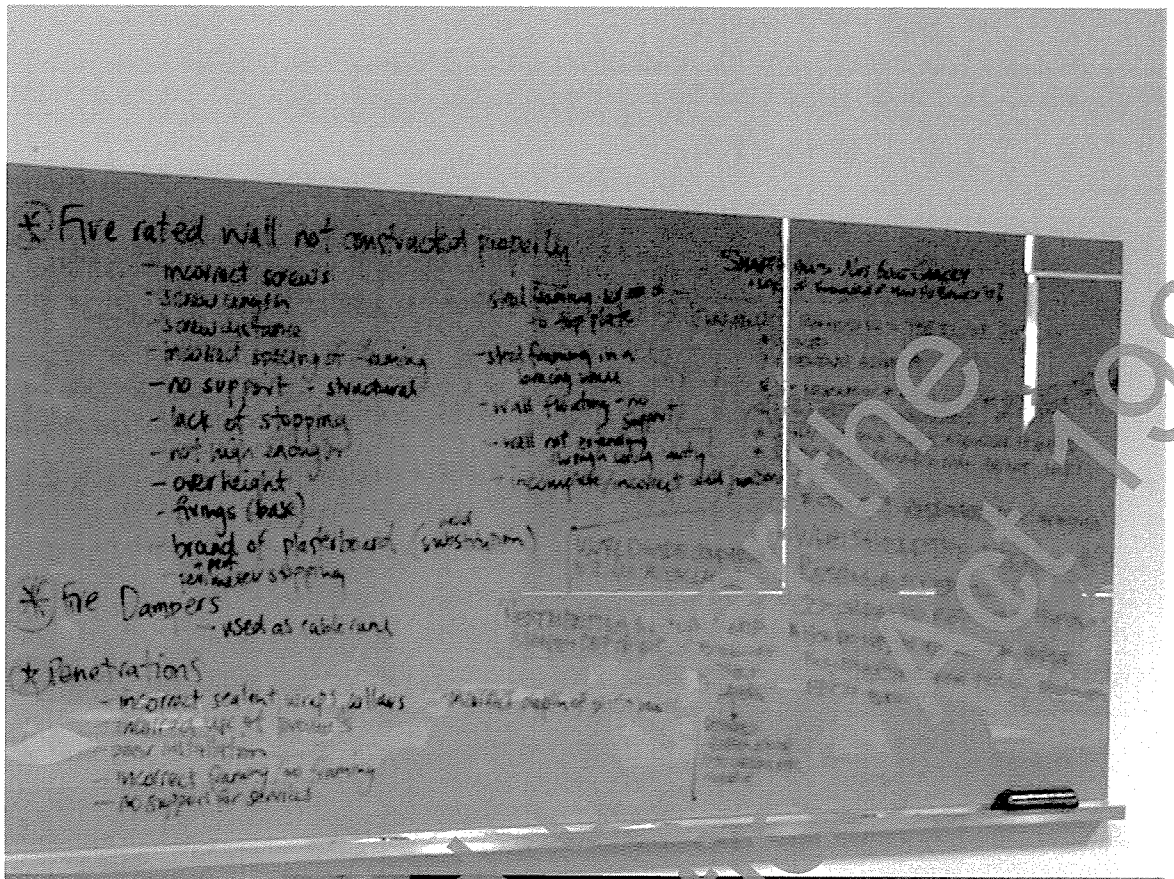
Notes: Passive fire meeting #3 Friday 9th December

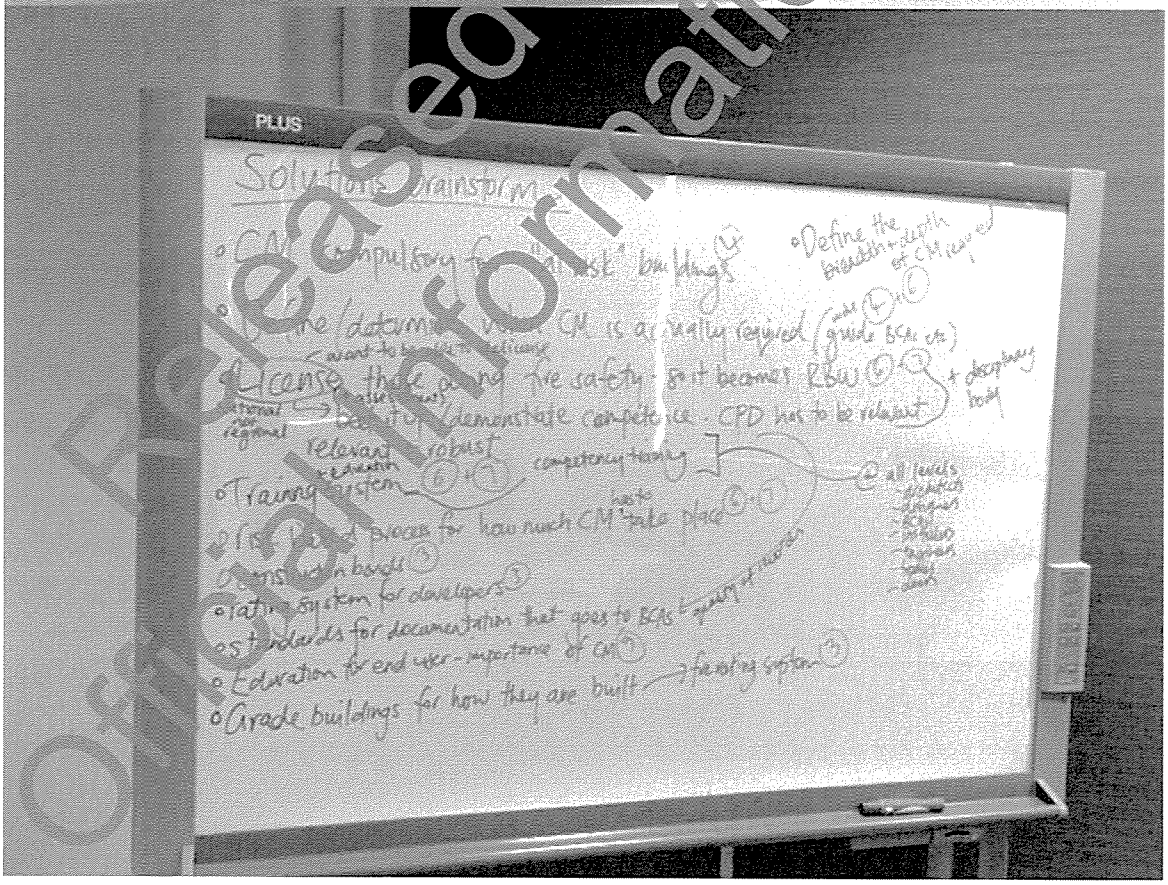
1. David Ong gave apologies, but otherwise all members in attendance
2. I gave an account of the progress to date for PCC and CM working groups. Concern was raised as to why CM had stalled I explained that they were struggling to stick to the task in hand, needed direction by the task group and that the EQ had stopped the TG meeting going ahead.
3. Concerns were evident that change within MBIE may lead to uncertainty in the fire programme. I tried to steady the group explaining that the fire programme was transitioning into BAU and that for them this had no net effect.
4. I apologised to KF of BRANZ for the mistake in the agenda and confirmed that BOINZ were playing no part in the day. KF then proceeded to give an account of the work he is undertaking at BRANZ testing generic as built elements, looking at the outputs in terms of adequacy rather than compliance to a standard. This raised both intrigue and concern from most members as they instantly recognised the implications of this work.
5. As agreed GR and EC then gave accounts of how the consenting process happens confirming that it does have a degree of flexibility largely dictated by the comfort of the building officer. Accounts of good and bad practice were recounted from both orginisations but in essence they confirmed my believes that performance based specifications were commonplace and when managed well yielded better results.
6. I then led a group exercise mapping the consenting process timeline against the procurement process timeline. This exercise demonstrated to the group that a main contractor doesn't build, rather facilitates the build, and furthermore the approved documents play no part in the tender process, with the exception of the consent addenda which lays out the process. It also showed that the design phase actually happens within the construction phase basically unchecked and as such results in a build and design process where compliance is reliant on CM and inspection picking up defects, or not, often when it is too late to do anything
7. This discussion led me into explaining the principles of TQM, designing out defects, and explaining the process I implemented as a BCA to incorporate TQM into the design phase. For many this proved to be a lightbulb moment showing how the consenting process could work with the procurement process to result in a quality product rather than swimming against the tide as it currently does.
8. Solution options were then discussed and captured again in real time on a whiteboard and edited as prompted by the group. These solution options are quite powerful as it shows that the sector wants to step up and be in control of their own destiny. I explained that this approach was quite powerful and that it had the potential to outperform tenfold any form of legislative solution

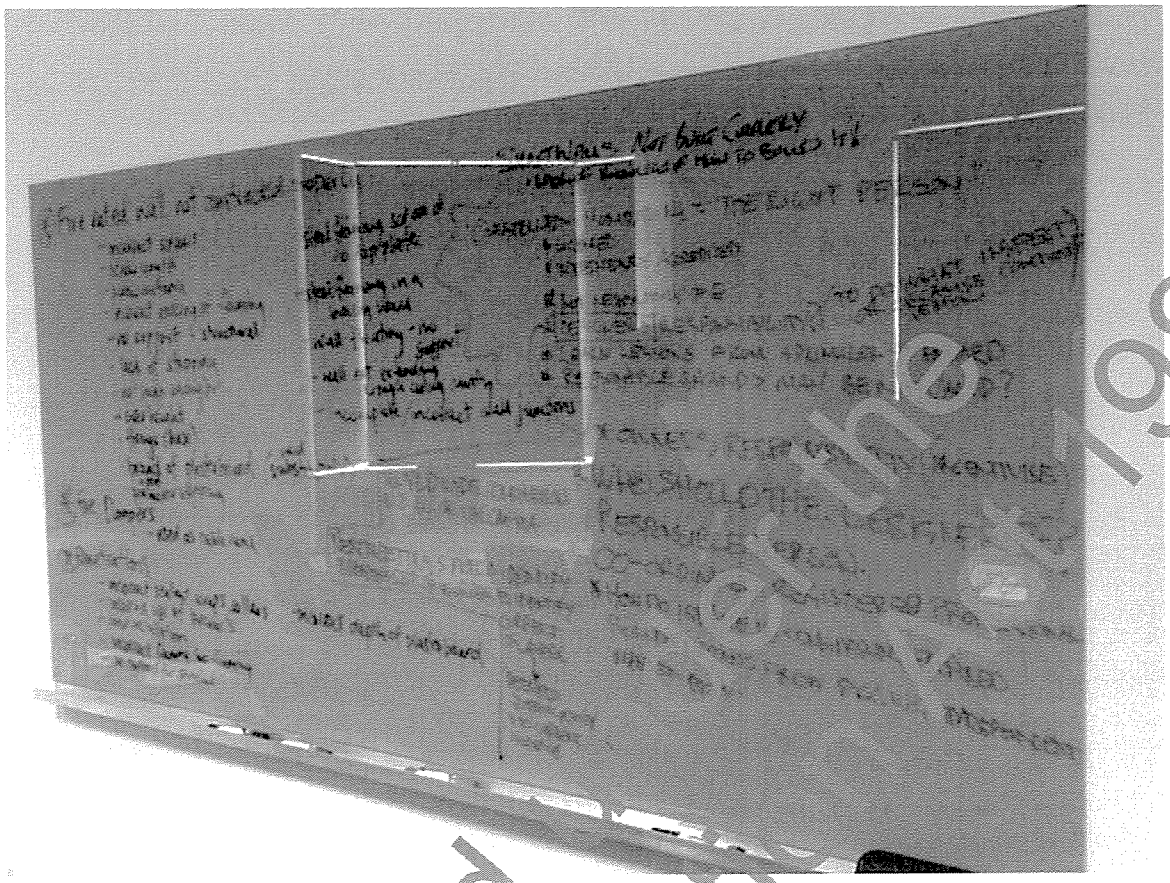
Fig 1

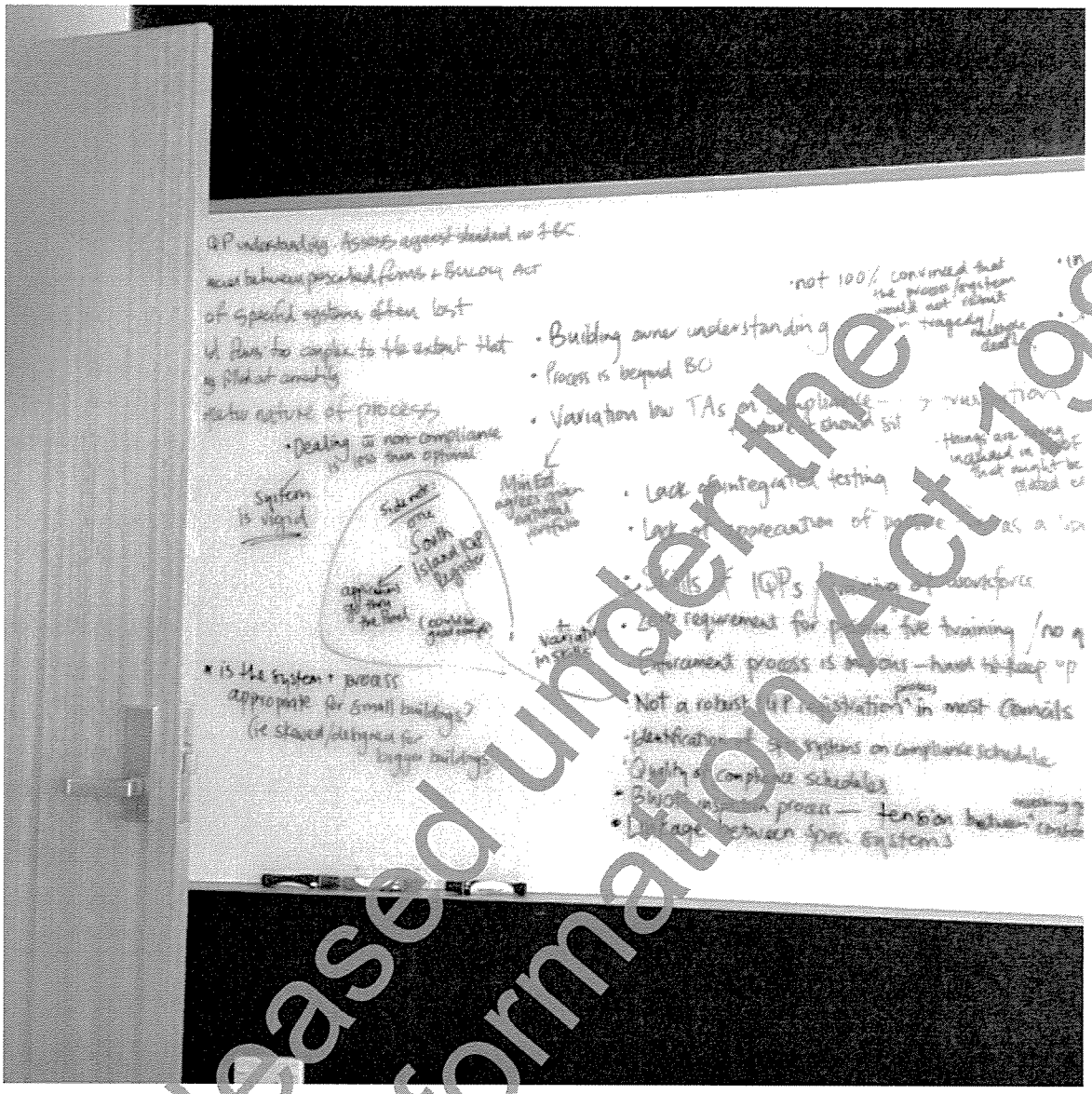
Passive Fire design phase timeline

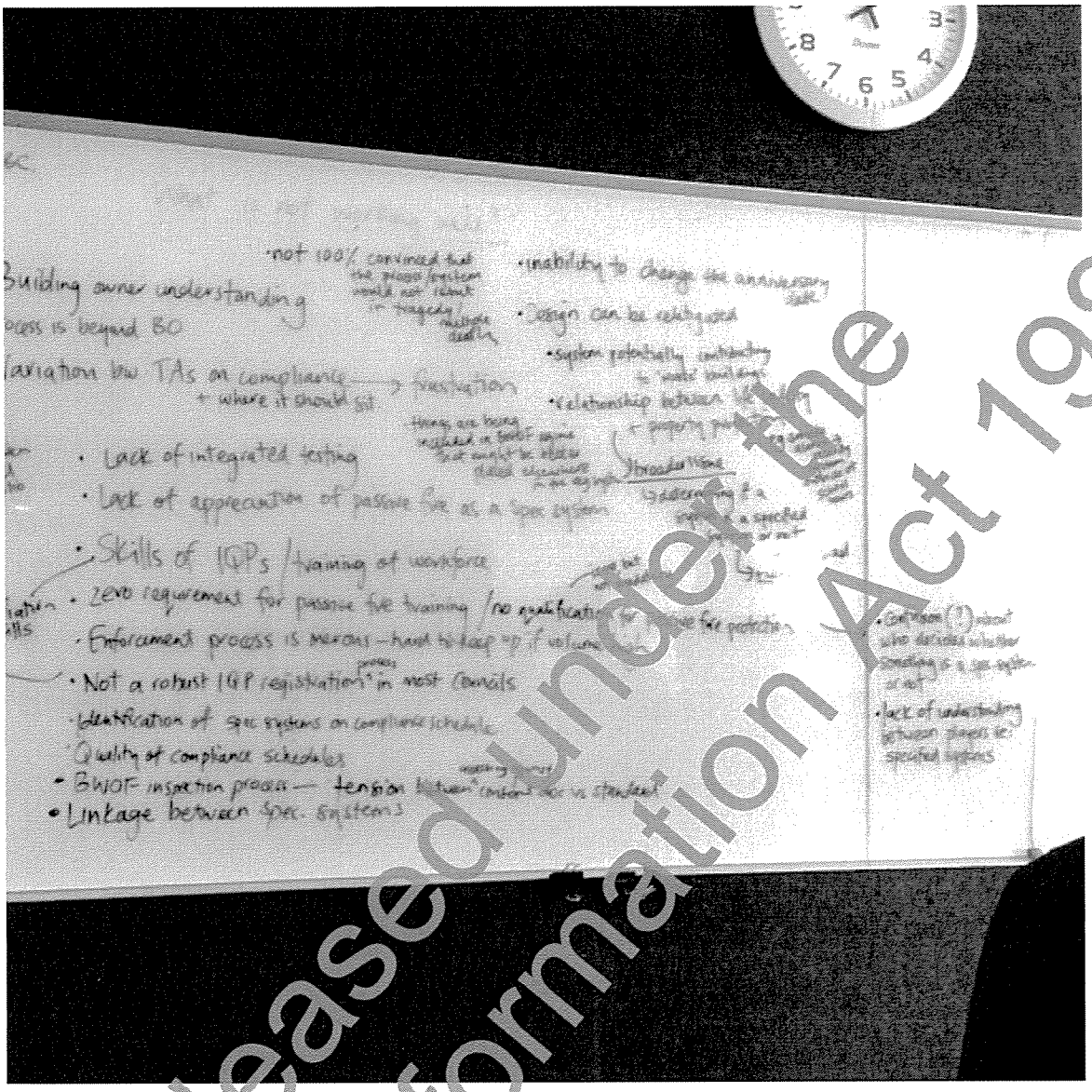


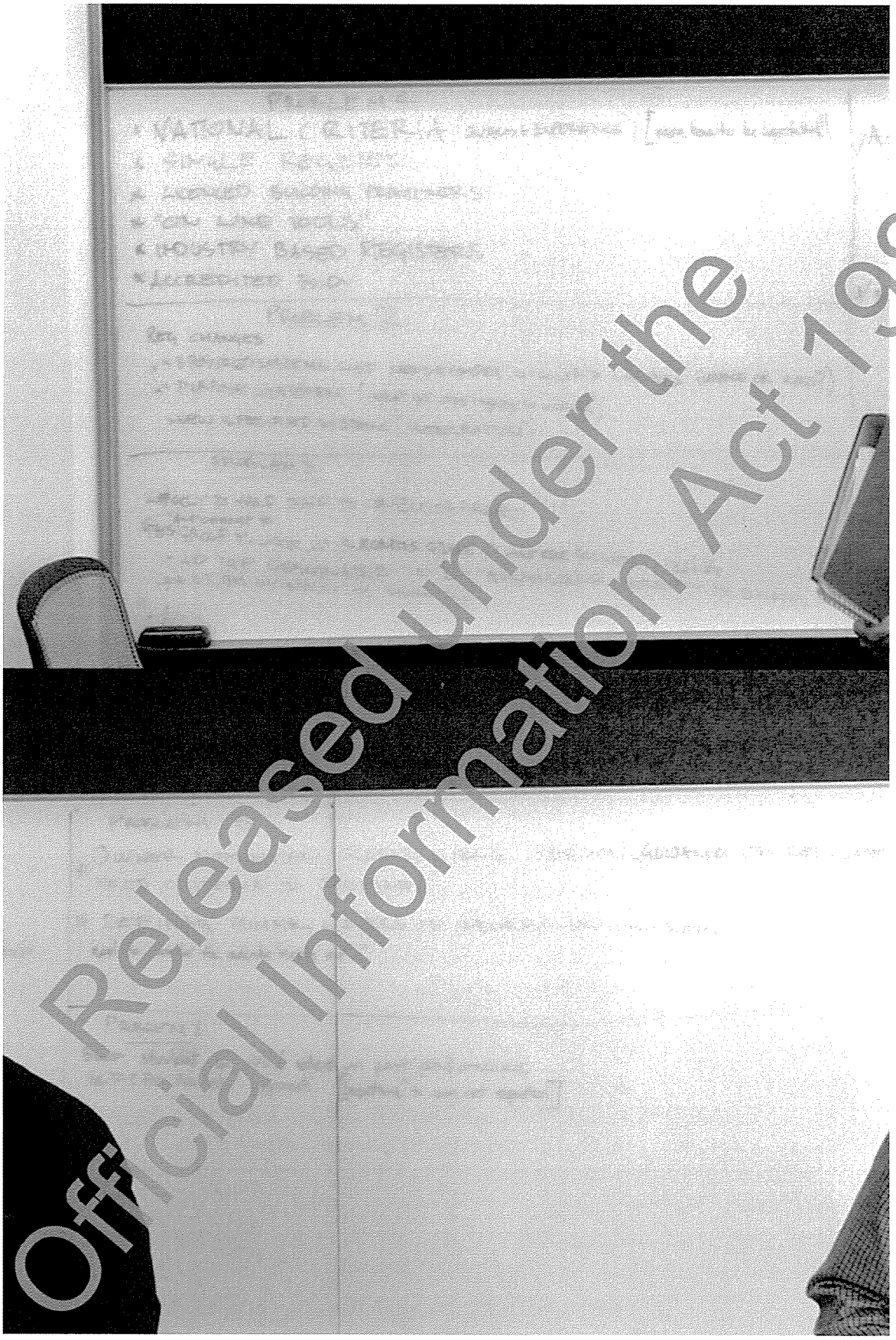












PROBLEM STATEMENT 7 PRE-READING

Information about specified systems is often not be transferred from the consent/code compliance certificate process to the compliance schedule

At the moment the relevant Act requirements are as follows:

When a applying for a building consent the applicant must

- Provide plans and specifications which (when you refer to section 7) include:
  - proposed inspection, maintenance and reporting procedures for the specified systems
  - the specified systems that will be required to be on the compliance schedule
- Provide a list of the specified systems for the building (where a CS is required as a result of building work)
- Provide a list of the specified systems that are being altered, added or removed as a result of building work

Issues

– no requirement to provide a system description (despite this being required on a compliance schedule and despite the owner (through the designer) being in the best position to provide this)

-no requirement to state the performance standards for the specified systems

- Double up in the requirement to provide a list of specified systems

When issuing a building consent the BCA must:

- State the specified systems that must be covered by the compliance schedule
- The performance standards that are required for the specified systems

Issues

– no requirement to provide a system description (despite this being required on a compliance schedule and despite the owner (through the designer) being in the best position to provide this)

No requirement to state the inspection, maintenance and reporting procedures

Possible solutions

- Create a new application for compliance schedule form which requires the prescribed information that reflects the compliance schedule content requirements under section 103 (i.e. the list of specified systems, a description or each specified system, the performance standards the IMR procedures)
- Remove all existing requirements described above

- Require a building consent applicant to submit an application for compliance schedule with a building consent application (where applicable)
- Require a BCA to review the contents of the compliance schedule application like they would for proposed building work under a building consent
- Require a BCA to issue a draft/interim compliance schedule with the building consent confirming the proposed and accepted compliance schedule information – this CS could be enforced where the building is occupied before a CCC **(links to the solution under PS1 in relation to CS issue)**

No prescribed form to ensure all required information is captured and to ensure nationwide consistency

- Should we add a prescribed form to the building (Forms) regulations for compliance schedules? Ensure alignment with the BWoF form and ensure each field prompting information has a purpose (this may require changes to the BWoF form).

Lack of knowledge about what is required on a compliance schedule and why

- Can we address this under solutions to PS5?

Alternative solutions confusion on how to deal with these and how they are specified in the compliance schedule

- Possibly one to hand over to the consenting and alternative solution working group?

Lack of documentation on the specified systems in the building – what they are and where they are

- For existing buildings/existing compliance schedules – could we make it a requirement to include location/plans identifying where a specified system is in a building. In combination or as an alternative to:
    - Prescribed form (as above)
    - Education and guidance (as per proposed solutions under PS5)
    - CS application/draft CS solution (as above)

Building owners lack, lose or never receive critical information regarding fire design parameters and other building design features contributing to the building's compliance at the time of construction

- Has this been addressed under 7(a) solution above

- Addressed by education of relevant parties (as per proposed solutions under PS5)

Interface testing is not covered by many compliance schedules

- Could require each specified system on a compliance schedule state any interfaces with other specified systems in the building, what is to be inspected and when and by who; or the solution or PS2 – to have a separate specified system for interfacing

Specified systems aren't being inspected and maintained correctly and completely

- Can this be addressed through various solutions in this document, including:
  - solution for 5(g) under PS5 - online compliance schedule
  - Prescribed form (as above)
  - Education and guidance (as per proposed solutions under PS5)
  - CS application/draft CS solution (as above)

Specified systems in the building aren't being included in the compliance schedule (7(j))

- Would either or both of the following help:
  - Create an offence or owner obligation relating to the ensuring the compliance schedule contains all the specified systems in the building (relates to the 'responsible person' proposed solution under PS5 – maybe as an alternative where this solution is accompanied by guidance suggesting who to employ to ensure obligations are met)
  - Make it mandatory for TAs to audit buildings to check all SS are on the CS (include the requirement to check the BWoF is displayed and any other requirments)

Problem Statement 1	Issues identified/concerns that have helped form the problem statements
Aspects of the BWOF system are prescriptive, inflexible and out of step with the way in which buildings are presently used and managed	a. A risk based approach is not employed – so onerous requirements for low risk situations and minimal requirements for high risk situations: i. No cost benefit applied based on complexity buildings vs number and complexity of systems ii. No exemptions for permanently unoccupied buildings/ buildings marked for demolition/ low risk buildings iii. No exemptions for decommissioned systems iv. No provision for managing temporarily unoccupied buildings b. Limited ability for TA to amend compliance schedules (TAs can only initiate amendments to compliance schedules in relation to a system that is already on a compliance schedule AND only for the reasons of ensuring the specified system continues to perform to the performance standard – no provision to amend to change owner and building details, no provision to add or remove systems in/out in the building.) c. NTF and offence provisions are inconsistent and in some cases hard to comply with d. Limited ability for TAs to issue compliance schedules eg where a building is occupied before CCC e. Confusion when the building is progressively occupied f. Superfluous and irrelevant Building Act provisions and potential improvements

Solution Options

1. ***Risk-based compliance schedule requirements (1(a))***
   - See proposal under '2' specified system review (2nd sub-bullet of 2nd bullet) ***(1(a)(i))***
   - Allow the TA to grant an exemption to the compliance schedule and BWoF requirements where the costs outweigh the benefits (eg the building is only intermittently occupied by maintenance workers (and never public), the building is to be demolished, a simple building with only one low complexity/domestic specified system whose failure would not affect the public, a system has been decommissioned but remains in the building) ***(1(a)(i) - (iii))***
   - Allow an owner to apply for, and the TA to grant, a temporary exemption to the compliance schedule and BWoF requirements where a building is temporarily unoccupied ***(1(a)(iv)- alternative 1)***
   - Provide guidance on how to amend compliance schedules for temporarily unoccupied buildings ***(1(a)(iv)- alternative 2)***

2. ***Compliance schedule amendments (1(b))*** Amend section 107 of the Building Act 2004 to allow TAs to amend a compliance schedule to ensure it complies with the Act and regulations (eg to change owner and building details as required and to add, alter or remove specified systems)

3. ***NTF and offence provisions (1(c))*** Modify the existing sections 108 and 164 as follows:

(5) A person commits an offence if the person–
(aa) fails to supply ~~to the territorial authority the~~ a building warrant of fitness in accordance with subsection (1); or
(a) fails to display a building warrant of fitness in accordance with subsection (4) ~~that is required to be displayed under this section~~; or
(b) displays a false or misleading building warrant of fitness; or
(c) supplies a false or misleading building warrant of fitness
~~(c) displays a building warrant of fitness otherwise than in accordance with this section.~~

(1) This section applies if a responsible authority considers on reasonable grounds that–
~~(b) a building warrant of fitness or dam warrant of fitness is not correct; or~~
~~(c) the inspection, maintenance, or reporting procedures stated in a compliance schedule are not being, or have not been, properly complied with.~~

4. ***Compliance schedules issue before CCC (1(d))*** Investigate a requirement to issue a compliance schedule where buildings are legally occupied before a CCC. This includes public use buildings occupied under a CPU, public use buildings occupied because the consent was granted before 31 March 2005 and a CPU is not required and non-public use buildings. This could include amendments to section 102(3) and section 102A to provide a more general requirement for an owner to apply and TA to issue a CS when the building is to be occupied (and ability for TA to issue a compliance schedule without an application from a building owner). Note: there is the need to look into a Ta being limited under section 102(3) to only issuing Cs if they think the systems will perform – a CS should be issued if it is required under section 100 – if the systems aren't performing to the performance standards then the TA should issue a NTF as a separate matter.

5. **Progressively occupied buildings (1(e))** – Person who raised issue to explain and/or specify solution

6. ***Superfluous and irrelevant Building Act provisions - Other technical changes (1(f))*** The following need to be investigated:
   - Usefulness of compliance schedule statement (addressed if current performance BWoF implamented)
   - Prescribed a form for a Section 110 report – detailing the information required to ensure all necessary information is received
   - Form 12 and Form 12A compliance statement – alignment to the Act + make clear it can cover less than 12 months as long as all Form 12As cover the full period (if 'current performance BWoF not implemented)
   - Remove or alter listed ways of referencing IMR procedures as current examples (ie compliance documents) are not relevant as inspection procedures (section 103(2))
   - Clarity when a specified system is a building
   - When a building is altered/refurbished all or significant number of specified systems may be removed or modified – should the compliance schedule anniversary be able to start again?

Comment [BH1]: doubles up with 'a' above

Comment [BH2]: This is already covered by the obligations of a building owner under section 105 - if that is breached then a NTF can be issued under 164(2)(a)

Comment [BH3]: Suggest this is moved to be a general obligation of the building owner under section 105 - may need to clarify with legal whether a NTF can still be issued for this and if so how would you remedy the breach

- Building Act changes to bring the requirements in line with best practice. The purpose of these changes would allow TA's to make risk informed decisions that don't dictate them having to break the law in an attempt to do the right thing. (Brad to develop plan to identify all of the possible changes that are not specifically mentioned within the solution options below)
- Update the compliance schedule handbook to assist stakeholders in navigating their way around the BWoF process. This revision ideally needs to be written is such a way that it provides practical, common sense guidance as opposed to theoretical ideology, i.e. from the aspect of the user rather than the legislator. This among other things would include details on how to address vacant buildings/ change of use.

Problem Statement 2	**Issues identified/concerns that have helped form the problem statements**
Lack of certainty about what systems are specified systems, coupled with varying beliefs about what should be a specified system	a. No overall purpose statement or reason for including a system or feature as a specified system in regulations b. Systems defined as specified systems vs systems that are not do not always reflect sound and logical reasoning (i.e. some low risk systems are specified system but high risk systems are not) c. Confusion on requirements when a specified system appears to have ongoing requirements under different legislation d. Building owners are being incentivised to remove (or not install) specified systems due to ongoing compliance requirements e. Specified systems are not being included on compliance schedules f. Non-specified systems are being included on compliance schedules g. Integrated testing is often overlooked, resulting in the overall system not being assessed and not performing as designed

Solution Options

1. ***Purpose statement and specified system criteria*** **(2(a))** The inclusion of an overall purpose statement in Schedule 1 of the Building (Specified Systems, Change the Use and Earthquake Prone Buildings) Regulations or forming part of the definition of specified system in the Building Act. This could be accompanied by a set of criteria, whether in the Act, regulations or guidance (or purely for the regulator to determine the list of specified systems), that provide a practical way to determine if a given system or feature is a specified system.

2. ***Specified system review*** **(2(b)-(g))** Schedule 1 of the Building (Specified Systems, Change the Use and Earthquake Prone Buildings) Regulations should be reviewed based on the above purpose and criteria to determine what systems should be added, altered or removed. **(2(b)-(g)).** This in conjunction with;
    - Formatting the list of specified systems with adjacent scope and examples (similar to Schedule 2 for change of use in the same regulations). Could trial this as s175 guidance to refine it whilst changes to the BA 04 are being pursued. **(2(b)-(f))**
    - categorising specified systems and sub-systems based on the level of contribution to safety/health, risk and consequence of failure including investigating whether it would be beneficial to allow some low risk systems or situations to exist in a building without the need for a compliance schedule based on this

categorisation **(2(b)) – links to *1(a)(i)***

- grouping of specified systems under broad classifications (eg fire safety approach) with the requirement that any system or feature relating to that classification be listed on the compliance schedule with the requirement to give an overview of all the systems and how they work together under each classification **(2(b)&(g))**

2. Inclusion of a new 'catch-all" specified system similar to the system 44(1)(j) under the Building Act 1991 subject to the condition that the criteria discussed above are satisfied. **(2(b))**

3. Review existing cross over with other legislation e.g. Fire Service Act and Health and Safety at Work Act and determine the most appropriate place for ongoing inspection and maintenance of relevant systems **(2(c))**

4. Inclusion of a new specified system, "specified system interface" eg SS15(f) or in some way using the regulations to ensure interface between other specified systems is tested. This would ensure that the view of the buildings systems is holistic as opposed to linear where the individual components of the system are considered in isolation. **(2(g))**

Problem Statement 3	**Issues identified/concerns that have helped form the problem statements**
The consenting process is not operating as intended, and CCCs are being issued for buildings with significant construction defects	a. IQPs are being expected to manage construction defects which the BWoF system is not designed to fix these - there is a lack of clarity about how construction defects should be addressed. b. IQPs are refusing to issue a form 12A certificate because of construction defects c. When building defects are discovered post CCC the noncompliance continues, is fixed and then not consented, or addressed under a subsequent building consent (in which case the consenting process permits non-compliance (ANARP) or the BCA insists on the construction defects being fully rectified

Solution Options

1. ***Addressing through the construction process (3(a))*** The issue of specified system construction/installation defects fundamentally stems from issues during construction and should be addressed by the "consenting, construction monitoring and passive fire" working groups. In particular, strengthening the checking of the code/consent compliance of the specified system before the CCC is issued. However, it is acknowledged that it is unlikely any changes to the consenting and CCC process will eliminate this issue completely and as such the BWoF system needs to have in place a way to manage any construction defects as per the section below

2. ***Acknowledging and addressing through the BWoF system (links to PS6 and technical changes under PS1) (3(b)&(c))*** As per above, BWoF system needs to have in

place a way to manage any construction defects that 'slip though the cracks'. Investigate the concept of a 'current performance BWoF'. A BWoF that is issued based on the current performance of the specified system (as opposed to inspection and maintenance being carried out) would allow a BWoF to potentially be issue at any point once the specified systems are operational (eg before, after or at the point of CCC issue). Ideally a process involving the various IQP's needs to be undertaken pre issuing of CCC to ensure that the systems are adequately functioning. Such a process could be tailored to replace BCA conditions for producer statements and independent certification for the various systems. If robust this could add value to the consenting process through the identification of construction defects at a stage where they can be more easily rectified. Issue of a current performance BWoF at (or around) CCC issue would remove the need for a compliance schedule statement to be issued.

Problem Statement 4	**Issues identified/concerns that have helped form the problem statements**
Lack of IQP capability and no standardised policy or process for IQP registers	a. Regional IQP registers and different approaches between regions mean that IQPs who cross boundaries (including those with national portfolio's): i. may be able to be registered in one TA district but not another ii. have to allocate resources to meet different requirements iii. have to pay multiple costs There is a risk with the ever increasing BCA accreditation process that councils channel resources away from their TA functions leaving them under-resourced? d. Anecdotal evidence suggesting IQPS are issuing Form 12As without carrying out the inspection and maintenance procedures – this often occurs where one IQP refuses to issue a Form 12A for legitimate reasons and the owner just 'shops' for another IQP who will issue it

Solution Options

1. **Investigate options to support the creation of a single IQP register.** This could be voluntary or mandatory through the Building Act 2004. The national register framework could take many forms, for example:
   - At the most basic level - A national register 'list' only where every council/cluster approves IQPs in their own regions based on their own registration criteria and this goes into a national list of IQPs accepted by all TA's
   - The next step would be to have a common set of IQP registration criteria but where each council/cluster approves IQPs in their region. Once accepted the IQP would again be logged on a national register, thus allowing them to be accepted nationally.
   - Ideally the system could have a common set of IQP registration criteria, one place (eg online portal) for an IQP applications to be made, common set of systems/process and forms with the IQPs being assessed at a national level. This assessment methodology could take one of several forms and would likely have to have some QA process/ accreditation. Some options for a national assessment include:-
     - MBIE, directly of via contract
     - Industry bodies, for example a recognised peak body such as FPANZ

- Some form of TA amalgamation

Problem Statement 5	Issues identified/concerns that have helped form the problem statement:
Some industry participants do not understand their obligations and lack the capability to deal with those obligations	a. The lack of understanding leads to an increased likelihood of poor decision making and obligations not being fulfilled b. Building work relating to specified systems is sometimes not done through the consent process (Owners and trades) c. Building owners are not involved in the process increasing the likelihood of communication breakdown and limited accountability d. There is a lack of robust BWOF enforcement, which is sometimes influenced by external factors (TAs) e. Despite the CCC process, which should certify specified systems are performing, systems often don't perform from the outset (BCAs) f. IQPs and owners do not refer to the compliance schedule when inspecting and maintaining systems – sometimes carrying these out in accordance with the wrong procedures (e.g. the latest standard rather than the applicable one) (owners and IQPs) g. Building owners are often not aware of the requirement to engage IQP(s) until the first BWoF is due (by which time a legitimate BWoF cannot be issued)

Solution Options

1. ***Clarifying obligations (5(a)-(g))*** Although clear for owners in section 105 of the Building Act, it may be worthwhile reviewing and if necessary clarifying the roles of all parties in the process under the Building Act

2. ***Education and guidance (5(a)-(g))*** Production of guidance about obligations and processes tailored to specific groups and effective delivery of this (eg for owners, through lawyers and banks when a purchase of a building is made) seminars or roadshows providing presentation and workshops for the various parties Ideally implementation of education and guidance would come after any legislation changes are enacted

3. ***Enforcement (5(b),(d)&(g))*** Investigating the root cause of lack of use of enforcement and potential solutions (is it more than just local political issues

4. ***Unconsented building work (5(f))*** Addressed under PS3 solutions

5. ***Requirement for 'responsible person' (5(a),(e) and (g))*** The introduction of an owner nominated "responsible person" or a "responsible registered professional" if we go down the route of registration? This person would be responsible for ensuring that the BWoF process is successfully undertaken including liaising with the relevant IQP's and TA. However, this is not intended to remove overall responsibility from the building owner, rather require the building owner to better manage their responsibilities and therefore better protect the buildings occupants. This would require changes to the BA04 to amend an existing section or add a new one.

6. ***Online compliance schedules (5(g))*** Require and/or provide the means for compliance schedules to be uploaded to a national system where the relevant people (owners and IQPs) can access these.

7. ***Building owners not engaging IQPs (5(h))*** Addressed under PS6 solutions – 'current performance' BWoF

Problem Statement 6	**Issues identified/concerns that have helped form the problem statements**
The BWOF system places too much weight on previous compliance	a. Where compliance schedule procedures are missed the owner is put in a position where they either have no BWoF for at least a year or have a false or misleading BWoF b. Councils are allowing BWoF's to be issued otherwise in accordance with the Act – e.g. by 'accepting' reports in lieu of a Form 12A c. The mechanisms (BWoF and Form 12A) to achieve the purpose of the BWoF (section 108) do not align with the purpose itself. d. Missed inspections can occur when: i. An owner or IQP cannot get to (or into) the building to carry out the inspection ii. Building ownership changes hands iii. Tenant removed systems on vacating building iv. Previous owner took records v. Buildings are left unoccupied vi. Building work resulting in inability for BS to be inspected vii. Building owner can't afford

Solution Options

1. ***'Current performance' BWoF (6 – alternative 1)*** Investigate the concept of a 'current performance BWoF'. A BWoF that is issued based on the current performance of the specified systems (as opposed to inspection and maintenance being carried out). The requirement for ongoing inspection and maintenance under a compliance schedule and report on this would remain but the issue of the BWoF would not be reliant on full compliance with these requirements. If inspection and maintenance is not carried out to a sufficient level (as determined by the TA), the TA could issue infringement notices or notices to fix to ensure incentives remain for carrying out these procedures. This would require amendments to the Building Act 2004. The current performance BWoF could be issued at any point which would have the additional following benefits:
    - If issued with the CCC,
        - eliminate the need for a compliance schedule statement
        - ensure the owner is aware of obligations from the outset (rather than 12 months after the CCC when current BWoF is due)

- allow a building to be sold with a new BWoF – reducing the risk of a new owner having to deal with previous owners missed inspections

2. ***Removal of owners inspections (6 – alternative 2)*** The requirement for owners inspections under a compliance schedule could be removed and placed under general obligations under section 105. This may not require amendments to legislation.

3. ***Guidance on amending compliance to have contingency procedures (6 – alternative 3)*** Guidance could be issued (a draft already exists) on how to amend a compliance schedule to provide contingency procedures when the 'primary' inspection and maintenance procedures are not fully complied with. (this has already been presented to several councils and there is little appetite to amend all compliance schedules to incorporate these)

4. ***Contingency procedures (Building Act) (6 – alternative 4)*** The Building Act could be amended to allow TAs to apply discretion and allow a BWoF to be issued when the requirements of section 108 cannot be satisfied. This may could include the requirement that certain conditions are met, eg any missed procedures has not had a material effect on the specified systems, the specified systems currently perform to the performance standards

Problem Statement 7	**Issues identified/concerns that have helped form the problem statements**
The quality, accuracy and usefulness of compliance schedules is poor	a. Information about specified systems is often not be transferred from the consent/code compliance certificate process to the compliance schedule (issue expanded on below) b. No prescribed form to ensure all required information is captured and to ensure nationwide consistency c. Lack of knowledge about what is required on a compliance schedule and why d. Alternative solutions confusion on how to deal with these and how they are specified in the compliance schedule e. Lack of documentation on the specified systems in the building – what they are and where they are f. Building owners lack, lose or never receive critical information regarding fire design parameters and other building design features contributing to the building's compliance at the time of construction g. Interface testing is not covered by many compliance schedules h. Specified systems aren't being inspected and maintained correctly and completely i. Specified systems in the building aren't being included in the compliance schedule