From: Ed Claridge <ed.claridge@aucklandcouncil.govt.nz>
Sent: Thursday, 14 April 2016 6:08 p.m.
To: Michael Belsham
Cc: Mike Stannard
Subject: Clarification Request - NZBC Code Clauses B1 and C6
Attachments: Auckland Council B1 and C6.pdf

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Hi Michael,

Please find attached a letter outlining a request regarding clarification with Code Clauses C6 and B1.

Given the implications of what is being presented to Council for a number of proposed designs including for a number of very tall buidilngs we would request that the Ministry look into this matter at your earliest convinence.

Regards

Ed Claridge | Principal Fire Engineer
Ph (09) 353 9372 s 9(2)(a)
Auckland Council, 35 Graham Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Ministry of Business, Innovation & Employment
Level 5, 15 Stout Street,
Wellington 6143

14/04/2016

Attention: Michael Belsham

Dear Michael,

Clarification Request - NZBC Code Clauses B1 and C6

Auckland Council is currently in receipt of two building consent applications that have undertaken specific structural fire engineering analysis to remove the applied passive fire protection to the steel structure. Council is also in advanced discussions on a project involving a tall building in excess of 40 stories in height, in which specific fire engineering design has been proposed for the structure. In all cases the designer has presented arguments to suggest that the only applicable Code clause for the structural fire design is that of NZBC C6. When questioned about the need to demonstrate compliance with the structural code clauses and specifically B1, the designer presents the argument that C6 compliance can be undertaken in isolation and that in achieving compliance with C6, that this also demonstrates compliance with B1.

Statements made by the applicants include

> *"...compliance with clause C6 provides the fire requirements for a solution which is deemed to comply with clause B1 to the extent required..."*

and

> *"...Clause C6 is the appropriate specific code clause to cite for compliance with the more general clause B1."*

Council does not currently accept this position and has specific concerns with regards to issues such as post fire stability and how those requirements can be achieved by meeting only Clause C6. This is of particular concern when considering very tall buildings.

Council requests the Ministry to provide advice with regards to the relationship between Code Clauses B1 and C6, specifically the question;

> **Does demonstrating compliance with NZBC Clause C6 also demonstrate compliance with B1 without further assessment?**

Council would welcome further discussion on this matter and would also suggest that it would be appropriate for the Ministry to review the opinions expressed for the specific projects when considering the above question. This may also be of benefit to all parties to ensure that other associated aspects of code compliance are not overlooked. Council would be happy to supply further evidence should this be requested to support this request.

If you have any further queries regarding this matter, please don't hesitate to contact the undersigned.

Yours faithfully

Ed Claridge
Principle Fire Engineer
ed.claridge@aucklandcouncil.govt.nz
BUILDING CONTROL- 35 Graham Street, Auckland Central

From: Michael Belsham
Sent: Thursday, 14 April 2016 1:44 p.m.
To: Edwin Claridge
Subject: Practice Advisory - Fire Safety Tall Buildings.docx [UNCLASSIFIED]
Attachments: Practice Advisory - Fire Safety Tall Buildings.docx

Thought I'd let you see the guidance in its final draft form.

Fire Safety Design for Tall Buildings

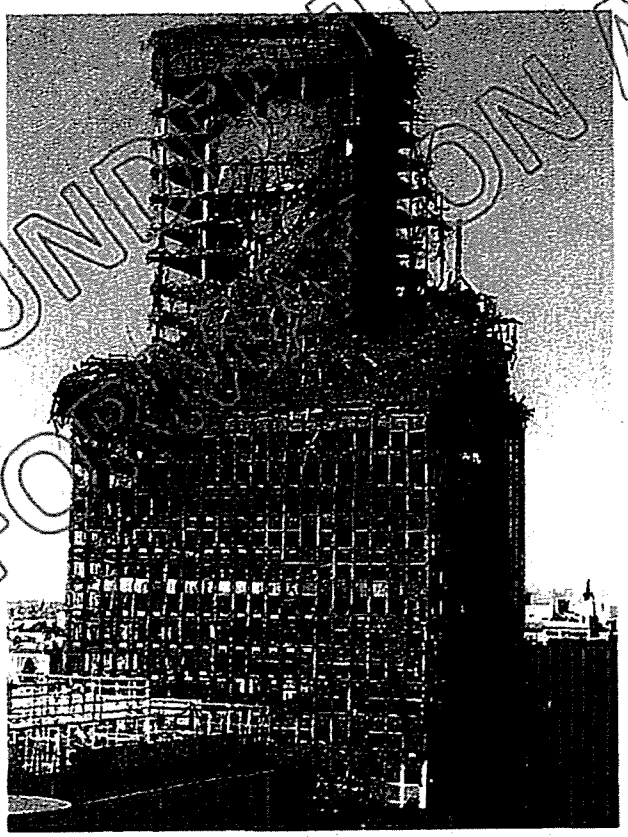
Good fire safety design recognises additional measures together with reliability and robustness of design features to allow for safe use of tall buildings.

Purpose

To highlight the additional considerations in fire safety design for tall buildings when using Acceptable Solutions, Verification Method C/VM2 or Specific Design.

Who's it for?

- Building owners or developers
- Architects
- Structural engineers
- Building consent authority
- Fire Engineers



Background

With the advent of high-rise developments in Auckland City the following guidance is provided to supplement the Verification Method C/VM2.

International best practice suggests that there is a range of specialist features that should be considered for high-rise buildings, most of which are not described in C/VM2. Designers and BCA's should consider the issues that are unique to tall buildings when applying C/VM2 such that the safety of the building has sufficient robustness to mitigate the fire risks of occupancy at height and to the surrounding community.

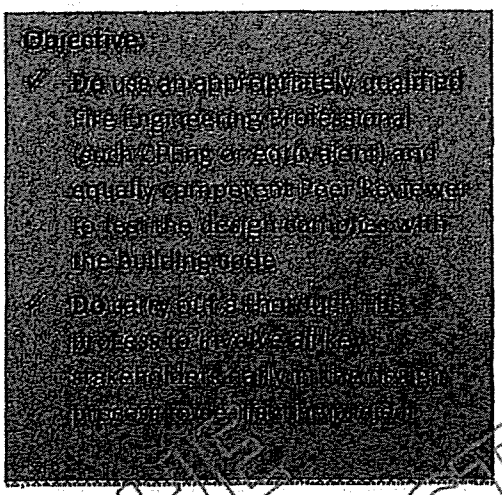
Recent tall building fires in Australia and UAE demonstrate potential rapid fire spread and need for robust and resilient buildings to safe guard the life of occupants, fire fighters and other property. These buildings require sufficient features to withstand extreme events and have reliable fire safety systems.

International Guidance

A useful reference for identifying appropriate fire safety measures for high-rise buildings is SFPE's Engineering Guide: Fire Safety for Very Tall Buildings. The guide can be purchased from the SFPE store website.

Recently updated draft amendment to BS9999 recognises the need for additional measures in tall buildings in the UK.

"However the increased demand on structural integrity, services, fire safety systems, means of fire-fighting and evacuation generated by buildings in excess of 50m high might mean that specific evaluation of all fire safety provisions is needed using a qualitative design review in accordance with BS 7974. This is to determine whether the recommendations of BS9999 are appropriate, or whether a full fire engineered solution is required"



Factors to Consider

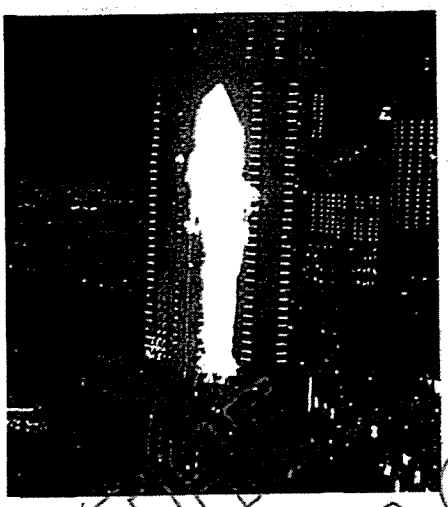
The fire safety issues and the corresponding measures to address them that must be considered in the fire designs for high-rise buildings include:

- **Fire Resistance and Robustness of Structure** - The fire resiliency of the structure for tall buildings warrants additional consideration due to the time required for occupant evacuation and firefighter operations, as well as the potential impact that local or global collapse could have on neighbouring property. While the C/VM2 provides for assessment of fire ratings, it is also required to demonstrate that the structural stability is not compromised by fire under Clause B1 the Building Code. It is therefore required that verification of structural stability due to fire as required in B1 be provided in addition to compliance with C/VM2.

- **Fire Fighting Access and Facilities** - Firefighting operations in tall buildings present a challenge for the Fire Service typically needs to move equipment vertically in the building. They often stage operations from a floor below the fire floor and utilize one or more stairwells to run hoses to the fire floor. They might need a lift to help evacuate occupants with disabilities, and they can sometimes have poor radio communications as a result of the building materials and construction. For these and related reasons, a variety of specific facilities to support fire service operations are often utilised, including protected / hardened lifts to facilitate firefighter access and operations, including evacuation of at risk populations. Redundant or more reliable water supplies, smoke protected lobbies, and so forth may need to be considered.

- **Phased/Defend in Place Evacuation Design** - A variety of evacuation strategies are possible for tall buildings, including staged evacuation, relocation and defend in place (refuge areas / floors), and full simultaneous evacuation. To account for the time required to evacuate part or all of the building, and / or the loss of a stairwell due to firefighting operations may require additional egress capacity (more stairs, more exit width), require use of refuge areas / floors, allow for use of lifts for evacuation by occupants, or some combination, to provide for reasonable means of assuring the occupants can reach a place of safety.

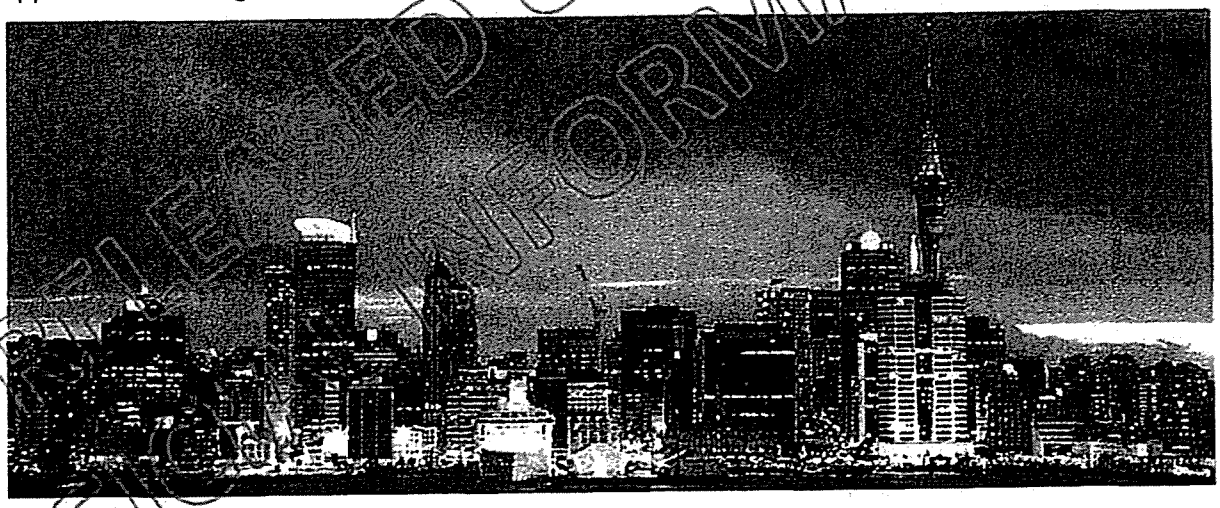
Reliability of systems becomes a concern where reliance on systems is critical to the safety strategy (e.g., emergency power if lifts are used by occupants and/or fire service, redundant firefighting water supplies / risers, etc.) and should be addressed. Likewise, systems to facilitate situation awareness are essential, for occupants and the fire service.



Fire spread by external façades which contain combustible materials (coatings, insulation, etc.) is a significant concern for very tall buildings, as has been demonstrated by fires in Australia, China, Dubai and elsewhere, and minimizing the potential for internal smoke and fire spread through passive and active means is essential to avoid such situations as the MGM Grand Hotel fire in Las Vegas and other tall building fire events.

Fire Engineering Brief (FEB)

The fire designs for high-rise should include a Fire Engineering Brief (FEB). The fire safety issues relating to high-rise buildings noted above should be addressed in the FEB process to feed into the design process. In deciding whether or not to approve a building consent application for a high-rise building, the BCA should have regard to whether the FEB process has addressed the fire safety issues above. This should inform the BCA's consideration whether there are 'reasonable grounds' to approve the building consent.



From: Michael Belsham
Sent: Wednesday, 13 April 2016 4:36 p.m.
To: 'Ed Claridge'
Subject: RE: Opinion for Risk Group SH [UNCLASSIFIED]

Stand your ground! He is clearly unsuitable to be involved.

The tall building comment is a concern. Please keep us informed. If the situation persists we will need to take action.

Just looking at s 9(2)(a) and tall buildings actually kick in at 10 stoerys....

Kind Regards,

Michael Belsham
FIRE ENGINEER

Building System Performance Branch | Building Resources & Markets
Ministry of Business, Innovation & Employment
Level 5, 15 Stout Street, PO Box 1473, Wellington 6143

BUILDING PERFORMANCE

From: Ed Claridge [mailto:ed.claridge@aucklandcouncil.govt.nz]
Sent: Wednesday, 13 April 2016 4:30 p.m.
To: Michael Belsham
Subject: RE: Opinion for Risk Group SH [UNCLASSIFIED]

You might be interested to know the outcome of that email I sent late on Monday.

Talk about fireworks and toys being thrown out of prams.

One of the responses included this

However I am interested as to s 9(2)(a) experience in the performance of high rise composite steel concrete buildings in fully developed fire that would lead them to appoint him to provide the regulatory review for the structural fire engineering components of the tower instead of the New Zealand expert in this area. From a Google search on him, which is admittedly not necessarily the definitive word, his experience and expertise in high rise buildings in fire looks similar to my own, with the exception that he does not appear to have been involved in studying the behaviour of composite floor systems in fire and development of design procedures for these floors to the extent that I have.

Notwithstanding the content, I have already gone back to them and questioned why a PS2 author who was supposed to be independent of the design is now questioning councils discussion about who we are using to undertake the regulatory review. He wasn't of course involved in the original distribution but quickly became involved☺

AND, I have already had a denial about the MBIE stance on tall buildings. Apparently we have no right to ask for more than the minimum of C/VM2 when it comes to tall buildings or mention the words 'best practice'

Regards

Ed Claridge | Principal Fire Engineer
Ph (09) 353 9372 | s 9(2)(a)
Auckland Council, 35 Graham Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Michael Belsham [mailto:Michael.Belsham@mbie.govt.nz]
Sent: Wednesday, 13 April 2016 3:59 p.m.
To: Ed Claridge
Subject: RE: Opinion for Risk Group SH [UNCLASSIFIED]

Hmm your probably right however we are 'obliged' to offer the option of an alternative path...

Kind Regards.

Michael Belsham
FIRE ENGINEER

Building System Performance Branch | Building Resources & Markets
Ministry of Business, Innovation & Employment
Level 5, 15 Stout Street, PO Box 1473, Wellington 6143

BUILDING PERFORMANCE

From: Ed Claridge [mailto:ed.claridge@aucklandcouncil.govt.nz]
Sent: Wednesday, 13 April 2016 3:54 p.m.
To: Michael Belsham
Subject: RE: Opinion for Risk Group SH [UNCLASSIFIED]

Thanks, hopefully this is now being sorted. A good example of 4 different potential outcomes and 4 different views being expressed – perhaps!

As for the alternative solution part – that wouldn't have helped here?

Regards

Ed Claridge | Principal Fire Engineer
Ph (09) 353 9372 | s 9(2)(a)
Auckland Council, 35 Graham Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Michael Belsham [mailto:Michael.Belsham@mbie.govt.nz]
Sent: Tuesday, 12 April 2016 8:26 a.m.
To: s 9(2)(a)
Subject: Re: Opinion for Risk Group SH [UNCLASSIFIED]

s 9(2)(a)

The documents do not restrict household unit to one level the figure is generic only.

C\AS1 does not regard any management systems as part of design as can't rely on door being kept closed. This would need to be presented as an alternative solution.

Regards,

Michael Belsham
Fire Engineer

On 12/04/2016, at 08:12, s 9(2)(a) wrote:

> Hello Michael, Thanks for the below,
> But the big thing the council officer is having trouble with is that C/AS1 Figure 1.1 only shows the household units are single storey/level, so he interprets that you cannot have a two level household unit above a single level household unit. I have shown him the comments from the commentary, (As per e-mail chain below) where it states that a household unit can have multi levels but he always comes back to figure 1.1.
>
> Can you please comment on figure 1.1 and if you are permitted to have a multi-level household unit above another household unit, as per designed in this project.
>
> I must point out that if the two household units where occupied by two separate family units the door between the units would be closed and locked for security reasons, then there would be no interdependence between the units. As stated in the scope in the report at first a family member will be living in the second unit, (Granny Flat), but the home owner is future proofing the building by making two separate household unit so in the future two separate family units can live side by side, one above the other with the door locked.
>
> Regards
> s 9(2)(a)

From: Michael Belsham [mailto:Michael.Belsham@mbie.govt.nz]
Sent: Friday, 8 April 2016 5:06 p.m.
To: s 9(2)(a)
Cc: Dennis Monastra <Dennis.Monastra@mbie.govt.nz>
Subject: RE: Opinion for Risk Group SH [UNCLASSIFIED]

s 9(2)(a)

The issue here is the connection between the two units. This creates an interdependence between the two units i.e. to keep the door closed.

I'd note 2.2.10 of C/AS2. The building is low rise however I don't believe there is true independence between the two units. If the fire door was removed then the building would be one household unit else C/AS2 should be applied.

2.2.10 For low-rise *buildings* that have no more than two levels (one *household unit* above another), and where each *household unit* has its own *escape route* that is independent of all other *household units*, and that contain only *risk group* SM, then the requirements of *risk group* SH shall apply (see C/AS1).

Kind Regards.

Michael Belsham
FIRE ENGINEER

Building System Performance Branch | Building Resources & Markets
Ministry of Business, Innovation & Employment
Level 5, 15 Stout Street, PO Box 1473, Wellington 6143

<image004.jpg>

From: s 9(2)(a)
Sent: Friday, 8 April 2016 8:28 a.m.
To: Michael Belsham
Cc: info@mbie.govt.nz
Subject: FW: Opinion for Risk Group SH

Hello Michael, The attached design has been presented to Auckland Council for building consent and the officer is debating that the risk group should be SM, where I believe that this design fits with a SH risk group.

Can you please read the attached fire report and give me your opinion on the risk group for this building.

As stated in the scope of the report the door connecting the two apartments is so the family member who will be living in the new apartment can still have direct connect with their family. So at first this is a granny flat and then at a later date when the family member passes on the flat will be

rented out and the door will be locked to become two separate household units with separate independent means of escape.

I believe that the commentary clearly states that you can have one household unit above another and each household unit can be more than one level, as per below.
As you can see in the plans at the rear of the fire report each household unit has its own independent means of escape.

<image005.png>

Thank you for your time and I may looking forward to hearing from you.

Regards

s 9(2)(a)

www.govt.nz - your guide to finding and using New Zealand government services

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From: Ed Claridge <ed.claridge@aucklandcouncil.govt.nz>
Sent: Tuesday, 11 April 2017 2:12 p.m.
To: John Gardiner; Michael Belsham
Cc: Brian Meacham
Subject: Tall buildings and C/VM2 compliance

Follow Up Flag: Follow up
Flag Status: Flagged

Dear all,

It has now been over a year since we raised the concerns regarding the suitability of C/VM2 for tall buildings. A number of high profile designs are reaching the end of the design phases and are currently working through the consent process. For many of these designs the Fire Engineering Brief process has provided a satisfactory mechanism of working through a number of the deficiencies of C/VM2, except in the instances where the FEB process has been abandoned. The reason for the email is to seek confirmation of the advice MBIE provided to a number of designers around the use of C/VM2 designs for tall buildings. I recall that there was a meeting on or around the 16th march 2016 involving a number of designers that were at that time involved with tall building designs to address the inadequacies of the compliance document.

Would you be able to confirm that this meeting involved Tony Enright and also what instruction/caution was given with regards to the use of C/VM2 as a compliance pathway for the design of a tall building? In currently dealing with the consent approval of a 50plus storey design featuring only a single egress route at the top of the building, the response being provided to the use of the MBIE Practice Advisory 18 is as follows:

"Pursuant to S175(2)(a) of the Act, MBIE Practice Advisory 18 is only a guide. Furthermore, MBIE Practice Advisory 18 was published on 6 July 2016. Detailed design for the project ended in December 2015 i.e. seven months prior to the guide."

We would therefore like to understand what the expectations of MBIE were and how these were conveyed so that we can raise these with the relevant design/project management team as appropriate and where relevant to the concerns now being identified during consent processing.

Regards

Ed Claridge | Principal Fire Engineer
Ph (09) 353 9372 | s 9(2)(a)
Auckland Council, 35 Graham Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

15

Out of Scope

From: Michael Belsham
Sent: Friday, 8 April 2016 1:21 p.m.
To: Edwin Claridge
Subject: FW: Fire Engineering Brief Guidance, Fire Engineering Brief FAQ [UNCLASSIFIED]
Attachments: AC2318 Fire protection policy EC Draft 4 - Meacham Comments.pdf

Ed,

Please find attached Brian's comments on the policy. I'll have mine with me too to go through on Monday.

Kind Regards,

Michael Belsham
FIRE ENGINEER
Building System Performance Branch | Building Resources & Markets Ministry of Business, Innovation & Employment Level 5, 15 Stout Street, PO Box 1473, Wellington 6143

-----Original Message-----
From: Brian Meacham
Sent: Friday, 8 April 2016 9:59 a.m.
To: Michael Belsham
Cc: Chris Rutledge; Mike Cox
Subject: RE: Fire Engineering Brief Guidance, Fire Engineering Brief FAQ [UNCLASSIFIED]

Michael,

Attached is Ed's draft with my comments. One question is whether he should add reference to the need for a qualified structural engineer to assure compliance with C6 and B1.

Regards,
Brian

Auckland Council

Fire Protection Policy

Auckland Council Building Control | Private Bag 92300, Auckland 1142 |
www.aucklandcouncil.govt.nz | Ph 09 301 0101

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Document Control

Version 1 approved 27 June 2013
Version 2 approved 09 August 2013
Version 3 approved 27 September 2013
Version 4 approved 16 April 2014 (changes to reflect MBIE guidance on Means of Escape)
Version 5 approved 08 October 2014 (update requirements for NZFS)
Version 6 DRAFT XX April 2016 (general update incorporating to reflect MBIE guidance on FEB)

Purpose

This document provides guidance for building owners, designers and reviewers in regards to the Council's role in consenting fire designs. It is intended that there is an understanding of Council's expectations in respect to the process involved for fire designs.

The following documents must be read in conjunction with this policy

- Auckland Council's Producer Statement Policy AC2301 if producer statements are offered as part of the design process; and
- MBIE Guidance requesting information about means of escape from fire for existing buildings (published December 2013)

Background

Council is responsible under the Building Act to issue building consents for building work that complies with the building code and ensuring that all building work has been carried out in accordance with the building consent for that work. To enable Council to issue a building consent the application must be accompanied by plans and specifications that are final and complete. An application must also be accompanied by any other information that the building consent authority reasonably requires.

For new and existing buildings fire designs need to establish compliance with the Building Act and meet the Building Code to the extent required by the Act. To meet Councils expectations and requirements in the consent process, the fire design will need to follow recognised processes and guidance which includes documents published under Section 175 of the Building Act, Ministry guidance and Council Policies.

Documentation

The standard and quality of documentation to accompany a building consent application should conform with Practice Note 22 as published by the Institute of Professional Engineers (IPENZ) and the Ministry of Business Innovation and Employment (MBIE), as guidance under s.175 of the Building Act 2004.

Excerpt from Practice Note 22:

> *"When the fire designer produces documentation for the appropriate discipline to incorporate into their building consent/construction documents, the fire designer and other disciplines share responsibility for correct interpretation and accurate representation in the other disciplines' documents. Primary responsibility for co-ordinating the design correctly rests with the consultants for the other design disciplines. However, it is expected that the building consent documents (e.g. drawings, wall, door and window schedules, and surface finish schedules) will be referred back to the fire designer who will undertake a secondary review of the documents for compliance with the fire engineering design."*

All designs shall be accompanied with evidence or confirmation that coordination has taken place to provide the Council with confidence that the design documentation submitted for consent has correctly and fully incorporated the relevant features of the fire engineering design into the drawings and specifications of the relevant discipline. A PN22 coordination statement or other suitable evidence would usually be provided by the fire designer in conjunction with evidence from other disciplines but for non-complex work can be provided by other appropriate parties.

Overview

Compliance with the Building Code can be achieved by following one of two approved design solutions; the Acceptable Solutions (AS) or the Verification Method (C/VM2). Where neither of these solutions is appropriate, there is a third option, specific design, i.e. a design that does not follow either the AS or C/VM2 in its entirety.

1. Design using the Acceptable Solutions

For both **NEW BUILDINGS** a design based on the Acceptable Solutions, must fully comply with all of the requirements of the Acceptable Solutions.

It cannot incorporate aspects of the verification method to demonstrate compliance with the New Zealand Building Code (the Code), except where the only non-compliance relates to the prevention of horizontal spread of fire or calculation of fire duration. In this instance, another methodology may be used. If this departure is performed or reviewed by a person listed on the Auckland Council Producer Statement Register and a PS1 or PS2 has been provided for this aspect only, then the design can be lodged as an Acceptable Solution and checked for compliance by Council staff. Where computer modelling or other calculation method is used for horizontal fire spread or fire duration a PS2 shall also be provided. This PS2 need only cover aspects of the design related to horizontal spread of fire and fire duration calculation.

When submitting a design using the Acceptable Solutions Council will undertake a regulatory review, request a PS1 or request a PS2.

2. Design using the Verification Method

The Verification Method (C/VM2) provides for 10 design scenarios; each scenario must be considered and an analysis undertaken, where appropriate, in order to demonstrate compliance with the Code clauses for Protection from Fire.

It is permissible to demonstrate compliance for parts of a building or for some design scenarios through compliance with Acceptable Solution requirements.

When using C/VM2 the designer must have the competence to perform the work, e.g. there is an expectation that an experienced and suitably qualified fire engineer perform this work.

Designs undertaken in accordance with C/VM2 shall be subject to the Fire Engineering Brief process and the design approach 'agreed in principle' by the Council.

Notes:

- Flowcharts for each of the 10 design scenarios are no longer present in the current Verification Method and as such are not required to be provided in support of a FEB or design. However, they may remain a useful communication tool to describe the applicable design route for each design scenario
- All C/VM2 designs must be completed and peer reviewed by a Council approved engineer. Council approval of the specific reviewing engineer is obtained as part of the FEB process

Refer to **Extent of Documentation**

The extent and level of documentation provided to support a FEB will be dependent on the specific nature of the project, the assessment methodology and approaches proposed. A FEB can range from a simple email or short letter outlining a minor deviation or to a substantial process and documentation requirements depending on the projects complexity. Generally most FEB's will utilise the C/VM2 design methodology requiring sufficient documentation to record and agree the location of

the proposed design fires and other necessary C/VM2 criteria. Typically this would include a report and drawings.

Good quality documentation aids the understanding of an FEB and will help to reduce the amount of feedback and correspondence generated between stakeholders.

- **Fire engineering brief (FEB) process** section for further details

3. Specific Design

Specific designs may be used where a building is not designed using either the Acceptable Solutions or C/VM2. All applications involving specific designs are subject to the FEB process.

Where designs fall outside of the scope of the Acceptable Solutions or C/VM2 and the designer wishes to use parts of either the Acceptable Solutions or C/VM2 as part of the proposed design it is strongly recommended that designers communicate this intent with the Council prior to lodgement of the Fire Engineering Brief.

When using specific design a suitably qualified and experienced fire engineer must perform the work and the design reviewed by an engineer listed on the Auckland Council Producer Statement Register.

Fire Engineering Brief (FEB)
The FEB is a documented process that defines the scope of work for a fire engineering analysis and the basis of the analysis. The purpose of this process is to identify and discuss at a high-level, the fire-safety design, proposed methodology, input parameters, acceptance criteria and any other relevant aspect of the design that may pose challenges to the approvals process.

The Ministry of Business, Innovation and Employment's has produced guidance on the FEB that should be read in conjunction with this Policy.

Fire engineers should refer to the International Fire Engineering Guidelines or other recognised standards[3] for further information regarding the content of an FEB.

Where a trial or preliminary design is presented within an FEB document or a calculation is provided the correctness or result will not be checked and/or approved prior to building consent stage. Trial designs provide a useful benchmark to understanding the likely outcome but will not be subject to prior approval before consent stage.

Extent of Documentation
The extent and level of documentation provided to support a FEB will be dependent on the specific nature of the project, the assessment methodology and approaches proposed. A FEB can range from a simple email or short letter outlining a minor deviation or to a substantial process and documentation requirements depending on the projects complexity. Generally most FEB's will utilise the C/VM2 design methodology requiring sufficient documentation to record and agree the location of the proposed design fires and other necessary C/VM2 criteria. Typically this would include a report and drawings.

Good quality documentation aids the understanding of an FEB and will help to reduce the amount of feedback and correspondence generated between stakeholders.

Fire engineering brief (FEB) process
The applicant must complete the online form to ensure that Council are aware of the proposal and to commence the FEB process. Council officers will review the FEB documentation to determine whether sufficient information has been provided to commence the process and provide initial feedback. If documentation is adequate, Council officers will then consider whether a meeting is required and confirm their level of involvement with the FEB going forward.

- Refer to our website to locate the on-line form *AC1027 Application to commence FEB process*
- On-line applications are automatically sent to the FEB team via email
- Council represent their own interests during the FEB process regardless of whether a peer reviewer has been engaged
- All relevant stakeholders must be copied into any communications

Note: all information on the online form must be completed; if documentation is not available or applicable, applicants must note this on the form. If documentation is available, it must be attached and submitted with the online application.

Where confidence is obtained via production of good quality documentation and peer review involvement, the extent of Council involvement can be limited. Once Council has been satisfied that their involvement in the process can be reduced, this will be communicated to the designer and wider stakeholder team. Council's expectations regarding closing out the FEB process and the expectations

[3] BS 7974 Application of fire safety engineering principles to the design of buildings ISO/TR 13387-1:1999 Fire safety engineering Part 1

of the peer reviewer to enable the Council to accept the FEB and any PS2 in good faith at the time of consent will also then be confirmed.

Meeting location
If a meeting is required, it will normally be held at 35 Graham Street, Auckland; alternatively, meetings may be held elsewhere by mutual agreement. If a meeting is not necessary, the FEB may be conducted via email or other agreed process

If a meeting proceeds, it is preferable that all stakeholders attend; however, there is no requirement for them to do so. Stakeholders are welcome to attend the meeting via telephone conferencing if they are unable to attend the meeting.

Stakeholders include but are not limited to:

- Council
- NZ Fire Service
- Fire engineer
- Architect or designer
- Building owner
- Specialists (e.g. emergency lighting, warning systems, etc.)
- Peer reviewer (means a professional engineer experienced in fire design and listed on Auckland Councils Producer Statement Register)
- Insurance representative
- Building management
- Tenant

Fees
Fees for Council's participation in the FEB process are set according to Auckland Council's Schedule of Fees and Charges and are a set fee based on a one-hour meeting; charged as per the fee for a pre-application meeting. If the meeting extends beyond one hour, additional fees are payable and are based on the hourly rate chargeable for the staff member in attendance. The cost of reviewing the application prior to the meeting is also payable and based on an hourly rate for the staff member concerned.

Section 112 Alterations to Existing Buildings

Section 112.1
A building consent authority (BCA) must not grant a building consent for the alteration of an existing building, or part of an existing building, unless the BCA is satisfied that, after the alteration, the building will

a) comply as is reasonably practicable with the provisions of the building code that relate to
   i. means of escape from fire; **AND**
   ii. access and facilities for persons with disabilities (if this is a requirement in terms of s.118); **AND**

b)
   i. if it complied with the other provisions of the Building Code immediately before the building work began, continue to comply with those provisions; or
   ii. if it did not comply with the other provisions of the Building Code immediately before the building work began, continue to comply at least to the same extent as it did then comply

Section 112.2
Despite subsection (1), a territorial authority (TA) may, by written notice to the owner of a building,, allow the alteration of an existing building, or part of an existing building, without complying with the provisions of the Building Code specified by the TA, if the TA is satisfied that

a) if the building work were required to comply with the relevant provisions of the Building Code, the alteration would not take place; **AND**
b) the alteration will result in improvements to attributes of the building that relate to
   iii. means of escape from fire (refer next section); **OR**
   iv. access and facilities for persons with disabilities; **AND**
c) the improvements referred to in paragraph (b) outweigh any detriment that is likely to arise as a result of the building not complying with the relevant provisions of the Building Code

An alteration means any building work to re-build, re-erect, repair, enlarge or extend the building. For alterations to existing buildings, the designer must consider all of the building, not just the new building work and provide an assessment to Council.

In addition to the assessment for means of escape from fire – refer next section, access and facilities for disabled persons must also comply as near as is reasonably practicable. Other code clauses must perform no worse than they did before the alteration for s.112 (1).

The information collected is best summarised in a table (gap analysis), which must describe existing features in the building; current code requirements; and options to upgrade the level of compliance (where there is a deficiency). The emphasis should be on upgrading the means of escape from fire and access and facilities rather than finding reasons not to upgrade.

If the work does not need a building consent then there is no need to consider s.112; however, if a building consent is required the assessment should be rigorous and thorough.

All **new building work** must fully comply with the Code.

For further guidance, refer to

- Practice Note *AC2226 s.112 and applying the term as near as reasonably practicable to existing buildings* on our website; or
- the Ministry of Business Innovation and Employment's website www.mbie.govt.nz

Assessment of the Means of Escape from Fire for Existing Buildings

When an alteration to an existing building, change of use or subdivision is proposed, **an assessment of the means of escape from fire for the existing building** must be performed.

Council has adopted guidance information published by MBIE entitled 'Requesting Information about Means of Escape from Fire'. This guidance provides the approach for assessing the Means of Escape from Fire for existing buildings. It includes a mechanism for recommending the level of assessment a building requires; it is an analysis of the risk associated with the building to determine the shape and form of the assessment.

Score	Risk profile	Type of assessment required
0-11	Low	Statement of proposed changes
12-19	Medium	Gap analysis
20+	High	Full assessment

The assessment must be updated every time that work requiring a building consent is undertaken on the building to provide a living document about the buildings history. For some buildings a 'Base Building Assessment' may be necessary to establish the level of compliance the existing building achieves when assessed against the Building Code. Such assessments can be used to support alterations and fit outs, where it can be shown that the proposed work does not negatively impact the current buildings levels of compliance. Base building assessments will also need to be maintained and remain relevant to the proposed building work. Depending on the age and the number and significance of consents that have relied upon the base Building assessment, Council may determine that such an assessment be revisited and updated to reflect the consent history of the building.

Once the building has been assessed, the designer can commence the design to establish compliance with C1-C6. Ideally as well as written reports, the assessment will include marked drawings, which provide sufficient pictorial information to identify key systems and locations.

Notes:

- The assessment must be updated whenever future alterations occur
- In addition to the requirements for means of escape from fire, options to upgrade the level of compliance for other code clauses must be provided as per the requirements of s.112
- All new building work must fully comply with the Code unless a waiver or modification is approved

Applying the term as near as is reasonably practicable.

Sections 112,115 and 116 of the Building Act require that the certain provisions of the building code are shown to comply on an 'as nearly as is reasonably practicable' basis also known as ANARP. Council Practice Note AC2226 has been developed to provide a clear understanding of the application of s.112 of the Building Act 2004 and in particular how to apply the term reasonable and practicable. Council advice can also be sought for specific applications as part of a pre-application meeting.

ASSESSMENT undertaken prior to carrying out work on a building

An owner may choose to get an assessment of their building, well before any building work is proposed. This provides the owner with information to support them in making a decision at to whether their building needs to be upgraded or not and will be alerted to any potential risks or issues.

A copy of the assessment may be placed on Council's property file for future reference. Building consent may also be applied for if the assessment is to be relied upon for future consent applications and for example it is to be treated as the 'base building' fire report.

If as a result of the assessment, the building is identified as being dangerous, Council will issue a notice under s.124 of the Building Act.

Sites with multiple buildings

Where new building work is proposed on a single building, which is part of a group of buildings, the assessment is only required on the building, which is the subject of the new building work; for example:

- A gymnasium is being altered in a school, the building assessment / fire report only needs to relate to the gymnasium (in this scenario, the gymnasium must be freestanding and not attached to other buildings or linked to specified systems within the complex).

The designer must establish whether any specified systems (within the existing building) are integrated into other buildings in the complex. If this is the case, information about these specified systems must be included as part of the assessment.

Section 115 Change of Use

Every building or part of a building has a 'use' that has been categorised by law. For the purposes of the application of s.115 of the Building Act, that use is specified in Schedule 2 of the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 (the Regulations).

Schedule 2 describes the uses for all or parts of buildings into four broad activity groups:

- crowd activities
- sleeping activities
- working, business or storage activities, and
- intermittent activities

A change of use occurs when:

- a building's (or part of a building's) use, as defined in the Regulations, changes from one use (the old use) to another (the new use), **and**
- the new use has more onerous or additional Building Code requirements than the old use[4]

To demonstrate compliance with s.115 of the Building Act 2004, an assessment of the means of escape from fire for the whole of the building must be provided.

In addition to the means of escape from fire, protection of other property, sanitary facilities, structural performance and fire-rating performance must also be assessed to as near as is reasonably practicable.

The requirements for building alterations to existing buildings are set out in s.112 of the Building Act. However, the requirements of s.115 are more onerous. Therefore, if both a change of use and alterations are going to occur, the requirements of s.115 will usually apply and take precedence over s.112.

For further guidance, refer to

- Practice Note *AC2205 Change of Use* on our website; or
- the Ministry of Business Innovation and Employment's publication, Change of Use, A guide for Christchurch City Council, which can be found on their website at http://www.building.govt.nz/userfiles/file/publications/building/building-act/change-of-use-guidance-cco.pdf

[4] Code requirements for the new use of a building maybe more onerous than the old use if there is a greater risk to life or the fire hazard is increased

Schedule 1: Exemption 10 Interior non-residential alterations

Schedule 1 provides for a number of exemptions for building work that does not require a building consent. Exemption 10 allows for non-residential buildings to be altered internally, without the need for a building consent.

Note: a building consent is required if the proposed building work reduces compliance with the Building Code of the following aspects.

- Means of escape from fire
- Protection of other property
- Sanitary facilities
- Structural performance
- Fire-rating performance
- Access and facilities for people with disabilities; or
- Modifying or affecting any specified systems

An owner may choose to put a record of the exempt work on file for record-keeping purposes.

- If an owner chooses to put a record of exempt building work on file, they should use application form *AC2111 Record of exempt building work*; this form is on our website.
- There is a small charge to cover the cost of scanning this record; Council do not review the application and merely place the record on file.
- No letters or documents are issued acknowledging acceptance of this record; however, if required a date stamped copy of the application form can be retained by the owner as a record of Council receiving this information.
- Detailed plans should accompany the application.

At present, there is very little guidance available to Council as to what constitutes minor work, we are therefore reliant on guidance information[5] published by the MBIE. Regardless of whether a building consent is required, all building work, must comply with the Building Code.

Some situations where a building consent is not required:-

- The owner of a retail store decides to do an internal fit out that includes new linings and finishes, shelving, clothes racks and simple low partitions. The escape routes are not reduced (e.g., total open paths stay the same) and the building work does not affect any existing specified systems.

- A restaurant undergoes an alteration that includes redecorating and new seating areas. The work does not affect escape routes (e.g., total open paths stay the same) and the building work does not affect any existing specified systems.

- Installing a window in a non-load bearing partition between a factory storage room and hallway to allow natural light into the hallway

- Replacing linings and finishes within a retail shop where the work does not affect compliance with any fire-rating requirements and surface finishes comply with the Building Code

[5] Ministry of Business, Innovation and Employment. GUIDANCE; Building work that does not require a building consent. . **Third edition 2014**

- Removing a sink and a wash hand basin from a disused cleaners' cupboard in a shopping complex, where the removal of the hand basin does not reduce compliance with Building Code provisions relating to sanitary facilities, as other fully complying facilities are available nearby in the complex.
    - *Any alteration work to sanitary plumbing must be carried out in accordance with the Plumbers, Gasfitters, and Drainlayers Act 2006*

Installing new walls and partitions (even non-load bearing ones) close to sprinkler heads may reduce the effectiveness and compliance of the sprinklers, which are part of a specified system. Installing new walls or partitions may also increase total open paths. Work of this nature will necessitate a building consent; however, where the work is considered to be relatively minor, there is provision under Schedule 1 clause 2 for Council to grant an exemption (refer next section).

Schedule 1: Exemption 2

Exemption 2 provides Council with the ability to exempt building work from the requirement for a building consent.

If an owner wishes to apply for an exemption, they should use application form *AC2119 Application to request an exemption under exemption 2 of Schedule 1 of the Building Act.* The same level of information required for a building consent is required in support of the application together with the justification for seeking an exemption.

- a statement from an approved fire engineer must be provided confirming that the building work has no effect or does not reduce the compliance of any existing fire safety features together with a list of fire safety features and what will change as a result of the building work
- if an exemption is granted, an assessment of s.112 is not required

Council will review the application and grant or refuse the request accordingly; a deposit is payable at lodgement. The full cost of reviewing and determining whether an exemption is viable is based on an hourly rate. Please refer to the fee schedule for further information about fees and charges.

Examples of situations where an exemption maybe considered[6]

- A shop within a mall is changing hands and the new tenant wants to install a new shop front, shelving and partitions. The replacement of the shop front involves a structural design for the new glass; the work does not impact on the superstructure of the existing building (structural or otherwise) and has been designed by a chartered professional engineer who has supplied a PS1

- An office on level nine of a 14-storey office / retail block has a need for additional offices. The space underwent a significant refurbishment within the last three years, which was consented. The tenants needs have changed and additional offices are required within the existing fire cell. The work involves reconfiguring three of the existing offices to create five smaller offices. The location of the new walls will have an impact on the location of sprinkler heads, which will need to be moved / replaced; the work on the system does not affect flow rates and has no effect on egress routes

[6] There is guidance available at http://www.building.govt.nz/UserFiles/File/Publications/Building/Technical-reviews/2012-wellington-technical-review.pdf

New Zealand Fire Service (NZFS)

The NZFS have two roles where fire designs are involved; firstly, they are a stakeholder in the Fire engineering brief (FEB) process and secondly Council are required to send NZFS certain applications for their comment if they so choose under s.47 of the Building Act 2004. The Fire Service also approve aspects of the design in respect of fire fighting facilities and as such should be consulted prior to consent stage where approval is required for any fire fighting facilities to be provided.

1. FEB process – engineers@fire.org.nz

NZFS provide feedback on

- the content of the FEB; and
- the suitability of fire fighting facilities

The table below summarises the application types that require input from the NZFS

Application type	Acceptable Solutions	C/VM2	Specific design
New building	No	FEB Input	Yes
Alteration to existing building	No	FEB Input	Yes
Change of use	No	FEB Input	Yes
Subdivision	No	FEB Input	Yes

As part of the FEB process it is expected that Fire Fighting Facilities Checklist be completed as required by the NZFS. Further information can be found on the NZFS website[7].

2. Building consents that must be sent to the NZFS Fire Engineering Unit for comment.

Section 46 of the Building Act specifies that certain applications for building consent must be provided to the NZFS for comment. The New Zealand Gazette Notice (No. 49) published on 3rd May 2012 defines the types of application that must be sent to NZFS.

The NZFS have 10-working days to review these applications and provide a memorandum to the BCA. This timeframe sits within the 20-working day statutory timeframe that the BCA has to process an application for building consent. To expedite this process, the Fire Engineer responsible for the fire design must state in their report if the building is required to be reviewed by the FEU.

Designs for building consent must be submitted to the NZFS when both Criteria 1 and Criteria 2 below are met.

CRITERIA 1 - Building type

Buildings (or parts of buildings) used for:

- gathering together of 100 or more people (for any purpose)
- employment for 10 or more people
- accommodation for 6 or more people (other than in 3 or fewer household units)
- hazardous substances in quantities exceeding prescribed minimum amounts
- early childhood facilities
- nursing, medical, or geriatric care
- specialised care for persons with disabilities
- lawful detention of people (not home or community detention)

[7] http://fire.org.nz/business-fire-safety/building-design/pages/building-act-2004.html

The following buildings are excluded:

- crown buildings that are specified by the Minister in the Gazette
- premises of diplomatic missions
- single household units
- buildings in which every fire-cell is a household unit separated vertically from the other fire-cells, and each fire-cell has independent and direct egress to a safe place outside the building
- an internal fit-out, unless the fit-out relates to a change of use outbuildings or ancillary buildings

CRITERIA 2 – Designs / building work type

- Designs for new buildings using alternative solutions (not using an Acceptable Solution or Verification Method) to comply with any of the following Building Code clauses:
  - C1-C6 Protection from Fire (or C1-C4 Fire Safety, until 9 April 2013)
  - D1 Access routes
  - F6 Visibility in escape routes
  - F8 Signs, or
- When waivers or modifications to any of the above Building Code clauses are required, or
- Alterations, change of use or subdivisions that have a more than minor effect on fire safety systems

Example

- Criteria 1 + Criteria 2 = FEU

The table below summarises the application types that must be sent to the NZFS (refer to the Ministry of Business Innovation and Employment's Building Controls Update #132 for a more detailed explanation)

Application type	Acceptable Solutions	C/VM2	Specific design
New building	No	No	Yes
Alteration to existing building[8]	Only if the design has more than a minor effect on a fire safety system	Only if the design has more than a minor effect on a fire safety system	Yes
Change of use			Yes
Subdivision			Yes

The Council may also, at their discretion, seek NZFS input as part of the Consent review process.

[8] The reference to an alteration in Item 1(c) of the Gazette Notice means that building consent applications for alterations that effect fire safety systems must be reviewed by the NZFS

Risk Groups and Uses

Risk groups in C/AS1-7 of the Protection from Fire clauses are used to establish risk in terms of fire safety measures; they **only** apply to the Acceptable Solutions.

Risk group	Description
SH	Houses and multi-unit dwellings with no more than one unit above another
SM	Other residences and accommodation
SI	Places of care or detention
CA	Places where people undertake activities other than working
WB	Places where people work
WS	Places where people work with higher risk / storage
VP	Places for cars, trucks, boats etc.

Uses relate to the use(s) of the building and whether a change of use has occurred; they are in Schedule 2 of the Building (Specified Systems, Change the Use and Earthquake-Prone Building) Regulations 2005.

Use	Description
CS	Crowd small
CL	Crowd large
CO	Crowd open
CM	Crowd mercantile
SC	Sleeping care
SD	Sleeping detention
SA	Sleeping accommodation
SR	Sleeping residential
SH	Single household
WL	Working low
WM	Working medium
WH	Working high
WF	Working fast
IA	Intermittent activity (low)
ID	Intermittent activity (medium)

Building Consent Documentation

The **standard** and **quality of documentation** must be in accordance with Practice Note 22 published by the Institution of Professional Engineers (IPENZ) and the Ministry of Business Innovation and Employment (MBIE), as guidance under s.175 of the Building Act 2004.

The design team usually coordinates the various design disciplines involved. As fire engineering overlaps so many other disciplines, the fire engineer may review associated documentation, to ensure that it reflects the requirements of the fire design, before the application for building consent is submitted; however, there is no expectation that the fire engineer signs off on other trades requirements or inputs.

Note:

- The reviewer does not assume responsibility for the design of the elements involved but is responsible for verifying that the intent of the design has been met.

Producing quality documentation for building consent will significantly improve Council (or the reviewer's) ability to process the application for building consent and provide a more seamless and efficient process (time and cost). Fire safety design must be properly communicated and incorporated into the final design documentation submitted for building consent.

Practice Note 22 describes the type and extent of information required to record fire-design requirements, how to communicate these to other members of the design team and the type and extent of information required to support applications for building consent. It also lists expectations of the designers and their responsibilities for producing plans and specifications for construction.

The Practice Note also provides guidance about the form of design documentation with *considerable emphasis* on graphical communication, rather than the traditional textural based reports.

Detailed floor plans must accompany fire reports depicting safe paths for each level of the building including basements (and any lifts serving the basement).

A PS1 covering C1 to C6 and F6, F7 & F8 (where applicable) shall be provided for all C/VM2 and specific designs to declare that the overall fire design demonstrates compliance with the Building Code.
A PS2 where provided must be in accordance with the Auckland Council's Producer Statement Policy.

Fire Engineering Brief

A copy FEB and stakeholder communications shall be provided as part of the consent documentation. This shall include the decision advising the outcome of the FEB process including the agreement by all the stakeholders and Council.

Computer Modelling

Only a person specialising in fire and listed on the Auckland Council Approved Producer Statement Register can issue producer statements for acceptance by Council. The computer model shall be analysed appropriately for the design by the design engineer; it is not the role of the peer reviewer to perform the analysis. Hard copies of the input files for fire modelling must be included with consent documentation.

For B-Risk simulations a hard copy of the results file must be included with consent documentation. The simulation settings must ensure that all inputs are reflected in this file. Smokeview files showing the modelling geometry and graphs indicating smoke layer heights and other important results should be included within the report write-up to support the analysis and conclusions made.

For CFD/FDS simulations a hard copy of the input and output files i.e. the *.FDS* file, the *.OUT* output files (sans Run Time Diagnostics) and HRR excel files must be included with consent documentation. Electronic input and all output files are also to be provided for each analysis to support an external review should that be required. Files provided on a USB drive or similar media can be accepted by Council at the time of lodgement. This can be discussed during the FEB process.

The documentation submitted should be sufficient to allow a regulatory reviewer and third party to fully understand the modelling undertaken and enable them to review the input and output sufficiently to confirm the assessment methodology and the results meet the requirements of the Fire Engineering Brief.

Note:
For CFD/FDS simulations it is not acceptable to use important input values from other calculation methods on which to base the final – for consent assessment. I.e. the use of FPETool to calculate Sprinkler activation and base the prescribed Heat Release Rate within the model will not be accepted.

Peer Reviews

Auckland Council's Producer Statement Policy must be read in conjunction with this policy if producer statements are offered as part of the design process.

A peer review is regarded by Auckland Council as a regulatory review carried out by a design professional on a designers work; a producer statement design review (PS2) is issued on completion. The applicant nominates the peer reviewer prior to the application being submitted for consent.

Producer statements are not specifically referred to in the Building Act 2004. However, they can be considered as part of the building consent process, in terms of giving Council reasonable grounds to be satisfied that the building work complies with the Building Code and provides an efficient and cost-effective service to clients.

If the peer reviewer is on the Auckland Council Producer Statement Register, Council will accept the PS2 in good faith and is completely reliant on it when processing the consent application, to establish compliance with the Building Code. Apart from checking the authors' details, the content of the producer statement and level of insurance, limited checks will be made by Council unless the application is selected for audit, is considered high risk or is of specific interest. The peer reviewer shall not have any direct involvement or financial interest in the company providing the initial design.

The acceptance of a producer statement is entirely at Council's discretion. Council reserves the right to perform additional reviews of the information to ensure quality and consistency is maintained in the review of designs for compliance with the New Zealand Building Code.

Although Council has no objection to a peer reviewer participating in the FEB process, to maintain the integrity of the review, the reviewer should be independent of the design process.

High-Risk design work

High risk in this context means a project where a high risk to life is present such as a building with very high occupant numbers or sleeping occupancies in multi-storey buildings and has a different meaning to that defined within AC2301. High-risk design work is subject to either a peer review and/or regulatory review; the decision as to which option is agreeable and who performs this role is at the sole discretion of Council. This decision is typically made before the FEB process is started and the peer reviewer is engaged.

Examples of High risk projects include:

- Projects that are not designed in accordance with a compliance document (C/ASX or C/VM2)
- Non sprinkled sleeping accommodation in buildings with more than 4 stories
- Sleeping accommodation having only a single means of escape with more than 4 stories (non C/ASX design)
- Fire cells with more than 1000 occupants
- Non sprinkled buildings with large occupancies more than 500 occupants
- All buildings exceeding 20 storeys in height
- Shopping centres/Malls
- Stadia
- Transportation
- Buildings containing significant quantities of Hazardous Goods
- Buildings with an Importance level of 4 and 5

Regulatory Review

At the time of submitting a building consent, if Council does not have the in-house capacity to assess an application or a PS2 has NOT been provided by a suitably qualified and approved fire engineer, Council may choose to engage the services of such a person to conduct the review on its behalf.

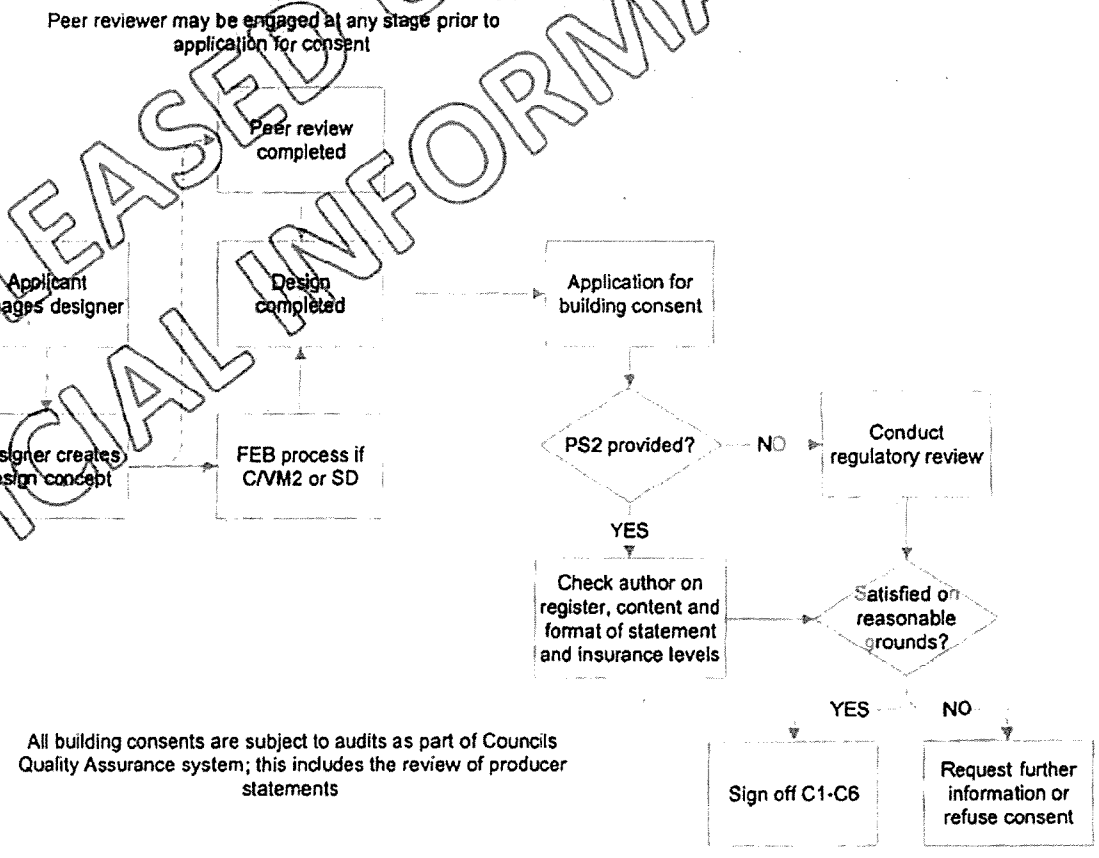
The purpose of a regulatory review[9] is to assess whether the design complies with relevant regulations, consent requirements and legislative requirements. The reviewer does not assess the design objectives, process, options, assumptions or method, only the submitted design and tests the outcome against regulatory parameters.

There is no direct relationship between the reviewer and the designer, although the reviewer may ask the designer questions about inconsistencies in the work. Communication between the designer and the reviewer is important.

The reviewer's role is to identify areas of the design that need to be addressed and invite the designer to resolve them to the reviewer's satisfaction. The reviewer does not become involved in resolving the issues. This allows the designer to comment and state a position before the report is submitted.

If the review is conducted during the consent processing stage, Council will recover the costs from the building consent applicant in the normal manner.

High-level overview of the design and consent approval process



[9] An independent reviewer maybe engaged by Council to carry out the design review. Please refer to the Auckland Council Producer Statement Policy for further information

Construction Monitoring

Appropriate levels of construction monitoring are necessary to provide confidence to Council that the design engineer, or their representative, has actively monitored and observed the building being constructed in accordance with their design expectations and also to confirm that the building will operate as required in accordance with the consented fire design.

The extent and scope of construction monitoring to be undertaken shall be agreed as part of the Fire Engineering Brief process and confirmed within the documentation submitted for consent approval. A PS4 shall be provided to support Code Compliance Certification of the building and to confirm that the design meets the designer's requirements for fire for all C/VM2 and specific designs. The IPENZ/ACENZ Guidance on Construction Monitoring Services[10] provides a useful reference to the various levels of construction monitoring that may be appropriate for each individual case. However, a more detailed description and agreed level of scope may be necessary for specific projects. Refer also to IPENZ PN22 for further information.

Not all designs and building consent applications will need the design engineer to undertake construction monitoring and the production of a PS4. For all fire design work undertaken in accordance with C/VM2 and specific design, construction monitoring by the design engineer is expected unless agreed otherwise as part of the Fire Engineering Brief process. Designs undertaken in accordance with the Acceptable Solutions may require construction monitoring to be undertaken at the discretion of Council, dependant on the complexity of the proposed works and fire safety systems proposed. For Acceptable Solution designs for new and existing buildings it is recommended that fire designer propose a level of construction monitoring commensurate with the complexity of the design. Where no discussion of construction monitoring is provided within the consent documentation the Council may require a specific level of construction monitoring as part of the approvals process.

Certificate for Public Use

If the building is to be occupied by the public before the Code Compliance Certificate is issued, there will need to be an application for a Certificate for Public Use. The management procedures associated with this certificate shall be included in the consent application and reviewed by the Peer Reviewer.

[10] https://www.ipenz.org.nz/ipenz/forms/pdfs/Construction_Monitoring_Services.pdf

Fire Design Review Process

In this section, reviewer means both the peer reviewer and regulatory reviewer.

The reviewer must:

- comply with both this policy and the Auckland Council's Producer Statement policy
- not perform any design work which is the subject of the review
- document all requests for additional information in writing and submit these to Council together with any supplementary documentation received during the review
- consider all relevant New Zealand Building Code clauses; i.e. D1, F6, F7 and F8 (as applicable to the C clauses)
- consider any legislative requirements; i.e. sections 67, 112, 115 or 116A
- confirmation that the fire safety features or specified systems required for the compliance schedule including any inspection and maintenance procedures stated within the fire report are correct
- consider whether it is appropriate for the fire engineer to monitor construction and provide a producer statement construction review on completion of the building work
    - the scope of construction monitoring and agreement to provide a producer statement construction review must be reached prior to the issue of the building consent

Before completing the review, the reviewer must provide Council with their professional opinion in respect to

- any request for a waiver or modification
- the assessment of what is *as near as reasonably practicable*
- the New Zealand Fire Service memorandum and the applicants response to this

On conclusion of the review, the reviewer must provide a producer statement design review and verify they hold an appropriate amount of insurance. The reviewer must also complete a design summary, the design summary must

- not include any exclusions or limitations
- summarise documentation reviewed during the assessment
- confirm the intent of the FEB process has been met (if applicable)
- detail all correspondence reviewed / received (written and verbal)
- precisely describe the extent of the review

At the end of the review, the information on Council's file must be complete. It must be adequate such that if the report is revisited in the future, that all decisions, reasons for decision and the outcome is understood. For this reason communication between the various parties must be clear and traceable. A schedule of questions and responses presents the most robust and common methodology for recording and closing out design review items. Long email trails and phone calls, whilst a common form of communication do not support a transparent process and important decisions impacting the design including the reasoning behind any decisions made must be documented in an appropriate format.