



Determination 2017/040¹

Regarding the refusal to grant a building consent for proposed supermarket alterations at 347 Moorhouse Avenue, Sydenham, Christchurch

Summary

This determination concerns the refusal to issue a building consent for alterations to an existing supermarket building because it was believed the proposed work did not comply with the fire safety clauses of the Building Code. The determination considers the requirements of the legislation as it applies to the alteration. The fire engineer initially used a verification method to show compliance, and the determination discusses what this method requires.

1. The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004² (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations and Assurance, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to this determination are:

- Countdown Foodmarkets Limited, who is the applicant, and the supermarket owner/operator acting through an Architect as the agent for the applicant (“the agent for the applicant”)
- Moorhouse Central Ltd, owner of the building (“the owner”)
- Christchurch City Council, carrying out its duties as a territorial authority or building consent authority (“the authority”)
- New Zealand Fire Service Commission (“the Fire Service”) as a party under Section 176(g) of the Act. The Fire Service’s Engineering Unit is referred to herein as the “Fire Service’s EU”.

1.3 I consider the Chartered Professional Engineer (“the fire engineer”), who issued the Fire Engineering Brief (FEB³) and the Fire Engineering Report (FER), is a person with an interest in the matter.

¹ Subject to a clarification under section 189 of the Building Act 2004. The determination originally issued on 7 June 2017 incorrectly named the fire engineer as a party under section 176 of the Building Act.

² The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at www.building.govt.nz or by contacting the Ministry on 0800 242 243.

³ The FEB is described in the International Fire Engineering Guidelines Edition 2005, as “a process that defines the scope of work for the fire engineering analysis. Its purpose is to set down the basis, as agreed by the relevant stakeholders, on which the fire safety analysis will be undertaken.... Ideally, the FEB should be developed collaboratively by all the relevant stakeholders but this may vary according to the particular circumstances of the project ...”

- 1.4 The determination arises from the authority’s refusal to grant a building consent for alterations to a supermarket as it was not satisfied with aspects of the proposed fire design. The applicant disagrees with this decision and considers that the authority requested information exceeding that required under the Building Code and the Act. The applicant also considers the Fire Service’s EU’s advice to the authority regarding the fire design was in breach of the Act.
- 1.5 I consider the matter to be determined⁴ is whether or not the authority correctly exercised its powers in refusing to grant the building consent.
- 1.6 I note that the applicant considers there are a large number of issues to be determined (refer paragraphs 3.1.5 and 3.1.6). As the Act is particular about the matters for which a party can apply for a determination I can only determine the matter identified in paragraph 1.4. Some of the other issues the applicant raises are covered in the course of this determination and I have included some additional comments in section 10.
- 1.7 In making my decision, I have considered the submissions of the parties, the report of the independent expert engaged by the Ministry (“the expert”) who is a Chartered Professional Engineer (CPEng) with specialist qualifications and expertise in fire engineering, and the other evidence in this matter.

2. The proposed building work and fire design

- 2.1 This determination relates to proposed alterations to a supermarket in an existing single storey building at 347 Moorhouse Avenue in Sydenham, Christchurch. The supermarket currently occupies 5,123 m² of the building’s 6,323m² total floor area. The building was originally built around 1990 for use as a supermarket and the fitout for the present supermarket was completed under a consent issued in 2007. There is a fast food outlet located in the south west of the building which is on a separate land title. The building contains two fire cells: the fast food outlet is one fire cell; the remainder of the building is the other. The existing floor plan is shown in Figure 1.

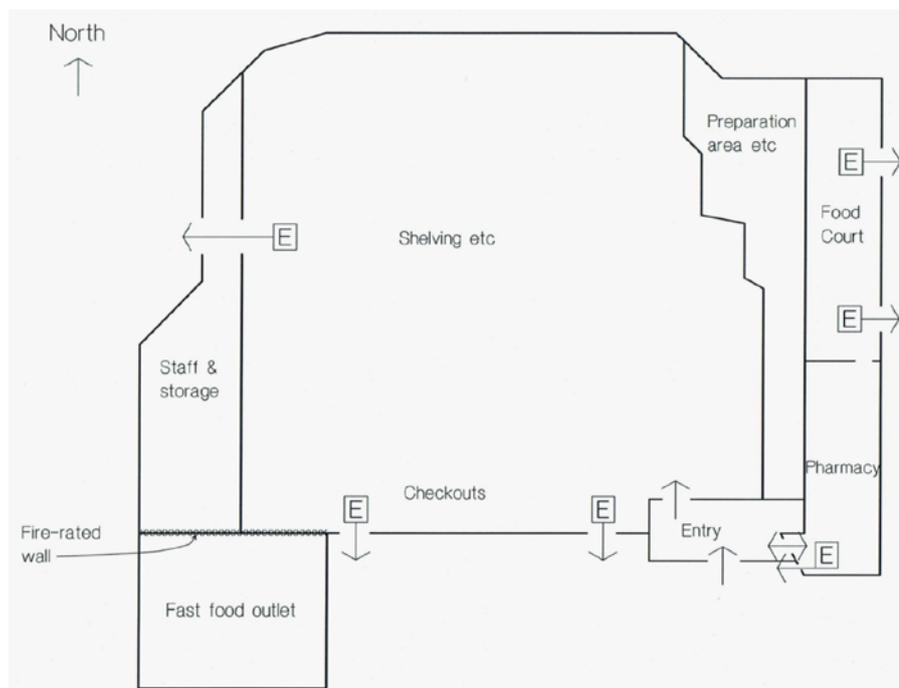


Figure 1: The layout of the existing building (not to scale)

⁴ Under section 177(2)(b) and 177(2)(f) of the Act.

- 2.2 The proposed alterations include reducing the supermarket's size to 4,539 m² and creating two new tenancy areas for future retail outlets. Exits at the front of the supermarket would be altered to accommodate these tenancies and a new egress corridor constructed to allow egress from the front of the supermarket checkouts to the front of the building. The proposed floor plan is shown in Figure 2.

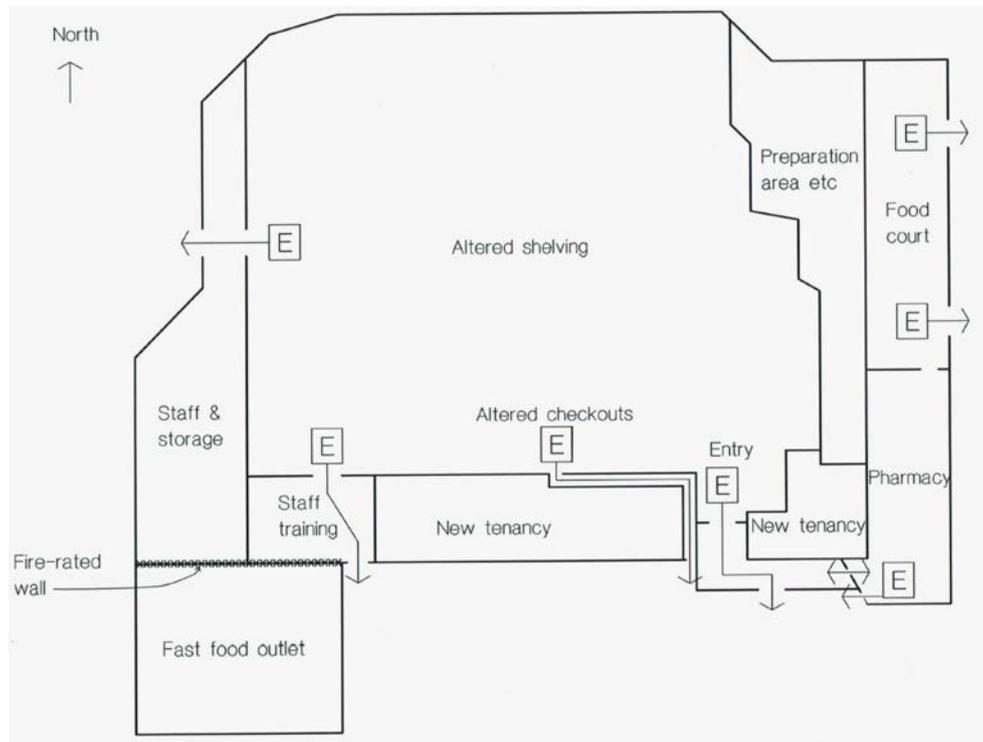


Figure 2: The layout of the building as proposed (not to scale)

- 2.3 On 24 March 2016 the applicant lodged a building consent application with the authority for these alterations. The fire design contained in the Fire Engineering Report (FER) accompanying this application claimed compliance with Verification Method C/VM2⁵.
- 2.4 The FER's summary of the major fire engineering scope of works included:
- altering and extending the existing Type 6 automatic sprinkler system⁶ throughout the building to suit the new layout in compliance with NZS 4541⁷
 - altering and extending the existing emergency lighting and exit signage in compliance with Building Code clauses F6 Visibility in escape routes and F8 Signs, and
 - specifying egress widths, locking devices, and requirements for internal surface finishes where alterations take place (to meet the provisions of Building Code clause C3.4 of clause C3 Fire affecting areas beyond the fire source).

⁵ Verification Methods C/VM1 and C/VM2 and Acceptable Solutions C/AS1 to C/AS7 are means of compliance with the Building Code requirements for protection from fire (Code clauses C1-C6). Means of compliance that do not completely follow the Verification Methods or Acceptable Solutions are called alternative solutions. Refer to www.building.govt.nz/building-code-compliance for more details.

⁶ A Type 6 warning system is an automatic fire sprinkler system with manual call points (refer www.building.govt.nz/building-code-compliance for descriptions of other system types).

⁷ New Zealand Standard NZS 4541:2013 Automatic fire sprinkler systems

- 2.5 Following correspondence with the authority, the fire design was subsequently revised and resubmitted to the authority on 20 June 2016 (contained in FER Rev B issued 10 June 2016) as a specific fire engineering design “based on the principles of C/VM2” – i.e. an alternative solution. It was accompanied with producer statements from fire engineers for design and review.
- 2.6 This revised FER included peer review and site survey revisions, including an addition to the major scope of works that existing push button releases would be reviewed to ensure they could be easily identified and activated in an emergency. Other additions included a description of existing internal surface finishes and their expected performance.
- 2.7 The revised FER also added:
- It is not proposed that the new retail units are separate titles and they shall not be fire separated from the existing supermarket. The fire engineering design and compliance of the new tenancy is outside the scope of this report and shall be addressed as a separate consent application. The new tenancy has means of escape independent of the supermarket. The possible new tenancy in the existing lobby has been addressed as the egress routes potentially merge with the supermarket occupants.
- 2.8 The documents and key events relating to the building consent application are summarised in the table below, which is based on a similar table in the expert’s report (prepared from material supplied with the application for determination) with some additions. I note that this shows the authority was sent a copy of the original FEB although it later told the applicant it had not been involved in the FEB process. The authority has subsequently accepted that this statement was in error (refer paragraph 4.4.2).

Date	Event
9 March 2016	The fire engineer issues an FEB revision A “for information”.
10 March 2016	The fire engineer sends the FEB to the Fire Service’s EU.
14 March 2016	The fire engineer sends the FEB to the authority, noting it is provided for consultation only and is not the final design.
24 March 2016	Building consent application BCN/2016/2332 (including the Fire Engineering Report) is lodged with the authority.
29 March 2016	The Fire Service’s EU issues an “FEB review” to the fire engineer: this raises six matters.
30 March 2016	The fire engineer issues the Fire Engineering Report (“FER”) revision A, which includes responses to the EU’s review.
6 April 2016 (1)	The authority sends the architect ⁸ its documentary requirements for using C/VM2 for alterations.
6 April 2016 (2)	The authority issues an FEB review to the fire engineer (raising 10 matters).
7 April 2016	The authority issues further FEB review comments to the fire engineer (raising two more matters).
18 April – 11 May 2016	The applicant corresponds with the Ministry seeking to clarify what information the authority can reasonably require.
21 May 2016	The architect advises the authority they are now “formally in dispute” over the authority’s outline of 6 April 2016 (1) and request for fire engineering information he considers beyond what is legally required. He asks the authority to withdraw this request.
30 May 2016	The authority writes to the architect (item FIR-001): <ul style="list-style-type: none"> • it has requested this information under section 45(1) of the Act and

⁸ The applicant’s agent for this determination

Date	Event
	<p>has also considered other sections of the Act in making this request (7 re plans and specifications, 14D, 19(1)(ba), 19(2)(b), 49(1), 112(1), 116A and 175)</p> <ul style="list-style-type: none"> • it asks the architect to indicate what he considers outside the Act's requirements • if this impasse continues it will have no option and will refuse to grant the building consent.
10 June 2016	<p>The architect responds to the authority's item FIR-001:</p> <ul style="list-style-type: none"> • a revised FER and Producer Statement of Design Review (PS2) will be submitted shortly • he asks the authority to withdraw requirements for the FEB to be part of the consent approval.
13 June 2016	<p>The authority writes to the architect (item FIR-002):</p> <ul style="list-style-type: none"> • it considers that the FEB process is "clearly part of C/VM2" • to comply with C/VM2 stakeholders must have an input into the FEB • it has no intention at this time of withdrawing the requirements for an FEB.
20 June 2016	<p>The architect provides the authority with:</p> <ul style="list-style-type: none"> • a revised FER (Rev B) issued 10 June 2016 by the fire engineer • a Producer Statement of Design (PS1) issued 15 June 2016 by the fire engineer • a PS2 issued 20 June 2016 by a peer reviewer for the fire engineer. <p>The architect says he has revised the FER to "overcome the impasse" and attached PS1 and PS2 from CPEng fire engineers for the fire design as a specific fire engineering design based on C/VM2. He says that by doing this an FEB is not required.</p>
21 June 2016	<p>The authority writes to the architect (item FIR-004 – NB this item is revised on 1 July 2016):</p> <ul style="list-style-type: none"> • as it says it has not been part of the FEB process it has no confidence in the PS1 and PS2 • to progress the building consent it will engage an external reviewer to make sure the fire safety issues meet the Act's requirements, which will involve consulting the Fire Service as a stakeholder.
23 June 2016	<p>The authority sends the FER (Rev B) to the Fire Service's EU and notes it will be a "major review".</p>
1 July 2016	<p>The EU issues a memorandum of advice to the authority as per section 47 of the Act (raising seven matters).</p>
1 July 2016	<p>The authority sends a request for information (RFI) to the architect. This replaces item FIR-004 of 21 June 2016 with a new FIR-004 listing six matters to be addressed, adds item FIR-005 listing another six matters, and asks for a full response within 20 working days.</p>
15 July – 20 July 2016	<p>The applicant and the authority exchange emails regarding progress on the building consent:</p> <ul style="list-style-type: none"> • the authority says it requires a response to its RFI before proceeding as it does not have the information required to make a decision on reasonable grounds • the applicant says no response will be provided to this RFI and a decision should be based on the information already supplied.
22 July 2016	<p>The authority advises the applicant it has refused the consent application and will send formal notification of its decision on 25 July 2016.</p>

2.9 The Ministry received an application for determination on 5 September 2016.

3. Submissions

3.1 The applicant's initial submission

3.1.1 The applicant provided copies of plans and specifications for the proposed alterations and correspondence between the applicant and the authority with the application for determination.

3.1.2 In a covering letter the applicant submitted (in summary):

- The dispute with the authority related to the application of Building Code clauses C2-C6 Protection from fire and its insistence that the applicant provide an FEB that was “agreed to by all parties”.
- The authority had requested information exceeding that required by the Building Code and was in breach of section 18 of the Act⁹.
- The Fire Service's EU had provided advice to the authority suggesting a particular means of compliance and this was outside the provisions of section 47 of the Act¹⁰. In the applicant's view some correspondence between the authority and the EU occurred outside the normal process, suggesting the authority may have acted inappropriately.
- There was “no obvious attached accountability and no right of appeal” regarding the Fire Service's input despite the impact its guidance and advice had on building design and compliance costs. There was also a conflict of interest within the EU “given that the documentation clearly shows that they are providing advice to the [authority] contrary to section 47 of the Act”.

3.1.3 The applicant also considered a number of other people and entities had, or may have, conflicts of interest with respect to the determination. These included engineers who reviewed the fire design for the authority, and Ministry staff involved in discussions with the applicant and the authority before the application for determination.

3.1.4 In the applicant's view, there had been a significant increase in compliance costs associated with fire design but little evidence to suggest buildings were safer as a result of the introduction of the FEB and the need to follow the “outdated” Practice Note 22 (PN 22)¹¹. The applicant noted “that the building itself is inherently safe given that the building has, and will [retain] a Type 6 Fire Alarm system.”

3.1.5 The applicant considered there were 17 items to be determined. These included whether:

- the fire report complied with Building Code requirements relating to fire
- the final fire report was an alternative solution
- the authority could consider the advice provided by the Fire Service's EU (which recommended that the authority require the applicant to revise the fire design to demonstrate compliance using either C/VM2 in its entirety or to present it as a fully performance based design with all design inputs justified from first principles)

⁹ The Act section 18: Building work not required to achieve performance criteria additional to or more restrictive than building code

¹⁰ The applicant's submission referred to section 37 of the Act but I assume that section 47, as later referenced, is the intended reference here.

¹¹ Institution of Professional Engineers New Zealand (IPENZ) Practice Note 22: Guidelines for Documenting Fire Safety Designs, Version 1, September 2011. This Practice Note also has status as guidance issued under section 175 of the Act.

- any components of the Fire Service’s advice were outside the scope of section 47 of the Act
- the authority could require a building consent applicant to demonstrate compliance in a certain way and change a fire report to be consistent with the EU’s views
- it was unreasonable for the authority to have a fire design reviewed by one in-house and two contracting fire engineers as the design was completed by a CPEng and had been peer reviewed by another CPEng, and
- whether the authority’s email of 6 April 2016 explaining the FEB process was sufficient to suspend a building consent application.

3.1.6 These items also included questions regarding:

- under what provisions of the Act a BCA could consult with the Fire Service outside the consent process other than regarding dangerous buildings
- in what context a BCA could ask the Fire Service EU to undertake a “major” review
- whether it was reasonable (for an applicant) to expect an explanation if a BCA expressed no confidence in a PS1 and PS2
- whether a fire engineer contracted to the BCA should issue a PS2 confirming their acceptance of a fire report they had reviewed
- what Building Code objectives or requirements the FEB satisfied
- whether an FEB was required under the Act
- what objective, functional requirement or performance criteria of the Building Code PN 22 satisfied
- if a BCA could require a designer to issue a PS1 or a reviewer to issue a PS2
- if a BCA could require a designer or reviewer to issue a PS4 given a fire report was a design document not a performance document, and
- whether a BCA could require an owner or applicant to comply with Ministry guidance.

3.2 Further submissions

3.2.1 Both the authority and the agent for the applicant responded to requests for further information from the independent expert (refer paragraph 1.6) while preparing his report. These are summarised in the table below. The authority also provided a copy of its RFI dated 1 July 2016, extracts from correspondence with the applicant 1 May - 21 June 2016, and the building file.

3.2.2 I note that the expert commented on the role of the FEB process in C/VM2 in his queries to the authority on 12 October 2016 and also in his final report. However, the authority said that the expert had a perceived conflict of interest¹². Accordingly, I have not included his comments on the FEB process in this determination. Some comments from the parties on the FEB process are included in section 4.5 (parties' responses to the expert's report).

Expert's queries to the authority 10 October 2016	Authority's responses 11 October 2016
Whether the authority had engaged an external reviewer as indicated in its letter 21 June 2016	One could not be engaged within the required timeframe so the authority carried out its own internal review.
What was meant by a "major review" by the Fire Service	The Fire Service had asked the authority to indicate if it considered any required reviews required of it were "major" or "minor" to help the Fire Service manage its internal workflow. Examples of minor reviews could include consents for alterations complying with the acceptable solutions, new work complying with the acceptable solutions but including a waiver application, and minor alterations. Examples of major reviews could include consents for C/VM2 designs, alternative solutions that were a significant departure from the acceptable solutions or were based on C/VM2, and major alterations.
If it had any fire-related technical matters of disagreement other than those raised in the Fire Service's memorandum of 1 July 2016	As a result of the authority's review it issued an RFI to the consent applicant dated 1 July 2016, which the applicant refused to respond to.
Expert's further query to the authority 12 October 2016 (after viewing its RFI to the applicant of 1 July 2016)	Authority's response 17 October 2016
Since it was party to the FEB (as it issued an FEB review on 6 April 2016), could the authority clarify on what grounds it had no confidence that it could rely on the PS1 or PS2	<p>It did not refuse the building consent because of issues with the FEB but as the consent applicant refused to answer its RFI.</p> <p>Although producer statements were in widespread use to help BCAs establish compliance with the Act and Building Code, they had no statutory or formal status and accepting them was at a BCA's discretion.</p> <p>The authority could find no record of an FEB review dated 6 April 2016. It had an email of that date setting out its requirements for building consent applications for alterations to existing buildings using C/VM2. These included: "Fire Engineering Brief which includes the agreement of the stakeholders. [The authority] considers the minimum stakeholders to comprise peer reviewer, NZ Fire Service and [the authority]".</p> <p>The authority supplied extracts from correspondence with the consent applicant dated 1 May, 30 May, 10</p>

¹² As the Ministry advised parties and the fire engineer on 7 December 2016, a possible conflict arose from the expert's personal association with the fire design for a building in another region. The expert advised the Ministry of this when approached to undertake the work. This was not considered a significant risk to his engagement, as any senior fire engineer working in New Zealand was likely to be in a similar position and/or would have a view on the FEB.

	<p>June, 13 June and 21 June 2016 (refer paragraph 2.2) and said this showed it had not been party to development of the FEB, had no input into the FEB and consequently believed this statement was incorrect. Consequently, it did not have any confidence that the fire design (based on this FEB) complied with the Building Code.</p> <p>The authority would normally accept PS1s and PS2s but was not prepared to accept them for a fire design which it had no confidence in, which applied in this case.</p>
Expert's query to the applicant 10 October 2016 and 12 October 2016	Agent for the applicant's response 19 October 2016
If the applicant had anything to add in response to the Fire Service memorandum of advice and authority's RFI of 1 July 2016	He had asked the authority to make a decision on its letter of 30 May 2016 item FIR-001 paragraph 4 (in which the authority said if the impasse continued it would have no option and would refuse to grant the building consent) "as we believed we were correct with our original fire safety design and design philosophy and this should have been the basis of the decision to approve or refuse the building consent".

3.2.3 The agent for the applicant also commented on some of the expert's questions to the authority, including that:

- questions and emails regarding fire safety "clearly showed external contractors were acting as external reviewers as well as [name] from [the authority]".
- the Fire Service's comments in its memorandum of 1 July 2016 were covered under section 46 of the Act and formed non-binding advice only to the authority. The PS1 and PS2 post-dated that memorandum and, as these were issued by Chartered Professional Engineers from independent companies, it was therefore taken that the designer and reviewer must have reached a position where they were satisfied as professional engineers that the design was appropriate as a specific design. The agent also said:

There is nothing in the legislation that, from our reading, states that all inputs for a specific design should be justified. Reliance on engineering judgement is a valid approach. We note that it appears the Fire Service EU comments exceed the requirements of the Act; in particular they were insisting on a particular compliance path.

Where this occurs the Fire Service EU are then acting beyond the scope of legislation and may be considered to be acting as designers, which would then put them into a conflict of interest position in that they are reviewing design that they insisted upon.

4. The expert's report

4.1 Key findings

- 4.1.1 The expert supplied his report to me on 25 October 2016 and I copied this to parties and the fire engineer for their comment.
- 4.1.2 In the expert's opinion the fire report (FER Rev B) supplied for building consent does not demonstrate compliance with the relevant performance criteria of the Building Code. He said that, setting aside issues with the process, several technical

matters raised in the Fire Service's memorandum of advice and the authority's letter of 1 July 2016 had not been addressed. The expert commented:

While I do not agree with all of the issues raised there are enough unresolved matters for me to conclude that building code compliance has not been demonstrated.

4.1.3 The expert's views on the individual matters raised by the Fire Service and the authority are summarised below.

4.2 Views on matters raised by the Fire Service

4.2.1 The expert was broadly in agreement with nearly all the matters raised by the Fire Service; namely that the authority should require the applicant to:

- provide a fire assessment considering the entire building to demonstrate this would meet the Building Code performance requirements to the extent required under section 112 of the Act following the alterations – the expert thought this could be addressed without significantly reworking the FER but did not consider a second means of escape was required from the (unoccupied) future fit-out at this stage
- revise the fire design to include consideration of visibility in spaces remote from the fire¹³ – in the expert's view visibility and FED¹⁴ (Thermal) in "other areas" should have been included in modelling with doors open as per the modelling rules of C/VM2
- correct the occupancy of the supermarket and reflect the impact of the increased occupancy in the ASET/RSET¹⁵ analysis
- revise the assessment to include all occupants reasonably expected to use the foyer exit route in the ASET/RSET analysis
- amend the fire report to provide fire modelling output to support the ASET/RSET values indicated in the fire report and be consistent about this output across the report and supporting documentation – the expert agreed with this but noted his lack of specific expertise with the modelling program used
- confirm that design coordination had been carried out and an issue with security gates had been addressed to demonstrate that the assumptions of the means of escape assessment were valid – the expert noted that the security gates at the primary entrance appeared to have been removed from the revised architectural drawings.

4.2.2 However, the expert did not agree with the Fire Service's recommendation that the authority should require the applicant to revise the fire design to demonstrate compliance either by using C/VM2 in its entirety or presenting it as a full performance based design with all design inputs justified from first principles.

I do not agree with the binary proposition i.e. "all or nothing". A comparative approach to either C/VM2 or [C/AS4] with variations is logically valid, especially where the "as near as is reasonably practicable" test applies. A fire engineer would need to take care, but it can be done¹⁶.

¹³ As required by Building Code clauses C4.3 and C4.4

¹⁴ Fractional effective dose

¹⁵ Available Safe Egress Time/Required Safe Egress Time

¹⁶ The expert referred to the International Fire Engineering Guidelines (IFEG) Section 1.2.9.1 'Comparative or absolute approach' for more information.

I also note that there are very few “first principles” in fire engineering. Fire engineering is highly empirical.

4.3 Views on matters raised by the authority

4.3.1 The expert agreed with some of the matters the authority raised with the applicant on 1 July 2016, namely:

- the fire design should be updated to include the adjacent tenancies, although the expert believed these could be assumed to be unoccupied spaces at this point and subject to C/VM2 design scenario CS¹⁷, which was satisfied by installing sprinklers
- the location of the building work should be clarified
- a mezzanine floor (indicated by stairs on the plans) should be included in the assessment and floor plans supplied for this.

4.3.2 The expert commented on other matters the authority raised, including:

- its concerns that the fire report’s executive summary contained comments and not definitive statements – the expert suggested these could be resolved with a coordination statement from the fire engineer
- its request for justification for all inputs from first principles as the fire design was an alternative solution – the expert said this point had also been raised by the Fire Service and he disagreed (refer paragraph 4.2.2)
- the computer model referenced should be updated – the expert thought this was the version current at the time
- information on fire separations should be provided, as the authority understood the site had multiple unit titles – the expert said this should be clarified
- a design fire should be provided for the retail spaces created between the training room and the main entrance, as these were part of the building but not fire rated from the supermarket – the expert’s view was these could be assumed to be unoccupied spaces at this point and subject to C/VM2 design scenario CS, which was satisfied by installing sprinklers
- the fire design requirements should be coordinated and included into all consent documents – the expert said this was essentially a design coordination statement as per PN 22 which he did not believe was mandatory but might well be deemed necessary by the authority in establishing reasonable grounds for granting the building consent
- the expectation that the fire designer would undertake construction monitoring and provide a PS4 – the expert said this was inconsistent given the authority was unwilling to accept the PS1 or PS2
- the intended means of compliance for future fit-outs of the retail tenancies – the expert said this was hypothetical.

¹⁷ C/VM2 Design scenario CS: Fire starts in a concealed space

4.4 Comments on the fire design and building consent process

- 4.4.1 I asked the expert for his view on other issues including the authority's level of scrutiny of the fire design and its unwillingness to accept the peer reviews (i.e. the PS1 and PS2).
- 4.4.2 The expert noted the authority's response on 17 October 2016 (refer table at paragraph 0) that it had not been party to the FEB. However, he said this was incorrect as the authority had provided an "FEB Review" on 6 April 2016. Given that (on the facts) the authority had been party to the FEB development, it should be asked again why it did not accept the PS1 and PS2.
- 4.4.3 As to why establishing compliance for the building's fire design seemed to have become so hard, the expert said he had observed a number of factors:
- that following the C/VM2 pathway for compliance "may not have been the simplest option"
 - there was a fundamental disagreement between parties "more or less from the outset" about the role of the FEB process, with the authority consistently maintaining that it was mandatory as part of C/VM2 and the applicant disputing this. With regard to this, the expert said:

As an aside, I think it is important to note that the fire engineer initiated the FEB process. In my opinion, they didn't receive FEB comments from the [authority] in a timely manner and the process was not completed.
 - weaknesses in the current fire regulatory framework, including the treatment of existing buildings in terms of what was compliance as nearly as is reasonably practicable ("ANARP")¹⁸.
- 4.4.4 Regarding whether the building had any unusual design features the expert said he would usually expect a building with an occupant load of more than 1,000 people to have early warning: i.e. smoke detection and alarm in addition to automatic sprinklers. In his view the configuration with future tenancy fit-outs, while not uncommon, had also complicated the fire design – particularly as the main area that occupants would normally exit through was now one of these fit-out areas. I note that the applicant considers the building's occupancy level is less than 1,000 (paragraph 5.4.1) so considers this view invalid.
- 4.4.5 I also asked the expert what he thought the effect of the ANARP considerations had on the process and whether the parties had made reasonable decisions in relation to this. He said it was not clear to him that ANARP had been applied.
- 4.4.6 The expert noted that the authority advised the applicant on 6 April 2016 that for the ANARP assessment they would need to determine using C/VM2 how the building complied prior to the work starting, how it would comply once the work has been completed, and what was required in the building for it to fully comply with the Building Code. I note here that this advice from the authority was in relation to the fire design submitted with the initial application for building consent made on 24 March 2016 and which claimed compliance with C/VM2, whereas the revised fire design submitted on 20 June 2016 was an alternative solution (refer paragraphs 2.3 and 2.5).

¹⁸. ANARP is the acronym for the test for "compliance as nearly as is reasonably practicable" in relation to alterations to existing buildings under section 112 of the Act.

4.5 Responses to the expert's report

4.5.1 I received responses to the expert's report from the agent for the applicant on 3 November 2016 and from the authority on 8 November 2016, followed by comments from the Fire Service on 15 December 2016.

4.5.2 The agent for the applicant said full compliance with the Building Code was not required for an existing building undergoing alterations, rather compliance by means of ANARP, and that "full compliance would be almost impossible given the changes to the [Building] Code in 2013 (*sic*)". He also said as the fire design was tested and with respect to the Fire Service comments, which he took to have been at least discussed with the fire designer and reviewer, the provision of the PS1 and PS2 offered the consent authority the grounds to consider a formal decision "on reasonable grounds".

We do recognise the time line and that the NZFS memo post-dates the PS1 and PS2 but the comments by the [Fire Service] EU did not affect the PS1 or PS2 to the extent that the designer or reviewer thought it necessary to revise them.

4.5.3 The authority said it reiterated that the building consent was not refused on the basis the FEB was not agreed by all stakeholders but because the fire design did not show compliance with the Building Code and the Act and as the submitted drawings were unclear on the scope of works.

4.5.4 The authority also said the inputs provided in the FEB did not follow the "building record" and were not agreed to by the authority or by the Fire Service, and these same inputs were used in the subsequent fire reports.

Regardless of the compliance method chosen by the designer, [the authority] carried out the review of the report and sent out the request for information based on the finding of our review on 01/07/16.

The applicant has confirmed on both 18/07/16 and 20/07/16 that they would not respond to the RFI and demanded [the authority] to make a decision based on the information provided. [The authority] communicated with the applicant trying to resolve the RFIs but without success.

4.5.5 The Fire Service said it broadly agreed with the expert's comments and conclusions and acknowledged his agreement that most issues raised in its memorandum of 1 July 2016 were appropriate and justified.

4.5.6 The Fire Service said it had a slightly different view from the expert about the fit-out of future tenancies – its position was:

- It was poor fire engineering practice when the modelling for a base building design, or shell design, did not consider all the means of escape as this meant modelling must be revisited as part of the subsequent analysis of a tenancy fit-out consent.
- It was also poor practice to assign a "nil" population to space that would obviously be occupied at a later date.

4.5.7 The Fire Service said the only significant area of difference between it and the expert related to its view that C/VM2 must be applied in its entirety (refer paragraph 4.2.2). It said it had adopted this view after testing the issue in Determination 2015/058¹⁹.

¹⁹ Determination 2015/038 issued 23 September 2015 "Regarding the refusal to issue a building consent for a proposed apartment block with a single means of escape in a retirement complex at 25 Graham Street, Petone, Lower Hutt": available at www.building.govt.nz (search "previous determinations")

4.5.8 I include more of the Fire Service's comments regarding this issue in section 10. Some further details of the applicant's and the authority's responses are provided below.

Expert's comments (report paragraph)	Parties' responses
(17) The fire report did not demonstrate compliance	<p>The applicant:</p> <ul style="list-style-type: none"> • Full compliance was not required, only compliance by means of ANARP (which is considered first by the fire designer and then the reviewer). The fire design was tested with respect to the Fire Service's comments and the PS1 and PS2 provided reasonable grounds for the authority (even though the Fire Service memorandum post-dated these. Its comments did not affect the producer statements to the extent the issuers thought it necessary to review them). • The test should be against the Code not against compliance with the verification method. <p>The authority:</p> <ul style="list-style-type: none"> • It issued its RFI because the fire report did not demonstrate compliance with the relevant performance criteria of the Building Code, and as the building consent application package was not clear on the scope of works. This was in agreement with the Fire Service memorandum issued after its RFI.
(18) Reasons why the fire compliance for this building may have become so hard	<p>The authority:</p> <ul style="list-style-type: none"> • It considered the FEB a crucial part of C/VM2 as described in paragraph 1.3 (of C.VM2). • It noted no ANARP discussion was presented as part of the fire report or building consent application. • It received the FEB on 14 March 2016 and the building consent was lodged on 24 March 2016. <p>"[The authority] has provided feedback on 06/04/16 mainly questioning the inputs to the design. The comments raised by [the authority] were ignored, and by doing so, the fire design does not show compliance with the Building Code. The fire report that went to the peer reviewer was prepared in June which was later than 06/04/16, i.e. the designer had time to consider the items raised by [the authority]."</p> <p>"We believe that as the designer did not take on board the comments raised by [the authority] regarding the design inputs, there is no merit in the fire designer initiating the FEB process."</p>
(18a) Weaknesses in the fire regulatory framework	<p>The applicant:</p> <ul style="list-style-type: none"> • Agreed, said these were more evident since the 2012 changes, said it appeared that the Ministry was insisting the industry followed prescribed methods of fire design.
(18b) Occupancy likely to be greater than 1,000 people	<p>The applicant:</p> <ul style="list-style-type: none"> • The FER Rev B gave the occupancy as less than 1,000 people with notes that avoided counting occupants twice. • The requirements of C/VM2 were used for this occupancy and this was also carried out following Ministry guidance on Code clause C4.4.
(18c) Disagreement re the role of the FEB process	<p>The applicant:</p> <ul style="list-style-type: none"> • The authority provided a list of required items (in its letter of 6 April 2016(1)) before the consent was processed, including an agreed FEB, so it was not the fire engineer but the authority which demanded the FEB process. • This list required the fire engineers to work outside their competency, PN 22 did not require these engineers to

Expert's comments (report paragraph)	Parties' responses
	perform design coordination.
(19) Expectation for a building with occupant load >1,000 people to have early warning	<p>The applicant:</p> <ul style="list-style-type: none"> The building was not new so ANARP applied and there were multiple considerations. Full Code compliance was not required and compliance for those aspects covered in section 112 of the Act was balanced against multiple factors.
(20) Future fit-out complicated the fire design	<p>The applicant:</p> <ul style="list-style-type: none"> These fit-outs were not part of the current consideration. <p>The authority:</p> <ul style="list-style-type: none"> Agreed and this was why this should be considered in the building-wide assessment when the tenancies were created. It was no different from a shell building design needing to consider means of escape from fire for the whole building including future tenants.
(21) Re the application of ANARP	<p>The applicant:</p> <ul style="list-style-type: none"> The cost and effect in undertaking three verification methods on an existing building when reliance still came down to judgement was not logical and was costly and frustrating. <p>The authority:</p> <ul style="list-style-type: none"> It did not believe any ANARP considerations were presented in the submitted fire engineering design, which appeared to claim the building complied with the Building Code, and that was the basis of its review. It believed that for an ANARP consideration the starting point would be acknowledging where the building fell short of full compliance, but the design presented did not contain any discussion or admission on this. Unlike the Acceptable Solutions which were prescriptive design outcomes, C/VM2 was a verification method i.e. to say a design followed C/VM2 was in relation to the design method and not the design outcome. <p>The real issue of this particular design is not about "compliance with C/VM2", but with compliance with the Building Code.</p>
(22) Clarification re a major or minor review by the Fire Service	<p>The applicant:</p> <ul style="list-style-type: none"> had no experience of other local authorities being involved in this arrangement and wanted more information. <p>The authority:</p> <ul style="list-style-type: none"> This was an informal reminder to the Fire Service at its request at a time when it was short staffed. Under Section 47 of the Act the Fire Service was to provide advice to the BCA to consider and it had no authority under the Act to refuse consents.
(23) Re the level of scrutiny by the authority and non-acceptance of the PS1 and PS2	<p>The authority:</p> <ul style="list-style-type: none"> The comments on the FEB from the Fire Service had not been resolved and items raised by the authority regarding inputs to be used in the design had been ignored – these same unresolved items led to the design not demonstrating Code compliance. It did not agree with the FEB as it considered a design based on the proposed input values would not comply with the Building Code. As the fire design was based on this FEB it had no confidence in the design's compliance. It did not accept the accompanying PS1 and PS2 for

Expert's comments (report paragraph)	Parties' responses
	<p>similar reasons, and the expert's conclusion that the design did not demonstrate compliance confirmed this decision.</p> <ul style="list-style-type: none"> • Its comments regarding ANARP for C/VM2 design were made following advice from the Ministry and it believed that before the ANARP argument could be presented the designer should first confirm the building was less than fully compliant with the Building Code. • It noted that the designer claimed the fire engineering design was an alternative solution because the FEB was not agreed, i.e. the designer recognised that not following the FEB process was not following C/VM2.
(23a) The authority was party to the FEB process, although stating otherwise	<p>The applicant:</p> <ul style="list-style-type: none"> • agreed
(23b) The authority should be asked again why it did not accept the PS1 and PS2	<p>The applicant:</p> <ul style="list-style-type: none"> • agreed
(23c) Re the consent process	<p>The applicant:</p> <ul style="list-style-type: none"> • commented that the Fire Service's review included a note that the FEB had not been "closed out" but did not believe there was such a requirement in C/VM2 or the Act • expressed concerns about the role of the Fire Service and the advice it could provide.
(B.1) Fire Service matter regarding revising the design	<p>The authority:</p> <ul style="list-style-type: none"> • The comments from the Fire Service on justifying the inputs corresponded to questions and answers on 'protection from fire' published by the Ministry.
(B.2, C.7) Matters (Fire Service, the authority) re building coverage	<p>The authority:</p> <ul style="list-style-type: none"> • disagreed future fit-out could be assumed to have zero occupancy, and said creation of new tenancies was part of the consent so the implication of these to the overall building compliance should be considered. • said under Section 112 of the Act it should be demonstrated that the building would not be less compliant after the creation of new tenancies and it should include consideration of the potential occupants in the new tenancies.
(B.3, C.7) Matters (Fire Service and the authority) re consideration of other spaces and adjacent tenancies	<p>The authority:</p> <ul style="list-style-type: none"> • These comments essentially confirmed the importance of the FEB as the question on the occupancy had been raised in this, and noted that the occupancy issue was raised in its FEB comment of 6 April 2016 • The existing base building fire design, based on an alternative solution to the previous C/AS1, had an occupancy of 1,721 persons (as shown in the property record and in compliance schedule for the building) • The presented fire report claimed the entire building was one firecell but only had a combined occupancy of 801 persons • The disagreement about whether the occupancy was above or below 1,000 persons led to the question on how compliance with Code clause C4.3 was achieved. The design had not considered FED (Thermal) nor visibility, a

Expert's comments (report paragraph)	Parties' responses
	requirement for firecells with more than 1,000 occupants.
(B.4, B.5) Fire Service matters re occupant load for the supermarket and other tenancies	The authority: <ul style="list-style-type: none"> believed the design should be assessed as having more than 1,000 persons in the building which would require compliance with C4.3 and include FED thermal and visibility.
(C.3, C.9) Authority matters re suggesting a design coordination statement	The authority: <ul style="list-style-type: none"> asked for a coordination statement but this was not provided.

5. The first draft determination and responses received

5.1 On 10 February 2017 I issued a draft of this determination (“the first draft”) to the parties and the fire engineer. The first draft concluded the authority correctly exercised its powers of decision in refusing to grant building consent for the proposed supermarket alterations and confirmed the authority’s decision.

5.2 The applicant, authority and Fire Service responded to the first draft, as outlined below. I have taken account of their responses where appropriate.

5.3 I note the applicant’s view that the first draft did not recognise the second fire design was an alternative solution. This is explained in section 2 (in particular, paragraphs 2.3 and 2.5) but I have amended some later references for clarity.

5.4 The applicant’s response

5.4.1 On 28 February 2017 the agent for the applicant advised that the first draft was not accepted. Reasons he listed for not accepting this draft included the following (in summary):

- The “fundamental issue” was the authority’s requirement for the FEB to be completed and signed off by all parties before granting a building consent (and its refusal of consent if the FEB was not provided), which the agent for the applicant said was the reason for going down the specific design process.
- The first draft did not recognise the second fire design was an alternative solution, not a Verification Method, and therefore no FEB was required (the applicant said the text in the table at paragraph 4.5.8, point 23, suggested the FEB had unresolved items). He also said the authority and Ministry “seemed to be testing the design to the VM, not to the performance based Building Code”.
- The agent for the applicant did not agree that any party had raised the issue of a potential conflict of interest (paragraph 0), so said all the expert’s considerations including comments on the FEB should be included in the determination.
- The agent for the applicant said the occupant load of the supermarket and adjacent chemist and lobby spaces was less than 1,000 people and it was reasonable to have zero occupancies for the vacant tenancies given their occupancies were currently unknown.
- Therefore, the agent for the applicant disagreed with the Fire Service’s views regarding the fit-out of future tenancies (paragraph 4.5.6). He said these views

were “pure opinion” and the approach taken by the designer and reviewer was consistent across the country.

- The agent for the applicant said that using C/VM2 there was no requirement to test the spaces with a total occupancy of less than 1,000 for FED thermal or FED visibility and, as per guidance on the Ministry’s website, it was not possible to expose more than 1,000 occupants in the firecell which was protected with an automatic sprinkler system.
- The agent for the applicant said the contention the building did not demonstrate Building Code compliance to the extent required by the Act had not been justified by the Ministry or the Fire Service (e.g. analysis showed visibility was not lost in the supermarket for a fire in the lobby, so the Code requirements were shown to be met).
- He said compliance sought for the alterations (paragraph 4.4.5) appeared to be compliance to the Verification Method and not the Building Code, “noting that the test under the Act is ANARP” and “We know that a sprinklered building will pass the VM”.

Testing a building using the VM three times is overkill for a single storey sprinklered building. Also consider the situation for a small change in a basement of a multi-storey building – is it necessary to address the entire building three times – surely it depends on the scope of work and the installed systems, given that they should exist and operate to the same level as the day they were installed.

5.4.2 The agent for the applicant also queried some parts of the discussion in the first draft regarding the role of the FEB (refer section 10.1). I note that this section provides general comment only on some of the issues that the applicant has raised but that are not determinable.

5.5 The authority’s response

5.5.1 The authority accepted the first draft on 27 February 2017 subject to various non-contentious amendments. Its comments included the following (in summary):

- The authority said part of the reason it could not grant a building consent was the lack of coordination and clarity of the plans and specifications, and that it was important to ensure the fire precautions identified in a fire report were properly detailed in the plans and specifications under Section 49 of the Act. The authority said even assuming the fire report was correct the lack of coordination as noticed by the Fire Service and its own review would not allow it to grant the consent.
- The authority said the presented design did not provide “ANARP justification”; instead, the fire report appeared to claim full compliance. It said a benefits versus sacrifices assessment should be presented to show the requirements for the building to comply fully with the Building Code versus what was proposed, with the gap between these assessed by the authority on an ANARP basis to make a decision.

The only part of the fire design that mentioned ANARP was in the original FEB which wished to have a reduced occupancy in the assessment as ANARP and ignore the tenancies that are not within the supermarket as they are outside “the scope of works”. Considering occupancy is not a building code item, and ANARP consideration is based on admitting the design does not comply with certain aspects of the Building Code, we do not believe that proposing a reduced occupancy is suitable for ANARP consideration.

- The authority also referred to the discussion in Determination 2006/078²⁰, which said a design that did not comply with the Building Code could not properly be called an alternative solution. The authority said the designer chose to call the fire design that was submitted for building consent an alternative solution and had not acknowledged any aspect of that design as being less than fully compliant with the Building Code.

Considering the Ministry's expert, Fire Service and [the authority] are all confused with the scope of the project from the submitted design, we do not believe there is enough information for us to consider ANARP.

- The authority also said that it was clear from the fire report that the designer had not presented any useful information for the consideration of ANARP. Although Section 112 of the Act did not ask for full compliance, it also did not permit further lowering of fire safety if the building did not currently comply with the Building Code. However, the authority said it was not able to establish this without reviewing and providing information on the safety level of the existing building before the proposed alteration.
- The authority regarded its decision to raise the Fire Service's queries with the applicant was objective and clear (refer paragraph 8.2.5) considering the Ministry's expert also agreed with most of these.
- Regarding the use of producer statements, the authority agreed these could be used as evidence in many cases for making decisions on reasonable grounds. However, it considered them unreliable in this instance as it said the fire design had technical issues and did not show compliance.

5.6 The Fire Service's response

- 5.6.1 On 2 March 2017 the Fire Service advised it accepted the first draft. It said it had some minor, non-contentious comments but expected these to be addressed in the context of issues raised by the applicant.

6. The hearing

6.1 General

- 6.1.1 On 24 March 2017 I held a hearing in Wellington at the applicant's request. This was attended by the following people:

- the applicant, the agent for the applicant, and two other representatives for the applicant
- the fire engineer, and the peer reviewer for the fire engineering report
- two officers of the authority and a fire engineer contracted to the authority
- a representative of the Fire Service and a lawyer for the Fire Service
- myself accompanied by three officers of the Ministry.

- 6.1.2 All attendees spoke at the hearing and were of assistance to me in preparing this determination. Their views are outlined below (for simplicity these are ascribed to

²⁰ Determination 2006/078: "Upgrading the means of escape from fire on the alteration of an office building at 110 Symonds Street, Auckland" (available at www.building.govt.nz)

“the applicant”, “the authority” and “the Fire Service” unless otherwise noted), followed by more from the discussion of specific aspects of the fire design.

6.2 The applicant’s views

- 6.2.1 In summary, the applicant said she would like a building consent for the supermarket alterations and in her view had met the requirements for this. She said the process had been exceptionally frustrating and costly. The supermarket had been operating for a long time (since 2007) and the building already had a sprinkler system, fire alarm system and emergency lighting.
- 6.2.2 The applicant said issues relating to the FEB were the driving point for the determination; in particular, what she said was the authority’s request to complete the FEB before the process had started which she considered inappropriate. While she understood the value of the process she said the FEB was not in the Act and should not be an impediment to issuing a building consent.
- 6.2.3 The applicant also said the authority’s letter of 22 July 2016 (refusing the consent application) contained issues not raised previously, which she felt was unreasonable. The authority’s “RFI conditions” could also largely be refuted based on previous consents for the same building. The applicant also considered other requirements and documentation were unreasonable (e.g. following PN 22’s coordination statement) and were not part of the Act.
- 6.2.4 Regarding the role of an FEB generally, the applicant did not consider this a normative part of C/VM2 as it happened before the Verification Method was applied and was not required by all other councils.
- 6.2.5 The applicant said she would like to see the determination include more discussion on some of the other issues raised in her application for determination. Although there had been ongoing correspondence with the authority she was still unclear about the process, and felt this too should be in the determination. She also wanted the issue of the expert’s perceived conflict of interest removed.

6.3 The authority’s views

- 6.3.1 The authority said the reason it refused to grant a building consent was the matters raised in its RFI of 1 July 2016 which the applicant did not respond to, not the FEB. It said the Ministry’s expert agreed with its view that there were technical issues with the fire design submitted for building consent.
- 6.3.2 Regarding the timing and content of its communications with the applicant the authority said it wanted to provide “early signals” there were issues with the fire design. It had flagged that it would pass on the Fire Service’s concerns when these were received, which it did in the later RFI. It said items that had been resolved were also included in the communications.
- 6.3.3 The authority said it needed to make a decision whether or not to issue building consent on reasonable grounds, which it had to do based on information the applicant supplied. It did not accept the inputs for the fire design and the applicant did not respond to its RFI. The authority said the discussion at the hearing was useful and provided some further information, but this would not have altered its original decision.
- 6.3.4 The authority also commented in general terms about how it assessed fire designs that claimed compliance with C/VM2. It said this was a risk-based approach which included consideration of the processes, occupancy numbers, inputs into the FEB,

and who had completed and peer reviewed the design (e.g. whether they were Chartered Professional Engineers).

6.4 The Fire Service's views

- 6.4.1 The Fire Service said in summary that it had not heard anything at the hearing to make it think its technical questions (about the fire design submitted for building consent) were inappropriate. The Fire Service also commented that the applicant “chose to go down the VM route at considerable cost, but could have done a simple gap assessment against the Acceptable Solution”.
- 6.4.2 Regarding the applicant's query about why it conducted a “major” review of the fire design (explained at paragraph 0, table row 2), the Fire Service said this was solely about managing workflow.
- 6.4.3 During general discussion at the hearing on the role of an FEB, the Fire Service said it agreed with the first draft determination and that, in its view, an FEB was a mandatory part of C/VM2. It said references to what had been established in the FEB were seeded through the Verification Method. This gave the FEB statutory standing as part of a Verification Method. However, it accepted there was scope for philosophical differences and it also took the applicant's point about the sequence of events.
- 6.4.4 The Fire Service also said it regarded the FEB as a (regulatory) risk management document, and the greater the extent of agreement reached through the FEB process the greater the extent of risk managed. While it said reaching agreement was not necessary, just writing a report and sending it would not be enough to constitute doing an FEB. In its view, those involved would have to have done enough to say it was a material process.
- 6.4.5 Regarding alternative solutions for fire design, the Fire Service commented that building consent applicants were entitled to choose whether or not to do an FEB. However, if they chose not to, they had to accept the risk to the project.

6.5 Discussion regarding the proposed fire design, firecells and occupancy levels

- 6.5.1 Regarding the extent of the building that needed to be taken into consideration for the fire design:
- The authority said the building was one firecell (apart from an existing fast food outlet on a separate title and separated by a fire rated wall) as it was possible to walk between the supermarket and the other areas in the building without going outside. This firecell included the supermarket and proposed new tenancies as well as an existing pharmacy and food court.
 - The authority said the whole firecell – and therefore the occupancies of each area – had to be taken into account in the application for building consent.
 - The Fire Service also said the whole building was one firecell (aside from existing the fast food outlet) and said the building consent application had only considered part of that firecell.
 - The applicant said she was only concerned with her tenancy.

6.5.2 Regarding the occupancy levels:

- The authority said the original fire safety report for the building stated an occupancy level of 1,700 people. It said this was reduced in a subsequent report (for the supermarket fit-out in 2007) and reduced again in the proposed fire design to less than 1,000. However, it said the compliance schedule for the building still identified an occupancy of over 1,000.
- The peer reviewer for the fire design noted that occupant densities for supermarkets were reduced in 2012 (in the relevant Acceptable Solutions) from 3.5 m² to 5 m² per person.
- The Fire Service said C/VM2 contained the same occupancy densities and it was common practice to use these numbers for alternative solutions. However, it questioned the occupancy stated in the applicant's fire design and said this contained arithmetic errors. The Fire Service said that, even allowing zero occupancy for the new retail tenancies (which it disagreed with), its expectation was the total occupancy would be over 1,000 for the entire firecell. It said this was significant as it triggered additional fire safety requirements, such as considering visibility in adjacent spaces.
- The fire engineer said she did not assess the food court but did not consider that this would take total building occupancy over 1,000. She said the Building Code allowed her to declare an occupancy. The authority and Fire Service agreed but said this had to be justified.
- The applicant said the Ministry's expert considered the adjacent tenancies could be assumed to be unoccupied spaces at this point (refer paragraphs 4.3.1 and 4.3.2).

6.5.3 Other discussion of the proposed fire design included the following:

- The Fire Service and the authority commented on some differences between details on the architect's report and in the fire design. The authority said it had identified specific issues that showed a lack of coordination, one of which was "sharks' teeth" that should not be located on escape routes and which had been noted in its RFI of 1 July 2016. However, the applicant said these had been removed; the architect confirmed these were not to be located on escape routes.
- The fire engineer said errors in the modelling outputs were printout errors only and that the peer reviewer had reviewed the correct modelling.
- The plans presented to the authority did not represent all exitways from the existing pharmacy next to the supermarket.

7. The second draft determination and responses received

7.1 On 10 April 2017 I issued another draft determination ("the second draft") to the parties and the fire engineer, taking account of points raised in responses to the first draft and at the hearing where appropriate. This draft concluded the authority correctly exercised its powers of decision in refusing to grant building consent for the proposed supermarket alterations and confirmed the authority's decision.

7.2 I received the following responses from parties and have taken account of these where appropriate.

7.3 The authority

7.3.1 The authority replied on 26 April 2017 to accept the second draft subject to some minor amendments:

- Regarding the timeliness of its response to the FEB (paragraph 8.2.15) the authority said it provided a response 15 working days (on April 6) after this was received, and that “the applicant and the fire engineer provided no evidence that the authority’s comments had been considered in the intervening two months”.
- The authority said it appreciated the notes throughout the draft regarding the importance of prior discussion and the FEB, and agreed that the FEB did not necessarily mean agreement must be reached on all issues. It re-emphasised that “just writing a report and sending it would not be enough to constitute doing an FEB” as noted by the Fire Service (paragraph 6.4.4), and that by not considering comments by the other stakeholders there was little merit in the fire designer initiating the FEB process (refer the authority’s response to the expert at paragraph 4.5.8, point 18).

7.4 The Fire Service

7.4.1 The Fire Service’s lawyer also replied on 26 April 2017 to accept the second draft.

7.5 The owner

7.5.1 The owner replied on 3 May 2017 to accept the second draft.

7.6 The applicant

7.6.1 The agent for the applicant replied on 15 May 2017 to say the second draft was not accepted. He requested the determination acknowledge and take account of the following (in summary):

- The agent for the applicant said the second draft still referred to a conflict of interest (paragraph 0) “when it was accepted there was no conflict evident”, and that the expert’s comments on the use of the FEB should be included.
- He said the second draft still contained conjecture and personal opinion which was evident in the discussion on FEB use (where he felt the words “in my view”, paragraph 10.1.7, should be removed). He also said comments about “poor practice” (made by the Fire Service – refer paragraph 4.5.6) should be removed as these were opinions only.
- Regarding the IFEG²¹, he said this was written to provide a framework guideline for considering alternative solutions (for Building Code compliance) and was not intended to be used for Verification Method designs, which were compliance documents in their own right. He concluded from this that “the FEB is not required for a C/VM2 design according to IFEG” and said the determination should clarify that the FEB was not a normative part of this Verification Method.
- The agent for the applicant also said the determination should clarify that the only reason the applicant submitted a “specific design” for building consent was “the threat by the authority that they would refuse to process the original

²¹ International Fire Engineering Guidelines

consent if an agreed FEB was not reached”, and he contended that such comments by the authority were determinable.

- Regarding the authority’s comments that the designer claimed the fire engineering design was an alternative solution because the FEB was not agreed, i.e. the designer recognised that not following the FEB process was not following C/VM2 (paragraph 4.5.8) point 23), he said this should be clarified. “The only reason that the designer followed the FEB was because of the demand from [the authority] for it, not that they thought the FEB was part of the Verification Method.”
- In relation to occupancy, he said the authority only referred to the occupancy load for the mall area in its final RFI and the only other reference to occupancy was in the FEB, where it was commented on by the Fire Service. As this was part of the FEB he said it formed no part of the design itself and the compliance schedule for the building was incorrect. He also said the occupancy was previously agreed by the authority as less than 1,000 people and this had not changed, nor had the building footprint.
- The agent for the applicant said the Fire Service’s and [the authority’s fire advisers’] approach to considering the occupancy was not consistent, as he had documentation where they agreed an occupancy did not change for a similar situation. He said the entire disagreement appeared to stem from a supposition provided by the Fire Service in the FEB that the occupancy was larger than 1,000 people. If this was proved to be less, he said the argument disappeared at that point and the two additional tests required under the Verification Method would not be needed.
- On the timeliness of the authority’s responses, he said the FEB was sent to the Fire Service on 10 March 2016 and to the authority on 14 March 2016. The applicant had not heard back from the authority by the time the Fire Report was issued for building consent on 30 March 2016. “We therefore stand by the comments of [the Ministry’s expert] who agreed that the FEB comments were not received in a timely manner from the BCA.”

7.6.2 Following this response from the applicant, the authority replied on 19 May 2017 that it would not be commenting further. It considered no matters had been raised that had not already been discussed in correspondence or at the hearing.

8. Discussion: the matter to be determined

8.1 The legislative requirements

- 8.1.1 Under section 49(1) of the Act the authority must grant a building consent “if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application”.
- 8.1.2 The building consent applicant can choose how to demonstrate this compliance. However, there are various means of compliance listed in section 19 of the Act that the BCA must accept including via an Acceptable Solution or Verification Method.
- 8.1.3 As the proposed building work involves alterations section 112 (1) of the Act also applies. This means the authority must not grant the building consent unless it is satisfied that, after the alterations, the building will comply “as nearly as reasonably practicable” with the Building Code provisions relating to:

- means of escape from fire and
- access and facilities for persons with disabilities (if required under section 118).

8.1.4 In addition, section 112(1) requires that the authority must not grant a building consent unless the building:

- if it complied with the other Building Code provisions immediately before the alterations, continue to comply with these when building work is completed, or
- if it did not comply with these provisions immediately before the alterations, continue to comply at least to the same extent.

8.1.5 Under sections 46 and 47 of the Act²² the authority is required to give a copy of the building consent application to the Fire Service which may then provide a memorandum of advice on specific matters regarding the application (i.e. on provision for means of escape from fire and on the needs of firefighters). However, the authority can proceed to determine the application without any advice from the Fire Service if it does not receive this memorandum within ten working days.

8.2 The authority's decision-making

8.2.1 As noted earlier the matter for determination is whether or not the authority correctly exercised its powers in refusing to grant a building consent. I note that my consideration of this is limited to the fire design and the plans and specifications provided to me as part of the building consent application.

8.2.2 The applicant initially submitted a fire design that claimed compliance with the Verification Method C/VM2. However, this was later amended to "a specific fire engineering design based on the principles of C/VM2" supported by producer statements for design and design review from fire engineers.

8.2.3 Therefore, as this is an alternative solution the authority must, before granting a building consent, be satisfied on reasonable grounds that:

- the proposed alterations will comply with the Building Code, and
- the building will comply as nearly as reasonably practicable with the Code's provisions relating to means of escape from fire and for access and facilities for persons with disabilities (if required), and
- the building will be no worse after the alterations in terms of compliance with the other Code provisions.

Information and evidence

8.2.4 As required under the Act the authority has copied the building consent application to the Fire Service. As it is entitled to, the authority has subsequently taken the Fire Service's advice on certain matters.

8.2.5 It is then up to the authority what additional advice and evidence it considers, although its decision should be objective and the reasons for reaching that decision should be transparent to others.

²² These sections apply to building consent applications of a kind specified by the Ministry's chief executive in the New Zealand Gazette notice published 7 May 2012. These include alterations to non-residential buildings that will affect their fire safety systems.

- 8.2.6 The applicant considers some of the authority's information requests, and how they were made, to be unreasonable. These included providing a design coordination statement and raising what she considered to be new issues in its July 2016 RFI.
- 8.2.7 The applicant has also asked about the status of guidance published under section 175 of the Act²³ and whether a building consent authority can require an owner or applicant to comply with this.
- 8.2.8 It is my view that, regardless of what the authority may ask for, a designer has a duty of care and it would be good practice for them to provide some evidence of design coordination, to set out provisions for construction monitoring, and to communicate the requirements for the fire design to the key stakeholders. This should give a building consent authority some assurance that a robust process has been followed and that it can rely on the information provided.
- 8.2.9 I note here that the Ministry has published guidance intended to help building consent authorities decide how much information to request about existing buildings as part of a building consent application, so they can then determine Code compliance relating to means of escape from fire²⁴. This guidance is also intended to inform building consent applicants about the sort of information an authority may request. As it notes:
- However, we still recommend that you talk to the relevant authority well before applying. As this is a guide only, it does not guarantee what a BCA or TA will actually require.
- 8.2.10 Regarding the status of Ministry guidance, the chief executive may publish information under section 175 of the Act for the guidance of building consent authorities, territorial authorities, owners and people who carry out building work to assist them in complying with the Act. As this section states:
- Any information published by the chief executive under this section (a) is only a guide; and (b) if used, does not relieve any person of the obligation to consider any matter to which that information relates according to the circumstances of the particular case.
- 8.2.11 In my view, following such guidance represents good practice and can also help to reduce consenting risks such as unnecessary cost and delays.
- 8.2.12 I also note the applicant provided producer statements for design and design review to support its alternative solution but the authority said it had no confidence in these, largely because of its concerns about the design inputs.
- 8.2.13 The authority is correct to say that although producer statements are in widespread use to help BCAs establish compliance with the Act and Building Code they have no statutory status. Therefore, accepting them is at a BCA's discretion.
- 8.2.14 Having said that, in my view a producer statement from a person with the appropriate qualifications can go some way towards providing evidence that can be relied on when a BCA is making its decision "on reasonable grounds". I note that the authority has provided its reasons for not relying on the producer statements in this instance (refer paragraph 5.5.1).
- 8.2.15 I accept the comment by the expert that the authority did not provide a timely response to the FEB.

²³ Section 175 of the Act: Chief executive may publish guidance information

²⁴ "Requesting information about means of escape from fire for existing buildings", published December 2013 and available at www.building.govt.nz

The legal tests

- 8.2.16 As explained in section 8.1 a building consent authority receiving an application for alterations must not only consider the Code compliance of these alterations but also the requirements of section 112 of the Act. In particular, means of escape from the building must be assessed throughout.
- 8.2.17 The applicant's chosen approach was to demonstrate Building Code compliance: initially this was via compliance with C/VM2, but this was later revised to an alternative solution (a specific fire engineering design "based on the principles of C/VM2").
- 8.2.18 This Verification Method requires each of 10 design scenarios to be considered and designed for in turn: the applicant's alternative solution (in FER Rev B) follows this approach.
- 8.2.19 Because the supermarket building is single storey, sprinklered and with no sleeping occupancies this simplifies the requirements for the fire design. In particular, a number of the design scenarios are satisfied by default (because of the sprinklers) or by not being applicable (because of the nature and occupancy of the building).
- 8.2.20 However, the authority still had a number of queries about the design and, as the applicant declined to respond to its RFI concerning these, refused to grant a building consent.
- 8.2.21 The expert considered each of the authority's queries in turn, as outlined in section 4. While he disagreed with a number of them, including that justification for all design inputs is required, in his view there were enough unresolved technical issues to conclude that Building Code compliance has not been demonstrated.
- 8.2.22 Turning now to the section 112 requirements, I note the expert's comments that it was not clear to him whether ANARP had been applied. The authority has advised it was not able to make the required assessment under section 112 of the Act as it did not consider it had enough information to do so. The authority also noted that the fire report appeared to claim full compliance with the Building Code (refer paragraph 5.5.1).
- 8.2.23 In relation to means of escape from the building, I note that the fire design presented for building consent appeared to affect this as it indicated merging flows between the main exit from the supermarket and the southern exit from the existing pharmacy (they appear to share the same foyer space).
- 8.2.24 During the hearing it was mentioned that the plans presented to the authority did not represent all exitways from this pharmacy. However, this information was not available to the authority at the time it made its decision regarding building consent.
- 8.2.25 The extent of the building to be considered for the section 112 assessment and the relevant occupancy levels were also raised by the authority and the Fire Service, and were discussed in some detail at the hearing.
- 8.2.26 I note that the fire design is significantly influenced by the maximum occupancy within the building / firecell. This applies both to an assessment under C/VM2 to demonstrate full compliance with the Building Code and to an ANARP upgrade in accordance with section 112 of the Act. In both cases, an occupancy of 1,000 is a threshold for more onerous requirements. The current fire report presents a building occupancy of less than 1,000 people (noting that this was debated at the hearing).

- 8.2.27 In my view, it is important for an applicant and the building consent authority to discuss and agree such details at the start of a project, as they can have a significant influence on the design and compliance requirements.
- 8.2.28 In making a decision regarding a building consent the authority must obviously base this decision on the information available to it at the time. In this case the authority identified a number of technical concerns which the applicant did not respond to. Further, the expert agreed with enough of these to conclude that Building Code compliance had not been demonstrated by the fire design. The authority also stated, and I agree, that there was insufficient information to make the assessment required under section 112 of the Act, and in my view there were also reasonable concerns about the impact of the proposed design on the rest of the building (e.g. for means of escape).
- 8.2.29 In conclusion, having considered the expert's report, submissions from parties and other evidence in this matter, it is my opinion that the authority was correct to refuse to grant a building consent for the alterations.

9. Next steps

- 9.1 For proposed alterations to an existing building, following C/VM2 or presenting an alternative solution based on this Verification Method to demonstrate code compliance is one of the ways that can be used to meet the Act's requirements. However, another approach can be framed around the application of section 112 of the Act.
- 9.2 A possible approach for the applicant would be to:
- agree with the authority the extent of the building that needs to be assessed
 - agree with the authority the occupancies for the relevant parts of the building, providing appropriate justification for any levels below those commonly used (e.g. from customer data)
 - instead of modelling (which is the C/VM2 approach) consider a gap assessment methodology and ANARP upgrade basis, first agreeing this in principle with the authority.
- 9.3 To consider the supermarket in accordance with Section 112 of the Act and on an ANARP upgrade basis, the baseline level of compliance for a gap assessment is Acceptable Solution C/AS4 (for risk Group CA).
- 9.4 Undertaking a gap assessment and cost-benefit analysis would present the pros and cons of full compliance with C/AS4 based on the cost of the proposed alterations, number and diversity of the escape routes, likelihood and consequence of failure of a system, and any mitigating features provided by the upgrade (such as upgraded emergency lighting systems, new exit signage and additional exit pathways).
- 9.5 Regarding means of escape from the building, one approach could be to provide an exit pathway diagram that nominates designated exits and indicates populations assigned to those exits. This may indicate that by nominating the external doors from the pharmacy (which were not shown on the plans submitted for building consent) as a designated exit for means of escape, the impact of merging flows through the main foyer is minimised.

10. Comment on other issues raised by the applicant

10.1 The Fire Engineering Brief

- 10.1.1 The applicant has asked what Building Code objectives or requirements the FEB satisfies and whether it is required under the Act.
- 10.1.2 The FEB is broadly described in the International Fire Engineering Guidelines²⁵ as “a documented process that defines the scope of work for the fire engineering analysis and the basis for analysis as agreed by stakeholders”. Its extent and form will vary depending on the particular project and its complexity: it can range from an email trail through to full documentation and meetings between all parties.
- 10.1.3 The FEB is not a requirement of the Act. It is referred to in the Verification Method, C/VM2. A Verification Method must be accepted by an authority as a means of compliance, but it only represents one means by which compliance with the Building Code can be established.
- 10.1.4 With regard to C/VM2, this document anticipates that the FEB is an integral part of its methodology as stated in paragraph 1.3 (of C/VM2):
- The concept fire design shall be trialled using building specific fire design requirements ascertained via the Fire Engineering Brief (FEB) process as described in internationally recognised fire engineering process documents.
- 10.1.5 However, C/VM2 also acknowledges that the nature and extent of the FEB can vary depending on the particular project (also in paragraph 1.3):
- The key features of both the FEB communication and documentation are that it is unambiguous, complete (i.e. provided with appropriate context) and recorded in some form for later reference.
- 10.1.6 Questions have been raised about whether a BCA can require an FEB if a building consent applicant claims compliance with C/VM2, especially given the lack of specific requirements therein for the FEB’s scope and content.
- 10.1.7 In my view an FEB must be carried out as part of C/VM2. However, I note that this does not necessarily mean agreement must be reached on all issues – and it may well be that some parameters need to change as the fire design is developed.
- 10.1.8 Further, my understanding is that BCAs can, and do, set out their information requirements for building consent applications for alterations to existing buildings that use C/VM2 as a means of compliance, including details about the FEB. As part of this, they may clarify who they consider to be the key stakeholders that should be involved.
- 10.1.9 If a building consent applicant presents an alternative solution for complying with the Building Code’s fire provisions rather than following C/VM2 it is his or her choice how to go about demonstrating that compliance. However, in my view, engaging in an FEB process – i.e. some form of communication with stakeholders and the documentation of this before developing a final fire design – is prudent at the very least to minimise the chance of problems at the consenting stage or otherwise.

10.2 Alternative solutions for protection from fire

- 10.2.1 As noted in paragraph 4.2.2, the Fire Service said in its response to the expert’s report that the only significant area of difference between it and the expert related to its view that C/VM2 must be applied in its entirety.

²⁵ International Fire Engineering Guidelines, Edition 2005

- 10.2.2 It said it had adopted this view after testing the issue in Determination 2015/058, which referred to guidance on the Ministry's website including the statement that "should a designer wish to vary the design inputs other than listed in C/VM2 the design is an alternative solution and all design inputs must be justified".
- 10.2.3 The Fire Service said it accepted a Verification Method could, in principle, be used as a form of benchmark. However, its interpretation of the passage above was that the dependencies within C/VM2 made this sort of assessment impracticable, or at least highly fraught.
- 10.2.4 I note that this previous determination related to a new building – a proposed apartment block – rather than an alteration to an existing building, as is the case here.
- 10.2.5 The Ministry is currently developing further guidance on the use of alternative solutions for complying with the Building Code's performance requirements for protection from fire. I do not want to pre-empt this guidance but note that a draft will be circulated for industry feedback before it is finalised.

10.3 The Fire Service's review

- 10.3.1 The applicant has asked in what context a BCA could ask the Fire Service EU to undertake a "major" review. In my view, the clarification of this provided by the authority (paragraph 3.2.2, table row 2) and confirmed by the Fire Service at the hearing is reasonable and should be accepted.

11. Decision

- 11.1 In accordance with section 188 of the Act, I hereby determine that the authority correctly exercised its powers of decision in refusing to grant building consent for the proposed supermarket alterations and I confirm the authority's decision.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 16 June 2017.

John Gardiner
Manager Determinations and Assurance

Appendix A: Legislation

A.1 Relevant sections of the Building Act 2004 discussed in this determination include:

46 Copy of certain applications for building consent must be provided to New Zealand Fire Service Commission

- (1) This section applies to an application for a building consent that is of a kind specified by the chief executive by notice published in the Gazette.
- (2) A copy of the notice must be given by the chief executive to every building consent authority as soon as practicable after it is so published.
- (3) A building consent authority must, on receipt of an application to which this section applies, provide a copy of the application to the New Zealand Fire Service Commission.

47 New Zealand Fire Service Commission may give advice on applications under section 46

- (1) The New Zealand Fire Service Commission may, within 10 working days after receiving a copy of an application for a building consent under section 46, provide the building consent authority concerned with a memorandum that sets out advice on the following matters in respect of the building to which the application relates:
 - (a) provisions for means of escape from fire:
 - (b) the needs of persons who are authorised by law to enter the building to undertake fire-fighting.
- (2) The New Zealand Fire Service Commission must not, in the memorandum referred to in subsection (1), set out advice that provides for the building to meet performance criteria that exceed the requirements of the building code.
- (3) If the New Zealand Fire Service Commission does not provide a memorandum within the period specified in subsection (1), the building consent authority may proceed to determine the application without the memorandum.

49 Grant of building consent

- (1) A building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.

...

112 Alterations to existing buildings

- (1) A building consent authority must not grant a building consent for the alteration of an existing building, or part of an existing building, unless the building consent authority is satisfied that, after the alteration,—
 - (a) the building will comply, as nearly 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 section 118); and
 - (b) the building will,—

- 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.

...