



Determination 2019/040

Regarding the authority's refusal to amend a compliance schedule to remove a mezzanine floor from the schedule for an early childhood centre at 8 Te Rito Street, Marshland, Christchurch

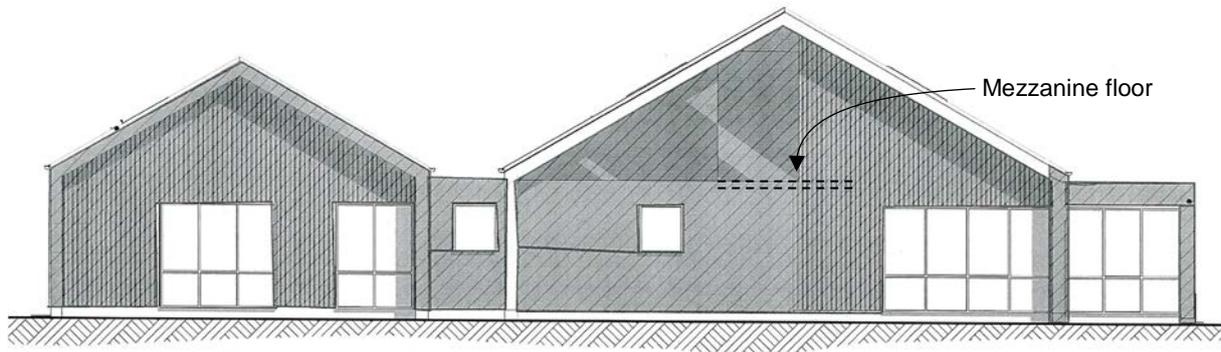


Figure 1: East elevation pre-school building (not to scale)

Summary

This determination considers the authority's refusal to amend a compliance schedule to remove the fire-rated mezzanine floor from the schedule for an early childhood centre. The matter turns on whether the fire-rated floor is a "fire separation" as that term is used in relation to specified systems.

1. The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ ("the Act") made under due authorisation by me, Katie Gordon, Manager Determinations, Ministry of Business, Innovation and Employment ("the Ministry"), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- the owner of the subject building, Canterbury Educare Ltd ("the applicant"), acting through an independently qualified person² as its agent ("the applicant's agent")
- Christchurch City Council carrying out its duties and functions as a territorial authority or a building consent authority ("the authority").

¹ 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.

² As defined in section 7 of the Act

- 1.3 This determination arises from the authority's decision to include a fire-rated mezzanine floor ("the mezzanine floor") as a specified system on the compliance schedule for the applicant's building. The applicant's agent subsequently recommended that the mezzanine floor be removed from the schedule, but the authority refused.
- 1.4 Accordingly, the matters to be determined³ are whether the authority was correct to:
- issue the compliance schedule with the mezzanine floor included as a specified system for the purposes of Schedule 1 of the Building (Specified Systems, Change the Use, and Earthquake-prone Building) Regulations 2005 ("the Specified Systems Regulations"), and
 - subsequently refuse to amend the compliance schedule to remove the mezzanine floor when recommended to do so by an independently qualified person.
- 1.5 In making my decision, I have considered the application, the submissions of the parties, and the other evidence in this matter. I have not considered any other aspects of the Act or Building Code⁴, beyond those required to decide on the matter to be determined. Relevant sections of the Act and clauses of the Building Code⁵ and the Specified Systems Regulations can be found in Appendix A.

2. The building and background

- 2.1 The applicant's building is part of a purpose-built early childhood centre. The centre includes a 'preschool building', which is the subject of this determination, and a separate administration and staff accommodation building.
- 2.2 The preschool is single storey, with a high pitched roof, which enables an additional mezzanine floor to be accommodated within the building. The ground floor area is approximately 230m², and the mezzanine floor area is approximately 33m². The mezzanine floor is located under the highest part of the gable roof (see figures 1 and 2) and is accessed via a flight of stairs leading from the ground floor entry and reception area.
- 2.3 The mezzanine floor has an FRR⁶ of 30/30/30. The underside of the mezzanine floor level is lined with 16mm fire-resistant plasterboard. The floor level of the mezzanine is approximately 2.74m above the ground floor level. The eastern and western ends of the floor abut the external walls of the building. Parts of the northern and southern walls are open to the ground floor below, and enclosed by 1100mm high barrier. The mezzanine floor, which is labelled as "Storage" on the plans, has two small rooms opening off it; one of which is designated as 'Storage', the other as a 'Staff Room'.

³ Under sections 177(1)(b), 177(2)(e) and 177(3)(d) of the Act.

⁴ First Schedule Building Regulations 1992

⁵ In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

⁶ Fire Resistance Ratings (FRR) comprise three numbers giving the time in minutes for which each of the criteria *stability*, *integrity* and *insulation* are satisfied (in that order).

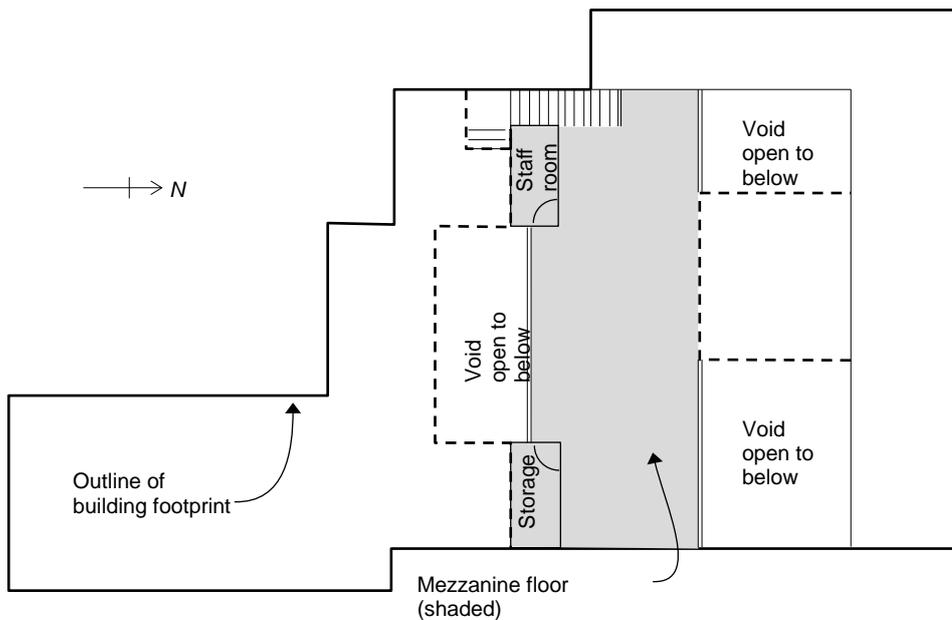


Figure 2: Plan showing mezzanine over ground floor (not to scale)

- 2.4 In 2016 the applicant’s architect applied for a building consent to construct the building. As part of this process, the architect commissioned a Fire Safety Design Report (“the fire safety report”) to be prepared by a company of consulting engineers. The final report dated April 2016 was based on the proposed plans for the building. Its stated purpose was to ‘identify the limitations, deficiencies and corrective actions necessary for the proposed building to comply with’ Clauses C1 to C6 of the Building Code relating to protection from fire by way of C/AS4⁷ (“the Acceptable Solution”⁸) as an Acceptable Solution. The fire safety report and its attached plans formed part of the approved building consent documentation for the applicant’s building.
- 2.5 The fire safety report places the building in ‘risk group’ category CA, which is described in Table 1.1 of the Acceptable Solution as applying to (among other uses) “early childhood centres”. The fire safety report gives the building a maximum occupancy load of 56 people, comprising 50 children and up to six staff. The mezzanine floor has no occupancy load allocated to it as it is stated that it is to be used primarily for storage and will only be occupied intermittently by staff. The building’s escape height is given as zero throughout⁹ on the basis that the mezzanine will not be occupied by children.
- 2.6 The fire safety report went on to consider the proposed building’s compliance with the requirements in C/AS4 as an Acceptable Solution for Clauses C1 to C6. With respect to ‘internal fire spread’ the report states:

The entire preschool building is to be treated as a single firecell. No formal fire separations need to be installed in the building.

The mezzanine floor and the stair used as access and their supporting structure will need to provide a fire rating of at least 30 minutes.

⁷ Acceptable Solution for Buildings with Public Access and Educational Facilities (Risk Group CA) C/AS4 amendment 3, effective from 1 July 2014 to 30 May 2017, current at the date of the fire report.

⁸ Unless otherwise stated, reference in the discussion section of this determination to the Acceptable Solution are to the suite of Acceptable Solutions C/AS1 – C/AS7 current at the time the building consent was applied for, and more specifically C/AS4 amendment 3.

⁹ *Escape height* is defined in C/AS4 as meaning “the height between the floor level in the firecell being considered and the floor level of the required final exit which is the greatest vertical distance above or below that firecell.” However, the comment to paragraph 2.2.2 of C/AS4 that concerns special requirements for early childhood centres notes that “Intermediate floors that children are unable to access do not need to be included in the escape height”.

- 2.7 Appendix C of the fire safety report listed specified systems for inclusion in the building's compliance schedule that had been identified through the fire engineering design, namely: a Type 4 smoke detection system, emergency lighting, and illuminated final exits signs. The mezzanine floor was not included in the specified systems identified.
- 2.8 The building was constructed, and on 10 February 2017 the authority issued a compliance schedule in respect of it. The compliance schedule (No. WOF56594) gives the building's current, lawfully established use as a 'PRE-SCHOOL. MEZZANINE FLOOR - STORE ONLY'. The specified systems listed in the compliance schedule include 'Specified System 15/3', i.e. fire separations, with the following details:

Specified System 15/3	Fire separations (as so defined)					
<i>Description: Type:</i>	Fire Separations protecting a Means of Escape					
<i>Location, Make (if known), Model number (if known):</i>	Location: 30/30/30FRR – Mezzanine and stair to storage Make and Model: [plasterboard] fire rated system					
<i>Maintenance Procedure Performance Standards</i>	Visual inspection of Fire Partitions including doors and their proper operation and in accordance with Compliance Document C/AS1 – C/AS7					
<i>Inspection Frequency</i>			Monthly			Annually
<i>Maintained or Inspected By</i>			Owner			Independent Qualified Person

- 2.9 The applicant's agent subsequently carried out annual building warrant of fitness inspections for the applicant's building, with the latest building warrant of fitness (Form 12) issued on 18 January 2019 in relation to the specified systems listed in the compliance schedule, including fire separations protecting escape routes.
- 2.10 On 27 November 2018, the applicant's agent emailed the authority seeking clarification as to what constituted a fire separation, and in particular whether a mezzanine floor could constitute a fire separation. The agent had received conflicting advice from the authority and from fire engineers. The authority, in its compliance schedules attached to code compliance certificates, was listing the underside of mezzanine floors as a fire separation, and hence a specified system. Whereas fire engineers were advising that fire and smoke separations were fully enclosed firecells, and that as mezzanine floors were not fully enclosed, they aren't fire or smoke separations and therefore are not specified systems. The applicant's agent cited the fire safety report as an example of the former approach and also quoted Clauses C3.3.2 and C3.3.3 and definitions of "fire separation" and "firecell" from the Building Code prior to its amendment on 10 April 2012.
- 2.11 The authority replied on 28 November 2018 clarifying its view that 'fire rated elements' are required either because they protect adjacent property or they protect the means of escape for occupants within a building. Intermediate floors were fire rated for the latter reason; to protect occupants or their means of escape. The authority concluded that:

As the fire rated element is there for the protection of means of escape we believe it is a specified system ss15/3.

- 2.12 The applicant's agent then sought the advice of the Ministry, and correspondence passed between the Ministry and the parties as to whether fire-rated mezzanine floors could be considered fire separations and hence specified systems for the purpose of inclusion in compliance schedules. While unable to provide advice on a specific set of circumstances, the officer of the Ministry stated that 'an intermediate floor would have to be separating a firecell from another firecell or a safe path to be considered a "fire separation". If the intermediate floor is open to the space above and below it, it is unlikely to meet the definition of "fire separation" as those spaces would be in the same "firecell".'
- 2.13 The authority maintained its view that it was 'appropriate to include fire rated intermediate floors' within compliance schedules. The applicant's agent contended that if this was the case, then there needed to be clearer guidance in the compliance schedules around the 'Maintenance Procedures / Performance standards when the sole Fire Separation is the underside of the Mezzanine Floor', as the procedures and standards currently being used in compliance schedules 'for SS15/3 is for genuine formal Fire Separations (Fire Cells)' which were not appropriate.
- 2.14 The applicant's agent applied for a determination in January 2019. Correspondence passed between the agent, the authority and the Ministry as to the matter for determination and who the parties would be. The applicant's agent reapplied for a determination on the applicant's behalf and this was received by the Ministry on 4 February 2019.

3. The submissions

3.1 The applicants' submissions

- 3.1.1 In its application for a determination, the applicant stated that it was:
- Seeking Clarity around Mezzanine Floors being listed on Compliance Schedules as Fire Separations and if listed the appropriate Maintenance Procedures / Performance Standards for Fire Rated panels over full Fire Separations.
- 3.1.2 I note here that a determination can only be made on matters set out in section 177 of the Act, and accordingly I have considered the matters as described in paragraph 1.4 of this determination. However, the discussion in this determination may be useful to others in similar circumstances.
- 3.1.3 With its application, the applicant provided copies of:
- the fire safety report
 - compliance schedule number WOF56594
 - correspondence between the parties, and between the applicant's agent and the Ministry.

3.2 The authority's submission

- 3.2.1 The authority made a submission in an email dated 14 February 2019.
- 3.2.2 In its submission, the authority stated that the parties were agreed that the terms mezzanine floor and intermediate floor are interchangeable, and that both the mezzanine floor and the staircase leading to it were required to have a fire rating. Where they disagreed was on whether the mezzanine floor and its staircase constitute a fire separation for the purposes of the Specified Systems Regulations.

3.2.3 The authority went on to consider the definitions of specified systems, fire separations, firecells and smoke separations in the Act and regulations, and to argue that the meaning of the term fire separation needed to be defined differently and more broadly in relation to a specified system than it was defined in the Building Code. The authority considers that where life safety or fire safety is an issue it is appropriate to adopt a wider interpretation of the term ‘fire separation’ that better met the purposes of the fire safety objectives in the Building Code, and that a mezzanine floor would come within such an interpretation.

3.2.4 The authority concluded that:

[The authority] considered the intent of the requirement to include fire separations where they form part of the means of escape from fire, and decided that as the fire rating of the intermediate floor was required to protect the occupants in their escape during a fire, that these fire rated elements should be included under SS15/3. [The authority] did appreciate that these fire rated elements did not meet the strict definition of a fire separation as defined in the Building Code but as they provided protection to the occupants that they should be included. The fact that this is not an ‘enclosed’ fire separation should not be the deciding factor...

[The authority believes] that inspection of a mezzanine floor for the purposes of the compliance schedule/[building warrant of fitness] inspections should be just the same as for a full floor, so there is no real ‘practical’ issue with a mezzanine floor being a fire separation to be included on a compliance schedule.

3.2.5 The authority also provided copies of:

- the current and past building warrant of fitness certificates for the applicant’s building
- the fire safety report
- compliance schedule number WOF56594
- the consented plans for the applicant’s building, including a floor framing plan and a mezzanine plan.

3.3 Submissions in response to the draft

3.3.1 A draft of this determination was sent to the parties for comment on 2 May 2019.

3.3.2 The applicant’s agent responded on 7 May 2019, accepting the findings in the draft determination without further comment.

3.3.3 The authority responded on 24 May 2019. It did not accept the draft determination, and made another submission setting out its view on the matter (in summary):

- In considering what constitutes a “fire separation” the origins of Clause 15 of the Specified Systems Regulations are relevant, specifically section 44(5) of the Building Act 1991 which required compliance schedules also include “where appropriate, systems or features relating to- (a) Means of escape from fire; ...”
- With reference to the definition of “specified system” in section 7 of the Act, the authority considers the fire rated floor to the mezzanine floor is “a means [sic] a system or feature that is contained in ...[the] building and contributes to the proper functioning of the building”, i.e. it is a system or feature relating to means of escape from fire.

- The authority maintains the view that a broader interpretation of fire separation should be applied to better support the life and fire safety purposes of the legislation.

4. Discussion

4.1 The matter to be determined is whether the authority correctly exercised its powers of decision in issuing the compliance schedule with the mezzanine floor included within it as a fire separation and hence a specified system, and then refusing to amend the compliance schedule to remove reference to the mezzanine floor.

4.2 The legislation relating to compliance schedules and specified systems

4.2.1 Compliance schedules are issued for certain types of buildings that contain specific safety and essential systems. These systems – known as specified systems – are crucial to the continuing safety of the building and those who use it, and are identified on the compliance schedule, along with the performance standards, and the inspection, maintenance and reporting procedures that relate to them.

4.2.2 Once a compliance schedule is issued, the building owner is responsible for ensuring that the inspection and maintenance of the specified systems occurs, that the specified systems continue to meet their identified performance standards and that this is duly reported on. This process confirms that the relevant systems and features incorporated into the building's design continue to perform as intended to ensure ongoing compliance of the building and that their performance is not compromised over time by, for example lack of maintenance or alterations.

4.2.3 To discharge these responsibilities, a building owner may engage an independently qualified person (as defined in section 7 of the Act) to verify that the requisite inspection, maintenance and reporting procedures for each specified system in the compliance schedule have been fully complied with. The independently qualified person (or persons, where more than one is used) will do this by completing a Form 12A¹⁰. Once this has been done, the owner must complete and sign a building warrant of fitness for the building, which must then be supplied to the authority (along with the completed Form 12A) and displayed in a public place. A building's warrant of fitness is renewed annually.

4.2.4 The legislative provisions relating to compliance schedules can be found in sections 100 to 111 of the Act. The provisions of particular relevance in the current case are section 100, which stipulates that a building requires a compliance schedule where it contains one or more specified system, and section 103 which relates to the content of compliance schedules.

103 Content of compliance schedule

(1) A compliance schedule must—

- (a) state and describe each of the specified systems covered by the compliance schedule, including a statement of the type and (if known) make of each specified system; and
- (b) state the performance standards for the specified systems; and
- (c) describe the inspection, maintenance, and reporting procedures to be followed by independently qualified persons or other persons in respect of the specified systems to ensure that those systems are capable of, and are, performing to the performance standards.

¹⁰ Schedule to the Building (Forms) Amendment Regulations 2005

(2) For the purposes of subsection (1)(c), the inspection, maintenance, and reporting procedures of the compliance schedule may be identified—

(a) by description in the compliance schedule; or

(b) by reference to—

(i) a prescribed acceptable solution or prescribed verification method in a regulation referred to in section 20; or

(ii) an acceptable solution or a verification method issued under section 22; or

(iii) a building method or product.

4.2.5 Accordingly, whether the authority was correct to issue a compliance schedule for the applicant's building that included the mezzanine floor depends on whether that floor constitutes a specified system for the purposes of the Act.

4.2.6 Specified system is defined in Section 7 of the Act, as follows:

specified system—

(a) means a system or feature that—

(i) is contained in, or attached to, a building; and

(ii) contributes to the proper functioning of the building (for example, an automatic sprinkler system); and

(iii) is declared by the Governor-General, by Order in Council, to be a specified system for the purposes of this Act; and

(b) includes a cable car

4.2.7 Schedule 1 of the Specified Systems Regulations sets out the systems and features that are considered specified systems for the purposes of the Act. These include, at item 15 (emphasis is mine):

15 Any or all of the following systems and features, so long as they form part of a building's means of escape from fire, and so long as those means also contain any or all of the systems or features specified in clauses 1 to 6, 9, and 13:

(a) systems for communicating spoken information intended to facilitate evacuation; and

(b) final exits (as defined by clause A2 of the building code); and

(c) fire separations (as so defined); and [my emphasis]

(d) signs for communicating information intended to facilitate evacuation; and

(e) smoke separations (as so defined).

4.2.8 The interpretation clause in the Specified Systems Regulations (Clause 3) contains no definitions specific to the regulations but instead adopts the definitions in the Act. However, the term "fire separation" is not defined in the Act and neither is the term "smoke separations". Clause 15(b) of Schedule 1 of the Specified Systems Regulations cites the definition in Clause A2 Interpretation of the Building Code for the purpose of defining the term "final exits". I take the view that the phrase "as so defined" in subclauses (c) and (e) as they relate to the definitions of fire separations and smoke separations respectively is to be read as meaning that these terms are also as defined by Clause A2 of the Building Code. However, if I am wrong about this, I have discussed further the interpretation of the term "fire separation" for the purpose of the Specified Systems Regulations in paragraphs 4.3.6 to 4.3.20.

4.2.9 The authority has submitted that in considering what constitutes a "fire separation", the origins of Clause 15 of Schedule 1 of the of the Specified Systems Regulations

are relevant; specifically section 44(5) of the Building Act 1991 which required compliance schedules to also include “where appropriate, systems or features relating to– (a) Means of escape from fire; ...”

4.2.10 I note that Clause 15 of Schedule 1 of the of the Specified Systems Regulations, which describes those systems and features that form part of a building’s means of escape from fire and that are specified systems, are more specific than the general requirement of section 44(5) of the Building Act 1991 as it relates to means of escape from fire.

4.3 Whether the mezzanine floor is a fire separation

4.3.1 The authority has included the mezzanine floor in the compliance schedule on the grounds that it is fire-rated and forms part of the escape route, and hence in the authority’s view is a specified system as a “fire separation”. Whether a mezzanine floor constitutes a fire separation has been the issue in debate between the parties, and on which they seek clarification through the determination process. The authority supports a broad interpretation of the term “fire separation” to support the life and fire safety purposes of the legislation. The applicant’s agent has received advice to the contrary from fellow professionals and also seeks clarification as to whether a mezzanine floor constitutes a fire separation for the purpose of the Specified Systems Regulations.

4.3.2 For a mezzanine floor to qualify as a specified system, being a fire separation is not the only thing that must be established. Clause 15(c) of Schedule 1 of the Specified Systems Regulations sets two additional criteria that fire separations must meet before they can be included as specified systems, namely that:

- they must form part of the building’s means of escape from fire; and
- that means of escape from fire must also contain one of the other specified systems listed in Clauses 1 to 6, 9, or 13 of Schedule 1.

4.3.3 Section 7 of the Act defines “means of escape from fire” as follows:

means of escape from fire, in relation to a building that has a floor area,—

(a) means continuous unobstructed routes of travel from any part of the floor area of that building to a place of safety; and

(b) includes all active and passive protection features required to warn people of fire and to assist in protecting people from the effects of fire in the course of their escape from the fire

4.3.4 The mezzanine floor in the applicant’s building is part of the floor area of the building. The fire safety report, which forms part of the consented documentation for the building, shows the route of travel from the mezzanine floor’s north-eastern corner, traversing the mezzanine floor to the top of the staircase, and from there, down the stairs to the ground-floor reception area and out through the final exit. It is clear, therefore, that the mezzanine floor forms part of the building’s means of escape, and meets the first criteria to be a specified system as described in Clause 15(c). I note also that the mezzanine floor, as well as the stairs leading from it and its supporting structure, has a fire-rating of 30/30/30FRR (30 minutes) for this purpose.

4.3.5 The fire safety report also shows that the firecell, within which the mezzanine floor is located, contains smoke detection, an alarm system, and emergency lighting. Looking at the criteria of Clause 15(c) noted in paragraph 4.3.2 above, I am satisfied

that they have been met in this case. It remains only to consider whether the mezzanine floor itself constitutes a “fire separation”.

- 4.3.6 I have reached the view that “fire separation (as so defined)” is to be interpreted as meaning as defined in Clause A2 of the Building Code. However, if I am wrong about this I must consider another interpretation of the term “fire separation” for the purpose of the Specified Systems Regulations. Accordingly, I have also considered broadly how the term is used in the Act and regulations.
- 4.3.7 In the Act, fire separations are referred to in Schedule 1 as being excluded from categories of building work that is otherwise exempt from the requirement for a building consent, such as Clauses 10, 11 and 13 in reference to work to “a fire separation wall (also known as a firewall)” and in Clause 31 in respect of removal of building elements that may affect any fire separation. For completeness I note here that in Clause 31 of the Schedule, “any fire separation” is listed separately and in addition to “any specified system”. In the context of Schedule 1, fire separations are exceptions to building work that might otherwise be exempt because the building work has the potential to affect the integrity of the fire separation, and hence requires oversight by a building consent authority. The intention is to ensure the performance of the fire separation is not compromised.
- 4.3.8 I note that while “Fire separation” is not defined in the Specified Systems Regulations or in the Act, it is defined in the Building Code (Schedule 1 of the Building Regulations 1992). That definition, in Clause A2, is also found in the Acceptable Solution:
- fire separation** any *building element* which separates *firecells* or *firecells* and *safe paths*¹¹, and provides a specific *fire resistance rating*
- 4.3.9 The other definition in Clause A2 that is relevant in interpreting the term “fire separation” as it is defined in the Building Code is “firecell”:
- firecell** any space including a group of contiguous spaces on the same or different levels within a *building*, which is enclosed by any combination of *fire separations*, *external walls*, roofs, and floors
- 4.3.10 I note that the definition of “firecell” in the Acceptable Solution is the same, but with the addition of an explanatory comment which notes that “internal floors between firecells are fire separations”. The other definition that appears in the Acceptable Solution, but is no longer in Clause A2 of the Building Code, is for ‘safe paths’, being “That part of an exitway which is protected from the effects of fire by fire separations, external walls, or by distance when exposed to open air.”
- 4.3.11 In my opinion all of these definitions, considered in light of the purpose and in the context in which they appear, show an intention that fire separations are those fire-rated elements within a building that create a complete separation between firecells, or between firecells and safe paths. I consider that the term separation itself infers this, and that this intention is reinforced by the definition of a firecell, as a space that is “enclosed” by fire separations, walls, roofs and floors. This is by necessity complete, not partial enclosure, as the nature of a firecell is that it is an area of a building that is completely physically separated from, and hence capable of being considered independent from, other areas of the building.

¹¹ The definition for the term “safe path” in Clause A2 was revoked on 10 April 2012, by [regulation 4\(1\)](#) of the Building (Building Code: Fire Safety and Signs) Amendment Regulations 2012 when the C Clauses of the Building Code were amended as that term is no longer used in the C Clauses; however, the term remains within the definitions “travel distance” and “escape route” and the same definition remains in the Acceptable Solutions for C Clauses current at the time of writing.

4.3.12 In the Building Code, the term “fire separation” is mentioned only in the interpretation of other terms in Clause A2, but does not appear in any of the performance clauses. Foremost among these mentions, is the definition for “place of safety”, which includes a place “constructed with fire separations that have fire resistance sufficient to withstand burnout at the point of fire source”. Again, I consider this definition shows that the separation provided by a fire separation is intended to be complete. A partial separation cannot create a level of fire resistance capable of withstanding burnout.

4.3.13 In previous versions of the Building Code, the C Clauses included specific performance requirements relating to fire separations. For example, prior to its amendment on 10 April 2012, Clause C3 – Spread of Fire included performance Clauses C3.3.2 and C3.3.3, both of which related to fire separations. These previous performance clauses have been referred to by the applicant’s agent in his correspondence as supporting the contention that fire separations are intended to be complete separations, without openings or penetrations, and I agree that this was the case. The historical Clause C3.3.3, in particular, makes this clear:

C3.3.3 *Fire separations shall:*

- (a) Where openings occur, be provided with *fire resisting closures* to maintain the *integrity* of the *fire separations* for an *adequate* time, and
- (b) Where penetrations occur, maintain the *fire resistance rating* of the *fire separation*.

4.3.14 I have also considered the use of the term “fire separation” in the Acceptable Solution, and whether its use is consistent with it being interpreted as a complete separation, and in particular in relation to intermediate (or mezzanine) floors. Fire separation is mentioned multiple times in the Acceptable Solution, and in my opinion these references reinforce the interpretation that a fire separation is intended to be complete. Of particular note, paragraph 4.5.2 in C/AS4 relating to firecell construction states that “Except where intermediate floors are permitted, each floor in a multi-storey building shall be a fire separation”, and paragraph 4.13, which relates to floors, including intermediate floors (which include mezzanine floors). Paragraph 4.13.1 states that:

Floors in *buildings* shall be *fire separations*...except if...

- a) The floor is an *intermediate floor* within a firecell...

This clearly shows that intermediate floors are not required to be fire separations when the Acceptable Solution is used as the means of achieving compliance.

4.3.15 This is reiterated in the definition of an “intermediate floor” in C/AS4:

Intermediate floor Any upper floor within a *firecell* which because of its configuration provides an opening allowing smoke or *fire* to spread from a lower to an upper level within the *firecell*.

Comment:

...

- 2. An intermediate floor may be open to the firecell or enclosed with non-fire rated construction. If enclosed with fire rated walls another firecell is created.

It follows that if the definition of an intermediate (or mezzanine) floor for the purpose of the Acceptable Solution is one that allows fire to spread, then it cannot also be a fire separation. I note also the Acceptable Solution recognises that occupants of the intermediate floor are at risk of heat and smoke exposure at an earlier stage than people on a “full floor” (refer comment to paragraph 3.4.3 of

C/AS4), and for this reason the Acceptable Solution includes particular criteria for intermediate floors such as limitations on the number of occupants, the size of the intermediate floor, and travel distances etc.

- 4.3.16 For completeness and in reference to the authority's submission regarding section 44(4) of the Building Act 1991, I note also that paragraph 2.2 of the Approved Document (equivalent of an Acceptable Solution) that was in effect from July 1992 to May 2001 for what was then Clause 3 Spread of fire addressed this matter as follows:
- 2.2.1 Floors in buildings shall be fire separations (see Figure 1) except where any of the following conditions are satisfied:
- ...
- c) The floor is an intermediate floor within a firecell [with reference to paragraph 2.2.4 of the compliance document for possible FRR requirements, which has the following comment: "1. Occupants on an open intermediate floor will be physically aware of a fire occurring anywhere in the firecell, and the F rating and alarm requirements are intended to ensure they have adequate time to escape."]
- ...
- 4.3.17 In its submission, the authority acknowledged that a strict interpretation of the definition of "fire separation" in the Building Code required enclosure, and would exclude mezzanine floors, but argued that where life or fire safety was an issue it was appropriate to adopt a wider interpretation of the term, that in the authority's view better meet the purpose of Clause C, and that such a wider interpretation would include fire-rated elements such as mezzanine floors. The authority considers that for the purpose of compliance schedules this broader interpretation that includes fire-rated elements should be used.
- 4.3.18 I disagree with the authority's view insofar as it concerns fire-rated elements associated with an escape route being included as fire separations for the purpose of the Specified Systems Regulations. Although fire-rating is relevant to building elements that make up fire separations, it does not necessarily follow that all fire-rated elements are fire separations. Fire-rating is required for various building elements and building assemblies in order that those building elements continue to, for example, maintain structural integrity without failure for a specified fire rating. For example, structural elements within a firecell may require fire-rating in order to meet the requirements of Clause B1.3.3(i) and Clause C6, even when those elements do not form part of a fire separation. I note also that paragraph 4.13.4 of C/AS4 addresses fire ratings for intermediate floors, stairs used as access and their supporting primary elements within the firecell, requiring these to have a fire-rating of at least 30 minutes when using the Acceptable Solution to achieve compliance.
- 4.3.19 In my view, the interpretation of fire-separation set out in this determination is also supported by the definition of "escape route", in which a "safe path" (one that is fire-separated or is otherwise protected by distance when exposed to open air) is only one type of path that is included in the definition of "escape route" in Clause A2 of the Building Code. An escape route may also include an "open path" within a firecell, i.e. that part of an escape route within a firecell where occupants may be exposed to fire or smoke while making their escape. In this case, the mezzanine floor is an open path that forms part of the escape route; it has a fire-rated floor and is supported with fire-rated columns.
- 4.3.20 Overall, I consider it clear from definitions discussed above, that what is meant by the term "fire separation" for the purpose of the Specified Systems Regulations is a

complete separation between spaces within a building, and that this does not extend to mezzanine floors within a larger firecell. I do not consider that a wider interpretation is warranted or that the interpretation of fire separation in this determination is contrary to the purposes of the Act or the Specified Systems Regulations.

Conclusion

- 4.3.21 I conclude that the mezzanine or intermediate floor in this case does not come within the meaning of the term “fire separation”, as that term is used in the Act and the Specified System Regulations. The implication of this is that the authority erred in including the mezzanine floor in the compliance schedule for this building as a specified system, and was incorrect to decline to amend the compliance schedule when recommended to do so by the applicant’s agent who is an independently qualified person.

5. The decision

- 5.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the authority was incorrect to:
- issue the compliance schedule for the applicant’s building with the mezzanine floor included within it as a specified system, and
 - subsequently refuse to amend the compliance schedule to remove the mezzanine floor when recommended to do so by an independently qualified person.
- 5.2 I hereby reverse those decisions, thus requiring the authority to amend the compliance schedule to reflect the findings of this determination.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 19 August 2019.

Katie Gordon

Manager Determinations

Appendix A

A.1 Relevant sections of the Building Act 2004 referred to in this determination:

7 Interpretation

specified system—

(a) means a system or feature that—

(i) is contained in, or attached to, a building; and

(ii) contributes to the proper functioning of the building (for example, an automatic sprinkler system); and

(iii) is declared by the Governor-General, by Order in Council, to be a specified system for the purposes of this Act; and

(b) ...

Compliance schedules

100 Requirement for compliance schedule

(1) A building not used wholly as a single household unit—

(a) requires a compliance schedule if—

(i) it has a specified system; or

(ii) it has a cable car attached to it or servicing it; and

(b) requires the schedule for all specified systems it has and any cable car it has attached to it or servicing it.

A.2 Relevant sections of the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 referred to in this determination:

3 Interpretation

(1) In these regulations, Act means the Building Act 2004.

(2) Terms or expressions used and not defined in these regulations but defined in the Act have, in these regulations, the same meanings as they have in the Act.

Specified systems

4 Systems or features prescribed as specified systems

The systems or features specified in Schedule 1 are specified systems for the purposes of the Act.

Schedule 1 Specified systems

...

15 Any or all of the following systems and features, so long as they form part of a building's means of escape from fire, and so long as those means also contain any or all of the systems or features specified in [clauses 1 to 6](#), [9](#), and [13](#):

(a) systems for communicating spoken information intended to facilitate evacuation; and

(b) final exits (as defined by clause A2 of the [building code](#)); and

(c) fire separations (as so defined); and

(d) signs for communicating information intended to facilitate evacuation; and

(e) smoke separations (as so defined).

Clause 15: added, on 12 January 2006, by [regulation 3](#) of the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Amendment Regulations 2005 (SR 2005/338).