BUILDING PERFORMANCE

Determination 2024/041

Date: 13 August 2024

Regarding the authority's refusal to grant a building consent for building work to replace the existing fire alarm system in a cool store

8 Canada Crescent, Hornby South, Christchurch

Summary

This determination considers the decision by the authority to refuse to grant a building consent for work to disestablish an existing sprinkler system. The authority considered that there were outstanding issues regarding the fire load within the building, the proposed replacement warning system, and the fire rating requirements for the building. The determination discusses the outstanding issues at the time the building consent was refused, and the refusal letter issued by the authority.

The legislation discussed in this determination is contained in Appendix A. In this determination, unless otherwise stated, references to "sections" are to sections of the Building Act 2004 ("the Act") and references to "clauses" are to clauses in Schedule 1 ("the Building Code") of the Building Regulations 1992.

The Act and the Building Code are available at www.legislation.govt.nz. Information about the legislation, as well as past determinations, compliance documents (eg, Acceptable Solutions) and guidance issued by the Ministry, is available at www.building.govt.nz.

1. The matter to be determined

1.1. This is a determination made under due authorisation by me, Andrew Eames, Principal Advisor Determinations, Ministry of Business, Innovation and Employment ("the Ministry"), for and on behalf of the Chief Executive of the Ministry.[1]

1.2. The parties to the determination are:

1.2.1. Lineage Logistics Ltd, the owner of the property ("the owner")

1.2.2. G Klein, the current leaseholder of the property ("the leaseholder")

1.2.3. Christchurch City Council, carrying out its duties as a territorial authority or building consent authority ("the authority").

1.3. I have also consulted with Fire and Emergency New Zealand (FENZ) in making this determination, as required under section 170(a) of the Act.

1.4. This determination arises from the decision of the authority to refuse to grant a building consent for alterations to an existing warehouse (a cold storage facility) to decommission an existing automatic detection sprinkler system and replace it with a manual call point fire alarm system. The refusal arose because the authority was not satisfied that the building work would achieve compliance with clauses C1 to C6 of the Building Code, which relate to fire safety.

1.5. The matter to be determined, under section 177(1)(b) and (2)(a), is the authority's decision to refuse to grant a building consent. In determining this matter, I will consider the reasons outlined in the authority's refusal letter dated 28 October 2021 and the referenced further information requests[2] FIR 10/11, FIR 27/29 and FIR 42/43, as issued on 24 September 2021.

[1] The Building Act 2004, section 185(1)(a) provides the Chief Executive of the Ministry with the power to make determinations.

[2] Further information requests are also commonly known as requests for information. This determination follows the term used by the authority for consistency.

Matters outside this determination

1.6. I have not considered any other aspects of the Act or of the Building Code, nor have I considered the Building Code compliance of the proposed building work covered by the building consent, other than as outlined in paragraph 1.5.

2. The proposed building work

2.1. The owner's property is a flat site in an industrial area of Christchurch.

2.2. There are two large adjoining warehouses already constructed on the site, which are variously referred to by the parties and in the submitted documentation as:

- unit A, the south side/southern building, no. 1 cold store – in this determination referred to as Unit A
- unit B, the north side/northern building, no. 2 cold store – in this determination referred to as Unit B.

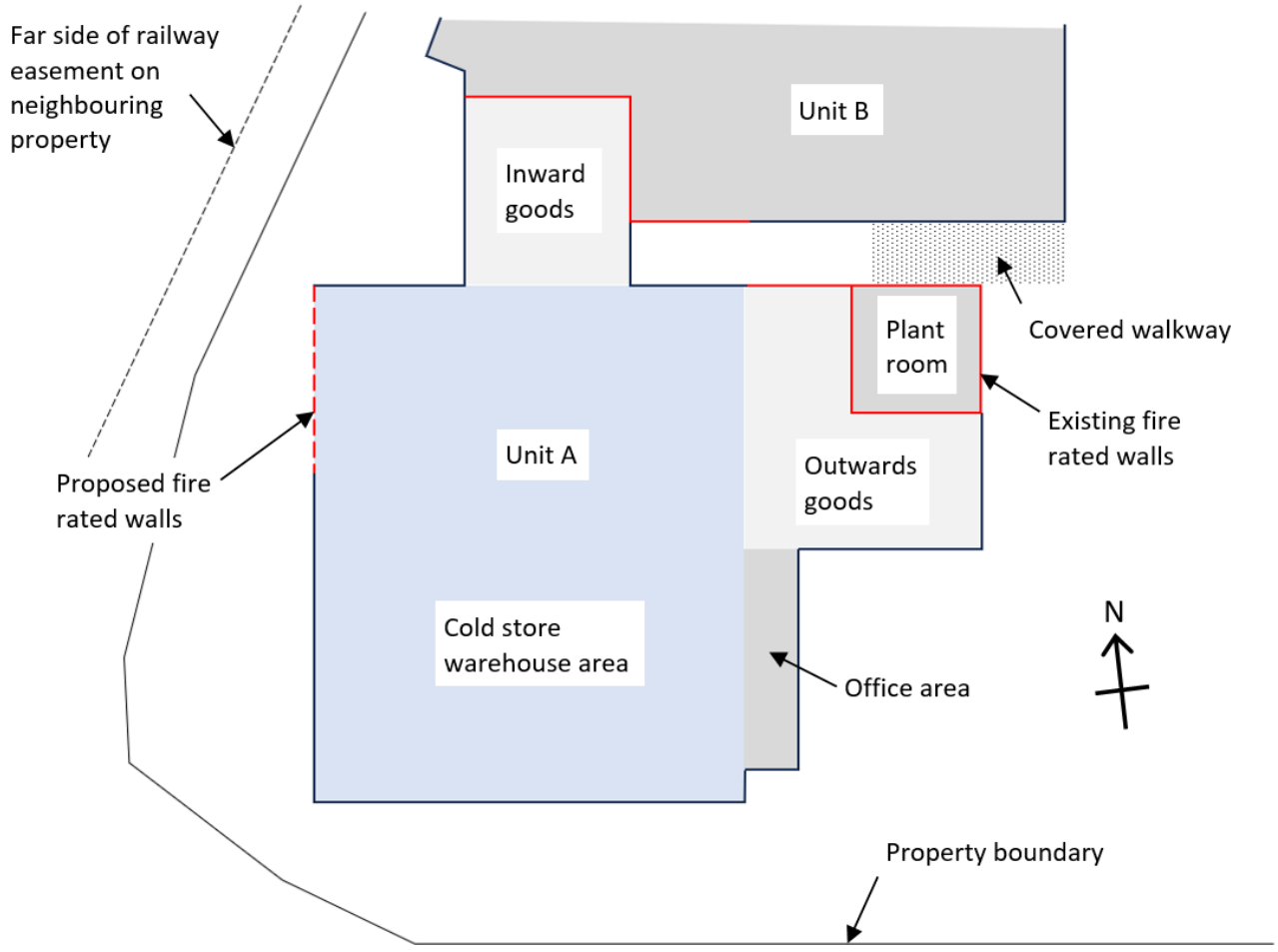

Figure 1: Diagram of the site layout, not to scale

2.3. Unit A was constructed in 1996, and consists predominantly of a single-level warehouse, made primarily of expanded polystyrene (EPS) panels, with a floor area of approximately 3,000sqm. Unit A is currently used as a racked cold store. To its north side is a loading area for inwards goods and on its eastern side it has a wing containing offices and staff amenity rooms; an engine/plant room with fire-rated walls, which comprises its own firecell[3] ("the plant room"); a small transformer room; and a loading area used for despatching goods, which opens out onto the loading docks.

2.4. The majority of Unit B was constructed in 1998, with an extension added in 2001. It is a single-level warehouse, made of EPS panels, with a floor area of approximately 4,000sqm, and is currently used as a cold store with racking. Unit B has its own load in/load out area, blast freezers, fire alarm panel, offices and amenities, and receives its own building warrant of fitness. It is not fitted with a sprinkler system, but instead has a manual call point fire alarm system.

2.5. Unit A and B are fire separated from each other by 'concrete fire walls with 240/240/240 fire rating'. This is described in a fire report prepared for the building work for the 2001 extension to Unit B ("the 2001 fire report"), for which the authority issued a code compliance certificate for building consent 10019605 on 25 January 2011. The two units share the plant room, which is located adjacent to Unit A but is fire isolated from both units and comprises its own firecell. They adjoin next to the northern loading bay for Unit A, and are connected via a partially covered accessway, but are otherwise independent buildings.

2.6. A dry pipe sprinkler system was installed in the warehouse area of Unit A when it was constructed in 1996. The system incorporated a large number of in-rack sprinkler heads, as well as drains to allow water in the pipework to drain before it froze in the pipework.

2.7. The owner advises that over the years the system suffered several accidental discharges, and experienced issues with ice forming in the pipework. This happened again in 2018, following which the independent qualified person responsible for inspecting the system identified that the in-rack sprinklers were "iced up" and hence refused to certify the system, for the purpose of the building's warrant of fitness, as it no longer complied with the "installed standard".

2.8. The owner then engaged a licensed building practitioner to develop a long-term solution to fix the system and to apply for building consent to carry out that building work.

2.9. For operational reasons, the owner considered the option of dismantling the existing system and replacing it with a new in-rack sprinkler system was not

[3] C/AS2 *Acceptable Solution for Buildings other than Risk Group SH* (amendment 2, effective 5/11/2020) defines a firecell as, "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." Page 25.

available. Instead, it was proposed to modify the existing sprinkler system and convert parts of it to "function as an automatic thermal detection system" ("the proposed design"). This would be done by:

> retain[ing] the wet pipe sprinkler system in the ambient areas (both environmental loading areas, offices and amenities), to disestablish the in rack dry pipe sprinkler systems, and retain the roof level dry pipe sprinkler systems (which are not filled with ice) as an automatic thermal detection system.

3. Background

3.1. In 2019 the owner applied for building consent BCN/2019/4930. In the course of processing the building consent the authority issued four sets of further information requests (FIRs) in response to the building consent application.

3.2. Initially it was proposed to reconfigure the sprinkler system to use the sprinkler heads as heat detection, with the owner comparing it to a type 3 system[4]. However, the owner and the authority did not come to an agreement on establishing Building Code compliance regarding this proposal.

3.3. As a result, the owner states that the proposed design was abandoned, and instead it was proposed Unit A would have a "NZS 4512[5] compliant Type 2 manual call point system" ("the revised design").

3.4. Accordingly, the owner provided an updated fire safety report (V1.2) dated 4 May 2021 ("the 2021 fire report"). The 2021 fire report set out the revised design for the alarm system, which is described as follows.

> **Requirements:**
>
> - Type 2 manual fire alarm system in compliance with NZS 4512:2010 throughout.
> - Disconnect and remove existing sprinkler system, including water supply and
> - diesel pump set.
> - Modify fire alarm panel to reflect the changes.
> - Amalgamate fire alarm systems between the north and south buildings [units A and B]
>
> **Recommendations:**
>
> - Suitable fire extinguishers to be installed throughout the building.

[4] A fire alarm system's "type" refers to its activation features. At the time the building consent was applied for these were described in Acceptable Solution F7/AS1 *Warning Systems - Fourth Edition*. A type 3 system consists of an automatic fire alarm system activated by heat detectors and manual call points. The proposed reconfiguration of the existing sprinkler system differed from the requirements for a type 3 system as laid out in F7/AS1 and its cited standards.

[5] New Zealand Standard 4512:2010 *Fire detection and alarm systems in buildings*.

- Construction monitoring to CM 2 standard.

3.5. The 2021 fire report advised that the existing "sprinkler system, town main supply, supplementary tank and diesel booster system will be made redundant". In the long-term, the intention was to remove the existing system, but in the short term, signage would be displayed notifying that the system was defunct.

3.6. In terms of compliance with Building Code clauses C1 to C4, the 2021 fire report stated that:

> An alternative fire design is proposed to be applied, based upon NZBC C/VM2. Note that NZBC C/VM2 is not directly applicable to cold storage in regard to internal doors, external doors, occupant numbers or storage heights.
>
> The building is Importance Level 2, as the building does not "contain sufficient quantity of explosive materials capable of causing acutely hazardous conditions that do not extend beyond the property boundary".

3.7. The 2021 fire report noted that as the revised design used an "alternative design methodology" it was required to be sent to FENZ for its consideration and advice. The new fire safety report also incorporated a gap analysis between the level of compliance required when the Unit A was constructed, and the current compliance requirements.

3.8. On 24 September 2021, the authority issued a fifth set of FIRs in response to the new fire safety report. These FIRs identified three outstanding items relating to the revised design.

3.9. The three items identified are the remaining matters in dispute between the parties with respect to the revised design. I have included relevant excerpts from them below:

3.9.1. FIR 10/11: "The response continues to ignore the identified non-compliance with NZBC C3.8 [that the fire load is less than 20 terajoules]. The reference to the previously issued code compliance certificate does not help addressing the new non-compliance. In addition, the 2010 fire report … does not specify any fire rating around the engine room or the transformer room. These is no evidence to support that Unit A and Unit B are completely fire separated from each other to the burn out rating. Please revise the design by appropriately addressing the compliance with NZBC C3.8 or this application may be rejected.

3.9.2. FIR 27/29: "(1) It appears that the revised proposal removes any form of automatic detection in the building. The C/VM2 based justification/analysis is thus not acceptable. C/VM2 Section 3.4 clearly states that "there must be automatic detection and alarm systems installed to NZS 4512 or automatic sprinkler systems installed to an appropriate standard to alert the occupants of a fire". Please revise the design by using an appropriate methodology, or

the application may be rejected.
(2) If an existing system is to be removed, all sprinkler heads must be removed and capped in addition to removal of the valveset, pump and etc. Please confirm all sprinkler heads will also be removed as part of this consent."

3.9.3. FIR 42/43:"(1) It appears that the northern portion of the west external wall of Unit A is to be fire rated. Please provide the detailed drawings of this fire rated external wall and the associated post fire structural stability design.
(2) It appears that the railway siding to the south of the property no long[er] has any railway line. Note the definition of relevant boundary under the Building Act only gives relaxation when the other property is railway line. The current southern railway siding does not appear to have any railway line, as such the fire spread must not be taken to the far side of the railway siding easement. Please revise the external fire spread assessment by addressing to the relevant boundary as defined under the NZBC."

3.10. The owner responded to these FIRs on 12 October 2012.

3.11. The authority was not satisfied with the owner's response. On 28 October 2021, it sent a letter refusing to issue the building consent under section 50 of the Act on the grounds that the applicant had failed "to provide a satisfactory [FIR] response demonstrating compliance with the New Zealand Building Code".

4. Submissions

The owner

4.1. The owner made a submission in which they set out the background to the dispute, including the authority's FIRs and their responses, and made the following points.

4.1.1. "There was never any intention to consider [the proposed design] as a sprinkler installation in compliance with NZS 4541, but to have the advantage of an enhanced automatic thermal detection system. Partial sprinkler systems exist in NZ, and NZS 4512, the fire alarm standard, addresses the requirements for a sprinkler system to function as an automatic thermal detection system."

4.1.2. The authority has "consistently opposed" the proposed design and "produced multiple impediments in an endeavour to prohibit [its] implementation".

4.1.3. The authority is trying to determine how Unit A is used, even though "the operational requirements within the subject building have existed for 25+ years".

4.1.4. NZBC C/VM2 is a method of compliance with clauses C1 to C6, and the authority is required to accept it under section 19 of the Act. The authority must therefore accept "that a manual call point system is an acceptable fire alarm system for this project".

4.1.5. Section 18 of Act prohibits the authority from "requiring building work to be undertaken that is additional to or more restrictive than the Building Code". NZS 4541 is a compliance standard and "there is nothing within that standard that requires redundant sprinkler systems to be removed". The authority cannot make the sprinkler system's removal a condition of the building consent approval.

4.1.6. The authority must also accept the definition of a relevant boundary in the Building Code, and that the "easement associated with the railway line on the west side of the [owner's property] can be included in the radiation calculations associated with the west side of [Unit A]".

4.2. The owner advised that following the determination, they intended to produce a revised fire report to include any modifications to the fire alarm system emanating from the determination process.

4.3. In response to a request from the Ministry, the owner also provided further information about the railway line easement and advised that although the line is not currently in use, KiwiRail continues to list it as part of its network.

The authority

4.4. The authority made a submission stating that it considered it had acted appropriately in refusing the building consent, but accepted that the wording of the formal refusal could have been better.

4.5. The authority submitted that a better wording for its refusal would have been:

> We are not satisfied that the building work will result in a building that meets the requirements of the New Zealand Building Code to the extent required by the Act, in particular in regard to Building Code clauses related to fire safety (C1-6). The specifics of our concerns are within the request for information sent on 24/07/2021 (copy attached).

4.6. The authority stated that, despite its refusal not being "optimally worded", both the owner and the owner had been sent the requests for information, so would have been aware of the authority's specific concerns.

4.7. The authority noted that the owner's partial response to the fifth set of FIRs "did not resolve the issues raised". The authority provided a copy of its fire engineer's 'specialist fire safety processing sheet', setting out the engineer's observations on the applicant's response to the fifth FIR, dated 20 October 2021.

4.8. The authority later confirmed, in response to a query from the Ministry, that the fire engineer's observations were the outstanding matters from the authority's perspective, and formed the basis for its decision to refuse, although they were not provided to the owner at the time. These observations are set out in paragraph 3.9.

The leaseholder

4.9. The leaseholder did not make a submission.

Fire and Emergency New Zealand

4.10. I consulted with Fire and Emergency New Zealand under s170(a) of the Act. They provided comments on the draft determination (in summary):

4.11. FENZ reviewed the building consent in August 2019 and issued a design review memo that had included comments on many of the issues in the determination.

4.12. How sprinklers systems should be described and the description of *relevant boundary* as it relates to railway easements.

4.13. That the use of C/VM2 in part rather than in full creates a risk that the values generated may then not be appropriate to use to demonstrate compliance.

5. Discussion

5.1. The matter for determination is the authority's decision to refuse to grant a building consent. I will consider the authority's decision in terms of both the provisions of the Act that relate to deciding whether to grant a building consent (section 49(1)) and the provisions that concern giving reasons for refusing to grant the building consent (section50(b)).

The decision to refuse to grant the building consent

5.2. The relevant provision for granting a building consent under the Act is section 49(1):

> **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.

5.3. In considering whether there are grounds to refuse to grant the building consent I have considered the three outstanding FIRs issued on 24 September 2021. I am of the view that these raise specific questions regarding the proposed building work's compliance with clauses C3.6, C3.8 and C4.3 of the Building Code. Accordingly, I will

now consider each of these clauses, and the reasons given by the authority for its assessment that compliance had not been established in relation to them, in turn.

Establishing compliance with the Building Act and Code

5.4. Section 17 of the Act states:

> **17 All building work must comply with the Building Code**
>
> All building work must comply with the Building Code to the extent required by this Act, whether or not a building consent is required in respect of that building work.

5.5. When building work applies to an existing building or part of a building, section 112 also applies, and sets out the extent to which the building must continue to comply with the Building Code after the work has been carried out. Section 112 states:

> **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) …; 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.

5.6. In relation to a building consent, it is an applicant's responsibility to demonstrate how compliance with the Building Code will be achieved, and section 19 sets out the various ways that compliance can be established. These include compliance with an acceptable solution or verification method (section 19(1)(b) and (ba)).

5.7. However, it is important to note that while acceptable solutions and verifications methods provide one means of establishing compliance, they are not the only way, and it is open to an applicant for a building consent to put forward an alternative means of demonstrating that compliance will be achieved (known as an alternative solution).

This is the case here, where the owner is not proposing a compliance pathway that follows an acceptable solution or verification method. Instead, the applicant is proposing to use a combination of comparisons to C/AS2 (amendment 2), C/VM2 (amendment 6)[6] along with additional justification to demonstrate the building work's compliance with the Building Code to the extent required by the Act.

Compliance with clause C3.6

5.8. Clause C3 of the Building Code concerns fire affecting areas beyond the fire source, with clause C3.6 reading:

> **C3.6** *Buildings* must be designed and constructed so that in the event of *fire* in the *building* the received radiation at the *relevant boundary* of the property does not exceed 30 kW/m2 and at a distance of 1 m beyond the *relevant boundary* of the property does not exceed 16 kW/m2.

5.9. FIR 42/43 raises two questions regarding external spread of fire.

5.9.1. The relevant boundary to the west of Unit A has been nominated as the far side of the railway easement on the neighbouring property. However, the railway easement is no longer in use and the authority is of the view that it is not a railway line for the purposes of the definition. The authority considers that the relevant boundary is therefore the near side boundary of the easement, making the calculations for the received radiation at the boundary, given to show compliance with the Building Code, incorrect.

5.9.2. The authority considers that the proposed fire rating to the western wall of Unit A does not have sufficient construction details provided.

5.10. I will turn first to the question of the relevant boundary, as this is where the received or emitted heat radiation, that forms the basis for compliance with C3.6, must be measured from. The term "relevant boundary" is defined in Clause A2 of the Building Code, with the relevant provisions being:

> **relevant boundary** means the *boundary* of an *allotment* that is *other property* in relation to the *building* in question and from which is measured the separation between the *building* and that *other property*; and for the external wall of any *building*, the *relevant boundary* is the nearest of—
>
> (a) a *boundary* of a freehold *allotment*, except that if the *other property* is a road, railway line, or public *open space*, the *relevant boundary* is the *boundary* on the far side of that *other property*; or…

[6] *C/AS2* Acceptable *Solution for Buildings other than Risk Group SH for New Zealand Building Code Clauses C1-C6 Protection from Fire* [amendment 2] (Ministry of Business, Innovation and Employment, 2020) and *C/VM2 Verification Method: Framework for Fire Safety Design for New Zealand Building Code Clauses C1-C6 Protection from Fire* [amendment 6] (Ministry of Business, Innovation and Employment, 2020) are the versions of these compliance documents that applied at the time of the owner's submission of the new fire safety report and the authority's refusal letter. In the determination, they are referred to as simply C/AS2 and C/VM2.

5.11. The parties disagree about which boundary is the relevant boundary for the purposes of assessing the proposed building work's compliance with clauses C3.6. The disagreement arises because the "other property" is a railway easement that is currently not being used. This easement runs along the western boundary of the owner's property adjacent to the western external walls of Unit A and Unit B. It contains a railway line and railway gantry for unloading trains.

5.12. The authority considers that, because the railway easement is currently not being used, the other property is not a railway line for the purposes of C3.6, meaning the relevant boundary is the western boundary of the owner's property, on the near side of the railway easement.

5.13. The owner disagrees and considers that, although currently not in use, the easement is still a railway line, and the relevant boundary is therefore the far-side boundary of the easement.

5.14. Neither the Act not the Building Code provide a definition for what is considered to be a railway. The term is, however, defined in the definitions section of C/AS2 as:

> **Railway line** Has the meaning ascribed to it by section 4 of the Railways Act 2005.

5.15. Section 4 of the Railways Act, in turn, defines a railway line as:

> **railway line—**
>
> (a) means a single rail or set of rails, having a gauge of 550 mm or greater between them, laid for the purposes of transporting people or goods by rail; and …

5.16. This is consistent with the dictionary definition of a railway or railway line as:

> **railway** *(noun)* a track with rails on which trains run

5.17. There is no dispute between the parties that the other property is a railway easement, and the owner has provided recent photos of the easement, which clearly show that it still contains railway lines and other railway infrastructure. I have not been provided with any information about the gauge of these rails, but from the photo they would appear to be of a relatively 'standard' width, and certainly greater than 550mm. The lines appear to have been laid for the purpose of transporting goods from the industrial area where the owner's property is located back to the main trunk line south of Christchurch.

5.18. The authority argues that the railway line is not currently in use and is not in a 'serviceable state' and hence is not a railway line for the purposes of clause C3.6. However, there is nothing in the Railways Act definition of a railway, or its common usage, to suggest that a railway line must remain in use or good repair. From the supplied photos, it also does not appear as if it would be difficult to restore the line to a usable state, should it be required.

5.19. Accordingly, I am of the opinion that the easement and the line it contains constitute a railway line for the purpose of C3.6. This has the effect of making the relevant boundary the far side of the easement for the purpose of this clause.

5.20. I now turn to the question of the fire rating of the western wall of Unit A. New areas of fire rated walls are proposed to be constructed to address the reduction in compliance with clause C3.6, due to the removal of the existing sprinkler system. I note that the parties are not in dispute regarding the size and location of the proposed fire rated walls.

5.21. As part of the proposed building work, the owner is intending to install new "fire rated panels" on the western walls of Unit A in order to provide additional protection to the neighbouring property (namely the railway easement). The proposed work is summarised in section 14 of the 2021 fire report, as follows:

> Commencing at the north west corner of the building, the west side plane, being 7.5m wide, requires to be fire rated for 9.9m x 0.8 = 7.92m height above internal floor level. The two adjacent planes on the west side of the building, each being 7.5m wide, require to be fire rated for 9.9m x 0.7 = 6.93m height above internal floor level. The remaining seven planes, being the two on the north side of the building and the five remaining planes on the west side do not need to be fire rated.
> See site fire plan for location details.
>
> [The builder is] to supply a PS1 in regard to the west side external fire walls fire rating *(FIR-043).*

5.22. The plans accompanying the 2021 fire report show the location of these new fire separations and note that construction details are to be provided by another contractor, however these have not been provided. The owner submits that this information was provided to the authority, but the authority states that it does not have it, and I have not been provided with a copy by either party.

5.23. At present, without construction details and material specifications for the new fire rated walls, the plans and specifications I've been presented do not include sufficient information to establish how these walls will be constructed to achieve the fire ratings required. Therefore, the compliance assessment for the purpose section 49(1) can not be satisfied.

Compliance with clause C3.8

5.24. Compliance with clause C3.8 was specifically mentioned by the authority in FIR 10/11.

5.25. Clause C3.8 reads:

> **C3.8** *Firecells* located within 15 m of a *relevant boundary* that are not protected by an automatic *fire* sprinkler system, and that contain a *fire load* greater than 20 TJ or that have a floor area greater than 5,000 m^2 must be designed and constructed so that at the time that firefighters first apply water to the *fire*, the maximum radiation flux at

> 1.5 m above the floor is no greater than .5 kW/m2 and the smoke layer is not less than 2 m above the floor.

5.26. Section 112(1)(b)(i) would require the existing building to continue to comply with C3.8 at least to the same extent as before.

5.27. The parties disagree on several aspects of how clause C3.8 might apply to Unit A, and so I will consider each of those aspects in turn.

5.28. Clause A of the Building Code defines firecell as:

> **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.

5.29. It also defines external wall as:

> **external wall** any exterior face of a building within 30° of vertical, consisting of primary and/or secondary elements intended to provide protection against the outdoor environment, but which may also contain unprotected areas.

5.30. It goes on to define fire load as:

> **fire load** the sum of the net calorific values of the combustible contents which can reasonably be expected to burn within a *firecell*, including furnishings, built-in and removable materials, and *building elements*. The calorific values shall be determined at the ambient moisture content or humidity. (The unit of measurement is MJ or TJ.)

5.31. The term fire load is similarly defined in the verification method for clauses C, C/VM2, as:

> **Fire load** Quantity of heat which can be released by the complete combustion of all the *combustible* materials in a volume, including the facings of all bounding surfaces (Joules).

5.32. The term fire load energy density (FLED) is also defined in C/VM2, as:

> **Fire load energy density (FLED)** Fire load per unit area (MJ/m2).

5.33. In applying clause C3.8, I must first establish the firecell being assessed.

5.34. The 2021 fire report treats Unit A and Unit B as separate firecells. The report states that as the authority issued both a building consent and a code compliance for the building work to extend Unit B in 2001, it must have accepted that Unit A and Unit B were fully fire separated from each other and from the plant room, and it cannot now revisit that decision.

5.35. The plans and specifications include a 2001 fire report showing the fire rated walls to be constructed at the time. While FIR 10/11 cites a 2010 fire report that

purportedly does not show these fire ratings I have not been provided with this report or other evidence to suggest that these walls were not constructed in accordance with the 2001 report fire report.

5.36. The 2001 fire report shows that Unit A and Unit B are separated by a fire separation where they abut next to the northern loading bay for Unit A. While neither unit contains fully fire rated walls where they face each other across the partially covered accessway, I consider these walls to be external walls as they are intended to provide protection against the outdoor environment.

5.37. As Unit A is fully enclosed and separated from both Unit B and the plant room by a combination of fire separations, external walls, roofs, and floors I consider it to be its own firecell.

5.38. I now turn to whether Unit A is within 15 metres of a relevant boundary.

5.39. The plans accompanying the 2021 fire report show that the closest point of Unit A to the relevant boundary is 13.57m, and this point is at the north-western corner of the building. The 2021 fire report notes that the total area within 15m of the relevant boundary equates to 2.0m^2. Given this, the report suggests that the authority should accept this "noncompliance as being as near as is reasonably practicable", and that Clause C3.8 should therefore continue not to apply.

5.40. The applicable requirement here is section 112(1)(b), which requires the building to either continue to comply with the Building Code, or comply to the same extent, where it does not fully comply prior to the proposed building work. For the purposes of section 112(1)(b), the building is not allowed to comply to a lesser extent on an "as nearly as is reasonably practicable" basis.

5.41. Clause C3.8 does not apply to firecells that are provided with an automatic fire sprinkler system. The parties do not dispute that, as a result of the proposed building work, the firecell will no longer be protected by an automatic fire sprinkler system. Therefore I will consider how the owner has calculated the fire load of Unit A.

5.42. The 2021 fire report includes an assessment to demonstrate that the 20TJ limit will not be exceeded. The assessment is based on the stated current use of Unit A, which is separated into a cold storage area and a marshalling area, where goods picked from the cold store are consolidated and packed. The report states that Unit A has been used in this manner for the past 25 years.

5.43. The Building Code does not specify how to calculate a firecell's fire load for the purposes of clause C3.8. However, C/VM2 includes some common FLED values that can be used for the calculation, including the FLEDs that should be used for particular activities within buildings, which are set out in table 2.2.[7] For

[7] Table 2.2 'Design FLEDs for use in modelling fires in C/VM2', on page 30 of C/VM2.

temperature-controlled storage over 3m in height the FLED to be used is specified to be 800MJ/m^2 of floor area per metre of height.

5.44. The 2021 fire report uses this value to calculate the fire load of Unit A, but as stated above, has treated a portion of the 'cold store' area of the unit as a 'marshalling area', with a lower FLED value than the 'racked area' of the cold store. The effect of this is that the report calculates the fire load for the entire area of Unit A as 16,900,000 MJ, lower than the 20TJ threshold outlined in clause C3.8.

5.45. The authority does not accept this calculation, stating that the separation of the cool store into the marshalling area and the racking area is inappropriate. The authority considers that the FLED values in Table 2.2 of C/VM2 must be applied to the entire cold store area, with this area unable to be further subdivided. The effect of this is that the fire load for Unit A exceeds the 20TJ threshold outlined in clause C3.8.

5.46. To support this position, the authority has pointed to the commentary on C/VM2[8] ("the commentary"), which states that the values given in Table 2.2 are to be used wherever a design FLED is required within the verification method. The commentary states that "Other values should not be used as it is difficult to control the actual fire load in a building over the life of a building, even for a given occupancy" (p. 71). The commentary cites the studies that the values in Table 2.2 are based on.

5.47. However, as I have noted, the Building Code is performance-based, and a verification method is only one means of establishing compliance. A building consent applicant may choose to present an alternative method to show that the 20TJ threshold for clause C3.8 to apply has not been reached. Alternatively, if the threshold has been reached, an applicant may propose an alternative solution to show that the building complies with the flow on requirements of clause C3.8. An alternative method or solution might involve references to other standards, comparisons to other compliance pathways such as verification methods, evidence of in-service history, expert advice, or similar.

5.48. In this instance, I am of the view that the plans and specifications do not include sufficient evidence to justify the FLED values used in the assessment for Unit A. The 2021 fire report has used the approach set out in the verification method but has deviated by attributing differing values to different areas of the firecell being assessed.

5.49. Where a proposed alternative method of establishing compliance partially uses, or deviates from, an acceptable solution or verification method, it may be relevant to provide supporting evidence on the impact that the partial use or deviation has on the proposed compliance pathway. In this case, sufficient supporting evidence has not been provided that establishes why the proposed FLED values are appropriate

[8] *Commentary for Building Code Clauses C1–C6 and Verification Method C/VM2*. (Ministry of Business, Innovation and Employment, 2013). I note that the commentary is issued as guidance under section 175 of the Building Act, and is not required to be followed when proposing C/VM2 as a compliance pathway.

to use and why guidance provided in the commentary is not relevant. The plans and specification do not provide any evidence of how the cold store is used in practice, other than an assertion that this is the case.

5.50. I consider that Unit A is its own firecell and is located within 15 metres of a relevant boundary. The proposed building work means it will not be protected by an automatic fire sprinkler system and I am of the view that the plans and specifications do not establish that the fire load is less than 20TJ. I therefore consider that the plans and specifications do not establish compliance with Clause C3.8 to the extent required by section 112(1)(b)(i).

Compliance with clause C4.3

5.51. Clause C4 is concerned with facilitating movement to a place of safety in the event of a fire.

5.52. The functional requirements of Clause C4 include:

> **C4.1** *Buildings* must be provided with:
>
> (a) effective means of giving warning of *fire,* and …

5.53. The performance requirements include Clause C4.3, which reads:

> **C4.3** The *evacuation time* must allow occupants of a *building* to move to a *place of safety* in the event of a fire so that occupants are not exposed to any of the following:
>
> (a) *fractional effective dose* of carbon monoxide greater than 0.3:
>
> (b) a *fractional effective dose* of thermal effects greater than 0.3:
>
> (c) conditions where, due to smoke obscuration, visibility is less than 10 m except in rooms of less than 100 m2 where visibility may fall to 5 m.

5.54. The proposed building work involves decommissioning the existing automatic fire sprinkler system in Unit A, and instead installing a manual call point system to alert occupants in the event of a fire.

5.55. The owner's proposed method of compliance uses part of C/VM2 to calculate the expected available and required safe egress times, after the manual call system is installed.

5.56. However, the authority's view outlined in FIR27/29, is that C/VM2 does not allow for manual call points to be used as the only fire safety system in a building of Unit A's type. Therefore, the owner cannot rely on C/VM2 to establish compliance.

5.57. In response to FIR27/29, the owner alerted the authority to paragraph 3.4 of C/VM2, which states that:

> Manual activation of an alarm system shall only be permitted in spaces where the average ceiling height is ≥5 m, the occupants of the *building* are awake and familiar

with their surroundings, and where the occupant density calculation results in an *occupant load* of fewer than 50 persons. In all other situations automatic detection is required.

5.58. The owner submits that Unit A fulfils the criteria of paragraph 3.4. I agree that paragraph 3.4 of C/VM2 has been met. Accordingly, while I am not making a decision regarding the compliance with C4.3, I consider that FIR27/29, is not sufficient grounds on which to refuse to grant the building consent under section 49(1).

Provision of reasons for the refusal

5.59. If the authority is to refuse a building consent, then section 50 states:

> **50 Refusal of application for building consent**
>
> If a building consent authority refuses to grant an application for a building consent, the building consent authority must give the applicant written notice of—
>
> (a) the refusal; and
>
> (b) the reasons for the refusal.

5.60. The obligation to provide reasons for decisions made under the Act have been discussed in previous determinations. Various court decisions have also discussed statutory provisions requiring reasons, noting that:

5.60.1. the extent of the obligation to give reasons is dependent on the function and the purpose for which reasons are required[9]

5.60.2. reasons provided must be "proper, adequate and intelligible"[10]

5.60.3. the reasons must be appropriate to the nature of the decision-making[11]

5.60.4. the reasons must be adequate to enable proper consideration of the decision on appeal or review[12].

5.61. The obligation to give reasons for refusing to grant a building consent also needs to be considered in respect of the authority's obligations under section 22(1) of the Local Government Official Information and Meetings Act 1987 ("LGOIMA").

5.62. I hold the same view as discussed in Determination 2021/010[13] regarding what is expected of an authority when giving reasons for refusing to grant a building consent. In this respect, I reiterate the following key points:

[9] Hollander *v Auckland Council* [2017], Heath J, CIV 2016-404-2322 NZHC 2487, dated 11 October 2017.
[10] *Chan v Minister of Immigration* HC Auckland CP80/89, 08 May 1989 at 14.
[11] *R v* Awatere [1982] 1 NZLR 644 (CA) at 649.
[12] Singh *v Chief Executive, Department of Labour* [1999] NZAR 258 (CA) at 263.

5.62.1. The authority will need to consider those aspects of the design that it believes do not comply with the Building Code or the Act.

5.62.2. An authority is required to provide reasons in writing for refusing to grant a building consent, so that an owner is made aware of any shortcomings with the plans and specifications to obtain that building consent.

5.62.3. It is important that an owner is given sufficiently explicit, specific, clear, and valid reasons why an authority believes compliance has not been achieved, so the owner can consider what is necessary to remedy the situation.

The refusal letter

5.63. Having considered whether there were grounds to refuse to grant the building consent, I now consider whether the authority has met its obligations under section 50.

5.64. The refusal letter states that the building consent has been refused due to a "failure to provide a satisfactory [FIR] response demonstrating compliance with the New Zealand Building Code". No further reasons were given, nor did the refusal letter specify which aspects of the response to the fifth set of FIRs the authority considered inadequate. In addition, the refusal letter did not clearly address new information provided to the authority in response to those FIRs.

5.65. Without specific references to what areas of the Building Consent the authority considers does not meet the requirements of section 49(1), and why, and without addressing the new information provided, it is difficult for the owner to ascertain what evidence might be necessary to address those reasons or what requirements that evidence would be assessed against.

5.66. I note that the authority has acknowledged the deficiencies in the refusal letter and has provided an updated list of what they consider to be the outstanding issues. Regardless of previous FIRs issued, the authority needs to give explicit, specific, clear, and valid reasons for refusal in the refusal letter. While this may be by way of reference to outstanding FIR's already issued, the authority needs to make sure that this also takes into account any new information provided.

5.67. As the refusal letter is not sufficiently explicit, specific, or clear in its reasons, or establish why its reasons are valid, I am of the view that the letter does not meet the requirements of section 50. Accordingly, although I have concluded there were grounds for refusing to grant the building consent, I am reversing the authority's decision.

[13] Determination 2021/010, "Regarding the refusal of a building consent for alterations to an existing students' hall of residence at 217 Willow Park Drive, Masterton", issued 31 May 2021. Refer to paragraphs 6.12 to 6.18 inclusive.

6. Decision

6.1. In accordance with section 188 of the Building Act 2004, I determine that:

6.1.1. There are grounds under section 49 to refuse to grant building consent BCN/2019/4930 because the building work will not comply with clauses C3.6 and C3.8 to the extent required by the Act if properly completed in accordance with the plans and specifications provided with the building consent application.

6.1.2. The letter dated 21 October 2021 refusing to grant the building consent did not adequately and specifically detail the reasons for refusal as required by Section 50.

6.2. I reverse the authority's decision, requiring it to make a new decision taking into account the findings of this determination.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 13 August 2024.

Andrew Eames

Principal Advisor Determinations