MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

Determination 2020/030

Regarding the purported refusal to grant a building consent because of a dispute about the importance level of the building, at 2 Bangor Street, Christchurch

Summary

This determination considers the authority's purported refusal to grant a building consent for proposed building work because the authority did not agree with the importance level proposed by the structural engineer. The determination discusses whether the subject building should be classified as Importance Level 2 or Importance Level 3 as set out in Australian/New Zealand Standard 1170.0. This standard is referenced by Verification Method B1/VM1, which is a means of compliance with Building Code Clause B1 Structure.

1. The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004 ("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]

1.2 The parties to the determination are:

- the owner, Giles Family Trust Limited ("the applicant"), represented by a structural and fire engineering firm engaged by the applicant for the project ("the engineer")
- Christchurch City Council ("the authority"), carrying out its duties as a territorial authority or building consent authority.

1.3 This determination arises from the authority's purported decision to refuse to grant a building consent for proposed building consisting of alterations and additions to an

[1] The Building Act and Building Code (Schedule 1 of the Building Regulations 1992) are available at www.legislation.govt.nz. Information about the legislation, as well as past determinations, compliance documents and guidance issued by the Ministry, is available at www.building.govt.nz.

existing two storey house which is being converted to a new day care facility, ("the day care centre"). The day care centre was designed as Importance Level 2 ("IL2") as set out in AS/NZS 1170.0[2]. This standard is referenced by Verification Method B1/VM1, which is a means of compliance with Building Code Clause B1 Structure[3]. The authority believes that the day care centre should be assigned as Importance Level 3 ("IL3").

1.4 The matter to be determined[4] is therefore whether the authority was correct to purportedly refuse to grant the building consent for the proposed building work that was based on an IL2 design.

1.5 In making my decision, I have considered the submissions of the parties and the other evidence in this matter. I have not considered any other aspects of the compliance of the proposed building work, the Act or Building Code beyond those required to decide on the matter to be determined.

1.6 The relevant extracts of AS/NZS 1170.0 can be found in Appendix A.

1.7 Matters outside this determination

1.8 The engineer in responding to the authority (refer paragraph 3.3), has referred to the importance levels contained under Clause A3 Building importance levels of the Building Code. These importance levels relate to Building Code Clauses C1 to C6 Protection from Fire. As the matter in dispute relates to the importance levels used in the structural design of the building, I consider the building's importance level for Clauses C1 to C6 is outside the scope of this determination.

1.9 This determination is limited to the matter described in paragraph 1.4 and does not consider the change of use or how the requirements of section 115 are applied.

2. The building work

2.1 The proposed building work comprises the change of use of an existing building to a day care facility and additions to the ground floor.

2.2 The existing building consists of a concrete slab foundation, timber framed walls clad with weatherboards and a timber trussed roof clad with butyl rubber and profiled copper.

2.3 The existing building is generally two storeys, and is 220m^2 at each level. A part of the building has three levels within the main building envelope.

2.4 The proposed additions comprise three single storey wings that each extend off a side of the building, and are 457m^2 in total. Two of the wings are founded on concrete slabs foundations, with the other founded on a timber subfloor structure with pile footings. The additions are constructed with timber framed walls and a mixture of timber weatherboards and fibre cement panels, and a timber trussed roof clad with metal roofing.

[2] Australia/New Zealand Standard AS/NZS 1170.0:2002 Structural design actions Part 0: General principles
[3] In this determination, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.
[4] Under sections 177(1)(b) and 177(2)(a) of the Act.

2.5 The day care centre is subject to a resource consent, which provides authorisation for the day care centre to operate for up to 150 children. However the fire report accompanying the building consent application (refer to paragraph 3.1) stated the design occupant load was 161, which includes up to 141 children and 17 staff on the ground floor and 3 staff on the intermediate floor. The ground floor areas will be used to care for the children, with the second storey containing staff-only areas.

2.6 I note that in this case, there is no dispute between the parties that the number of occupants to be considered is 161, comprising up to 141 children and 20 staff.

3. Background

3.1 An application for a building consent (BCN/2019/7675) was submitted to the authority in late 2019.

3.2 On 12 December 2019, the authority requested further information in respect of the proposed building work. The request covered a number of geotechnical and structural engineering issues. The request stated that as the day care centre has a capacity of more than 150 "this building should be designed to IL3".

3.3 The engineer responded to the authority's request on 19 December 2019 and provided an extract from Clause A3 Building importance levels, noting that it stated that a day care facility with a capacity of more than 250 was to be considered as IL2.

3.4 On 10 January 2020, the authority requested further information:

> [The fire report states] that the design occupancy load of the building is 161 thus the building has capacity more than 150. Please update design to IL3.

3.5 On 15 January 2020, the engineer wrote to the authority about the importance level, stating:

> The fire report gives a total building occupancy of 161, including staff. The Resource Consent obtained for this facility limits the number of children to 150.
>
> Table 3.2 of AS/NZS1170.0 gives importance levels for building types. Under IL3 it includes day care facilities with a capacity of greater than 150. Similarly it gives capacities for schools and other education facilities (along with airport terminal and railway stations). For most other building types it gives people numbers (or areas), ie the total building occupancy.
>
> The logical inference is that the capacities given are for child/student (traveller) numbers and not the total number of people in the facility, including staff, parents etc.
>
> Therefore on this basis the building can be classified as an IL2 building.

3.6 The authority responded to the engineer on 16 January 2020:

> If you look at the health care facilities in [IL3 of Table 3.2 of AS/NZS 1170.0], it specifically mentioned about number of resident patients which your interpretation could apply [to] but this is not the case for the day care.

3.7 The design for the conversion of the building (BCN/2019/7675) was subsequently amended to IL3. The engineer noted that the change to the design was made so that the building consent could be granted by the authority.

3.8 The Ministry received an application for a determination on 4 February 2020.

4. The submissions

4.1 The engineer noted in the letter accompanying the application for determination,(in summary):

- there is a clear distinction in AS/NZS1170.0 between the use of terms "people" and "capacity". However, there is no definition of the two terms
- highlighted the different uses of capacity and people in the examples listed in Table 3.2 of AS/NZS1170.0
- The building capacity is no more than 150 (children) and therefore should be assessed as an IL2 building

4.2 The authority acknowledged the application on 4 February 2020. The authority noted:

- the design has been presented as satisfying B1/VM1, with reference to AS/NZS 1170.0. Table 3.2 of AS/NZS 1170.0 refers to structures including day care facilities with a capacity greater than 150. It does not distinguish between the ages of the people that make up that capacity. The numbers provided as the capacity for the building exceed 150, therefore IL3 applies.

4.3 A draft determination was issued to the parties for comment on 9 July 2020.

4.4 The authority responded on 4 August 2020 accepting the draft determination.

4.5 The engineer responded on 7 August 2020 accepting the draft determination.

5. Discussion

5.1 General

5.1.1 The parties disagree on the interpretation of Table 3.2 of AS/NZS 1170.0 and whether there is a distinction between the use of the terms "people" and "capacity" in the table.

5.1.2 In order to determine whether the authority correctly exercised its power of decision in its purported refusal to grant the building consent for the building work to convert the building to a day care facility and construct additions to the building, I must consider whether the proposed building work would comply with Clause B1, based on establishing compliance via Verification Method B1/VM1 with an Importance Level of 2 rather than an Importance Level of 3.

5.2 The importance level framework

5.2.1 B1/VM1 is a Verification Method[5] for Clause B1 Structure, and references AS/NZS 1170.0 as a means for the design of structures to meet the performance requirements of Clause B1. AS/NZS 1170.0 uses importance levels, among other factors, to determine the loadings for earthquake, snow and wind that a building and building work needs to be designed for. A building with a higher importance level is required to be designed for stronger forces than a building designed to a lower importance level. Section 3.2 of AS/NZS 1170.0 states:

> A structure shall be designed and constructed in such a way that it will, during its design working life, with appropriate degrees of reliability sustain all actions and environmental influences likely to occur.

[5] A Verification Method is a means to establish compliance with the Building Code; refer to section 19 of the Act.

5.2.2 The importance levels in AS/NZS 1170.0 are from 1 to 5. Section 3.3 of AS/NZS 1170.0 states that the importance level of a structure shall be determined in accordance with its occupancy and use as given in Tables 3.1 and 3.2. For those buildings not specifically mentioned, the designer will need to exercise judgment in assigning the appropriate level. Paragraph C3.2 of AS/NZS 1170.0 Supplement 1[6] states:

> The 'importance level' of a structure is related to the consequences of failure and is reflected in the acceptance (explicit or implicit) of the probability of exceeding a limit state.

5.2.3 Table 3.1 of AS/NZS 1170.0 (refer to Appendix A), sets out the consequences of failure for importance levels. The Table 3.1 description of IL2 is 'medium consequence for loss of human life, or considerable economic, social or environmental consequences', with a comment that this is 'normal structures and structures not falling into other levels'. The description of IL3 (and IL4, which has the same description) is 'high consequence for loss of human life, or very great economic, social or environmental consequences', with a comment for IL3 that this is 'major structures (affecting crowds)'.

5.2.4 Table 3.2 of AS/NZS 1170.0 (refer to Appendix A) sets out importance levels for different structures. This table repeats the Table 3.1 comment for IL2 buildings, and for IL3 buildings comments that these are 'Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds.'

5.2.5 Table 3.2 of AS/NZS 1170.0 also includes examples of types of buildings for each importance level. As discussed in Determination 2015/059[7], the examples in Table 3.2 should not be used in a strict and rigid manner without taking into account the intent and principles of the various importance levels.

5.3 The application of the importance level framework to the building

5.3.1 Sections 3.2 and 3.3 of AS/NZS 1170.0 refer to the structural design and construction of a building for the appropriate loadings, with the importance level of a building being determined in accordance with its consequence of failure, occupancy and use based on Table 3.1 and Table 3.2 of AS/NZS 1170.0. The difference between the importance levels is consequences of failure for loss of human life, as well as the economic, social or environmental consequences.

5.3.2 I am of the view that this reflects:

- section 3(a)(i) of the Act, which states that a purpose of the Act is to provide for the setting of performance standards for buildings to ensure that 'people who use building can do so safely without endangering their health'
- Clause B1.1, which sets out that an objective of Clause B1 Structure is to 'safeguard people from injury caused by structural failure'
- Clause B1.3.4(a) of the Building Code, which requires due allowance to be made for the consequences of failure.

5.3.3 The definition of IL2 buildings is simply 'normal structures and those structures not in other importance levels'. Therefore, in order to determine whether IL2 or IL3

[6] Australia/New Zealand Standard AS/NZS 1170.0 Supplement 1: 2002 Structural design actions – General principles – Commentary
[7] Determination 2015/059: Regarding the building importance level of two proposed buildings at Grey Base Hospital at 146 High Street, Greymouth (30 September 2015)

applies to the day care centre, I must decide whether the day care centre should be an IL3 building.

5.3.4 The description of IL3 buildings in Table 3.2 of AS/NZS 1170.0 is 'Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds'. The importance levels of buildings reflect the importance of the building to society. Therefore, the examples of IL3 buildings cover types of buildings that fulfil a role of increased importance to the local community or to society in general than IL2 buildings.

5.3.5 The numbers given in the examples in Table 3.2 of AS/NZS 1170.0 for types of IL3 buildings indicate the crowd numbers that apply. Examples from Table 3.2 include:

- buildings where 300 people can congregate in one area
- day care facilities with a capacity greater than 150
- primary or secondary school facilities with a capacity greater than 250, and colleges or adult education facilities with a capacity greater than 500
- health care facilities with a capacity of 50 or more resident patients
- airport terminals and principal railway stations with a capacity greater than 250.

5.3.6 From the description of IL3 in Table 3.2 of AS/NZS 1170.0, 'crowds' is not a defined term and there is no further explanation of the term 'crowds' or the phrase structures that 'pose risks to people in crowds'. However, the range of examples and numbers given indicate that what constitutes a crowd depends on both the nature of the building in terms of size and the type of areas available, and the use of the building.

5.3.7 I am of the view that the examples in Table 3.2 of AS/NZS 1170.0 are examples only and should not be used in a strict and rigid manner without taking into account the intent and principles of the various importance levels. However, in order to consider whether there is a difference between the terms "people" and "capacity", I must look in detail at the wording of the examples provided and in particular at what the term "capacity" means in the context of the examples given in Table 3.2.

5.3.8 In the absence of further information to interpret the terms, I note that the term "capacity" means 'the total amount that can be contained or produced'[8]. This indicates that the use of the term "capacity" must be taken to mean the overall number of occupants or users in the building. The example in Table 3.2 regarding health care facilities also refers to capacity, but specifies that capacity is 'of 50 or more resident patients', thus making it clear in that example that the capacity relates to the patients. The same cannot be said for the other examples that use the term "capacity". Where the term "people" is used in the examples in Table 3.2, it is clear from the wording that this refers to the total number of people. For these reasons, I am of the view that apart from the example given for health care facilities, there is no distinction in the terms "people" and "capacity" used in Table 3.2.

5.3.9 I note here the relevant objectives and requirements of Clause B1 of the Building Code for structural performance, and that there is no distinction in terms of ages of occupants, instead a guiding principle that the structural design of buildings is to ensure that generally occupants are adequately protected from injury caused by structural failure.

[8] "Capacity", Dictionary.Cambridge.org. Cambridge Dictionaries, n.d. Web. 2 Jul. 2020.

5.3.10 Therefore, as the day care centre has a capacity of more than 150 people, including both children and staff, the building should be IL3.

6. The decision

6.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the authority was correct in its purported refusal to grant building consent number (BCN/2019/7675), as the proposed building work was incorrectly assigned as Importance Level 2 in accordance with Australia/New Zealand Standard 1170.0:2002. Accordingly, I confirm that decision.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 25 November 2020.

Katie Gordon
Manager Determinations

Appendix A

The relevant paragraphs of AS/NZS 1170.0 are

Table 3.1 Consequences of failure for importance levels

Consequence of failure	Description	Importance level	Comment
	Low consequence for loss of human life, or small or moderate economic, social or environmental consequences	1	Minor structures (failure not likely to endanger human life)
Ordinary	Medium consequence for loss of human life, or considerable economic, social or environmental consequences	2	Normal structures and structures not falling into other levels
High	High consequence for loss of human life, or very great economic, social or environmental consequences	3	Major structures (affecting crowds)
		4	Post-disaster structures (post disaster functions or dangerous activities)
Exceptional	Circumstances where reliability must be set on a case by case basis	5	Exceptional structures

Table 3.2 Importance levels for building types – New Zealand structures

Importance level	Comment	Examples
1	Structure presenting a low degree of hazard to life and other property	Structures with a total floor area of <30m^2 Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2	Normal structures and structures not in other importance levels.	Buildings not included in Importance levels 1, 3 or 4. Single family dwellings Car parking buildings
3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult education facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity of greater than 250 (g) Correctional institutions (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10000m^2 (i) Public assembly buildings, theatres and cinemas of greater than 1000m^2 Emergency medical and other emergency facilities not designated as post-disaster Power-generating facilities, water treatment and waste water treatment facilities and other public utilities not designated as post-disaster Buildings and facilities not designated as

		post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations, and emergency vehicle garages Utilities or emergency supplies or installations as required as backup for buildings and facilities of Importance Level 4 Designated emergency shelters, designated emergency centres and ancillary facilities Buildings and facilities containing hazardous conditions that extent beyond the property boundaries
5	Special structures (outside the scope of this Standard – acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failures poses catastrophic risk to a large area (e.g., 100km^2) or a large number of people (e.g., 100 000) Major dams, extreme hazard facilities