

Determination 2025/044

**Whether a bedroom in a proposed multi-unit building
complies with the scope of Acceptable Solution G7/AS1**

3 Madeira Lane, Grafton, Auckland

Summary

This determination considers the compliance pathways applicable to a bedroom window located within a return feature of the proposed building's façade in relation to Building Code Clause G7 – *Natural light*. It specifically discusses the scope of Acceptable Solution G7/AS1, as well as the exclusions outlined in paragraph 1.1.2.1 of that document.

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, for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment (“the Ministry”).¹
- 1.2. The parties to the determination are:
 - 1.2.1. CMP Living Ltd, the owner of the property who applied for this determination (“the owner”)
 - 1.2.2. Auckland Council, carrying out its duties as a territorial authority or building consent authority (“the authority”).
- 1.3. The matter to be determined, in terms of section 177(1)(a), is whether “bedroom 3” in units 2-6 of the proposed multi-unit building (“the proposed building”) is within scope of Acceptable Solution G7/AS1 (“G7/AS1”) as a means to establish compliance with Building Code Clause G7 – *Natural Light*. In deciding this matter, I must also consider whether any of the exclusions, as outlined in paragraph 1.1.2.1 of G7/AS1, apply to bedroom 3.
- 1.4. I have not considered compliance of the proposed building with clause G7 or G7/AS1 beyond what has been described in paragraph 1.3.

2. The building work and background

- 2.1. The proposed building is a three-storey residential building containing seven attached, side-by-side household units or ‘townhouses’ (“the units”).
- 2.2. Each unit consists of a garage and laundry on the ground floor, three bedrooms and two bathrooms on the first floor, and kitchen and living areas on the second floor. All units have near identical or mirrored floorplans, with additional windows installed in the external end walls for each of the two end units (i.e. units 1 and 7).

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

Units 1 and 7 do not have return features² in their external envelopes and so will not be considered further in this determination.

- 2.3. The disputed building work relates to “bedroom 3” (as named on the plans) in the proposed building’s middle five units (i.e. units 2-6), which is located on the units’ eastern elevation on the first floor.
- 2.4. For units 2-6, bedroom 3 is 11m² in area with one window (1100mm x 1027mm) in the external wall. This window faces into one of three return features in the proposed building’s façade. At its narrowest, in the second northernmost unit (i.e. unit 6), the return feature is 1040mm wide and 1041mm deep. The return features are entirely open at the second and third floor levels, with no roof, eaves or overhangs above the returns.
- 2.5. The owner submitted an application for building consent (BCO10386542) to construct the proposed building and on 12 September 2024 the authority sent the owner a request for information (“the RFI correspondence”). The information required included:

G7 Outside Awareness

Unit 2 – 6 – Second floor open plan with outside awareness through external balcony room with over hang [sic] above is not in scope of G7/AS1

- a. The scope of G7/AS1 has been reduced and is no longer applicable for awareness of the outside through another space.
- b. Refer 1.1.2.1, habitable spaces where windows are facing a porch, a covered walkway, or are under a balcony is outside scope of AS1.

Demonstrate how has [sic] proposed door and window head heights achieves [sic] minimum illuminance against the depth of the building. You may consult professional to demonstrate compliance to G7/VM1.

- 2.6. In an email to the owner dated 1 November 2024, the authority said:

... [it had] never confirmed that [the owner’s] current design complies with the Acceptable Solution G7/AS1. As mentioned in [its] previous email ... further info is still requested for us to check whether Performance Requirement G7.3.1 (illuminance) can be met. And, in our opinion, performance requirement G7.3.2 (awareness of outside environment) is not deemed to be met in your latest design [for Bedroom 3 in units 2-6] ...

² A return in this context is the portion of a façade that turns in and extends back from the main face. Could also be considered a stepped return.

- 2.7. The parties continued to meet and correspond but were unable to resolve the matter. In an email dated 7 November 2024, the authority advised the owner:
- 2.7.1. “The designs which have been proposed have not demonstrated compliance to G7/AS1 ... This is identified as outside the scope of G7/AS1, also not meeting the basis of the code clause of objective & performance.”
- 2.7.2. “The proposed design is identified as being outside the scope of G7/AS1, with very little evidence to demonstrate adequate light levels & outdoor awareness would be achieved, which inherently does not meet the objective or performance requirements to this code clause.”
- 2.7.3. It was “not ‘reasonably satisfied’ the natural light & awareness to the outside can be achieved through the information provided to date for use as a ‘habitable space’”.
- 2.8. The owner disputes the authority’s view regarding the scope of G7/AS1 in relation to the proposed building and applied for a determination.

3. Submissions

The authority

- 3.1. The authority stated that while the owner has “attempted to design ... a habitable space facing the [property’s] boundary line in accordance with G7/AS1” they have not addressed factors such as “the location of the proposed building [and] the location and characteristics of the taller neighbouring building on the boundary”.
- 3.2. The authority, in relation to the scope of G7/AS1, submitted:
- 3.2.1. The authority stated that “the use of recessed windows does not constitute a complex façade issue and that there are no permanent external obstructions within 1 metre” of the external window in bedroom 3.
- 3.2.2. However, the authority is of the view that “the [bedroom 3] window configuration [is] unique due to its placement within a recessed light well and its proximity to an adjacent building”. Accordingly, the guidance in paragraph 1.1.2.2 of G7/AS1, regarding the use of other compliance pathways such as G7/VM1, should be followed³.
- 3.2.3. The authority also submitted that G7/AS1 applies to “residential buildings up to three storeys in height located in low-density developments” and it does not consider the proposed building to be low density, for which the

³ G7/AS1 paragraph 1.1.2.2 states “For buildings that have more complex configuration or internal rooms with borrowed light, Verification Method G7/VM1 or an alternative means may be used as a means to demonstrate compliance”.

authority gave a definition of “a pattern of land use characterised by relatively few buildings or dwellings spread over a large area”.

- 3.3. Though not an issue within the scope of this determination, the authority also made several submissions regarding the illuminance and visual awareness requirements of clause G7 *Natural light*.

The owner

- 3.4. The owner is of the view that the proposed building has been designed to meet the requirements of G7/AS1 “in all respects”. They submitted, in summary:

- 3.4.1. The design of bedroom 3 “utilises conventional architectural elements typical in standard residential construction”.
- 3.4.2. The proposed building is not excluded from the scope of G7/AS1 because it does not include any of the non-standard features listed in paragraph 1.1.2.1(c) of G7/AS1.
- 3.4.3. The owner provided commentary from two consulting engineers to support their view that G7/AS1 is an applicable compliance pathway. The first consultant concluded that, in their view, “the design [of Bedroom 3] is not an exclusion listed in G7/AS1 clause 1.1.2.1 (c)”. The second consultant made similar conclusions and provided further comment, noting that:

While the design includes recessed windows which comply with measurements to external obstructions as per [paragraph 1.1.2.1.(e) of G7/AS1], these features are fairly standard across buildings in New Zealand. There are no curved surfaces, fins, louvres, curtain walls or other advanced façade details which might make a façade complex or specialised. In our opinion, the project meets the simple façade design which can be described by a glazing to wall ratio as per 1.1.1.2 of G7/AS1.

- 3.5. In response to the authority’s submissions at paragraph 3.2, the owner submitted:

- 3.5.1. The proposed building is a “side by side multi-unit residential project of up to three storeys” which meets the requirements of paragraph 1.1.1.1(b) of G7/AS1.
- 3.5.2. The return feature in the proposed building’s façade is not a “light well” but a “typical stepped façade” It does not constitute a complex façade which would be excluded by paragraph 1.1.2.1(c) of G7/AS1.
- 3.5.3. The proposed building is a “low density” development of the type envisaged in G7/AS1, which “explicitly applies to townhouses and side by side multi-unit dwellings”. Additionally, “the presence of adjacent buildings in an urban environment does not automatically place a development outside the scope of G7/AS1. Urban proximity is normal for townhouses and multi-unit

housing, and G7/AS1 is intended to address precisely these types of contexts”.

- 3.6. The owner also made submissions regarding the illuminance and visual awareness requirements of clause G7.3.1 and G7.3.2 that were not within the scope of this determination.

4. Discussion

- 4.1. Building Code Clause G7 – *Natural light* sets out, in order to safeguard people from illness or loss of amenity due to isolation from natural light and the outside environment, that habitable spaces⁴ in housing, old people’s homes, and early childhood centres must have adequate openings to achieve minimum illuminance levels and to give awareness of the outside.
- 4.2. The dispute between the parties is whether G7/AS1 can be used to establish compliance of the proposed building work with Building Code clause G7. I shall therefore assess the proposed building, and specifically bedroom 3, and identify if it is within the scope of G7/AS1.

Establishing compliance with the Building Code

- 4.3. Section 17 requires all building work must comply with the Building Code.
- 4.4. Section 19(1)(b) states that:
- 19 (1) A building consent authority must accept any or all of the following as establishing compliance with the building code:
- (a) ...
- (b) compliance with an acceptable solution:
- 4.5. Read in conjunction with section 22⁵, a building consent authority must accept building work in accordance with an acceptable solution as establishing compliance with the performance requirements of the Building Code to which that acceptable solution relates.
- 4.6. G7/AS1 is an acceptable solution for Building Code clause G7 natural light. It is limited to “simple buildings up to three storeys excluding those with borrowed daylight”. It consists of three parts:

⁴ Clause A2 – *Interpretation* defines ‘habitable space’ as: “a space used for activities normally associated with domestic living, but excludes any bathroom, laundry, water-closet, pantry, walk-in wardrobe, corridor, hallway, lobby, clothes-drying room, or other space of a specialised nature occupied neither frequently nor for extended periods”.

⁵ Section 22 (2) states that: “A person who complies with an acceptable solution or a verification method must, for the purposes of this Act, be treated as having complied with the provisions of the building code to which that acceptable solution or verification method relates.”

- 4.6.1. Part 1 sets out the scope for the acceptable solution. A building must meet the requirements of part 1 to use parts 2 and 3 as a compliance pathway for clause G7.
- 4.6.2. Part 2 describes a calculation method for assessing the illuminance of a habitable space. Where a habitable space meets the quantitative glazing and reflectance⁶ values set out in part 2 it is established that it meets the illuminance requirements of G7.3.1.
- 4.6.3. Part 3 describes a calculation method for assessing awareness of the outside environment. Where the glazing in a habitable space meets the quantitative area and location values for transparent glazing set out in part 3 it is established that the space meets the awareness requirements of G7.3.2.
- 4.7. Paragraph 1.1.3.1 of G7/AS1 states that the acceptable solution relates to the two performance requirements of clause G7⁷. As I have discussed in previous determinations, compliance with a clause's performance requirements thereby establishes compliance with that clause's functional and objective requirements⁸. Therefore, compliance with G7/AS1 establishes compliance with clause G7.

Whether the proposed building work meets the scope set out in part 1 of G7/AS1

- 4.8. Paragraphs 1.1.1.1 and 1.1.1.2 in part 1 of G7/AS1 set out the initial scope of the acceptable solution, by describing the types of buildings and habitable spaces to which the acceptable solution applies.
- 4.9. They state:
 - 1.1.1.1 This acceptable solution applies to housing ... up to 3 storeys that are:
 - a) Detached; or
 - b) Attached side by side multi-unit buildings including townhouses.
 - 1.1.1.2 This acceptable solution applies to habitable spaces with external windows and simple façade designs that can be described by a glazing-to-wall ratio (GWR).
- 4.10. The acceptable solution provides that the combination of external windows and 'simple façade' "can be described by a glazing-to-wall ratio", where a 'glazing-to-wall ratio' ("GWR") is defined as "the percentage of glazing, not including framing and mullions, relative to the area of the external wall containing the vertical window".

⁶ G7/AS1 defines 'reflectance' as "the ratio of the flux reflected from a surface to the flux incident on it".

⁷ G7.3.1 and G7.3.2, discussed at paragraphs 4.6.2 and 4.6.3.

⁸ Determination 2012/061 *Regarding the compliance of door handles installed in school classrooms at Wairoa College, Lucknow Road, Wairoa* 24 September 2012 [at para 7.1.2].

- 4.11. I note G7/AS1 does not define 'simple façade'. However, the context of paragraph 1.1.1.2 indicates that a façade being simple means that its GWR can be determined by a straightforward quantitative calculation.
- 4.12. In other words, for a façade to be 'simple' the external wall in which the external windows sit need to be vertical and flat without having to compensate for complex features when calculating a GWR. These complex features could include unusually shaped facades, projecting elements, or others such as those listed in paragraph 1.1.2.1 of G7/AS1. This is supported by the calculation methods in parts 2 and 3 involving simple assessments of the relative area of a space's glazing and the diagrams therein showing habitable spaces with vertical and flat external windows and walls.
- 4.13. I consider that bedroom 3, being the habitable space in question, has a simple façade design that can be described by a glazing-to-wall ratio. The return feature in the exterior façade, where the wall is stepped back by 1040mm, is a basic feature. A GWR can be calculated for bedroom 3 without having to compensate for complex features (which are further discussed in paragraph 4.19).
- 4.14. As bedroom 3 is within a 3 storey building consisting of side-by-side townhouses and has an external window and simple façade design which can be described by a GWR it meets the requirements of paragraphs 1.1.1.1 and 1.1.2.1.
- 4.15. Further to the requirements of paragraphs 1.1.1.1 and 1.1.1.2, paragraph 1.1.2.1 then lists a set of features which a building must not have in order for it to not then be excluded from G7/AS1:
- 1.1.2.1 This acceptable solution does not include solutions for:
- a) habitable spaces that rely on daylight borrowed from another space; or
 - b) habitable spaces that do not have at least one window in an external wall; or
 - c) habitable spaces that include non-standard features such as advanced daylight redirection systems, complex façades top lighting strategies, internal divisions, internal obstructions, external shading devices or other specialized designs; or
 - d) habitable spaces with floor-to-ceiling heights of more than 3.0m; or
 - e) habitable spaces where more than 50% of the area of glazing are blocked by permanent external obstructions that are less than 1.0m from the area of glazing (see Figure 1.1.2.1); or
 - f) habitable spaces where windows are facing a porch, a covered walkway, or are under a balcony.

- 4.16. The parties dispute whether the exclusions as laid out in paragraph 1.1.2.1 apply to the proposed building. I will now consider each of these, specifically in relation to bedroom 3 of unit 6, which has the closest permanent external obstruction of units 2-6.
- 4.17. Paragraph 1.1.2.1(a) does not apply as bedroom 3 relies on daylight received directly via the window in the external wall.
- 4.18. Paragraph 1.1.2.1(b) does not apply as bedroom 3 has a window in an external wall.
- 4.19. Paragraph 1.1.2.1(c) excludes 'non-standard features' which alter the way natural light enters and disperses throughout a habitable space from the scope of the acceptable solution. Paragraph 1.1.2.1(c) then provides a non-exhaustive list of examples.
- 4.19.1. One approach to assessing whether a habitable space contains any 'non-standard features' is to describe the space and its daylighting strategies and consider whether any of those aspects are similar or could be comparable to the examples provided in paragraph 1.1.2.1(c).
- 4.19.2. The external walls for bedroom 3 have an orthogonal layout with no overhangs or protrusions. The external window is rectilinear in shape and has no internal, external or incorporated shading or reflection mechanisms other than standard occupant-operated curtains or blinds⁹. The external window faces the return feature in the building's façade, which is open to one side and above and is two storeys in height.
- 4.19.3. Bedroom 3 employs a direct daylighting strategy, where natural light is received directly from the exterior to the interior through the glazing area without being moderated, modified, or redirected by the features described earlier. Bedroom 3 has an open plan so direct daylight can propagate through the habitable area without being blocked by any internal partitions or obstructions.
- 4.19.4. I do not consider that any strategies or features outlined above are similar or could be considered comparable to the examples provided in paragraph 1.1.2.1(c), and conclude bedroom 3 does not contain any 'non-standard features'.
- 4.20. Paragraph 1.1.2.1(d) does not apply as the floor-to-ceiling height in bedroom 3 is 2.4 metres.
- 4.21. Paragraph 1.1.2.1(e) does not apply because the closest permanent external obstruction for the glazing area in question is 1.04m away. I note that the closest permanent obstruction measurement is taken as a projection directly perpendicular

⁹ I note these are not shown on the plans but it is fair to assume they may be installed by the owner or occupier at a later date.

from the plane of the glazing area, as shown in figure 1.1.2.1 of G7/AS1. The neighbouring building the authority referred to in their submission is to one side of the window and so is located outside this projected area. As such, it does not constitute a permanent obstruction for the purposes of this assessment.

4.22. Paragraph 1.1.2.1(f) does not apply because, as described in paragraph 2.4, the external window in bedroom 3 does not face a porch or covered walkway and is not located under a balcony.

4.23. The authority's submissions also reference two other aspects of part 1 of G7/AS1:

4.23.1. The authority submits that the guidance in paragraph 1.1.2.2 is "appropriate" due to the "window configuration". Alongside paragraph 1.1.1.3, paragraph 1.1.2.2 provides guidance on alternative compliance pathways for "more complex" buildings which do not meet the requirements of paragraphs 1.1.1.1, 1.1.1.2, and 1.1.2.1. It does not, in and of itself, outline any criteria regarding the scope of G7/AS1 and so does not provide a reason why the proposed building would fall outside the scope of the acceptable solution.

4.23.2. The authority also submits that G7/AS1 applies to "low density" buildings (which it considers the proposed building is not). This is reflected in Table 1.1.3.2 which, in outlining options for establishing compliance with clause G7, describes G7/AS1 as applying to "simple buildings up to 3 storeys in low density developments without borrowed light". However, as noted in paragraph 1.1.3.2, which this table accompanies, this is a summary only of the document's scope. It is paragraphs 1.1.1.1, 1.1.1.2 and 1.1.2.1 which lay out the specifics of G7/AS1's scope and what is considered to be "low density" (or not) for the purposes of the acceptable solution.

4.24. As bedroom 3 in units 2-6 of the proposed building meets the requirements of paragraphs 1.1.1.1 and 1.1.1.2 and none of the exclusions outlined in paragraph 1.1.2.1 apply, it follows that it falls within the scope of G7/AS1.

4.25. Accordingly, provided bedroom 3 in units 2-6 satisfies the requirements of parts 2 and 3 of G7/AS1, under section 19(1)(b) the authority must accept that compliance is established with clause G7. I leave this further assessment to the parties as it is outside the matter being determined.

5. Decision

- 5.1. In accordance with section 188 of the Building Act 2004, I determine that bedroom 3 in units 2-6 of the proposed building is within scope of G7/AS1 as a means to establish compliance with Building Code Clause G7 – *Natural Light*.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 10 September 2025.

Andrew Eames

Principal Advisor Determinations