

Ventilation and visual awareness of the outside environment in a multi-unit dwelling

1 THE MATTER TO BE DETERMINED

- 1.1 The matter before the Authority is a doubt as to whether a ventilating skylight in a room in a multi-unit dwelling provides adequate ventilation and visual awareness of the outside environment.
- 1.2 The Authority takes the view that it is being asked to determine whether the room concerned complies with clauses G4 and G7 of the building code (the First Schedule to the Building Regulations 1992) if used as a bedroom or other habitable space.
- 1.3 In making its determination the Authority has not considered any other aspects of the Building Act 1991 or of the building code.

2 THE PARTIES

- 2.1 The applicant was the owner of one of the units in a multi-unit dwelling, who also acted on behalf of the owners of nine other identical units. The other parties were the territorial authority and a building certifier.
- 2.2 The developer, no longer being the owner of the unit concerned, did not appear to be a party in terms of section 16 of the Building Act. However, the applicant properly chose to provide a copy of the application and its accompanying documents to the developer, and the Authority considers that the developer is an appropriate person to receive them in terms of section 19(1)(b).
- 2.3 Both the owner and the developer originally indicated that they wished the Authority to hold a hearing at which they could speak and call evidence. On 30 January 2001 the Authority issued this determination in draft form together with a request that the parties and the developer indicate whether they accepted the draft or wished for a hearing. The applicant, the territorial authority, and the building certifier each replied that it accepted the draft. The developer did not reply. In a letter dated 15 February 2001 the developer was told that unless a reply was received by 5 March 2001 it would be open to the Authority to issue the draft as the final determination. No reply having been received by that date, the Authority accepted legal advice that the developer had been given a reasonable opportunity to be heard. The Authority then issued this determination, which is identical to the draft except for the addition of this 2.3.

3 BACKGROUND

- 3.1 The building was erected for the developer, who obtained a building consent from the territorial authority and engaged the building certifier to undertake inspections during the course of construction. When construction was completed, the building certifier issued a code compliance certificate in terms of the building consent.
- 3.2 The applicant purchased the unit concerned from the developer, and is now in dispute with the developer as to whether that unit may properly be described as having three bedrooms. For the purposes of that dispute, the applicant wishes to establish whether the room concerned complies with the building code if it is used as a bedroom. The Authority is not concerned with the dispute between the applicant and the developer but only with the doubt as to whether the building complies with the building code.

4 THE BUILDING AND THE ROOM CONCERNED

- 4.1 The building is a multi-unit dwelling. The room concerned is on the lower level of one of the two-storey units. The rest of the lower level consists of a garage and workshop incorporating laundry facilities and a bathroom. The clothes drier vents to an exterior outlet, but there is no other specific provision for ventilation in the garage and workshop area, although the garage door can be described as “loose fitting”. One of the walls of the room concerned is an external wall, and two are internal fire-rated walls between the unit concerned and the units on either side of it. Some of the other units in the building are identical.
- 4.2 Originally, the plans and specifications showed the external wall as containing French windows opening on to a courtyard between the wall and the property boundary. However, by the time the developer applied for a building consent, the plans and specifications had been revised to omit the courtyard, so that the external wall is now on the boundary and contains no openings. . The room concerned, previously labelled “Bed 3/Study” had been re-labelled “Store Room Only”. Instead of the French windows there is a ventilating skylight, which passes through the ceiling and protrudes above a deck on the upper level of the unit The building consent was issued on that basis, as was the code compliance certificate.
- 4.3 In other words, it was a condition of the building consent that the room was to be a storeroom. (Some of the documents indicate that those amendments were made after the building consent had been issued, but that appears to be a misapprehension).
- 4.4 At some point, a mechanical ventilation system incorporating extractor fans appears to have been installed in the room, but it is not mentioned in the plans and specifications.
- 4.5 The room has a floor area of approximately 7.8 m², including a cupboard or wardrobe with a floor area of approximately 1.3 m². The skylight has an openable area of 0.021 m², being 0.27% of the floor area including the cupboard, or 0.32% excluding the cupboard. The building certifier stated that the extractor fan “achieves 15 litre/s”, well in excess of what is required by NZS 4303.

5 THE LEGISLATION

5.1 Ventilation

5.1.1 The relevant provisions for ventilation in the building code are:

G4.3.1 Spaces within buildings shall have means of ventilation with outdoor air that will provide an adequate number of air changes to maintain air purity.

G4.3.3 Buildings shall have a means of collecting or otherwise removing, the following products from the spaces in which they are generated:

- (b) Moisture from laundering, utensil washing, bathing and showering,
- (c) Odours from sanitary and waste storage spaces,
- (e) Poisonous fumes and gases,

5.1.2 The relevant provisions of the acceptable solution G4/AS1 in Approved Document G4 are:

1.1.1 Ventilation of spaces within buildings is required to maintain air purity by a flow of outdoor air through the building envelope, with or without mechanical assistance.

1.1.2 Where natural ventilation is available via adjacent spaces, specific ventilation shall not be required to small spaces such as hallways and lobbies in household units.

1.2.1 Provision for natural ventilation of occupied spaces, other than those in Commercial and Industrial buildings where products listed in NZBC Clause G4.3.3 are generated, shall be achieved by providing a net openable area of windows or other openings of no less than 5% of the floor area. Openable building elements shall be constructed in a way which allows them to remain fixed in the open position as a means of ventilation during normal occupancy of the building.

1.3.1 Mechanical ventilation systems must satisfy the following conditions:

a) Outdoor air supply shall:

Be designed and equipment installed to comply with NZS 4303, or AS 1668.2 (excluding Table A1 and Section 4), and to provide outdoor air to occupied spaces at the flow rates given in NZS 4303 Table 2.

b) Air-handling systems shall:

Be installed and maintained to the requirements of NZS 4302 Sections 202 to 214.

c) Extract ventilation shall:

i) be constructed so that any products listed in Clause G4.3.3 are removed, collected or diluted by ventilation rates and methods set out in AS 1668.2 Section 3.

d) Outdoor air intakes shall:

Be located to avoid contamination from any local source in accordance with AS 1668.2 Clause 2.2 and NZS 4303 Clause 5.5.

5.2 Awareness of the outside environment

5.2.1 The relevant provisions for awareness of the outside environment in the building code are:

G7.1 The objective of this provision is to safeguard people from illness or loss of amenity due to isolation from natural light and the outside environment.

G7.2 Habitable spaces shall provide adequate openings for natural light and for a visual awareness of the outside environment.

Requirement G7.2 shall apply only to Housing, old people's homes and early childhood centres.

G7.3.2 Openings to give awareness of the outside shall be transparent and provided in suitable locations.

where "habitable space" is defined in clause A2 as follows:

Habitable space 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.

5.2.2 The relevant provisions of the acceptable solution G7/AS1 in Approved Document G7 are:

2.0.1 At least 50% of the glazed area provided for natural light in habitable spaces shall be clear glazed. The clear glazing shall be located in the zone between the levels 900 mm and 2000 mm from floor level.

2.0.2 It is acceptable for awareness of the outside to be provided through another space.

6 THE SUBMISSIONS

6.1 General

6.1.1 As well as letters from the applicant and the building certifier, the Authority was provided with relevant correspondence and other documents generated in the course of construction together with a report of an inspection of one of the units by a building consultant and a producer statement for the design of the mechanical ventilation system.

6.1.2 The developer acknowledged receipt of the application form and each of the supporting documents. The Authority received no submissions from the developer.

6.1.3 The matter has been the subject of previous correspondence with members of the Authority's staff. The Authority has not taken any account of that correspondence in arriving at its decision.

6.2 Ventilation

6.2.1 The building consultant's inspection report, dated 8 August 2000, said:

The natural ventilation provided [by the skylight] . . . is grossly inadequate . . . No other means of ventilation is provided.

6.2.2 The mechanical ventilation referred to 4.4 and 4.5 above was designed and installed by a company specialising in air conditioning services engaged by the developer. A producer statement by an officer of that company, dated 14 August 2000, states in effect that the design complies with G4/AS1.

6.2.3 In a letter dated 23 August 2000 to the developer, the building certifier said:

Mechanical ventilation has also been installed in the form of extractor fans (achieving 15 litres/second extraction in accordance with G4/AS1 & AS1668).

6.2.4 In a letter dated 13 December 2000 to the Authority, the territorial authority (apparently unaware of the mechanical ventilation installed) said in effect that the room concerned was specified as a storeroom, that specific ventilation was not required for small spaces such as hallways and lobbies, and that storerooms were generally unoccupied and smaller than many hallways and lobbies.

6.2.5 The applicant said:

. . . the mechanical ventilation relies heavily on drawing air from underneath the [external] door into the garage with the obvious potential for carbon monoxide poisoning.

6.3 Awareness of the outside environment

6.3.1 At the time of the application for building consent, the territorial authority, in a facsimile to the developer dated 29 October 1999, pointed out that the room did not "have awareness to comply with regulation G7". That ceased to be an issue when the room was re-labelled as a storeroom.

6.3.2 The building certifier, in its letter to the developer dated 23 August 2000, said:

. . . the lower level rooms with sky-lights and extractor fans achieve the objective and performance requirements of Approved Documents 'G4 Ventilation' and 'G7 Natural Light' of The New Zealand Building Code, as habitable auxiliary bedrooms.

6.3.3 The building certifier explained that awareness of the outside environment was achieved because the skylight had an area of at least 10% of the floor area of the room and had "no buildings, structures, or other land features restricting light levels (in accordance with G7/AS1 2.02)".

7 DISCUSSION

7.1 Ventilation

- 7.1.1 The building certifier appears to have accepted the producer statement, as it was entitled to do, as being reasonable grounds on which to be satisfied that the proposed mechanical ventilation system complied with the building code. The applicant did not identify whether the concern about carbon monoxide poisoning related to outside traffic or to vehicles in the garage with their motors running. The Authority considers that the applicant's concern does not amount to technical evidence tending to establish that the producer statement is incorrect.
- 7.1.2 In the absence of any other evidence, the Authority considers that the room complies with the provisions of clause G4 of the building code in respect of ventilation.

7.2 Awareness of the outside environment

- 7.2.1 The Authority considers that the building certifier's letter quoted in 5.3.2 above confuses the provision of natural light with awareness of the outside environment. The Authority notes that the relevant objective of the building code is to safeguard people from illness or loss of amenity due to isolation from the outside environment. The acceptable solution G7/AS1 achieves that objective by providing a certain area of glazing in walls to allow occupants can see what is happening outside. The room concerned, with no glazing whatsoever in its external wall, does not comply with the acceptable solution.
- 7.2.2 Of course, the acceptable solution is not the only means of complying with the building code, but it may be used as a guideline or benchmark when considering other solutions. In general, the Authority does not consider that a view achieved by looking upwards through the ceiling is comparable with a view achieved by looking through the walls. In this case, the skylight is not an adequate safeguard against isolation from the outside environment.
- 7.2.3 The Authority therefore considers that the room does not comply with clause G7 of the building code if it is used as a bedroom or other habitable space. It does comply if used as a storeroom or other non-habitable space.

8 THE AUTHORITY'S DECISION

- 8.1 In accordance with section 20 of the Building Act, the Authority hereby determines that the room concerned:
- (a) Complies with clause G4 of the building code whether it is used as a bedroom or other habitable or as a storeroom or other non-habitable space;
 - (b) Does not comply with clause G7 of the building code if it is used as a bedroom or other habitable space;
 - (c) Complies with clause G7 of the building code if it is used as a storeroom or other non-habitable space.

- 8.2 The Authority accordingly confirms the territorial authority's decision that it was to be a condition of the building consent that the room (and each of the identical rooms in other units in the building) was to be a non-habitable storeroom. That condition is to be noted on any land information memorandum issued in respect of the building.

Signed for and on behalf of the Building Industry Authority on this 7th day of March 2001

W A Porteous
Chief Executive