Determination

under the

Building Act 1991

No. 97/007: Fire safety - alterations to a rest home - meaning of "suite"

1. GENERAL

1.1 The matter to be determined

1.1.1 The matter before the Authority is whether a building consent should be issued for the alteration of a rest home and hospital involving:

(a) The addition of a new rest home wing consisting of a central group of rooms including a kitchen, dining room and lounge, and three 'suites' of up to 11 bedrooms and associated sanitary facilities. The 'suites' are separated from each other and the central group of rooms by fire rated construction with full-height, but not fire rated, separation between the bedrooms and common spaces within each 'suite'; and

(b) The upgrading of the active fire protection systems in the existing building but with no upgrading of the passive fire protection measures, and in particular upgrading existing doors and adding new ones.

The word "suite" has been put in inverted commas above because one of the matters of dispute is whether they are in fact "suites" as that word is used in Approved Document C3 Acceptable Solution 1 ("C3/AS1").

1.1.2 The Authority takes the view that it is being asked in effect to determine:

(a) Whether the proposed new wing complies with C3/AS1, and if not whether it nevertheless complies with clause C3 of the building code; and

(b) Whether the existing building upgraded as proposed by the applicant complies as nearly as is reasonably practicable with the provisions of the building code for means of escape from fire.

1.1.3 In making its determination the Authority has not considered whether, after the alteration, the building including the new wing will comply with any other provisions of the building code.

1.2 The parties

1.2.1 The applicant was the owner acting through a fire and egress consultant. The other party was the territorial authority.

1.2.2 Neither party wished the Authority to hold a hearing at which they could speak and call evidence.

2. THE PROPOSED NEW WING

2.1 The building

2.1.1 The existing building was originally constructed in 1986 to accommodate 50 residents in single and double bedrooms. It was extended in 1989 to accommodate an additional 15 residents.

2.1.2 The plans and other information submitted to the Authority for the proposed new wing show that it will contain 30 single bedrooms, some with their own sanitary facilities, plus various common spaces and other facilities. The wing is divided into four firecells by fire rated construction. The point at issue is whether each of the individual bedrooms should be protected by fire rated construction.

2.2 The legislation

2.2.1 The relevant provisions of clause C3 of the building code read as follows:

> **OBJECTIVE**
>
> **C3.1** The objective of this provision is to:
> (a) Safeguard people from injury or illness when evacuating a building during fire.
>
> **FUNCTIONAL REQUIREMENT**
>
> **C3.2** Buildings shall be provided with safeguards against fire spread so that:
> (a) Occupants have time to escape to a safe place without being overcome by the effects of fire,
>
> **PERFORMANCE**
>
> **C3.3.2** Fire separations shall be provided within buildings to avoid the spread of fire and smoke to:
> (a) Other firecells,
> (b) Spaces intended for sleeping . . .

2.2.2 In terms of the acceptable solution C3/AS1 the building comes within occupancy group SC. The relevant parts of C3/AS1 read as follows:

> **2.8 Purpose groups SC and SD**
>
> **2.8.1** Purpose groups SC and SD shall be separated from other purpose groups by fire separations, and each SC and SD sleeping area shall be a separate firecell. The fire separations shall have a FRR using the F rating from Table B1, or 30/30/30

whichever is the greater. Where the fire separation is a wall, it shall be fire rated on both sides.

Comment:

1 A sleeping area firecell may be subdivided by non-fire rated construction into smaller partially enclosed spaces or cubicles (see Paragraph 2.8.4) or by fire separations into fully enclosed suites (see Paragraph 2.8.5). In both situations the subdivided spaces may contain one or more beds.

2 In this acceptable solution the term "beds" is used to denote the number of people expected to be sleeping in the firecell. Therefore, a double bed counts as two beds, and a tier of three single bunks (one above the above) counts as three beds.

2.8.2 Where the number of beds on any floor exceeds 10, the sleeping area shall be divided into no fewer than two firecells, and the fire separations between adjacent sleeping areas shall have a FRR of no less than 60/60/60, but refer to Paragraph 2.8.6 for exceptions.

2.8.3 No firecell shall contain more than 40 beds, and sufficient room shall be available within each firecell to accommodate, in an emergency, the beds from another firecell of any occupants unable to walk.

2.8.4 A sleeping area firecell may be subdivided with non-fire rated construction into smaller spaces each containing one or more beds provided that:

a) Where full height walls are used, they enclose no more than 75% of the perimeter of the space, or

b) Where more than 75% of the perimeter of the space is enclosed, a gap of no less than 400 mm is provided between the top of the wall (or screen) and the underside of the roof or ceiling.

Comment:

It is important that firecell occupants are aware of a fire as early as possible. Fully enclosed subdivisions within a firecell can delay detection of a fire in other parts of that firecell.

2.8.5 As an alternative to a non-fire rated subdivision, a sleeping area may be divided to provide one or more suites. Each suite shall be a firecell with the fire separations having a FRR of no less than 30/30/30. No suite shall contain more than 15 beds.

Comment:

A suite is a firecell which may comprise one or more spaces (including bedrooms) and may include other facilities for the exclusive use of the occupants. Fire separations are not required within a suite. Examples may be found in hotels, motels or residential facilities in a health care institution such as old peoples homes, hospices etc.

2.8.8 Intermittently occupied spaces used for direct support functions or services to SC and SD sleeping areas and located within or adjacent to the firecells they serve, may be included as part of those firecells.

2.8.10 Provision and requirements for sprinklers:

a) Where the sleeping area is sprinklered,

   i) the maximum number of beds permitted by Paragraphs 2.8.2, 28.3 and 2.8.5 may be doubled if the sleeping area is a single firecell, and

ii) the FRR of 60/60/60 required by Paragraph 2.8.2 may be reduced to 30/30/30, and the FRR 30/30/30 required by Paragraph 2.8.5 reduced to 15/15/15.

Table B1/5: Fire safety precautions Purpose group SC & SD

Single floor building, over 40 beds:

Firecell rating: F0

Alarm type: Type 7 automatic fire sprinkler system incorporating a manual fire alarm and an automatic smoke detection system.

Other protection required:

Type 12 hold open devices.

Type 14 fire hose reels.

Type 16 emergency lighting in exitways (shall be extended to include bedrooms corridors, passageways, lounges, lobbies, staff quarters when in the same building, and to spaces providing support functions to the primary activity . . . whether or not the space is a dead end).

Type 18 fire hydrant systems.

2.3 The submissions and the Authority's responses

2.3.1 The territorial authority's opinion, as reported by the applicant, was that:

> . . . each bedroom is a suite which shall be fire separated from adjacent bedrooms, corridors and other spaces.
>
> The bedroom doors shall be approved fire stop and smoke control doors fitted with self closers and, in this instance, fitted with approved hold open devices.

The Authority's general response will be apparent from what follows. However, the Authority notes that type 12 hold open devices on the bedroom doors are not a requirement of C3/AS1, although such devices on doors in long corridors are a requirement of C2/AS1.

2.3.2 The applicant submitted the matter to the Authority as a request for "a clear definition" of what C3/AS1 means by a "suite" in a building of purpose group SC. The Authority's response to that submission is set out in 2.4 below. The applicant also made the following specific submissions:

(a) That paragraph 2.8.5 of C3/AS1 (see 2.2.2 above) meant that any group of up to 15 bedrooms with associated sanitary facilities constituted a suite, that each suite must be a firecell, but that there was no requirement for fire rated separation between spaces within the suite.

The Authority disagrees for the reasons set out in 2.4 below.

(b) That the comment to paragraph 2.8.4 (see above) did not apply to this building because:

> . . . each space, including bedrooms, are fitted with a smoke detector and/or a sprinkler head (Type 7 alarm system) which, once activated, will simultaneously warn all occupants of the building of the emergency.

The Authority responds that warning systems are relevant to C2/AS1 for means of escape but not to C3/AS1 for spread of fire. Under C3/AS1, the sprinkler system

allows reductions in fire resistance ratings and increases in the numbers of beds on a floor or in a firecell. The Authority does not accept that the presence of a Type 7 combined warning and sprinkler system can be used to justify any additional concessions over and above those specified in C2/AS1 and C3/AS1.

(c) That the separations between bedrooms and other spaces within the 'suites' were not fire rated but nevertheless "effectively created 15 minute fire rated partitions which is the minimum FRR for this sprinkler protected building".

The Authority does not consider that an "effective" or any other kind of fire resistance rating may be ascribed to building elements which cannot be demonstrated to have a specific fire resistance rating on the basis of tests.

The Authority interprets comment 1 to paragraph 2.8.1 and paragraphs 2.8.4 and 2.8.5 of C3/AS1 as meaning that a fully enclosed bedroom, other than a bedroom in a suite, is to be enclosed by fire rated construction. It interprets paragraphs 2.8.5 and 2.8.10 as meaning that for a sprinklered building the required FRR is 15/15/15.

(d) As to self-closing doors to the bedrooms, the applicant submitted:

(i) Self-closing doors are difficult for the occupants of a rest home who are therefore "denied free and easy access to and from their bedrooms". The applicant also claimed anecdotal evidence (but not its own knowledge) to the effect that:

> Various rest home owners spoken to on this matter consider "we are making prisoners of the residents" and "the residents will suffer numerous bruises or broken bones from the self-closing doors" and "the self closers on bedroom doors could be considered a hazard to the residents under the OSH Act".

(ii) As to alternatives, the applicant said:

> Approved hold open devices on the bedroom doors also denies the residents of their privacy as the door can only be fully open or fully closed. It is recognised that there are specialised devices that allow the door to be operated normally but once the fire alarm is activated they will automatically fully close the door. The cost of these devices when calculated over the number required for this complex is prohibitive. - In excess of $60,000.

(iii) The applicant's proposal includes the provision of hold-open devices on the doors which form part of the fire rated construction dividing the new wing into four as described in 2.1 above.

(iv) That "as part of the procedures in the Approved Evacuation Scheme for the rest home, staff are trained to close doors to avoid the spread of smoke", so that there is no need for the doors to the bedrooms to be self-closing.

The Authority responds that it accepts that some occupants may well have problems with self-closing doors. However, it is essential that openings in fire rated construction should be protected by self-closing fire rated closures. Type 12 hold open devices enable that essential requirement to be met while overcoming some of the difficulties associated with self-closing doors. However, neither C2/AS1 nor C3/AS1 requires bedroom doors to be provided with hold open devices. As to the activities of staff, see 2.3.5 below.

(e) The applicant said:

> If we compare the acceptable solution . . . of providing 'dormitory' style accommodation for up to 15 beds as stated in paragraph 2.8.5 [of C3/AS1], there is no protection between bedspaces and there is no capability of avoiding the spread of smoke to all 15 bedspaces as all spaces are open.
>
> Under this scenario we believe that in an open 'dormitory' style firecell of up to 15 bedspaces there is a far greater risk to the life of the residents and more chance of mass panic than if the occupants were in fully enclosed "non-fire rated" partitions made up of one or two bedspaces and protected by a Type 7 alarm.

The Authority responds that it takes the provisions of C3/AS1 as to separation between bedrooms as being concerned with the danger of a fire occurring in a bedroom without anyone outside that bedroom being aware of the fire or being protected from it by fire rated construction.

Even if the applicant is correct in suggesting that C3/AS1 results in a resident being less safe in a dormitory than in a single bedroom, as to which the Authority offers no opinion, that might be a reason for reducing the requirements for a single bedroom, as the applicant presumably suggests, but it might equally well be a reason increasing the requirements for a dormitory.

2.3.3 In accordance with section 12(2) of the Building Act, the Authority consulted the New Zealand Fire Service Commission, which suggested that in C3/AS1, the word "suite" should be given the following meaning:

> A firecell comprised of a sleeping space or spaces and other spaces provided for the exclusive use of the occupants of that suite firecell. Examples of "other spaces" are toilets, bathrooms, and lounges.

On that basis, the Fire Service considered that the new wing complied with C3/AS1.

2.3.4 To assist it in understanding the technical points involved, the Authority obtained reports from an expert employed by a research organisation and a member of a firm of consulting engineers, both with experience in fire matters.

2.3.5 The research expert was of the opinion that C3/AS1 required individual bedrooms to be enclosed by fire rated construction so that occupants who could not escape without assistance would be safe from smoke within their individual bedrooms until assistance could arrive. However, C3/AS1 made no distinction between sprinklered and unsprinklered buildings. As the new wing is sprinklered, the expert considered that:

> . . . the **Applicant's interpretation of "suite" should be accepted for this specific building only**, provided that:
>
> - individual bedrooms are constructed as smoke-cells with smoke-control doors (with or without closers as indicated below)
> - at least two staff would be available 24 hours per day if manual method of door closing is to be implemented
> - at least one staff would be available 24 hours per day if automatic method of door closing is implemented.

The Authority responds that paragraph 2.8.10 of C3/AS1 does in fact distinguish between sprinklered and unsprinklered buildings, and that the Authority disagrees about the interpretation of the word "suite" for the reasons set out in 2.4 below. Furthermore, the Authority is always reluctant to take account of management matters such as the provision and training of staff. In this case, of course, because the principal users of purpose group SC are by definition people who "because of age, mental or physical limitations require special care or treatment", it can be assumed that care-giving staff will be present. That is not the same as assuming that they will always be able to ensure that doors are closed and stay closed during sleeping hours, and that, when a fire occurs, they will always be present in sufficient numbers to assist all of the principal users in sufficient time.

2.3.6 The consulting engineer had found that in practice "the word suite has caused more problems than solutions". In any case, the word appeared to be used only in the context of the spread of fire and not in the context of means of escape. In some circumstances, particularly within purpose group CS, a self-closing door might impede escape. Indeed:

> . . . the worst case . . . is to have all doors shut except that to the room with the fire. In this case, with minimal floor area to fill up, the smoke will very rapidly fill both the room of origin and the adjacent corridor over its full length. . . . It would be far better to include smoke separation doors in the corridor at much more frequent intervals and have these closed by release of automatic hold-open devices.

The Authority responds that the consulting engineer's scenario appears to assume that the principal users will all be able to escape unaided, albeit slowly. The Authority does not accept that assumption.

2.3.7 The fire engineer concluded by saying:

> Note that it has not been possible within the budget allocated for this exercise to undertake a computer simulation to assess the tenable times for escape from the bedrooms relative to the danger imposed by the fire, even under sprinklered conditions. To give a definitive view, this exercise would need to be undertaken.

2.4 Discussion

2.4.1 Does the proposed new wing comply with C3/AS1?

2.4.1.1 In effect, the applicant is seeking approval for a design which complies with C3/AS1 except that fully enclosed bedrooms will not be enclosed by fire rated construction. That is clearly justifiable only if the applicant's interpretation of "suite" is correct.

2.4.1.2 The applicant's interpretation appears to be that a suite is any group of spaces containing not more than 15 beds, increased to 30 in this case because the building is sprinklered (see paragraph 2.8.10 of C3/AS1). At first sight, that interpretation appears to be supported by the comment to paragraph 2.8.5 of C3/AS1, which says:

> A suite is a firecell which may comprise one or more spaces (including bedrooms) and may include other facilities for the exclusive use of the occupants. Fire separations are not required within a suite. Examples may be found in hotels, motels or residential facilities in a health care institution such as old peoples homes, hospices etc.

2.4.1.3 However, in this case, applying that interpretation to paragraphs 2.8.4, 2.8.5, and 2.8.10 amounts to saying:

> If a bedroom is completely enclosed then that enclosure shall be fire rated unless the bedroom is in a firecell which contains no more than 30 beds.

Thus the word "suite" is unnecessary if it merely means any firecell containing no more than a certain number of beds.

2.4.1.4 The Authority does not accept that interpretation, and in particular does not accept that the comment to paragraph 2.8.5 can be treated as if it were a definition of the word "suite". The question as the Authority sees it is: What differentiates a suite from any other group of spaces?

2.4.1.5 As the word "suite" is not defined in the legislation or in C3/AS1, the Authority considers that it must therefore be given its ordinary and natural meaning in the context.

2.4.1.6 In the context of residential accommodation the word "suite" would be generally understood to refer to an interconnected group of rooms occupied by people having some relationship to each other, whether by family, friendship, common employment, or the like. In the context of a health care institution, the relationship could be that all members of the group were undergoing the same treatment or were suffering from the same communicable disease so

that for specific health management reasons it would be appropriate for them to share a suite. However, in such cases one would expect that there would be close monitoring by staff, which would not usually be assisted by fully enclosed bedrooms within the suite.

2.4.1.7 In other words, the Authority considers that a suite must be occupied by people having some specific relationship to each other. A suite of rooms in temporary or transient accommodation such as a hotel is similar to a household unit in a permanent residence.

2.4.1.8 On that interpretation, it is incorrect to use the word "suite" to describe an arbitrary group of separate bedrooms and associated facilities which are not interconnected and which are to be occupied by people having no specific relationship to each other and having no specific reason for occupying those particular bedrooms.

2.4.1.9 The Authority considers, therefore, that a group of fully enclosed bedrooms cannot be treated as a suite for the purposes of C3/AS1 unless they are interconnected and occupied by people having a specific relationship to each other. A group of bedrooms cannot properly be treated as a suite for no reason other than to avoid the need for fire rated partitions between them.

2.4.1.10 Thus the Authority concludes that the proposed new wing does not comply with C3/AS1.

2.4.2 Does the proposed new wing nevertheless comply with clause C3 of the building code?

2.4.2.1 The Authority recognises that the C3/AS1 is only one means and not the only means of establishing compliance with clause C3 of the building code. However, the proposed new wing includes significantly less fire protection than is required by C3/AS1 in that the fully enclosed bedrooms are not protected by fire rated construction.

2.4.2.2 In this case, the applicant has submitted theoretical discussions indicating that the precautions required by C3/AS1 are excessive, but has submitted no specific evidence to support that theory.

2.4.2.3 The Authority recognises that C3/AS1 might possibly need revision on that point, but such a revision, if it is in fact justified, must be made in accordance with the procedures specified in section 49 of the Building Act. It would be inappropriate for the Authority, on the grounds of theoretical arguments only, and without going through the section 49 procedures, to determine that a building falling significantly short of compliance with C3/AS1 nevertheless complies with clause C3.

2.4.2.4 It might be different if the applicant were able to produce "a computer simulation to assess the tenable times for escape from the bedrooms relative to the danger imposed by the fire, even under sprinklered conditions" as suggested by the fire engineer, or some other specific evidence that this particular building would comply with clause C3 of the building code despite the fact that it does not comply with C3/AS1.

2.4.2.5 Such evidence would, of course, need to be submitted to the territorial authority in the first instance, and only if there were some doubt or dispute would the evidence need to be submitted to the Authority for a further determination.

2.5 Conclusion

2.5.1 In effect, the Authority disagrees with the interpretation of the word "suite" in C3/AS1 which was adopted by the applicant. On the Authority's interpretation, therefore, the proposal does not comply with C3/AS1. Of course, that does not necessarily mean that the proposal does not comply with clause C3 of the building code. However, the acceptable solution may be used as a guideline or benchmark for determining whether an alternative solution complies with the building code. In this case, the proposal amounted to the acceptable solution C3/AS1 except that individual bedrooms would not be protected by fire rated construction. The applicant could point to no special features of this particular building which would justify omitting that protection and did not submit any specific calculations or other evidence to that effect.

2.5.2 Accordingly, and for the reasons set out in more detail above, the Authority considers that the proposed new wing does not comply with clause C3 of the building code.

2.5.3 The applicant may choose either:

(a) To bring the new wing to compliance with C3/AS1 by providing fire rated separation between each bedroom and other bedrooms and common areas; or

(b) To use an alternative solution which the applicant can establish, to the satisfaction of the territorial authority, complies with clause C3 of the building code.

3. UPGRADING THE EXISTING BUILDING

3.1 The building

3.1.1 The existing single storey building was originally constructed in 1986 to accommodate 50 residents in single and double bedrooms. It was extended in 1989 to accommodate an additional 15 residents. The applicant states that it was constructed with fire resistance ratings as previously required by NZS 1900 Chapter 5 and the rest home codes of practice as they existed at the times of construction, and includes:

- Kitchen, laundry, and storeroom separated by 1 hour fire rated walls.
- Ceiling voids subdivided by ½ hour fire rated partitions.
- Bedroom walls ½ hour FRR
- Bedroom doors are all hollow core doors.
- Doors subdividing the corridors and separating the sleeping areas from the living areas are all smoke control doors to the superseded NZS 1188. Hold-open devices are currently fitted on some doors subdividing the corridors.

3.1.2 The applicant proposes to upgrade the existing building by installing the following types of active fire safety precautions listed in Table B1 of the Fire Safety Annex to Approved Document C4:

- Type 7 automatic sprinkler system incorporating a manual fire alarm system and an automatic smoke detection system;
- Type 12 hold open devices fitted to the doors subdividing the long corridors and the doors subdividing the sleeping areas from the living areas;
- Type 14 hose reels;
- Type 16d emergency lighting system (currently provided in the corridors only) to be extended to include bedrooms, lounges, lobbies, staff facilities, and all other occupied spaces; and
- Type 18 fire hydrant system.

3.2 The legislation

3.2.1 Section 38 of the Building Act says:

> **38. Alterations to existing buildings -** No building consent shall be granted for the alteration of an existing building unless the territorial authority is satisfied that after the alteration the building will -
>
> (a) Comply with the provisions of the building code for means of escape from fire, and for access and facilities for use by people with disabilities (where this is a requirement in terms of section 25 of the Disabled Persons Community Welfare Act 1975), as nearly as is reasonably practicable, to the same extent as if it were a new building; and
>
> (b) Continue to comply with the other provisions of the building code to at least the same extent as before the alteration.

3.2.2 The only issue in this case is whether the existing building when upgraded as proposed by the applicant, will comply with the provisions of the building code for means of escape from fire as nearly as is reasonably practicable, to the same extent as if it were a new building.

3.2.3 The Authority notes that if it were a new building it would be required to comply completely with those provisions, and that the acceptable solutions, particularly C3/AS1 may be used as guidelines or benchmarks when determining whether the building has been upgraded as nearly as is reasonably practicable to compliance.

3.2.4 The relevant provisions of C3/AS1 are set out in 2.2.2 above. The relevant provision of C2/AS1 is:

> ### 3.3.2 Long corridors
>
> Any corridor linking exitways more than 25 m apart, shall be divided by a smoke separation and smoke control door(s) located as near as practicable to midway between the two exitways. (See Figure 15). When alarm Types 4 or 7 are required by Table B1, the smoke control door(s) shall be fitted with hold open devices complying with Appendix B Paragraph B3.3 (Type 12).

Comment:

It is advisable that such doors be double-swing, and if likely to be wedged open in use, they should be fitted with hold-open devices. Although such doors are frequently considered a nuisance by users, they perform the essential function of ensuring that if the corridor becomes smoke-logged, occupants have only a limited distance to travel before getting into a smoke-free path. Sensible design will also ensure that door closers are installed on doors off the corridor to prevent the spread of smoke from one side of the smoke separation to the other.

3.3 The submissions and the Authority's responses

3.3.1 The territorial authority's opinion, as reported by the applicant, was that:

> . . . it [is not considered to be] unreasonable to replace existing bedroom doors and doors subdividing the corridors with approved fire stop and smoke control doors fitted with self-closers and hold open devices.

The Authority comments that paragraph 3.3.2 of C2/AS1 requires smoke control doors fitted with hold open devices in the long corridors in any case, but as mentioned in 2.3.2 above, neither C2/AS1 nor C3/AS1 requires bedroom doors to be provided with hold open devices.

3.3.2 The applicant submitted that:

(a) Estimated costs of replacing existing doors and installing hold open devices obtained from a hardware supplier, fire alarm company, and builder were:

		$
Doors: -/15/-Sm rimu finish	51 x 1200 mm wide	48,450.00
	24 x 810 mm wide	14,400.00
Door hardware: Self closers, door handles, hinges push plates etc		86, 610.00
Hold open devices supplied and installed:		34,100.00
Labour: to remove existing doors, reinstate new doors and redecorate		22,800.00
TOTAL COST:		**$172,260.00**

Those costs would be in addition to the costs of installing the active fire safety precautions listed in 3.1.2 above.

The applicant submitted that "the additional cost is *not reasonably practicable* considering the minimal increase in life safety of the residents".

The Authority's response to that submission is set out in 3.4 below.

(b) The existing hollow-core doors provides a sufficient level of protection against fire and smoke in a building fitted with a type 7 fire alarm system.

The Authority responds that both a type 7 system and fire rated doors are required by C2/AS1 and C3/AS1

(c) When the existing smoke stop doors were installed, they complied with NZS 1188 and were considered to be 30 minute fire stop doors, and they do in fact provide some fire resistance rating.

As mentioned above, the Authority does not consider that any kind of fire resistance rating may be ascribed to building elements which cannot be demonstrated to have a specific fire resistance rating on the basis of test evidence.

(d) "The existing building has a current Compliance Schedule issued by the TA and an evacuation scheme approved by the Fire Service. Neither would have been issued if the building was considered non-complying or dangerous as defined by the Building Act 1991."

The Authority disagrees. Section 8 of the Building Act provides in effect that an existing building cannot be required to be upgraded under that Act unless one or more of sections 38 (alterations), 46 (changes of use etc), or 64 (buildings deemed to be dangerous) applies. Thus the fact that the territorial authority issued a compliance schedule for the building merely means that it contains systems and features listed in section 44. The fact that the Fire Service approved an evacuation scheme under the Fire Safety and Evacuation of Buildings Regulations merely means that the Fire Service was satisfied that the scheme complied with those Regulations.

The Authority does not believe that the applicant is seriously contending that the existing building complies with the building code. The most that can be said is that neither the territorial authority nor the Fire Service considered the building to be so dangerous as to justify its taking action under sections 64 to 71. The fact is that the building does not comply with the current building code, and the only question is whether the proposed upgrading will bring it to compliance as nearly as is reasonably practicable as required by section 38.

(e) "It is considered that if self closers and hold open devices were fitted to bedroom doors it encroaches on the rights of privacy and freedom of movement by the residents. Rest Home Owners consider the self closers to be a health hazard to frail residents trying to negotiate their way through the doors."

The Authority considers that submission to be irrelevant. This determination is concerned with fire safety, not with privacy and freedom of movement, important though those matters are.

3.3.3 The New Zealand Fire Service Commission, adopting the applicant's definition of "suite" as mentioned in 2.3.3 above, said:

(a) "We do not find it unreasonable to ask for an upgrade of the smoke stop doors between sleeping Areas and other areas. These should be upgraded to the latest requirements. In most cases, this might be obtained by installing smoke seals on the existing door hardware."

The Authority agrees, see 3.4 below.

(b) The plan of the existing building shows a storeroom and a cleaning room part way down each wing. These areas appear to have a $^1/_2$ hour FRR. We would find it 'practicable' to ensure these areas had 30 min FRR and smoke stopping capability to be consistent with the suite concept, this includes doors."

The Authority responds that the storeroom and the cleaning room are "Intermittently occupied spaces used for direct support functions or services to SC . . . sleeping areas" in terms of paragraph 2.8.8 of C3/AS1 and may therefore be included as part of the sleeping area fire cell which they serve. Thus the Authority reads C3/AS1 as not requiring those rooms to be enclosed by fire rated construction. However, that does not affect the requirement that each fully enclosed bedroom is to be enclosed by fire rated construction.

3.3.4 The research expert mentioned in 2.3.4 above considered that the applicant's proposal did not go far enough but that the territorial authority's opinion went further than necessary. The expert suggested that a satisfactory solution would be to do the following:

- upgrade (not replace) existing doors to smoke control doors by adding smoke seals.
- only installing hold-open devices in selected locations as described by the Applicant.
- replace some key fire/smoke doors in main circulation areas and add appropriate hardware.
- omit door-closers on bedrooms only providing at least 2 staff are available 24 hours per day, and they have been trained to close doors on activation of the fire alarm system.

The Authority repeats that it is reluctant to take account of management matters, see 2.3.5 above.

3.3.5 The consulting engineer mentioned in 2.3.4 above repeated his opinion that:

> individually separating with closures each individual door to each individual bedroom is . . . a poor way of providing for life safety, and it would be much better to provide for smoke separation doors at much more regular intervals along the corridor rather than allow the corridor itself to be used as a smoke reservoir along its full length.

and suggested that:

> . . . each bedroom wing . . . should be divided into three firecells separated from one another by 30/30/30 fire resistant rated partitions running across the building. Where these partitions cross the corridor, they should be fitted with a -/30/30Sm door with magnetic hold open devices activated by smoke detectors.

The Authority repeats its comment that the consulting engineer's scenario appears to assume that the principal users will all be able to escape unaided. The Authority does not consider that assumption valid for purpose group SC.

3.4 Discussion

3.4.1 The applicant's proposal is in effect that the existing building will be brought to compliance with C2/AS1 and C3/AS1 except that the existing bedroom doors will not be replaced by fire rated doors but will be fitted with smoke seals and hold open devices.

3.4.2 The Authority considers that a principal user unable to escape from a fire unaided should be able to remain safely in his or her bedroom until assistance becomes available, whether from staff or from members of the Fire Service. In a sprinklered building, the danger is most likely to be from fire in an adjoining room or from smoke in the corridor. It is much less likely that there will be danger from fire in the corridor.

3.4.2 On balance, therefore, the Authority considers that the cost of replacing the bedroom doors with fire rated doors is not justified by the increased safety from fire in the corridor. However, the cost of fitting the existing bedroom doors with smoke seals is justified by the increased safety from smoke in the corridor. The provision of hold open devices to the bedroom doors is not relevant to compliance with C2/AS1 and C3/AS1 but is a sensible provision if occupants have difficulty with the self closers on their bedroom doors.

3.4.3 The point about the separation of sleeping areas from other areas raised by the New Zealand Fire Service Commission, see 3.3.3(a) above, was not mentioned by the applicant. From the drawings of the existing building submitted to the Authority, the sleeping areas are not separate firecells as required by paragraph 2.8.1 of C3/AS1. In particular, the doors between the bedroom wings and the other wing are shown as smoke stop doors only.

3.4.4 The Authority considers that those doors should be replaced by doors having a fire resistance rating of 30/30/30 and fitted with type 12 hold open devices.

3.5 Conclusion

3.5.1 For the reasons set out above, the Authority concludes that the proposed upgrading does not comply as nearly as is reasonably practicable with the provisions of the building code for means of escape from fire as required by section 38. However, it would comply as nearly as is reasonably practicable if the existing bedroom doors were fitted with smoke seals and the doors from the bedroom wings to the other wing were replaced by doors having a fire resistance rating of 30/30/30 and fitted with type 12 hold open devices.

7. The Authority's decision

7.1 In accordance with section 20(a) of the Building Act the Authority hereby determines that building consent for the proposed alteration is to be refused unless:

(a) The proposed new wing is either:

(i) Brought to compliance with C3/AS1 by providing fire rated separation between each bedroom and other bedrooms and common areas; or

(ii) Re-designed in accordance with an alternative solution which is established, to the satisfaction of the territorial authority, as complying with clause C3 of the building code.

(b) The existing building is to be upgraded as proposed by the applicant and in addition the existing bedroom doors are to be fitted with smoke seals and the doors from the bedroom wings to the other wing were replaced by doors having a fire resistance rating of 30/30/30 and fitted with type 12 hold open devices.

Signed for and on behalf of the Building Industry Authority on this 7th day of July 1997

J H Hunt
Chief Executive