

Touch lights as emergency lighting in the bedrooms of a rest home

1 THE MATTER TO BE DETERMINED

- 1.1 The matter before the Authority is a dispute as to the installation of emergency lighting in the alteration of a rest home. Specifically, the dispute is about extending the existing emergency lighting system to the bedrooms by installing a single touch light in each bedroom.
- 1.2 The Authority takes the view that it is being asked to determine whether the installation of those lights brings the emergency lighting system to compliance with clause C2 of the building code (the First Schedule to the Building Regulations 1992) as nearly as is reasonably practicable as required by section 38 of the Building Act 1991.
- 1.3 In making its determination the Authority has not considered any other aspects of the Building Act or of the building code. In particular, it has not been asked to consider, and has not considered, whether section 38 required the emergency lighting system to be extended into the bedrooms.

2 THE PARTIES

- 2.1 The applicant was the territorial authority. The other parties were the owner and the New Zealand Fire Service. The building consultant mentioned in 3.2 below were considered to be an “appropriate person” in terms of section 19(1)(b) of the Building Act, and was accordingly sent copies of the application and its accompanying documents, and of subsequent correspondence between the Authority and the parties, and given the opportunity to make submissions to the Authority.

3 BACKGROUND

- 3.1 Two rest homes, under the same ownership, were being altered. The point at issue is identical to both, and so this determination is written in terms of a single building.
- 3.2 The existing building contained a sprinkler system, and smoke detectors, together with an emergency lighting system that did not extend into the bedrooms. After some discussion, and the commissioning by the territorial authority of a report from a building consultant, the owner agreed to extend the emergency lighting system to cover the bedrooms also. The owner proposed to do so by installing a single station, wall mounted, battery powered, touch operated lamp in each bedroom.

- 3.3 The territorial authority accepted that proposal and issued a building consent accordingly. When the alterations, including the installation of touch lights had been completed, the territorial authority issued a code compliance certificate.
- 3.4 A little over a month later, the Fire Service wrote to the territorial authority expressing concern about the use of touch lights, and in effect disputing the territorial authority's decision to issue the building consent and the code compliance certificate for their installation.
- 3.5 The territorial authority then submitted that dispute to the Authority for determination under section 17 of the Building Act.
- 3.6 The Authority sent a draft determination to the parties. It then held a hearing at which each of the parties appeared. This determination is a significantly amended version of the draft.

4 THE TOUCH LIGHTS

- 4.1 As described by the owner, the touch lights are powered by four AA batteries and will function continuously for 10 hours. A touch light is installed in each bedroom, attached to the wall by a hook above or near a light switch. They are operated by placing gentle pressure on the surface.

5 LEGISLATION, THE APPROVED DOCUMENTS AND CASE LAW

- 5.1 The relevant provisions of the Building Act are:

(a) Section 38:

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 . . . as nearly as is reasonably practicable, to the same extent as if it were a new building

(b) Section 49(1) and (2):

(1) The Authority may prepare or may approve, in whole or in part and subject to any modification it considers necessary or desirable, any document for use in establishing compliance with the provisions of the building code.

(2) Any document, prepared or approved by the Authority under subsection (1) of this section shall be accepted for the purposes of this Act as establishing compliance with those provisions of the building code to which it relates, but it shall not be the only means of establishing such compliance.

(Such documents are issued by the Authority as “the Approved Documents” and the means of complying with the building code are referred to as “acceptable solutions”.)

- 5.2 The relevant provisions of the building code are:

C2 MEANS OF ESCAPE

C2.3.3 *Escape routes* shall be:

- (f) Provided with adequate illumination as required by Clause F6 “Lighting for emergency”.

F6 LIGHTING FOR EMERGENCY

OBJECTIVE

F6.1 The objective of this provision is to safeguard people from injury due to inadequate lighting being available during an emergency.

FUNCTIONAL REQUIREMENT

F6.2 *Buildings* shall be provided with *adequate* lighting within all *escape routes* in an emergency.

PERFORMANCE

F6.3.1 An *illuminance* of 1 lux minimum shall be maintained at floor level throughout *buildings* for a period equal to 1.5 times the *evacuation time* or 30 minutes, whichever is the greater.

F6.3.2 Signs to indicate escape routes shall be provided as required by Clause F8 “Signs”.

5.3 The relevant provisions of acceptable solution F6/AS1 in Approved Document F6 are:

1.2.1 An emergency lighting installation shall comply with:

- a) AS/NZS 2293:Parts 1, 2 & 3, and
- b) NZS 380, and
- c) NZBC G9 Electricity.

5.4 The relevant provisions of AS/NZS 2293.1:1995 are:

1.1.1 **Scope** . . . The objective of the Standard is to provide visual conditions which will alleviate panic and permit safe evacuation of the building occupants, should this be necessary, in the event of failure of the electrical supply to the normal lighting.

1.3.27 **Luminaire** – equipment which houses the lamp(s) and directs the light in required directions. It includes items necessary for fixing, protecting, and operating the lamp(s).

1.3.42 **Single point (emergency lighting) system** – A system of emergency lighting employing self-contained emergency luminaires and exit signs.

2.2 **OPERATION OF EMERGENCY LUMINAIRES AND EXIT SIGNS** On failure of the electric supply to the normal lighting, emergency luminaires and exit signs shall be automatically energised from their emergency supply in accordance with Clause 2.4.2.

2.4.2.2 *Single-point systems* In single-point systems, the self-contained emergency luminaires and exit signs shall be arranged so that they are automatically connect to the emergency power source upon failure of the electric supply to the normal lighting in the designated area.

(AS/NZS 2293.1:1998 contains identical provisions.)

5.5 AS/NZS 2293.2 1995 specifies maintenance procedures for single-point systems.

- 5.6 Case law¹ establishes that it is legitimate to use the acceptable solution as “a benchmark or guideline” when considering whether something complies, or complies as nearly as is reasonably practicable, with the building code.

6 THE SUBMISSIONS

6.1 Initial submissions

- 6.1.1 The territorial authority submitted that it had been satisfied that the use of the touch lights was an alternative solution. It considered that “the ongoing procedures, other high standards of fire protection, and evacuation plans will make a safe and timely evacuation possible for the rest home residents”.
- 6.1.2 The building consultant’s report mentioned in 3.2 above had been commissioned by the territorial authority because of the owner’s contention that a requirement to extend the existing emergency lighting system into the bedrooms was inconsistent with practices enforced by other territorial authorities. The report concluded that in fact the requirement was consistent with the requirements of other territorial authorities. The report included an extensive discussion of the provisions of the Building Act and the building code but did not discuss the touch lights, which had not been proposed at the time of the report.
- 6.1.3 The Fire Service, in a letter to the territorial authority, said:

. . . these touch type lights are not automatic in operation, as required by the standard, have no guarantee of in-service duration time, as required by the standard, and do not have a testing, inspection, and maintenance programme, as required by the standard. These points are necessary to ensure reliability and integrity of the system and to provide assurance that the emergency lighting system will operate satisfactorily when an emergency occurs.

6.2 The draft determination

- 6.2.1 The draft determination compared the proposed touch lights with the acceptable solution, specifically the single point emergency lighting specified in AS/NZS 2293. A significant difference was seen in the fact that whereas the acceptable solution required automatic operation, the touch lights did not have that feature.
- 6.2.2 The draft concluded that because the touch lights do not come on automatically they do not provide a level of life safety comparable to the level provided by the acceptable solution.
- 6.2.3 As discussed below, the Authority has reconsidered the need for automatic operation of emergency lighting in the particular circumstances. The Authority regrets that the draft did not discuss the other relevant considerations. However, that did not, in the Authority’s opinion, disadvantage the parties because those considerations were in fact addressed in submissions made at the hearing.

¹ *Auckland CC v NZ Fire Service* 19/10/95, Gallen J, HC Wellington AP336/93, partially reported at [1996] 1 NZLR 330, noted [1995] BRM Gazette 189.

6.3 At the hearing

6.3.1 *The territorial authority*

6.3.1.1 The territorial authority submitted that since it accepted the touch lights as an alternative solution it had discovered that they did not in fact provide the illuminance of 1 lux required by clause F6.3.1 of the building code. Because of that, the territorial authority no longer considered the touch lights to be an acceptable solution.

6.3.1.2 Nevertheless, the territorial authority submitted argument and discussion in relation to the operation of emergency lighting in rest home bedrooms and whether there was a need for automatic operation. It considered that if the touch lights did provide an illuminance of 1 lux or more “the solution is acceptable”.

6.3.1.3 The territorial authority gave reasoned arguments against the need for automatic operation of emergency lighting in bedrooms. That is specifically discussed in 7.3 below.

6.3.1.4 The territorial authority also said, amongst other things:

The owner documented the specific management regimes for evacuation . . . and the maintenance of the lights . . .

the testing, inspection, and maintenance programme . . . will guarantee in service 30 minute duration.

The [owner’s] Quality Control procedures . . . ensured the ongoing maintenance of the touch lights. Needless to say the [territorial authority] did not see the need to doubt these maintenance procedures.

Those statements are taken into account in 7 below.

6.3.1.5 In conclusion, the territorial authority asked the Authority to continue with the determination and to:

offer some guidance, in particular the relationship between the standards of acceptable solutions and their use as a benchmark for alternative solutions. We also ask for some guidance as to how the cost, time, trouble or other sacrifice necessary to eliminate the risk should be interpreted in this matter as per [the *Auckland City Council v NZ Fire Service* case].

6.3.2 *The owner*

6.3.2.1 The owner outlined the systems and procedures it was required to have in place under other legislation. It emphasised that the primary occupants of rest homes needed assistance to escape in a fire, so that the emergency lighting was mainly for the benefit of staff rather than occupants.

6.3.2.2 The owner made no specific submissions as to the touch lights themselves, but appeared to be disputing the need for any emergency lighting in the bedrooms, a matter that the Authority has not considered, see 1.3 above.

6.3.3 *The Fire Service*

6.3.3.1 The Fire Service, as indicated in its letter to the territorial authority quoted in 6.1.3 above, disputed that the touch lights were an alternative solution complying with the building code.

6.3.3.2 It pointed out that the rest home had an evacuation scheme under the Fire Safety and Evacuation of Buildings Regulations that provided for staged evacuation. Therefore, under regulation 16(b) the design and construction of the building was required to comply with clauses C1 to C4, D1, and F6 to 8 of the building code. The Fire Service would not approve a staged evacuation scheme unless it was satisfied that the emergency lighting complied with clause F6.

6.3.3.3 The Fire Service submitted that the touch lights did not comply because they did not operate automatically and did not provide an illuminance of 1 lux.

6.3.3.4 In response to a question from the owner, the Fire Service agreed that trial evacuations of the rest home had been successful. However, they had been held during the daytime so that the contribution of the emergency lighting was not tested.

7 **DISCUSSION**

7.1 **General**

7.1.1 The Authority considers that the dispute submitted for determination ceased to exist when the territorial authority withdrew its acceptance of the touch lights on belatedly realising that they did not provide the 1 lux required by clause F6.3.1.

7.1.2 However, in response to the territorial authority's request for guidance, and also in response to submissions from the parties, the Authority sets out below some considerations that it would expect to be taken into account by a territorial authority considering this or any similar system of emergency lighting.

7.2 Management practices

- 7.2.1 The Authority has no reason to doubt the owner's contention that the rest home is well managed and complies with the systems and procedures required under other legislation. However, that must be assumed to be the case with any rest home, and the acceptable solution must be assumed to take account of those systems and procedures.
- 7.2.2 Requirements under the Building Act for fire safety precautions and related inspection and maintenance are in addition to requirements under other legislation, they are not alternatives. The Authority sees all such requirements as forming a legislative framework intended to ensure that the building itself and the management of the building achieve the desired end, in this case safety in fire.
- 7.2.3 As to management practices not required by legislation, in Determination 92.1102, the Authority said, in the context of supervision of children:

the Building Act does not cover the management of buildings in that respect, and assurances as to future management practices will rarely be enforceable under the Act.

The Authority takes the same approach to management practices for providing care for the principal users of rest homes. In any case, there is no guarantee that such practices will survive a change of ownership or even a change of manager.

7.3 Automatic operation

- 7.3.1 Automatic operation of emergency lighting is not a requirement of the building code but it is a requirement of the acceptable solution F6/AS1.
- 7.3.2 In its draft determination, the Authority placed considerable weight on the argument that the nature of emergency lighting is that it comes on automatically in an emergency. However, assisted by the submissions from the territorial authority, the Authority has now reconsidered that point.
- 7.3.3 F6/AS1 cites AS/NZS 2293.1:1995, which requires that on failure of the normal electrical supply, emergency luminaires "shall be automatically energized" and that self-contained luminaires in single-point systems shall be "automatically connected to their emergency power source". In other words, emergency lights are required to operate automatically on the failure of the normal electricity supply.
- 7.3.4 However, the Authority notes that clause F6 has the objective of safeguarding people from injury "during an emergency". The "emergency" that triggers the automatic operation of emergency lighting is the failure of the power supply. It is obviously important that people should not be plunged into darkness while, for example, negotiating stairs.

- 7.3.5 Clause C2 refers to clause F6, but the relevant objective of clause C2 is the narrower one of safeguarding people from injury from a fire while escaping to a safe place. In other words, clause C2 is concerned with fire emergency only.
- 7.3.6 Emergency lighting complying with F6/AS1 does not operate automatically on the outbreak of fire or on the operation of fire safety systems such as smoke detectors. In most fires, therefore, the emergency lighting will not operate. If the power does not fail, then in a fire either the ordinary lighting will be on or inhabitants will have to make their way to the light switch in darkness, a familiar activity for ambulant occupants. Staff or other rescuers merely need to open the bedroom door to admit light from the corridor, and again should have no difficulty in turning on the bedroom light switch.
- 7.3.7 Of course, it is important in a fire that the emergency lighting does operate automatically if the power supply fails, but does it make any difference in a bedroom? An emergency light switch adjacent to the ordinary bedroom light switch appears to be an adequate safeguard for occupants and staff or other rescuers.
- 7.3.8 The Authority concludes that an emergency lighting system in a bedroom need not operate automatically on failure of the power supply in order to comply with clause C2 of the building code.

7.4 Illuminance

- 7.4.1 To comply with clause F6.3.1, emergency lighting in a bedroom must maintain an illuminance of 1 lux at floor level throughout the room. In this case, the requirement is that the emergency lighting shall comply as nearly as is reasonably practicable. The Authority takes that to imply that a slightly lower illuminance might be acceptable provided that staff or rescuers will not be endangered and will be able to see a fallen occupant in any part of the room, behind the bed for example.

7.5 Maintaining illuminance for an adequate time

- 7.5.1 Clause F6.3.1 requires the lights to maintain the required illuminance for 1.5 times the evacuation time. In this case, there was no dispute that the touch lights' batteries would function for 10 hours if run continuously. The owner said that its monthly procedures included "turning on these light and ensuring that they run for at least 30 minutes". The Authority was not advised as to the evacuation time, but accepts that it will be no more than 30 minutes. However, see also 7.7 below.

7.6 Permanent installation

- 7.6.1 The Authority considers it unacceptable for touch lights or any other kind of emergency lighting to be "attached to the wall by way of a hook". Emergency lighting must be permanently attached to and form part of the building.

7.7 Inspection and maintenance procedures

- 7.7.1 Section 44(1)(d) of the Building Act requires any emergency lighting system to be included in the building's compliance schedule. The Authority reads section 44(2) as requiring that the compliance schedule shall specify which procedures are to be undertaken by the owner and which by an independent qualified person, with an independent qualified person involved on at least an annual basis if not more frequently.
- 7.7.2 It is the territorial authority, not the owner, which issues the compliance schedule, see section 44(2). However, when a compliance schedule item is first installed, the owner is required to submit, as part of the application for building consent, proposed procedures for inclusion in the compliance schedule, see section 33(2) and the definition of "plans and specifications" in section 2.
- 7.7.3 The Authority was therefore surprised by the territorial authority's statement that it "did not see the need to doubt" the procedures proposed by the owner. The territorial authority must decide what procedures are to be included in the compliance schedule. The Authority considers that decision must be made on reasonable grounds.
- 7.7.4 The owner's submitted procedures amounted to:
- (a) Monthly, turning on each light and ensuring that it runs for at least 30 minutes;
 - (b) Replacing all the batteries in any light that fails to run for 30 minutes;
 - (c) Replacing any damaged light from a stock of spare lights; and
 - (d) Annually, replacing all the batteries in every light.
- 7.7.6 The Authority considers those procedures to be unacceptable because:
- (a) There is no way of knowing whether the lights have been turned on between monthly tests. If so, then the test will drain the batteries without giving any assurance that they will operate properly in an emergency. The important thing is to check the battery level, not to reduce it.
 - (b) There is no mention of procedures to be undertaken by an independent qualified person.
- 7.7.7 It is not for the Authority to specify acceptable procedures, but it notes that for any such system to be acceptable it is essential that the compliance schedule procedures are appropriate to the nature of the system.

8 CONCLUSIONS

- 8.1 For the reasons set out above, the Authority concludes that the touch light system concerned does not comply as nearly as is reasonably practicable with clause C2 of the building code.

- 8.2 However, every decision about an alternative solution must be made in accordance with the circumstances of the case, and the Authority recognises that another system using appropriate touch lights could well comply with clause C2.
- 8.3 Any territorial authority considering such a system should take account of the considerations discussed above together with any other relevant considerations that arise in the particular case concerned.

9 THE AUTHORITY'S DECISION

- 9.1 In accordance with section 20, the Authority hereby reverses the territorial authority's original decision to issue a building consent and a code compliance certificate for the touch lights (while confirming the territorial authority's subsequent decision that those particular touch lights are not acceptable).

Signed for and on behalf of the Building Industry Authority on this 14th day of May 2001

W A Porteous
Chief Executive