

Fire safety provisions in a medical centre building

1 THE MATTER TO BE DETERMINED

- 1.1 The matter before the Authority is whether the fire safety provisions in a new medical centre building comply with the building code (the First Schedule to the Building Regulations 1992) as required by section 7(1) of the Building Act 1991. (That requirement is subject to any waivers or modifications granted by the territorial authority, but the Authority understands that in fact no such waivers or modifications have been sought or granted).
- 1.2 The Authority takes the view that it is being asked to decide whether the proposed building work specified in the applications for building consents, and the completed building work for which code compliance certificates were issued, complied with clauses C2 and C3 of the building code.
- 1.3 In making its determination the Authority has not considered any other aspects of the Building Act or of the building code.

2 THE PARTIES

- 2.1 The applicant is the New Zealand Fire Service Commission (“the Fire Service”). The other parties are the owner of the building, acting through a barrister, the building certifier concerned, and the territorial authority.
- 2.2 The building has changed ownership since the application for determination was made. The then owners responded to the application and subsequent correspondence through a firm of solicitors, but did not wish to remain involved in the determination as an “appropriate person” under section 19(1)(b) of the Building Act. Except in 4.3 below, no distinction is made between submissions received from the previous owner and from the current owner.
- 2.3 The firm of consulting engineers responsible for the fire safety design of the building (“the fire designer”) declined the Authority’s offer to treat it as an “appropriate person”.

3 THE BUILDING

- 3.1 The building is on a corner site. It is of structural steel and concrete construction and has six levels, shown on the plans as including:

- Level 1: Basement car park, 2,548 m².
- Level 2: Ground floor medical centre, including a hyperbaric chamber, retail pharmacy, and so on, 1,091 m².
- Level 3: Car parking, 1,391 m².
- Level 4: Dental and medical offices, laboratory, two operating theatres, and a six-bed recovery area, 1,770 m².
- Level 5: Dental and medical offices, 1,742 m².
- Level 6: Dental and medical offices, 1,742 m².
- 3.2 The building was constructed in stages as the needs of particular tenants were established, and was still to be completed on some floors at the time this determination was issued. The work was done under a series of building consents, each issued by the territorial authority on the basis of a building certifier's building certificate. Four of those consents are relevant to this determination. The building certifier issued code compliance certificates in respect of those building consents.
- 3.3 The fire designer prepared a fire report for the building as a whole ("the original fire report") with accompanying fire protection specification, and then prepared subsequent reports for the completion of various stages (essentially fit-outs of particular levels). In those subsequent reports, the fire designer treated the fit-out as an alteration to an existing building. The Authority does not agree with that approach, see 5.3 below.
- 3.5 The Authority understands that the fire designer was not engaged to check that the plans and specifications for the building, whether initially or in respect of the fit-outs, complied with the fire reports. There is nothing unlawful in that, but the Authority does not regard it as good practice. It places an additional burden on the principal designer and also on the territorial authority or, as in this case, the building certifier. In fact, both the plans and specifications for which building consents were issued and the building as originally constructed did not comply with the fire reports in several respects.

- 3.6 The Fire Service apparently raised concerns about the building with those involved, including the territorial authority, which itself was sufficiently concerned to issue a “dangerous building” notice under section 65 of the Building Act. Shortly afterwards, the Fire Service applied for this determination. The two procedures are very different. A “dangerous building” notice relates to a building considered to be dangerous in terms of section 64. A determination relates to whether or not particular building work or proposed building work complies with all of the provisions, or with any particular provision, of the building code.
- 3.7 Various alterations to the building were made, or are intended to be made, to improve its fire safety. The consent for the fit-out of the surgery on level 4 has been varied to correspond to the actual use. Those alterations will not simply bring the building to compliance with the fire reports but introduced fire precautions additional to those required by the reports. The owner and the building certifier therefore expressed surprise that the Fire Service did not withdraw its application for a determination. The Fire Service responded that it had “not received any information that confirms any planned building work has been completed”.

4 THE SUBMISSIONS

4.1 The Fire Service submissions

- 4.1.1 The Fire Service structured its application and subsequent submissions in terms of the various building consents and code compliance certificates, submitting that they “should not have been issued”. It would have been more helpful to the Authority if the application has been in terms of whether particular items of building work or proposed building work complied with the building code.
- 4.1.2 The Authority takes the view, as it did in Determination 2001/6 and in several previous determinations, that it does not have jurisdiction to determine whether territorial authorities or building certifiers acted on reasonable grounds when issuing building certificates, building consents, or code compliance certificates. However, the Authority does have the jurisdiction to determine whether particular building work or proposed building work complies with the building code.
- 4.1.3 The Fire Service amended its original application by adding various matters mentioned in the reports from two independent fire engineers commissioned by the Authority, see 4.2.4 below. In the absence of objections from any of the other parties, the Authority accepted the amended application.

4.1.4 The matters that the Fire Service specifically requested the Authority to determine were:

- (a) In relation to the issuing of building consents, whether the proposed building work as specified in the fire reports complied with the building code in the following respects:
 - (i) Means of escape.
 - (ii) Means to control the spread of fire.
 - (iii) Smoke protection of vertical shafts.
 - (iv) Provision to facilitate the needs of fire service personnel.
- (b) In relation to the issuing of code compliance certificate, whether the building work complied with the building code at the time the relevant code compliance certificate was issued in respect of the following matters not already listed under (a) above:
 - (i) Fire protection of structural steel.
 - (ii) Fire separation between exit route stairs.
 - (iii) Surface finishes.
 - (iv) Protection against vertical spread of fire between levels 3 and 4.

Those matters are discussed individually below.

4.2 Other submissions

4.2.1 The owner and the building certifier maintained that the Fire Service should have withdrawn its application because of the alterations mentioned in 3.7 above.

4.2.2 The Authority treats that as a submission to the effect that it had no jurisdiction to make a determination because there is no longer any matter of doubt or dispute to be determined. That question is discussed in 5.1 below

4.2.3 Neither the owner, the building certifier, nor the territorial authority made any technical submissions, although they did provide copies of the relevant fire

reports, drawings, and so on submitted in support of the applications for building consents.

- 4.2.4 The Authority commissioned reports from two independent fire engineers (“engineers 1 and 2”) who studied the documentation received by the Authority and visited the building. Those engineers were given copies of the application and the relevant documentation. Their reports were copied to the parties.
- 4.2.5 The Fire Service made submissions in response to those reports.
- 4.2.6 Relevant passages from the submissions and reports are outlined in the discussion of particular items below.

4.3 The draft determination

- 4.3.1 A draft of this determination was sent to the parties, who were each asked to indicate whether they accepted the draft subject to non-contentious amendments or whether they did not accept the draft and considered that it “should be altered because the Authority has not taken full account of [the party’s] submissions, or has misunderstood the facts of the case, or for any other reason”.
- 4.3.2 The Fire Service did not require a hearing but requested a few amendments.
- 4.3.2 The original owner referred the draft to a firm of builders who had been engaged to alter the building, and submitted that firm’s report describing the work, including the installation of sprinklers on additional floors, that had been done in respect of aspects of the building considered to be unsatisfactory.
- 4.3.3 The new owner indicated that it did not wish to comment.
- 4.3.4 The building certifier did not require a hearing but requested a number of amendments.
- 4.3.5 The territorial authority did not require a hearing but requested one non-controversial amendment.
- 4.3.6 The Authority copied to each of the parties its responses to the requested amendments. Most of them were accepted as non-controversial, but some were rejected as inappropriate without a formal hearing. In the absence of any objections, the Authority made the non-controversial amendments to the draft to produce this final determination.

5 THE AUTHORITY'S APPROACH

5.1 The Authority's jurisdiction

5.1.1 The Fire Service's application in effect asked the Authority to determine two types of matters:

- (a) Whether proposed building work, as specified at the building consent stage, would have complied with the building code if it had been properly completed in accordance with that specification.
- (b) Whether building work as it existed at the code compliance certificate stage complied with the building code.

5.1.2 The Authority takes the view that in the circumstances of this case it has jurisdiction to determine matters of doubt or dispute about proposed building work whether or not that work has in fact been completed.

5.1.3 As to completed building work that has since been altered, the Authority addressed a similar problem in Determination 2000/3, when it was asked to determine whether certain demolished building work had complied with the building code. In that case the Authority was unable to make a determination because the necessary evidence was no longer available. In this case, evidence as to the relevant building work as at the date of the code compliance certificate and before any subsequent alterations is available not only from the Fire Service but also from engineers 1 and 2. The Authority takes the views that it has the jurisdiction to make a determination on that evidence whether or not the building work concerned has since been altered.

5.2 The acceptable solutions

5.2.1 The fire designer's fire reports were written in terms of the previous acceptable solutions C2/AS1 and C3/AS1, which were in force at the time, but specifically identified two departures from those documents as being alternative solutions. The Fire Service's submissions and the reports of engineers 1 and 2 were also written primarily in terms of the acceptable solutions. This determination has generally been written in terms of the current acceptable solution C/AS1 so that it will be of most use to practising fire engineers and others concerned. However, if the building does not comply with C/AS1 but does comply with C2/AS1 and C3/AS1, the Authority accepts that as establishing compliance with the building code for the purposes of this determination only.

5.2.2 As for the proposed alternative solutions, the Authority's task is to determine whether they comply with the performance-based building code. In doing so, the Authority may use the acceptable solution as a guideline or benchmark¹.

¹ *Auckland CC v NZ Fire Service* [1996] 1 NZLR 330,

- 5.2.3 The Authority sees the acceptable solution C/AS1 as an example of the level of fire safety required by the building code. Any departure from the acceptable solution must achieve the same level of safety if it is to be accepted as an alternative solution complying with the building code.
- 5.2.4 As it has in several previous determinations, the Authority makes the following general observations about acceptable solutions and alternative solutions:
- (a) Some acceptable solutions cover the worst case so that in less extreme cases they may be modified and the resulting alternative solution will still comply with the building code.
 - (b) Usually, however, when there is non-compliance with one provision of an acceptable solution it will be necessary to add some other provision to compensate for that in order to comply with the building code.
- 5.2.5 The process by which an acceptable solution is changed is set out in section 49 of the Building Act and involves widespread consultation. Therefore, no matter how strong the arguments a party to a determination advances to justify an alternative solution providing a lower overall level of safety in the particular building concerned, those arguments cannot be accepted for the purposes of the determination. The Authority is mindful of the following passage from the decision in a case² concerning the interpretation of the expression “low probability” in clause B1 of the building code:

It is tempting to say that [a risk that does not have a low probability] is a risk that a reasonable and responsible contractor or engineer would not take having regard to the object of protecting property, but that might be to re-write the Building Code. The Code is intended to set the standard for those in the building industry, not the other way round.

Of course, strong arguments in favour of a lower level of safety might well be accepted in the process of amending or revising the acceptable solution.

5.3 Staged construction

- 5.3.1 The particular uses of the various tenancies within the building were not known at the time of the building consent for the main structure. For that reason, the fire designer treated the fit-out of a particular level as being an alteration to an existing building and therefore as governed by section 38 of the Building Act, saying:

S.38 of the Building Act requires consideration of the evacuation of the building, this report addresses the area of tenancy only and assumes that

² *Auckland City Council v Selwyn Mews Limited and Ors* 18/6/2003 Judge F W M McElrae, DC Auckland CRN 2004067301-19.

any requirements of S.38 for the remainder of the building are satisfactorily met under the previously issued Building Consent(s).

- 5.3.2 The Authority disagrees. In the view of the Authority, the fit-out of a particular area in the shell of a new building to suit the needs of the first tenant is part of the construction of the building and cannot be treated as an alteration to an existing building. The various building consents were all for stages of construction, not for alterations. In other words, the Authority takes the view that a building is to be treated as a new building under construction until all of it is actually completed and ready for use.

6 MEANS OF ESCAPE – SAFE PATHS

- 6.1 In the words of the original fire report:

Two exits are provided from each level via scissor stairs . . . One stair uses a safe path on L2 [ground level] to reach the final exit. The other discharges at first floor level (L3) to open air from where a choice of two 1:8 slope vehicle down ramps offer access to the ground level. In the event of a fire alarm vehicles will automatically be prevented from using the ramps to ensure evacuees have a right of way.

- 6.2 The Fire Service cited paragraph 6.3.1 of C2/AS1, now paragraph 3.16.8 of C/AS1:

At least half the safe paths serving purpose groups SC and SD shall terminate in a safe place without being combined with an escape route from any other purpose group.

(The Authority agrees that the operating theatres and recovery rooms on level 6 come within purpose group SC, see also 7.7 below.)

- 6.3 The Fire Service said:

In this building there are two safe paths, both of which serve the sleeping care purpose group on Level 4 and the other purpose groups above. In addition, one stair discharges into the level 3 car park which is not a “safe place”.

- 6.4 Engineer 1 did not address the question of the number of the safe paths from the recovery rooms on Level 4 being combined with the safe paths from all other purpose groups present on all levels. In respect of the discharge of a safe path into the Level 3 car park, Engineer 1 said:

Fire separation of the final exit of the upper stair leading to the ramp may expose escaping occupants to radiation or toxic products but this is not a high probability.

The Authority takes that to amount to an opinion that the risk is low enough, that is to say the level of safety is high enough, to comply with the building code despite the fact that there would be an even lower risk, and therefore a higher level of safety, in a building complying with the acceptable solution. That opinion cannot be accepted for the purposes of this determination for the reasons set out in 5.4 above.

6.5 Engineer 2 noted that “no alternative solutions were proposed to address the non-compliance [with paragraph 3.16.8 of C/AS1 so that] it is the opinion of [Engineer 2] that the building did not meet the NZ Building Code”.

6.6 The Authority agrees with Engineer 2 that the proposed building does not comply with the building code in respect of the means of escape from level 4.

7 SPREAD OF FIRE – SPRINKLER SYSTEM

7.1 The original fire report classified level 4 as SC and required an automatic sprinkler system on level 4 only (see also 7.7 below).

7.2 The Fire Service cited paragraph 2.8.10(c) of C3/AS1:

Firecells on floors immediately below sprinklered sleeping areas shall also be sprinklered.

7.3 Engineer 1 reported seeing “a single line of sprinklers in the Level 3 carpark” during a site inspection, but that clearly did not satisfy the requirement for level 3 to be sprinklered. Engineer 1 said:

An Alternative Solution, had one been offered, might well have shown that passive fire protection between Level 3 and Level 4 could have obviated the requirement for sprinklers at Level 3 . . . However, such an Alternative Solution was not offered.

7.4 Engineer 1 concluded:

We are of the view that the entire building should be sprinklered and that this work should not be delayed.

7.5 Engineer 2 noted that “no alternative solutions were proposed to address the non-compliance [with paragraph 2.8.10(c) of C/AS1 so that] it is the opinion of [Engineer 2] that the building did not meet the NZ Building Code”.

7.6 The Authority notes that Table B1/5 of the previous Fire Safety Annex to Approved Documents C2-4 required sprinklers in a purpose group SC firecell with an escape height of less than 10 m only if it contained 6 or more beds. However, paragraph 4.5.11 of C/AS1 now requires sprinklers and smoke detection (Type 7) irrespective of the number of beds and also required that all floors below a floor of purpose group SC shall be sprinklered (Type 6 or 7).

- 7.7 The Authority agrees with Engineers 1 and 2 that the proposed building work does not comply with the building code.
- 7.8 A subsequent fire report (associated with the fit-out) classified level 4 as SA. The Fire Service said:

There is still an operating theatre on that level and people will still be operated on whilst under the effects of anaesthetic. Beds are provided for recovery and clearly people will be kept overnight for medical reasons. This type of activity clearly comes under SC and not SA.

- 7.9 The Authority agrees that the firecells concerned on level 4 come within purpose group SC, but does not agree that is because “people will be kept overnight”. The presence of beds in which people who require special care or treatment will be sleeping is sufficient to classify a firecell as SC.

8 SMOKE PROTECTION – LIFT SHAFTS

- 8.1 The fire report said:

As an Alternative Solution to the provision of smoke stop lobbies, smoke curtains will be provided on L1, 2, 3, and 5 only to prevent smoke from a fire on those levels entering the lift shafts. . . .

Where smoke curtains are used to prevent smoke from entering lift shafts they shall be deployed automatically in response to a single smoke detector located centrally between the curtains within 2 m of the doors.

- 8.2 The Fire Service cited paragraph 5.5.2 of C3/AS1:

Doorsets opening into liftshafts which are protected shafts shall be fire doors complying with Table 3 but need not meet the Sm requirement, provided that immediate access to the lift door is via a smokecell separating the liftshaft from the adjacent firecell.

- 8.3 The Fire Service said:

A smokecell requires smoke separation, which is defined in the Building Code as:

Any vertical, horizontal or inclined building element with known smoke stopping or smoke-leakage characteristics.

. . . No justification is provided in the [fire] report for the alternative solution selected.

- 8.4 Engineer 1 said:

Alternative Solution using smoke curtains in lieu of smoke stop lobbies in principle appears to provide redundancy considering the likely limited volume of smoke which can enter a lift shaft, rise . . . to the top of the lift shaft then build down and escape via lift doors on upper floor.

The Authority takes that to amount to an opinion that the risk is low enough to comply with the building code despite the fact that an even lower level is required by the acceptable solution. That opinion cannot be accepted for the purposes of this determination for the reasons set out in 5.2 above, but in saying that the Authority does not decide that properly specified and installed smoke curtains cannot control the risk to the level required by the acceptable solution.

8.5 Engineer 2 said:

The lift lobbies are to be smoke separated. This has not been done, most tenancy doors that create the lift lobby are not provided with self-closers or smoke seals.

8.6 The Authority notes that whereas under C3/AS1 there was a general requirement for smoke control capability between a firecell and a liftshaft, under C/AS1 that requirement applies only between an unsprinklered protected shaft and a safe path or protected path.

8.7 In the absence of any detailed specification for the smoke curtains on levels 1, 2, 3, and 5 mentioned in the fire report, the Authority is unable to accept that they would provide the necessary smoke control capability. The Authority concludes that on levels 4 and 6, where no smoke curtains were provided, the lift doors do not comply with the building code in respect of smoke control capability between the unsprinklered lift shaft and the protected path.

9 PROVISIONS TO FACILITATE THE NEEDS OF FIRE SERVICE PERSONNEL

9.1 Hydrant system

9.1.1 The original fire report said:

Hydrants . . . not required by Alternate Solution below.

Fire Extinguishers throughout all areas except car parks.

Fire extinguishers are required throughout the top three floors and on the ground floor as a substitute for additional protection type 14 [fire hose reels] and for compliance with the sprinkler code NZS 4541.

9.1.2 The Fire Service said:

The building requires a fire hydrant system. This has been deleted. No alternate solution has been provided.

9.1.3 Engineer 1 said:

Provision of fire extinguishers in lieu of hose reels appears to comply with generally accepted practice under C3.3.9. . . . Fire Service input would be required on this.

9.1.4 Engineer 2 said:

. . . provided the number of SC bedspaces is less than 10 [a fire hydrant system] is not required [under C3/AS1].

9.1.5 The Authority notes that C/AS1, requires a fire hydrant system to serve all levels. However, under C3/AS1 a hydrant system is required for the building concerned only if there are more than 10 beds. The plans show 6 beds for 2 operating theatres, so that the building complies with C3/AS1 in that respect and the Authority therefore accepts, for the reasons set out in 5.1 above, that the building also complies with the building code in that respect. However, the Authority takes the view that if more than 6 people actually occupy beds at one time while the building is in use, then that will amount to a change of use and it may well be necessary to consider retrofitting a hydrant system to comply with section 46(2) of the Building Act.

9.1.6 The Authority was surprised to learn from Engineer 1's report that the provision of fire extinguishers instead of hydrants and hose reels was "generally accepted practice". It is not a practice that has been accepted by the Authority, and the Authority does not consider that in this case fire extinguishers would give as high a level of safety as the hydrants and hose reels required by C/AS1. Further more,

the Authority doubts that the substitution would be acceptable in any other case. That is because it considers that fire extinguishers are not as suitable as hose reels for Fire Service rescue operations.

9.2 Vehicular access

9.2.1 The building has three road frontages. However, none of the fire reports mention Fire Service vehicular access, and no hardstanding areas are shown on the site plan.

9.2.2 The Fire Service cited paragraph 2.8.11 of C3/AS1 (which is identical to paragraph 8.1.2 of C/AS1), and said:

For buildings containing SC purpose groups this clause requires that:

Hardstandings shall be provided adjacent to any building having a building height greater than 7.0 m. The location and extent of hardstandings shall be determined in consultation with the Fire Service.

Hardstandings are not provided and no consultation with the Fire Service has taken place.

9.2.3 Engineer 1 did not address the issue, and Engineer 2 considered in effect that the Fire Service might not have required hardstanding had it been consulted, but that the failure to consult was a breach of the building code.

9.2.4 The Authority concludes that the building does not comply with C/AS1 in respect of Fire Service vehicular access, and therefore, in the absence of any evidence to the contrary, does not comply with clause C3.3.9 of the building code.

10 HYPERBARIC CHAMBER

10.1 Level 2 (ground floor) contains a hyperbaric chamber, which is a steel pressure vessel that can accommodate one or more persons for medical treatment in a compressed air atmosphere that may be oxygen enriched.

10.2 The relevant fire report notes that if the chamber is in use when it becomes necessary to evacuate the building, it might not be medically safe to depressurise the chamber quickly enough to facilitate safe evacuation of the people in it. The same applies if fire breaks out within the chamber while it is in use. The report proposes the following as an alternative solution:

- (a) Fire within the chamber is “adequately safeguarded against by the low flammable load and special fire extinguishers and other safety equipment within the chamber together with the skilled supervision and operating procedures required by the health authorities”.

- (b) “Should a fire occur in the building while the chamber is occupied it is proposed to ‘defend in place’ the chamber occupants, if necessary cooling the steel shell of the chamber with water . . . until the arrival of Fire Service personnel . . .” Parameters for a cooling system are given, but no details of such a system are shown on the drawings provided to the Authority.
- (c) Oxygen and compressed air will be supplied to the chamber from storage cylinders and a compressor on the basement level brought through the floor slab. “Both these supplies are proposed to be fire rated where they passes [*sic*] through the floor. In addition the oxygen supply will be fitted with a fire rated shut-off valve close to the floor penetration . . .” No details of those arrangements are shown on the drawings provided to the Authority.

10.3 The Fire Service said:

Even though people may not actually sleep on [level 2], the purpose group that should have been used is clearly SC since the people are subject to a “*physical limitation*” that requires “*special care or treatment*” . . .

The “*alternative solution*” presented relies on the management and intervention of the Fire Service [which] has no expertise in . . . the management of hyperbaric chambers. . . .

[The Fire Service] also has serious reservations about how the pipe carrying pressurised oxygen from the floor below is protected from fire.

10.4 Engineer 1 said:

The Alternative Solution does not appear to directly address building code clause C3.3.6 which requires automatic fire suppression systems to be installed: “*Where people would otherwise be: (a) unlikely to reach a safe place in adequate time because of the, (b) required to remain within the building without proceeding directly to a final exit, or where the evacuation time is excessive, (c) unlikely to reach a safe place due to confinement under institutional care because of mental or physical disability, illness or legal detention, and the evacuation time is excessive, or (d) at high risk due to the fire load and fire hazard within the building.*”

Of these, C3.3.6(b) and C3.3.6(c) would appear to require the use of automatic fire suppression systems in case of delayed evacuation by occupants of the hyperbaric chamber.

10.5 Engineer 2 made similar criticisms but in terms of the acceptable solution rather than the building code itself.

- 10.6 The Authority observes that a fire on the floor below could also threaten occupants of the chamber if the supply of compressed air and oxygen is compromised.
- 10.7 The Authority agrees with the Fire Service and Engineers 1 and 2 that the fire cell containing the hyperbaric chamber is purpose group SC. As discussed in 7 above, that would require both levels 1 and 2 to be sprinklered.
- 10.8 The Authority concludes that levels 1 and 2 do not comply with clause C3.3.6 of the building code.

11 FIRE PROTECTION OF STRUCTURAL STEEL

- 11.1 The fire report required a 60/60/30 FRR only to partitions and means of escape on certain floors, with a 30/30/30 FRR being required to all other structural members except on the ground floor.
 - 11.2 Engineer 1 noted that there was unprotected structural steel within the level 1 and 2 carparks and in all upper floors.
- 11.2 The Authority concludes that structural steelwork did not comply with the building code at the time of engineer 1's visit, which was after the code compliance certificate had been issued.

12 FIRE SEPARATION BETWEEN EXIT ROUTE STAIRS

- 12.1 Engineer 1 said:

We are advised that the fire resistance rating of the wall between the two scissor stairs is provided by one layer of 9.5 mm [proprietary wallboard] on each side. This therefore does not reach the 60/60/60 fire resistance rating.

(In the circumstances, engineer 1 considered that this failure to comply with the fire report "would not appear to further compromise life safety", but that is a different matter.)

- 12.2 Engineer 2 also said that the wall between the stairs did not appear to provide the necessary fire resistance rating, but noted that the actual thickness of the wallboard had not been verified.
- 12.3 The Authority concludes that the fire separation between the exit route stairs did not comply with the building code at the times of the visits by engineer 1 and engineer 2, which were after the code compliance certificate had been issued.

13 SURFACE FINISHES

- 13.1 Engineer 1 cited clause C3.3.1 of the building code:

C3.3.1 Interior surface finishes on walls, floors, ceilings and suspended building elements, shall resist the spread of fire and limit the generation of toxic gases, smoke and heat, to a degree appropriate to:

- (a) The travel distance,
- (b) The number of occupants,
- (c) The fire hazard, and
- (d) The active fire safety systems installed in the building.

13.2 However, the fire reports provided no guidance on surface finish requirements. Engineer 1 accordingly recommended that an investigation into surface finishes “is urgently required”.

13.3 The Authority has since been advised that the paint manufacturers supplied certificates of compliance in respect of the surgery on level 4 before the relevant code compliance certificate was issued, although the Authority has not seen those certificates.

14 PROTECTION AGAINST VERTICAL SPREAD OF FIRE BETWEEN LEVELS 3 AND 4

14.1 To allow for vehicle access to the levels 1 and 3 carparks, part of the external walls of levels 2 and 3 are set back from levels 4 to 6. Engineer 1 said:

Vertical fire spread from Level 3 to Level 4 . . . does not appear to be controlled.

14.2 The building certifier said that the external cladding system “has an inbuilt FRR of 240/240/- there is plenty of literature on these systems”. However, the Authority has not seen any of that literature, and in particular the Authority has no evidence such as test reports. Furthermore, the Authority has not seen any evidence that the cladding as installed corresponded to a tested cladding. In the absence of such evidence, the Authority cannot be satisfied that the protection against vertical spread of fire between levels 3 and 4 complied with the building code at the time of the visit by engineer 1, which was after the code compliance certificate had been issued.

15 CONCLUSIONS

- 15.1 The Authority concludes that the building work proposed in the various fire reports did not comply with the building code.
- 15.2 The Authority also concludes that at the time the code compliance certificate for the entire building was first issued the building did not in fact comply with the building code. However, since then various alterations have been made or are intended to be made. Although some of those alterations were necessary because of the shortcomings in the fire reports identified above, most of them were necessary because the plans and specifications approved for building consent purposes and the building as constructed did not correspond to the fire reports. The Authority endorses the following comment from Engineer 1:

If a single specific reason were to be identified for the alleged failure of the building, it would lie in the domain of poor documentation. In particular, the transferral of the findings from the fire reports to the construction drawings appears to be virtually non-existent.

- 15.3 It is open to the Authority to modify or reverse the territorial authority's decision to issue the building consents and the building certifier's decision to issue the code compliance certificate. Although the owner and the building certifier are aware of the various matters of non-compliance and are taking steps to rectify them, it is appropriate for the Authority to in effect cancel the original code compliance certificates so that they can be replaced by a final code compliance certificate when the rectification is properly completed.

16 THE AUTHORITY'S DECISION

- 16.1 In accordance with section 20 of the Building Act, the Authority hereby determines that the proposed building work, as described in the fire reports and the plans and specifications approved by the building consents, does not comply with the building code in the following respects:
- (a) There are inadequate means of escape;
 - (b) There are inadequate means to control spread of fire;
 - (c) There is inadequate protection of lift shafts against the entry of smoke; and
 - (d) There is inadequate provision to facilitate the needs of fire service personnel
- 16.2 The Authority also determines that at the time the code compliance certificate for the entire building was issued the building did not comply with the building code in the following respects:

- (a) Fire protection of structural steel; and
 - (c) Fire separation between exit route stairs.
- 16.3 The Authority accordingly reverses the building certifier's decision to issue the code compliance certificates.
- 16.4 The Authority makes no determination about the following matters, but records that it cannot be satisfied that the building complied with the building code at the time the code compliance certificate for the entire building was issued:
- (a) Surface finishes; and
 - (b) Protection against vertical spread of fire between levels 3 and 4.
- 16.5 The Authority has not been asked to make any determination about the building as altered and offers no opinion about its compliance with the building code. That is a matter for the owner to demonstrate to the building certifier or the territorial authority so that a final code compliance certificate may be issued. Any matters of doubt or dispute may be submitted to the Authority for a further determination.

Signed for and on behalf of the Building Industry Authority on this day of
2004

John Ryan
Chief Executive