



27. 9. 2001

**SUPPLEMENTARY REPORT BY THE
DEPUTY CHAIRMAN OF THE COMMUNITY SERVICES COMMITTEE**

PART A - MATTERS REQUIRING A COUNCIL DECISION

1. AIREDALE COURTS – FIRE PROTECTION

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The purpose of this report is to outline Fire Evacuation Regulations and Fire Protection requirements as they relate to the Airedale Courts Housing Complex. A request is made for funding to achieve compliance.

BACKGROUND

Airedale Courts, at 16 Conference Street, consists of a total of 108 units. The complex is made up of seven buildings, with three- and four-storey public rental blocks, plus basement areas, built in 1966, and a two-storey elderly person housing block built in 1976. The current fire protection system for each rental unit is a domestic stand-alone smoke alarm and some fire hose reels located in the larger block on one level only.

The Fire Safety and Evacuation of Building Regulations require certain buildings to have either Fire Evacuation Schemes or Procedures. A procedure is required for the Airedale Complex under Item 5 of the Regulations "Apartment Building and groups of three or more pensioner flats (whether or not in an apartment building)".

A procedure requires:

1. Procedure for safe, expeditious and efficient evacuation from a fire.
2. Information is provided to the occupants on:
 - Fire exit routes.
 - Fire alarm signals
 - Fire fighting equipment (where appropriate)
3. Appropriate signage and notices of Fire Evacuation procedures and Exit signs displayed by owner.
4. Tenant to follow the evacuation procedures.

These procedures have duly been put in place for all of the housing complexes, including Airedale Courts.

This consisted of signage, domestic smoke alarms and tenant information.

A second part of the Fire Regulations is that certain buildings require a Fire Evacuation Scheme approved by the New Zealand Fire Service. Eight key points trigger the requirement for a scheme; the point pertaining to the Housing Portfolio is 'accommodation is provided for more than five people' (unless in three or fewer household units).

The original interpretation of this was that each rental unit was its own fire cell and therefore exempt from the need to have a scheme. It has recently become clear that this is not the case for these buildings, as the New Zealand Fire Service has instructed that a Fire Evacuation Scheme is provided for approval. This was duly done and submitted in May 2001.

The scheme submitted in May 2001 fell short of obtaining approval from the New Zealand Fire Service on the grounds that a draft evacuation scheme requires a suitable means of warning building occupants of the existence of a fire which provides a safe, expeditious and efficient evacuation of the occupants from the building.

The Fire Service has stated that they will not approve the draft Evacuation Scheme if a suitable means of warning is not provided. They have also stated that a fire alarm would comply with the Fire Alarm Standard NZS 4512 (1977). However, the currently installed domestic smoke alarms do not meet this standard.

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At the time of submitting the Fire Evacuation Scheme, Holmes Fire & Safety were also commissioned to review the existing Fire Protection requirements for Airedale Courts.

FIRE ENGINEER'S REPORT

Their report was received on 6 September 2001 and identifies, in summary, three key areas:

- Means of escape
 - Spread of fire
 - Acceptable solutions
- (a) **The Means of escape** - While not complying fully with the acceptable solutions by providing fire rated doors and smoke stop capabilities the method of construction satisfies Holmes Fire & Safety that it does not appear to be a life threatening issue and therefore does not require any form of upgrade.
- (b) **Spread of Fire** - Both internal vertical spread of fire from unit to unit could occur via the existing service ducts plus flashover from one unit to another unit via external glazed areas could occur.
- (c) **Acceptable solutions** - In reviewing the acceptable solutions several areas of non-compliance were identified.
- Exit way construction – as referred to in means of escape.
 - Fire Hydrant System - installing a fire hydrant system would be unnecessary and a large cost as Fire Service has access to water supply nearby.
 - Emergency Lighting – should be installed.
 - Manual call points and automatic alarm system – standard minimum requirement in terms of today's regulations would require a manual fire alarm and no connection to the Fire Service for three storey blocks and an automatic fire alarm system with smoke detection for the four storey blocks.

FIRE ALARM SYSTEM

Holmes Fire & Safety have reviewed alternative solutions to provide an adequate alarm system for the building, as well as to address effectiveness and longer-term operating costs.

Holmes have identified that manual call points will not provide a sufficient level of life safety to occupants, as the manual call point system relies purely on appropriate occupant response at the time of fire, and therefore should not be relied upon.

Their recommended solution is to provide an automatic response system in the event of a fire which is cost-effective and low maintenance and minimises false alarms.

The option of an automatic smoke detection system complying with NZS4512 with a direct connection to NZFS is ruled out due to the high false alarm rate (example of false alarm occurrence, burnt toast for example). This system was installed at Hornby Housing and is already causing problems with false call-outs.

The alternatives to meet compliance are either:

Option 1 - A Type 3 automatic heat detection system with manual call points and a direct connect to the Fire Service, including smoke detection system with ionisation detectors to bedroom areas and photo-optical detectors to lounge/dining areas.

Option 2 – Automatic Sprinkler System.

ESTIMATES

Option 1

- A Type 3 automatic heat detection
- Fire hose reels upgrade to meet current standards.
- Vertical shafts fire rated.
- Emergency lighting

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Estimated cost	\$160,000
plus design and supervision	\$10,000
plus contingency	\$5,000_
 Total	 \$175,000

Option 2

- Automatic sprinkler system
- Emergency lighting

Estimated cost ranging from \$176,000 to \$264,000. Further enquiries are now being sought, as it requires specialised design and is dependent on the level of concealment of the pipe work system.

Estimated cost	say \$250,000
plus design and supervision	\$ 15,000
plus contingency	\$ 10,000

 Total	 \$275,000

Option 1 - provides the benefit of a cheaper initial cost and has an operating cost of \$5,000 to \$8,000 per annum. However, it will require a trial fire evacuation every six months causing inconvenience to tenants and additional work in management/training of fire wardens etc.

Option 2 – This option will be the most costly for the initial installation, but will have the same operational costs as the alarm system. A sprinklered building with occupancy under 100 people per building does not require trial Fire Evacuation. This would reduce on-going management costs of trial fire evacuations and tenant inconvenience.

Discussion has also occurred with the Council's Building Control Fire Engineer, who advised the processing of a Fire Safety upgrade consent will not trigger other Building Act requirements, such as an upgrade to meet disabled code requirements. Therefore, this removes the need to install lifts to each building to allow the upgrade of the Fire alarm system. His view is that any improvement in fire safety is better than none at all.

ALTERNATIVE SOLUTION

Holmes Fire & Safety have advised a possible alternative option. This would require the adoption of the Australian standard for sprinkler installation for residential building, rather than the New Zealand Standard. This Australian standard focuses on a sprinkler system to address life safety issues rather than building safety (i.e. ceiling spaces will not be sprinkled as they are considered low risk). This approach has the benefit of reducing the initial cost of installation. If this option is pursued, communication between the Insurance Council, the Council's Insurance Company and the New Zealand Fire Service will need to occur to determine if this is acceptable.

If the decision is made to fund the option for a sprinkler system a second call needs to be made on whether the adoption of the Australian Standard for Sprinklers in Residential Buildings be pursued.

Providing some form of sprinkler system that meets life safety requirements would be better than not providing any. This design will be pursued if funding and approval is given.

FUNDING

It is proposed the funding will be sourced from the Housing Development Fund as unbudgeted expenditure and that a special draw down for installation of the Fire Protection system at Airedale Courts occur.

The Principal Accountant advises that sufficient funds are available in the Housing Development Fund and in fact a surplus over-budget for the 2000/01 year equated to \$1,156,603.

CONCLUSION

Some form of Fire System is required for Airedale Courts to meet compliance with current regulations/statutory requirements.

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The Fire Service have already rejected the Property Unit's initial scheme application and strongly recommends at least the installation of an automatic fire alarm system. In declining the original application they required re-submission within a month of receiving their letter dated 20 July. In response to this the Property Unit has written back advising that Holmes Fire & Safety were working on the issues and would update the Fire Service of progress by 12 September 2001. This has now also been done and the Fire Service are awaiting the outcome of this report.

Installation of fire sprinkler systems has previously occurred in our latter multi-level housing developments at Tommy Taylor Housing, Hornby Housing and Gloucester Courts. While this is not a precedent, it is starting to determine the levels of service provided. Clearly, tenant safety is top priority.

The advantage of not requiring trial fire evacuation every six months must also not be underestimated. The co-ordination and tenant inconvenience are intangible benefits that need to be weighed up against the additional cost of installation of a Fire Sprinkler System over a Type 3 Fire Alarm system.

While this report deals with Airedale Courts, Holmes Fire & Safety are currently reviewing two other large complexes, Norman Kirk Courts and Brougham Village, and also will be seeking a waiver from the requirements of a scheme for other housing complex buildings.

**Deputy Chairman's
Recommendation:**

1. That the Council approve \$275,000 additional funding from the Housing Development Fund surplus to allow installation of sprinklers to Airedale Courts.
2. That the Property Unit pursue the option of reducing costs of installation of a sprinkler system by gaining approval to adopt the Australian Standard for Sprinklers in Residential Buildings.

CONSIDERED THIS 27TH DAY OF SEPTEMBER 2001

MAYOR