ANGUS COUNCIL

RESOURCES AND CENTRAL SERVICES COMMITTEE 09 September 2004

REPORT BY THE DIRECTOR OF PROPERTY SERVICES No 1009/04

INSTALLATION OF AUTOMATIC LIFE SAFETY FIRE SUPPRESSION SYSTEMS

Abstract

This report advises on the outcome of a review into the use of automatic life safety fire suppression systems, usually fire sprinklers, in non-housing council buildings.

RECOMMENDATION

The Resources and Central Services Committee is recommended to:

1. note the contents of this report and

2. approve the strategy recommended by the Director of Property Services.

1 INTRODUCTION

As a consequence of a series of events since May 2003 the Property Services department has undertaken a review of the use of fire sprinklers in council non-housing buildings, particularly schools and residential homes for older persons.

The Scottish Executive has advised its intention to introduce legislation requiring the installation of fire sprinklers in residential homes and other buildings from 01 May 2005.

This report details the strategy it is proposed to adopt for the installation of fire sprinkler systems in Angus Council non-housing buildings.

2 BACKGROUND

2.1 Schools

In April 2003 Zurich Municipal, the Council's insurer, published a report FIGHTING THE FIRE which concluded that the adoption of a number of preventative measures and the installation of fire sprinklers in schools could reduce the damage to buildings and consequent disruption to educational provision caused by arson.

The Zurich Municipal report refers to the report THE DESIGN AND PROTECTION OF NEW SCHOOL BUILDINGS AND SITES by Graham Meldrum, HM Chief Inspector of Fire Services which particularly recommends that consideration be given to the installation of fire sprinkler systems in new schools and advised that some authorities have been able to recover their initial

investment in about seven years as a result of reduced insurance premiums.

The preventative measures detailed in this latter report are already employed, where practicable, in Angus schools but since sprinkler systems have never been introduced, an exercise was undertaken to evaluate this recommendation.

The Scottish Executive subsequently published FIRE SAFETY IN SCHOOLS guidance in November 2003 which covered a range of good practice including the benefit of installing fire suppression systems to prevent and limit fire damage.

The terms "fire suppression" and "life safety fire suppression systems" are used by the Scottish Executive so as to encompass all suitable technologies, when they exist, rather than focus on fire sprinkler systems alone.

2.2 Evaluation

The general approach to the design and maintenance of schools has always excluded the provision of fire sprinkler systems because:-

- there has been no legislative or best practice requirement to provide them;
- there is no sound financial case for investing in this technology.

There is no disagreement with the basic premise that sprinkler systems are beneficial in that they respond immediately to internal fire incidents, are very effective and avoid the level of damage, which can result from the assistance from the fire brigade. Under such circumstances both the scale of damage and the immediate and longer-term disruption to educational provision would be significantly reduced.

Providing a temporary replacement for a Secondary School whilst remedial works similar to those at Morgan Academy were being undertaken would be a considerable, if not impossible, exercise.

None the less there are a number of factors which continue to mitigate against the adoption of fire sprinklers in schools, and other properties in Angus, namely:-

- the cost of and disruption caused by retrofitting sprinklers would be significant,
- many of our schools are rural, small and often do not have adequate access to mains pressure needed to support these systems. Pumped storage might be needed in some circumstances at additional cost.
- many schools continue to make use of temporary buildings whose condition would hardly justify the investment;
- the number of serious fires in school properties since 1996 is relatively low,
- such investment, whilst significantly reducing the insurance premium for a school [~50%] but not the deminimus levels that currently apply, does not reward the investment with a reasonable payback period.

Whilst it could be argued that the introduction of fire sprinklers would reduce the risk of major future insurance claims resulting in significant increases in the insurance premium, it is very unlikely that a financially sound case could be made for the introduction of fire sprinklers in existing buildings for this purpose alone.

Given the opportunities presented by PPP funding and the special funding from 2003 - 2006 for

the improvement of schools it would be sensible to install fire sprinkler systems, as part of new build or major refurbishment projects, for larger primary schools and all secondary schools, subject to the constraints of the estate management strategy and the availability of suitable water supplies. In such circumstances the cost of, and disruption caused by, installing fire sprinkler systems would be much more manageable.

Consideration should be given to the introduction of sprinkler systems in future projects.

The introduction of such systems does, however, raise concerns regarding opportunity for vandalism in secondary schools, through the deliberate setting off of the sprinkler systems. Accordingly it will be necessary to ensure appropriate precautions are in place to minimise such a risk.

2.3 Residential Premises

In February 2004, the Office of the Deputy Prime Minister published the results of a two and a half year project "THE EFFECTIVENESS OF SPRINKLERS IN RESIDENTIAL PREMISES". It found that residential sprinklers are probably cost-effective for residential care homes (old persons, childrens and disabled persons care homes) and for tall blocks of flats but not cost effective for other dwellings.

Coincidentally a serious fire occurred at Rosepark Nursing Home, Uddingston in February 2004 resulting in significant loss of life mainly due to the effects of smoke inhalation. The Fire Brigade were quick to advise that the loss of life could have been significantly reduced if the home had been equipped with a functioning fire sprinkler system. It soon became common opinion that the Scottish Executive should take action to quickly introduce legislation requiring the installation of fire sprinkler systems in both new and existing residential homes.

The Scottish Executive has subsequently incorporated specific requirements in its first set of Building Regulations, to be made under the Building (Scotland) Act 2003, which are currently subject to consultation.

It is proposed that certain building types will be required to fit automatic life safety fire suppression systems for new buildings and when undertaking conversions. It is proposed that this requirement will apply to:-

- High rise blocks of flats
- Residential care buildings
- Sheltered housing
- Enclosed shopping centres

Further consideration is being given to their use in Homes of Multiple Occupancy.

The requirements will not apply retrospectively to existing buildings but will apply when buildings are converted to serve such a function. The installation of these systems will not be required when refurbishment of existing of buildings is being undertaken but if extensions are added such extensions shall be fitted with a system. This does not preclude existing building owners enhancing fire safety by deciding to introduce such systems when major refurbishment is underway. Residential care buildings include homes for old persons, children and disabled people including residential care homes, boarding schools and childrens homes.

These proposals may be affected by the research put in place following the fire at Rosebank will build on the work already completed by the Building Research Establishment on behalf of the Office of the Deputy Prime Minister.

The Director of Social Work and Health has responded to these issues as detailed in Report No: 861/04 BEECH HILL HOUSE, FORFAR, INSTALLATION OF SPRINKLER SYSTEM and Report No: 922/04, FIRE SAFETY IN LOCAL AUTHORITY CARE HOMES.

2.4 Conclusions and Recommendation

Conclusion

The provision of a well designed, installed and maintained fire alarm system, incorporating where appropriate, smoke and heat detectors, supported by effective local management arrangements remains the most effective means of fire detection, notification and occupant evacuation. It can also contribute, in part, to reducing the extent of consequent fire and water damage.

The additional provision of a sprinkler system integrated with the fire alarm system will, once temperatures achieve the levels which will cause the sprinkler system to operate, provide quick, effective localised containment and suppression of fire outbreaks and limit the generation of smoke and other products of combustion. The extent of fire and water damage will be significantly reduced and fire outbreaks may be suppressed by such systems in the time taken for the fire service to respond.

Recommendation

It is therefore recommended that the Director of Property Services in conjunction with client departments introduce fire sprinkler systems in all new buildings and as part of major refurbishments, subject to technical considerations including the availability of suitable water supplies.

3 FINANCIAL IMPLICATIONS

The introduction of fire sprinkler systems as part of new build or major refurbishment projects adds an additional cost for such projects but being a small proportion of the overall cost represents a value for money means of enhancing the safety of buildings and their occupants.

4 HUMAN RIGHTS ACT IMPLICATIONS

There are no Human Rights Act implications specific to this report.

5 CONSULTATION

The Chief Executive, the Director of Law & Administration, Director of Education, Director of Social Work and Health and the Director of Finance have been consulted in the preparation of this report.

6 CONCLUSION

The Resources and Central Services Committee is recommended to note the contents of this report and approve the strategy recommended by the Director of Property Services.

REFERENCES

Committee	***Date***	***Report No***	***Subject***
Social Work and Health	09 July 2004	861/04	Beech Hill House, Forfar, Installation of Sprinkler System

BACKGROUND PAPERS

No background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information), were relied on to any material extent in preparing the above report.

M G Lunny
Director of Property Services