

**HERTFORDSHIRE COUNTY COUNCIL**

**COMMUNITY SERVICES SCRUTINY COMMITTEE  
TUESDAY 13 JANUARY 2004 AT 10.00 a.m.**

Agenda Item No.

**2**

**SPRINKLER SYSTEMS TOPIC GROUP**

Report of the Chief Fire Officer

Author: Steve Seaber, Chief Fire Officer      Tel: 01992 507500

Executive Member: Iris Tarry

**1. Purpose of Report**

To report the work and conclusions of the Sprinkler Systems Topic Group established by the Community Information and Protection Committee on 11 June 2002. Membership of the Group comprised Peter Channell (Chairman), Michael Colne, Bryan Hammond, Jane Hobday and John Usher.

**2. Summary**

The report provides an overview of the use and potential use of sprinklers at national and local level. In addition to the remit to consider their use in County Council premises, the Topic Group recognised the value in the protection of high risk groups in the population and the potential to support the planning requirement for housing in Hertfordshire.

**3. Conclusion**

1. The Topic Group noted the progress with sprinklers in Hertfordshire and the profile of the Fire and Rescue Service in this area at local and national level.
2. The Topic Group recommended the service continues to promote the use of sprinklers to protect those groups most at risk from fire.
3. The Topic Group welcomed the decisions taken by the County Council with regard to the provision of sprinkler systems in schools and other County Council premises. These policies have been set since the commencement of the Topic Group's work.
4. The Topic Group noted the potential use of sprinklers to provide additional planning opportunities and encouraged their promotion in discussions on the provision of housing in the county.

5. The Topic Group requested that the Service develops a briefing pack and programme which would be used by all Building Control and Planning Authorities.
6. The Topic Group requested that the Chief Fire Office liaises with Directors of Childrens Schools and Families and Adult Care Services regarding the use of sprinklers in hostels and residential homes etc.

## **1. Background**

Following a seminar at the Fire Service Training Centre, the Community Information and Protection Committee of 11 June 2002 approved a short life Topic Group to look at the cost benefits analysis of sprinkler system installations within the county's property.

At its initial meeting the Panel received presentations from the Chief Fire Officer providing a national perspective on the current and potential use of sprinklers. Divisional Officer Paul Hardy gave a presentation on the situation in Hertfordshire particularly relating to the use in residential premises and schools.

As a result of the attendance of the Chairman of the Property Panel, the Chief Fire Officer was invited to make a presentation to the Property Panel on 16 June 2003.

A survey conducted with other fire and rescue services indicated that Hertfordshire is in the upper quartile of brigades with over 80 residential installations. The LGA is actively engaged in 3 campaigns relating to the installation of sprinklers in domestic houses, HMO's and institutions and in schools. In addition, the Association will be lobbying at major conferences on this subject. Steve Seaber as Lead officer for CACFOA has written a response to the ODPM Select Committee Inquiry on The White Paper.

The Panel met for a second and final time on 12 September 2003.

## **2. Historical Perspective**

Sprinklers are not new technology, they were invented in the United Kingdom in 1870 but were developed and most widely used in the United States. Their role in the UK has until recent times been mainly for the protection of commercial property, often as a result of the requirements of Insurance companies.

Improvements in the design of sprinklers mean that they are now effective in protecting life as well as property. They are now used to protect residential and other life risk properties, particularly in the USA, Canada and New Zealand.

There is no legislative requirement for the use of sprinklers in the UK except for large single storey warehouses and retail buildings which exceed 2,000 m<sup>2</sup>. The fire community has recognised the potential of sprinkler technology and they are increasingly being used to provide protection in a variety of building types.

This interest is mainly as a result of national and local initiatives to reduce the number of fire deaths and injuries. These initiatives initially focused on the ownership and use of smoke detectors and raising fire safety awareness. The outcome of these Community Fire Safety programmes has seen a reduction in fire deaths and injuries. Analysis of such incidents is providing evidence that the most at risk come from the most vulnerable sections of society. In many cases they would not be able to escape without assistance and therefore smoke detectors do not provide the same level of protection they do for more independent and ambulant sections of the community.

As a result the Office of the Deputy Prime Minister (ODPM) commissioned the Building Research Establishment (BRE) to undertake a research project "Effectiveness of Residential Sprinkler Systems" which reported on 11 December 2003. It is anticipated that the outcome of this research project will lead to amendments to the Building Regulations to include sprinklers as part of the fire protection requirements.

### **Remit of Topic Group**

In addition to the use of sprinklers in County Council premises the group and the Property Panel considered the use of sprinklers in high risk residential premises and as a factor in allowing development of brown field sites. It was felt that as the authority has other responsibilities for vulnerable people in the highest risk categories, the Topic Group should consider the potential use of sprinklers to protect them.

The interest in the use of sprinklers to allow additional housing development was based on the difficulties the County Council is having in providing sufficient housing stock in line with Government expectations and requirements.

### **High Risk Groups**

#### **Residential Sprinklers – At Risk Groups**

There are three major groups where sprinklers are being used both nationally and locally to protect people. They are:

- *Protection of most at risk groups, these include the elderly, young, disabled or those with a dependency on alcohol or drugs*

There are a number of installations of this type in Hertfordshire. Stevenage Borough Council has installed them in elderly people's

bungalows and a charity has installed them in the home of a disabled person who otherwise would have required care accommodation.

- *Protection of life in high risk premises, particularly Houses in Multiple Occupation, only 4% of the population live in such premises but over one third of fire deaths and injuries occur in such premises*

In partnership with Watford Borough Council, the Service has provided an agreed risk assessed approach to the use of sprinklers in four HMO's. The approach taken has provided a cost effective solution which is in part sponsored by the Borough Council.

- *Protection for high risk occupants, who have a tendency to accidentally or deliberately start fires.*

Two District Councils have installed sprinkler systems in the homes of persistent firesetters. This is seen as cost effective both in terms of protecting the lives of the occupants and the removal of the requirement of frequently re-housing and refurbishment.

### **Sprinklers in Schools**

The number and cost of school fires in the UK has been rising year on year. Currently there are six fires a day nationally with an insured cost of approximately £100m. Between 70-80% of these fires are deliberate, the majority occur out of school time and in the evenings, although there is an alarming increase in day time attacks whilst the schools are occupied.

The impact of school fires is greater than the pure cost of replacement. They have significant impact on the local community and in particular lead to loss of teacher resources and pupils' coursework.

A number of authorities, including Hertfordshire, have adopted policies of fitting sprinklers in new schools. They perceive that they offer a number of benefits which include the early suppression of fire with far less water usage and damage than that experienced from fire service hoses. Early suppression limits damage and allows the school to be returned to normal use much sooner.

Experience also provides evidence of design freedoms and variance from passive fire protection requirements which can offset some or all of the costs over the life of the system. Advice from insurers is that where authorities have policies to fit sprinklers to schools, then the levels of excess will be reduced and there may be some reduction in premium levels.

### **Sprinklers in other HCC buildings**

It is appropriate that sprinklers are considered in the design of all new HCC buildings and that their provision is based on both a risk assessed and cost benefit analysis. This is the approach now adopted by the Property

department and they will be assisted in their considerations by the Fire and Rescue Service.

They would, of course, be most appropriate in any life risk or residential accommodation provided by the County Council.

The new fire station at St Albans will be fitted with a sprinkler system with a variety of sprinkler heads and installation features to provide opportunities for demonstration purposes.

### **Residential Sprinklers – Development Opportunities**

A number of authorities, including Hertfordshire, have promoted the use of sprinklers to allow the building of residential properties that would otherwise be prevented due to the requirements of Building Regulations, particularly as compensation for the provision of means of escape or access requirements for the fire service.

- To compensate for the requirements of means of escape from a building. This is particularly applicable to loft conversions or conversion of existing commercial buildings to residential accommodation.
- To compensate for the requirements of access for fire appliances. This application has been allowed for both single and multi property development in a number of areas of the county.

The use of sprinklers in these circumstances allows residential development where it would not otherwise have been possible, particularly on brown field sites. It therefore could assist with meeting the targets for housing provision which have been placed on the county.

The Service has worked closely with District Council Planning officials to allow such schemes which may provide access to brown field sites which it would not be possible to build if such relaxation was not permitted. With the additional housing requirements in Hertfordshire there is a potential for sprinklers to be part of the solution.

### **Financial Implications**

There are a number of variables which affect the installation costs of sprinkler systems, particularly residential systems. The main factor which affects cost is the connection or upgrading of supply from the mains. For school premises the estimated cost is around 3% of total building costs. The payback period is estimated to be as low as five years depending on the existing premium levels. Cost benefit analysis of the HMO installations in Watford shows the payback to be between 1 and 5 years depending on the design requirements.

*Background documents used in the preparation of this report:*

*Minutes of the Sprinklers Systems Topic Group meetings 6 June 2003 and 12 September 2003*

*Minutes of Property Panel meeting 16 June 2003*