

NFSN Parliamentary Seminar 4th March 2008

Reducing the impact of fire on communities and the environment

Strategic look at Fire Sprinklers from an economic perspective

Jonathan O'Neill and John Stephens - Fire Protection Association

Sprinklers were originally developed to protect property and businesses and were first used in the UK to protect cotton and woollen mills.

The first sprinkler installation standards were published in 1880 in the UK by the FOC and there has been continuous development of products and standards since that time.

Most businesses give serious consideration to the issue of risk transfer in respect of fire. Fire represents one of the hazards which can result in a total loss of building and contents. Businesses must take a decision whether to carry a potential loss on the balance sheet or look for a third party to carry or share potential losses – that is an insurer.

One of the advantages of insuring against fire is that insurers have both the experience and knowledge to assess risk and hazard and can provide appropriate advice as well as insurance cover.

Whilst insurers business is to take on risk they will only take on those they consider to be reasonable. If there are minor adverse considerations they will either ignore them or introduce a loading to the premium – and so on up the scale. Eventually a point will be reached where the hazard may be so great as to make the risk not commercially viable. The question then is can the fire hazard be changed and will sprinkler protection reduce the fire hazard to the extent that the risk is insurable.

There are however, other considerations, management and housekeeping being a significant factor. There is an underwriter's adage "if you have a bad insured, it does not matter how good the property, you always have a bad risk. In the UK sprinklers have generally been specified by insurers for risk reduction purposes to protect property (and business) against fire. As a consequence of which the standards to which sprinklers are installed offer a sound level of protection with the objective of controlling or suppressing fire.

If an insurers decision is only take a risk on if it is sprinklered, the probability is that the same decision would be made by the business owner if they were carrying their own insurance providing they are equally well informed.

It is interesting to note that whereas the CBI fiercely resists any suggestion for mandatory requirement in the building regulations for sprinkler protection, many of its members already routinely fit fire sprinklers as part of their risk managed and risk reduction strategies.

NFSN Parliamentary Seminar 4th March 2008

Reducing the impact of fire on communities and the environment

Strategic look at Fire Sprinklers from an economic perspective

Perhaps business owners are not aware that many do not survive a major fire, with or without insurance. More than 50% of businesses go under after a serious fire. Installing a correctly designed and well maintained sprinkler system may make economic sense for business recovery reasons alone.

In high risk occupancies – insurers have traditionally given incentives (large discounts) if a sprinkler system is installed and maintained. Many of the audience will be well aware of the arguments recently espoused in respect of schools.

It is almost universally recognised that the insurance market is cyclical. Hardening insurance markets lead to increasing insurance premiums and profitable underwriting which tend to attract new companies into the markets or for existing ones to increase the capacity of their business. This tends to lead to an insurance market which is over provided with intensified competition; resulting in reducing premium rates and a softening market.

However as the insurance market softens (which it has continued to do in recent years) the premium discounts for sprinklers narrow and consequently it becomes less financially advantageous to install sprinklers if the primary consideration is savings on your insurance premium. It is argued that for certain classes of risk the payback in insurance discounts can be less than 10 years.

In the UK we are nearing the bottom of the cycle – it will be interesting to see what effect the global credit crunch has on the availability of risk capital for insurance companies and what in turn this will do to insurance premiums. However when the market does turn and the appetite for risk diminishes, it is likely that insurance specified sprinkler systems will increase.

Whilst sprinkler systems are designed to common codes and standards no two sprinkler installations are the same, each is individually designed to protect the building and the contents. This consideration has resulted in a relatively small sprinkler industry 'regulated' to insurers needs.

For many years most fire professionals (including FPA) argued that the government should set targets for fire and rescue services (or fire brigade as it used to be known).

The primary consideration for the fire & rescue services is (quite correctly) life safety.

Requirement for life safety is to allow for safe evacuation. This combined with the flexibility encouraged by the introduction of fire engineering has seen building

NFSN Parliamentary Seminar 4th March 2008

Reducing the impact of fire on communities and the environment

Strategic look at Fire Sprinklers from an economic perspective

materials moving away from the traditional largely non combustible (or fire resistant) to flimsier structures some of which may result in untimely collapse during a fire.

Building collapse can have devastating consequences, this was so tragically demonstrated most recently in Warwickshire, and it is not uncommon that immediately following such incidents that there are widespread calls for sprinklers.

Integrated Risk Management Planning (IRMP) – Guidance notes did highlight economic loss as a consideration, however they also assumed a ‘massive’ investment in built fire protection systems, which numerous studies have found to be unsound. Experience is now showing that there are frequent breaches of passive fire protection barriers within recently constructed buildings.

Worryingly, insurance losses are now increasing.

The provision of sprinkler protection may not be sufficient to reverse this trend; Sprinkler protection is highly dependent on adequate separation and good business management.

The success of the Fire Precautions Act to create a fire safe working environment and the move to less prescription is welcome as long as it is properly ‘policed’.

If self regulation and greater flexibility for the building owner results in increased risk to property the Fire safety Order will have failed as it was identified as an important strand of community risk reduction – which in itself was argued would give fire and rescue service greater operational flexibility.

We are aware there is a lack of detailed information on

- sprinkler performance - how much was saved;
- how building materials have performed
- what protection is in buildings –
 - is it designed to protect (mitigate loss) and
 - have any provisions been properly maintained.

These unknowns raise the questions are the Fire & Rescue Services making response plans on unsound assumptions.

The fire & rescue service should take great pride in the success it has had in recent years in reducing deaths and injuries hitting all of the Public Services Agreement (PSA) targets which included property protection – the arson

NFSN Parliamentary Seminar 4th March 2008

Reducing the impact of fire on communities and the environment

Strategic look at Fire Sprinklers from an economic perspective

reduction target. However the insured loss figures tell a different tale which show a steady increase in losses over time.

There is a perception that sprinkler protection is expensive – what price to save a business, considering:

- lost production;
- lost jobs. (not just to the area but often to the UK);
- lost assets;
- pollution

Where the sprinkler industry provides cost figures to justify sprinkler protection, it is important that they are accurate. Can we be certain that previous cost estimates are accurate? According to one paper given to Building Regulations Advisory Committee (BRAC) the actual cost of installing sprinklers in retail stores was five times greater than the estimate used in a Regulatory Impact Assessment (RIA).

Recognising the difficulty that the industry has in providing ball park costings for justifying fire sprinklers it needs to get its act together. Whilst government (and treasury) evaluate the efficacy of sprinkler protection based on lives saved as, they do at the moment. It will be difficult to argue that we should see a widespread increase in recognition for sprinklers within ADB on these grounds alone.

There have been suggestions that the Local building acts be repealed. However as they afford a degree of property protection it could be argued that we need more not less of these, if Integrated Risk Management Planning (IRMP) is really to fulfil its true potential of community risk reduction; assuming community has a wide definition

Under the Civil Contingencies Act – Local government has a responsibility for business continuity planning – local planning guidelines could easily make reference to property protection being a goal. Fire & Rescue Services, Insurers and the Sprinkler Industry should work with local government to make the case for increased recognition of fire suppression for business continuity.

It is often said the polluter pays but the usual consequence of a serious fire is that the community pays either in terms of contamination or damage to adjacent property or loss of resources at a local or national level. Where properties such a school or hospital disappears in a cloud of smoke how is the disruption to a student's education or the reduced care or discomfort to a patient costed and brought into the equation?

NFSN Parliamentary Seminar 4th March 2008

Reducing the impact of fire on communities and the environment

Strategic look at Fire Sprinklers from an economic perspective

In the insurance industry there is the consideration of Moral Hazard. This is where the insured party behaves in a way to transfer the burden of risk to the insurer and is less concerned about negative consequences. Does the issue of Moral Hazard apply where properties of importance to the community remain unsprinklered?