

Cost analysis

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With UK fire losses at an all-time high, a discussion on the risks to commercial buildings and the need for best practice formed the basis of a recent seminar. **Fire Risk Management** reports

WHEN THE Association of British Insurers (ABI) issued its latest fire loss figures earlier this year, it pointed to a curious paradox: although the overall number of UK fires is at its lowest for more than 20 years, the financial cost of fires is rising at an alarming rate. According to the figures, insured fire damage leapt by 16% in 2008, compared to the previous year, and now stands at a record £1.3bn a year.

Understanding the reasons for this increase, and the steps that can be taken to

counter it, formed the basis of a seminar by the All-Party Parliamentary Fire Safety and Rescue Group, held in July at the House of Commons in Westminster.

Putting the issues into context, Mike Wood, chair of the Fire Safety Development Group, which organised the event, said: 'Is fire safety and protection of buildings improving? Available evidence would suggest not. It is not that we do not know what to do – the required measures are available and well defined. The main challenge lies in putting fire safety measures into

practice, enforcing effectively, and in bringing the building stock up to modern standards and fire safety expectations.'

Loss figures

Providing a starting point for the debate, Nick Starling of the ABI outlined the fire loss figures in more detail. The 2008 statistics show there has been a gradual rising trend in losses since at least 1994. Insured fire damage in commercial premises last year cost £865m, up 15% on the previous year, while there were losses

of £408m in domestic premises, marking a 17% rise. There was also a significant growth in large-loss incidents (losses of £500,000-plus). In addition, figures for the first quarter of 2009 show that fire claims increased by 17%, year-on-year, to £353m.

Taking into account uninsured losses – estimated to be several times the insured loss figure – suggests that the cost problem goes much deeper.

Commercial fires are a particular concern. Despite government figures showing that the number of fires in commercial premises is decreasing, the cost of these fires is increasing – indeed, the average cost of fire claims has been rising since 2002.

As a result, said Mr Starling, during the period when reforms and legislative measures – including fire service modernisation, the growth in community fire safety activity, and the introduction of the Regulatory Reform (Fire Safety) Order 2005 – has brought benefits in many areas, the cost of fire, particularly to the business sector, continues to rise. The average cost of a commercial fire insurance claim, for instance, has gone from around £7,000 to £20,000.

Also mentioned was research by the Fire Protection Association (FPA), which shows that 48% of commercial fires are

deliberate or of unknown origin, while a common cause of accidental fires is faulty equipment or apparatus. In addition, an FPA analysis of large-loss incidents underlines that the large open-plan layout of many commercial buildings is a factor in the scale of loss, allowing the fire to spread more quickly. It also found that few of these fires were in buildings that were sprinklered, providing further evidence of the value of properly installed and maintained sprinkler systems.

Mike Wood reflected on the spate of large-loss warehouse fires in recent years – not only the tragic blaze at Atherstone on Stour, Warwickshire, in November 2007, in which four firefighters died, but also other fires at furniture, business and garden centre sites. Warehouse fires, he said, could be seen as a specific problem, or as a specific illustration of more general fire issue.

Contributing factors

The seminar also discussed the factors that may be contributing to the rise in fire losses, including:

- changes in emergency fire cover and response arrangements
- lower-quality materials or outdated design in older buildings

- modern methods of construction (MMC) and materials that are not properly tested for their behaviour in a fire
- social factors, such as increases in arson
- changes in design practice, especially risk-based design
- more diverse and dynamic fire loads in modern occupancies
- large, complex buildings, which may not have sufficient compartmentation and do not utilise the best of integrated fire protection
- the level of awareness and knowledge of fire protection, both in design and at its point of application

Tapping into many of these points, Douglas Barnett of the insurer, AXA, argued that it is only a matter of time before a serious loss of life occurs in a commercial building. He outlined a range of concerns – for example, that efficiency savings in the fire and rescue service might have an adverse effect on resources and response times (some firefighters have advised that they are attending fires where they do not have sufficient knowledge, manpower or immediate accessibility to resources); that fire service community safety activity does not target businesses; and that buildings which may have had limited fire damage before may now suffer a total loss.

Although the number of commercial fires is decreasing, the cost is going up – insured fire damage in commercial premises cost £865m in 2008



Mr Barnett also set out some steps that should be taken, such as:

- increasing the level of advice and enforcement for businesses
- removing the threat of further spending cuts to fire services
- urgently carrying out large-scale testing of MMC – there is some evidence that such buildings may have been poorly designed and constructed
- penalising financially those building owners who do not manage their automatic fire detection systems and cause unwanted fire signals
- introducing mandatory sprinkler installation for such risks as large hotels and residential care homes
- considering an information exchange between fire services and insurers, to assist fire crews with knowledge of local risks and hazards

Structural protection

In discussing how to tackle the problem, Mike Wood explained that it was important to stick to fixed points of best practice and the tried and tested principles of fire safety design. He went on to promote the benefits

of passive fire protection, such as compartmentation, in limiting smoke and fire spread, assisting with safe evacuation, and supporting fire crews in the building.

He also raised concerns that, for example, Approved Document B (ADB) to the Building Regulations in England and Wales, and BS 9999: 2008: *Code of practice for fire safety in the design management and use of buildings* give often conflicting guidance on how large the compartment limits should be. He questioned where the technical, considered basis is for determining the optimum compartment size.

Taking a broader view, Mr Wood explained that fire safety should not be based on an 'either-or' decision, but rather on a balanced mix of solutions designed to complement and support each other. Robust and resilient fire protection in buildings, he said, requires a combination of good design

and specification; functional systems, using good materials that are tested and approved; the optimum combination of different systems and technologies; and construction and installation carried out by those with the necessary knowledge, skills and awareness.

In addition, the innovations in architecture and building design, and the growth in large and complex structures, have brought a need for a re-evaluation of the materials and design methods used, and the larger spaces and unpartitioned floor areas that are being seen. Specific questions that should be asked include: are test methods and approval processes for new products and systems sufficiently rigorous; do we have an adequate understanding of how modern design practices affect fire safety, and the fire behaviour of these structures; and are the defined best practice guidelines always well-followed when it comes to installation on construction and refurbishment?

Building on this last point, he said there are serious questions to ask when operations requiring technical knowledge are placed in the hands of the unaware, ill-informed and unskilled. The Fire Safety Order, he argued, has provided a major step forward by emphasising the principle of individual responsibility. However, the message has yet to get fully through to all those down the design, specification, contracting and installation chain that they have a fundamental duty of care and shared liability.

The risk assessment approach may not be entirely appropriate without specialist back-up and guidance, added Mr Wood. Fire safety systems are technical, advanced systems requiring specialist knowledge and competencies.

Single-storey warehouses

Discussion also focused on single-storey warehouses, and particularly the role of sprinkler systems. Stewart Kidd, secretary general of the British Automatic Fire Sprinkler Association,

“ We must stick to fixed points of best practice and the tried and tested principles of fire safety design ”

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outlined the work that led to the recommended maximum limit of 2,000m² for an unsprinklered compartment in a retail premises being included in ADB during an update in 2000.

In 2007, during the most recent review of ADB, there were numerous submissions to Communities and Local Government (CLG) proposing that similar restrictions on the recommended uncompartimented size of single-storey warehouses should be added to the guidance. The submissions suggested that the guidance should be revised so that unsprinklered warehouses are capped at, variously, 2,000m² to 9,000m².

As Mr Kidd explained, CLG accepted that there was an argument for an upper limit, but did not accept that there was a sufficiently robust argument for a restriction of 2,000m². As a result, 20,000m² (or 18m high) was imposed as the recommended maximum uncompartimented or unsprinklered size for single-storey warehouses.

He went on to emphasise the strong case for sprinkler protection in warehouses, not only in terms of life safety and property protection, but also in reducing the impact of fire on the environment, risks to attending fire crews and the adverse effect on jobs and the economy.

Warehouse fire safety was also covered by Eric Cesmat from the French scientific and technical agency, CSTB. He explained how, given the logistical and commercial onus at warehouse operations, fire safety is not always taken into account as it should be, even though most warehouses contain large quantities of combustible material, such as paints, wood and plastics.

Statistics from the French Ministry responsible for sustainable development indicate that the majority of accidents in the country's warehouses involve fire. Mr Cesmat also said that, in the event of a fire, the response of firefighting crews can be delayed because, for example, fires often occur at night or weekends, so there can be a delay in raising the alarm; warehouses are designed to protect goods from robbery, so security measures may hamper fire crew access to the fire-affected area; and delivery lorries parked in front of access doors may also hinder firefighting operations.

In comparison to the situation in England and Wales, a regulation introduced in France in 2002 limits the size of the storage compartment to 3,000m² if there is no automatic fire suppression system installed, and 6,000m² if there is one. It also calls



Given the logistical and commercial onus, fire safety is not always a priority in warehouses

for external walls to be made with non-combustible materials, unless a suppression system is in place.

The ABI is currently discussing the increasing cost of fire losses with the Government and other stakeholders, in order to get their input into why this is happening and what can be done to reduce the economic cost, particularly for the business sector, which ultimately pays for it through their insurance premiums. But, as made clear at the seminar, the costs and risks are not simply financial, and there are local, social, human and environmental issues which must not be underestimated ■

Closing comments

Addressing delegates at the seminar, Dennis Davis CBE, chair of the Federation of British Fire Organisations, made the following comments:

'LET ME start with a philosophy. I have a fire background that starts as a firefighter from over 40 years ago, when I was raised on the simple philosophy that my task was to save lives and property from fire and render humanitarian service. We have today heard that philosophy reduced to a question of economics.

We also hear that there has been a paradigm shift from responsibility for one's actions and an embedded safety culture, to the perversity of community protection being given, regardless of personal accountability – a perversity that includes a lack of parity between possible fire size and compartmentation size.

That brings me onto the fire safety regime. We have been told that awareness about fire, especially in the commercial sector, is poor – yet we strongly promote a public safety regime of self-regulation and non-prescriptive compliance. Can that be right?

These two issues of philosophy and regime seem out of kilter with each other, and that raises the question as to whether we are in a transition of fire policy that is not in balance. Are we moving too fast or is progress too slow? And in the UK today do we have the right balance between capacity and competency to do what is needed?

I say this because we are not a poor country and we must be technically able to manage transition. While it is easy to criticise the government for any shortcomings, we must recognise that they face growing demands and are trying to play the game by a set of rules that demand evidence and costings.

Unfortunately, many of these arguments have been made before. We need to stop talking to ourselves and start a wider debate. The Federation of British Fire Organisations is one of the groups that feels this deep sense of frustration, and has suggested that what we need is a cross-departmental and cross fire sector 'round table' discussion that can look at actions that help reset these fire balances.

This is all happening at a time when we are facing major policy shifts, not simply in terms of the recession but also with the fact that there is an upcoming general election. There could be major political change – so this is exactly the right time to start raising issues of philosophy, regime and balanced policy, and not just the economics of fire. So my simple summary of the discussions at the seminar is that we have to take this debate to others and make them listen to our concerns ■