

# Kept in check

12 April 2019

## **Fire safety in buildings is now more than ever a key consideration during inspection, so it helps to have an overview of potential defects and other issues says Joshua West**

---

Fire safety is of the highest importance, but the nature of legislation, industry guidance, and building information can be confusing for surveyors and other professionals inspecting and advising on built assets.

Nevertheless, a good building survey report should evidence understanding of the way a building prevents the cause or spread of fire, with advice given on promoting responsibility for fire safety management and fostering a fire safety culture. It should be noted that we are not fire engineers; but this article provides an overview of key areas we must consider in ensuring fire safety in a property is assessed holistically.

The typical methodology includes being aware of the appropriate legislation before carrying out the initial desktop review and a site inspection. The following are the key pieces of legislation on building fire safety:

- [the Regulatory Reform \(Fire Safety\) Order 2005](#) ;
- [Building Regulations 2010](#) , with [Approved Document B ? Fire Safety being of particular relevance](#) ; and
- [BS 9999: 2017](#) .

## **Desktop review**

Initially, the fire strategy for the building should be requested for review. A report on this should provide a full, well-structured description of the design approach for the building, with regard to whether it is a new build, an existing property or one that has recently been refurbished or redeveloped. If a strategy is not available then the landlord should be advised to commission a new one, because a fire risk assessment can only properly be undertaken once this strategy is fully understood.

The building's evacuation plan and its fire detection and warning system should also be known; the latter should be the correct category and type for the building it serves. To ensure adequate means of escape, the occupational densities on each floor, protected fire escape routes, travel distances, the widths of fire exit doors and stairs, and final exit locations must all be understood. The emergency lighting, signage and assembly points should be evaluated too, along with the provisions for evacuation of people with disabilities.

## **Facades and facilities**

Regard should be had to the height of the building ? is it more than 18m tall from ground level? Is the cladding of the building a composite panel system with combustible insulation?

Approved Document B states: 'in a building with a storey 18m or more above ground level, any insulation product used in the external wall construction should be of limited combustibility?.'

The fire strategy should indicate the extent of the cladding's combustibility after a review of the as-built documentation; if it does not, the property management team should be advised that samples of cladding panels be sent for testing to determine this.

While samples have been removed for testing and the facade is open, the installed barriers that close the edges of cavities and are fitted around openings should also be reviewed. Although such testing is seen as critical for high-rise buildings, cavity barriers should also be reviewed in sensitive buildings with high occupancy rates, such as schools and hospitals, and those where occupants sleep, such as hotels, student accommodation and the like. It is important to note such barriers are used in all types of building to prevent the spread of fire, and are not just limited to those listed above.

The building should provide adequate access and facilities for the fire service too, with all the following taken into account:

- vehicle access;
- access for firefighters in and around the building;
- the need for a fire-resistant lift shaft;
- the provision of fire mains and dry risers;
- venting for heat and smoke from basement areas; and
- provision of adequate water supplies.

## **Fire risk assessment**

The fire risk assessment (FRA) for the building should be requested for review as well. The FRA document's quality should be scrutinised as, in my experience, these can vary dramatically, with little control in the industry over who undertakes them.

The age of the FRA is crucial; it should be reviewed in line with the recommended review date, and again when any significant or relevant changes are made, to assess whether these have affected the risk and whether the on-site safety measures remain appropriate. The property management team should confirm that any shortcomings or potential for improvements raised by the FRA have been actioned rather than just filing the document away.

The fire safety management process is presently fragmented, and the structure must be changed from the top down. FRAs need more respect, and should command greater involvement ? and therefore higher fee levels ? to achieve the consistently higher standard required by the industry.

Other documentation that should be requested includes:

- building control certification, although this should not be presumed conclusive evidence of compliance in every case;
- fire compartmentation surveys;
- 3rd-party installation accreditation; and
- test data relating to as-built products.

## **On-site inspection**

While the building surveyor is on site, the reviewed documentation should be checked to make

sure it is a true reflection of the current state of affairs. If any changes have been made to the strategy or building, confirmation should be sought that they have been approved by the relevant statutory body.

When considering a building's fire protection system, many commonly think about its alarms and sprinklers alone, when the system actually comprises both active and passive fire protection measures. The former include fire or smoke alarms, sprinklers and fire extinguishers; passive fire protection meanwhile involves compartmentation of a building, with walls and floors rated for fire resistance to help control and prevent fire or smoke spreading. Active and passive fire protection systems are equally important and work together during a fire, not in place of one another.

The sealing of each compartment should be inspected to ensure it will prevent the spread of fire effectively. Deficiencies are often found behind the scenes, especially but not exclusively in plant rooms or service risers, above ceilings and in voids below raised floors. In my experience, it is common to have concerns about the inadequacies of fire compartmentation after inspection, with advice regularly stating that work will be required to provide the necessary degree of protection.

Although such concerns can be a result of poor-quality work in newly built or refurbished buildings, it can also be seen in existing buildings; for instance, in penetration works undertaken by the landlord's or tenant's contractors through installed fire-rated walls, or openings where the compartmentation or stopping has been disturbed but not reinstated. Even where it has been reinstated, it is common to find poorly applied expanding foam used as a filler, which is highly likely to be incorrectly specified to achieve the required fire rating for the materials it replaces.

Other common issues include the failure to install fire-rated collars on service penetrations through structural slabs. Inspection of fire doors serving riser cupboards, protected fire escape routes and the like will also be needed. Tenants and other building occupants can create fire risks as well, by locking fire doors or leaving them propped open; storing combustible materials in electrical risers and plant rooms; and making unauthorised alterations such as installing new doors in fire compartment walls, among other things.

A comprehensive review should be undertaken to identify any deficiencies in the on-site occupational test information associated with the fire precautions and means of escape, to ensure they all are in date and renewed on a cyclical basis. This includes testing certification for the fire alarm, smoke detection, emergency lighting system and dry riser, with supporting records to cover extinguishers, hose reels and sprinkler systems.

To conclude, it is important to step back and review the building works holistically rather than inspecting each element individually and separately.

**Joshua West is a senior surveyor at [Savills](#)**

## **Further information**

- Related competencies include: [Fire safety](#) , [Inspection](#)
- This feature is taken from the RICS [Built environment journal](#) (April/May 2019)
- Related categories: [Building control](#) ; [Fire and life safety](#)