

Built-in fire protection must be at the heart of design. Ignoring it can lead to tragedy and responsibility can be laid at the door of everyone from the original designer to the risk assessor who carries out the fire safety assessment, warns David Sugden, Chairman of the Passive Fire Protection Federation.

### **Is built-in fire protection on your back burner?**

Passive fire protection. It may not sound exciting or cutting edge but it is fundamental to the future of all buildings and their occupants. Passive or built-in fire protection saves lives and it saves businesses but at the Passive Fire Protection Federation (PFPF) we are aware that it is often relegated to the bottom of the heap when it comes to designing a new building or renovating an old one. It's understandable - modern materials and methods are so different from the traditional that it is difficult to apply existing knowledge to completely new situations. But it is the responsibility of everyone working in construction, from the specifier and designer through to the installer, to be aware of the implications for fire safety in every stage of construction. It is essential to use the correct materials in the correct way and to ensure that compartmentation is maintained throughout.

It's worth repeating some basic points. Built-in fire protection works by preventing the spread of flames and smoke from the original fire. Compartmentation (providing fire separation and isolation) and protected escape are vital. The elements of a fire-protection compartment are walls, partitions (especially glazed partitions) ceilings, floors, beams and columns, doors and windows. Each of these can be given a rating based on how long it can continue to function in case of fire. In order to gain approval from Building Control any design must demonstrate that it complies with regulations. Smoke must not be able to creep through the walls, under floors or above the ceilings and there will be no ducting from one apartment to another.

But we all know that changes get made to the original plan - economies are made or supplies delayed and seemingly unimportant changes pass unnoticed as building goes on. The original built-in fire safety is compromised and nobody notices. Specifiers and architects need to ensure that what is specified on the plans is what is delivered and installed. It isn't good enough to think any substitute will do. Safety certification for a specific product is for a specific set up and as soon as that changes the certification is invalid.

A recent report, [Compartmentation in Roof Voids](#) BD2846, commissioned by the Department of Communities and Local Government and carried out by Exova Warringtonfire, has confirmed the PFPF's fears about inadequate compartmentation. It is difficult to check fire safety provision in roof voids as the details are often unclear in the design and it isn't a mandatory inspection point for Building Control. Post-construction inspection can be destructive so, when pressure mounts to meet time and budget targets, the whole issue slips down the list of priorities. This report is only concerned with compartmentation in roof voids, and has found serious problems. The PFPF knows that these problems can apply throughout a building.

Unfortunately it often takes a tragedy to highlight problems with fire protection. Six deaths at Lakanal House in July 2009 were a high price to pay to discover that fire and smoke was able to spread from floor to floor and break out in areas far removed from the original blaze. More fortunate were the residents of Pacific Wharf, where serious inadequacies in passive fire protection were discovered during the course of repair work, and rectified before there was a similar tragedy.

The law now puts the responsibility for fire safety principally on the owners and operators of a building, but it doesn't end there. The first court cases have been brought following various fire tragedies, and prison sentences and large fines have been handed out where serious breaches in fire safety have occurred. We are now seeing prosecutions of constructors and even risk assessors so who's to say anyone is immune? Are you sure your design is compliant with the latest regulations? Is it being modified for economy or speed? Was the specification changed? The PFPF recommends using third party certification for all fire critical elements - and that includes installers. The best components are useless if they are incorrectly installed. The consequences of failure could be catastrophic so it is worth checking, and double checking.

For more help and guidance consult the PFPF website at [www.pfpf.org](http://www.pfpf.org).

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**751 words**