

# Avoiding a catastrophe

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**There can be no complacency regarding the risk of fire; disaster can arise from a wide variety of causes, warns Mike Wood**

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January's Brazilian nightclub tragedy highlights the scant regard for fire safety precautions, aggravated by a general lack of understanding of construction and how building materials behave in fire. It illustrates how the design of a building, together with choice, installation and maintenance of materials can make the difference between life and death. Inadequate fire safety management and a poorly designed, constructed and maintained building can equally lead to disaster.

According to press reports, investigators believe a band on stage lit a flare, which ignited flammable soundproofing ceiling foam. The lack of emergency infrastructure compounded the situation. But why was a flammable ceiling lining used? Many of the deaths were said to be the result of inhaling noxious fumes and it appears there was only one available exit. While this is inexcusable given the high-capacity occupancy, preventing and limiting the spread of smoke and fire by using fire doors, fire-stopping and effective fire compartmentation may have resulted in a very different outcome.

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It is clear that there was no sensible fire safety plan, which would have comprised measures to avoid ignition, raise the alarm and provide safe escape. Just as important are proper building management and appropriate fire safety provisions for isolating and minimising its impact. It also appears the nightclub was filled well beyond permitted capacity even under its (allegedly) expired licences. While no country can legislate against people behaving thoughtlessly, authorities should ask for fire safety measures to be put in place and ensure proper enforcement.

## Lessons for the UK?

The Building Regulations aim to ensure safe escape with protected firefighter access. They included measures to ensure that the structure can neither collapse prematurely, nor can the fire spread easily. Passive fire protection (PFP) built into the building's fabric has a vital role. PFP products work to control the flammability of wall and ceiling linings, divide the building into fire-resisting compartments, protect the building from collapsing, and provide protective escape routes. Once the building is occupied, the [Regulatory Reform \(Fire Safety\) Order 2005](#) applies.

There have, of course been fire tragedies in the UK. The outcome of the inquest into the Lakanal House tower block fire in July 2009 will undoubtedly be noted.

There are other signs that we cannot relax. [Passive Fire Protection Federation \(PFPF\)](#) members regularly report shortcuts being taken in the design, supply and installation of fire safety measures. As a result, the PFPF recently launched a campaign aimed at improving fire safety enforcement and compliance, linked to an improved appreciation of essential built-in measures.

## **Failing to comply**

The PFPF has highlighted failings in enforcement, both during construction and when a building is occupied. Consideration is seldom given to basic fire safety principles such as design, specification, product selection and use, construction processes and installation.

During construction, incorrect assumptions may be made on product performance, due to lack of knowledge of materials or interest in trying to understand failure and deterioration mechanisms. This can include the unwarranted substitution of one fire protection system for another when integrated holistic fire protection is needed.

UK government's [Fire Futures review](#) in 2010 revealed a general lack of respect for fire safety guidance, placing excessive pressure on compliance and enforcement, particularly in the design, construction, and operation of buildings, including procurement. This has tremendous implications for those who endeavour to raise and enforce fire safety standards. The latest [Fire and Rescue ? Operational Statistics Bulletin for England 2011-12](#) demonstrates the need for improvements in compliance.

Fire and rescue authorities conducted 82,000 fire safety audits in 2011-12, according to DCLG figures, representing just 6% of all premises known to the authorities. Only 59% were deemed to have satisfactory fire safety measures; more than 13,000 (of which 1,900 were licensed premises) did not comply with the legislative requirements for emergency routes and exits.

We must establish the proficiency of those installing and maintaining fire safety systems, offer competent risk assessment services and ensure that structures are correctly specified and built. The fire safety industry provides the means to raise levels of assurance. Third-party certification and accreditation schemes for products and installers are available; the PFPF has been involved with schemes to define key competency criteria for emerging accreditation schemes for risk assessors.

**Mike Wood is Chairman of the PFPF**

## **Further information**

Related competencies include: [T033](#)