

LWF PROFESSIONAL BULLETIN

The Role of the Fire Safety Manual

The management of fire safety within buildings is an area that must now receive greater priority. Due to the often complex nature of modern building design, the ever increasing use of fire engineered solutions and the sophisticated protection systems which are utilised to achieve an acceptable level of safety, it is unsurprising that confusion may occur during the lifetime of a building for those persons responsible for managing the building and the safety of its occupants. BS 5588 - Part 12: 2004 (*Fire Protection in the design, construction and use of buildings - Managing Fire Safety*) recognises this potential problem within its introductory paragraphs where it states: *'It is now widely acknowledged that the design and engineering put into a building for life safety can only do its job properly if it can be managed, maintained and tested over the whole life of a building, and if the staff are trained to handle incidents and operate effective and tested emergency plans'*.ⁱ

During the life of a building not only is there potential for building ownership to change, but possibly the type or category of occupants or even the processes undertaken therein. Subsequently, the design, fire-engineered solutions and safety systems initially employed may not be compatible with the general characteristics of the change of occupants. Furthermore, subsequent alterations or refurbishment's may also adversely affect the safety features originally installed within the premises. It is true that once a building has been handed over then a high standard of fire safety management becomes the crucial element to fire safety for the lifetime of the building. If effective management systems are established from the outset, this will go a long way in averting potential future disasters. For these reasons the construction of a *Fire Safety Manual* can play a major role in maintaining a safe environment throughout the life of a building.

Fire Safety Manual

The design of a building and the safety systems installed therein should be clearly documented for the benefit of building management who will be responsible for fire safety matters. Consolidating all relevant information into a single fire safety manual will help achieve a true understanding of the basis of the fire safety design for the building. Along with the emergency plan and staff responsibilities, this document should also explain the operation of the electrical and mechanical systems and the associated information relating to the testing and maintenance requirements. In brief, the fire safety manual should:

- Provide a full description of the assumptions and philosophies that led to the fire safety design, including explicit assumptions regarding the management of the building, housekeeping and other management functions;
- Explain the nature of the fire safety planning, construction and systems designed into the building, and their relationship to overall safety and evacuation management;

- Draw on the documentation produced at the design stage to describe the use of the various protection systems in each type of incident, and the responsibilities of the staff; and,
- Provide a continuously updated record of all aspects of the building and the building users that affect its fire safety.ⁱⁱ

The construction of the fire safety manual should not be initiated following hand over of the building. The responsibility for the creation of the document rests with the designer and fire safety engineer, who should lay the foundations of the document from the outset of any project. As such, it is essential that the manual evolves in tandem with all other developments throughout the design, construction and safety systems' installation processes. Vital information regarding the future management responsibilities may be expressed implicitly or explicitly, dependent upon the nature of the design assumptions. For instance, the arrangements for the weekly testing of active systems such as the fire alarm will be expressed explicitly, whilst assumptions that the design fire sizes or maximum fire loading will not be



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exceeded are likely to be implicit. Following hand over, the fire safety manager will be responsible for those parts of the fire safety manual that detail the operational records, the fire safety policy statement and the fire safety specification.

The fire safety manual is an ideal opportunity to state the interaction between active fire protection systems such as the cause and effect relationship between the fire alarm installation and any gaseous suppression systems, and/or the fire alarm and smoke ventilation systems. This can be an area where the cause and effect information and interaction between the various systems often leads to confusion or misunderstanding further down the life of the building. Likewise, the areas of fire-resisting construction should also be documented and the original design reasoning behind this. The consolidation of all relevant information into the manual will go along way in helping ensure that the future management of the building is successful and correctly interpreted.

Due to the size, nature and complexity of modern buildings a phased evacuation strategy is now often adopted. This will require detailed knowledge of complex systems and effective management control. All assumptions regarding the sizing of escape routes and staircases will be documented and the maximum occupant densities permitted as per the original design.

It should be remembered that with a rapidly developing culture shift away from fire certification to one of risk assessment the fire safety manual will form a vital information package during any fire risk assessment process. In effect, the fire safety manual will eventually become an overarching document which will detail and identify both the passive and active safety elements incorporated within the building and the management responsibilities required for the safe use and future operation of the building.

Inevitably, over the life of a building there will be changes in layout and design due to refurbishment's, change of use and potentially occupant characteristics, which could all adversely affect the original design concept and the safety systems employed therein. Review of the manual whenever there are any key changes to any of the above will help limit the potential for unsafe consequences.

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Yours sincerely



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LWF are fire engineering and fire risk management consultants with over sixteen years experience in the development of fire engineered technology and the application of fire safety standards including fire engineered techniques.

Should you wish to receive any further information on LWF and the services we provide please contact our Marketing Department.

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ⁱ BS 5588 - Part 12: 2004, Fire precautions in the design, construction and use of buildings - Managing fire safety (BSI Publications).

ⁱⁱ *Ibid*