

David Sugden, Chairman of the Passive Fire Protection Federation, on fire safety in hospitals.

Fire safety - a hot issue for hospitals

Fire in hospital is a nightmare. Evacuating patients from a burning building when some are unable to walk, some are in surgery and all are unwell presents an enormous challenge to the hospital staff. The evacuation of the Royal Marsden Hospital during the fire on January 2nd 2008 was a shining example of how this can be achieved calmly and efficiently without lasting harm to the patients. It was also an illustration of the benefits of passive fire protection.

Passive fire protection is built into the fabric of a building to protect it against fire. By the use of fire separating elements such as fire doors, seals, fire-resistant glass, partitions and ducting it confines fire to its point of origin and stops the spread of smoke, heat and flames through the building. It allows the occupants to escape and the fire service to get in to fight the fire and get out safely. The basis of this separation of fire from people and property is **compartmentation** - isolation of the area where the fire started, keeping the smoke and flames contained and the escape routes clear.

A recent Radio Four programme, *File on Four*, put the case for the use of sprinklers in most hospitals but it is a fact of life that the typical NHS Trust budget does not run to the installation of such systems. Many hospitals, the Royal Marsden included, must rely on passive, or built-in, fire protection measures. Participants in the programme agreed that compartmentation is vital for fire protection. Active fire prevention measures such as sprinklers and smoke alarms depend on the foundations of passive fire protection to work effectively - unless the fabric of a building is reasonably secure a sprinkler system will not operate efficiently.

The Royal Marsden was up and running within a week of the fire, thanks to the efforts of its staff and the firefighters, but also because a large part of the building remained intact. Passive fire protection remains the best ally in defending against fire in hospital.

If fire can be contained then firefighters can concentrate on extinguishing it before it spreads, leading to saving of life and property. Some walls and all floors in a multi storey structure are "fire separating elements" and so all services, doors or windows in such elements must use fire rated materials to seal the holes through which services, people or light pass in order to prevent the spread of smoke and flames for given periods of time. Modern materials and engineering mean that high-rated fire doors can resist flames for up to two hours. Glass can withstand enormous temperatures, in special cases for as long as 180 minutes if necessary. Structural steel can be protected to retain its strength in a fire - all providing a platform from which automatic sprinklers or manned fire-fighting systems can operate effectively.

For more information on the installation and maintenance of passive fire protection measures visit the PFPF website at www.pfpf.org

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