

# Fire Sprinklers in Heritage and Historic buildings

Fires are perhaps the greatest threat to heritage and historically significant buildings because when a fire occurs, the outcome is always destructive, and the age and construction of these old buildings usually means that they are consumed quickly. Each year, throughout the country, there are fires in historic and heritage buildings; many of these are so serious that the fire loss reaches millions of pounds. The loss of priceless artefacts and culture mean that such fires strike at the very heart of our heritage which can never be replaced once lost.

Buildings of major national importance are lost or seriously damaged by fire regularly. Some examples are:

- ❖ Windsor Castle
- ❖ Hampton Court
- ❖ City University, London
- ❖ Savoy Theatre

After the fire at Windsor Castle an enquiry was set up, chaired by Sir Alan Bailey, he concluded that sprinklers could play a useful role in the protection of heritage buildings.



The first fire sprinklers were used in 1870 to combat fires in commercial and industrial property. Although today's sprinkler systems work in exactly the same way as those early systems, continuous research and development programmes, coupled with rigorous quality assurance programmes, have ensured that today's systems are among the most reliable protective systems available for buildings.

At one time the idea of installing sprinkler systems into stately homes, mansions, castles, churches, museums and libraries may have been inconceivable, mainly due to misconceptions and myths surrounding these systems.

Contrary to popular belief and to what is unfortunately portrayed in the media, only those sprinkler heads in the area of the fire will operate and in the vast majority of fires, only one sprinkler head will operate to control the fire.

The construction of historic buildings often presents unseen fire safety problems, such as undivided roof spaces, hidden voids, ducts, chimney flues, ventilation shafts and old dumb waiter shafts, which all provide routes through which fire can spread rapidly throughout a building.

Sprinklers have been used in some historic buildings as a compensating feature, where modern fire precaution standards cannot be complied with, resulting in cost saving where the building authority has permitted design freedoms in respect of means of escape facilities and structural fire protection measures. A sprinkler system appropriately designed to meet the risk in specific buildings will help control the fire until help arrives.

There are different types of sprinkler systems available. Currently wet type sprinkler systems complying with the new Standard BS (EN) 12845 are considered to be the most appropriate for protection of heritage buildings. However there are other systems available, which may be more suitable for particular buildings. For further advice contact your local Fire and Rescue Service.

#### The Benefits:

- ❖ Deliver water directly to the seat of a fire
- ❖ Operate automatically - even when buildings are unoccupied
- ❖ Are relatively inexpensive to install
- ❖ In the UK there has never been a fire death in a fully sprinklered building
- ❖ Reduce loss/damage to content and structure of the buildings
- ❖ May attract insurance discounts
- ❖ Reduce the total amount of water required to extinguish the fire compared to the intervention of the Fire and Rescue Service.

#### Useful contacts:

##### **British Automatic Sprinkler Association Ltd.**

Richmond House,  
Board Street,  
Ely,  
Cambridgeshire,  
CB7 4AH.  
Tel: 01353 659 187  
Fax: 01353 666 619  
Web: <http://www.basa.org.uk>

##### **The Fire Sprinkler Association**

Mill House, Mill Lane,  
Padworth, Reading  
Berkshire,  
RG7 4JX.  
Tel: 0118 971 2322  
Fax: 0118 971 3015  
Web: [www.firesprinklers.org.uk](http://www.firesprinklers.org.uk)

Further information regarding system standards, design and installation can be obtained from the:

##### **British Standard Institution**

Tel: 020 8996 9001  
Fax: 020 8996 7001  
Web: <http://www.bsi-global.com>

- ❖ British Standard - European standard 12845:2003 - Fixed fire fighting system, automatic sprinkler system design, installation and maintenance
- ❖ British Standard 9251:2005 - Sprinkler systems for residential and domestic occupancies