

IFIC FLARE



Fires in Historic Buildings

The recent images and footage of the fire ravaging the iconic Notre Dame Cathedral bring the fire risks associated with historic buildings back into mainstream focus. There are calls for the full restoration and renewal programme for the UK Houses of Parliament to be urgently implemented rather than the 'patch and mend' approach currently being undertaken. The historic Grade 1 listed building faces many critical risks including its outdated electrical system.

Lack of regulations and fire safety guidance means many historic buildings have unstopped voids from basement to roof level. Typically these old properties will have pipes traversing through floor voids and walls, with little or no fire compartmentation installed to reduce the horizontal or vertical rapid spread of flame or hot gases. To add to the difficulties the original records for many of these buildings are no longer available and so the location of these voids may not be known. It is the hidden voids in this type of building that allow unpredictable and uncontrollable fire spread and cause problems when trying to effectively protect the building from fire. Fires can take hold and spread rapidly in buildings constructed in this way. Many of us will have seen the footage of the flames engulfing the roof of the Notre Dame Cathedral in circa 45 minutes, assisted by the dry historic timbers.

The Challenges

Owners, architects and conservationists will often block attempts to install 'unsightly' fire prevention and suppression measures for fear of ruining the character of the historic building. The cost of retrospectively fitting fire safety measures can also be seen as prohibitive. In some cases, the building's listed status is stated as the reason for not being required to have work undertaken under the Regulatory Reform [Fire Safety] Order.

Fire Safety Measures

Fire safety measures fall into 2 main categories passive (built into the building structure) and active (fire detection, sprinkler systems).

With historic buildings, to protect life and to preserve the building's fabric and contents, escape routes may be longer than the required maximum travel distances as stated in the current building regulation, and as a result fire doors may have to be installed to conform to the regulations. Any high-risk areas (kitchens, boiler rooms) may have to be afforded the proper separation.

Sprinklers are an effective means for detecting and suppressing a fire during its early stages, before it destroys the entire building. They can, however, cause significant water damage. Modern design means that sprinkler heads can be concealed but it should be noted that the installation of the pipework required can involve considerable disturbance to the historic fabric.

Automatic Fire Detection systems will inevitably be in view and it may be felt that they are not in keeping with the buildings appearance.

Emergency Planning – Fire Strategy

Many historic buildings are located in rural areas, which may affect the response times for the attending Fire Services. Emergency planning is a key part of fire strategy and plans can be put in place whereby training exercises with building staff and the Fire Service can be undertaken. Working together to combine building knowledge and fire-fighting expertise, emergency salvage measures can be organised so that in the event of a fire artefacts may be saved and important areas of the building that are of major significance may be protected.

These exercises can also determine where water supplies in the surrounding area are inadequate or limited, highlighting in advance the need for additional water supplies if a fire was to occur.

Fire Safety Management and Renovation Works

Good fire safety management can reduce the need for physical fire protection measures by helping to mitigate the risk of a fire occurring, speeding up the discovery and controlling the spread of any subsequent fire. Staff at historic buildings can be given the opportunity to be nominated as a responsible person and trained to identify fire related issues.

It should be recognised that our historic buildings are potentially at their most vulnerable during renovation works, particularly those involving hot work. Hot work refers to methods of work, primarily in construction and refurbishment, which produce heat in the form of flame, hot surfaces or sparks. There is a plethora of guidance documents produced by insurers, industry groups and government bodies relating to 'Hot Work Safety'. They all detail relatively similar procedures which represent good practice in hot work. Most insurance policy conditions are based on this guidance.

Those involved in hiring contractors for this type of work, particularly related to historic properties, are advised to check job quotations; method statements; risk assessments; to ensure they follow industry guidance. Where contractors are likely to be visiting and carrying out work of a potentially hazardous nature, a permit to work system should be introduced to supervise the contractor and control the risks. Hot work permits should be produced for every period of work. They last a maximum of one day and cover only the area detailed in the permit. The permit should be signed at the start of the task and at the conclusion of the task by those completing the work and those authorising the work. When hot work is being undertaken there should be a continual fire watch and firefighting arrangements in place to mitigate fire risks.

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