

Fire

SPAB Scholar, architect and historic buildings consultant **Andrew Brookes**, of *Rodney Melville and Partners*, provides thoughts on preventative measures and an overview of the issues to consider when dealing with the aftermath of an old building fire.

The fire brigade will provide advice regarding precautions which can be taken to protect life and property in the event of fire. Fire detection is, of course, a primary means of alerting building users and inhabitants to fire with detectors triggered by smoke or heat-rise appropriate to the area being monitored. There are statutory requirements regarding means of escape in case of fire, although these may not apply to existing uses of historic buildings. If in doubt, seek expert advice.

Depending on the size and complexity of the building, there are appropriate measures which can be taken to reduce the risk of damage from fire. These include the construction of fire-resistant partitions to provide compartmentation within the building, together with upgrading works to doors to provide fire separation. It is important to pay attention to attics and, in particular, unoccupied roof spaces which can allow the rapid spread of fire throughout the building if not adequately compartmented. Building owners like the National Trust implement such measures to contain fire, although these can be difficult to accomplish if there are voids, for instance, behind panelling, requiring extensive works to install the necessary fire compartmentation. The impact of such works on historic fabric would need to be minimised through careful and sensitive design. Listed building consent would be required for alterations to provide compartmentation and to upgrade existing doors.

Managing the event

The post-fire involvement of a conservation-accredited architect or surveyor requires an appointment to be made to act on behalf of the building owner. Mistakes can easily be made during the first days following a fire in the absence of expert advice from experienced construction professionals.

There may be competing requirements for advice. If the cause of the fire is unexplained, the fire brigade or loss adjuster may instigate forensic investigation to try to determine the cause. Any disturbance to the fire-damaged fabric could compromise forensic investigation. Safe access is a prerequisite following fire and the structure may need to be assessed by a structural engineer if the fire is thought to have compromised the structural integrity of the building.

Damage to the building fabric may be compounded as a result of exposure to the elements following damage to roof coverings. Damp damage will also result from extinguishment waters poured into the building by the fire brigade. The provision of scaffolding and a temporary roof

is an urgent consideration, although usually requiring design input from the structural engineer and competitive tenders being sought.

Recovery

Fire damage to historic buildings can often result in exposure to hazardous materials. Asbestos is the primary concern as this can be found in pipework insulation, floor tiles and other finishes as a binder to plastics. Bakelite is also potentially asbestos-containing. The list of hazardous materials will include the potential for lead contamination from paint and lead sheet. All these risks need to be managed and analysis can be commissioned, particularly to identify asbestos. Awareness of statutory requirements in dealing with hazardous materials is an important factor.

Depending on the listed status of the fire-damaged building, early consultation with the local planning authority is an important consideration. Fire damage to a Grade I or II* building will usually require input from Historic England (in England). This early consultation is an urgent requirement as listed building consent will usually be required for repairs after a fire, depending on the extent of damage caused. To avoid delay, it is usual to submit a number of applications for listed building consent



HAMPSHIRE FIRE & RESCUE SERVICE

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LEFT
The 800 year old St Peter's Church in Ropley, Hampshire was almost completely destroyed by fire in 2014.

renewal of the mechanical and electrical services which provides the opportunity for future-proofing of the installation and for it to be discreetly designed. Extensive works would usually require input from a mechanical and electrical services engineer.

Saturated fabric will carry a long-term risk of fungal and/or wood-boring beetle infestation, particularly as moisture levels in the fabric reduce. The drying-out regime needs to be carefully managed. The tried and tested method is to insert timber dowels into predrilled holes in brickwork and masonry. These are periodically retrieved and replaced. By carefully weighing the retrieved dowels the moisture content can be assessed by comparison with the 'dry' weight, reflecting the levels of moisture in the building fabric. Care would need to be taken when selecting sites for monitoring to avoid damage to finishes.

Clearance of saturated fire-damaged fabric is not a pleasant task, although this needs great care to ensure that any items removed are assessed before being disposed of.

Contract matters

To ensure that delays are minimised, fire damage repair projects are often managed by management contractors on the basis of an overall cost estimate with work packages sequenced in order of priority. The estimate will include structural repairs, roofing works, external fabric repairs and the detailed reconstruction of interiors. This avoids the delay which would follow if a conventional contract route were to be implemented requiring the entire repair proposals to be designed and let as a single contract.

Insurance

Contrary to popular belief, it is usual for insurers to recognise that delays in implementing temporary works, including propping and shoring, and the provision of a temporary roof, would almost certainly result in increased costs and further damage to the building fabric. Extensive fire damage is usually assessed by loss adjustors experienced in this specialised field, with early dialogue paramount between the loss adjustor and the construction professionals appointed to advise.

Insurance-funded work has a lexicon of its own which the construction professionals need to be aware of. Generally, fire damage work in compliance with building regulations will qualify for insurance funding as will any 'consequential loss' as a result of fire. 'Pre-existing damage' can be an area where the building owner would need to contribute towards the cost of repairs. There will also be the opportunity for 'betterment' which again will usually require a contribution from the building owner. It is usual for a dialogue to continue with the loss adjustor appointed by the insurers for the entire construction period, to ensure that costs are correctly allocated and that the building owner is fully aware of any cost liabilities. #

as the repair proposals are designed for implementation.

The imperative following a fire is to make rapid progress with works of protection, including propping and shoring, and the provision of a temporary scaffolding roof. However, this preliminary work has to be carefully planned with a view to the repair objectives and the salvage and re-use of historic fabric.

Salvage of fire-damaged fabric will be an important element of the initial work once safe access has been gained to the building. Even where damaged beyond reuse, fragments of the existing fabric can inform the repair process, including any decorative ceiling plaster, panelling and other items of interest.

It is also important to assess the cost of repairs and this can best be done by the preparation of a detailed fabric report, usually carried out on a room-by-room basis for the interiors and dealing with each element of the building fabric in a methodical manner. The external envelope of the building would also be assessed for repair requirements, including roof coverings, the external wall fabric and windows and doors. The fabric condition report is costed by a quantity surveyor to establish the cost of the proposed repairs which can then be assessed against the insured amount.

Extensive fire damage will usually require complete