The Second Fire at the Glasgow School of Art

I am a fire and security consultant with more than 40 years’ experience in the field. Since 1998 I have worked extensively and directly in the area of heritage protection and have undertaken consultancy assignments for Historic Environment Scotland, English Heritage, the National Trust, the National Trust for Scotland as well as many individual institutions, galleries, libraries and cathedrals and private house owners.


As an independent consultant, I have a practice covering three main areas: heritage protection; large construction projects and expert witness services. I am the author of two HS Technical Advices Notes on fire matters and its Guide for Practitioners No 7: Fire Safety Management in Traditional Buildings. This guide has ‘Approved Code of Practice Status’ in respect of Building Standards in Scotland.

I provide general consultancy, training, technical writing and expert witness services in all of these areas and have been responsible for overseeing the construction insurers’ interests on many large projects. These include: Burj Khalifa, The Shard, Heathrow Terminal 2A and 2B, Atlantis Dubai, the Abu Dhabi International Financial Centre and the United Tower in Kuwait. I am presently working on:

- The new King Abdulaziz Airport, Jeddah
- The Al Dar Project, Astana, Khazakstan
- The Riyadh Metro
- The Copenhagen Metro extension

In all of these projects I advise on the optimum way of managing the construction process to minimise the possibility of fires and to assist contractors in mitigating any damage which does occur. I also audit fire safety arrangements and ensure that they comply with the policy wordings.

Currently, I am advising Historic Environment Scotland on the fire protection of three significant buildings and am retained by the National Library of Wales on an open-ended consultancy contract. I am also providing advice to three English cathedrals on matters related to fire detection. I have delivered more than 50 one day training courses on construction fire safety management in the UK, Middle East and Central Asia.

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1 https://www.cost.eu/actions/C17/#tabs|Name:overview
Although I have no specific knowledge which has not been gained from press reports and discussions with other fire safety professionals, I believe that the second fire at the GSA would have been amenable to a properly-structured fire safety programme which could have reduced the risk of a fire occurring or alternatively could have mitigated the impact of the fire which did occur.

I would like to bring the following to the attention of the Committee as I am not persuaded that evidence already taken has fully covered these matters adequately.

1. During a construction or refurbishment project, the owner of a building will enter into a JCT standard construction contract with a contractor. One of the conditions of all such contracts is a requirement to purchase and maintain insurance cover for the building and works under a ‘Construction All Risks’ (CAR) policy for the duration of the project. Often, such cover is purchased with joint names (i.e. the owner and contractor), I believe this may have been the case at the GSA.

2. The CAR contract of insurance will contain specific clauses regarding the need for the provision of fire safety measures during the project. These go considerably beyond the legal duties imposed on the contractor by fire or safety regulations. Such clauses can be fairly general, for example:

‘The Contractor shall institute a Fire Protection Plan and a Site Fire Action Plan and ensure that these are updated regularly.’

Sometimes, however more specific requirements can also be imposed:

‘Fully operative wet riser hydrants shall be installed up to one level below the highest work level.

All CAR policies recognise the dangers of ‘hot works’ so invariably something like this will be included.

‘A permit to work system is to be implemented for all contractors and sub contractors engaged in ‘hot work’ of any kind. Hot work is defined any work involving the application or generation of heat as part of a construction process.

3. These clauses are invariably deemed to be ‘Warranties’ and as such MUST be complied with. Failure to do so could result in a claim being denied by the underwriters. Should the clauses be included as ‘Conditions Precedent’ then failure to comply will result in the insurance policy being declared null and void ab initio. This would result in a serious breach of the contract with the owner by the contractor.

4. The legal duties in respect of fire safety on construction sites are set out in the Construction (Design and Management) Regulations 2015. The enforcing authority for these regulations is the HSE and, as might be expected, the Regulations focus on the safety of operatives if there is a fire. Out of 38 Regulations, only four cover fire safety:

29. Prevention of risk from fire, flooding or asphyxiation
30. Emergency procedures
31. Emergency routes and exits
32. Fire detection and fire-fighting
Regulation 29 requires that suitable and sufficient steps be taken to prevent injury from fire or explosion during construction work. Regulation 30 requires the development of procedures to deal with the impact of an emergency and the evacuation of the site. Regulation 31 requires that emergency routes and exits be provided to enable any person to reach a place of safety quickly in the event of danger and requires routes and exits to be signed. Regulation 32 requires the provision of firefighting equipment and fire detection and alarm systems and requires that these be maintained and that all staff be instructed in their use.

5. These very basic requirements have been successful in protecting site operatives but less successful in preventing fires but not at all successful in protecting buildings under construction or being refurbished as the litany of disastrous site fires proves. One HSE estimate suggests that there are ‘many hundreds of construction site fires each year’ – however the way the fire and rescue service record data is not helpful to actually quantify this number. In 2008 the Fire Protection Association estimated that there were more than 3000 fires on construction sites each year.

6. In 1991, following two very large construction site fires in the City of London, the Association of British Insurers asked the Fire Protection Association (of which I was then the Director) to draw up a unified Code of Practice for fire safety on construction sites. The first edition of the Joint Code\(^2\) (as it is known) which I edited, was published in 1992. The Code is intended to be called up for all large or complex construction or refurbishment projects or those with a value in excess of £2.5 million. Large projects are defined as those with a value on excess of £20 million - clearly the case at the GSA.

7. Section 9 of the Code covers fire protection and requires contractors to plan their work to allow the early installation and operation of fire safety measures, including hydrants, risers, fire barriers and sprinklers.

8. Notwithstanding the requirements of the Joint Code which are specifically imposed or called up by the insurers in policy wordings, the standard guidance on fire safety management in traditional Scottish buildings, is the previously referenced Guide for Practitioners No 7 published by Historic Scotland in 2010. This explains very clearly the dangers of fires in older buildings and requires very specific fire safety management practices during refurbishment or rebuilding. Section 2.12 of Part 2. Section 2 makes extensive cross references to the contents of the Joint Code and proposes that its requirements should be adopted as part of all relevant construction contracts. I believe that the requirements and recommendations in GP7 should have been incorporated into the GSA’s building contract – or at the very least drawn to the attention of the Contractor.

10. I am aware that there has been speculation as to the part which the timber-lined ventilation trunking may have played in both fires. I’m not able to comment directly on this but I do recall that when I visited the site sometime between in 1996 -1997 in company with a senior member of staff of Historic Scotland, we both commented on the potential for serious fire spread throughout the building via the trunking. I recall

the comment ‘just like a very effective chimney’ being agreed as an appropriate
description of the hazard.

11. In at least one of the technical discussions which took place between 2001 and
2006 during meetings as part of the COST C17 project I recall hearing comments
about the hazard of fire spread posed by the GSA’s ventilation trunking.

12. As someone specialising in the fire protection of heritage and historic buildings I
am aware that many other heritage specialists, including conservation architects and
others, do not have a favourable opinion of automatic fire suppression systems (such
as sprinklers and watermist). I believe their concerns are generally overstated and
stem largely from a lack of experience and understanding of the capability of such
systems – and perhaps from being influenced by the inaccurate and dramatic depiction
of sprinkler actuations in films and on tv. I believe that sprinkler systems which have a
proven reliability factor of more than 97% are very unlikely to actuate spuriously and
will always prevent fires spreading – and usually extinguish or suppress these.

13. There are no practical reasons why an AFSS which is being installed in a building
anyway cannot be commissioned at a very early stage (as is required by Section 9 of
the Joint Code). I have been responsible for recommending just such measures in a
number of projects including a complex and innovative system in the Al Dar Tower in
Astana. In addition, I am also aware that temporary sprinkler systems have been
installed in a number of timber framed buildings such as smaller hotels and large care
homes as these are very vulnerable to fire during construction.

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