



Loss Bulletin: Hot Work

Introduction

Industry:	Leisure Centre
Source of Incident:	Section of flat roof between two pitched roofs over a swimming pool and gymnasium
Value of Loss:	Circa £5m
Extent of damage:	Complete loss of the pitched roof over the pool, damage from falling debris in the pool and damage to services and finishes of a large proportion of the remaining building
Cause of Incident:	Roofing contractor set fire to the roof of the swimming pool whilst using a gas blow torch to apply roofing felt

Background Information

The main vaulted roof structure over the pool is pitched steel beams supporting steel purlins. Either side of the roof apex for the majority of the roof's length (and circa one third of its slope) were translucent roof sheets providing natural light to the pool below. The lower sections of the roof comprised what appears to be profiled steel sheeting, overlaid with a combustible breather membrane, foil backed synthetic insulation (not fully identified), timber battens and an artificial slate covering. The flat sections of roof at the base of the slope (which effectively formed the gutter), were covered with built-up bitumen felt which appears to have been laid directly on a plywood decking (with no insulation) and supported on timber beams. The adjacent gymnasium roof is formed from laminated timber beams underdrawn with timber lining; neither of which were involved in the fire.

At approximately 12:03 hours the London Fire Brigade received the first telephone call reporting a fire at the Leisure Centre. The fire involved the pitched roof above the pool hall of the building. At the time of the incident bitumen felt was being applied to an adjacent flat roof.

It is reported that the roofer (Bob) came down from the roof to report that there was a fire at the roof which he had attempted, unsuccessfully, to extinguish. The building was subsequently evacuated.

The Loss Adjuster's report states:

"I consider it likely that the fire was caused by the hot work being undertaken by the Roofing Contractor having led to the ignition of the combustible membrane of the adjacent pitched roof. If that is correct, it is probable that the fire could have been avoided by protecting the membrane that would have been

visible at the base of the pitched roof, as ought to have been done in accordance with published guidance relating to hot work”

The roof membrane and insulation were tested and were both found to be self-propagating (i.e. to sustain a flame without any additional fire load). The timber battens were combustible as was the plywood decking and bitumen felt over the flat roof areas. The translucent roof sheeting mostly melted, dripping into the pool below (so not resulting in fire spread).

The adjacent gymnasium roof was supported by laminated beams and lined internally with wood. This did not get involved and this might have been as a result of Fire Brigade intervention (though this is not clear from the Loss Adjuster’s report).

Whilst the origin of the fire was the hot work required to apply the bitumen felt, the felt itself was not extensively damaged. The main cause of the damage was the application method itself igniting the breather membrane and insulation at the exposed base of the slate roof.

Lessons Learnt & Issues for your consideration

The materials used in the construction of the roof were extensively combustible and able to sustain propagation of fire in their own right. Such materials should be avoided wherever possible.

Construction and roofing methods requiring hot application methods should be substituted with safer systems of work

Whilst it appears that a fire extinguisher was discharged on discovery of the fire, suitable precautions are unlikely to have been taken to protect the exposed combustible roofing materials prior to the start of the work.

Additional Comments

The Loss Adjuster did not have access to any documents such as the scope of works, method statements, risk assessments and hot work permits (if such existed). We are therefore unable to comment on whether or not any management control was exercised over this Contractor’s activities though it would be reasonable to assume that it was not.

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