

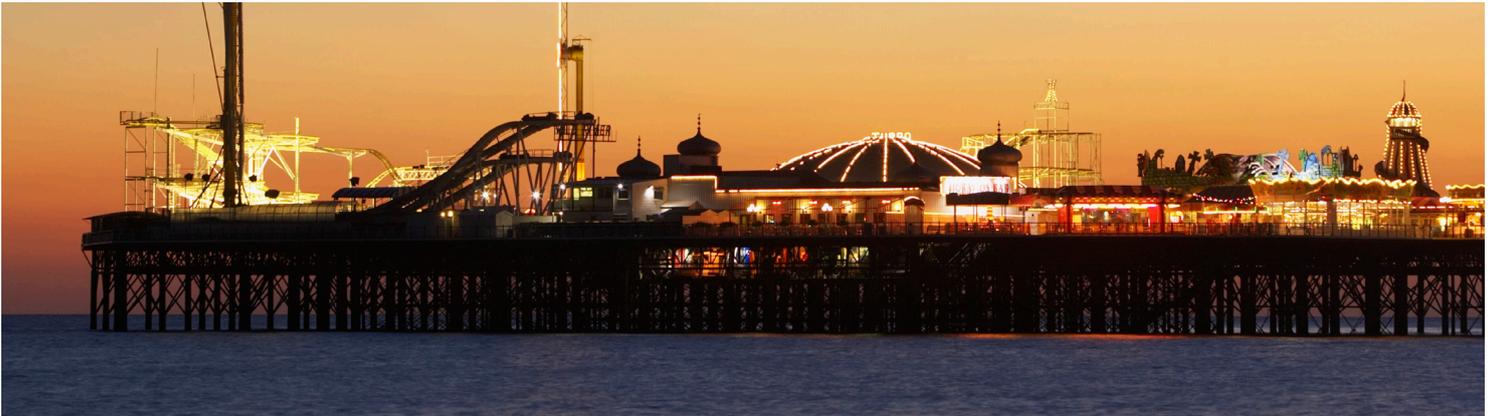
# Outdoor Structures risk review report

Business Sector Risk Review Reports are created for each and every occupancy category held within the FPA/ RISCAuthority Large Loss Fire database where sufficient records exist for meaningful analysis and are updated annually. They are designed to highlight the loss history in each business sector to help inform insurance and risk control choices, and provide brief bespoke best-practice guidance.

This data is best appreciated in association with local information on F&RS response, AFA policy, and firefighting water availability data which is available to RISCAuthority members via the website ([www.RISCAuthority.co.uk](http://www.RISCAuthority.co.uk)). The data presented here spans the two years January 2012 to December 2013; the complete database and analytical tools may be accessed by members via the RISCAuthority website.

## Other Outdoor Structures

*Sub category*



**Outdoor Structures** fires account for **0.3%** of all large loss fires.

Fires involving **Other Outdoor Structures** account for **0.2%** of all large loss fires and **55.6%** of all **Outdoor Structures** fires.

Causation	Accidental	Deliberate	Unknown
Outdoor Structures	33%	33%	33%
Other Outdoor Structures	20%	60%	20%

Time of fire	Midnight - 6am	6am - midday	Midday - 6pm	6pm - midnight
Outdoor Structures	57%		14%	29%
Other Outdoor Structures	67%			33%

Impedances	Access	Acetylene	Inadequate water supply	Resources
Outdoor Structures		100%		
Other Outdoor Structures				

**1 Outdoor Structures** fires of **9** had impedances, **0** of these had more than one impedance.

**0 Other Outdoor Structures** fires of **5** had impedances, **0** of these had more than one impedance.

## Cost of fire

**Outdoor Structures** fires account for **0%** of all large loss financial loss, with a mean average cost of **£254,532** per fire.

**Other Outdoor Structures** fires account for **37%** of all **Outdoor Structures** loss, with a mean average cost of **£168,724** per fire.

Insurance component	Material damage	Business interruption	Contents	Resources	Machine and plant	Stock	Other
Outdoor Structures	53%	27%	2%	0%	6%	10%	2%
Other Outdoor Structures	76%		4%	1%	13%	2%	4%

*These statistics are based upon information supplied by loss adjusters to the FPA on a voluntary basis and not all insurers conducting business in the UK contribute to this dataset. They represent only sums paid out where the total loss is in excess of £100K and are deficient of losses under £100K, deductibles, under-insurance, uninsured, self-insured and captively insured components, which may be significant. In a year, total losses captured typically account for 50% of the ABI declared annual fire loss figure - which is similarly deficient of the same components (except the £100K threshold).*

# FPA BUSINESS SECTOR RISK REVIEW REPORT FOR OUTDOOR STRUCTURES – OTHER OUTDOOR STRUCTURES

## Fire safety legislation

Fire risk assessments should be undertaken for outdoor structures which form a workplace in compliance with the Regulatory Reform (Fire Safety) Regulations 2005 (or equivalent legislation in Scotland and Northern Ireland). It should be noted, however, that a vehicle, trailer or semi-trailer for which a licence is in force is exempt from this requirement. In some instances an assessment may also need to be undertaken in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).

## Fire hazards

There are numerous fire hazards associated with outdoor structures; these include:

- Deliberate fire setting.
- Sparks produced as a result of welding and cutting of metal using oxyacetylene, oxygen/propane or electric arc welding, and also from grinding discs and other hot work processes.
- Heating from friction as a result of the use of machinery or of hand tools for processes such as drilling, boring and reaming.
- Heat produced as a result of poorly maintained machinery and lack of lubrication.
- Electrical fire hazards from poorly maintained generators, equipment and installations.
- Static electrical charges accumulating from poor bonding and earthing of conductors.
- Poorly maintained lightning conductors.
- Grassland and wildfires caused accidentally or from deliberate ignition.
- Accumulation of combustible and flammable waste materials.

## Risk control recommendations

The following risk mitigation measures should be considered to eliminate or reduce the risk of fires involving temporary or permanent outdoor structures:

- Give careful consideration to the likelihood of deliberate fire raising at the time of the fire risk assessment. Suitable security measures should be implemented to reduce the incidence of fire setting; these may include providing locks complying with BS 3621, installing security lighting and introducing a high quality CCTV system to monitor the site.
- Review the fire risk assessment periodically, when major works are planned and whenever there are significant changes to the potential sources of ignition and combustible materials present.
- Identify appropriate hazard zones in the DSEAR assessment (where undertaken) and train staff in the implications of these in the context of the materials being handled and the operations being carried out.
- Observe the guidance set out in the *Joint code of practice for fire safety on construction sites* where construction, refurbishment or demolition work is involved.

- Avoid hot work wherever possible. Where there is no practicable alternative to the use of acetylene, minimise the time that acetylene cylinders are held on site.
- Wherever practicable carry out hot work processes in a purpose designed area; control work undertaken outside of this by a hot work permit system.
- Engage competent engineers to maintain plant and equipment in accordance with the manufacturers' instructions so as to eliminate potential sources of ignition. Keep suitable records of maintenance and servicing.
- Earth all electrical circuits in accordance with the requirements of BS 7671; extraneous conducting materials should also be bonded and earthed. This is especially important on structures such as silos. The bonding and earthing should be subject to a programme of inspection and testing as determined by a risk assessment. The results should be recorded.
- Ensure that electrical installations are designed, installed and periodically tested by a competent electrician in accordance with the current edition of BS 7671 (the IET Wiring Regulations). Inspections should be carried out on a risk assessed basis as recommended in the Periodic Inspection Report.
- Provide power tools and other items of portable electrical equipment that are suitable for use outside and arrange for them to be inspected and tested at least in accordance with HS(G) 107 and/or the IET *Code of practice for in-service inspection and testing of electrical equipment*. A risk assessment should be used to determine the actual programme of inspection and testing.
- Replace highly flammable and flammable solvents with non-flammable alternatives wherever possible. Where this is not practicable replace low flash point solvents with those with a higher flashpoint.
- Store cans and drums of flammable solvents in accordance with RISC Authority Recommendations RC20-2.
- Store all gas cylinders in suitably signed facilities designed for this purpose in accordance with RISC Authority Recommendations RC8.
- Minimise the spread of fire by storing hazardous materials and combustible waste at least 10m from each other and from outdoor plant, equipment or manufacturing process wherever possible.
- Cut down undergrowth regularly; do not treat it with proprietary chlorate based weedkillers.
- Establish a means of giving warning of fire. Certain sites, by their size and nature, may require a formal system incorporating automatic detectors and call points designed to an appropriate category as defined in BS 5839-1 (or a temporary system in the case of a construction site). On other sites the fire risk assessment may indicate that whistles, klaxons or manually operated sounders may be suitable provided they are clearly audible above background noises in all areas and can be readily identified as being a fire alarm
- Where appropriate, and following a risk assessment, consider installing an automatic fire suppression system designed in accordance with BS EN 12845 or other recognised standard to protect the facility.
- Ensure that water supplies in the area are adequate for firefighting purposes; liaise with the local fire and rescue service where appropriate.
- Ensure that access to the site is readily available for the fire and rescue service.
- Have an effective emergency plan in place to ensure the resilience of the business. One way of approaching this is to complete the ROBUST business continuity and incident management planning software available free from <https://robust.riscauthority.co.uk/>

## Further information

1. Regulatory Reform (Fire Safety) Order 2005, SI 2005 No 1541, TSO.
2. The Fire (Scotland) Act 2005, asp 5, TSO.
3. Fire Safety (Scotland) Regulations 2006, Scottish SI 2006 No 456, TSO.
4. Fire and Rescue Services (Northern Ireland) Order 2006, SI 2006 No 1254 (NI9), TSO.
5. Fire Safety Regulations (Northern Ireland) 2010, SI 2010 No 325 (NI), TSO.
6. Dangerous Substances and Explosive Atmospheres Regulations (DSEAR), 2002, SI 2002 No 2776, TSO.
7. *RC7 Recommendations for hot work*, 2012, FPA.
8. *RC8 Recommendations for the storage, use and handling of common industrial gases in cylinders including LPG*, 2012, FPA.
9. *RC20 Recommendations for fire safety in the storage and use of highly flammable and flammable liquids: Part 1: General principles*, 2006, FPA.
10. *RC20 Recommendations for fire safety in the storage and use of highly flammable and flammable liquids: Part 2: Storage in drums, cans and containers other than external fixed tanks*, 2007, FPA.
11. *RC49 Recommendations for reducing business interruption, Part 1: Acetylene cylinders involved in fires*, 2007, FPA.
12. *RC52 Recommendations for fire safety for waste solvent recovery plants*, 2012, FPA.
13. *RC53 Recommendations for fire safety in the use of thermal oxidation plant*, 2012, FPA.
14. *Business resilience: A guide to protecting your business and its people*, 2005, FPA.
15. ROBUST software (Resilient Business Software Toolkit): <https://robust.riscauthority.co.uk>
16. *Joint code of practice for fire safety on construction sites. Eighth edition*, 2012, FPA.
17. BS 5839: *Fire detection and fire alarm systems for buildings: Part 1: 2013: Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*, BSI.
18. *LPC Rules for automatic sprinkler installations incorporating BS EN 12845: (Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance, BSI)*, 2009, FPA.

## Case histories

1. Arsonists are believed to have started a fire at a derelict grain silo. Three fire engines were called to the eight-storey building just before midnight on Tuesday. The fire started in the ground floor of the building and spread to three sections of the plant. No one was injured.
2. Dozens of firefighters contained a large blaze at a tower at a north east port. Fire crews were called to reports of a fire in a conveyor transfer tower at about 15:00, a fire and rescue service spokesman said access to the fire was difficult and dangerous but was now under control. No one was injured in the incident and the cause of the fire is under investigation. The tower is used to transfer wood pellets from a storage facility to a rail loading silo; crews applied six cooling water jets to dampen down the fire. About 50 firefighters and 12 appliances tackled the blaze. The fire service said firefighters would remain at the site to ensure the fire does not re-ignite.
3. CCTV camera controllers spotted a potentially serious fire at a fairground and alerted fire crews before it took hold. Police said the camera control staff saw smoke at the amusement centre and raised the alarm. Three crews with an aerial platform put out the fire. Police said they believed welding had been carried out in the area shortly before the fire was discovered. The fire and rescue service said when it arrived no one was at the site and crews had to smash a padlock to enter the fairground.

19. *Fire safety risk assessment: Factories and warehouses*, 2006, DCLG.
20. *Fire safety risk assessment: Large places of assembly*, 2006, DCLG.
21. *Fire safety risk assessment: Small and medium places of assembly*, 2006, DCLG.