



# Lightning System Audit

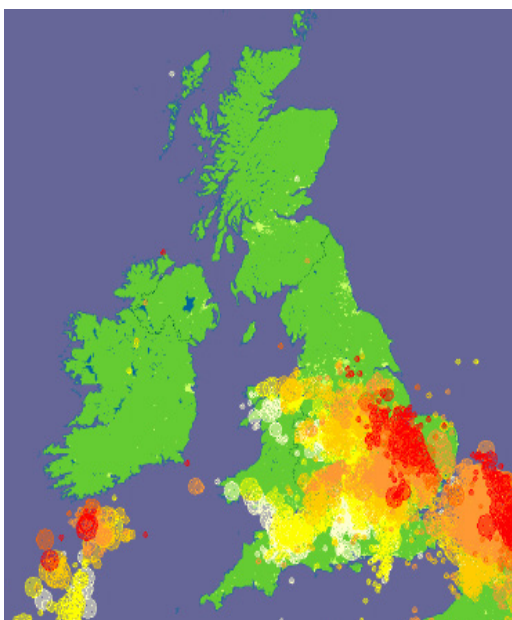
Independent, expert advice on the most cost effective lightning protection systems to guard against damage to assets from electrical storms.

## Benefits

- Recommendations are based on detailed site surveys by EA Technology experts
- Independent advice can be used as the basis for internal work plans or external tenders
- Our lightning protection systems are purpose-designed for your needs, to maximise value
- Minimise risk to your assets and personnel
- Ensure compliance with BS EN 62305

## Improving asset performance

- Protection
- Compliance
- Value
- Safety



*Because we do not sell or install one-size-fits-all protection systems, this ensures the optimum balance between cost and risk mitigation for specific sites.*

## 3 steps to cost-effective lightning protection

Our protection systems are more cost-effective than generic solutions because they are based on the specific risks to each structure.

### Step 1 Site survey and measurements

- We survey the location and purpose of structures to be protected in your site
- We carry out a detailed survey of existing lightning protection systems on site, including:
  - Assessing their effectiveness
  - Identifying current systems which are suitable for modification
- We perform measurements to establish the suitability of using existing structures as part of the lightning protection system

### Step 2 Risk Assessment

The first step is to establish how much the structures on your site are at risk of lightning strikes. We therefore:

- Check detailed records of lightning activity in the area of the site over the past 20+ years, collected by our unique Lightning Location Data & Display System
- Examine the geographical location of your site. This process provides a precise, individual and usable lightning risk assessment

### Step 3 Recommendations

We combine the information gathered in Stage 1 and 2 to provide a detailed risk assessment of individual structures, based on historical strike data for the area, vulnerability and existing protection systems.

- We identify areas of the site where lightning protection is required
- We provide recommendations on the most appropriate techniques for lightning protection, based on our analysis of risk and cost/benefits

*Our recommendations ensure compliance with the British Standard Agency's BS EN 62305 guidelines*



## How lightning causes damage

- A lightning strike extends from a cloud in branches called leaders
- When a leader reaches the ground, the energy in all of the leaders will flow through that single leader with a huge flow of current
- Leaders can jump to other parts of the structure while the strike is happening, reaching parts of the structure that the main strike would not reach

## Lightning location data and display system

Subscribe to EA Technology's unique lightning tracker service to receive detailed plots of electrical storms online as they develop and move in real time. The system is widely used by the electricity industry to ensure the safety of personnel and prepare for potential damage to assets. It includes the facility to

'replay' records of lightning strikes, to establish the causes of damage.

## Protection principles

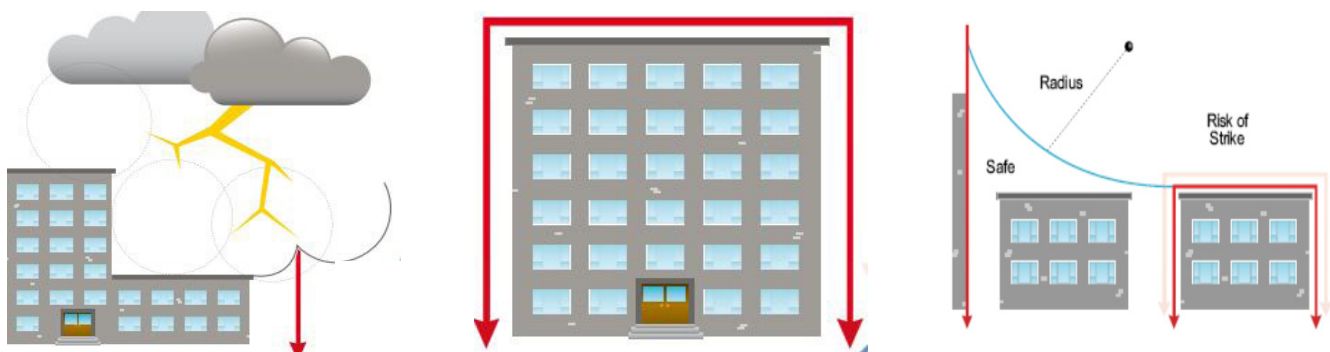
### Faraday Cage

Lightning does not always strike the highest point of a structure. A Faraday Cage wrapped around the structure (or a steel framed structure itself) will conduct the current safely to ground, wherever it is struck. This also spreads the load to all earth connections, making it intrinsically safer than a single earth rod.

### Rolling Sphere

Fitting an effective lightning protection system to a tall structure will also protect structures close to its base. The radius of this sphere is defined in BS EN 62305 and varies with the risk associated with the site. Any structure not enclosed by this protective arc will need its own protection system.

EA Technology uses these principles to ensure maximum protection with minimum materials and cost.



# Global support

The Lightning Sytem Audit™ can be supplied and supported anywhere in the world, through our network of international sales offices and distribution partners. We provide excellent lifetime support for this system, including:

- Installation and commissioning
- Training
- Lifetime technical support
- Online data analysis and reports



## Our expertise

We provide world-leading asset management solutions for power plant and networks.

Our customers include electricity generation, transmission and distribution companies, together with major power plant operators in the private and public sectors.

Our products, services, management systems and knowledge enable customers to:

- Prevent outages
- Assess the condition of assets
- Understand why assets fail
- Optimise network operations
- Make smarter investment decisions
- Build smarter grids
- Achieve the latest standards
- Develop their power skills

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Smarter Networks

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