

FACILITY SAFETY INSPECTION AND TESTING SERVICES

AEM provides cross-sector **Facility Safety Auditing Services** to assess the provision, condition, operational readiness and the degree of readiness of sites to react to an emergency. Our multi-skilled engineering teams have extensive expertise in electrical and mechanical plant gained from 25 years' experience in aerospace, general industrial, garment and other sector manufacturing, commercial, healthcare and the power sector.

In business reputation is everything. Ensure you meet your corporate responsibility by allowing AEM to conduct regular factory safety inspections and tests on the facilities belonging to you and your suppliers.



Fire



Electrical



Lifts and Hoists



Plant



Structural

AEM offers Multi-Disciplinary Facility Integrity Testing Services

- **Fire safety, Detection and Suppression** - conformance and functionality tests
- **Means of Escape** including signage, exit routes, means of escape and escape lighting
- **Electrical Safety** including **Thermographic Assessments**
- **Rotating Machinery and Process Systems**
- **Pressurised Steam and Compressed Air Systems** including assessment of boiler condition and controls
- **Building and Structural**
- **Lifts and Hoists**
- **Mechanical and General Safety** (belt guards, handrails etc)

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Fire Integrity Assessment

To ensure a fire emergency is detected and dealt with quickly, safely and with the least possible damage

AEM engineers will assess whether you meet your basic legal obligations, whether the systems in place will actually work in practice and advise on options for improvement.



Areas considered include:-

- **Mean of escape**, signage, exit routes and lighting
- Access and emergency **access control**
- External **assembly points** and procedures
- Condition of Automatic **Fire Safety System**
- Fire and smoke **ventilation**
- Sprinkler and gaseous **protection systems**
- **Firefighting systems**, extinguishers, blankets etc
- **Hydrants** – street and interior
- **Interfaces** to Building Management and Control Systems
- **Backup** generator system
- **MVAC** system
- **Lift** system

Electrical Safety Audit

Electrical systems represent a major hazard to safety if poorly designed, implemented or maintained



It is essential that all electrical systems are tested before and during installation, in final commissioning, and then on a regular basis as part of an ongoing maintenance routine. AEM are specialists in the testing and commissioning of all electrical power and distribution systems.

- **Design suitability** against end-user requirements and physical environment – temperature, vibration, risk of damage, etc
- Adequacy of specified **current ratings** to suit circuit loads
- **Cable size** suitability in its actual installation environment
- Adequacy of **fuses and circuit breakers**
- **Insulation, earth loop impedance, RCD** tripping time, main switchgear, torque checks for bolted connections etc
- Soft starters and **invertors** correctly set up for ramp-up
- **Earthing and bonding** provision
- Fitting of proper **barriers and insulators**
- Correct and permanent **labels** for switchgear, cables, etc
- Operating and Maintenance **manuals** adequate to allow continued safe use of plant in later service
- Test and commissioning **records** and accurate **drawings**

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Structural Inspection

AEM engineers will visually inspect the facility premises and comment on the general condition of the accessible and visible structure of the buildings including **roof and internal roof spaces, external and internal walls, floors, ceilings and stairs.**

We will be looking for signs of structural distress:

- **Cracks and bulges in walls and floors**
- **Excessive deformation of floors or roofs**
- **Signs of subsidence**

Also the siting and suitability of heavy plant within the building and modifications beyond the original intended use of the building with the potential to impact structural cohesion.



Where appropriate we will recommend that a formal Structural Survey is carried out by a certified surveyor

Infrared Thermographic Survey

A versatile and powerful technique conducted using the latest generation of FLIR cameras to quickly and safely measure the temperature of electrical and mechanical equipment to identify potential problems

Overheating in plant and electrical equipment is indicative of maintenance issues, waste and potential hazard. Measuring this directly on live and operating systems is dangerous and slow. **AEM has pioneered the approach** of using **FLIR infrared imaging cameras** to indirectly measure temperatures, initially on 415 Volt and 11,000 Volt power distribution systems, but now in a variety of situations.

Today **AEM** provide both one-off and annually repeated Infrared Thermographic Safety Inspections and other imaging services to many premier organisations. We use the latest generation of calibrated FLIR cameras and conduct the surveys following **USA Code NFPA 70B** (2010 edition) methodology to ensure the rigour and accuracy of our results.

- **Main Switch Rooms** - LV cubicles, busbar sections, circuit breakers, cables, HV circuits, switchgear, cables, transformers, tripping systems, metering
- **Power Distribution** - Field power distribution load centres and distribution boards including incoming cables, protective devices and outgoing cable terminations
- **MVAC Systems** - Chillers, cooling towers and air handling units (excluding fan coil units)
- **Air Compressors and Waste Treatment Plant** - Air compressors, power supply cables and internal wiring), pump and blower motors, starters and cable connections
- **Process Plant** - Paint booths, autoclave, blasting enclosures, temperature controlled process enclosures and associated fusing machines, ovens, autoclaves, scrubbers etc - fans and pumps, control panels. Chemical plating equipment and water purification plant
- **Other Operational Systems** - Other systems to be as agreed subject to time constraint at site during survey



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