AIR-CONDITIONING INSPECTIONS

HOW TO...

Air-conditioning inspections require compliance with a number of regulatory requirements. While the asset manager is often the accountable body, the responsibility for managing air-conditioning inspection arrangements at the portfolio or property level usually sits with the property manager, or may be contracted to the facilities manager.

Air-conditioning inspections involve consideration of the following factors:

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1. SECURING AN ACCREDITED ENERGY ASSESSOR

An inspection of an air-conditioning system must be carried out by an energy assessor who is a current member of an accreditation scheme.

Responsibilities of an energy assessor:

An energy assessor must make a copy of the air-conditioning inspection report available to the building owner or manager, or to the person who controls the operation of the system.

This must be done as soon as practicable after the inspection date, but only after the air-conditioning inspection report is entered on the register.

Only air-conditioning inspection reports which have been produced and lodged on the register by accredited energy assessors are valid.

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2. FIRST INSPECTIONS

There are a number of legal requirements relating to the first inspection of air-conditioning systems:

- For all systems first put into service on or after 1 January 2008, the first inspection must have taken place within five years of the date when the system was first put into service.
- For other air-conditioning systems, where the effective rated output is more than 250kW, the first inspection must have taken place by 4 January 2009.
- For other air-conditioning systems, where the effective rated output is more than 12kW, the first inspection must have taken place by 4 January 2011.

3. REFRIGERATION, AIR MOVING PARTS AND CONTROLS

Checking refrigeration equipment and associated heat exchange systems are an important part of air-conditioning inspections. The inspection looks for any indication of damage or lack of maintenance that would significantly reduce their efficiency from their 'as new' state and does not provide high levels of detail.

Where installed as part of the system to provide cooling, air moving systems are an important factor in air-conditioning inspections. The contribution that fans make to the total annual energy consumption of the combined cooling system is likely to be higher than that of the refrigeration plant, and there may therefore be a potential for greater performance improvement.

Air-conditioning inspections require that system controls are assessed in detail. There could be considerable scope to identify inefficiency due to inappropriate control methods and control settings or poorly located sensors.

There may be potential for improvement at low cost. Improving systems might be as simple as adjusting time switches or for cooling or heating thermostats being set correctly. The energy assessor would not reset them, however, but will report to the building owner or manager.

4. DOCUMENTATION AND MAINTENANCE

The quality, extent and accessibility of relevant information provided before an energy assessor inspects the system has important consequences for the effectiveness and cost of an air-conditioning system inspection.

Information about the air-conditioning systems installed and their operation should be provided to the energy assessor in order for them to be able to carry out the most effective assessment of the system.

Incomplete or missing documentation not provided to an energy assessor could reduce the effectiveness of the assessment. It could also increase the cost of the inspection by requiring the energy assessor to locate relevant documentation while on site.

Evidence of any existing planned maintenance schedule or of other recent maintenance activities will be sought as part of an air-conditioning assessment.

Where documentation clearly shows that equipment and systems are already the subject of regular good practice checking and maintenance procedures, a number of aspects of the inspection and provision of advice may be reduced in scale or omitted.

5. REVIEW OF INSPECTION REPORT

An air-conditioning assessment is likely to conclude that the energy efficiency of the system will fall into one of three categories:

- Systems where efficiency is clearly impaired due to faults, neglect or misuse.
- Systems where efficiency is likely to be lower than current accepted minimum provisions due to aspects of design or use.
- Systems that are acceptably efficient.

There are three broad levels of advice that the building owner or manager may receive:

- Advice on the rectification of faults in the system that are impairing its efficiency as designed.
- Improvement advice to bring existing systems broadly to a standard of 'inherent' efficiency consistent with the current minimum provisions of building regulations or standards.
- Best practice improvement advice to raise standards even where systems are fully compliant with the current minimum provisions of building regulations or standards.

Given the need for simplicity and consistency, the inspection report is likely to provide a combination of both aspects. Best practice advice may also be provided on a general basis by referring to other published guidance sources.

Air-conditioning assessment and levels of advice