



Department for
Communities and
Local Government

Improving the energy efficiency of our buildings

A guide to air conditioning inspections for buildings

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Foreword

This guidance is intended to help anyone who manages or controls an air conditioning system to understand how the Energy Performance of Buildings Regulations (Certificates and Inspections (England and Wales) Regulations and the Directive, on which these regulations are based, work in practice, how to apply the regulations, what their responsibilities are and when air conditioning inspections are required.

While this guidance aims to explain how the requirements will work in practice, any interpretation of the regulations is offered only as a guide. The Department for Communities and Local Government cannot provide legal advice. Therefore, it is important to read and understand the regulations and for individuals themselves to take a view on whether or not they fall within the requirements of the regulations. In cases of doubt independent legal advice should be sought.

This guidance does not address other statutory inspection requirements, such as those which cover health and safety requirements, nor does it cover inspection under the Fluorinated Greenhouse Gas Regulations and associated requirements, which are outside the remit of the Energy Performance of Buildings Regulations.

This guidance incorporates extracts from CIBSE TM44: Inspection of air conditioning systems: a guide to EPBD compliance, by permission of the Chartered Institution of Building Services Engineers (www.cibse.org), which describes the appropriate assessment methodology.

This document is part of a suite of documents that explains the requirements for energy performance certificates, display energy certificates and air conditioning inspections in England and Wales only. Buildings in Northern Ireland and Scotland are subject to separate regulatory requirements and are not covered by or referred to in this guidance.

Chapter 1

Air conditioning inspection requirements

Why air conditioning inspections are required

Having an air conditioning system inspected by an accredited air conditioning energy assessor¹ is designed to improve efficiency, reduce energy consumption, operating costs and the carbon emissions of the system. The energy assessor will highlight improvements to the operation of existing systems or opportunities to replace older, less energy efficient systems or oversized systems with new energy efficient systems.

As the replacement of refrigerant is restricted in older systems (as established in other legislation), there is an additional incentive to improve or replace older systems with more modern energy efficient units.

The person who controls the operation of the system, such as the building owner or manager, has statutory obligations and duties of care in the operation and maintenance of air conditioning systems. The inspections referred to in this guide are in addition to the normal activities associated with the ownership and operation of air conditioning systems.

Inspection, maintenance and cleaning programmes maintain the ability of the system to provide healthy and comfortable environments for building occupants, limiting the escape of refrigerant gases and ensuring the safety of equipment. The practices and procedures needed to achieve these aims should be applied more frequently than the assessment for energy efficiency described here. It is outside the scope of this document to describe such procedures in detail.

¹ All references to energy assessor in this guidance means accredited air conditioning energy assessor

When air conditioning inspections are required

All air conditioning systems with an effective rated output of more than 12kW must be regularly inspected by an energy assessor. The inspections must be no more than five years apart.

The regulations require the first inspection of the affected air conditioning systems to be carried out as follows:

- 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

Systems requiring an air conditioning inspection

Only air conditioning systems with an effective rated output of more than 12kW are affected by these regulations. This will include systems consisting of individual units which are less than 12kW but whose combined effective rated output is more than 12kW.

The effective rated output is the maximum calorific output in kW stated by the manufacturer of the system as deliverable during continuous operation while complying with the useful efficiency indicated by the manufacturer.

One or more air conditioning units within a building controlled by a single person are considered to comprise a single air conditioning system for the purposes of the regulations.

The person who controls the operation of the system is the person who controls the technical functioning of the system, not someone who can just adjust the temperature or whose only responsibility is to adjust the controls.

For the purposes of the regulations, a building is defined as 'a roofed construction having walls, for which energy is used to condition the indoor climate', and 'building unit' means a section, floor or apartment within a building which is designed or altered to be used separately.

A building designed or altered to be used separately is where the accommodation is made or adapted for separate occupation. This could be indicated by the accommodation having its own access, separate provision of heating and ventilation or shared heating and ventilation, but with the ability by the occupier to independently control those services. For a non-dwelling the part could be deemed to be separate even if some facilities (e.g. kitchen and toilet facilities) were shared.

An air conditioning system is defined as 'a combination of all components required to provide a form of air treatment in which the temperature is controlled, or can be lowered, and includes systems which combine such air treatment with the control of ventilation, humidity and air cleanliness'. This includes both fixed self contained systems, such as split systems and centralized systems. Mechanical ventilation systems that provide no

mechanical cooling themselves, but serve spaces that are cooled by other means are included. Any components contained in air conditioning systems that are only intended to provide heating are excluded. Air conditioning systems that provide refrigeration for process applications, such as server rooms, would also require an inspection if that part of the system allows an inspection to be carried out.

Fluorinated greenhouse gas inspections

Fluorinated greenhouse gases are among the Kyoto Protocol groups of gases for which the EU has committed itself to reduce emissions. European Community Regulation 842/2006 on certain fluorinated greenhouse gases (the F-Gas Regulation) is the legal instrument by which emissions reductions are to be delivered. The framework set out by the regulation and its supplementary European Community Regulations is underpinned in Great Britain by the Fluorinated Greenhouse Gases Regulations 2009 (SI 2009/261). Northern Ireland has similar regulations.

The aim of the fluorinated greenhouse gases regulatory framework is to minimise emissions mainly through leak prevention and repair. Specific provisions include leak checking obligations and the requirement that personnel and companies must be appropriately certificated if they undertake work on equipment, such as air conditioning. Full details of all of the obligations can be found in the information sheets provided by the Department for Environment, Food and Rural Affairs (Defra) business support unit. F-Gas support, a government sponsored unit, provides guidance to organisations and individuals affected by the framework. The information sheets and other F-Gas guidance can be found on the Defra website at:
www.defra.gov.uk/environment/quality/air/fgas

Chapter 2

What are air conditioning inspections?

What does an air conditioning inspection cover?

The inspection will examine the refrigeration and air moving equipment that are part of air conditioning systems and their controls. It will also examine any documentation that helps to understand the system, or indicates the extent to which the system has been maintained. The energy assessor is also required to estimate whether the system is suitably sized for the cooling loads in the treated spaces and to provide advice on ways in which the performance of the system might be improved.

Access will be required to equipment that may be located in plant rooms, or outside the building, including rooftops or other locations with limited provision for access. In all cases the building owner or manager must agree the means for safe access with the energy assessor. The energy assessor may need to be accompanied by the responsible building manager or maintenance agent at all times.

Some additional access is likely to be needed, for example to the inside of air handling units or ducts. This must be provided and supervised by the responsible building manager or maintenance agent with due regard to the safety of the energy assessor and to building occupants. This would require the system to be turned off to allow safe access, so arrangements may need to be made for this outside working hours to avoid disruption to business. Similarly, the energy assessor may need to access a sample of components, such as fan coil units, which may be hidden above suspended ceilings. Again, access should be provided by the building manager or maintenance agent.

The building owner or manager should not expect the air conditioning inspection to identify hazards or unsafe aspects of the installation, operation or maintenance of systems that should be identified and addressed by other arrangements, nor should they expect the energy assessor to fix any problem identified as part of the inspection.

If the building owner or manager requires this service then they must ensure that the need is clearly specified in the invitation to undertake the work, must assure themselves that the energy assessor is competent to undertake such additional work and must ensure that such aspects are clearly expressed in their contract or agreement with the energy assessor.

Air conditioning inspections carried out for the purposes of the Energy Performance of Buildings Regulations are not specifically designed to assess the risks to public health, although the energy assessor is required to inform the building owner or manager, of a potential issue. The aim of the air conditioning inspection is to address energy performance, but the energy assessor is also required to confirm that the relevant person has undertaken the necessary checks to ensure there is no Legionella risk as required by the Health (Legionella) Regulations 2001.

What can I expect in the report?

The purpose of the inspection report is to ensure that the building owner or manager is provided with information regarding the efficiency of the air conditioning systems that they control, together with advice on how to improve the energy efficiency of the system, to identify opportunities to save energy and to reduce operating costs.

The air conditioning inspection report will include at least the following details:

- the likely efficiency of the system and any suggestions made for improvement
- any faults identified during the inspection and suggested actions
- the adequacy of equipment maintenance and any suggestions for improvement
- the adequacy of the installed controls and control settings and any suggestions made for improvement.
- the current size of the installed system in relation to the cooling load any suggestions for improvement.
- summary of the findings and the key recommendations

There is no legal requirement to act on the recommendations. Acting on the advice and key recommendations in the inspection report and rectifying faults or making appropriate improvements, where this is attractive and cost effective, will contribute to the efficient running of air conditioning system, which will contribute to a reduction in carbon emissions and reduce the operating costs for the building occupants.

In some cases the costs of providing both heating and cooling may be reduced, in cases where these two systems are unnecessarily in use at the same time due to inappropriate controls or settings.

In many cases it will be clear that the building and systems are already well understood, documented and commissioned, with records available showing that the equipment has been regularly maintained to a good standard.

In such cases, the scope of an energy inspection could be reduced in extent and the inspection report brief, with the main content advising on opportunities for load reduction or on alternative solutions not previously considered. In other cases the energy assessor may find it necessary to suggest relatively basic maintenance, such as cleaning or repairs, to equipment whose efficiency has evidently suffered through neglect.

Cleaning operations or adjustments to controls do not form part of the inspection procedure, even where they might be carried out simply and with significant immediate effect to improve efficiency. The inspection is not intended, or expected, to involve any physical work of this nature as this could change the level of professional risk to the energy assessor. Authority to carry out such work would need to be given as part of a separate arrangement by the building owner or manager provided the energy assessor has the necessary competence to do this work. However, the building owner, manager or their representative may well be able to carry out some alterations themselves as the energy inspection is carried out, provided they agree with the assessor's observations.

Most reports are likely to contain advice with a combination of simple low or no cost measures and measures where some investment may be required either to apply the measures, or to investigate the potential to apply measures in more detail. The building

owner or manager should also be provided with, or informed of how to obtain, access to advice on the ongoing management of the systems.

What a report must contain

The inspection report must include an assessment of the efficiency of the system and its size compared to the cooling requirements of the building. It must also contain appropriate advice on possible improvements to the system.

The inspection report must include, but is not limited to, the following information:

- the address of the building in which the system is located
- the name of the accredited air conditioning energy assessor
- the name and address of the energy assessor's employer, or the name under which a self employed assessor trades and his address
- the date on which the inspection occurred
- the name of the government approved air conditioning accreditation scheme² of which the accredited air conditioning energy assessor is a member

All inspection reports produced on or after the 6 April 2012 must contain a valid report reference number. This number can only be generated once the report has been lodged on the central register.

² All references to accreditation scheme in this guidance means government approved air conditioning accreditation scheme

Chapter 3

Obtaining an air conditioning inspection

Responsibilities for ensuring inspections are done

The person who controls the operation of an air conditioning system must:

- ensure an inspection has been done in accordance with the requirements and timetable of the regulations
- keep the most recent inspection report provided by an energy assessor
- give any inspection report to any person taking over responsibilities with respect to the control of the air conditioning system

If the control of an air conditioning system is passed to another person and that person has not been given an inspection report by the previous operator of the system, the system must be inspected within three months of the new operator of the system taking over such control.

Control of air conditioning systems

The person who controls the operation of the system is the person who controls the technical functioning of the system, not someone who does no more than adjust the temperature or whose only responsibility is to adjust the controls.

The owner of the system will usually control the operation of the system even where day to day operation is contracted out to another person or organisation. Where a tenant takes total responsibility for a building and its services (e.g. full repairing and insuring lease), then the tenant will control the system.

Where the operation and management of the system is carried out on a day to day facilities management basis, or a servicing company provides routine servicing and maintenance, the contract may specify the facilities management or servicing company as the controller of the system with responsibility for ensuring that inspections are carried out. Depending on the terms of such a contract the facilities management or servicing company may accordingly become responsible under the regulations also. Even in such cases, however, the landlord or tenant retains a parallel duty to ensure the air conditioning inspection has been done.

Where air conditioning systems are installed locally by a tenant, the responsibility will lie with the tenant as they own the system.

Responsibilities for conducting air conditioning inspections

An energy inspection of an air conditioning system must be carried out by an accredited air conditioning energy assessor who is a current member of an accreditation scheme. The energy assessor must make a copy of the inspection report available to the client, or to the person who controls the operation of the system, as soon as practicable after the inspection date but only after the report is entered on the central register. Only

inspection reports which have been produced and lodged by accredited air conditioning energy assessors are valid reports.

In certain circumstances, data gatherers, working under the supervision of the energy assessor, enable the assessor to produce the reports for larger and sometimes more complex buildings and portfolios of buildings. Data gatherers must have a contractual relationship with an assessor, or the company employing the assessor, to provide professional assistance to gather the information needed to carry out an energy assessment of a building for the purpose of issuing an air conditioning inspection report. The assessor must be in the position to verify the data and supervise how and by whom it is collected. For the purposes of effective quality control and assurance, the energy assessor must not sanction any practice that is contrary to the quality of the air conditioning report. The Department has provided accreditation schemes with guidance on this issue.

Air conditioning energy assessor accreditation

Accreditation schemes are responsible for managing air conditioning energy assessors and for the quality of air conditioning inspections by ensuring their energy assessors are competent and possess the appropriate skills to conduct energy assessments. To become a member of an accreditation scheme, the energy assessor will need to:

- demonstrate their competence, either by having a recognised qualification from an awarding body or approved prior experience and learning equivalent to the national occupational standard requirements
- maintain appropriate professional indemnity cover
- update their skills and knowledge regularly
- participate in the accreditation schemes quality assurance procedures
- abide by accreditation scheme advice and guidance

A list of accreditation schemes can be found in Annex A.

Responsibilities with respect to other inspection or certification procedures

The air conditioning inspection report must be kept in a safe place so that it can be used to inform subsequent inspections. It is recommended that the inspection report should be kept in the building log book, together with ongoing maintenance and/or energy records.

More recent buildings may already be provided with a building log book satisfying the requirements of Part L of the Building Regulations to provide the building owner or manager with information about the building, its fixed services and their maintenance requirements. Building log book toolkits providing guidance and example templates for the preparation of the log book and on its subsequent use are available from a variety of sources. The building log book would be the most suitable place to keep records of the air conditioning inspection, together with other such inspection results e.g. fluorinated greenhouse gas inspections. Where a log book does not exist, it would be useful to begin a file to keep these records.

The information that it would be helpful to keep in the building log book, or in a separate file if a formal log book is not available, includes:

- the preparatory details for packaged cooling systems or for centralised cooling systems. Further information can be found in sections 2.2 and 2.3 of the Chartered Institution of Building Services Engineers TM44, *Inspection of air conditioning systems: a guide to EPBD compliance, guidance*.
- a copy of the full signed report of the air conditioning inspection produced by the energy assessor
- the recommendation report and any data used to prepare an EPC for the building (where one has been produced)
- the advisory report produced to accompany a display energy certificate (if one is required)
- the reports from any other regular inspections, such as inspections for refrigerant leakage, involving the building's air conditioning or heating systems

This information can then be provided for subsequent energy inspections and it may help to minimise the time needed to carry out the inspections.

Chapter 4

Applying the regulations in practice

Determining the size of your air conditioning system

The effective output of an individual air conditioning unit or system may be given on the rating plate attached to the unit. It may also be stated in the operating and maintenance manual or from the manufacturer's website. Alternatively, where the system is covered by a maintenance contract, the capacity should be known by the contractor and should be reported in the maintenance records they supply.

The guidelines below are an approximate indication of typical figures for installed capacity for various spaces and may help you determine whether your system is within the scope of the regulations. Cooling requirements depend on a wide range of circumstances, including the fabric, location and orientation of the building towards the sun, as well as the activities and the number of people in the building. Older systems are also likely to have higher rated outputs for a given floor area. Where more specific figures are needed these should be calculated taking account of the particular circumstances of the building and its use.

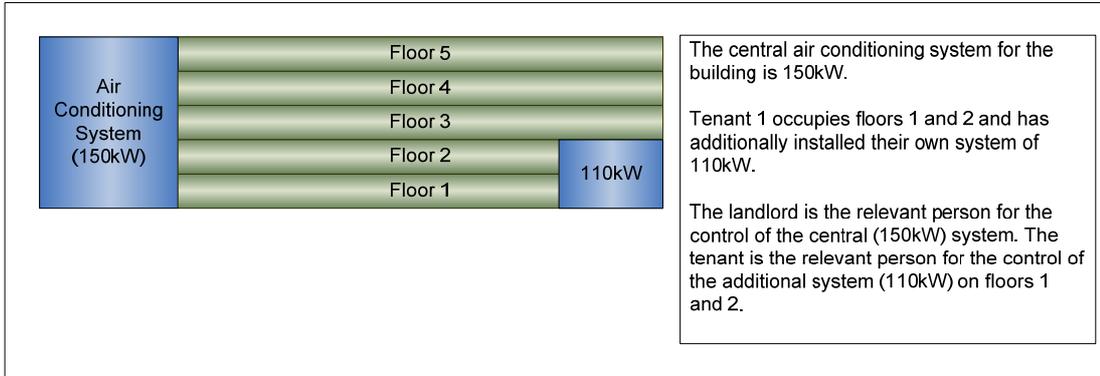
The guidelines below are for offices and shops. If it is not clear whether a building reaches the threshold the installed capacity of the system must be determined by appropriate inspection, calculation and enquiries. In other, more specialised, buildings, the wide range of factors which influence system capacity means that these systems should be determined by a suitably qualified person on a case by case basis if the information is not already available.

For larger systems, a central cooling system serving an office building of 2,000m² is likely to be 250kW rated output. Cooling systems serving meeting rooms which may be used by large numbers of people, such as council chambers, may exceed the 250kW threshold for lower floor areas.

Activity	Likely area requiring 12kW of cooling
Air conditioning general office spaces Assuming typical levels of electrical equipment and 8 – 10 m ² per person	200 m ²
Air conditioned offices with high levels of IT electrical equipment	100 m ²
Office, call centre or dealing floors with high occupation densities of 6 m ² or similar and high levels of IT, communication or lighting loads may well fall within the scope at smaller areas.	
Retail spaces with average levels of display lighting	250 m ²
Retail spaces with high levels of display lighting and illuminated cabinets	150 m ²

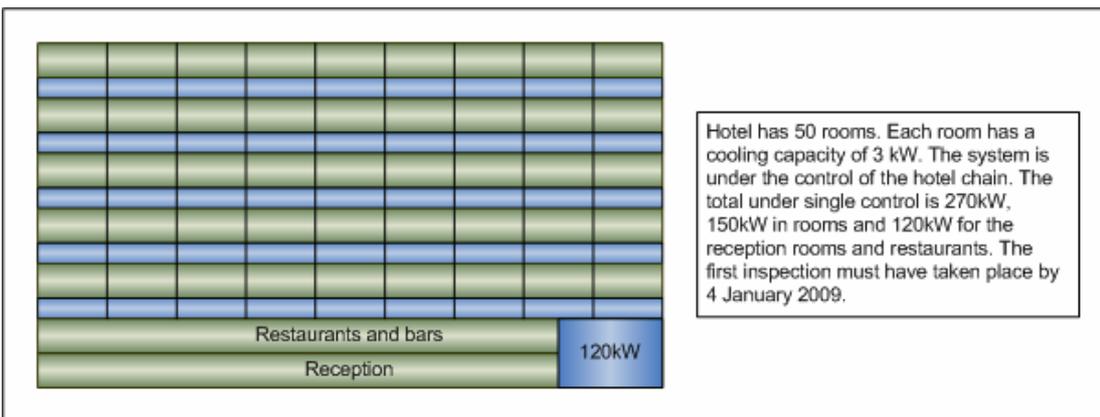
Control and contractual arrangements for air conditioning units and the requirements for air conditioning inspections

Control of equipment



The landlord is responsible for ensuring there is an inspection report for the central system and the tenant is responsible for ensuring there is an inspection report for the equipment they have installed. In this example each party controls less than 250kW and the first inspection must have happened by 4 January 2011.

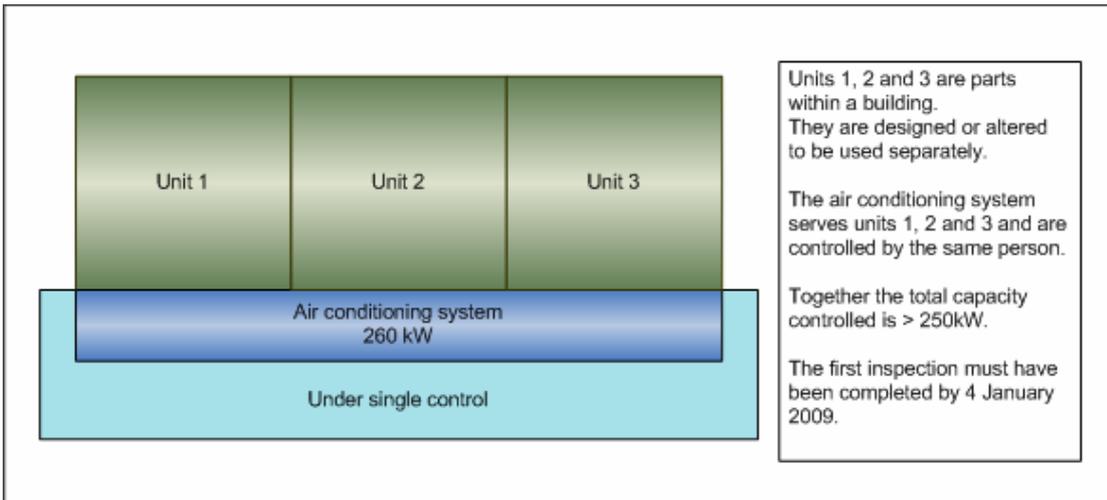
Multiple small systems in a building



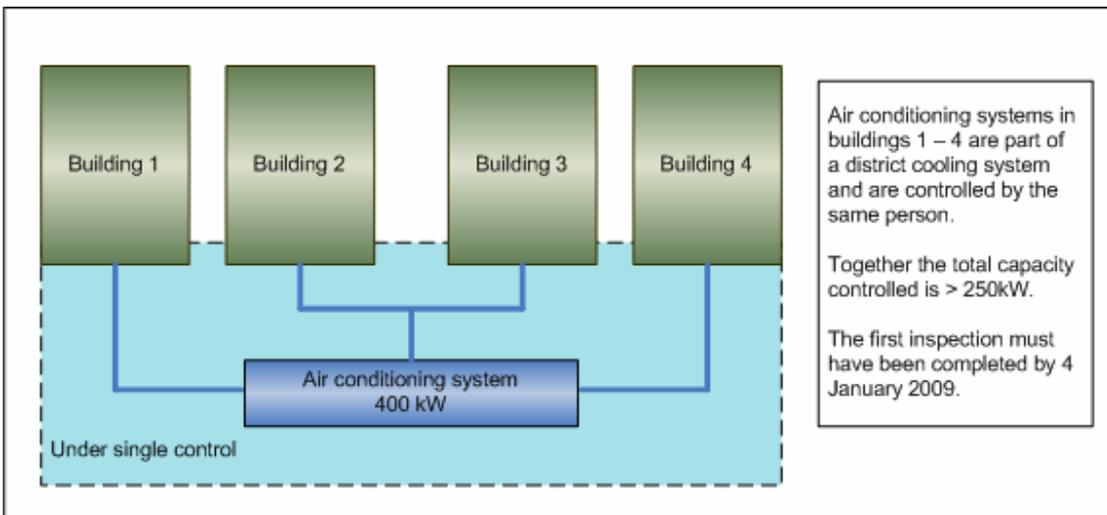
Where a system consists of a number of small units with an effective rated output of less than 12kW, but the total number of units within the building means that the combined cooling capacity is greater than 12kW then an air conditioning inspection is required.

Control of air conditioning units in buildings or parts of buildings and the requirement for air conditioning inspections

Equipment under single control in parts of a building



Equipment under single control in separate buildings

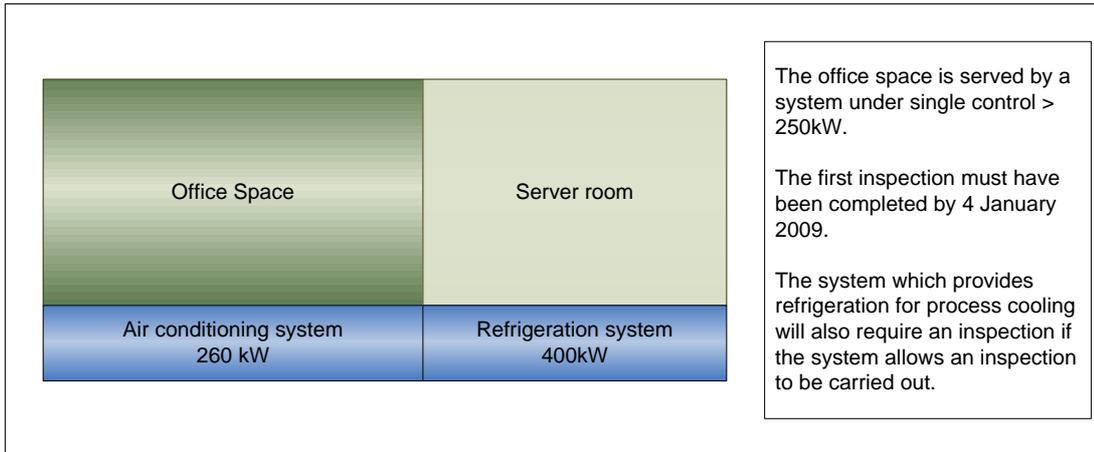


Where an individual building benefits from the refrigeration plant of an air conditioning system, under single control, the building owner or manager are responsible for obtaining an air conditioning inspection report if the local cooling plant in the building is greater than 12kW.

The buildings are not covered by the air conditioning plant under single control, unless the systems in these buildings are a permanent part of the air conditioning system.

Cooling capacity and process applications

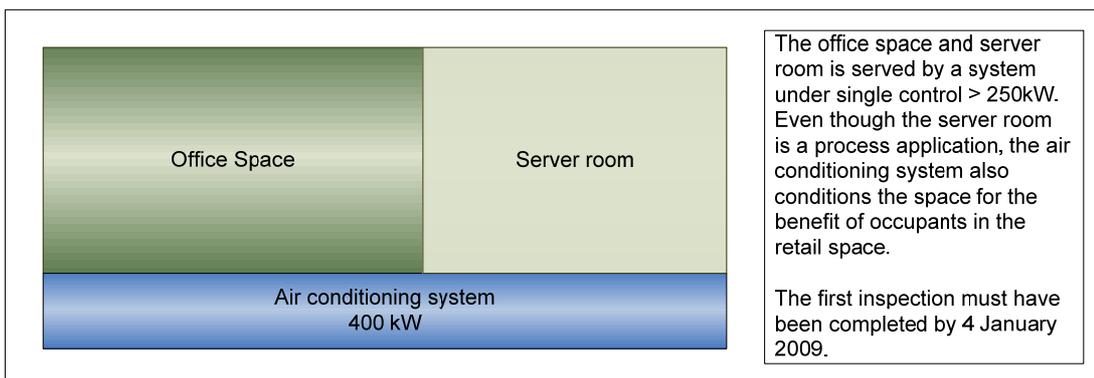
Refrigeration provided solely for process applications



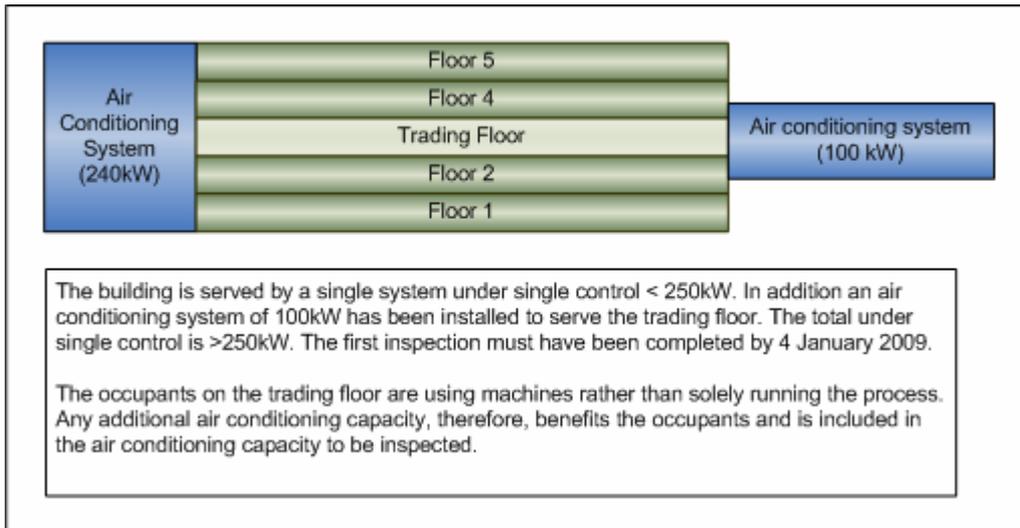
The definition of air conditioning system means a combination of all the components required to provide a form of air treatment in which the temperature is controlled or can be lowered, and includes systems which combine such air treatment with the control of ventilation, humidity and air cleanliness. Although a system may provide process cooling at a specified level, or provide conditioning to spaces for a specific purpose, the Energy Performance of Buildings Directive is designed to manage and reduce energy consumption. Air conditioning systems that provide refrigeration for process applications, such as server rooms, would also require an inspection if that part of the system allows an inspection to be carried out.

Although process cooling may provide cooling at a specified level to maintain the space for a specific purpose the requirement of the energy performance of buildings directive is to understand, manage and reduce energy consumption. There is a benefit to doing an inspection for all units even those providing process cooling.

Cooling capacity and refrigeration combined for process applications and comfort



Cooling capacity, where occupants benefit from additional cooling capacity



Chapter 5

Assessing the energy performance of an air conditioning system

The inspection process

The air conditioning inspection process will examine the refrigeration equipment and air moving systems that are part of an air conditioning system, including their controls. Any documentation which helps to understand the system, or indicates the extent, to which the system has been maintained, will also be examined. The energy assessor is also required to estimate whether the system is suitably sized for the cooling loads in the treated spaces, and to provide advice on ways in which improvement might be made to the energy efficiency of the system.

Access will be required to equipment that may be located in plant rooms, or outside the building including on rooftops or in other positions with limited provision for access. In all cases the building owner or manager should agree the means for safe access in conjunction with the inspector. The inspector may need to be accompanied by the responsible building manager or maintenance agent at all times.

The building owner or manager should not expect the inspector to routinely alert them to all hazards or aspects of the installation, operation or maintenance of systems that are unsafe. If the owner or manager requires this service then they should ensure that the need is clearly specified in their invitation to tender for the work and assure themselves that the inspector is competent to undertake such additional inspections.

The purpose of the inspection and resulting report are to ensure that the building owner or manager are provided with basic information that gives an indication of the likely efficiency of the air conditioning systems, together with some initial advice on how energy efficiency or effectiveness might be improved. The report should be kept in a safe place and can be used to inform subsequent inspections.

There is no statutory requirement to act on the recommendations in the air conditioning inspection report; however, the inspection and report will only benefit the building owner or manager if the findings are acted upon.

The scope of an inspection

Refrigeration

Refrigeration equipment and its associated heat exchange systems are checked briefly. The inspection looks primarily for indicators of damage or lack of maintenance that would significantly reduce their efficiency from their “as new” state and does not provide high level detail.

Effective heat rejection is necessary to maintain the efficiency of the refrigeration system. If outdoor heat rejection equipment is damaged, or its access to adequate flow of air is otherwise reduced by blockage due to dirt or debris, its effectiveness in rejecting heat is reduced and its temperature will be unnecessarily high. This has the effect of reducing refrigeration efficiency, and reducing the cooling capacity of the system. It may

cause the refrigeration equipment to turn off and on under the action of its own high temperature or pressure cut out, often without satisfying the building cooling load.

Similarly, effective indoor heat exchange is necessary to maintain the efficiency of the refrigeration system. If this heat exchange equipment is damaged, or its access to adequate airflow is otherwise reduced, its effectiveness in transferring heat to the refrigeration system is reduced and its temperature will be unnecessarily low. This consequent reduced temperature at the indoor unit increases the temperature difference that the refrigeration system has to maintain, which has the effect of reducing the cooling capacity of the system. It may cause the refrigeration equipment to turn off and on under the action of its low temperature or pressure cut-out, often without satisfying the building cooling load.

Air moving systems

Where installed as part of the system to provide cooling, air moving systems is an important factor in the assessment. 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 itself, and there may be a greater potential for improvement.

The effectiveness of how air is delivered can play a part in determining the overall efficiency of the air conditioning system. Where delivery systems are ineffective, plant that is otherwise efficient may operate for longer periods than necessary. However, the reverse may also be true, in that some delivery systems may interact unfavourably with occupants or control sensors, leading to reduced operation and consequent lack of adequate cooling. Improving some systems, even at good efficiency, could increase annual energy use.

Important factors to observe are the condition of, damage to, or blockage of filters and heat exchangers, and the fan type and method of control. Ventilation air delivery systems need free access to outdoor air. Where grilles, screens or pre-filters are obscured by damage or debris, additional energy will be needed to overcome the extra resistance caused by the restriction to flow, or the system may under perform in other ways due to reduced air flow rates.

Where systems provide cooled air, admitting air from locations where the local air temperature may be higher than ambient will add to the energy required to achieve cooling to the required temperature. Such locations might include positions near busy roads, in car parks, or where exhaust air from the building could be drawn into the air inlet.

Controls

System controls are assessed in more detail. There could be considerable scope to identify inefficiency due to inappropriate control methods, incorrect control settings and poorly located sensors, and there could be much potential for improvement at low cost. Although discovered faults might be as simple as time switches or cooling or heating thermostats being incorrectly set, the energy assessor would not reset them but will report to the building owner or manager.

An investigation of the realised effectiveness of system controls over any significant period of operation would be outside the scope of a simple inspection regime, but a series of physical observations of their layout and operation could give an indication of potential inefficiency, ineffectiveness or misuse.

It might not be possible to investigate some aspects of the layout and operation of controls, particularly in more complex systems. However, sufficient of the following important issues should be accessible to a brief examination:

- the set temperatures to which the treated spaces are to be conditioned
- the time periods during which they are to be conditioned
- the appropriateness of the control zones, control sensors and their locations
- the potential for cooling to be operated at the same time as heating
- the method of refrigeration capacity control
- the method of air flow rate control

Where systems are controlled by a building management system, it may be necessary for the building manager to arrange for relevant aspects of this information to be extracted from the building management system prior to the inspection.

Documentation

The quality, extent and accessibility of relevant information provided before an air conditioning energy assessor visits an installation has important consequences for the effectiveness and may increase the cost of the inspection. Experience has shown this information is often missed and energy assessors have to spend time trying to locate relevant documentation. This is not effective use of the assessor's time on site and without the information it is difficult to properly estimate the cost of an inspection.

The air conditioning energy assessor will ask the building owner or manager to provide a list of relevant records, sight of the principle ones before visiting the site and for site records to be made readily available. Any available documentation for the air conditioning system must be provided prior to the inspection. This could include, for example, catalogue information and details provided during installation, commissioning and maintenance of the system. The quality and accessibility of relevant information provided before an inspection takes place may reduce the time taken to complete the inspection and may reduce the cost of an inspection.

Maintenance

Evidence of any existing planned maintenance schedule or of other recent maintenance activities will be sought. 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 energy inspection and provision of advice may be reduced in scale or omitted.

Advice on improvement options

Three levels of energy efficiency are likely to be found when systems are assessed:

- 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

Correspondingly to these, 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 will mostly provide a combination of aspects of a) and b) only. However, best practice aspects may be provided on a generalised basis by providing reference to other published guidance sources.

A further category of advice which may also be given concerns some systems which may be older and operate with refrigerants which are being phased out, or having their use and supply restricted, under regulations relating to ozone depleting substances. In these cases the assessor may give advice on possible options for future system adaptation to use other refrigerants, or complete replacement. This advice will need to be supplemented by a more detailed assessment when modifications or replacement are to be undertaken.

More detailed information about the inspection process and good practice inspection and maintenance guidance can be found in the Chartered Institution of Building Services Engineers TM44 guidance: *Inspection of air conditioning systems - a guide to Energy Performance of Buildings Directive compliance*, or similar equivalent guidance.

Chapter 6

Consumer protection and enforcement

Checking the authenticity of an air conditioning inspection report or an energy assessor

An air conditioning report must be produced by an accredited air conditioning energy assessor. The energy assessor must make a copy of the inspection report available to the client, or to the person who controls the operation of the system, as soon as practicable after the inspection date but only after the report has been lodged on the central register. The energy assessor may also make a copy of the report available to the accreditation scheme of which they are a member.

All air conditioning energy assessors must be a member of an accreditation scheme. To check that an energy assessor is a member of an accreditation scheme a search facility is available on the central register website (www.ndepcregister.com). If a person does not have access to the internet they can ask the energy assessor for the name of the accreditation scheme of which they are a member and for their membership number. This information will enable the building owner or manager to confirm with the accreditation scheme that the energy assessor is accredited and fit and proper to practice as an energy assessor.

From 6 April 2012, it became a statutory requirement for the energy assessor to lodge all air conditioning inspection reports on the central non-domestic register. When the report is lodged it will be allocated a unique report reference number. Only air conditioning reports which were produced and lodged on the central register from this date are valid reports. Air conditioning inspection reports produced before 6 April 2012 may have been lodged on the central register on a voluntary basis. However, there is no statutory requirement for a valid air conditioning inspection report, which was produced before this date to be lodged on the central register.

Statutory lodgement has been introduced to protect the consumer and to ensure that only accredited air conditioning assessors undertake inspections and prepare subsequent reports. Statutory lodgement will enable the building owner or manager to verify the identity of the air conditioning assessor and for accreditation schemes to monitor the standards of the reports which have been produced. Statutory lodgement will also enable lost and mislaid reports to be replaced easily at no additional cost to the building owner or manager.

The building owner or manager will be able to check the validity of the report by accessing an on line copy of the inspection report and downloading a copy from the central register web site (www.ndepcregister.com) using the report reference number.

A copy of the inspection report can also be downloaded from the central register using the building address from the register website, if the report reference number has been mislaid, unless the building owner has 'opted out' of making the report available in this way.

Complaints

Complaints about the availability or quality of an air conditioning inspection report, about an energy assessor who produced the report or the energy assessment should be directed to the following:

Failure to secure an air conditioning inspection report. For complaints regarding the availability of an air conditioning inspection report, you should contact the building occupier or an authorised officer of the local weights and measures authority (usually a trading standards officer). The authorised officers have the power to act on your complaint.

Quality or accuracy of the air conditioning inspection report and the recommendations. For complaints regarding the quality and accuracy of the air conditioning inspection report, in the first instance, you should contact the energy assessor who produced the report. If the assessor is no longer practising, or you are not satisfied with the response you have received, you should contact the accreditation scheme of the energy assessor who produced the report. Contact details of both the assessor and accreditation scheme can be found on the report.

Complaints regarding an energy assessor or any aspects of the assessment process. For complaints regarding the energy assessor or the assessment process you should contact, in the first instance, the energy assessor who produced the report. If the assessor is no longer practising, or you are not satisfied with the response you have received, you should contact the accreditation scheme of the energy assessor who produced the inspection report. Contact details of both the assessor and accreditation scheme can be found on the report.

The accreditation scheme must investigate the complaint and where necessary, provide the appropriate redress. Where it is found that the information on the air conditioning inspection report is incorrect a new inspection report must be issued and the information on the central register amended. This procedure should be followed at no cost to the complainant. In the event that the complaint cannot be satisfactorily resolved, the accreditation scheme will refer the matter to an independent third party for adjudication.

If the building owner or manager suspects that the air conditioning inspection report has been produced fraudulently, then the matter should be referred to the police.

Penalties for not having an air conditioning inspection report

Local weights and measures authorities (usually through their trading standards officers) are responsible for enforcing the requirements relating to air conditioning inspection reports. Failure to commission, keep, or provide an air conditioning inspection report when required by the regulations means that a penalty charge notice may be issued to those in breach of the requirements. Trading standards officers may act on complaints or undertake investigations. They may request that a copy of the air conditioning inspection report is provided to them. If requested, the building owner or manager must provide this information within seven days of the request or be liable to a penalty charge notice for failing to do so. A copy of an air conditioning inspection report can be requested by an enforcement officer at any time up to six months after the last day for compliance with the obligation to make it available.

The penalty for failing to having an air conditioning inspection report is fixed at £300.

Tenants of a building, where a central air conditioning system is under the control of the building owner or manager would not be liable for a penalty charge for any breach of the duties.

A further penalty can be issued for failure to provide a copy of the air conditioning inspection report when requested to an officer of an enforcement authority within seven days. This is fixed at £200.

If a penalty charge notice is issued but that person believes it should not have been issued they can request a review. If that person is not satisfied with the outcome of the review they may appeal to the county court within 28 days after they are given notice confirming the penalty charge notice by the local weights and measures authority.

If the building owner or manager wants to sell or let a building with an air conditioning system, which should have been inspected, then it is very likely that the legal advisors to the prospective tenant or buyer will require sight of the report during the legal processes prior to exchange of contracts. Failure to have a report, where one is required, may have a negative impact on the transaction process.

Annex A

Useful information

List of government approved air conditioning energy assessor accreditation schemes

Building Engineering Services Competence Assessment (BESCA)	www.besca.org.uk
Building Research Establishment (BRE)	www.bre.co.uk/accreditation
Chartered Institute of Building Services Engineers (CIBSE)	www.cibse.org
ECMK Ltd	www.ecmk.co.uk
Heating and Ventilation Certificated Associates (HVCA)	www.hvca-ltd.co.uk
National Energy Services (NES)	www.nesltd.co.uk
Northgate	www.northgate-dea.com
Quidos	www.quidos.co.uk
Sterling Accreditation	www.sterlingaccreditation.com
Stroma	www.stroma.com

