



AIR CONDITIONING POLICY

Policy Title

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Section 1 – Policy Intentions

1.1 - It is the policy of the Police and Crime Commissioner and Chief Constable for Gloucestershire to avoid the routine installation of air conditioning or comfort cooling unless there is a technical reason, e.g. temperature control of computer server rooms, or where another operational justification can be made.

1.2 - We have a duty of care under the Health & Safety at Work Act 1974 for the welfare of our employees. Installation and Maintenance of Air Conditioning Systems is the responsibility of Estates and Support Servicest. Our Operational Estate varies in the mix of buildings within it and therefore careful consideration of installation is required, due to the structural make up of each building and the complexities of installing such systems to some particularly old buildings.

This Policy is designed to create a balance between providing comfortable working conditions and being reducing the Carbon Footprint of the Constabulary/OPCC.

Section 1 – Policy wording

The Estate Strategy will need to have a clear approach to new building acquisitions, new builds and existing buildings in order to avoid costly installation, maintenance and high energy bills, and resulting harmful effects on the environment.

Any requested, whether for technical reasons or not shall be approved by Estates and Support Services Team.

Any existing units used for comfort cooling that require repair or replacement will also be assessed under this policy.

New Building Acquisitions

Every attempt will be made by the Constabulary/OPCC to acquire leased or purchased buildings that have little or no need for air conditioning in the working area. Where buildings do have systems in place or systems need to be installed the most cost effective and environmentally sustainable system will be procured.

New Builds

All new buildings, unless there are overriding factors, will be designed such that there is little or no need for air conditioning of the working area. Fresh air systems should be considered as an alternative where possible.

Existing Buildings

In this country the climate is temperate and uncomfortable for only short periods of two to three weeks a year.



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Where possible the Estates and Support Services team will try to avoid the installation of air conditioning of the working area unless the criteria, as stated below, justify its need.

Any installation is to be subject to completion of a minor works form request signed off by the Head of Estates and Support Services. The form is on the Estate Management Intranet page and once completed must be E mailed to Estates.SupportServices@gloucestershire.police.uk.

Section 2 – Procedural guides

1. Comfort Cooling

Comfort cooling is generally installed where the environment is not conducive to comfortable working conditions e.g. a sealed or partially sealed atmosphere where air changes are not sufficient to maintain a reasonable temperature. E.G. control rooms

There are basically two types of systems that can be used:

- a. Fixed
- b. Portable

Both consist of a split-cooling coil, mounted inside the office, either on the wall or in the ceiling. There is also an associated compressor unit which is sited outside, either on the wall or on a purpose made concrete base. The internal and external units are connected by liquid, gas pipes and electric cables. This form of cooling is basic and only offers temperature control without controlling other parameters (e.g. humidity) except filtration. There is no fresh air that would have to be introduced separately, as opening the windows could overload the cooling unit.

Fixed System

The cost of a fixed system will again depend upon its size and complexity. Liquid and gas lines will have to be run in trunking to make the finished work robust.

Portable System

Such systems have been used by local managers to quickly satisfy staff complaints about being too warm. The electrical load is fairly high and can overload the ring circuit if not checked for capacity before installation. With certain systems there are also legionellosis implications and robust checks would be required,

Portable systems often look unsightly internally and externally.

2. Air Conditioning

Air conditioning is normally installed where there is a technical requirement for cooling such as IT equipment in server rooms

Full air conditioning is designed to control all parameters to within specified limits involved in creating the feeling of a comfortable working environment as follows:

- a. Air filtration.
- b. Heated air entering the controlled space.
- c. Cooled air entering the controlled space.
- d. Fresh air entering the controlled space.
- e. Humidification and dehumidification.



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Note: It is possible to install partial air conditioning by omitting the control of humidity.

This type of system would only normally be installed in computer suites, control rooms, ICT electronic equipment rooms, and areas used for special processes like laboratory procedures.

Health and Safety Requirements

The following parameters are applicable in accordance with the Health and Safety at Work Act Regulations 1974:

- ◆ Minimum temperature: 16°C for sedentary work.
- ◆ Minimum temperature: 13°C for workshops and physically active areas.

Upper limit no figure stated.

Humidity no figure stated.

Fresh air rates 8 litres per person, per second.

Health and Safety Executive's Thermal Comfort in the Workplace - Guidance for Employers:

- ◆ Workplace must be adequately ventilated.
- ◆ Temperature during working hours must be reasonable¹.
- ◆ Any method of cooling used should not produce dangerous or offensive fumes, gas or vapour.

Note: This would include Legionella, or the build up of other bacteria within the Air Conditioning System causing illness or Sick Building Syndrome.

- ◆ Thermometers should be provided in the workplace, to measure temperatures.

¹ In the context of this document, the word 'reasonable' indicates a temperature between 16 to 30°C

The Chartered Institute of Building Services Engineers (CIBSE), has issued guidelines that the following parameters should be followed when designing Air Conditioning Systems:

<u>Temperature:</u>	Summer: 23°C Winter: 20-23°C
<u>Relative Humidity:</u>	Summer: 50% with an acceptable range of 40 to 70%. Winter: 50% with an acceptable range of 40 to 70%.
<u>Air Movement:</u>	8 Litres minimum per person per second of fresh air, for office type work. An open window is deemed acceptable. 10 Litres per person, per second, or more depending upon the degree of work and processes that may pollute the air.

Adverse effects of air conditioning



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The installation of air conditioning or comfort cooling may solve the problem of feeling warm, but may also create other problems including creating draughts, concerns about unclean filtration systems or physical systems which may or not be directly attributable to cooling systems :

Methods of removing the build-up of heat without installing Air Conditioning

There are various more cost effective alternatives available to remove and or prevent the build-up of heat within offices where the average temperature does not exceed 30°C (86°F).

These methods should be investigated and tried with the advice of the Estates and Support Services Team.

1. Solar Film

Solar Film placed on window glass can reduce the sun's radiant heat through the window by between 60 and 80%. This is a simple and relatively easy means of reducing the effect of solar gain.

2. Natural Ventilation

This is achieved by opening windows to allow the wind pressure to remove the build-up of heat and provide the fresh air required by the Health and Safety Regulations. Night purging is also possible to install in new builds

3. Fan assisted Air circulation

This is the cheapest solution but the least effective in terms of reducing temperature but more acceptable environmentally.

4. Forced Air Ventilation

This is generally a ducted system where air is forced into the room under the pressure of an electric fan through the ductwork, into the various rooms via ceiling or wall grilles, which diffuse the air. There may also be an extract fan forcing the air out of the room at about the same quantities as that entering. This type of system is called a Balanced System. Such systems will normally have an air filter and a heating coil to temper the air entering during the winter months. This system can be used all year round to provide fresh air and help to remove any build up of warm air.

This type of system could be used where there are windows opening onto a busy road, which gives rise to noise, dust and traffic fumes.

The cost of installing such systems can vary with size and complexity, and can be comparable in price to that of comfort cooling, but they are much less expensive to run and maintain.

It is recommended that before requesting the installation of comfort cooling, the above methods should be tried first.

If temperatures remain above the limits as stated then The Estates and Support Services Team will install a recording temperature logger to establish trends. This data will be used to support the next most appropriate course of action.

Whole Life Costings

Prior to requesting the installation of air conditioning/comfort cooling the whole life costing of the equipment must be taken into account

- ◆ Purchase price
- ◆ Installation and servicing



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- ◆ Consumables
- ◆ Repairs
- ◆ Disposal and replacement
- ◆ Energy cost

Processes or conditions where Air Conditioning is considered best practise;

- ◆ Scenes of Crime Laboratories where chemical processes or Electronic Equipment require it to enable correct operation.
- ◆ IT Equipment Rooms where the operating temperature tolerance range is likely to be exceeded.
- ◆ Enclosed or sealed rooms like control rooms, where for security reasons the windows are unable to open.
- ◆ Offices: when the **average temperature** during the working hours of the day, for 14 consecutive days, prove to be above 30°C (86°F).
- ◆ Computer Suites.
- ◆ Temporary air cooling may be installed if there is an expectant mother who is being affected by the heat of the office, and where a suitable Risk Assessment calls for such a measure to be taken for the duration of the pregnancy or summer, which ever is shorter.
- ◆ Where a specific Risk Assessment calls for Air Cooling or Conditioning for medical or other operational reasons.

Section 3 - Relevant Legislation: *(Human rights/diversity/Health & Safety/any other specifics)*

The following Acts and Regulations place on the Constabulary specific responsibilities in defined areas.

- ◆ **The Building Regulations**

The technical requirements of these Regulations apply to Police Buildings (ref. Police Buildings Design Guide Section B2 1.0.1.). These set minimum standards for the insulation of buildings, heating and lighting controls and ventilation and are thus a starting point for the construction of energy-efficient buildings.

- ◆ **The Energy Performance of Buildings Regulations 2017**
- ◆ **Police Building Design Guide, published by Home Office**
- ◆ **Energy Acts**
- ◆ **Climate Change Act 2008**
- ◆ **Carbon reduction energy efficiency scheme**
- ◆ **Gloucestershire Constabulary Carbon Management Plan**

Section 4 - Related References:

- ◆ **Gloucestershire Constabulary Energy Policy.**
- ◆ **Police Buildings Design Guide, Home Office,**

Section 5 - Identification, Monitoring and Review

This policy will be reviewed annually by the Head of Estates and Support Services,

Policy should enable consistent and effective decision making. Where operational or managerial circumstances require any decision making that would adversely affect adherence to the policy or procedure, in line with the 'Statement of Intent' of the constabulary and the police service 'Code of Ethics', if an officer/



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police staff member believes that they need to make a decision that steps outside of policy and procedure they should do so, provided that:

- the officer/ police staff member raises the matter at the earliest opportunity (and ideally before any such decision is made) with their line manager declaring their intended (or actual) course of action if notification is made after the decision is taken,
- produces, in a timely manner, a signed and dated written explanation of why it is/ was deemed necessary to step outside of policy and procedure, and
- maintain an adequate record of this written rationale for audit purposes appropriate to the circumstances/ contravention

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