

# Space Heating & Cooling Policy

## Purpose

This policy defines the University's approach to space heating and cooling. The University aims to ensure buildings are heated or cooled to within a designated internal temperature range in order to meet reasonable thermal comfort standards, minimise CO<sub>2</sub> emissions and reduce energy expenditure.

## Scope

This policy covers the portfolio of academic and support buildings on all the University's UK campuses. It excludes premises solely occupied by commercial tenants and/or subsidiary companies.

## Definitions

### Heating Season:

The 'core' heating season is typically October to April but varies each year in line with prevailing outside air temperatures. During the 'shoulder' months, typically September and May, space heating may be enabled during working hours when the prevailing weather conditions require it in order to achieve 19°C. Outside of these periods, heating systems will not normally operate, both to conserve energy and to allow major maintenance work and statutory inspections to be carried out.

### Cooling Season:

The 'core' cooling season is defined as the period between 1 June and 31 August. During the 'shoulder' months of May and September cooling will be enabled when the prevailing weather conditions require in order to achieve 25/27°C during working hours. Outside these periods cooling systems will not normally operate, both to conserve energy and to allow major maintenance work and statutory inspections to be carried out. Critical cooling for IT machine rooms, research facilities etc. will operate throughout the year.

### Working Hours:

Defined as Monday to Friday, 08:00 – 18:00 for teaching spaces and 08:00 – 17:00 for non-teaching spaces (unless otherwise agreed with building support, Heads of Department, School or Function and Estates), excluding bank holidays and University closure days. Library and sports facility working hours will cover normal opening hours.

### Building Management System (BMS):

The centralised control system used to manage the operation and maintenance of the University's Heating, Ventilation and Air Conditioning (HVAC) systems, including operational times and temperature set points.

### Optimum Start:

This BMS function is used to control the start time of heating systems according to actual demand, rather than on a fixed time schedule. A time is set by which the building is required to be at desired temperature for occupancy, and the Optimum Start assesses what time the heating system must start running to achieve temperature by that time, according to the prevailing weather and temperature conditions. The system has a building-specific self-learning algorithm to accurately predict what time it must start to achieve temperature, optimising both energy conservation and comfort.

### **Optimum Stop:**

This BMS function operates in a similar manner to the Optimum Start, assessing when building heating can be turned off at the end of the day without significantly compromising the thermal comfort of occupants.

### **Legal Requirements**

The Workplace (Health, Safety and Welfare) Regulations 1992 require minimum temperatures to be maintained. The associated Approved Code of Practice proposes 16°C for sedentary work and 13°C for manual work.

### **Heating Policy**

The University aims to achieve a temperature setting during the heating season in working hours of 19°C. Outside these periods the heating will be 'set back' to lower temperatures appropriate to the background conditions, level of use and to ensure protection of property.

The Policy aims to strike an appropriate balance between the thermal comfort of building occupants and energy use.

Where installed, heating will normally be controlled by the central BMS. Use of BMS technology helps us to achieve this balance through the use of the Optimum Start and Optimum Stop functions.

During the Heating Season, the heating will operate during Working Hours with Optimum Start/Stop. In order to conserve energy, the heating will switch off between 13:00 – 14:00 each day using Optimum Start/ Stop functionality. Optimum Stop will be set to have a maximum temperature drop of 1 degree during Working Hours, after which the heating will turn back on.

An exception applies for single glazed buildings, which will not switch off over lunchtime due to the increased likelihood of drafts relative to other buildings.

Outside the heating season systems are normally switched off to allow time and access for routine maintenance and statutory inspection.

Outside of normal working hours, heating (and cooling where installed) can normally be provided if this has been previously arranged with Estates. A charge may be levied for heating or cooling that is operated outside working hours.

### **Supplementary Heating**

In general, the University does not support the use of supplementary electric heaters. This is because the University's heating systems are generally controlled via the BMS and introducing other heating sources can interfere with both the thermal comfort of the wider building, and the efficiency of the main fixed heating systems. There are some exceptions as outlined below, which are subject to approval by Estates on a case-by-case basis.

During the heating season, where internal temperatures fall below 19 °C for sustained periods during working hours due to an issue with the main heating system, and the problem cannot be quickly resolved, a request can be made for the loan of oil-filled radiators for supplementary heating.

Where there is a need to work regularly out of hours in a small section of a building, it may be more energy and cost efficient for the temporary use of oil-filled radiators to heat that small space, rather than to turn on the main heating system. This would need to be reviewed on a case-by-case basis according to the zoning of the building.

Where there are specific health-related heating requirements of a building occupant, these will need to be reviewed by Occupational Health and Estates in conjunction with one another to find the most appropriate solution for the individual, and building.

Requests for additional electric heating for health or other operational reasons must be approved by both a Head of Department, School or Function and the Director of Estates. The electrical system in each building will limit how many supplemental heaters can be authorised.

Where supplementary heating is approved, only Estates-supplied oil-filled radiators can be used. Building occupants are not permitted to use their own heaters. If non-approved heaters are found, these may be removed, as they potentially constitute a fire and/or electrical safety risk.

Supplementary electric heaters must not be left on if the room is left unoccupied for more than 15 minutes. If un-monitored heaters are found, these may be removed.

### **Cooling Policy**

Mechanical cooling is not routinely installed in University buildings. Cooling is installed only where there is a demonstrable operational or business need. (e.g. Home Office Licence requirements)

Building occupants are permitted to use plug in fans, but are not permitted to use their own portable air conditioning. Estates do not provide portable air conditioning units.

Where installed, mechanical cooling will normally be controlled by the central Building Management System.

Where it is installed, the cooling temperature set point during working hours in the cooling season is 27°C where there are openable windows, and 25°C where there are none.

### **Expectation of Building Users**

Take reasonable measures to retain heat within buildings in cold weather by closing windows and doors when appropriate.

Ensure locally controlled heating and cooling is switched off when not needed or when leaving a room.

Ensure radiators and grilles are not blocked with furniture, clothing or other items which might prevent the heating or cooling system from operating effectively.

Wear suitable clothing in hot or cold weather.

Report heating or cooling problems to the Estates Help Desk in a timely manner.

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