

## Facilities Management Department Thermal Comfort Procedure



### Document Control

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# FMD Thermal Comfort Procedure

## 1 Introduction

Glasgow Caledonian University is committed to ensuring the safety, health and wellbeing of all stakeholders affected by the activities of the University. This includes staff, students, visitors, contractors and all other persons on University premises. The University shall ensure that buildings within the University portfolio are heated to comply with the Workplace (Health, Safety and Welfare) Regulations 1992. The management of heating within the University shall take into consideration the University's Environmental Policy which aims to use resources more efficiently.

## 2 Scope

FMD acknowledge the importance of providing a comfortable working environment within the University campus. A centralised heating system is in place within University buildings in order to monitor and control the heating use and contribute to reducing the carbon footprint as per the University Carbon Management Plan. FMD are responsible for managing this system which includes the times set for the heating system to operate and the temperatures it is set at. These decisions are made to balance the comfort of the building users with the energy consumption.

## 3 Thermal Comfort

The thermal comfort of building users can be described as a person's state of mind in terms of whether they feel too hot or too cold. The assessment of this must take into consideration a range of environmental and personal factors other than just the temperature of a room. The six key factors that must be considered are the air temperature, radiant temperature, air velocity, humidity, clothing insulation and metabolic heat. These all contribute to the thermal comfort of the individual therefore must be assessed when considering their impact on a room. These are defined as:

Air temperature – The temperature of air surrounding the body

Radiant temperature – The heat radiated from an object such as the sun, ovens etc.

Air velocity – The speed of air moving across the person that may be considered a draught to some

Humidity – The amount of water in the air when water is heated and evaporates

Clothing insulation – The affect that clothing has on the temperature of the person

Metabolic heat – The heat produced from our body when carrying out physical activities

Consideration of each of the factors can be complex as personal factors will vary between each person and there may be differences in comfort arrangements between each person. This makes satisfying all persons in an office difficult and as such the HSE considers reasonable comfort to be if a minimum of 80% of the occupants are thermally comfortable.

## **4 University Arrangements**

FMD are responsible for managing the building energy management system (BEMS) for the University. The minimum temperature for the University environment is 16°C as per the Workplace (Health, Safety and Welfare) Regulations 1992. However if much of the work carried out is physical then the minimum temperature would be 13°C. The standard temperature set by FMD within buildings is typically 21°C. There is no set maximum temperature within Health and Safety legislation however the University shall take reasonable steps to achieve a comfortable temperature. This may require the use of increased ventilation in warm conditions.

During summer months the heating system shall be switched off as there are minimal requirements for heating during this period. This is in line with using resources more efficiently as per the University's Environmental Policy. The heating will be switched off between the Easter weekend and September weekend each year.

## **5 Heating System**

The Building Energy Management System (BEMS) is used by the University to monitor and regulate the heating system within University buildings. It is controlled by FMD and is a centralised system which regulates the whole University. Sensors are located throughout the buildings which measure and regulate the temperatures within rooms. It is a complex system that controls the temperature in accordance with the temperatures measured by sensors in their locations therefore additional heating such as portable heaters may influence the overall temperature and cut off the heating in some areas depending on where the sensor is located.

## **6 Portable Heating**

FMD does not support the use of portable heating appliances due to the increased fire risk it represents and the additional energy consumption it uses as it has the potential to cause the electrical system capacity to be overloaded.

The use of portable heating can cause inaccurate temperature readings for buildings. This may result in inaccurate temperature control within buildings as some areas may have higher temperatures than others, causing reduced heating due to temperature readings from the sensors.

Portable heaters shall be issued at the discretion of FMD where circumstances dictate their requirement. This would include instances such as mechanical failure or emergency situations.

## **7 Out of Hours**

The heating system is programmed to provide heating to those areas which are in use or require heating. FMD must be advised in advance of any room use out of hours so that any heating requirements can be determined. This is because some areas may not receive heating out of hours or at weekends. All heating requests and inquiries should be made to the Facilities Helpdesk (3999) with requests for out of hours or weekend heating required 24 hours in advance.