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BUILDING AND ROOM VENTILATION AND MONITORING MEASURES (UK CAMPUS)

Summary

Good ventilation that ensures the regular exchange of fresh air creates a healthier environment in which to teach, research, work and study. This document summarises the measures in place to assure the supply of fresh air to our indoor environments, helping to ensure they remain healthy and do not facilitate airborne transmission of Covid-19.

Guidance published by the Universities Safety and Health Association (USHA) states that teaching, studying, and research are considered to be low risk activities and that conventional levels of ventilation are sufficient to maintain healthy indoor environments where the maximum room occupancy is not exceeded.

Buildings across the university's UK estate use mechanical ventilation systems to draw air into and out of buildings, regularly replenishing those spaces with fresh air. Where this is not possible, natural ventilation measures are used to achieve the same, for example by opening windows, skylights or louvres. The Estates team ensure that mechanical ventilation systems are optimal at all times, and colleagues are encouraged to make full use of natural ventilation methods.

The following ventilation and air quality monitoring measures are being implemented for Semester One and will continue to be reviewed throughout the academic year in light of any further guidance from government or local public health officials.

Mechanical ventilation

Across the university estate, almost half of our teaching rooms are monitored and mechanically ventilated by the university's extensive Building Management System (BMS).

This means that these spaces are remotely and continuously monitored by sensors that automatically adjust ventilation measures such as automated windows, skylights and air handling units to assure a constant level of fresh air. In these spaces, sensors have been set to run at high or maximum rates to provide a higher air change rate.

Natural ventilation

Where buildings or spaces are naturally ventilated, colleagues are encouraged to take responsibility for ensuring a regular supply of fresh air by:

- opening windows and/or air vents, where present, to provide a fresh air supply;
- opening doors in combination with windows to encourage through-draughts wherever practical;
- regularly 'purging' indoor areas by fully opening all windows, air vents and doors, particularly between sessions.

Where timetabling adjustments have increased room occupancy for Semester 1, these adjustments are still within maximum capacity limits for each room to assure safe levels of ventilation.

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Measuring air quality

Carbon dioxide (CO_2) levels are used as a guide to determine that an indoor space has a sufficient quantity of fresh air. CO_2 is typically present at around 350 - 400 parts per million (ppm) in the ambient environment. The Chartered Institution of Building Services Engineers (CIBSE) recommends CO_2 levels of 1500 ppm or under to provide a comfortable teaching environment.

Higher levels of CO_2 in buildings are caused by the normal respiratory processes of people using the spaces, and providing fresh air through mechanical or natural ventilation systems changes the air within a room to reduce CO_2 levels.

Monitoring air quality

CO_2 levels are monitored via the University's extensive Building Management System (BMS) or by using standalone CO_2 sensors installed in the teaching rooms. In both cases they measure CO_2 concentration in a specific area.

Mechanical ventilation systems are checked regularly to ensure they are working optimally, and if CO_2 levels were to exceed recommended limits the Estates team is automatically alerted to take appropriate actions to increase ventilation levels

The University has procured additional portable CO_2 sensors, which will be regularly moved around rooms that use natural ventilation measures, to confirm that CO_2 levels are within the recommended limits.

In the unlikely event that CO_2 levels exceed the recommended limits, Timetabling will be notified to take the room out of service and advise teaching staff accordingly. Alternate teaching locations will be provided until CO_2 levels have been addressed.

Help and information

Should colleagues wish to report an issue or concern with a specific room, they should contact the Estates Helpdesk at https://www.nottingham.ac.uk/estates/helpdesk/home.aspx or by telephone on 0115 951 6666 (or 16666 internally).