

Ventilation Guidance

Having adequate ventilation in multi-occupancy spaces is now considered a key protection against the transmission of COVID-19. Rooms without openable windows have mechanical ventilation even if it is not obvious. This is a requirement under both Health & Safety and Building Regulations.

Where ventilation is provided mechanically, Estates has made sure that the rate of ventilation meets the standard set by the HSE and recommended by the CIBSE. We must ensure there is a minimum flow of 10 l/s/person. Maximum occupancy levels have been set according to our ability to meet this flow rate. In a few spaces, where normal occupancy would have meant that this flow rate would not have been met, occupancies have been reduced to ensure that it is. For teaching rooms these occupancy levels have been built into the timetabling system.

Many offices across campus rely on natural ventilation. Natural ventilation is achieved through opening windows and doors. There is no defined size of opening within the HSE guidance. Any width of opening will provide increased ventilation. To provide some sort of context, an air speed of 0.02 kmph through a fully open accessible door is sufficient to provide a ventilation rate of 10 l/s: through a standard small bathroom window that you may have at home, it is met by an air speed of 0.3 kmph. Very low air speeds provide adequate ventilation. If you can feel a breeze, you are getting substantially more ventilation than is necessary to provide protection.

Rooms without mechanical ventilation should have their windows and any door that is not a fire door open when occupied by more than one person. It is good practice for the first person in in the morning to open windows and doors and for the last person out to close them. In the summer when conditions are normally less windy and there is little difference between inside and outside temperatures, open windows wider. In autumn and winter when the opposite is true, a smaller opening will provide sufficient ventilation. Preferentially opening high level windows can reduce draughts. It sounds trite, but the HSE guidance suggests wearing warmer clothes. However, there may be a need for managers to reorganise offices to move workstations away from cold draughts in the winter.

It is appreciated that ventilation appears to be an invisible protection against COVID and as such does not quell individual anxiety as much as more visible, but less effective measures such as wearing a face covering. Estates and the Health and Safety team will be carrying out ventilation checks of multi-occupancy spaces across campus throughout the year using CO₂ monitors. CO₂ levels give an indication of the level of ventilation within a room if used properly. In some spaces, the ventilation system has built in CO₂ monitoring that is, in turn, monitored by Estates. Estates is also looking at how it can install permanent CO₂ monitoring in spaces where there currently isn't any. These are the areas that will be targeted for checks over the coming year.

Where staff continue to be concerned about ventilation in multi-occupancy spaces in which they work, they can borrow a CO₂ meter from Estates to provide reassurance. They can do so by emailing Estates Customer Services.

Using a CO₂ monitor

- Place the monitor at head height away from any windows, doors, or air vents and at least 50cm away from any people
- Take multiple readings throughout the day. Individual readings do not indicate good or poor ventilation, it is the mean across the period the room is occupied that is important. Record sheets are available from the Estates website.
- Very low (<400 ppm) and very high (>1500 ppm) readings may indicate that the monitor is not in a good location. In which case, reposition it and try again. In small spaces (less than 50m²) readings may not be reliable. In larger spaces (bigger than 320m²) more than one sampling location will be required.
- Take readings through the day to represent normal use and occupancy. Don't just focus on short periods of high occupancy. The key is to determine the mean across a working day, not the peak.
- When you take CO₂ readings also make a note of the occupancy level and level of ventilation (how many windows and doors were open and by roughly how much)
- CO₂ levels are a broad guide to ventilation rather than indicating a safe threshold. A mean value of 800 ppm or less indicates good ventilation. A mean value of 1500ppm or more indicates poor ventilation. Action in the form of finding ways to increase ventilation or reduce occupancy will need to be taken where readings are consistently this high and such readings should be reported to Estates Customer Services.