

## **Use of Ventilation and Air Conditioning during the Coronavirus pandemic**

### **December 2020 Supplemental Note**

#### **Cold Weather Mitigation**

This supplement should be read in conjunction with the previous guidance issued and outlines Lancashire County Council's response to the health & safety and Covid -19 related issues associated with Ventilation and Air Conditioning, during colder weather.

#### **Current Theory**

Current theory and understanding of coronavirus transmission maintains that it mainly occurs through 2 sources:–

- Close proximity to those infected via coughs/sneezes which create a local aerosol of exhaled droplets, hence the need for social distancing guidance;
- Contact with contaminated surfaces where the virus can survive for up to 3 days, hence the guidance on regular hand washing and sanitising of surfaces.

Studies continue, but as yet guidance from Chartered Institution of Building Services Engineers (CIBSE) and the Health and Safety Executive (HSE) remains unchanged.

#### **Current LCC Position**

LCC policy is to ensure there is an adequate supply of fresh, outside air in occupied rooms, as good ventilation can help reduce the risk of spreading coronavirus, the introduction of fresh, outside air dilutes the amount of air borne pathogens.

The following generic measures are applicable across all buildings:-

- Continue to provide an adequate supply of fresh, outside air via open windows and doors, wherever safe and practical to do so.
- Any ventilation or air conditioning system that normally runs with a recirculation mode, to remain set to run on full outside air wherever this is possible.
- Mechanical ventilation system operation times extended to increase the period of effective dilution.
- Those systems with "demand" control systems, CO2 set points should be set to 400ppm to increase the delivery of outside air.
- Supply and extract ventilation systems, even those in temporarily vacated premises e.g. schools during holiday periods, to be operated continuously at reduced speeds, to avoid stagnations.
- Recirculation of air between spaces, rooms or zones occupied by different workplace or class bubbles should be avoided.
- Adjustment of Heating controls, to extend operating times and off-set the increased exchange of cooler outside air.

As a consequence of the multiple variations of building use and possible configurations of ventilation plant and equipment, Premises Managers are advised to seek assistance when implementing any of the above actions, see Advice and Support below.

## **Colder Weather Mitigation**

On colder days our natural behavioural response would be to close windows to avoid uncomfortable draughts, but such action will reduce the rate of air exchange and dilution of any contaminants and overcome the primary objective of the published guidance. Consideration should be given to opening windows 15 minutes before a room is used, and whenever a room is unoccupied. This practice essentially purges the air within a room and would then permit windows to be partially closed for comfort during occupation, especially in the event of strong winds or driving rain.

Premises Managers are expected to recognise that the use of external doors, to boost air exchange rates, must be balanced against the need to maintain the safeguarding and security of the premises at all times.

The potential benefit of effective air flow and ventilation to public health at this time outweighs the reduction in energy efficiency, so as the seasons change, it will become increasingly necessary to adjust heating controls (see Advice and Support below) to off-set the increased exchange of cooler outside air and it may also become necessary to remind building occupants to dress appropriately for cooler internal conditions.

**Important:** the use of additional local, electrical heaters is to be avoided. Whilst undoubtedly providing a welcome, instant solution, their use may overload circuits, present a trip hazard or become a fire hazard if left on and/or, unattended for long periods.

The primary objective of current guidance on ventilation emphasises the need to maximise the dilution of internal air by the addition of outside air (termed "air exchange") and minimise the risk of any pockets of stagnant air.

Therefore, if a local unit enhances air exchange and reduces the risk of stagnant air, they should remain in operation, but only in conjunction with a source of fresh, outside air.

For rooms that have no access to outside air and rely on the use of air conditioning units, fan convectors, fan coil and heat recovery units as the sole means of heating or cooling, the advice is to turn off these units, as the action of the unit could create air movement that is likely to spread any airborne viral particles throughout the room, without the benefit of any dilution.

## **Advice and Support**

Premises Managers can seek assistance from the Building Services Engineers, [duty.engineer@lancashire.gov.uk](mailto:duty.engineer@lancashire.gov.uk) regarding the range of measures available and are advised not to attempt to override complex control systems, such as BMS or TREND, as other plant may be interlocked i.e. gas safety or boiler safety lockouts, etc.

During colder months, CO2 monitoring equipment will be available for purchase via Design and Construction Service Providers, the aim is to prompt Premises Managers to open windows when internal air quality becomes compromised. CO2 monitoring should not be used to justify the premature closure of windows in cold weather, as the threat from Covid 19 is of arguably more immediate concern.

As Duty Holders, those School Management Teams choosing not to purchase a LCC Design & Construction Property Maintenance service level agreement or membership of the PROp Scheme, retain the statutory responsibility to appoint suitably skilled, trained, qualified and insured Responsible Persons and are advised to seek their professional advice.