Ventilation Guidance for Businesses to Help Prevent Transmission of Viruses.

There is increasing evidence that effective ventilation is an important control and helps to prevent spread of infection.

The provision of fresh air into indoor environments is essential and by taking measures to increase the volume of outside air entering a building, such as opening windows, doors or vents you can help minimise the risk of spreading viruses. All businesses should include ventilation controls in their **Risk Assessment** and ensure there are systems in place to maintain good indoor air quality.

Let in As Much Fresh Air As Possible.

Open windows, doors (excluding fire doors that don't have automatic closures) and vents in your workplace or social setting. This includes any shared space such as offices meeting rooms ,canteens, rest rooms and changing rooms as well as hospitality venues. Opening multiple windows at opposite ends of the room will encourage good cross-flow and circulation of fresh air which will dilute any virus particles that may be present. Heating bills may increase during the colder months but it is vital that fresh air enters occupied spaces.

It is important to avoid gathering with colleagues in poorly ventilated rooms. Opening the windows is the easiest way to keep the fresh air flowing. If rooms cannot be adequately ventilated, you should avoid using them. Examples include basements that have no windows or ventilation.

Be Aware of the Relevant Occupancy Level

More people together means more particles. Where possible, as per your Risk Assessment, reduce occupancy (set maximum occupancy levels), and increase ventilation.

Understand Your Building's Ventilation System

It is important to make sure that mechanical ventilation systems are used correctly and seek advice where necessary. Current guidance from CIBSE suggests 3-8 air changes per hour in occupied rooms but during the pandemic the upper limits are recommended. It may be difficult to establish the actual air change rate so simply turn up the fresh air intake to maximum.

There are systems that have built in sensors which detect CO_2 in the air we exhale and these can be an indicator of indoor air quality. Some systems will automatically adjust air intake based on these.
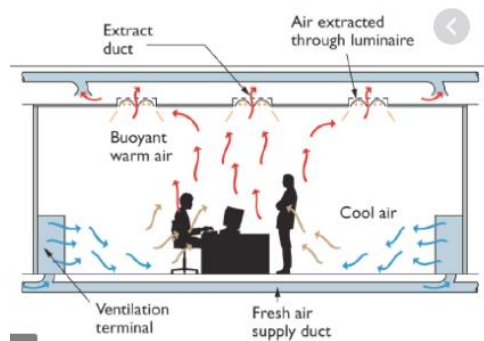
Mobile CO_2 monitors can also be used although 'one-off' applications may not provide meaningful data**.** False readings can occur if these are placed in locations that don't represent day to day occupancy patterns.

Mechanical Ventilation

Mechanical ventilation is the intentional fan driven flow of outdoor air into a building. Mechanical ventilation systems may include supply fans (which push outdoor air into a building), exhaust fans (which draw air out of a building and thereby cause equal ventilation flow into a building), or a combination of both.

Recirculation within central air handling units serving multiple rooms or zones may increase the risk of cross-infection. If you use a centralised ventilation system that removes and circulates air to different rooms it is recommended that you turn off recirculation and use a fresh air supply.
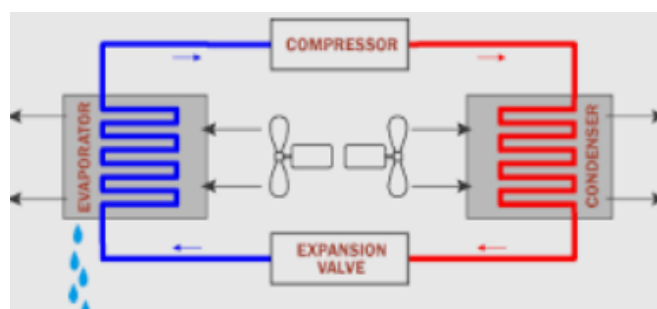
Ensure maintenance is carried out in accordance with manufacturer's specifications and filters are cleaned at regular intervals. Filters may need to be replaced where Covid-19 infection has been identified.

Air conditioning (often referred to as AC, A/C or air con) is a system used to cool down the temperature in an inside space by removing the existing heat and moisture from the room.

Essentially, they work by taking warm air into a system and dispersing cold air, but there is much more to this process.

Avoid Recirculating Air

Avoid using ventilation systems which only recycle used air. Make sure that fresh air is introduced to all spaces.

Air conditioning is sometimes connected to the ventilation system, but many rooms have a stand-alone air conditioner which simply recirculates the room air.

Recirculating air conditioners may pose a risk if they are operated in a room which has a very low outdoor flow rate. These may need to be switched off if there is no fresh air intake. Alternatively open windows although this is likely to affect the cooling efficiency.

Airing Rooms, Between Users or Regularly Throughout the Day

If you share a space with others, you should open the doors and windows regularly, especially between users, to help reduce the risk.

Use of Air Purifiers / Cleaners

Those that are based on filtration (particularly those that use HEPA filters and ultra-violet lamps) may be an option where it is difficult to achieve good ventilation. These may reduce concentrations of airborne viruses and can also increase air change rates which help dilute the air, however, there is a need for better data on real-world application to support these technologies. It is important to avoid any devices that produce ozone or other chemicals as these may be a respiratory irritant.

This guidance will be updated as more information becomes available. Further information can be found:

https://www.hse.gov.uk/coronavirus/equipment-and-machinery/air-conditioning-and-ventilation/index.htm

https://www.cibse.org/coronavirus-(covid-19)/coronavirus-covid-19-and-hvac-systems