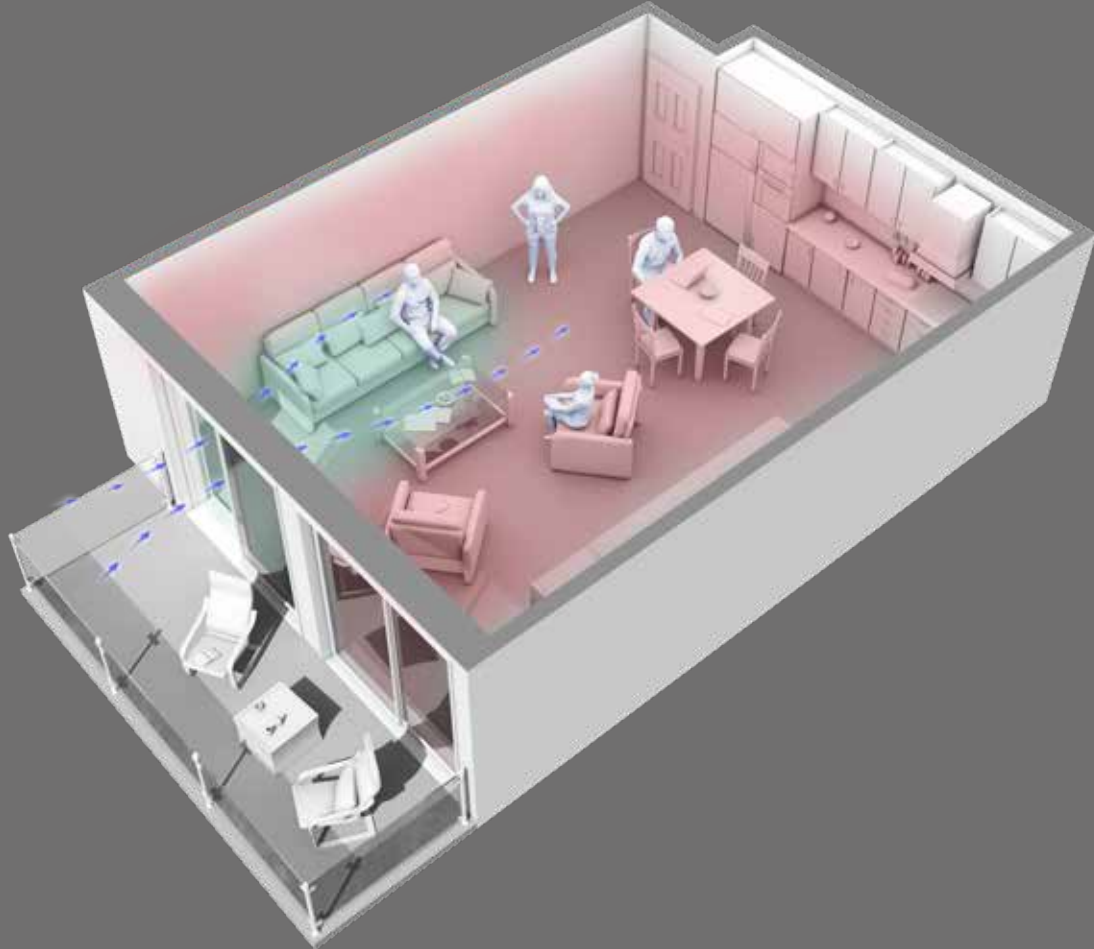


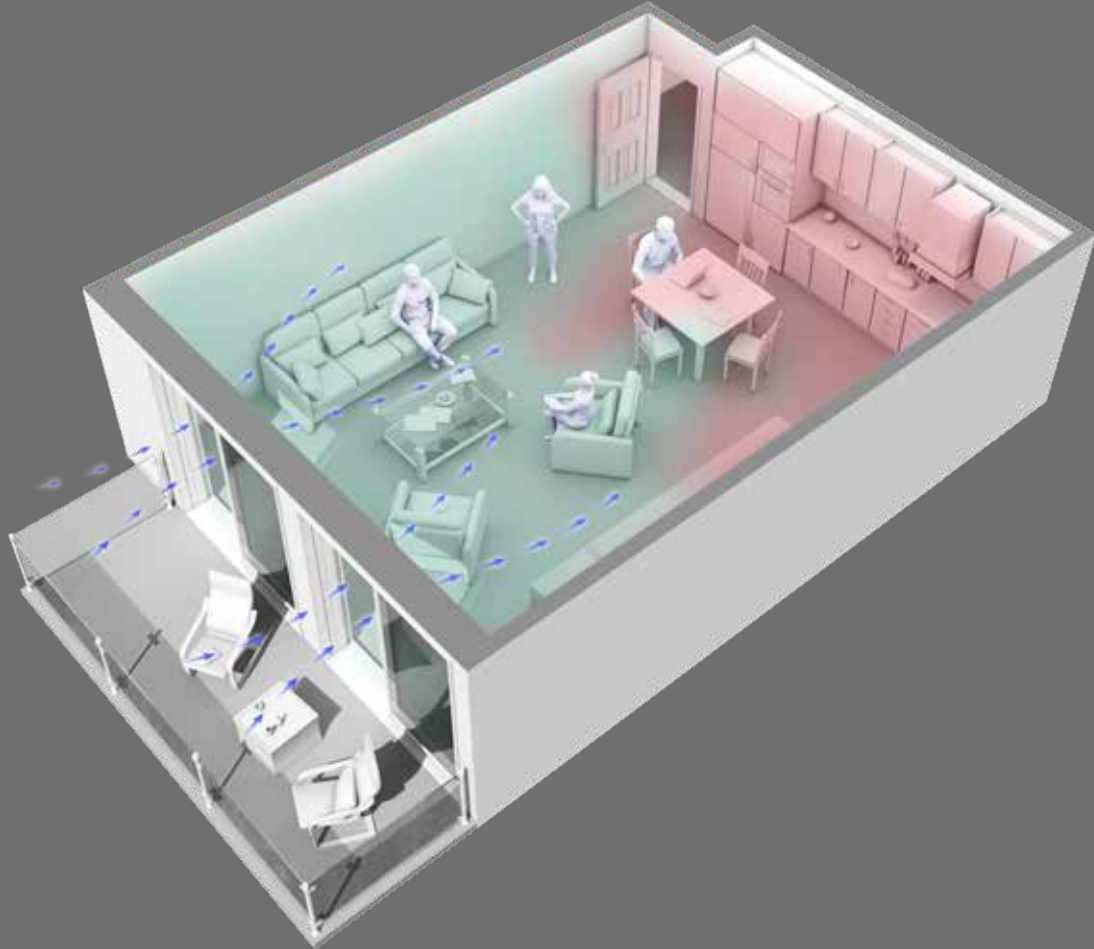
Impact of no ventilation of a room in times of Covid-19

If a Covid-19 infected person is in the room: Virus-carrying aerosols increase in an apartment where no fresh air enters the room. The infection risk increases. In addition to this CO₂ levels will also increase which can cause fatigue, headaches and reduced concentration levels. A poorly ventilated room is when the CO₂ level is over 1000 ppm. A concentration of CO₂ measuring 2000 ppm or higher is considered as health hazard (2).



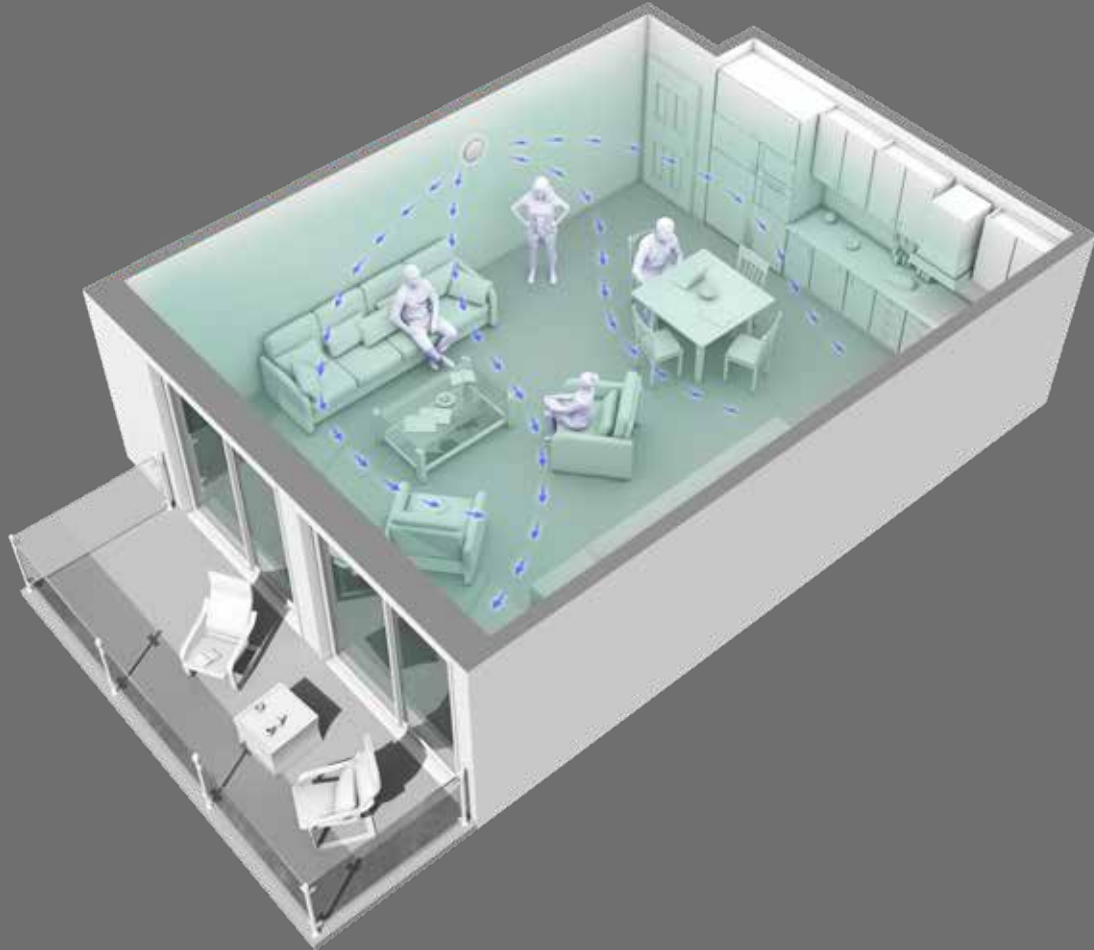
Ventilation through an open window in times of Covid-19

The impact of opening a window to improve air quality depends on several factors, e.g. is there enough air flow movement outside to enter the room. If not, this might take quite long. In summer, when its warm outside, people would have the window open much more and for a longer period than in winter. Typically, in winter people would keep the window closed to ensure they retain the heat and avoid cold air entering the room.



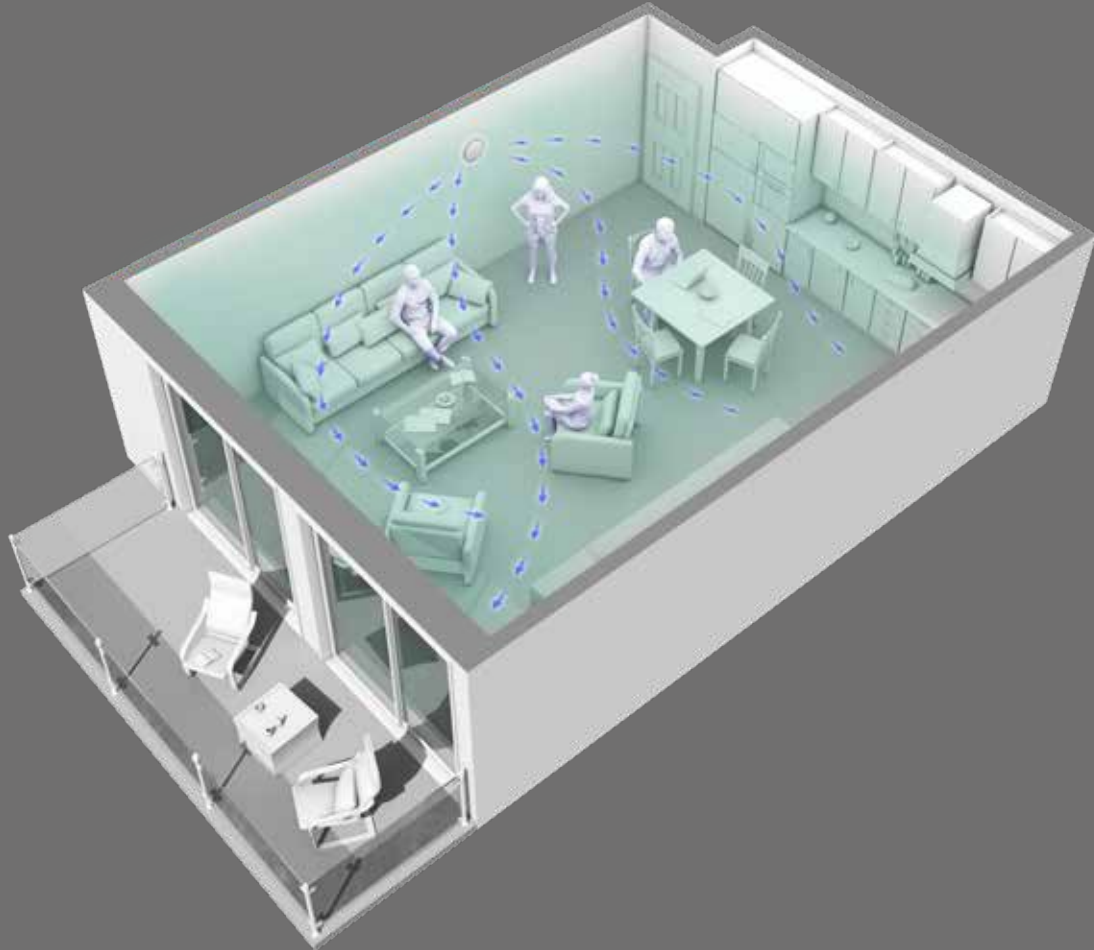
Cross-ventilation in times of Covid-19

Good air quality is deemed as having CO₂ concentration under 1000ppm (parts per million) [3]. Opening multiple windows and doors can improve air movement in the room due to increase volume of air entering the room due cross ventilation. Fresh air dilutes virus-carrying aerosols and other negative factors such as a high carbon dioxide concentration (CO₂).



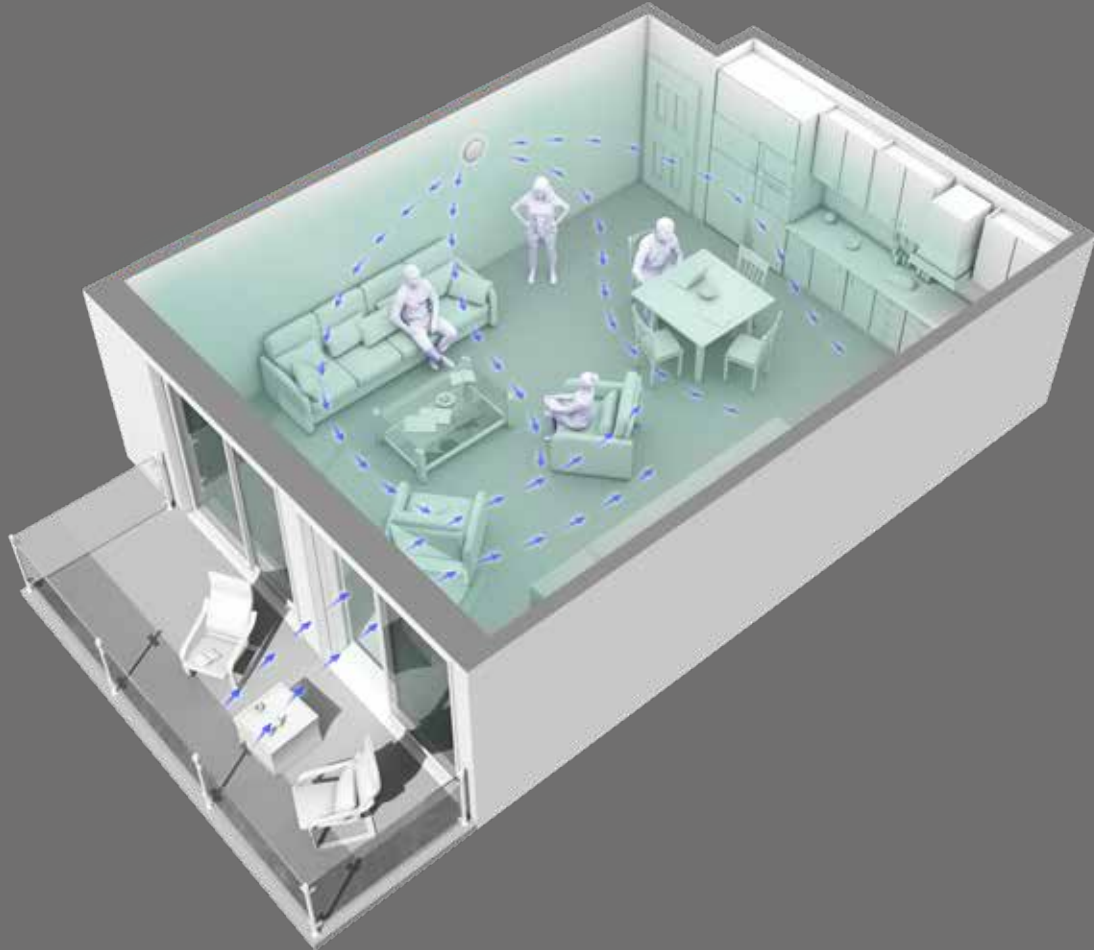
Usage of a ventilation system in times of Covid-19

A ventilation system automatically introduces fresh air to a room. When ventilating through an open window, it is unclear to those in the room how much air is entering and leaving through the window and how long it must be kept open to attain good air quality [4]. You always have a good air quality when virus-carrying aerosols are diluted, and the CO₂ concentration is under 1000 ppm.



Usage of a ventilation system in times of Covid-19

Several ventilation units assist to also maintain a room air humidity between 40% - 60%. It's reported that if rooms are kept within this humidity range that it can help to reduce the risk of infection. In addition to this known that the aerosols in this range reduce the risk of infection [5]. In addition to this its important to note that a balanced ventilation system isn't a contamination source as the airstreams within the unit are separated.



Usage of window ventilation while the ventilation system is running

Its perfectly fine to open a window when the ventilation system is running. This helps to dilute the air in this room even more. This approach isn't recommended in densely populated or polluted areas however, to avoid pollutants (i.e. dust, dirt, pollen, NO_x, etc.) entering the room.