

CORONAVIRUS



Precautionary Measures for Recirculation of Air in the Fire Station

SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19) spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. Talking and breathing can also release droplets and particles.

Droplets generally fall to the ground or other surfaces in about 1 meter (3 feet), while particles (aerosols) behave more like a gas and can travel in the air for longer distances where they can be transmitted to people, as well as settle on surfaces.

COVID-19 can also be transferred by hands that touch contaminated surfaces (called fomite transmission) or be re-entrained into the air when disturbed on surfaces. There is evidence that at least some strains of it remain suspended and infectious for three hours, suggesting the possibility of aerosol transmission. For this reason, basic principles of social distancing (2 meters or 6 feet), surface cleaning and disinfection, handwashing and other strategies of good hygiene are important.

The Centers for Disease Control and Prevention (CDC) recommends a layered strategy to reduce exposure to COVID-19. This includes using multiple mitigation strategies with several layers of safeguards to reduce the spread of disease and lower the risk of exposure. In addition to ventilation, the layered approach includes efforts to improve social distancing, wearing facemasks, practicing hand hygiene and regularly disinfecting work areas.

COVID-19 viral particles spread between people more readily indoors than outdoors. When indoors, ventilation mitigation strategies help reduce the concentration of viral particles in the air. The lower the concentration, the less likely some of those viral particles can be inhaled into your lungs, contact your eyes, nose and mouth, or fall from the air to accumulate on surfaces. Protective ventilation practices and interventions can reduce the airborne concentration, which reduces the overall viral dose to occupants inside the fire station.

Ventilation improvements may include some or all the following considerations:

- Increase outdoor air ventilation by opening windows and doors.
- Use fans to increase the effectiveness of open windows.
- Avoid placing fans in a way that could potentially cause contaminated air to flow directly from one person to another.
- Use a window fan, placed safely and securely in a window, to exhaust room air to the outdoors. This will help draw fresh air into the room via other open windows and doors without generating strong room air currents.
- Decrease occupancy in areas where outdoor ventilation cannot be increased.
- Ensure ventilation systems operate properly.
- Increase airflow to occupied spaces when possible.
- Open outdoor air dampers beyond minimum settings to reduce or eliminate HVAC air recirculation.
- Improve central air filtration by increasing air filtration to as high as possible without significantly reducing design airflow. Inspect filter housing to ensure appropriate filter fit and check for ways to minimize filter bypass.
- Check any air filters to ensure they are within their service life and appropriately installed.
- Inspect and maintain local exhaust ventilation in any areas in the fire station and operate them anytime these spaces are occupied.
- Consider portable high-efficiency particulate air (HEPA) fan/filtration systems to help enhance air cleaning.
- Consider running the HVAC system at maximum outside airflow for two hours before and after the building is occupied.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has developed proactive guidance to help address COVID-19 concerns with respect to the operation and maintenance of heating, ventilating and air-conditioning systems.

Refer to the document, "Guidance for Building Operations During the COVID-19 Pandemic," published by ASHRAE.