

COVID-19 VENTILATION FAQs

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Limiting COVID-19 transmission in the workplace involves critical elements outlined in the [University's COVID-19 Prevention Plan for the Workplace](#).

Maintaining building systems, including central heating, ventilation, and air conditioning (HVAC) systems, to support safe occupancy is a supplemental effort to the University's COVID-19 prevention measures.

This document contains responses to frequently asked questions from occupants in University facilities. Building coordinators and facility managers may share the responses with occupants as appropriate.

Which standards and guidelines does the University follow for maintaining HVAC systems?

- [American Society of Heating, Refrigerating and Air-Conditioning Engineers \(ASHRAE\)](#)
 - [Coronavirus \(COVID-19\) Response Resources from ASHRAE and Others](#)
- [Centers for Disease Control and Prevention \(CDC\) – Ventilation in Buildings](#)
- [Seattle Mechanical Code](#) / [International Mechanical Code](#)
- Washington State Department of Labor & Industries
 - [General Coronavirus Prevention Under Stay Home-Stay Healthy Order](#)
 - [COVID-19 Guidance on Ventilation in the Workplace](#)

What do I need to know about ventilation in University buildings?

UW buildings are typically supplied with a percentage of outside air either via mechanical fans (a mechanical HVAC system), or natural ventilation (e.g., operable windows), dependent on each building and system. Those systems are maintained to provide ventilation and thermal comfort as designed through the following activities:

- In most cases, air filters in buildings equipped with central heating, ventilation, and air conditioning (HVAC) systems are rated at [MERV-13](#) or higher as recommended by the CDC and have been inspected and changed per maintenance procedures and schedules.
- Building HVAC systems have continued to operate normally during all phases of the pandemic, even while buildings were unoccupied or at reduced occupancy.
- Laboratory ventilation systems operate continuously with 100% outside air supply that is not recirculated in the building and is exhausted directly to the outside.
- In naturally ventilated areas where windows serve as the main form of fresh air supply, operable windows should be open while spaces are occupied.



- In mechanically ventilated areas, operable windows may also be opened to supplement mechanical ventilation when outside temperatures are moderate. An exception where opening windows is not recommended includes laboratories due to the potential interference with ventilation flow and pressure balancing.
- In most cases, exhaust fans in restrooms operate continuously when buildings are occupied. Some restrooms are equipped with a wall switch operated by the occupant, in which case it's suggested to keep toilet exhaust fans operating continuously. For restroom exhaust fans to work best, it is recommended to avoid opening operable windows in restrooms and keep restroom doors closed (or mostly closed for single restrooms not in use).
- To ensure fresh air is supplied to spaces prior to employees arriving on site and to ensure air changes occur after departure, building mechanical ventilation system operating hours have been extended from 6 a.m. to 10 p.m. daily.
- Demand-control ventilation systems that increase or decrease outside air based on carbon dioxide concentrations have been adjusted or disabled.

What is being done to verify building HVAC systems are operational, given COVID-19?

UW Facilities is checking HVAC systems to ensure that buildings are ready for reoccupation, including, but not limited to the following:

- Fan systems are functional and operating.
- Central HVAC fan filters are within acceptable operating ranges and replaced as necessary.
- Fan filter racks are inspected for major gaps or damage.
- Outside air ventilation rates are being increased in recirculating HVAC systems where possible.

Can the building's outdoor air ventilation rate be increased?

Some HVAC systems are designed to mix outside ventilation air with air recirculated from occupied spaces as required to comply with applicable energy codes. While outside air ventilation rates have been increased in many UW buildings, there are some systems that do not have capacity to increase outside air ventilation rates while still maintaining recommended indoor temperature ranges.

How many air changes per hour are in my room?

- Air changes per hour (ACH) is defined as the volume of ventilation air that is supplied and removed from the room every hour. The ventilation air can be through natural or mechanical ventilation systems and helps to remove stale air and contaminants from a room.
- The number of air changes per hour in each room in a building can vary throughout campus and within a building.



- If you notice evidence of inadequate air quality in your space (e.g., air seems stuffy or stagnant) or thermal discomfort, please submit a request for evaluation by campus location:
 - On the Seattle campus, contact UW Facilities Customer Care Team at careteam@uw.edu or submit an [Online Work Order Request](#) to main campus UW Facilities.
 - At UW Bothell, submit an [Online Work Order Request](#) to UW Bothell Facilities Services.
 - At UW Tacoma, submit an [Online Work Order Request](#) to UW Tacoma Facilities Services.

Can my building's supply airflow or exhaust airflow be increased or rebalanced?

HVAC supply and exhaust systems work in tandem to maintain building pressures that are close to neutral. While some systems do have fan capacity to increase airflows, those adjustments can also cause uncomfortable drafts, increase noise from HVAC diffusers, and create challenges for safe egress and security if air pressure holds exterior doors open. Other systems do not have fan capacity to increase airflows at all.

Can I use or purchase a [portable air cleaner](#) or air filter for my area? What kind of portable air purifier should I purchase?

Yes. Individuals may use a portable air cleaner or air filter in their work area. When used properly, portable air cleaners and air filters can help reduce the presence of airborne particles. However, a portable air cleaner should not be solely relied on to prevent COVID-19 transmission.

The portable air cleaner should:

- Be sized appropriately for the square footage where it will be placed.
- Be equipped with a high efficiency particulate air (HEPA) filter which is at least 99.97% efficient at capturing particles 0.3 micrometers (μm) in size.
- Be as quiet as possible to prevent interruptions in the work environment.

Units that purchase portable air cleaners or air filters should understand and follow manufacturer instructions for use and maintenance for the specified model. The [Portable Air Cleaner Selection, Care and Maintenance Focus Sheet](#) provides University units with guidance for selecting and maintaining air cleaners for University spaces.

Can I turn on a portable air-conditioning unit or fan when it gets too hot?

- Yes, but the discharge airflow should be directed away from the body and face of other people to prevent potential transmission to nearby individuals.
 - Avoid the use of high-speed settings.
 - Use ceiling fans at low velocity and potentially in reverse-flow direction (so that air is pulled up toward the ceiling).



- Direct the fan discharge towards an unoccupied corner and wall spaces or up above the occupied zone.
- Fans can be used to improve room air mixing which helps distribute supplied clean air and reduces the likelihood of stagnant air pockets where viral concentrations can accumulate. This also limits the potential for SARS-CoV-2 viral particles to accumulate in a portion of the room if an infectious person was present.
- Follow all manufacturer instructions for use and maintenance for the specified model.

Can carbon dioxide (CO₂) monitors be used to indicate when there is good ventilation?

According to the [CDC](#), limited information exists regarding a direct link associating CO₂ concentrations to a risk of COVID-19 transmission. Changes in CO₂ concentrations can indicate a change in room occupancy and be used to adjust the amount of outdoor air delivered to a space. However, CO₂ concentrations cannot predict who has a SARS-CoV-2 infection and might be spreading the virus, the amount of airborne viral particles produced by infected people, or whether the HVAC system is effective in diluting and removing viral concentrations near their point of generation.

Can ultraviolet lamps be installed within our building's HVAC system or within rooms?

According to [CDC](#) guidelines, ultraviolet germicidal irradiation (UVGI) should only be considered as a supplemental technique to inactivate potential airborne viruses in the upper-room air of spaces with insufficient or no mechanical HVAC system. Because retrofitting current buildings with this technology is challenging and expensive, and there are health and safety considerations with UVGI installations, these are specialized and require careful evaluation by EH&S and facilities groups.

Should duct cleaning be performed and could it reduce transmission of SARS-CoV-2?

According to the EPA, duct cleaning has never been shown to actually prevent health problems. A majority of the particles in air ducts adhere to duct surfaces and do not necessarily enter spaces supplied by the HVAC system. EPA does not recommend routine cleaning of air ducts. Ducts should only be cleaned in certain situations including rodent or insect infestation, ducts clogged with dust and debris, or if substantial suspect visible mold growth is present inside the ducts.

What if I have questions or suspect my HVAC system may not be working properly?

- To Report building HVAC issues by campus location, see below:
 - On the Seattle campus, contact UW Facilities Customer Care Team at careteam@uw.edu or submit an [Online Work Order Request](#) to main campus UW Facilities.

- At UW Bothell, submit an [Online Work Order Request](#) to UW Bothell Facilities Services.
- At UW Tacoma, submit an [Online Work Order Request](#) to UW Tacoma Facilities Services.

How are ventilation work orders prioritized?

UW Facilities and EH&S collaborate to prioritize ventilation work orders or requests for information with consideration for ongoing campus operational issues in the following order:

1. Clinical/Health care/COVID-19 research spaces
2. Lab spaces
3. Instructional spaces (with scheduled classes)
4. Office spaces
5. Support spaces

Resources

Centers for Disease Control and Prevention – [Ventilation in Buildings](#)

Environmental Protection Agency – [Air Cleaners and Air Filters in the Home](#)

OSHA - [OSHA COVID-19 Guidance on Ventilation in the Workplace](#)

UW – [COVID-19 Prevention Plan for the Workplace](#)