

## Penn State's Indoor Air Ventilation Measures

**January 2022 Update:** *The University continues its close monitoring of indoor air ventilation recommendations related to COVID-19 and its many variants, including Omicron. In preparation for the Spring 2022 semester, OPP has reviewed the latest recommendations from CDC and ASHRAE to ensure we are meeting or exceeding recommendations across all Penn State locations.*

### Overview

Penn State's Office of Physical Plant (OPP) has led the University-wide efforts to improve ventilation throughout campus buildings. Ventilation improvements have met or exceeded the latest Pennsylvania Department of Health, Centers for Disease Control and Prevention (CDC), and American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) guidance for improving indoor ventilation including:

- a. optimization of mechanical systems;
- b. utilizing open windows to promote natural airflow; and/or
- c. installation of portable HEPA filtration in spaces with no ventilation or operable windows.

All three strategies align with CDC guidance for improving ventilation in buildings when coupled with the other [COVID-19 mitigation efforts](#) used by the University.

### Optimization of mechanical systems

The University has continued to follow the latest CDC guidance in the operation of mechanical systems inside University facilities to maximize the amount of outside air without significantly degrading the comfort and functionality of buildings.

- Throughout the pandemic, OPP has maintained increased ventilation in facilities while balancing the need to control temperature and humidity.
- OPP increased filtration in all air handling equipment from MERV 8 air filters to higher-performing MERV 13 filters, where feasible.
- OPP disabled demand-controlled ventilation systems so that air flow continues in rooms even during limited use periods.
- Occupancy hours were modified to provide a continuous flush of air at the beginning and end of day.

### Utilizing open windows to promote natural airflow

The University has hundreds of classrooms and offices that rely on operable windows for ventilation, including over 130 classrooms at University Park. Introduction of outdoor air for these rooms requires the collaboration and cooperation of building occupants to manage opening, closing, and adjusting these windows to ensure some ventilation is introduced into indoor spaces without causing occupant discomfort or introducing humidity and water inside the building.

Ventilation in these spaces depends entirely on the windows being opened. CDC guidance recommends that building occupants “open windows and doors when weather conditions allow to increase outdoor air flow. Even a slightly open window can introduce beneficial outdoor air.”

**Therefore, Penn State recommends building occupants open windows when utilizing a space (office, classroom, etc.) with operable windows and no mechanical ventilation. If unsure of the presence of mechanical ventilation, open the window.**

Windows should be opened as much as is comfortable to the room occupants and only while the room is occupied. This may change throughout the day as outdoor air temperatures fluctuate and room occupants should be free to open/close the windows to adjust.

Open windows should not create uncomfortable indoor conditions. The windows can be only partially open if occupants are uncomfortably hot/cold due to proximity to the windows. If blowing rain is entering the building, the windows should also be shut or just cracked open to minimize water intrusion.

Even on very hot or very cold days, we encourage occupants to crack open operable windows. There is a cost associated with this practice in terms of energy waste, but the recommended benefits of ventilation during the pandemic outweigh these costs.

### Installation of portable HEPA filtration in spaces with no ventilation or operable windows

Portable air filters, also known as HEPA units, can reduce viral load in the air in spaces where there are no other means of air ventilation or potential for increased risk of COVID-19 transfer, such as the COVID-19 testing centers, the Student Health Center, and performing arts spaces. More than 100 of these units have been deployed across the University. OPP does not recommend the placement of portable air filters in classrooms that have operable windows unless other risk factors are present.

### Occupant concerns

If occupants have concerns about indoor air ventilation, please contact the appropriate party:

- In a General Purpose Classroom (GPC) – contact the Classroom Hotline (1-814-863-6000) which is posted in GPCs at University Park.
- In a departmental classroom – contact the departmental/unit Facility Coordinator.
- In an office, lab, or other space – contact the departmental/unit Facility Coordinator.
- At a Commonwealth Campuses – contact the campus Director of Business Services and/or campus Pandemic Safety Officer.

Facility Coordinators will work with OPP to establish any necessary evaluation or support that might be needed for a space.

To find the contact information for a Facility Coordinator, visit:

<https://www.opp.psu.edu/facilities-coordinators>