

HOW SAFE IS MY BUILDING?

Eliminating potential for spread of COVID-19 in classrooms, offices, restrooms and more

Penn State's Office of Physical Plant (OPP) worked through the summer 2020 to carefully evaluate all building mechanical and life safety systems to determine that they were fully functional and ready for occupancy and that they met or exceeded all of the building systems requirements set forth by [the Centers for Disease Control and Prevention \(CDC\)](#). OPP then implemented intensive corrective and preventive maintenance for every building at every campus. Learn more about OPPs [procedures and plans here](#).

USING GUIDANCE FROM BEST SOURCES

As part of its facilities evaluation and practices, OPP also:

- Follows guidance from the Pennsylvania Department of Health, as well as the CDC.
- Follows the recommendations of the [American Society of Heating, Refrigerating and Air-Conditioning Engineers \(ASHREA\)](#), the authority on various aspects of heating, ventilation and air conditioning -- including indoor air quality.
- Makes decisions in consultation with health care and disease experts from Penn State and elsewhere.

Protecting the health, safety and welfare of the Penn State community is an essential element in keeping our campuses open to in-person teaching, learning and engagement.

MULTI-LAYERED PROTECTION

A multi-layered approach is what the University has instituted overall for return to campus, with the following requirements and guidance in place:

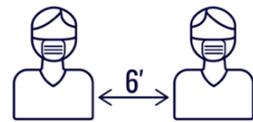
- Wear face masks (Masks limit emission of both large and small particles from an infectious person, which protects others)
- Practice good hand hygiene
- Social distance from other at least 6 feet
- Testing and contact tracing



Wear a mask



Wash hands



Socially distance

Knowing the concerns related to the potential for spread of the virus, OPP also follows a multi-layered approach to its building and systems review, maintenance and upgrades.

ADDITIONAL LAYERS

- [Increased cleaning and disinfecting](#) of buildings and high-touch surfaces
- Hand sanitizing stations at every building entrance and in other common areas
- Use of plexiglass shields where warranted in areas of close personal contact
- Increased signage and reminders of requirements
- Reduced occupancy limits for 1,700 instructional spaces
- Thorough building systems checks, [with focus on ventilation and improvement of indoor air quality](#)



BUILDING CHECKS - HVAC FOCUS

The CDC and others have indicated that COVID-19 is spread [primarily through person-to-person contact](#) and, while possible, it is not probable that it spreads through surfaces (fomites). In addition to the critical first-line measures already outlined (masking/social distancing)--which help mitigate large droplet and aerosol transmission of the virus—along with intense cleaning and disinfecting of facilities, the University is undertaking more rigorous steps to further mitigate possible risk inside buildings.

Changes to building operations -- including heating, ventilating and air-conditioning [HVAC] systems -- can reduce airborne exposures, which are only a serious problem when there is a system that re-uses air, according to ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers). OPP has modified where appropriate how buildings operate to provide more ventilation, air flow and outdoor air being brought into buildings.

WHAT IS BEING DONE?

- Meeting or exceeding all building systems requirements from [the CDC](#), the Pennsylvania Department of Health and ASHRAE.
- Where possible, increasing outside air to buildings. Also using economizers, which pull in outside air, and operable windows to boost ventilation and air circulation.
- The University does not have many spaces where air is recirculated without ventilation – that’s good news, since unventilated spaces have been identified as a possible source of airborne risk of the virus. With the exception of individual offices, most spaces don’t use systems that recirculate air without the introduction of outdoor air.
- Reviewed existing building records to determine current status and address any deficiencies in air distribution/air flow, as well as other matters.
- Maintaining indoor comfort. OPP must maintain not only ventilation and circulation of air, but also temperature and humidity – since these factors influence the time aerosol virus droplets remain in the air.
- Continue to transition to air filters that screen for fine particulate matter where the systems can handle it. (Increase from MERV-8 to MERV-13) A higher MERV (Minimum Efficiency Reporting Values) indicates a filter's ability to capture particles between 0.3 and 10 microns (µm). Verified all filters installed correctly. Although we have experienced delays from filter manufacturers, we expect all facilities will have MERV-13 filtration in place before November, when the weather becomes colder.
- New building construction (since 2000) is ASHRAE-compliant. There are currently about 500 buildings that comply with ASHRAE’s energy efficiency code, which focuses on ventilation.
- Sponsoring UV disinfectant research for mechanical systems and exploring bipolar ionization systems that can deactivate harmful substances like bacteria, mold, allergens and viruses.

A QUICK GUIDE TO DIFFERENT SPACES

- **With the exception of individual offices, Penn State is not using spaces that rely wholly on recirculated air without ventilation.**
- Private offices with individual air conditioning units: It’s recommended people not share offices. Alone in your office, the air recirculating is your own. If you can’t avoid sharing an office, keep enough space between individuals and wear a mask. An option would be to alternate days of office use.
- **Residence Halls:** There is no air exchange between rooms. Residence halls operate on a fan coil system, with operable windows for ventilation.
- **Classrooms:** Only using spaces where there is air circulation.

If you have a question about your space, ask your Facilities Coordinator:

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