

The Centers for Disease Control and Prevention (CDC) continues to provide COVID-related guidance to employers and employees related to workplace health and safety; Rutgers has followed this guidance since the onset of the public health emergency. Engineering controls implemented early in 2020 included providing physical separation of employees and ventilation considerations for the buildings.

During the worst of the public health emergency in New Jersey, and to minimize an employee's exposure to SARS-CoV-2, Rutgers reduced its building populations. With the introduction of vaccines, public health statistics have improved, and the guidance from public health agencies and the state government has changed, especially in regard to requirements for reduced population, social distancing, and face coverings.

As the number of employees in buildings increases, the following pillars of safety remain:

- 1 Maintain social distance (six feet minimum).**
- 2 Wear face coverings.**
- 3 Wash hands often.**
- 4 Stay home if sick.**

Management of Heating, Ventilation, and Air Conditioning (HVAC) systems is part of our overall risk mitigation approach that supports these critical pillars.

Rutgers employs experienced HVAC professionals and engineers to manage and monitor our equipment. Through the University Facilities preventive maintenance and repairs program, Rutgers maintenance staff has, and continues to ensure that HVAC systems operate optimally. Maintenance staff will ensure that ventilation systems continue to operate properly, and will not operate out of appropriate temperature, humidity, or ventilation ranges.

It should be noted that there are many different types of HVAC systems on campus and all were designed to meet professional standards at the time of installation. Because of the variances in design, capabilities and adjustments will vary from building to building and system to system. In order to view your individual building records, Facilities has made access to their Integrated Work Management System available. Please email servicedesk@ipo.rutgers.edu with your request, and remember to include your name and NetID. An account will be provisioned for you and you will receive an email confirming your access, a link to the system, and navigational directions. Given the volume of requests, please expect a response within a few days.

The CDC has posted on its website updated tools to improve ventilation. Some of the following interventions are based on the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) [Guidance for Building Operations During the COVID-19 Pandemic](#). Rutgers will respond to the guidance from both ASHRAE and CDC as noted below (action shown in italics):

INCREASE THE INTRODUCTION OF OUTDOOR AIR:

- Open outdoor air dampers beyond minimum settings to reduce or eliminate HVAC air recirculation. In mild weather, this will not affect thermal comfort or humidity. However, this may be difficult to do in cold, hot, or humid weather, and may require consultation with an experienced HVAC professional.

Action: Many HVAC systems in Rutgers buildings are designed to maximize outdoor air percentage based on environmental conditions and building demands. To ensure proper temperature and humidity control and maintain building conditions, Rutgers will operate HVAC systems in accordance with design capabilities. This practice will avoid deleterious effects that excessive ventilation would have on the ability to control temperature and humidity, especially during typical New Jersey summer and winter seasons. Systems will be checked to verify proper operation.

- To increase outdoor air flow, open windows and doors, when weather conditions allow. Do not open windows and doors if doing so poses a safety or health risk to occupants in the building (e.g., risk of falling, triggering asthma symptoms). Even a slightly open window can introduce beneficial outdoor air.

Action: Occupants in buildings that have operable windows have the option of opening windows to provide ventilation if they find the resulting indoor temperature and humidity acceptable. Occupants must ensure that the windows are closed at end of workday to avoid freezing, condensation, security issues, etc.

USE FANS TO INCREASE THE EFFECTIVENESS OF OPEN WINDOWS:

- To safely achieve this, fan placement is important and will vary based on room configuration. Avoid placing fans in a way that could potentially cause contaminated air to flow directly from one person to another (see FAQ on [indoor use of fans](#)). One helpful strategy is to use a window fan, placed safely and securely in a window, to exhaust room air to the outdoors. This will help draw outdoor air into the room via other open windows and doors without generating strong room air currents. Similar results can be established in larger facilities using other fan systems, such as gable fans and roof ventilators.

Action: Contact the IP&O FAST Team (<https://go.rutgers.edu/pn09atn6>) to assess need and for installation of fans.

- Ensure ventilation systems operate properly and provide acceptable indoor air quality for the current occupancy level for each space.

Action: Our buildings are designed to meet American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) standards and to provide minimum ventilation rates based on the type of activities occurring in the room, maximum occupancy of the room as designed, and the size of the room. Rutgers HVAC professionals and engineers have been monitoring, maintaining and repairing our equipment in accordance with manufacturers' recommendations and professional practice.

- Rebalance or adjust HVAC systems to increase total airflow to occupied spaces when possible.

Action: Where indicated, and based on issues identified during preventive maintenance or by our engineers, HVAC systems will be rebalanced. Rutgers will operate HVAC systems in accordance with design capabilities.

- Turn off any demand-controlled ventilation (DCV) controls that reduce air supply based on occupancy or temperature during occupied hours. In homes and buildings where the HVAC fan operation can be controlled at the thermostat, set the fan to the "on" position instead of "auto," which will operate the fan continuously, even when heating or air-conditioning is not required.

Action: Rutgers has made these adjustments where control systems have the capacity to adjust based on occupancy.

IMPROVE CENTRAL AIR FILTRATION:

- **Increase air filtration** to as high as possible without significantly reducing design airflow. Increased filtration efficiency is especially helpful when enhanced outdoor air delivery options are limited.

Action: Many of the buildings constructed within the past two decades were designed with MERV-13 or higher filtration, and within the past decade, buildings have been constructed to meet LEED Silver requirements. Filters will not be changed if the change will cause a decreased performance of the system. Filter changes, and where appropriate upgrades, will continue on a regular basis, in accordance with preventive maintenance schedules.

- Make sure air filters are properly sized and within their recommended service life.

Action: University Facilities maintenance staff will continue to inspect filter installations and replace them in accordance with the preventive maintenance schedule.

- Inspect filter housing and racks to ensure appropriate filter fit, and minimize air that flows around, instead of through, the filter.

Action: University Facilities maintenance staff will continue to inspect filter installations and replace them in accordance with the preventive maintenance schedule.

- Ensure restroom exhaust fans are functional and operating at full capacity when the building is occupied.

Action: University Facilities maintenance staff has, and will continue to, ensure proper operation.

- Inspect and maintain exhaust ventilation systems in areas such as kitchens, cooking areas, etc. Operate these systems any time these spaces are occupied. Operating them even when the specific space is not occupied will increase overall ventilation within the occupied building.

Action: University Facilities maintenance staff has, and will continue to, ensure proper operation.

- Use portable high-efficiency particulate air (HEPA) fan/filtration systems to enhance air cleaning, especially in higher risk areas such as a nurse's office or areas frequently inhabited by people with a higher likelihood of having COVID-19 and/or an increased risk of getting COVID-19. See the FAQ below on [HEPA filters and portable HEPA air cleaners](#). (Note: Portable air cleaners that use less efficient filters than HEPA filters also exist and can contribute to room air cleaning. They should, however, be clearly labeled as non-HEPA units.)

Action: Our spaces are designed to provide acceptable indoor air quality and minimize adverse health effects. This includes ventilation considerations for high risk areas. Due to numerous considerations, including NJ Uniform Construction Code and NJ Uniform Fire Code limitations, the university will not provide portable HEPA filtration devices.

- Generate clean-to-less-clean air movement by evaluating and repositioning as necessary, the supply louvers, exhaust air grilles, and/or damper settings. See the FAQ on [Directional Airflow](#). This recommendation is easier to accomplish when the supply and exhaust points are located in a ceiling grid system.

Action: This technique can be considered on a case-by-case basis, though given the size of the Rutgers footprint, a system wide approach is infeasible.

- Use **ultraviolet germicidal irradiation (UVGI)** as a supplemental treatment to inactivate SARS-CoV-2 when options for increasing room ventilation and filtration are limited. [Upper-room UVGI systems pdf icon\[6.1 MB, 87 pages\]](#) can be used to provide air cleaning within occupied spaces, and in-duct UVGI systems can help enhance air cleaning inside central ventilation systems.

Action: This recommendation has been considered and will not be implemented.

- In non-residential settings, run the HVAC system at maximum outside airflow for 2 hours before and after the building is occupied.

Action: Where existing control systems permit, occupancy mode will be enabled two (2) hours prior to building opening. Other systems run continuously.

PORTABLE AIR FILTERING UNITS:

Heating, ventilation, and air-conditioning (HVAC) systems in buildings are designed to provide acceptable indoor air quality and minimize adverse health effects. Based upon established ventilation rates and other measures, portable HEPA fan/filtration units are generally not required. However, departments may purchase units provided that certain criteria are met.

Please note that:

- There is no direct clinical evidence of the effectiveness of portable air cleaners for reducing infectious disease risk. The units will not address transmission from close contact between individuals.
- The use of portable air cleaners to complement existing HVAC filtration and ventilation may be considered, particularly in areas where sufficient ventilation is difficult to achieve. For most areas, this is not required. Other mitigation steps (described below) should be implemented before consideration of the use of these units.

The units are not a substitute for getting vaccinated, staying home when you are sick, maintaining social distancing, wearing a face covering, and limiting occupancy density of the room.

- The air filtered may be limited to the area surrounding the unit and may be ineffective for other areas within the space based on size of space, current ventilation, air flow movement, and other factors.
- Consider the noise rating, if provided, as some units can be quite loud and interfere with normal conversation or communication depending on the specifications and how close the person is to the unit.

If purchasing a unit:

- Obtain a unit that has a CADR rating sufficient for the size of the room. The higher the CADR rating, the more air that is filtered. CADR ratings are based on the highest fan speed. This will also be the loudest noise level.

As a rule of thumb, the CADR of your air cleaner should be equal to at least two-thirds of the room's area. Use the CADR rating for smoke for your calculations.

- Units must be NRTL certified (i.e. UL, ETL, NSF, etc.), should meet ANSI/AHAM AC-1 performance test method, and must be plugged in directly to an outlet (no use of extension cords or power strips).
- Some portable units may also generate strong air currents and care should be taken to ensure that they do not create strong air flows directly between individuals.
- These devices require regular maintenance that will be the responsibility of the department to perform. If using a HEPA filter, a UV light function is not necessary. Other units may also come with a charcoal filter. Please note that the UV lights may contain mercury. Prior to disposal or replacement of the lamp, please contact REHS.