

VENTILATION AND COVID-19

June 23, 2020 – Last Updated: August 9, 2021

Heating Ventilation and Air Conditioning (HVAC) Systems

EHS and Facilities Operations continue to monitor guidance from the State, CDC, and other public health and HVAC standard setting organizations with regard to COVID-19 mitigation strategies in relation to HVAC systems. CDC has recommended a layered approach to reduce exposure to SARS-CoV-2 in the indoor environment, which includes vaccination, wearing masks, physical distancing, hand hygiene, and improved ventilation. They recognize that indoor activities can lead to a greater incidence of exposure and that while close contact is the primary means of exposure, improving ventilation in spaces can help to reduce the accumulation of bio-aerosols in the indoor environment.

Guidance for re-opening over the last year has focused on increasing ventilation rates and increasing the percentage of outdoor air that circulates where possible. There are a number of simple strategies being employed to improve ventilation in spaces.

Facilities Operations is continuing to perform preventative maintenance (PM) on the University's HVAC systems, and changing filters on a regular basis. Where feasible, filters with higher MERV ratings are being installed in HVAC systems. Outside air settings are being leveraged to maximize outdoor air per person.

Physical distancing, while important for limiting transmission from close contact, has the added benefit of reducing overall density in a space. This, in turn, assures that there is an increased amount of outdoor air per person over a space with a pre-COVID population density.

Window air conditioners, unit ventilators and fans

Unit ventilators and window air conditioners have limited ability to bring in fresh air. Often they only recirculate and condition indoor air. For spaces with local ventilation control, occupants should try to maximize outdoor air damper settings, if applicable. Additionally:

- *Whenever possible*, have blowers set on low and pointed away from occupants. This prevents air from blowing from a potentially infected person to another and minimizes the possibility for virus transmission.
- If conditions allow, open windows and doors to increase ventilation – note however that in spaces with HVAC systems, control of temperature and humidity are lost and the outside air is not filtered, which can compromise the HVAC system performance and lead to potential concerns such as allergies or other respiratory conditions.
- Window fans should only be used when *exhausting out* of the space.
- Free standing fans or window fans *blowing into the space* can “push” air from one person to another and **should not be used**.

Use of stand-alone filtration units

Starting in the Fall 2021 semester:

Although not required, in keeping with best practice guidance and out of an abundance of caution,, Facilities Operations in consultation with EHS will be supplying stand-alone filtration units in classrooms

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and teaching labs available for instruction in the fall that do not have the mechanical means to bring in outside fresh air via the building ventilation system. These units will be labeled with the room numbers and tracked as inventory but will not be replaced if moved from their assigned classroom/teaching lab. A list of the [classrooms](#) and [teaching labs](#) are appended to this document. The number of units provided for each classroom or teaching lab is based on room dimensions and achieving an increased air change rate when units are running at the medium setting. It is important to keep the units at the medium setting whenever possible. Lowering the setting reduces the effectiveness of the units. Settings can be increased, though this may increase noise, interfering with instruction.

The University will not be funding air purifiers for other reasons. However, if your department chooses to purchase stand-alone units for comfort purposes, keep these requirements in mind:

- They must **only** utilize HEPA filters (or combination HEPA and carbon filters – many units on the market incorporate both HEPA filters for particulates and carbon filters for odors.)
- No ionizers or photocatalytic oxidation (PCO) technologies – these are marketed as able to remove odors, smoke, and other contaminants, but they can produce ozone, a harmful respirator irritant and/or other hazardous by-products.
- No UV – Can produce ozone and also has the potential for harmful UV exposure to eyes and skin
- Portable units may also contribute to overload of electrical circuits in some locations.
- Nuisance noise can be generated from the units, especially when operated at higher levels. Operating at low levels, however, reduces the effectiveness of the unit.
- Departments interested in purchasing stand-alone units should contact Amy Allen, Associate Director Supply Chain Management, at amy.allen@uconn.edu, to discuss options.

What about adding UV lamps to existing ventilation systems?

Ultraviolet germicidal irradiation (UVGI) uses short-wave ultraviolet (UVC) energy to inactivate viral, bacterial, and fungal microorganisms. UVC energy disrupts the DNA of a wide range of microorganisms and renders them harmless - but only if given a high enough dose and duration of exposure, which varies from microorganism to microorganism.

In-duct UVGI air disinfection systems must be engineered to provide a high enough dose at specific velocities in order to produce the desired effect. Design and maintenance are critical to ensure adequate dose over the high volume and velocity of air movement in ducts. In-duct UVC systems are more often used to maintain effectiveness of cooling coils, rather than provide air disinfection. Simply adding UV lamps to ductwork without proper design has not been demonstrated to be effective. And UV sources present hazards to technicians and potentially occupants if not used properly.

At this time, based on current consensus standards and guidance, EHS does not advise in-duct UVGI air disinfection systems for general building use. EHS and Facilities Operations will continue to monitor guidance from health agencies on how to effectively utilize ventilation systems to assist in reducing disease transmission.

Resources

1. [CDC General Business FAQs for COVID-19](#)
2. [Guidance for Building Operations during the COVID-19 Pandemic](#)
3. [Air filtration and COVID-19: IAQ expert explains how to keep you and your building safe](#)
4. [ASHRAE Technical Resources: Filtration/Disinfection](#)

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Fall 2021 - Classrooms supplied with stand-alone filtration

| | | |
|-----------------------------|-------------------------------------|-------|
| STORRS CAMPUS | STORRS HALL | SH002 |
| STORRS CAMPUS | STORRS HALL | WW16 |
| STORRS CAMPUS | STORRS HALL | SH117 |
| STORRS CAMPUS | STORRS HALL | SH303 |
| STORRS CAMPUS | HALL BUILDING | 104 |
| STORRS CAMPUS | HALL BUILDING | 129 |
| STORRS CAMPUS | BEACH HALL | 302 |
| STORRS CAMPUS | BEACH HALL | 317 |
| STORRS CAMPUS | BEACH HALL | 443 |
| STORRS CAMPUS | WALTER CHILDS WOOD HALL | 004A |
| STORRS CAMPUS | WALTER CHILDS WOOD HALL | 004B |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 018 |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 025 |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 102 |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 103 |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 202 |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 216 |
| STORRS CAMPUS | FAMILY STUDIES BUILDING | 220 |
| STORRS CAMPUS | RATCLIFFE HICKS BUILDING | 001 |
| STORRS CAMPUS | RATCLIFFE HICKS BUILDING | 101 |
| STORRS CAMPUS | RATCLIFFE HICKS BUILDING | 201 |
| STORRS CAMPUS | WHITE BUILDING | 209 |
| STORRS CAMPUS | ARJONA BUILDING (HUMANITIES) | 105 |
| STORRS CAMPUS | ARJONA BUILDING (HUMANITIES) | 119 |
| STORRS CAMPUS | ARJONA BUILDING (HUMANITIES) | 143 |
| STORRS CAMPUS | TORREY LIFE SCIENCES BUILDING | 301 |
| STORRS CAMPUS | GANT NORTH BUILDING | 020 |
| STORRS CAMPUS | SCHOOL OF FINE ARTS - ART | 106 |
| STORRS CAMPUS | SCHOOL OF FINE ARTS - ART | 107 |
| STORRS CAMPUS | SCHOOL OF FINE ARTS - ART | 202 |
| STORRS CAMPUS | HALL BUILDING | 202 |
| STORRS CAMPUS | HALL BUILDING | 401 |
| STORRS CAMPUS | HALL BUILDING | 422 |
| STORRS CAMPUS | BEACH HALL | 209 |
| STORRS CAMPUS | BEACH HALL | 404 |
| STORRS CAMPUS | BEACH HALL | 447A |
| STORRS CAMPUS | MANCHESTER HALL | 002 |
| STORRS CAMPUS | PLANETARIUM | 103 |
| STORRS CAMPUS | DRAMA MUSIC BUILDING | 128 |
| STORRS CAMPUS | DRAMA MUSIC BUILDING | 134 |
| STORRS CAMPUS | DRAMA MUSIC BUILDING | 219A |
| STORRS CAMPUS | DRAMA MUSIC BUILDING | 219B |
| STORRS CAMPUS | ARJONA BUILDING (HUMANITIES) | 138 |
| STORRS CAMPUS | ARJONA BUILDING (HUMANITIES) | 139 |
| STORRS CAMPUS | TORREY LIFE SCIENCES BUILDING | 111 |
| STORRS CAMPUS | TORREY LIFE SCIENCES BUILDING | 263 |
| STORRS CAMPUS | SCHOOL OF FINE ARTS - ART | 102 |
| STORRS CAMPUS | SCHOOL OF FINE ARTS - ART | 222 |
| STORRS CAMPUS | SCHOOL OF FINE ARTS ATRIUM | 103 |
| STORRS CAMPUS | KELLOGG DAIRY CENTER | 020 |
| STORRS CAMPUS | DEPOT- THOMSON HALL | 143 |
| STORRS CAMPUS | DEPOT- THOMSON HALL | 150 |
| HARTFORD REGIONAL CAMPUS | HTFD LAW SCHOOL-HOSMER HALL | 240 |
| HARTFORD REGIONAL CAMPUS | HTFD LAW SCHOOL-CHERYL A CHASE HALL | 110 |
| HARTFORD REGIONAL CAMPUS | HTFD LAW SCHOOL-CHERYL A CHASE HALL | 210 |
| HARTFORD REGIONAL CAMPUS | HTFD LAW SCHOOL-KNIGHT HALL | 215 |
| HARTFORD REGIONAL CAMPUS | HTFD LAW SCHOOL-STARR HALL | 225 |
| AVERY POINT REGIONAL CAMPUS | COMMUNITY AND PROFESSIONAL BLDG | 106 |
| AVERY POINT REGIONAL CAMPUS | COMMUNITY AND PROFESSIONAL BLDG | 210 |
| AVERY POINT REGIONAL CAMPUS | COMMUNITY AND PROFESSIONAL BLDG | 212 |
| AVERY POINT REGIONAL CAMPUS | COMMUNITY AND PROFESSIONAL BLDG | 302 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 106 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 107 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 201 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 204 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 205 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 206 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 207 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 208 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 211 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 301 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 303 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 304 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 306 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 309 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 311 |
| AVERY POINT REGIONAL CAMPUS | ACADEMIC BUILDING | 314 |

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Fall 2021 – Teaching labs supplied with stand-alone filtration

| Building Name | Room |
|---------------------------------------|-------|
| STORRS HALL | SH003 |
| KOONS HALL | 001 |
| KOONS HALL | 006 |
| KOONS HALL | 008 |
| KLINCK, MERLE S. AGRICULTURAL ENGINEE | 101A |
| KLINCK, MERLE S. AGRICULTURAL ENGINEE | 204B |
| BEACH HALL | 101 |
| BEACH HALL | 109 |
| BEACH HALL | 128 |
| BEACH HALL | 137 |
| BEACH HALL | 139 |
| BEACH HALL | 141 |
| BEACH HALL | 204 |
| BEACH HALL | 304G |
| BEACH HALL | 328 |
| BEACH HALL | 440 |
| BEACH HALL | 447B |
| BEACH HALL | 452 |
| BEACH HALL | 453 |
| ART CERAMIC STUDIO | 100 |
| ART CERAMIC STUDIO | 101 |
| ART CERAMIC STUDIO | 102 |
| ART CERAMIC STUDIO | 200 |
| MANCHESTER HALL | 318 |
| CASTLEMAN BUILDING (ENG. I) | 101 |
| CASTLEMAN BUILDING (ENG. I) | 106 |
| CASTLEMAN BUILDING (ENG. I) | 108 |
| CASTLEMAN BUILDING (ENG. I) | 111 |
| CASTLEMAN BUILDING (ENG. I) | 112 |
| CASTLEMAN BUILDING (ENG. I) | 114 |
| CASTLEMAN BUILDING (ENG. I) | 126 |
| CASTLEMAN BUILDING (ENG. I) | 136 |
| RATCLIFFE HICKS BUILDING | 006 |
| RATCLIFFE HICKS BUILDING | 006A |
| RATCLIFFE HICKS BUILDING | 009 |
| WHITE BUILDING | 010 |
| MUSIC BUILDING (W/ORCH. BAND) | 202 |
| MUSIC BUILDING (W/ORCH. BAND) | 203 |
| MUSIC BUILDING (W/ORCH. BAND) | 204 |
| MUSIC BUILDING (W/ORCH. BAND) | 205 |
| MUSIC BUILDING (W/ORCH. BAND) | 206 |
| MUSIC BUILDING (W/ORCH. BAND) | 207 |
| ARJONA BUILDING (HUMANITIES) | 109 |
| ARJONA BUILDING (HUMANITIES) | 110 |
| ARJONA BUILDING (HUMANITIES) | 115 |
| TORREY LIFE SCIENCES BUILDING | 007 |
| TORREY LIFE SCIENCES BUILDING | 013 |
| TORREY LIFE SCIENCES BUILDING | 017 |
| TORREY LIFE SCIENCES BUILDING | 022 |
| TORREY LIFE SCIENCES BUILDING | 091 |
| TORREY LIFE SCIENCES BUILDING | 171 |
| TORREY LIFE SCIENCES BUILDING | 179 |
| TORREY LIFE SCIENCES BUILDING | 181 |
| TORREY LIFE SCIENCES BUILDING | 201 |
| TORREY LIFE SCIENCES BUILDING | 203 |
| TORREY LIFE SCIENCES BUILDING | 207 |
| TORREY LIFE SCIENCES BUILDING | 253 |
| TORREY LIFE SCIENCES BUILDING | 265 |
| TORREY LIFE SCIENCES BUILDING | 267 |
| TORREY LIFE SCIENCES BUILDING | 277 |
| TORREY LIFE SCIENCES BUILDING | 303 |
| TORREY LIFE SCIENCES BUILDING | 309 |
| TORREY LIFE SCIENCES BUILDING | 311 |
| TORREY LIFE SCIENCES BUILDING | 313 |
| TORREY LIFE SCIENCES BUILDING | 371 |
| TORREY LIFE SCIENCES BUILDING | 475 |
| SCHOOL OF FINE ARTS - ART | 103 |
| SCHOOL OF FINE ARTS - ART | 105 |
| SCHOOL OF FINE ARTS - ART | 108 |
| SCHOOL OF FINE ARTS - ART | 109 |
| SCHOOL OF FINE ARTS - ART | 111 |
| SCHOOL OF FINE ARTS - ART | 112 |
| SCHOOL OF FINE ARTS - ART | 113 |
| SCHOOL OF FINE ARTS - ART | 115 |
| SCHOOL OF FINE ARTS - ART | 116 |
| SCHOOL OF FINE ARTS - ART | 117 |
| SCHOOL OF FINE ARTS - ART | 118 |
| SCHOOL OF FINE ARTS - ART | 119 |
| SCHOOL OF FINE ARTS - ART | 120 |
| SCHOOL OF FINE ARTS - ART | 228 |
| OBSERVATORY - SPRING HILL | 100 |
| DEPOT - HAMPTON COTTAGE | 16 |
| DEPOT - VERNON COTTAGE | 012 |
| COMMUNITY AND PROFESSIONAL BLDG | 208 |
| ACADEMIC THEATER - BLDG 22 | 201 |
| ACADEMIC THEATER - BLDG 22 | 204 |
| ACADEMIC THEATER - BLDG 22 | 205 |
| ACADEMIC THEATER - BLDG 22 | 209 |
| ACADEMIC THEATER - BLDG 22 | 212 |