

VENTILATION AND COVID-19

June 23, 2020 – Last Updated: June 21, 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

and teaching labs available for instruction in the fall that do not have the mechanical means to bring in outside 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](#)

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	FAMILY STUDIES BUILDING	111
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
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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	002
DEPOT- VERNON COTTAGE	003
DEPOT- VERNON COTTAGE	013
DEPOT- VERNON COTTAGE	014
DEPOT- WILLINGTON COTTAGE	001
DEPOT- WILLINGTON COTTAGE	003
DEPOT- WILLINGTON COTTAGE	004
DEPOT- WILLINGTON COTTAGE	013
DEPOT- WILLINGTON COTTAGE	016
DEPOT- WILLINGTON COTTAGE	018
DEPOT- WILLINGTON COTTAGE	019
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