



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

August 14, 2020

Update on Consideration of CDC and ASHRAE Guidance on Ventilation

Facilities Services has continued to monitor guidance from the Centers for Disease Control (CDC) and American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) concerning building system operations to mitigate the spread of COVID-19

The guidance from these sources is very similar and falls into three basic categories: increasing the amount of outside air being delivered to spaces, using high efficiency filtration in systems that circulate air between large numbers of spaces, and maintaining temperature and humidity levels within spaces.

As Facilities Services considers how to comply with this guidance, the limitations of existing systems are carefully considered. In many systems, limitations on heating and cooling capacities prevent simultaneously increasing the outside air while maintaining appropriate temperature and humidity levels. In other systems, the increased air pressure drop from higher efficiency filters will limit airflow unacceptably or cause equipment damage.

Keeping these system limitations in mind, Facilities Services is implementing strategies to follow CDC and ASHRAE guidance as much as possible. The amount of outside air supplied per person will be able to be increased in some of the newer systems. Some of these systems will also be able to flush the spaces with outside air for a period of time each night.

Facilities Services does not recommend opening windows as that could create problems with mold, dust, pollen, temperature regulation, and air movement. Air movement is especially important as opening windows can have unintended repercussions, such as pulling unwanted air into your space and/or moving air from your space into others' space(s).

ASHRAE guidance is to use MERV-13 or better filtration in systems circulating air between large numbers of spaces. Facilities Services had previously standardized on this level of filtration for large systems. Facilities Services will also be replacing all air filters in these systems prior to the fall semester. In smaller systems, increasing the filtration level would result in a loss of airflow (ventilation) to the spaces served, which can also damage some systems, so this has not been able to be done.

Data is not clear on what temperature and humidity limits are most effective in mitigating COVID-19. However, there are other airborne contaminants (molds, other viruses, and bacteria) that must continue to be controlled. Some research indicates that relative humidity levels between 40%-60% help to maintain control of these contaminants. Spaces are maintained within these ranges where possible.

ASHRAE and CDC have recommended consideration of UV systems, and others have recommended ION systems. Given the number of systems on the UTK campus, installation of these systems would not have been able to be accomplished by the beginning of fall semester, plus are cost prohibitive when considering the entire campus. As of this date, we have not seen any evidence of transmission of COVID-19 through HVAC systems. Concern of transmission affected by the HVAC system has been centered around movement of air within individual spaces. These concerns are being addressed as they are brought to our attention.

ASHRAE has recently provided a guidance document on maintenance to be performed on systems during reopening. The maintenance as described is already being performed at UTK.

Facilities Services Department

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Facilities Services will continue to stay abreast of changing CDC and ASHRAE guidance and will make adjustments where possible within the capabilities of the systems on campus.

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