



THE UNIVERSITY OF  
**TENNESSEE**  
KNOXVILLE

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Consideration of CDC and ASHRAE Guidance on Ventilation

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

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 comply with the CDC and ASHRAE guidance as much as possible. In newer systems with the ability to better control outside air, increasing outside air amounts is relatively simple. In these newer systems Facilities Services is also investigating implementing an overnight cycle where buildings are flushed with increased volumes of outside air without exceeding heating and cooling system capacities. This will help to limit any day-to-day concentration buildup of infectious particulate. It should be noted that this ability is reduced during periods of outside temperature extremes. In older systems, Facilities Services is evaluating if increased outside air volumes can be implemented within the limits of system designs.

Regarding filtration, the 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 in an effort to improve indoor air quality on campus. Facilities Services will also be replacing all air filters in these systems prior to the fall semester.

When considering indoor temperature and humidity limits, the data is not clear on what 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.

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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