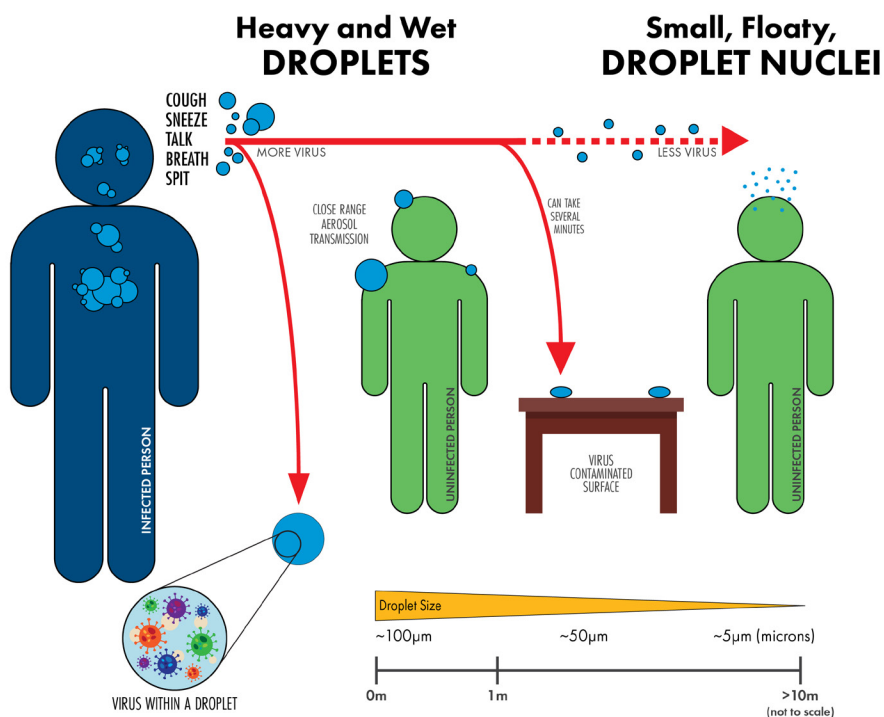


Higher education facilities have a variety of different building types and operations presenting unique challenges for staff, faculty and students when considering the control of Air Quality, including risk reduction addressing COVID-19 concerns, thus each campus will require multiple approaches. TLC can assist you in managing the risk for re-opening, operation and long-term capital improvement assessment.



The primary vectors for transmitting COVID-19 are touching surfaces with the virus, mitigated by hand washing; and contact with droplets containing the virus, mitigated by social distancing. The least prevalent transmission vector is an aspirated virus. HVAC systems can reduce the risk of infection from an aspirated virus.



How HVAC Systems Can Reduce the Risk of Transmission

- Retro-Commission core systems; don't modify a system that is functioning below optimal
- Use ventilation and exhaust systems to improve IAQ
- Circulation systems that minimize cross-contamination
- Enhanced filtration levels improve IAQ
- Modified control sequences/ setpoints (temperature and humidity control) minimize virus propagation
- Specialized equipment to target concerns

Want help identifying next steps for your building?

Contact your local TLC office or Matt Wiechart, PE, CxA, LEED AP, at 813.281.8427 or matthew.wiechart@tlc-eng.com

Affect of Atmospheric Conditions of Virus Life

CONDITION	Temperature	Humidity	Solar	HALF LIFE
Surface	70-75°F	20%	None	18 hours
Surface	70-75°F	80%	None	6 hours
Surface	95°F	80%	None	1 hour
Surface	70-75°F	80%	Summer	2 minutes
Aerosol	70-75°F	20%	None	~60 minutes
Aerosol	70-75°F	20%	Summer	~ 15 minutes

Increased temperature, humidity, and sunlight are detrimental to SARS2-CoV-2 in saliva droplets on surfaces and in the air.



How to Remain Competitive in the 'New Normal'

Communication is key with faculty, staff and students. As you address operational and janitorial concerns, TLC can support you in communicating building energy system strategies that help protect your assets and may include:

- Building wellness audit to inform cost effective measures for IAQ improvement
- Low cost / no cost HVAC system upgrades that enhance efficiency:
 - Temperature set points
 - Damper positions
 - Fan speed settings
 - Filter upgrades / changes
 - Operational / Equipment settings
- Planning / budgeting for capital upgrades:
 - Fan replacements
 - Ventilation / exhaust system upgrades
 - Lighting modifications
 - Air handler replacements
 - Hydronic systems upgrades
 - Central utility equipment upgrades
- Position building asset as a healthy building, including:
 - Indoor air quality metering / monitoring communicated to building users
 - Plan to achieve WELL, BREEM or FitWel Certification

References



CDC – Centers for Disease Control and Prevention - <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section10.html>
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ASHRAE Position Document on Infectious Aerosols 4/14/2020. -ASHRAE Position Document on Infectious Aerosols

ASHRAE Handbook – HVAC Applications - CHAPTER 62. ULTRAVIOLET AIR AND SURFACE TREATMENT.

ASM - 2019 Novel Coronavirus (COVID-19) Pandemic: Built Environment Considerations To Reduce Transmission.<http://msystems.asm.org>

IES Germicidal Ultraviolet (GUV) – Frequently Asked Questions <https://media.ies.org/docs/standards/IES-CR-2-20-V1-6d.pdf>

The RESET® Air Standard - https://www.reset.build/standard#std__download

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