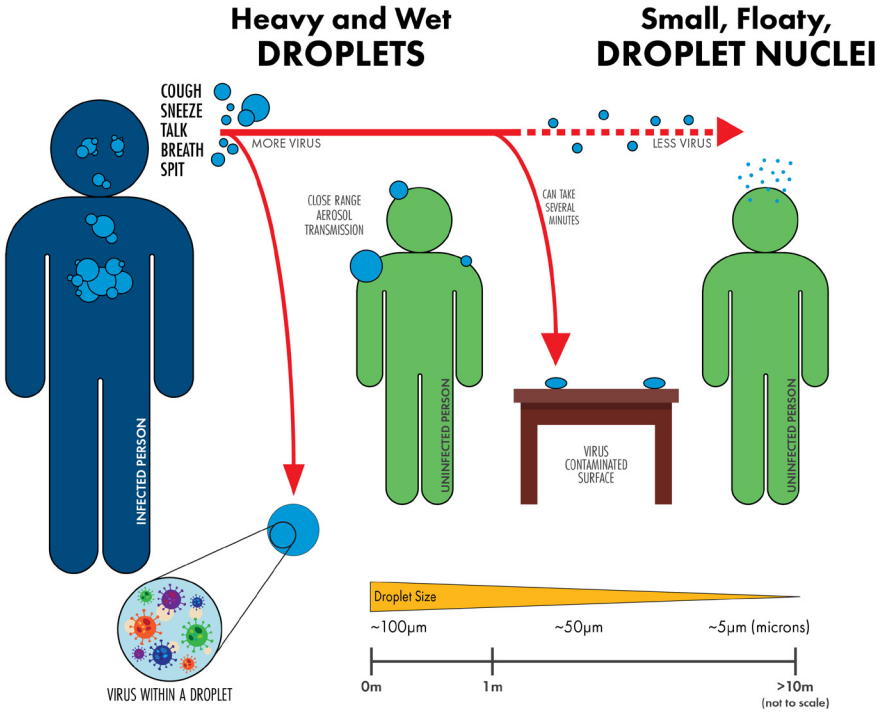
TLC ENGINEERING SOLUTIONS®

K - 12 EDUCATION

COVID-19 RISK MANAGEMENT

Families and communities need schools to be ready to reopen as soon as public health officials signal that it is safe. Schools are vital to the community as they connect students with peers and mentors to productively channel youthful energy, impart essential academic skills and knowledge, and provide meals for the community's most economically challenged families. TLC Engineering Solutions can assist you in managing risk for the re-opening, operation, and overall health of the learning environment.

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 anaspirated 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 Lawrin Ellis, PE, LEED AP, at 239.292.3776 or lawrin.ellis@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.

WH.GOV

How to Remain Competitive in the 'New Normal'

Communication is key among school district administrators, educators/school staff, students and parents. As the community addresses occupation, operation and sanitation concerns, TLC can support you in communicating building HVAC system strategies that help protect staff / students and may include:

- Building wellness audit to inform cost effective measures for IAQ improvement and address water system concerns that include Legionnaires'
- 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:
  - Ventilation system upgrades
  - Lighting modifications
  - Maintenance of idle systems
- Position campuses as healthy buildings, including:
  - Indoor air quality metering / monitoring communicated to building users and facilities
  - Incorporating WELL, BREAM or FitWel strategies

References

CDC – Centers for Disease Control and Prevention - https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section10.html
https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html
NIOSH - National Institute of Occupational Safety and Health -https://www.cdc.gov/niosh/index.htm
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