CREATING A

HEALTHY

SCHOOL ENVIRONMENT

WITH COMMERCIAL HVAC TECHNOLOGY

Creating a **Healthy School Environment** with Commercial HVAC Technology

It's been a heckuva year.

Between raging debates on masks, classroom safety and the merits of Zoom, students, educators and school administrators have been through a lot in the past 12 months. We salute your patience, your courage, and your commitment to the kids who are the future of our world. And here at Air-Tro, we're busier than ever helping schools and childcare facilities make sense of often contradictory, frequently changing advice and compliance guidelines for wherever children gather.

As of spring 2021, the CDC and the Los Angeles Department of Public Health have moved away from much of their earlier hygiene advice and towards recommendations that focus on the single, unchanging fact about Covid-19 and its multiple variants: this virus is airborne. Hand washing, cleaning countertops and other "high-touch" hygiene measures are not enough to prevent spread. Air quality and indoor safety are paramount.

An appropriately upgraded HVAC system is essential to maintain compliance with health department and school district guidelines throughout our districts.

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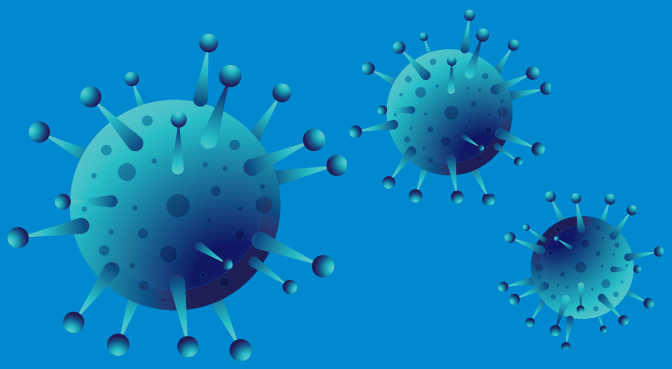


Let's take a look at these Los Angeles County Department of Public Health Order guidelines, and how they relate to the heating and air conditioning system at your school or childcare center.

Ventilation

"HVAC systems are set to maximize indoor/ outdoor air exchange unless outdoor conditions (recent fire, very high outside temperature, high pollen count, etc.) make this inappropriate."

It starts with opening windows and doors whenever possible to increase airflow, while continuing to use the thermostat to set a comfortable temperature for all. Child-safe fans can also promote this crucial influx of outdoor air into classrooms, offices and common areas.

Evaluate your HVAC system with a professional to ensure your built-in ventilation systems are not only up to code, but serviced properly to ensure peak performance. Airflow recirculation should be reduced or eliminated entirely if possible. Demand-controlled ventilation must be eliminated to keep airflow consistent throughout the day. Check to make sure all possible ventilation upgrades are in place for economizers and outdoor air intakes.

If there was ever a time for upgrading this equipment to guarantee code compliance and total functionality, that time has surely arrived. Luckily, HVAC technologies of today are also geared towards saving energy wherever possible, resulting in lower utility bills, too.

If possible, keep your HVAC system on for at least 2 hours before and after the building is occupied. This refreshes airflow and ensures clean, filtered air when people do re-enter school buildings.

Air Cleaning

“Portable, high-efficiency air cleaners have been installed if feasible.”

“Air filters have been upgraded to the highest efficiency possible.”

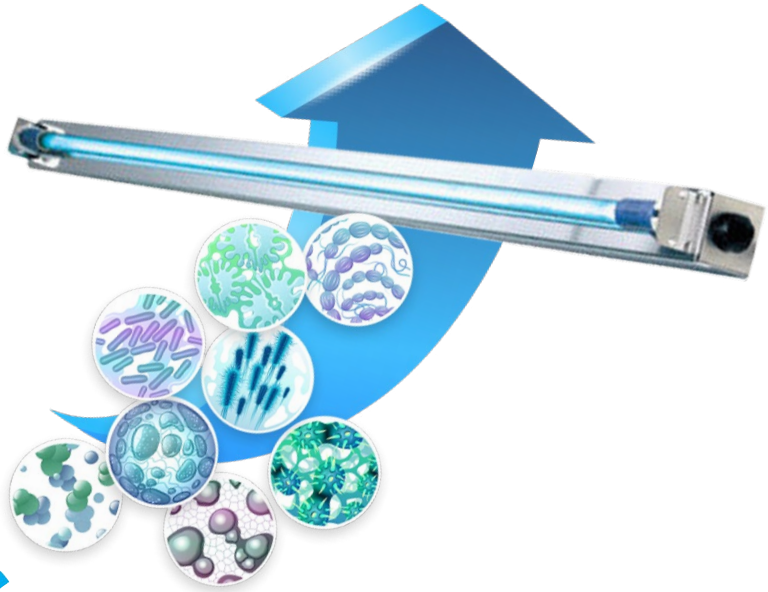
The Los Angeles Department of Health is clear: cleaning the air that children, their teachers, office staff and administrators breathe within all indoor buildings is now a matter of compliance. HVAC air filters should be changed out often and always following correct sizing, and installation requirements for your system. MERV-rated filters must be used, and luckily, are relatively inexpensive.

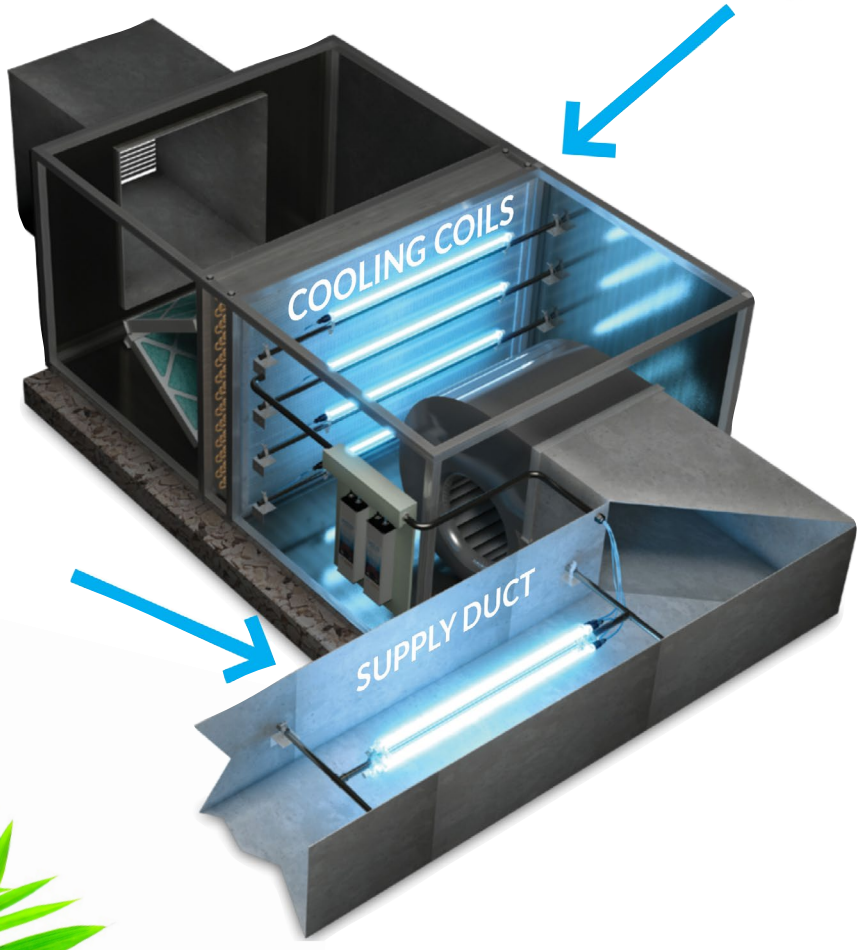
Think about installing UV light air sanitizers. While past UV germicidal controls were mostly utilized in hospitals and scientific research labs, today’s UV equipment options for commercial buildings offer numerous cost-effective, comprehensive approaches for killing germs and preventing the spread of viruses, pollutants and harmful irritants. Quite frankly, this technology makes sense for any environment where children are present. Consider a recent article in Nature:

> **“Under a UV-C irradiance of 0.849 mW/cm^2, partial inactivation occurred from 0.8 seconds of exposure, while SARS-CoV-2 virus infectivity was reduced to below detectable levels in as few as 9 seconds for dried virus and 4 seconds for wet virus.”**

Translation? Sterilization with UV-C light is rapid and effective.

UV light for HVAC works in two ways: coil sterilization and air sterilization. With coil sterilization, essentially one or two stick-shaped light bulbs are secured within the school's HVAC system to shine UV light 24/7 onto the air handler coil. Any viruses, bacteria, mold or other harmful irritants that would otherwise stick to its moist surface are heated into oblivion.





With the air sterilization option, lights are placed inside the ductwork where air returns into the system. The goal of this equipment is not to fry germs stuck on the air handler coils, but instead to actually eliminate viruses, germs and pathogens floating around in the return air. Some UV air sanitation systems are set up to even sync up with the HVAC's blower motor, turning on and off along with it during a 24 hour cycle.

Regular HVAC Maintenance and Inspections

"The school HVAC system is in good, working order. Prior to school reopening, the HVAC system should be evaluated by an appropriate engineer familiar with the Guidance for Reopening Schools as developed by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)."

This is now an essential part of code compliance for any school or childcare program. Whether it be a hidden leak resulting in mold or mildew, a broken economizer (an all too common problem with these fragile pieces of equipment) or filters that need to be changed, a qualified technician will find and fix these issues.

Along with preserving and enhancing the well-being of everyone on school grounds, this kind of regular maintenance will also ensure your system is working well for years to come.

The truth is that air quality has never mattered more, to all of us. For schools, this focus presents unique challenges and opportunities for better health and safety.

And the world is watching.

Increased scrutiny from parents groups, the teachers union, and the media as schools reopen necessitate compliance with CDC and Department of Public Health guidelines wherever possible.

Air-Tro is here to help you determine what HVAC modifications are needed, and the most cost effective way to implement these upgrades. In today's world, high quality commercial HVAC is no longer just about indoor comfort, but inextricably linked to a successful school year.

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Robert Helbing, PE, is President of Air-Tro Heating and Air Conditioning Company. He is a Caltech-degreed aeronautical engineer (yes – a rocket scientist!), as well as a 4th generation contractor and 3rd generation engineer. He is a past-president of the Institute of Heating and Air Conditioning Industries (IHACI); Air Conditioning Contractors of America (ACCA) Contractor of the Year, 2011; and a 15-year member of Excellence Alliance Industries, a membership organization committed to the development and improvement of HVACR companies nationwide. Bob is also a founding member and past committee chair for the Western HVAC Performance Alliance, a council of stakeholders in the Energy industry which includes utilities, regulators, manufacturers and contractors. He currently serves on two committees for the WHPA: Commercial Quality Installation and the Existing Buildings Energy Efficiency. He can be reached at 626.357.3535 and bobhelbing@airtro.com.

For more information, visit our commercial section on the web at **airtro.com/commercial**

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