



OSC CLEAN AIR PROGRAM FOR K-12 SCHOOLS

We spend approximately 90% of our time indoors, and studies have long shown that our environment is the largest determinant of our overall health. The COVID-19 pandemic has highlighted how truly critical our physical environment can be to our health as scientific evidence supports the case for guarding against airborne transmission of the disease. Now, as school districts open up, administrators, teachers and parents are all looking for answers.

WHAT DO I DO NOW?

The reality, despite what some will claim, is that there is no magic bullet and school facilities are not a one-solution-fits-all proposition. GARDINER has been a leader in the Ohio market around Indoor Air Quality for decades, offering technologies, strategies and solutions to help keep buildings healthy. **Now those products and services are available to Ohio Schools Council members at discounts ranging from 15-45%.**

OUR APPROACH: HEALTH SCIENCE MEETS BUILDING SCIENCE

GARDINER was the first Cleveland-based member of the International WELL Building Institute (IWBI), the world's leading authority on health & wellness in facilities. Together with recommendations from ASHRAE, the CDC, the Ohio Department of Health and local healthcare experts, we've developed an approach that combines the best of health sciences and building sciences provide you with options to keep your facility as safe as possible from the spread of infectious disease.



One of the best tools in this process is a **WELL Health-Safety Rating Assessment**, which can help you quickly collect, organize and evaluate data covering all aspects of safely opening and operating facilities of all types. GARDINER is offering free WELL HSR Assessments for OSC members.



VENTILATION & HUMIDITY CONTROL

The introduction and distribution of adequate ventilation air and management of humidity levels to 40-60% is the cornerstone of good IAQ. ASHRAE's Position Document on Infectious Aerosols and Building Readiness & Reopening Guidelines recommend that facilities of all types follow, at a minimum, the latest published standards, guidelines and best practices. Where possible, building operators are being told to look beyond minimum requirements to higher ventilation rates and airflow patterns that draw contaminants out of the breathing zone. Building owners should consult an HVAC professional to discuss the building's application, occupancy patterns and other factors to determine the most practical approach. GARDINER's Building AI: Applied Intelligence team can help you plan, implement and validate ventilation & humidity control measures that make sense for your facility.





CONTROLLING AIRBORNE CONTAMINANTS

While there is no magic bullet, there is sufficient research that different filtration and air purification technologies are effective at removing contaminants, including viruses, from an indoor space. Some of those technologies worth considering in your own facilities:

FILTRATION UPGRADES

One of the easiest measures to consider is replacing the filters you're using today with a higher grade (MERV rating) filter. ASHRAE suggests that MERV-13 and above help control the spread of infectious disease. Important considerations to this would be how your air distribution systems would handle static pressure changes (many aren't designed to handle higher grade filters) and how well fitted the filter frames are to avoid gaps and bypass air.

Consider Upgrading

MERV 13

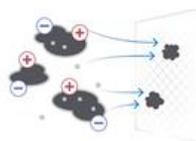
A MERV 13 air filter captures more than 95% of virus-carrying particles in **3 air changes**.* If you rely on a MERV 7, 8, or 9 air filter, you would have to cycle air through your filter **10 or more times** to remove the same amount of these particles.



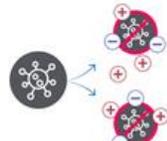
*Air change refers to the complete replacement of a volume of air within an indoor space with an equal volume of newly filtered air.

NEEDLEPOINT BIPOLAR IONIZATION TECHNOLOGY

Districts across Ohio are implementing this affordable, cutting edge technology. NPBI involves deactivating pathogens by producing a natural bio-climate rich with positive and negative ions. The bipolar ions seek out atoms and molecules in the air, neutralizing particulate matter, viruses and bacteria in the air. Independent third party testing has proven the effectiveness of Plasma Air Ionization technology in the reduction of MS2 Bacteriophage, a surrogate for SARS-CoV-2 (COVID-19), in indoor environments. This research indicated a 99% air and 80% surface disinfection rate within 10 minutes. Plasma Air is safe for humans, produces no ozone and is virtually maintenance free.



Airborne particles are charged by the ions causing them to cluster and be caught in filters



As they divide to reproduce, bacteria and virus cells bond with oxygen ions and are destroyed



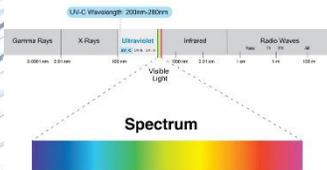
Odorous gases and aerosols oxidize on contact with oxygen ions and are neutralized



Oxygen ions cause a chemical reaction with VOCs breaking down their molecular structure

ULTRAVIOLET TECHNOLOGY

By utilizing UV-C rays, UVDI (Ultraviolet Devices Incorporated) technology destroys the DNA of microorganisms, including viruses. UVDI is a measure of utilizing "line of sight" wavelengths to kill bacteria/pathogens and similar air born contaminants. Potential application methods include surface disinfection on coils, airstream disinfection, and in-room upper-air UV. GARDINER utilizes a sophisticated modeling software to determine the optimal UV configuration & balance of performance, energy consumption and cost. Practical application of UV in K-12 facilities can be limited, but may play a role in overall mitigation strategies.



NEXT STEPS

Maybe the most important aspect of managing Indoor Air Quality measures in your facility is working with a team you can trust to advise you. The Ohio Schools Council has partnered with GARDINER to help. For more information or to set up your WELL Health-Safety Assessment, contact Dave Smith (dsmith@whgardiner.com) or Jerry Hixson (jhixson@whgardiner.com) from GARDINER's K-12 team or call 440-248-3400.