

# THE PILLARS OF: INDOOR AIR QUALITY



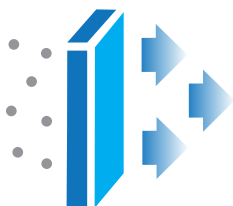
## INDOOR AIR QUALITY (IAQ)

TODAY, these are three letters with tremendous significance. With demands for cleaner, fresher, and more comfortable environments on the rise, property owners and managers of every type are making indoor air quality (IAQ) their top priority.

There is no stand-alone solution to providing clean, fresh air. Neither is there a cookie-cutter strategy that will work for all environments. Instead, enhancing indoor air quality (IAQ) requires a holistic approach that tackles the challenge from several key angles. No doubt, proper air ventilation and filtration are key to reducing the risks of infection. To that end, ASHRAE released its Practical Guidance for Epidemic Operation of Energy Recovery on June 9<sup>th</sup>,

“As IAQ becomes even more relevant, it’s important to apply several measures to ensure superior protection and prevention against harmful bacteria, pollutants, viruses or other microbes, and pollution,” says **Will Elaridi, Business Development Rep with Mitsubishi Electric Sales Canada Inc.’s (MESCA) HVAC Division**, explaining, “We sometimes call this the ‘swiss cheese model’ wherein each layer is a form of protection, while each hole is an imperfection. Ventilation and improving IAQ is a very important layer to add to the model, which help us achieve superior protection.

## BY AND LARGE, THERE ARE FOUR SUB-LAYERS TO CONSIDER WHEN TACKLING IAQ. THESE INCLUDE:



### FILTRATION

How effective is air being filtered before it enters an environment? Are the right filters in place to mitigate the presence of harmful pollutants? With the risks of COVID-19 set to linger for a long time, experts suggest increasing air filter efficiency from MERV 8 to MERV 13, 14, or HEPA to catch smaller particles than dust/pollen. Eco-friendly ultra-violet (UV) lighting technologies are also proving effective in killing harmful particles that stick to these filters or even come in contact with the air space.



### VENTILATION

Improving IAQ means ensuring clean, fresh air is constantly being pulled into the environment while stale air is constantly being removed. To that end, IAQ specialists recommend increasing air changes per hour (ACH) to rates that exceed current ASHRAE minimum requirements.

“For example, in a space that’s typically meant to have 3-4 ACHs, it would be better to increase up to 6-9 ACH - or even sometimes 12 ACH - to make sure you’re moving old and potentially ‘contaminated’ air out of the office or home,” says Elaridi.

Maintaining optimal humidity levels (e.g., 40-60%) is also key to preventing harmful bacteria/viruses from surviving within indoor environments as they tend to thrive in humid or dry areas. Additionally, it is helpful to utilize energy recovery devices as they allow outside air in and expel stale air out while saving energy in the process.



### HIGH-RISK SPACES

Identifying and addressing your IAQ trouble spots is key to creating an effective IAQ strategy. Those trouble spots could include areas with poor ventilation, crowded or high-density spaces, areas that are host to high metabolic rate activities (e.g., fitness/exercise, active group events, social spaces, etc.), or environments with high air movements that make it easier to transmit airborne particles from one area to another.

“Once you know where you need to focus your best IAQ practices and technologies, then you can make more informed investments,” adds Elaridi.

For reference, ASHRAE recommends three ACHs of outside air for two hours pre and post-occupancy when it comes to cleansing crowded environments.



## HVAC MAINTENANCE

Improving IAQ is not a one-and-done project. It requires constant attention and adaptation to ensure strategies are working and building environments employ the best practices and HVAC technology to protect occupants from the latest risks. Herein, HVAC maintenance is an important part of any IAQ strategy and includes any number of activities from ensuring the HVAC DOAS system is running up to par, HVAC equipment controls are being monitored and utilized (e.g., CO<sup>2</sup> and occupancy sensors, purge modes, etc.), and filters are being changed regularly.

“Even the best filters will lose effectiveness over time as dust/particles accumulate on the surface of the filter,” says Elaridi. “That’s why you need to keep HVAC maintenance an ongoing consideration.”

There’s a reason IAQ is dominating the building management conversation. Fortunately, with a holistic approach and the right tech, there are many ways to turn words into action.

Mitsubishi Electric Sales Canada Inc. (MESCA) is dedicated to educating and providing solutions on IAQ to anyone involved in building projects. Our research and development teams are also continuously researching more ways to improve the efficiency and effectiveness of our ERV and DOAS ventilation products to exceed code requirements and standards.

Learn more about MESCA's IAQ solutions at

<http://mitsubishielectric.ca/en/hvac/professionals/energy-recovery-ventilation>.

And if you're a dealer seeking a distributor, visit

<http://www.mitsubishielectric.ca/en/hvac/where-to-buy>.



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