



SICK BUILDING SYNDROME

THE HIDDEN "PRODUCTIVITY TAX"

Are You Paying the Hidden “Productivity Tax” that Comes from Unhealthy Air?

SBS Can Hurt Your Health... and Your Wallet

Whether it's a story about a Legionnaire's outbreak or Covid, everyone has probably heard something in the news about Sick Building Syndrome. But popular awareness of this problem is still limited. Most of us imagine it as something that only happens in a giant skyscraper, or to rowdy conventioners with a leaky air conditioner in their hotel. In reality, SBS (the popular acronym for Sick Building Syndrome) is a common and pernicious problem for many commercial building owners, whether or not they host conventions. While leaks can be involved, water is not always the culprit, and obviously, SBS can occur in a structure of any size. Most importantly, it often goes undetected, until someone inside the building complains about its effects.

Consider the facts. According to the Environmental Protection Agency, Sick Building Syndrome is defined as “acute health and comfort effectslinked to spending time in a particular building.” The EPA also reports that up to 35% of commercial buildings have one or more elements likely contributing to SBS. According to the Los Angeles Department of Public Health, 30%-60% percent of workers report “at least one health problem attributable to their workplace



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environment.” Even more troubling, scientists publishing a report in the Lancet found that SBS is more likely to occur in newer, more energy efficient buildings than within older structures. Whether it’s a worst case scenario involving a fatal case cluster of Legionnaire’s, acute dermatitis from airborne fiberglass microshards, or lower productivity building-wide as a result of elevated interior CO₂ levels, SBS can have costly and devastating results.



Luckily, the right remedial actions are well known for preventing SBS and its abatement. Careful maintenance and thoughtful installations can not only help you avoid a tragedy, but also create a workplace where people thrive. Let’s take a look at the most important solutions and indeed, best practices to foster good health and clean air within any commercial building. Some are easy fixes, others more complicated, but all are essential for any commercial building owner interested in preserving and protecting their financial investment.

Source Control: Stopping the Problem Before It Starts

Covid isn’t so far away that we all can’t remember the strict rules for many buildings about who could and couldn’t enter. Obviously, many of us also can also recall how well that worked (or didn’t) in a variety of situations. However, regardless of situational extremes, keeping obviously sick people home from work and out of your building makes sense for everyone. If that isn’t possible, consider keeping a box of paper masks and hand sanitizer at the front desk for those who might not be feeling well. Remind your tenants that staying home when suffering from the flu, colds or worse prevents the spread of illness to others. There is nothing heroic about coming to work when you feel terrible.

Animals, paints, and other chemicals can also cause real problems for others. Regardless of policy, an inattentive building owner is a fact of life that occupants will notice, fast. Pets, for example, may be prohibited without permission, but footage from a lobby camera could reveal that the rule is often ignored. Or a small business operating in your building might be using toxic chemicals or unauthorized mechanical equipment that brings odors and allergies to another floor. The takeaway? Know who and what is coming into your building at all times. It’s important for both safety and health reasons.



Ventilation: A Powerful Intervention for Healthy Indoor Air

Few outside the HVAC industry may be aware of this facet of Sick Building Syndrome: the detrimental effects from working or living with too much carbon dioxide. In the grass outside your building, carbon dioxide levels are usually around 350-450 parts per million. In a well ventilated structure, carbon dioxide levels are between 450 to 1000 ppm. In a “sick building,” those levels can go to 1000-2000 ppm or even higher. And while people can tolerate carbon dioxide levels up to 5000 ppm, anyone inside a building with those kinds of numbers will inevitably start to feel their effects. Drowsiness, headache and other mild but unpleasant physical symptoms are inevitable. There’s a reason the Harvard University T.H. Chan School of Public Health study recently came out with a study referring to CO₂ levels at 1440 ppm inside an office building as “the cognitive cliff.”

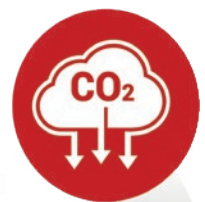
CO₂ LEVELS COMPARED





According to that study, strategic decision making, information usage and crisis response skills all dwindle to about 50% of their usual levels in the ordinary person once that level of carbon dioxide in the air is reached. It's a concrete demonstration of the excessive "productivity tax" commercial building owners and their occupants pay when they spend time in a sick building.

Remember, ventilation is essential. Your system should be allowing for at least 5 full changes of indoor air (ACH) per hour. These regular infusions of outside air prevent stale, unhealthy air from recirculating. Your HVAC consultant can help to determine if your air conditioning system has its supply, return, exhaust and outdoor air levels in balance. Vents should also remain open whenever possible. However, it's important to remember that healthy air exchange is just part of the puzzle when it comes to eliminating the risk factors for Sick Building Syndrome. There are other indoor air pollutant levels that must be addressed, which is why the next remediation technique is also so important.



**STRATEGIC
DECISION
MAKING**

**INFORMATION
USAGE**

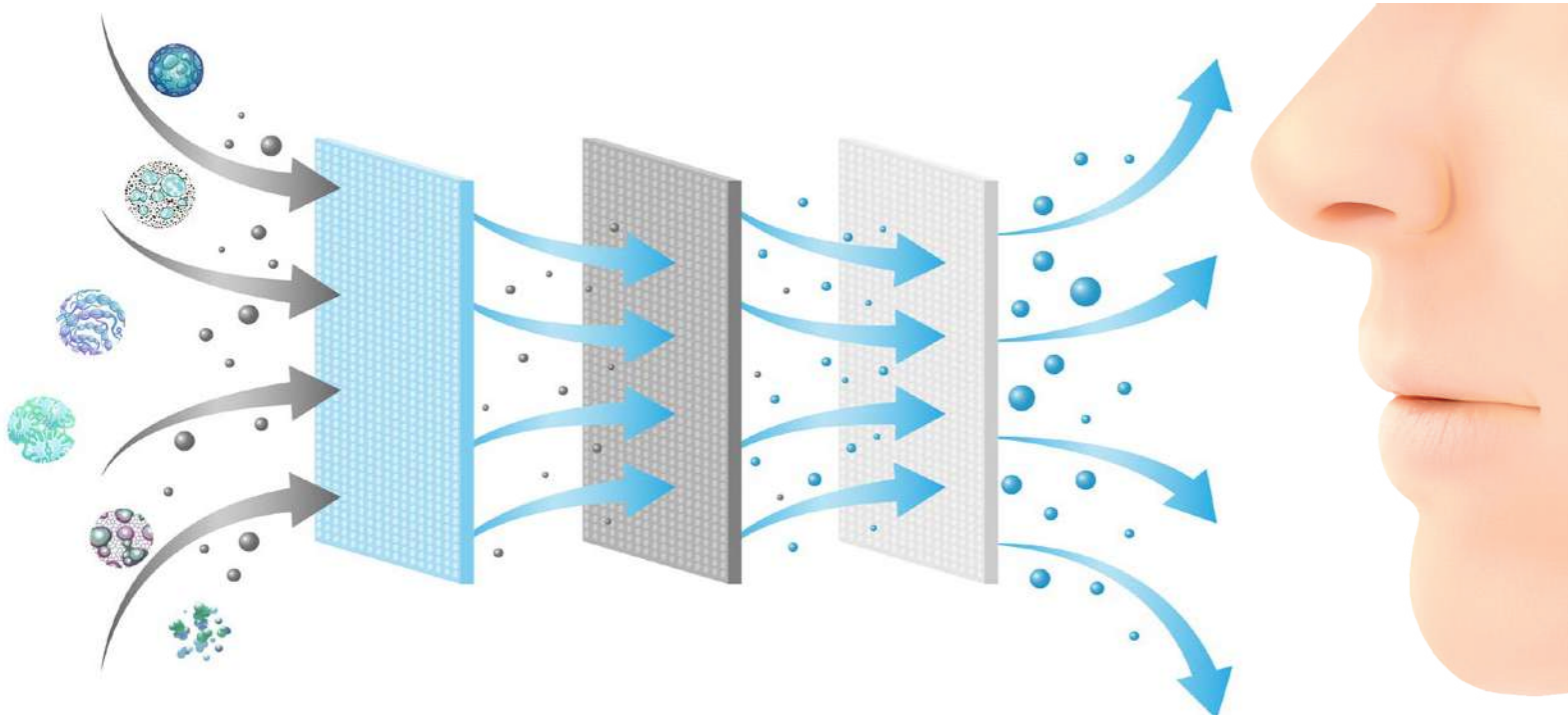
**CRISIS
RESPONSE
SKILLS**

Air Filtration: Screening Irritants, 24/7

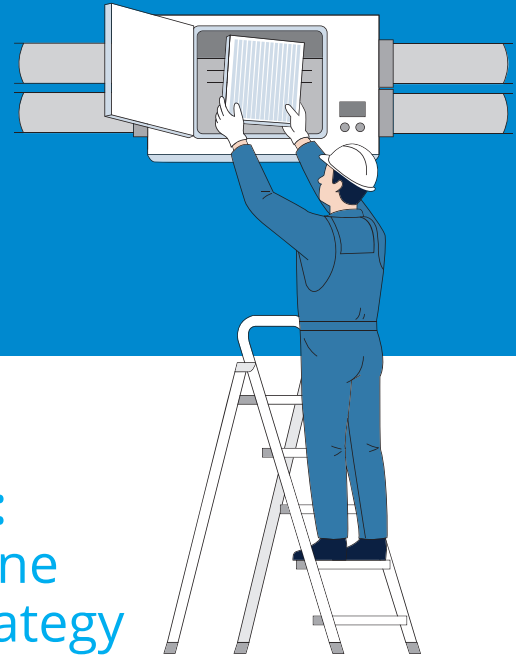
How many times have you entered a commercial building that smells musty? Imagine the physical consequences of breathing that kind of air, day after day, hour after hour. It should come as no surprise that those irritants can cause multiple health problems and respiratory issues. Luckily, with appropriate use of MERV rated air filters, UV light sanitizers and other air cleaning technologies, you can reduce or even eliminate chemical pollutants from contaminating your commercial building.

Filters in your system should be upgraded to ones with MERV ratings between 13 to 16 in order to stop viruses, mold spores and other smaller particulates. Gas-phase carbon products can also be employed to remove off-gassing volatile organic compounds (also known as VOCs) from newer office furniture, paints, carpets and even residue from certain cleaning supplies. These carbon filters range from pleated panels to the “deep bed scrubbers” used in heavily polluted locations.

Realistic, cost effective air sanitation equipment is also now available and appropriate for use in ordinary buildings far outside a hospital setting. Using targeted UV light, these central air purification devices kill mold, viruses and other dangerous pathogens as they pass under their rays, helping to keep indoor air clean and fresh for everyone.



Regular inspections, maintenance and HVAC repairs can prevent Sick Building Syndrome by addressing its causes.



Maintenance: The Cornerstone of Any SBS Strategy

Many public tragedies related to Sick Building Syndrome stem from lack of maintenance. For example, medical researchers in Cleveland, Ohio, recently linked untreated black mold within multiple rental properties to frequent infant hospitalizations among tenant families. In 2025, the management team for 10 New York high rises neglected to address a leakage problem in their cooling towers, inadvertently fostering growth of the deadly Legionella bacteria that sickened hundreds and killed 5. The bottom line? Regular inspections, maintenance and HVAC repairs can prevent Sick Building Syndrome by addressing its causes. To ignore these routine tasks is to risk disaster. Much like driving a car without changing the oil or doing a tune up, choosing to operate heating and air conditioning equipment without a regular maintenance plan in place can be a costly and dangerous mistake.

Today's air conditioning and heating systems for commercial buildings are complicated. Modern equipment is designed with exacting specifications for a particular building size and environment, in order to maximize energy efficiency and reduce waste. In contrast, commercial property owners looking to save money with a cheap install or "one-size-fits all" HVAC equipment often find there are later, expensive decisions to be made when problems with air quality arise, necessitating immediate replacement. We aren't sure why, but usually this also happens on the hottest day of summer or the coldest day of the winter.

Good HVAC can lessen or eliminate pollutants and dangerous organic compounds, while keeping a building's interior comfortable and optimized for hard work and big ideas from its occupants. Why settle for equipment that does anything less?

Get in touch with Air-Tro today to make sure you're taking all the necessary steps to prevent allergies, cognitive slowdowns or even worse in your commercial building. You will increase the value of your property, enhance the comfort experience of your tenants, or employees, and prevent catastrophe along the way. We don't know many people who enjoy paying taxes. Why pay one on productivity within your commercial building when you don't have to?



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