

## IAQ and Employee Productivity

### A Guide to Understanding the Real Cost of Poor Indoor Air Quality

Poor Indoor Air Quality (IAQ) significantly influences the occurrence of communicable respiratory illnesses, allergy and asthma symptoms, and sick building symptoms. Unfortunately, poor IAQ is so prevalent that the American College of Allergy, Asthma & Immunology notes that 50 percent of all illnesses are either caused or aggravated by poor IAQ.



## Absenteeism

Poor indoor air quality (IAQ) is more than just a nuisance; it's costly to U.S. businesses. In fact, total costs to the U.S. economy from poor IAQ range as high as \$168 billion per year.

Part of those costs come from direct medical care and absenteeism. For example, one study found that for every ten workers, poor IAQ caused an additional six sick days per year.

A couple of additional, alarming statistics:

- The American Lung Association says that U.S. adults miss approximately 14.5 million work days due to asthma.
- U.S. Centers for Disease Control and Prevention (CDC) estimate that sinus infection sufferers miss an average of four work days each year.

## Presenteeism

An even bigger problem may be "presenteeism" – when people come to work even when they're sick. The problem here is loss of productivity – both the quantity and quality of work – among sick workers and longer recuperation times due to lack of rest. Numerous studies place average productivity losses due to poor IAQ between three and seven percent (or higher), with individual productivity losses of 33 percent. Overall, presenteeism is 7.5 times more costly than illness-related absenteeism and two to three times more costly than direct medical care. Even more disturbing may be the chain reaction as illnesses are spread to others.

## The Health Effects of Poor IAQ

The World Health Organization estimates that up to 64 million U.S. office workers and teachers may be at risk of suffering from Sick Building Syndrome (SBS). Asthma is another prevalent problem facing about 20 million people, or six percent of the U.S. population. Allergies affect more than 20 percent of the U.S. population, and are the sixth leading cause of chronic disease in the U.S. And a whopping 70 percent of the U.S. population is afflicted by respiratory illnesses such as the common cold or flu each year, with more than one-quarter of those illnesses attributable to poor IAQ.

## What is Sick Building Syndrome?

Sick Building Syndrome – When building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified.

Asthma – Breathing problem that makes it more difficult to get air in and out of lungs.

Allergy – Harmful, increased susceptibility to specific substances.

## The Role of HVAC Air Filtration

There are many airborne triggers for respiratory illnesses, including microorganisms, respirable particles such as dust and smoke, volatile organic compounds (VOC) and allergens. Ideally, these triggers should be eliminated or significantly reduced by a building's heating, ventilation and air-conditioning (HVAC) system.

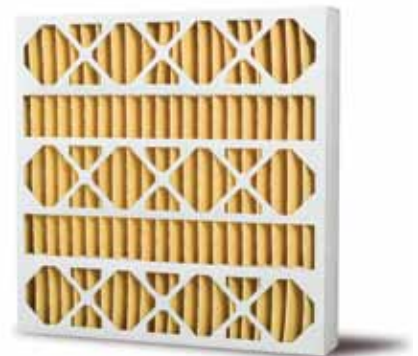
## Did You Know?

One study of 813 "sick buildings" found that more than 75 percent of IAQ problems were HVAC related.

Most IAQ experts agree that the most likely candidates for problems like SBS are buildings with poor upkeep. This is why best-practice IAQ is so important. Regular HVAC maintenance, improving intake control through HVAC instrumentation and ventilation design, and use of adequate high-efficiency air filters are just some of the steps businesses can take to improve IAQ.

## Cleaner Air is Good for Business

Just under half of U.S. office workers polled in a national survey selected IAQ as the thing they would most or second most like to improve in the office where they work. And when asked what happens when office workers get sick from poor IAQ at work, nearly 50 percent of those office workers linking ill health effects to poor IAQ said that it affected work



**Tip:**

A filter upgrade is one of the least expensive alternatives to improve IAQ. Even better news...switching to a lower pressure drop filter can lead to energy savings as well. That's because, with a lower pressure drop filter, the HVAC system motor needs to overcome less resistance to deliver the required air flow to the system, thus reducing the motor's energy consumption.

performance, while 34 percent said it caused missed time at work. Unfortunately, today's cost-cutting measures in building operations may negatively affect the indoor air quality of the workplace, leading to the undesired side effect of productivity losses.

Studies have shown that improving the indoor environment can lead to as much as a 20 percent improvement in worker productivity, for gains of \$40-\$250 billion per year. Since, according to the Environmental Protection Agency (EPA), most Americans spend 90 percent of their time indoors, businesses would be well-served to look at the incremental savings available through improved IAQ.

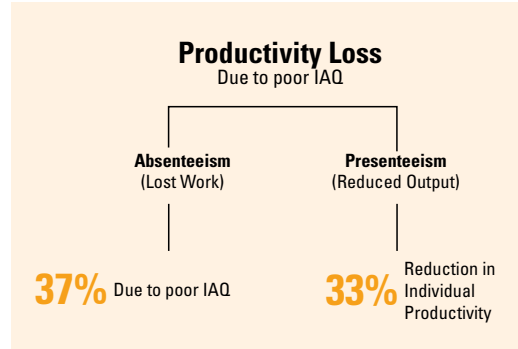
**Marketing Cleaner Air in Buildings**

Building tenants aren't the only ones who can see bottom line benefits from improved IAQ. Building owners can use the superior IAQ of their building as a way to attract and retain tenants. If you have the advantage of owning or managing a building with high IAQ, you may want to raise the market's awareness of the benefits received as tenants, including savings on health care costs, sick leave time and productivity. IAQ has emerged as a major issue, both at home and at work. If you are one of the diligent owners/managers who has made this very real benefit/risk a priority in your building, it can be a real differentiator in the marketplace. The key is education and communication, so prospects and tenants will reward you for your investment and commitment to their well-being.

**Cleaner Air is Greener Air**

Commercial buildings today consume more than half of our nation's electricity and are responsible for a significant percentage of greenhouse gas emissions, raw material use, waste output and potable water consumption.

The good news? A simple upgrade of the HVAC air filtration system is one of the easiest changes building owners can make to become more environmentally responsible, while meeting tenants' demands for a healthier working environment.





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