Kimberly-Clark PROFESSIONAL* | Exceptional Workplaces

# Exceptional Workplaces Start with Healthy Workplaces

**As someone involved in providing for superior indoor air quality (IAQ), you may already know the negative effects of poor IAQ:**

- 50 percent of all illnesses are either caused or aggravated by poor IAQ
  (Source: American College of Allergy, Asthma & Immunology)
- For every ten workers, poor IAQ caused an additional six sick days per year
  (Source: Environmental Protection Agency)
- Average productivity loss due to poor IAQ is between three and seven percent
  (Source: Occupational Safety and Health Administration)

Most people in North America spend about 90 percent of their time indoors, and for many of us, a good percentage of that time is spent at work. Whether our workplace is an office building, school, hospital, retail setting or some other type of facility, our collective hope and expectation as we walk through the door each day is that the place we spend so much of our time and expend so much of our energy will be a healthy place.

Indeed, the health of commercial and institutional facilities has come a long way in recent decades. From the elimination of cigarette smoking and the advent of the Green Building movement, to increased public awareness about how to reduce the spread of germs, buildings today should be healthier places in which to work and visit.

Fortunately, irritating and illness-causing airborne particulates can be captured with the proper HVAC air filtration strategy. But the air inside a facility is not the only thing that needs to be cleaned. There are other workplace environmental issues that can lead to health and productivity problems among building occupants. So where else should one look to make facilities healthier, safer and more productive?

## How Do Infections Spread?

Airborne infections spread when bacteria or viruses travel on dust particles or small respiratory droplets that become aerosolized when an infected person sneezes or coughs. Healthy people can inhale the infectious droplets, or the droplets can land on their eyes, nose and mouth. People who inhale the airborne germs do not have to have face-to-face contact or be in the same room as the infected person. Source: Delaware Health and Social Services, Division of Public Health

## Germ Hot Spots: Surface Sanitation

Illness-causing germs are everywhere, especially when it comes to offices and other workplaces where people are in close proximity to each other. That's why it's important to have a good understanding of germ "hot spots" throughout a workplace and to adopt proper surface sanitation measures to avoid the spread of germs, before they can become airborne and affect indoor air quality.

## Did You Know?

Fingers carrying a flu virus can contaminate up to seven clean surfaces, where they can live for up to 48 hours.

One area of particular concern when improving facility sanitation efforts is the restroom. Other areas of concern are office break rooms and kitchens. According to a recent study conducted by KIMBERLY-CLARK PROFESSIONAL*, sink and microwave door handles are the dirtiest surfaces touched by office workers on a daily basis.

Other germ "hot spots" include:

• **Doors** - everyone touches the door handle on their way into or out of the building, bringing harmful germs with them.

• **Stair Railings** - people touch railings often and can transmit germs without even knowing it.

• **Elevator Buttons** - just one finger can spread germs throughout an entire building.

• **Copy Stations** - adults touch their faces an average of 15.7 times every hour, transmitting germs to the surfaces they subsequently touch.

• **Conference Tables** - when large groups gather in one place, the potential for spreading germs grows exponentially.

• **Lobby Areas** - viruses can live up to 48 hours on surfaces, including chairs and tables.

• **Water Cooler** - common areas like this are perfect sanctuaries for germs, especially when eating or drinking are involved.

Keep in mind that it's not just germs (bacteria, viruses, etc.) that can be removed through proper surface cleaning and sanitation. Smaller, lighter particles like mold, dust and pollen can also be removed – a smart source-control strategy for good IAQ. Remember: Lung-damaging dust can be as small as 0.5 micrometers, making it virtually impossible to see, but easy to become airborne.

### One caveat:

Don't let facility cleaning be the source of IAQ problems. The types of cleaning products and equipment used can have a negative impact on IAQ and the health of building occupants. Fortunately, many cleaning-related issues can be addressed by instituting a green cleaning system.

## Hand Hygiene

In addition to regular and "spot" cleaning of dusty and germ-laden surfaces, the best way to nip that cross-contamination in the bud is with good old-fashioned hand washing. Facility professionals should make sure washrooms are stocked with plenty of hand soap and disposable towels. Placing hand sanitizer stations in high-traffic areas and giving employees bottles of sanitizer to keep at their work stations can also help to encourage good hand hygiene.

**A good tip:** When washing hands, use soap and warm water and rub hands vigorously together for 15 to 20 seconds, scrubbing all surfaces of the hands to dislodge and remove germs.

## Respiratory Etiquette

Coughs and sneezes spread diseases! The best medicine here may be distance: Stay away from people who are sick, and if you're sick, consider staying at home to avoid spreading germs to others.

Teaching building occupants about respiratory etiquette is a good step toward helping to reduce the spread of germs. Everyone should cover their mouths and noses with a disposable tissue when coughing or sneezing and should throw the used tissue away instead of re-using it. If a tissue just isn't handy, most health experts recommend sneezing into your upper sleeve, not your hands.

Another good tip for building occupants: Avoid touching your eyes, nose or mouth. Germs are often spread when a person touches something that is contaminated with germs and then touches his or her eyes, nose or mouth.

## Cleaner, Healthier Indoor Air

It stands to reason that fewer germs in the work environment – a result of better surface sanitation, hand hygiene and respiratory etiquette – may mean fewer germs that can be transferred to others through indoor air. However, that doesn't mean that facilities should opt for the least expensive (and least effective) air filtration strategy. In fact, air filtration is a prime line of defense in the fight against the spread of airborne germs and irritating particulates.

Air filter effectiveness is tested via the ASHRAE 52.2 Standard. The test assigns a Minimum Efficiency Reporting Value (MERV) to filters based on their minimum fractional particle size efficiency. The ASHRAE 52.2 test provides the efficiency of the filter over three particle size ranges: E1 (very fine particles in the 0.3 to 1.0 micrometer range), E2 (fine particles in the 1.0 to 3.0 micrometer range), and E3 (coarse particles in the 3.0 to 10.0 micrometer range). The E1, E2, and E3 efficiencies represent the true measure of filter performance and give users a complete picture of what the filter will do.

High E1 and E2 efficiencies are critical to providing for good IAQ, but many pleated filters today have very low E1 and E2 efficiencies and thus could potentially be responsible for IAQ-related illnesses (or at least do little to help prevent them).

Filters with poor E1 and E2 filtration efficiencies may do an adequate job of keeping larger airborne particles from fouling HVAC equipment, but they are not likely to remove the very fine respirable particles that may lead to health problems. To find a filter with good E1 and E2 efficiencies, consider a filter designed with filtration media that provides a good balance of mechanical and electret efficiencies; these filters will almost always outperform a filter that relies solely on mechanical efficiency. To see the difference in electrets performance boost for a given MERV rated filters, be sure to ask for these particulate efficiency numbers for both filter media types.

## Bottom line for facility and HVAC professionals:

In the war on germs, superior IAQ works hand-in-hand with other workplace wellness efforts like respiratory etiquette and surface sanitation to keep tenants healthy, safe and productive.

## Bottom line for filter manufacturers and distributors:

Understanding the broader health and productivity issues faced by your customers and end-users will help you to not only meet but exceed their higher-order needs.

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A Healthier Workplace: Additional Resources

Centers for Disease Control: download free posters and other materials at www.cdc.gov/germstopper/work.htm and www.cdc.gov/flu

World Health Organization: step-by-step guide for proper handwashing at www.who.int/gpsc/clean_hands_protection/en/index.html

KIMBERLY-CLARK PROFESSIONAL* The Healthy Workplace Project: Learn about steps to a healthier workplace and reduced absenteeism costs at www.healthyworkplaceproject.com

KIMBERLY-CLARK PROFESSIONAL* Filtration: Get more information about the health and productivity benefits of improving your indoor air quality by visiting the Resource Center at www.kcfiltration.com.

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