



# How to Create a Healthy Building for Returning Employees

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*Editor's Note: SHRM has partnered with Harvard Business Review (<https://hbr.org/>) to bring you relevant articles on key HR topics and strategies.*

In a typical year you will take two million breaths in your office. This, however, is not a typical year.

The pandemic spawned by the novel coronavirus has forced a global reckoning with the awesome power of infectious diseases to grind economies to a halt. The forced lockdowns and retreat into home isolation has also given us a heightened awareness of the role our surroundings play in our health and wellbeing.

While no one could have predicted the exact nature of the outbreak that is now upending our lives, many of us working in public health have been urgently advocating (<https://www.nature.com/articles/s41370-019-0195-5>) for organizations to invest in healthier buildings for some time. History tells us that buildings play a central role in the spread of disease. From measles to SARS to influenza and the common cold, the scientific literature is full of examples. But, as much as buildings can spread disease, if operated smartly, they can also help us fight against it. Amidst the chaos, one thing is clear: We will all go back to work with new expectations about the buildings where we live, learn, work and play.

## SHRM RESOURCE SPOTLIGHT

Coronavirus and COVID-19 ([www.shrm.org/ResourcesAndTools/Pages/communicable-diseases.aspx](http://www.shrm.org/ResourcesAndTools/Pages/communicable-diseases.aspx))

## Buildings that Fight Disease and Promote Health

For our book, *Healthy Buildings: How Indoor Spaces Drive Performance and Productivity*, the two of us have spent the last three years speaking to executives across the business spectrum who oversee real-estate portfolios that cover several billion square feet and contain millions of employees. We aimed to better understand how to drive healthy building science into

practice.

Locked in a global battle for talent, the business leaders we spoke with were eager to find new ways to attract, retain and enhance the performance of their employees. Few of them realized that their buildings could play a vital role in the health of their business. In response to Covid-19, that's rapidly changing. CEOs from companies large and small have come out of the woodwork to engage with us on how to design, operate and manage better buildings. Calls are also coming in from groups that run medical offices and dental clinics, hotels, schools, airports and theaters, as well as mid-size law firms and small businesses in both small towns and major metropolitan areas.

The question on the mind of every business and organizational leader is this: When the time comes, how do I re-populate my buildings and restart my business?

### Re-Populating Your Buildings

As you prepare for the return of your employees, remember that the scientific models on the spread and containment of SARS-CoV-2 indicate this is a problem we will be dealing with for at least 12 months. Likely approaches to controlling the spread and damage from the virus include a combination of widescale testing and periodic isolation and quarantine. Some cities and regions will begin re-populating their buildings over the next few weeks, and some will likely be hit with repeated cycles of social distancing.

In either case, as employees return to offices, there is a framework companies can deploy to keep people safe without crippling their businesses and our economy.

First, we all have to understand — and communicate to employees — that there is no such thing as zero risk. The goal is to minimize risk, and we can get there using a layered defense approach by applying what is known in public health as the hierarchy of controls (<https://www.cdc.gov/niosh/topics/hierarchy/default.html>).

The hierarchy of controls is how the field of occupational health thinks about protecting workers from any hazard — biological, chemical or otherwise. There are five types of controls, moving from the most effective at the bottom to least effective at the top.

**Elimination of exposure.** The first, and most effective control, is to minimize social interaction. Of course, you could keep everyone 100% safe by keeping them at home for the near future. But this will come at a great cost to your company and the economy. In time, you will need to begin re-populating your building. This means you will be accepting *some* degree of risk.

**Substitution activities.** This brings us to level two of the pyramid: "substitution." Evaluate critical, core workers who need to be onsite and create work teams that can be physically isolated from one another.

That way, if one employee gets sick and their close contacts need to self-quarantine, you can shut down that one group for two weeks without shutting down your entire company.

**Engineering controls and healthy building strategies.** The next step is to boost your building's defenses against disease. This means immediately enacting some key healthy building strategies. At the room level, consider using portable air purifiers and looking into new technologies like touchless entryways, elevators, sinks and toilet flushes. In addition, having an enhanced disinfection protocol in place that clearly spells out the locations, timing and frequency of cleaning is critical, as well as training cleaning staff on these new procedures.

Most importantly, at the building level, focus on improving these 9 Foundations of a Healthy Building (<https://9foundations.forhealth.org/>):

- Ventilation
- Air quality
- Thermal health
- Moisture
- Dusts & pests
- Safety & Security
- Water quality
- Noise
- Lighting and views

These were distilled from 40 years of scientific evidence at Harvard's Healthy Buildings lab, and improving them will serve as a long term preventative measure.

While some of these you might have expected, like better acoustics and lighting, we suspect you haven't been thinking about how humidity, temperature, furniture, carpeting and even dust can impact employee health — and even beyond health, performance. But consider just a small smattering of the evidence:

One study of young adults found that every 1°F deviation from an optimal indoor temperature came with a 2% decrease in output (<https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002605>). In another study, researchers found that every time you double the rate of outdoor air delivered into an office, worker performance improves by 1.7% (<https://www.ncbi.nlm.nih.gov/pubmed/11089327>) across four simulated office tasks: text typing, addition, proofreading and creative thinking. It's no surprise, then, that an analysis of sick leave data for more than 3,000 workers across 40 buildings found that 57% of all sick leave was attributable to poor ventilation (<https://www.ncbi.nlm.nih.gov/pubmed/11089326>).

## Minimizing Risk in the Workplace

Using a hierarchy of controls as a response framework, companies can take a range of actions — weighing the effectiveness and financial impact of each — to combat Covid-19 in their buildings.



Note: "PPE" stands for personal protective equipment.

Source: Joseph Allen and John Macomber, HBR

Of course, it's not just air quality that drives health and performance. A study of workers found that they reported more headaches and worked 6.5% more slowly (<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1600-0668.1999.t01-1-00003.x>) on a typing test when they were in an office with a pollution source. The "pollution source" in question? A dirty carpet. The amount of indoor nature and views matter, too. Young adults in an office designed following biophilic design ([https://en.wikipedia.org/wiki/Biophilic\\_design](https://en.wikipedia.org/wiki/Biophilic_design)) principles had lower blood pressure, lower heart rates and better performance on short-term memory tests (<https://www.sciencedirect.com/science/article/pii/S0360132318300064>).

Making sure each foundation is up to par with our current healthy building standards (<https://9foundations.forhealth.org/>) is key to both stopping the spread of infectious disease and setting up a successful workforce.

**Administrative controls.** Here, the big picture focus should be on de-densifying your buildings and maintaining social distancing (e.g., staying six feet apart). You can do this through both time and space. By limiting who comes to your office (substitution), you've already taken one step. You can do more by getting clever with your scheduling. Consider extending operating hours and asking employees to come in shifts. Running a two-shift operation — say, six a.m. to 12 p.m., and one p.m. to seven p.m. with an hour of deep cleaning in between, instantly cuts the occupant density by half. Not everyone needs to arrive right at the start of their shift. Staggering arrival and departure times, even by 10 minutes, can prevent traffic jams at the elevators and common areas. Another option is to alternate work-from-home and office days, using A/B days, so that only half your company is in the building on any one day. This tactic also mitigates exposure to rush hour crunches in public transportation.

In addition, because one unfortunate fallout of the virus is an economic slowdown, layoffs may lead to higher vacancies in office space, retail stores, restaurants, hotels and more. This means there is a lot of "unused" space in most commercial buildings, and now is a good time to repurpose it. Move desks into conference rooms and common areas to spread out your workforce.

In terms of meetings, any gathering with more than 10 people should be virtual for the near term. For essential in-person meetings, you can slide your chairs back and keep to the edges of the room. If you're at a conference table, leave a chair open between each person. Skip the handshakes and wash your hands immediately before and after each meeting.

**Personal protective equipment (PPE).** The last, and least effective control measure, is personal protective equipment. Employees should be wearing a mask on their way to and from work, and also as they enter the building and walk through common areas and take the elevators. Wearing a mask protects others and the wearer.

Finally, remember that no single control strategy is sufficient. You have to think about this in terms of a layered defense, doing everything you can to minimize the risk.

### How Can You Measure Success?

If you wait for people metrics to show you success — like the number of sick or absent employees in a given time frame — you are acting too late. Like a doctor at the start of an exam, if you want to protect your workforce, you should be regularly checking the health of your building, not just your people. It's common for organizations to measure the life of their

workspaces in terms of years, when visible decay and wear and tear become noticeable. But buildings change on a much shorter timescale and the effects are not always visible.

Every business tracks key performance indicators so they can keep tabs on their progress. But very few track what we're calling Health Performance Indicators, or HPis. At a fundamental level, health drives human performance. This means that *building performance* is a critical metric that every business should be tracking.

HPis can be used to measure indoor environmental quality, or what we call "the pulse" of your building. We have divided them into four quadrants: leading and lagging indicators, and direct and indirect indicators. Direct indicators measure people, while indirect indicators measure the building. Leading factors are those that can be measured — and caught — before an issues arises, whereas lagging ones can only be measured after the fact. For example, "commissioning" your building, which is akin to giving your car a tune-up, can help you identify problems with your ventilation system before anyone is actually in the space. As such, "commissioning" is a leading factor and an indirect indicator.

There are a handful of tools you can use to get started, like real-time sensors to monitor CO2 as a proxy for ventilation rates, and particle sensors to let you know if a nearby pollution source is impacting your building. More granular testing will be required for other measurements, such as air and water sampling techniques.

### Healthy Building Are the New Minimum

You may be thinking this all sounds expensive. But it doesn't take a huge investment to create a healthy building and start reaping the benefits. In fact, the cost is far greater if your building helps spread communicable diseases.

In fact, our studies and financial simulations have found that the efforts you put in will pay back in multiples. The benefits of higher ventilation (<https://www.ncbi.nlm.nih.gov/pubmed/26593933>) alone are estimated to be between \$6,500 and \$7,500 per person per year. Researchers at Lawrence Berkeley National Laboratory have estimated that improving indoor air quality in offices could add as much as \$20 billion annually to the U.S. economy. This new calculus should inspire a new generation of highly justifiable investment in creating and operating a healthy building.

Further, consider the talent you will want to attract in a post-Covid-19 world. Today, businesses need to understand that prospective hires will not just be interviewing you, they will be interviewing your buildings. And you can be sure that future employees will be paying close attention.

Glassdoor, famous for allowing employees to publicly and anonymously dish on where they work, makes this evident. People comment on their salary, their boss or workplace culture. But we bet you didn't know that they are also reporting on your building:

- "Coronavirus is finally showing the company how flawed it is with outdated technology and management style... With no break spaces, no in-person interactions, and 6 ft. of social distancing, what is the point of having 2,000 to 3,000 people in an office with circulated air?"
- "Yes, I would also hope this was a joke, but the building smells like sewage in between 7 and 9 am in the morning."
- "The office is too cold – so cold that it's sometimes hard to focus on the job."

- "The building we were in had very few windows, grey wall-to-wall carpeting, and dim lighting. Luckily they were talking about moving when I left!"

Until now, these type of stories were largely hidden from public view, confined to legal documents, privy to a select few. Today is near certain that these issues will start to show up on social media platforms, linked to your company. And when they do, you need to consider the brand, legal and investment risks not preparing for them will cost you. In the post-Covid world, buildings will be seen as a first line of defense against disease. A healthy building will go from a "nice to have" to a competitive "must have."

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