



THE ECOLAB GUIDE TO HEALTHY BUILDINGS

Making Smart Investments to Drive Business Value



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Executive Summary

The focus on healthy buildings is a natural outgrowth of the sustainable, “green” building trend of the last two decades – accelerated by the COVID-19 pandemic. Both public demand and business interests focus on how healthy indoor environments can drive both societal and business value. Amid the paradigm shift, there remains some uncertainty around the definition of, and criteria for, a healthy building.

This guide is designed to give those responsible for employee safety, wellness and satisfaction, a go-to resource for understanding the healthy building paradigm, including:



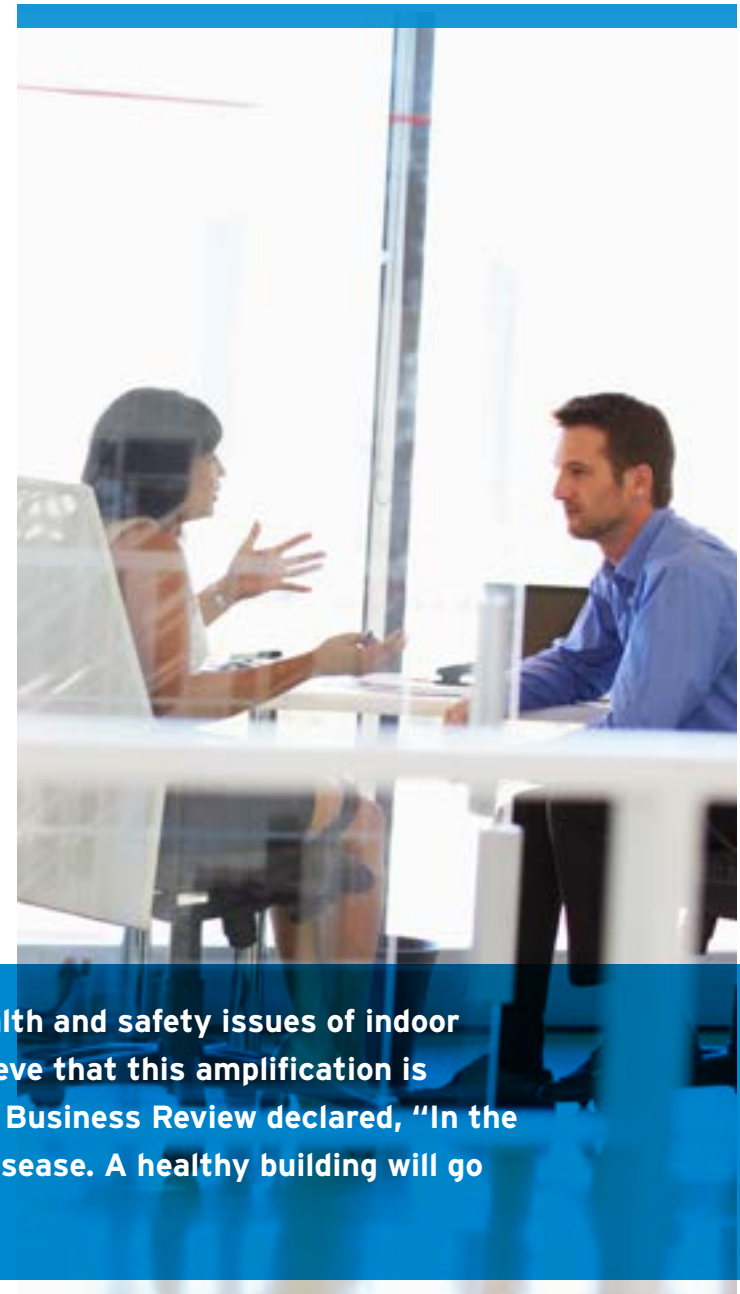


Healthy Buildings: From Buzzword to Business Value

The last two decades have seen tremendous growth in awareness and prioritization of how buildings impact the environment. Several years ago, forward-thinking real estate developers, commercial property managers, facility managers and even top-level business leaders began looking more closely at how buildings impact the people inside them. More than a true shift in focus, this is more of a natural extension: many of the same considerations that make a building “green” can also make it “healthy.” But whereas green buildings contribute to public health in the long-term, healthy buildings also achieve that impact today.

As a 2018 research paper concluded, “Beyond reductions in energy usage and increases in market value, the main strength of green buildings may be the procurement of healthier building environments. Further pursuing the right to healthy indoor environments could help the green building movement to attain its full potential as a transformational public health tool.”¹

The COVID-19 pandemic naturally amplified the collective awareness of health and safety issues of indoor spaces – the places where we work, learn, shop and play – and experts believe that this amplification is permanent. In the defining modern essay on healthy buildings, the Harvard Business Review declared, “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’.”²



Healthy Buildings: An Accelerating Trend

“While the business case for investing in the holistic health of employees has been proven many times over, we now see CEOs caring about health for reasons that go beyond the bottom line.” - Deloitte report: The Health-Savvy CEO

Executives' top-ranked benefits of a healthy workforce:¹

1

**INCREASED
PRODUCTIVITY**

2

**STRONGER STAFF
MORALE & MOTIVATION**

3

**GREATER STAFF
LOYALTY & RETENTION**



9 in 10

CEOs & EXECUTIVES
say investing in employee health & wellness directly impacts the company's financial performance¹



87%

of real estate owners & investors have seen **INCREASED DEMAND FOR HEALTHY BUILDINGS** over the last two years²



9 in 10

REAL ESTATE OWNERS
real estate owners & investors plan to enhance their health & wellness strategy in 2021²



60%

of U.S. facility managers are already **INVESTING IN HEALTHY BUILDING ENHANCEMENTS** like indoor air quality optimization³

1. https://impact.economist.com/projects/healthy-workforce/pdf/EI_The_employer_imperative_report_commissioned_by_Cigna.pdf

2. <https://centerforactivedesign.org/new-investor-consensus>

3. <https://inbuildingtech.com/smart-buildings/honeywell-survey-reveals-healthier-buildings-will-be-key-in-post-pandemic-era/>



The Business Value of a Healthy Building

People are the most valuable resource in nearly every organization, typically accounting for 70-90%¹ of business operating costs. That means that even the most incremental change in things like productivity, absenteeism or turnover can have a significant impact on the business.

In other words, investing in your people will pay dividends for your business – and as the Harvard Business Review says, “At a fundamental level, health drives human performance.”

Research shows that when organizations make investments that directly or indirectly support the health of staff, they ultimately see improvements in their bottom line.





The Business Value of a Healthy Building: Driving Business Value Across Multiple Fronts



IMPROVED STAFF PERFORMANCE	REDUCED ABSENTEEISM	TALENT ACQUISITION & RETENTION	ATTRACTING INVESTORS	DRIVING REVENUE
<p>Just a 1° deviation from optimal indoor temp leads to 2% decrease in worker output¹</p> <p>Workers work 6.5% more slowly on typing test when in an office with a pollution source (dirty carpet)²</p>	<p>Sick days cost U.S. businesses \$225.8 billion annually²</p> <p>Unplanned absences lead to 54% decrease in productivity²</p> <p>A consistently and thoroughly cleaned facility means 46% reduction in absenteeism³</p>	<p>High-performance buildings can drive an estimated 5% reduction in annual turnover rates⁴</p> <p>“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.” - Harvard Business Review⁵</p>	<p>Environmental, Social, and Governance (ESG) investing increased 300% in the last 8 years⁶</p> <p>More than 70% of millennials use ESG factors to guide their investment decisions²</p>	<p>Buildings with certifications see a 4-7% rental premium per square foot⁷</p> <p>Organizations inside high-performance buildings* average an annual profit increase of \$3,395/employee⁴</p> <p><small>* The National Institute of Building Sciences' High-Performance Buildings Council defines high-performance buildings as buildings "which address human, environmental, economic, and total societal impact, are the result of the application of the highest level design, construction, operation, and maintenance principles - a paradigm change for the built environment."</small></p>

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6377698/>
 2. <https://hbr.org/2020/04/what-makes-an-office-building-healthy>
 3. <https://facilityexecutive.com/2017/12/workplace-cleanliness-key/>
 4. <https://stok.com/research/financial-case-for-high-performance-buildings/>

5. ISSA Value of Clean
 6. <https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf>
 7. <https://www.paladinoandco.com/blog/demand-for-healthy-buildings/>



Healthy Building Defined

In many ways, defining a “healthy” building is more intuitive than defining a “green” one. Many people think of similar things – air quality, clean surfaces, etc. – that help make an indoor space healthy and safe. But the emerging challenge is aligning on a consistent definition – to protect public confidence in the validity of the term (avoiding the fate of marketing cliches like “natural”) and to help organizations direct and focus their investments.

While specific recommendations within each may evolve, Ecolab believes there are four core elements of healthy buildings:

4 Core Elements of Healthy Buildings



HYGIENE

Clean, safe environments throughout the facility.



AIR QUALITY

Clean air for all building users to breathe.



WATER QUALITY

Safe, sustainable water-use practices.



EXPERIENCE

Comfort & confidence in clean, healthy, safe spaces.



BEST PRACTICES

Hygiene

GOAL: Promote clean, safe environments throughout the facility.



Key Considerations

- **Create & regularly audit a comprehensive cleaning, sanitizing and disinfecting program:** Help ensure your facility has a fully specified cleaning and disinfecting program that covers surfaces and spaces, aligned with science-based protocols and evidence-based best practices.
- **Focus on right products & right protocols:** Make sure cleaning protocols specify the correct product and exact protocol, including defining where sanitization vs. disinfection is required. Follow the exact specifications for use found on the product label.
- **Prioritize robust staff training:** Staff training – including onboarding for new staff and frequent reinforcement for existing employees – should be a defined part of your comprehensive cleaning program. Invest time and resources to help staff understand proper cleaning protocols, including using the correct products, following product label use instructions, following safety and ergonomic best practices, etc.
- **Simplify & promote hand hygiene:** Create a robust hand hygiene program that includes convenient hand sanitizing and handwashing stations, with clear signage to remind and instruct people on effective hand hygiene.
- **Elevate food safety:** Foodborne illness presents one of the most common health risks – even in buildings without a foodservice outlet. Help ensure food safety considerations and protocols are part of your cleaning program.
- **Include proactive pest management:** Pests can be a source of food safety and other risks, as well as irritants and allergens. Integrate a proactive pest management plan as part of your cleaning program. Take caution to avoid the use of hazardous pest management chemicals that could negatively impact other healthy building efforts.



BEST PRACTICES

Air Quality

GOAL: Provide clean air for all building users to breathe.



Key Considerations

- **Air quality testing:** Regularly test indoor air quality to monitor levels of pathogens, allergens and other indoor air pollutants and particulates. Aim to achieve indoor air quality (IAQ) levels that meet or exceed industry standards.
- **Natural ventilation whenever possible:** Help ensure your building meets or exceeds outdoor air ventilation rate guidelines such as those from The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to control indoor sources of odors, chemicals and carbon dioxide – and look to increase outdoor air ventilation and reduce recirculation of indoor air as much as the system, climate and space allows.
- **Optimize air filtration:** Professional guidance, such as from ASHRAE, can help improve indoor air filtration, including installing mechanical filtration in your HVAC system. Current ASHRAE guidance suggests using a MERV 13 or higher filter in order to achieve optimal filtration of incoming or recirculated air.¹
- **Regularly clean ducts:** Frequently and thoroughly clean duct work to remove dust, organic and microbial build-up, and other debris – being careful to avoid releasing these pollutants further into the air intake system.
- **Conduct regular equipment inspections & maintenance:** Faulty equipment can create air quality issues. Schedule frequent inspection and preventative maintenance on your HVAC equipment.²
- **Evaluate impact of materials:** Consider how building materials including flooring and walls, as well as furnishings and office supplies, may impact air quality.
- **Choose less volatile cleaning products & use properly:** Sanitization and disinfection should not come at the expense of air quality. Seek out EPA-registered cleaning products that release fewer volatile compounds – and ensure they're used according to label instructions. Improper use – including mixing chemicals, incorrect concentration, or off-label use – can negatively impact indoor air quality and safety.



BEST PRACTICES

Water Quality

GOAL: Develop & promote safe, sustainable water-use practices.



Key Considerations

- **Develop & implement a water management program:** Follow CDC guidance and all local regulations to develop an ASHRAE 188-based plan to mitigate water-borne public health and infection risks, including Legionella bacteria, for all identified at-risk water systems.
- **Implement a water treatment/water quality program:** Assess your water quality and overall system performance. Implement a specific water treatment program designed to extend asset life, reduce water, and reduce energy consumption.
- **Deploy water filtration & treatment for drinking water:** Help improve both water safety and taste by installing water purification systems for drinking water to remove contaminants if necessary. This may include water softening, filtration or chemical treatment.
- **Follow water re-use and recycling best practices:** Implement ongoing best practices for alternative water source uses and water recycling practices to optimize energy consumption and reduced water discharge/effluents. This may include mechanical, operational and/or water treatment solutions to support HVAC equipment.
- **Implement water efficiency strategies:** Implement high-efficiency/low water-use fixtures while managing overall utility water use (potable & non-potable water) to help achieve water waste-reduction goals.
- **Water-based fire suppression systems:** Follow evidence-based best practices for maintenance and inspection to help ensure proper working condition.
- **Install automated & touchless dispensers:** Installing touchless water and ice dispensers can help mitigate transmission of pathogens on surfaces, as well as reducing the risk of contaminating the dispenser itself.



BEST PRACTICES

Experience

GOAL: Creating comfort & confidence in clean, healthy, safe spaces.



Key Considerations

- **Maintain comfortable air:** Keep temperature and humidity levels consistent throughout the day, providing zonal or individual thermal control where possible.
- **Control noise:** Monitor noise levels, aiming to keep background noise levels below 35 decibels. Use noise mitigation technologies to help protect against outdoor noises and mitigate the impact of indoor noises, such as mechanical or office equipment.¹
- **Prioritize natural light:** Prioritize natural lighting and/or blue-enriched lighting wherever possible, without creating glare issues for employees. Research shows exposure to natural light can reduce eye strain and headaches and promote better sleep, all helping to promote worker productivity.²
- **Invest in active, ergonomic design:** Promote healthy activity with features like accessible staircases and recreation areas. Follow relevant OSHA guidelines to help create safe, healthy work environments, and provide ergonomic furnishings that promote healthy use patterns.
- **Prioritize personal safety:** Help building occupants feel confident and deliver peace of mind. Meet all standards around fire safety and carbon monoxide monitoring. Ensure doors, stairwells, common areas, parking lots/ ramps and other public spaces are well lit. Monitor building traffic – including access security, video monitoring – and maintain a comprehensive emergency action/response plan.
- **Don't overlook the impact of scent:** Scent is an important indicator of clean and a proven way to promote well-being in an indoor built environment.³ Consider cleaning and disinfecting products that leave a pleasant scent. You should also have a reliable de-odorizing product in your program that can target and eliminate malodor. Finally, make sure pest management products are safe for indoor use and do not leave unpleasant odors.

1. <https://www.who.int/docstore/peh/noise/Comnoise-1.pdf>

2. <https://www.prnewswire.com/news-releases/study-natural-light-is-the-best-medicine-for-the-office-300590905.html>

<https://view.com/sites/default/files/documents/Daylight-in-the-Workplace.pdf>

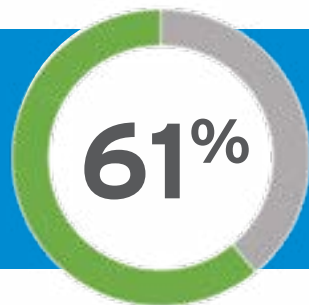
<https://www.sciencedirect.com/science/article/abs/pii/S2352721817300414>

3. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.598859/full>

The Value of Building Certifications and Programs

Along with the rapid increase in focus and investment in healthy buildings, there are now many third-party programs can attest to the health of a building or facility. While there are a range of healthy building certification types, most reputable programs can deliver several distinct benefits to an organization.

DEFINING STANDARDS	PROGRAM GUIDANCE	PROVIDING PROOF TO BUILDING USERS	VALIDATING ONGOING PERFORMANCE
<p>Certification standards give an organization clear guidance and criteria on what they should aim to achieve. This also helps justify and earn buy-in for healthy building initiatives, providing assurance that investments in creating healthier indoor spaces will achieve the impacts and value they promise.</p>	<p>Some standards – but not all – go beyond defining the “what” to providing guidance on the “how.” For example, helping you identify the necessary building equipment, the right cleaning products and procedures, the proper staff training, etc.</p>	<p>Certification programs typically provide visible seals and other visible signifiers to help you demonstrate and communicate all that you’re doing to make your building healthy – providing the third-party proof that people are seeking more than ever.</p>	<p>Healthy buildings are living, evolving organisms and achieving a healthy building is much more of an ongoing exercise than achieving a green building. Some certification programs offer ongoing assessment, measurement and validation, so your organization and your building users can feel confident that you’re continuing to meet the standards and create healthy, safer environments.</p>



61 percent of a global sampling of real estate investors use some form of building certification system to track how their assets are impacting health and wellness.¹



Building Certifications and Programs: Understanding Options

There are many healthy building program standards available today, varying widely in their focus, scope, rigor, cost, time to achieve, etc. Here is a quick overview of some of the main categories. The first breakdown separates the generalist certifications from those with a more focused scope:

Generalist Options

Generalist certifications are an excellent way to define standards across all four elements of a healthy building. Generalist certifications may or may not be as rigorous and specific on each aspect. Their broad scope can also make certification more time- and/or cost-intensive. But their broad scope provides compelling proof to building users, giving them peace of mind and confidence in the comprehensive health and wellness considerations of your building.

Specialized Options

Specialized certifications hone in on one or more elements of a healthy building, such as hygiene, air quality, active design, etc. Specialized programs often provide deep, specific guidance and rigorous assessment. Specialized certifications are not intended to be holistic, but can be a focused and cost-effective way to target specific elements of a healthy building. They can also help provide enhanced confidence for building users with regard to a specific element of building health.

Examples of Specialty Areas



Public Health & Infection Prevention

Focus on public health and infection prevention measures to address risks in indoor spaces.



Air Quality

Help create and sustain healthy air in all indoor spaces.



Building Design

Focus on design, ergonomics and other healthy use considerations.



Building Certifications and Programs: Choosing the Right Program

While different standards can be applied to just about every building, the right certifications or programs will depend on the specifics of your building, your organization and your goals. Here are a few key considerations to get you started.

Key Considerations

NEW CONSTRUCTION OR EXISTING BUILDING?

Some standards are better suited for new construction, whereas others are designed to help enhance existing buildings. Most specialized certifications can be applied to both new and existing buildings.

WHAT ARE YOUR BIGGEST BUILDING HEALTH CHALLENGES?

Make an honest assessment of where your building is strongest and weakest, looking across the key pillars of Hygiene, Air Quality, Water Quality and Experience. If you see issues concentrated in certain areas, specialized certifications may provide more targeted impacts. You can do this internally or use a neutral third party.

WHAT DO YOUR BUILDING USERS WANT TO SEE?

The corollary to the point above is to consider what your building users care most about. For example, awareness and concern around cleanliness and surface disinfection remains higher than ever. Building users may place greater value on programs that focus on public health measures over one that touts active design features.

WHAT ARE YOUR TIME AND COST CONSTRAINTS?

Broader-scope certifications tend to require more time and cost to achieve. Depending on your time and budget goals, specialized certification(s) may provide more “bang for your buck” and allow you to achieve targeted impacts in a tighter timeline.

Building Certifications and Programs: Choosing Partners to Support You

Many organizations interested in pursuing healthier building certifications or programs partner with key vendors to support them with expertise, guidance and service along their journey. As you build a strategy toward achieving your healthy building, here is a quick list of what to look for in your vendor partners:

Comprehensive solutions

Your vendor should be able to provide expertise across several facets of your program such as cleaning and disinfection, hand hygiene, pest management and food safety – so you don't have to try to manage multiple vendors.

Consultative guidance




Your vendor relationship should extend well beyond the transaction of products and services. Expert vendor partners should be able to provide guidance in helping you put the pieces, protocols and programs in place to achieve a healthy building – including guidance that extends beyond the products they provide.

Science-based approach

As you invest in creating a healthy building, you want to know your partner is leading you based on proven guidance. Their services and practices should be evidence-based and science-backed wherever possible, to help deliver the outcomes you expect. For example, a science-based approach to hygiene validation is important—are the right products for each job being used, are processes and procedures being followed, are the right resources readily available. Validation programs can help to further emphasize this focus and drive compliance.

CONVENTIONAL VALIDATION

SCIENCE-BASED VALIDATION

Is disinfection being done?		Are disinfection protocols effectively removing pathogens from surfaces?
Are food contact surfaces sanitized?		Is a food-contact-safe sanitizer being used correctly based on the product label?
Is hand soap refilled?		Is handwashing/hand hygiene compliance at or above target levels?



Building Certifications and Programs: Validating Ongoing Program Performance

Whether it's a broad-scope or specialized solution, healthy building certifications and programs can help ensure you're investing in the right areas and provide confidence to those inside your building. But any validation is a snapshot – a point-in-time assessment. Like the health of an individual, the health of a building is incredibly dynamic. Most of the factors impacting the health of a building can and do change – year to year, day to day and even hour by hour.

Repeated validation of proper hygiene, air quality, water quality and a comfortable environment is critical to realizing the true value of a healthy building. The much broader range of business benefits – from productivity gains and staff satisfaction to operational efficiency improvements – depend on rigorous, ongoing validation of the standards you've set for your building.

For more information about how Ecolab can help you achieve healthy buildings, visit:
ecolab.com/healthy-buildings

