Smart & Green Workplaces: Designing for Wellbeing, Satisfaction, and Business Value

An actionable guide for businesses & organizations to understand the links between the workplace, employee wellbeing, engagement, and productivity, and economic benefits for the company.

altanova

Table of Contents

Executive Summary

The modern workplace is no longer a static cost center. Ample research shows that the physical built environment has a significant impact on occupants' well-being, engagement and productivity. For commercial real estate occupiers, the office is a strategic lever for talent attraction, retention and engagement, while looking to curb operational costs; whereas owners and investors seek to improve asset valuation and attractiveness.

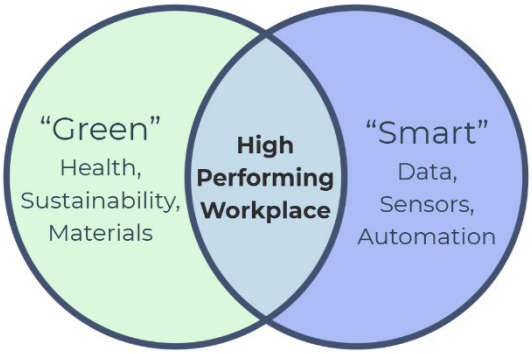
Smart and green workplaces combine human-centric design with data and technology to create healthier, more satisfying environments. When buildings serve people better, organizations see measurable outcomes: higher productivity, lower absenteeism, improved retention, and an overall stronger return on real estate investment. A McKinsey Health Institute study carried out in collaboration with the World Economic Forum estimated that improving global employee health and well-being could spur up to $11.7 trillion in annual performance value globally, with the largest potential gains coming from improved productivity and reduced presenteeism. [1]

Employees in high-performing, green-certified spaces report fewer symptoms of illness and perform better on tasks critical to business outcomes. Optimized air quality, light, acoustics, and thermal comfort support cognitive function and focus; access to nature and movement lowers stress and elevates satisfaction. These are not just wellness amenities – they are performance infrastructure.

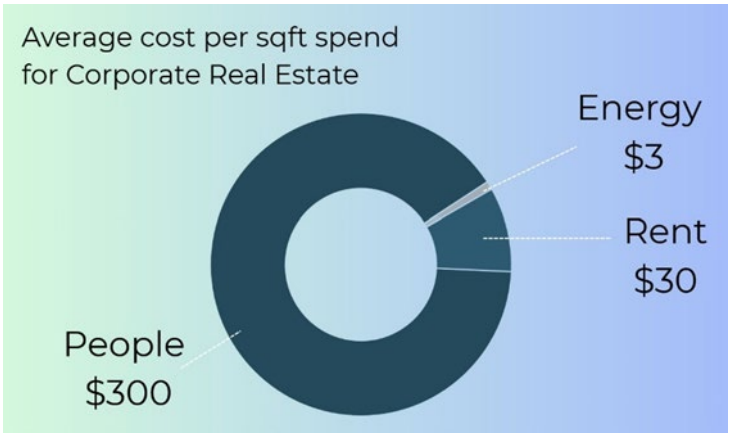
This paper defines what makes a workplace smart and green, examines how key components influence wellbeing and satisfaction, translates those impacts into business value, and offers practical, scalable strategies to improve and continuously monitor building performance.

Introduction: Defining the Smart and Green Workplace

A **green workplace** is a resource-efficient, health-promoting environment that minimizes environmental harm while maximizing human potential. A **smart workplace** provides the right features and technologies to meet the needs of employees to complete their tasks and uses sensors, software, and analytics to measure, manage, and optimize conditions in real time. In practice, the most effective environments are both: "green" provides the design foundations for comfort and health; "smart" provides the feedback loop to ensure those benefits are delivered consistently and transparently. For the rest of this paper, we will refer to "smart workplaces" to encompass both ideas.



On average, we spend about 90% of our time indoors, and in most organizations the largest operating cost for corporate real estate is people – far eclipsing energy or rent. Post-pandemic hybrid work has raised the bar for what draws people to the office: spaces must be healthier, more comfortable, and more compelling than the average home setup. Real estate teams that deliver on this mandate create outsized value for the business.

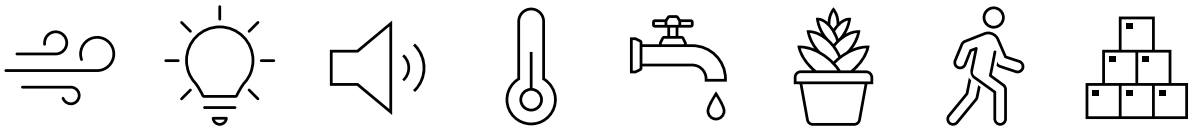


Cost breakdown based on approximate statistical averages on global portfolios

For owners and investors, the implication is equally clear: assets that exhibit better indoor environmental quality (IEQ) and user experience increasingly command higher effective rents, stronger demand, and lower vacancies. Certifications such as WELL, Fitwel, and LEED signal quality, but ongoing performance – and the data to prove it – now differentiates leaders from the pack.

How the Workplace Affects Wellbeing and Satisfaction

What makes the office better than home? People consistently name focus, collaboration, mentoring, community, and access to resources, but only if the environment supports deep work and energizing interactions. Eight physical components are especially influential. Each can elevate (or erode) wellbeing and satisfaction, with direct consequences for productivity and retention.



Air Quality (IAQ)

Why it matters: Clean, well-ventilated air supports cognitive function, decision-making, and overall health. Poor IAQ (Indoor Air Quality) contributes to headaches, fatigue, and increased sick days.
What good looks like: Adequate outdoor air ventilation, effective filtration, source control for VOCs (Volatile Organic Compounds), and real-time CO_2 and PM (Particulate Matter) monitoring with alerts when the quality falls below set standards.
Evidence highlights: Studies associate improved ventilation with measurable performance gains; occupants in green-certified buildings report fewer symptoms of illness and higher cognitive scores. [2–5]

Lighting & Daylight

Why it matters: Light regulates our bodies' natural circadian rhythm, affects alertness and mood, and reduces eyestrain. Adequately daylit environments are consistently preferred by occupants.
What good looks like: Daylight access, glare control, task lighting, and tunable systems aligned to time of day and task.
Evidence highlights: Access to windows is linked with better sleep duration and satisfaction; lack of window access is a key risk for lighting dissatisfaction. [6-7]

Acoustics & Noise

Why it matters: Noise is one of the most common sources of dissatisfaction. Distractions impair concentration and elevate stress.
What good looks like: Zoning for quiet and collaborative work, sound-absorbing

finishes, sound masking in open areas, and etiquette norms to help separate spaces designed for specific types of work.
Evidence highlights: Office noise (phone rings, background speech) is widely reported to impair focus; better acoustic design improves task performance. [8]

Thermal Comfort

Why it matters: Even small deviations from comfort ranges can degrade performance. A perceived lack of control amplifies this dissatisfaction.
What good looks like: Setpoints tuned to activity, adequate air distribution, operable controls where feasible, and seasonal commissioning.
Evidence highlights: Performance peaks near common comfort ranges; high or low temperatures reduce output and accuracy in multiple studies. [9–11]

Water Quality & Hydration

Why it matters: Hydration supports attention, coordination, and mood. Even mild dehydration increases error rates.
What good looks like: Delicious tasting, quality tested drinking water; visible, easily accessible hydration points; bottle-fill stations; transparent quality testing results data.
Evidence highlights: Even a 1–2% fluid loss during the day can increase errors and impair attention and short-term memory. [12–13]

Biophilia & Connection to Nature

Why it matters: Views of nature, indoor plants, and natural materials reduce stress and support attention recovery.
What good looks like: Plants integrated into sightlines, views to the outdoors, natural patterns, and access to terraces or gardens.
Evidence highlights: Biophilic interventions are associated with mood improvements and faster task reaction times; workers value nature-forward attributes. [14–17]

Movement & Ergonomics

Why it matters: Sedentary work elevates health risks and fatigue. Movement boosts energy and creativity throughout the day.
What good looks like: Sit-stand options, stairs that invite use, flexible rooms for focused and collaborative tasks, and micro-break cues.
Evidence highlights: Workplace interventions that encourage physical activity are linked with better health and performance outcomes. [18–19]

Materials & Chemical Health

Why it matters: Low-emitting materials protect occupants from harmful exposures and reduce Sick Building Syndrome (SBS) complaints.
What good looks like: Verified low-VOC products, avoidance of legacy hazards, and robust cleaning and maintenance protocols.
Evidence highlights: Lower-emitting materials and better ventilation correlate with fewer SBS symptoms; understanding chemicals reduces long-run liabilities. [2, 20–21]

What is Sick Building Syndrome?

Acute health, comfort, or performance issues linked to time spent in a specific building. Symptoms usually resolve after leaving the space.

Translating Impacts into Business Value

Improved wellbeing and satisfaction translate into clear economic outcomes for employers and owners. Below we summarize the most material value pathways and how to quantify them in business terms.

Employee Health & Presenteeism

Healthier environments reduce preventable illness, stress-related impacts, and respiratory complaints that drive absenteeism (missing work) and presenteeism (employees coming to the workplace while ill, injured, stressed, or otherwise not functioning at full capacity). At a macro level, presenteeism alone represents a substantial drag on productivity. One study estimates that presenteeism costs US businesses up to $150 billion annually. Organizations that address root-cause environmental factors like air quality, lighting, thermal comfort, and noise, see fewer symptoms and stronger day-to-day performance. [21–22]

Productivity & Cognitive Performance

IAQ improvements are repeatedly linked with higher cognitive and task performance. Enhanced ventilation and low pollutant loads improve decision speed and accuracy, optimized thermal and acoustic conditions limit error rates. A 2015 study found that the average cognitive scores in green buildings are 61% higher than in conventional buildings and green buildings with even

101%

Increase in cognitive scores in an enhanced green building compared to a conventional office

x 150

Return on employee productivity compared to the energy costs of enhanced ventilation

higher ventilation rates (labeled in the study as enhanced green buildings) boosted scores by up to 101%. Even modest, persistent improvements compound into meaningful business impact across an office population. One recent study found that investments in IAQ as little as $40 annually per employee, through enhanced ventilation, resulted in cognitive and productivity gains of up to $6,500 per employee per year. [2–5, 9–11]

Talent Attraction, Retention & Engagement

Workplaces signal organizational values. Environments that support wellbeing and flexibility help attract and retain talent – especially younger cohorts that weigh health and sustainability heavily in employer choice. The Millennial Impact Report found that 82% of millennials aspire to work in workspaces that empower collaboration and innovation. Engagement correlates with profitability; one research study found that companies with highly engaged workers have 6% higher net profit margins. Workplaces that foster connection and individual control tend to score higher on engagement measures. [23–25]

Asset Performance for Owners

For landlords and investors, superior IAQ and credible performance data differentiate assets in competitive markets. Health and sustainability certifications (WELL, Fitwel, LEED, Living Building Challenge Certification) and proven operational performance can support rent premiums and reduce downtime. As tenant organizations internalize the people-performance value, demand for demonstrably healthy buildings continues to rise. [26–27]

Strategies to Improve and Continuously Monitor the Workplace

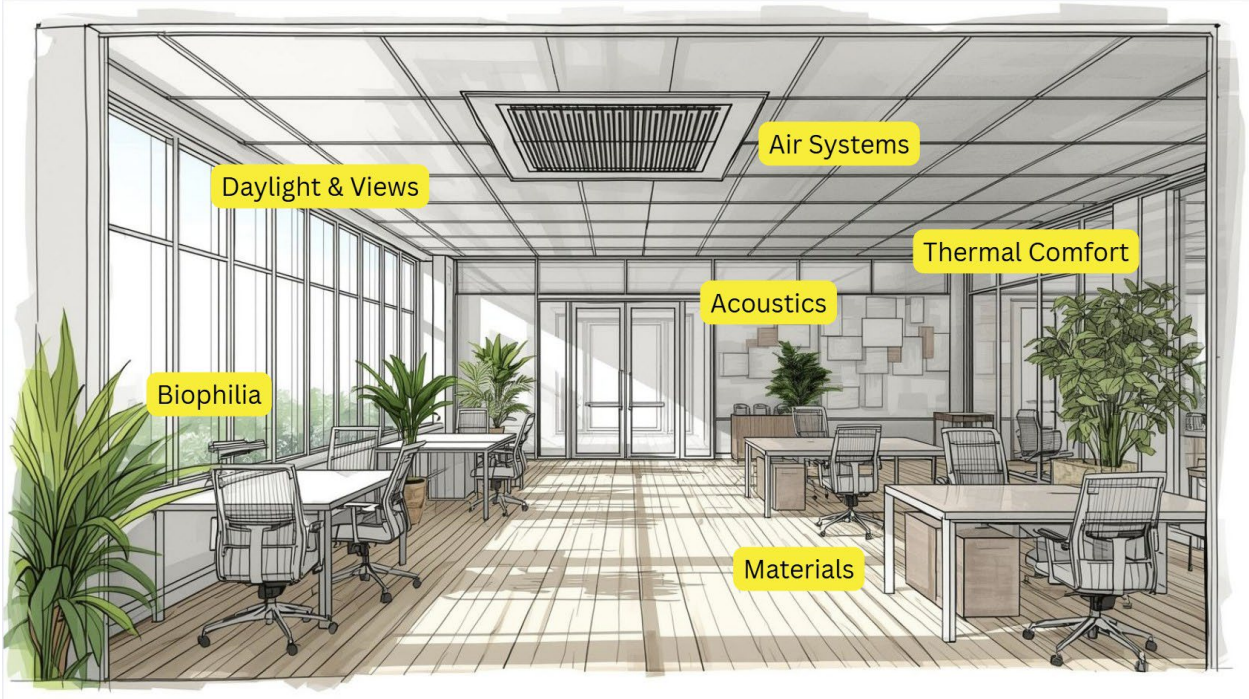
Turning intent into performance requires an integrated playbook across design, operations, and technology – anchored by continuous feedback. Below is a list of features that real estate leaders can adapt to context and budget for their own implementation.

Design Foundations

Daylight & Views: Prioritize layouts that bring daylight deep into floorplates; manage glare; provide task lighting for focus zones.

Air Systems: Optimize outdoor air and filtration; commission for actual use patterns; provide local boost ventilation where needed.

Thermal Comfort: Tune setpoints by zone and season; balance air distribution; consider personal comfort systems in challenging zones.



Acoustics: Plan for activity-based use; incorporate sound absorption; deploy sound masking in open areas; ensure quiet rooms are truly quiet.

Biophilia: Integrate greenery into primary sightlines (exterior or interior); add natural materials and textures; utilize terraces and outdoor spaces whenever possible.

Materials: Specify verified low-emitting products; avoid harmful legacy chemicals; align cleaning protocols with health goals.

Management & Culture

Activity-Based Working: Offer a mix of environments and space types, focus rooms, project spaces, social hubs, so people can choose the right setting for the task.

Protocols & Norms: Set clear etiquette for noise, phone calls, and booking quiet rooms to maintain quality of experience.

Micro-Breaks & Movement: Normalize short movement breaks; provide sit-stand options and visible stairs that invite use.

Change Management: Communicate the 'why' behind changes; train managers to model healthy behaviors (e.g., movement, space use, lighting choices).

Certification & Signaling: Use WELL, Fitwel, or LEED to guide improvements and communicate commitments to stakeholders.

Tools, Sensors & Data

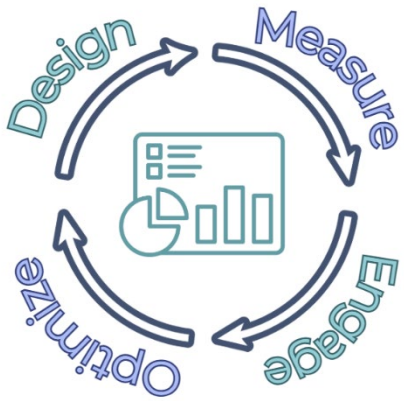
IAQ Monitoring: Deploy sensors for CO_2, PM2.5, TVOCs (Total Volatile Organic Compounds), temperature, and light; alert when thresholds are exceeded; integrate with building management system (BMS) where appropriate.

Occupant Feedback: Run periodic satisfaction surveys and quick pulse checks; map results to floor areas to pinpoint issues.

Usage Analytics: Use badge or booking data to understand how spaces are used; right-size and rebalance over time.

Dashboards & Governance: Consolidate data into a simple executive dashboard; assign accountable owners; review performance monthly.

Iterate: Close the loop – design → measure → engage → optimize – so improvements persist rather than decay.



Conclusion

Green and smart workplaces are not simply a trend, they are a strategic imperative for real estate professionals seeking to drive value, future-proof assets, and support healthy, high-performing occupants.

The actual impact of the physical work environment on occupants' engagement and productivity is vastly underestimated in many cases and demonstrates why it is vital to connect commercial real estate initiatives with human resource strategy. These two departments combined should be part of the core of any business. A thoughtfully designed, well-executed workplace provides tangible proof of a company's culture and embodies an organization's values through the daily experience of its employees. These quantifiable benefits can also help strengthen a more complete business case for workplace investments and strategy.

As we are still in a time of mandatory return to office mandates and shifting priorities to bring people back to the physical office space, some companies are still struggling to incentivize employees to return to the office more often to collaborate, innovate, and spontaneously meet with colleagues. Smart workplaces designed to fully support employees' health and wellbeing can help win the war against working from home.

While many of the considerations included in this whitepaper are primarily focused on commercial real estate and office settings, many can also be applied to healthcare and hospitality facilities where both the wellbeing and satisfaction of occupants (patients or clients respectively) as well as the engagement of employees and their talent retention and performance are essential.

The evidence is clear: the benefits of investing in sustainable environments far outweigh the costs, delivering measurable returns in productivity, retention, and long-term resilience.

Real estate professionals who embrace these strategies will be well-positioned to lead in a marketplace that increasingly values health, sustainability, and innovation.

About Altanova: Partnering for Smart, Sustainable Workplaces

Altanova helps organizations translate ambition into performance. Our interdisciplinary team of engineers, data scientists and sustainability strategists partner with clients to design, implement, and verify workplaces that improve wellbeing, satisfaction, and business outcomes – while advancing decarbonization and sustainability goals.

What we do:

Assess

IEQ diagnostics, occupant surveys, usage and performance baselining.

Design & Advise

Playbooks for air, light, acoustics, thermal comfort, biophilia, and materials; activity-based planning guidance.

Implement

Integration of sensors, analytics, and building systems; training and change-management support.

Verify & Communicate

Support for WELL, Fitwel, and LEED; dashboards and executive reporting to demonstrate results.

Case Study: Global Fortune 500 Company Workplace Strategy

1. Challenge: maintain its culture of innovation while relocating and merging teams worldwide.
2. Our Solution: We combined efforts to foster employee engagement and productivity with ambitious decarbonization targets that reduced the company's operational costs and carbon footprint for 60 sites worldwide. We conducted benchmark surveys, targeted audits, and developed advanced energy and financial models for each individual site.
3. Results: $50M annual real estate savings + 26% GHG reduction over 4 years + leveraged Fitwel and WELL certifications


Our Track Record:
220+
Clients Served
800+
Sustainable Strategy Projects
20
Years of Experience
Let's Work Together!
Julien Lafond,
Altanova CEO
jlafond@altanova.io
347.410.9098
Julien Soufflet,
Partner, Team Lead
jsoufflet@altanova.io
+33 1 88 80 31 42
+1 347.343.5918
Alison Koczanski, Senior Sustainability Consultant
akoczanski@altanova.io
347.732.3041
www.altanova.io
altanova

Endnotes

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