

# Healthy **BY DESIGN**

*Perkins Eastman's role in the evolving movement towards sustainable and healthy buildings*



By Jennica Deely

**Above**

The new West/John Lewis Elementary School in Washington, DC, is targeting net zero energy, LEED Platinum, and WELL certification. It would be the first school in the world to achieve all three. Copyright Joseph Romeo / Courtesy Perkins Eastman

Madona Cumar-Malhotra was sitting at her desk in her home office on a November day in 2020 when she received a long-awaited message from the International Well Building Institute (IWBI). After an intricate, 18-month testing process—conducted during the unprecedented COVID-19 pandemic—Perkins Eastman's new Chicago studio had officially been granted a “WELL v2 Pilot Platinum” rating, the best-in-class anywhere for rating the health of interior environments.

Cumar-Malhotra, a senior associate with Perkins Eastman and member of the firm's workplace team that designed the space, was excited to read the message, albeit somewhat underwhelmed. "You want them to say 'Congratulations!' and confetti falls with balloons and bubbly ... things like that. But after all this time and work, the message content felt a bit anticlimactic." Still, Cumar-Malhotra says, "to us it meant a lot more."

Confetti or not, the designation in many ways is the culmination of healthy-building design over the firm's 40-year history, beginning in the '80s when adding an atrium or some windows to an old warehouse was considered innovative. But it's not so simple anymore. The studio has been designed in accordance with WELL's v2 pilot program, a prototype for the second iteration of IWBI's WELL Building Standard. Pursuing WELL for the Chicago studio was an integral component of the firm's ethos—a commitment to design spaces centered on health and well-being—but achieving WELL was a complicated, multi-faceted process. While the space had already scored high enough to achieve a Gold rating earlier that summer, Cumar-Malhotra says, "We'd been through almost two levels of testing, with air quality metering, acoustic, and light level readings, and so forth. When we achieved Gold, we immediately asked, 'Why not Platinum? What can we do next?'" When the team learned that they only needed three more points to achieve the next level, they were willing to devote the extra time in the form of additional testing and calibration, achieving six more points to make certain they achieved WELL Platinum.

### Diagnosing Sick Building Syndrome

While it's now mainstream, the WELL Building Standard is just one of many design and building criteria—including LEED, Fitwell, net zero, and the AIA Framework for Design Excellence—that are linked to an evolving movement towards energy-efficient, sustainable, and healthy spaces.

## WELL Adjusted

Following its debut in 2015, the WELL Building Standard drew much criticism from sustainable and healthy-building advocates. Its steep upfront costs and hefty time commitment, many argued, made certification realistic for only the wealthiest clients and biggest-budget projects. But in the years since, says Tanya Eagle, senior associate and leader of sustainability standards at Perkins Eastman, "WELL has done a really good job of adjusting course and making a more flexible system that works for many more buildings." Perkins Eastman is now applying WELL Building Standards to a variety of projects, from schools to senior living environments, and is encouraged by their broad applicability and research-based strategies. "The more the industry thinks it's important, the bigger the impact," Eagle says.



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Leveraging features like the building's existing atrium with high-performance ventilation and air-conditioning system updates, Perkins Eastman's Chicago studio in the historic Rookery building sets a standard for adaptive, sustainable design. Photography by Andrew Rugge / Copyright Perkins Eastman



The movement traces its roots to the energy crisis of the '70s, authors Joseph Allen and John D. Macomber write in their recently published book, *Healthy Buildings: How Indoor Spaces Drive Performance and Productivity* (Harvard University Press). “It is only in the last 40 years that we’ve started to adapt the way our buildings operate, tightening building envelopes and reducing ventilation in an effort to conserve non-renewable energy sources.”

The new and renovated airtight systems of the late '70s and the '80s reduced the costs of keeping a building warm or cool, a major incentive during the energy crisis, “but sealing these buildings so well, without increased attention to wall assembly detailing, resulted in diagnoses of respiratory illnesses from mold, dust, and noxious fumes, among other things.” These health issues, Allen and Macomber argue, birthed a “phenomenon known as Sick Building Syndrome,” which prompted a pivot from the energy-efficiency focus towards a stronger emphasis on green, healthy spaces. The oft-used “buildings need to breathe” argument became the slogan that ushered in this next era, which has come to be known as the Green Building Movement.

### Consumer’s Choice

With its focus on healthy, environmentally friendly design, the Green Building Movement influenced much of Perkins Eastman’s work through the late '80s and the '90s. One of the earliest examples that showcases this commitment is the Consumers Union Headquarters and National Testing Center in Yonkers, NY, which was completed in 1987.

With an ethos of transparency and authenticity, *Consumer Reports*, the independent, non-profit product testing and review company, is driven by a mission to create a fair and just marketplace for all. The design process for a major relocation of the company’s headquarters was no different. “The entire senior leadership team was very interested in how major design decisions were made. They all attended the weekly work sessions with the construction manager and the design team,”

says Brad Perkins, co-founder and chairman of Perkins Eastman, who managed the project with co-founder and vice chair Mary-Jean Eastman. Rhoda Karpatkin, one of the nation’s first female CEO/executive directors of a major not-for-profit, was especially invested. “In the same vein as the work *Consumer Reports* was doing with product reviews and testing, Karpatkin wanted the headquarters to be a sustainable and healthy work environment for her staff,” says Perkins. The 175,000 sf testing laboratory and office building, an adaptive reuse of an office-products warehouse, also needed to be completed on a tight budget. The new design inserted a second floor into the warehouse, while new windows along the shell and an atrium that runs the length of the building bring in valuable daylight to the office and laboratory spaces. An on-site storage facility for ice that runs on off-peak electricity reduces cooling loads for the building during the day, and motion detectors on the lights keep energy costs down. Though it seems modest for our present-day standards, these actions were revelatory for the pre-LEED '80s. At the grand opening of the headquarters, Karpatkin personally thanked the Eastman/Perkins duo. “She took us both aside, gave us hugs, and said, ‘You made all my dreams come true,’” Perkins recalls.

### Nudge in the Right Direction

While renowned for the quality of its built work, Perkins Eastman is also a pioneer in exploratory and experimental design concepts that advance innovation for healthy buildings.

In the Nudge Home, which was recently featured in *Fast Company*, a team comprised of co-CEO Nick Leahy and architects Dina Hassan and Pablo Cabrera Jauregui explored ways to imagine the “home of the future” with design and technology that are predicted to become feasible within the next five to 10 years. The Nudge Home concept integrates new technology with human psychology to create a healthy environment that promotes the well-being of its occupants.

“In the future, technology will be even more ubiquitous. Identifying how it can holistically inform rather than overwhelm our design will be the real challenge,” Hassan says. In the Nudge Home, for example, two roof systems work together to optimize

**Above**  
Advanced for its time as the firm’s first large-scale sustainably focused project, Consumers Union Headquarters was designed around a heightened emphasis on employee wellness, energy-efficient systems, adaptive reuse, and built-in laboratory flexibility. Copyright Chuck Choi / Courtesy Perkins Eastman

**Right**  
Nudge Home incorporates technology that currently exists and/or that our designers imagine could be available within the next five to 10 years to foster an ecological balance between people and the planet. Graphic by Perkins Eastman



energy collection and dispersal via both sun and wind: a top layer of photovoltaics covers a second layer of mini wind turbines. Neighbor-friendly gardens in the front yard put healthy food front and center, meanwhile, and a hydroponic bio wall serves the dual purpose of shading the front walk and filtering the air. Rain barrels and small pathways channel water and irrigate the gardens.

“It’s a harmonic combination of low-tech and high-tech that comes together to resolve a design problem in an integral way,” says Cabrera Jauregui.

### Equal Footing

Whether cutting-edge or tried-and-true, the Green-turned-Healthy Building Movement must also bring equity to the built environment to achieve widespread impact. We reap the most benefit to that end through the design of public spaces—particularly schools, says Sean O’Donnell, Perkins Eastman’s K-12 practice leader. “These healthy, high-performance learning environments are suffused with natural light, they have wonderful acoustics, they have great indoor air quality, they’re comfortable, and they really foster opportunities to engage in education and support the learning process,” O’Donnell says. But is there a quantifiable connection between healthy design and student-teacher performance?

Perkins Eastman and its affiliates have been working with the District of Columbia Public Schools (DCPS) for more than 20 years and conducting pre- and post-occupancy evaluations (POEs) for nearly eight of them. POEs, which measure the performance of a space using both quantitative and qualitative data, are not typically performed on projects in the architecture industry, but Perkins Eastman is

committed to better understanding how its buildings actually support the diverse stakeholders living, working, and learning in our designs. To test the physical, quantitative elements of a space, metering devices gauge everything from temperature and daylight to sound and air quality. To understand the qualitative elements—how a space improves the performance and experience of its occupants—surveys and questionnaires query individual feedback.

Principal Patrick Davis, the former DCPS chief operating officer, is a vocal proponent of the POE because he’s experienced the benefit of healthy learning environments firsthand. “With our modernized spaces, teachers are now able to use our facilities to enhance instruction, and students enter an environment that welcomes them and provides the spaces to meet their learning and social and emotional needs,” says Davis. “We are excited to take our designs and operations to the next level, which is part of a larger district-wide effort to reduce our energy consumption and promote well-being.”

### A Heightened Urgency for Indoor Health

With an average of 90% of our lives spent indoors, the need for healthy buildings will only increase. The COVID-19 pandemic, furthermore, has heightened the urgency for clean, healthy environments that support well-being where we work, play, live, and learn.

Cumar-Malhotra, who’s been gradually increasing her in-office time at the Chicago studio, is in full agreement, “We went through the hoops to achieve WELL at the perfect time—everyone was concerned about the pandemic—but now we’re coming out of this and we’ve never been more ready.” **N**

#### Below

West/John Lewis Elementary prioritizes passive strategies including daylight, indoor/outdoor spaces, and healthy materials combined with high-performance energy systems and real-time data to embody the potential in healthy buildings to bring equity to the built environment. Copyright Joseph Romeo / Courtesy Perkins Eastman

