



Perkins Eastman DC

# John Lewis Elementary (DCPS)

A School District and an Architecture Firm Partner for Health and Sustainability

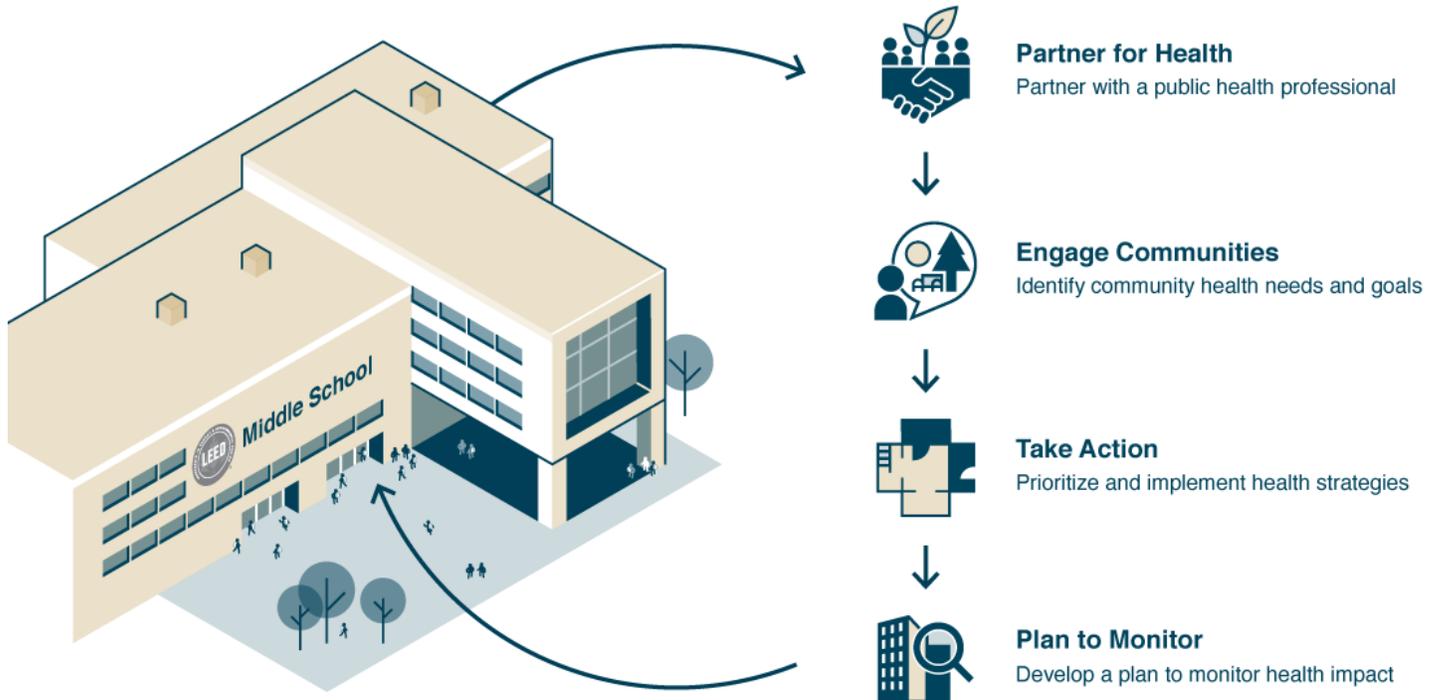
*Building Design + Construction, Schools*

In 2018, Perkins Eastman DC was awarded the modernization of John Lewis Elementary of DC Public Schools (DCPS), a school striving for excellence in both health and sustainability. Perkins Eastman DC worked with DCPS leadership to apply the Integrative Process for Health Promotion pilot credit (LEED Health Process) to take an integrated approach to promoting student, staff, and community health alongside high performance targets.

In 2011, the District of Columbia Public Schools (DCPS) system began a portfolio-wide effort to improve sustainability through green school modernizations, requiring all new construction and modernization projects to meet a minimum of LEED Gold Certification. With the help of the highly motivated design team, John Lewis Elementary, a PK3-5th grade facility, set in motion an effort to build a school environment that places complementary emphasis on achieving both high performance design goals and health and wellness goals for students, staff, and the community that interacts with the building every day.

In September 2018, DCPS released RFPs for the modernization of four schools, which specified that projects and design teams must implement the LEED Health Process to guide the project's health strategy, in addition to the required LEED certification. Additionally, for the modernization of John Lewis Elementary (name recently changed from West Elementary to honor the American Congressman and civil rights activist who passed in 2020), the RFP also requested the project to achieve Net Zero Energy. In consideration of these complementary goals, Perkins Eastman DC (the design team selected for the project) advocated for a holistic approach to wellness, where the wellness of both people and planet were considered together so that the new John Lewis school would deliver not only a high performance building, but one that contributes positively to the health, wellness, and performance of the occupants. Going beyond the call of duty, the Perkins Eastman DC team also set goals for the project to be LEED Platinum, WELL certified, and achieve Net Zero Energy. This case study describes the team's efforts to achieve their health and sustainability goals, and create a positive learning environment for students.

# The LEED Health Process



The LEED Health Process helps built environment project teams consider and promote population health and well-being as a formal part of their green building strategy.

The LEED Health Process is available as the **LEED v4 Integrative Process for Health Promotion pilot credit** and within the LEED v4.1 Integrative Process credit. The process is also aligned with 2020 Enterprise Green Communities Criterion 1.5, Design for Health and Well-Being. The Green Health Partnership, an initiative of the University of Virginia School of Medicine and the U.S. Green Building Council, developed the process in collaboration with Enterprise Community Partners and the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts.





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**Partner for Health.** Schools have the unique ability to harness the wealth of existing knowledge and expertise of their district-level health staff. In their collaboration with DCPS, Perkins Eastman DC was able to engage school professionals from both traditional and nontraditional health backgrounds - nurses, nutritionists, guidance counselors, and social workers, and others - to provide a health perspective to the John Lewis Elementary design process. This partnership provided diverse input that had a direct impact on design decisions and provided a greater understanding of possible opportunities for the school environment.

Guided by the language of the LEED Health Process credit, Perkins Eastman DC selected these professionals to serve as their health partners for John Lewis and to supplement their own experience promoting health well-being throughout their work. Interdisciplinary collaboration can be challenging, but bringing a diversity of perspectives to the table can

spark new ideas to promote the health of the school population, particularly given the unique understanding of student and community health the DCPS staff members have.

**PROJECT TEAM**

The interdisciplinary John Lewis team included stakeholders from the following departments and disciplines:

- **DESIGN.** Perkins Eastman DC.
- **INTERNAL DCPS TEAM.** DCPS Facilities, Health Services, Sustainability, Health & Physical Education, Food & Nutrition, and DCPS School Leadership.
- **PLANNING.** DC Department of General Services (DGS) and DCPS Facilities.

**JOHN LEWIS ELEMENTARY PROJECT STATISTICS**

LOCATION	PROJECT TYPE	CERTIFICATIONS	NUMBER OF STUDENTS	NUMBER OF STAFF	SQ. FOOTAGE	ARCHITECT
Ward 4, Washington, DC	Schools, New Construction	LEED Platinum, WELL Certified, Reaching for Net Zero	315 (current) 557 (expected) PK3 - 5th	60	~ 88,680 sq. ft (Structure)	Perkins Eastman DC

**Engage Communities.** Perkins Eastman DC took part in several collaborative workshops sessions with their health partners and collaborators at DCPS to evaluate the unique health and well-being needs of the John Lewis Elementary population and begin discussing strategies for how to address them. The DCPS Facilities team recruited a public health graduate student to help coordinate outreach with John Lewis and the other DCPS schools undergoing modernization and develop community health profile assessments. The graduate intern visited the schools, conducted interviews, and administered pre-occupancy surveys to help the John Lewis team determine which health needs were most pressing in each of the communities.

Based on research and results from the school observations (which included pre-occupancy surveys and on-site measurements for IEQ conditions), Perkins Eastman DC and DCPS established a number of health and well-being goals for John Lewis that work in harmony with their existing sustainability and education strategies. To promote physical well-being, improving indoor environmental quality (IEQ), enhancing water quality, promoting healthy nutrition and drinking water, encouraging hand washing, and increasing opportunities for physical activity were prioritized. To promote emotional and social well-being, the team focused on helping students build and strengthen a sense of community identity by using spaces within the school building.

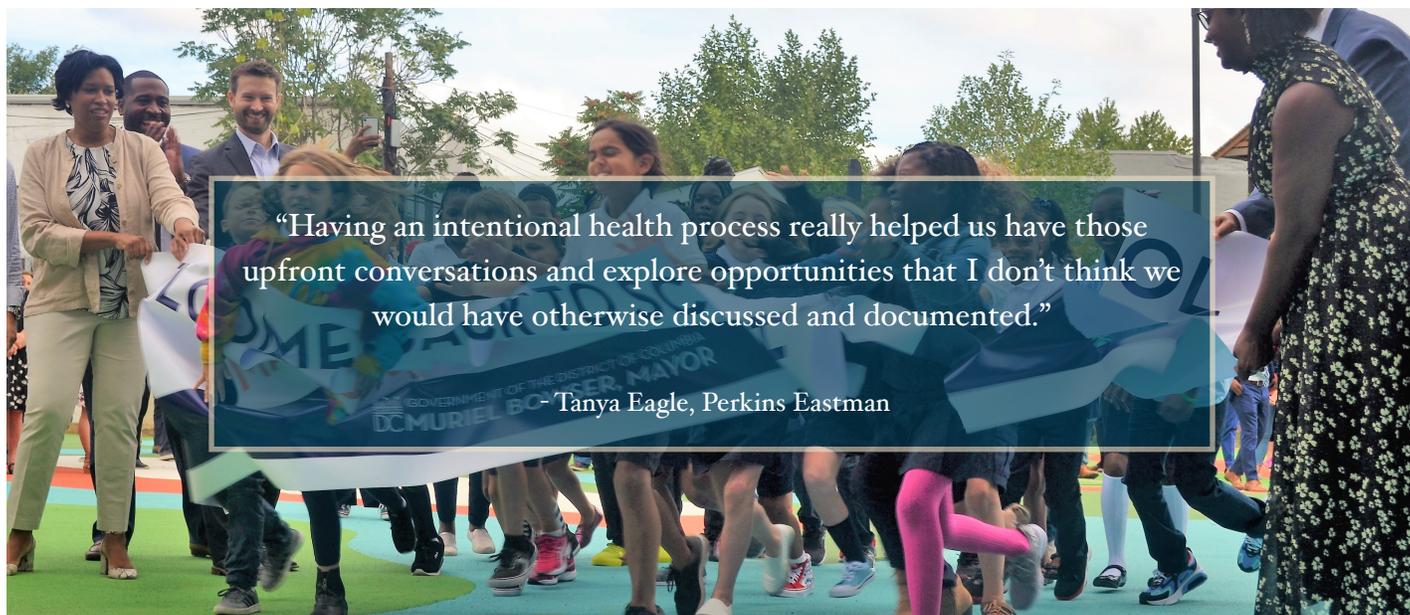
### JOHN LEWIS HEALTH GOALS

- **Physical Well-Being:** Improving IEQ, enhancing water quality, healthy nourishment and drinking water promotion, hand-washing, and physical activity.
- **Social + Emotional Well-Being:** Strengthening community ties, ownership over student spaces, school as a teaching tool, spaces to collaborate and discover.

### JOHN LEWIS SUSTAINABILITY GOALS

- LEED Platinum
- WELL Certified
- Net Zero Energy Ready





**Take Action.** Once the environmental, physical, social, and emotional health goals were established for John Lewis, the Perkins Eastman DC team began to chart out a process and identify specific strategies to address the goals. From the beginning, the design team decided to leverage the rigor of a Net Zero Energy design process to achieve what they call “Net Positive Education.” Using the high levels of collaboration needed by all parties at the beginning of the design process for Net Zero Energy, the health goals and conversations were integrated alongside this effort. As design advanced, the team prioritized strategies that would provide benefits across all of these goals, mainly IEQ strategies like daylight, thermal comfort, acoustics, and air quality. For example, by orienting the building along the east-west axis, instructional spaces face north or south. This change in orientation resulted in a 9% reduction in energy consumption and also allowed for improvement in daylight autonomy, glare reduction, and solar heat gain mitigation - all which have an impact on energy consumption and user comfort and performance.

The John Lewis school building was also designed to meet a 30% increase in ventilation to create an indoor environment that enhances cognitive function by reducing CO2 levels. Though increasing ventilation and filtration improves air quality, it may also have a negative impact on energy efficiency. While increasing ventilation slightly affected upfront energy usage and costs, it supported the school’s mission of starting students on a path to success, and was deemed well worth the investment.

Additional health and wellness goals were prioritized based on the WELL Building Standard. Increasing hand-washing and access to drinking water were addressed with mindful placement of hand-washing support and fountains in highly-visible and highly-trafficked areas. Nourishment, a goal not often discussed by architecture firms, was also addressed via strategies in WELL and aligned with DCPS nutritional standards. Healthy nourishment is key at John Lewis, a school that serves three meals a day to its students, so limiting refined ingredients, promoting healthy nutritional and mindful eating messaging, and providing on-site gardening and planting support were important programmatic strategies to incorporate. Active design strategies like “discovery zones” and outdoor spaces encourage play, while an early childhood courtyard provides age-appropriate opportunities for movement for the youngest students at the school.

To maintain the already well-established sense of community at John Lewis, and to foster social and emotional health, the library was turned into a large hub at the front of the school - a space for learning, community activity, and connection for students and staff. A mural in the library by Colombian-American artist Mas Paz, whose large-scale art also distinguished the previous building, celebrates community and history. Students at the school are also encouraged to participate in community activities and use the building in creative ways.

# Needs-Based Solutions at John Lewis Elementary

## Health Need

## Health Solution

### Promoting Physical Activity

### Discovery Zones and Adventure Play

Hallways throughout John Lewis expand and contract between classrooms to mimic river deltas and create a flow of movement and spaces to come together. Outdoor spaces were also designed to encourage “adventure play” and exploration.

### Encouraging Water Drinking and Hand-Washing

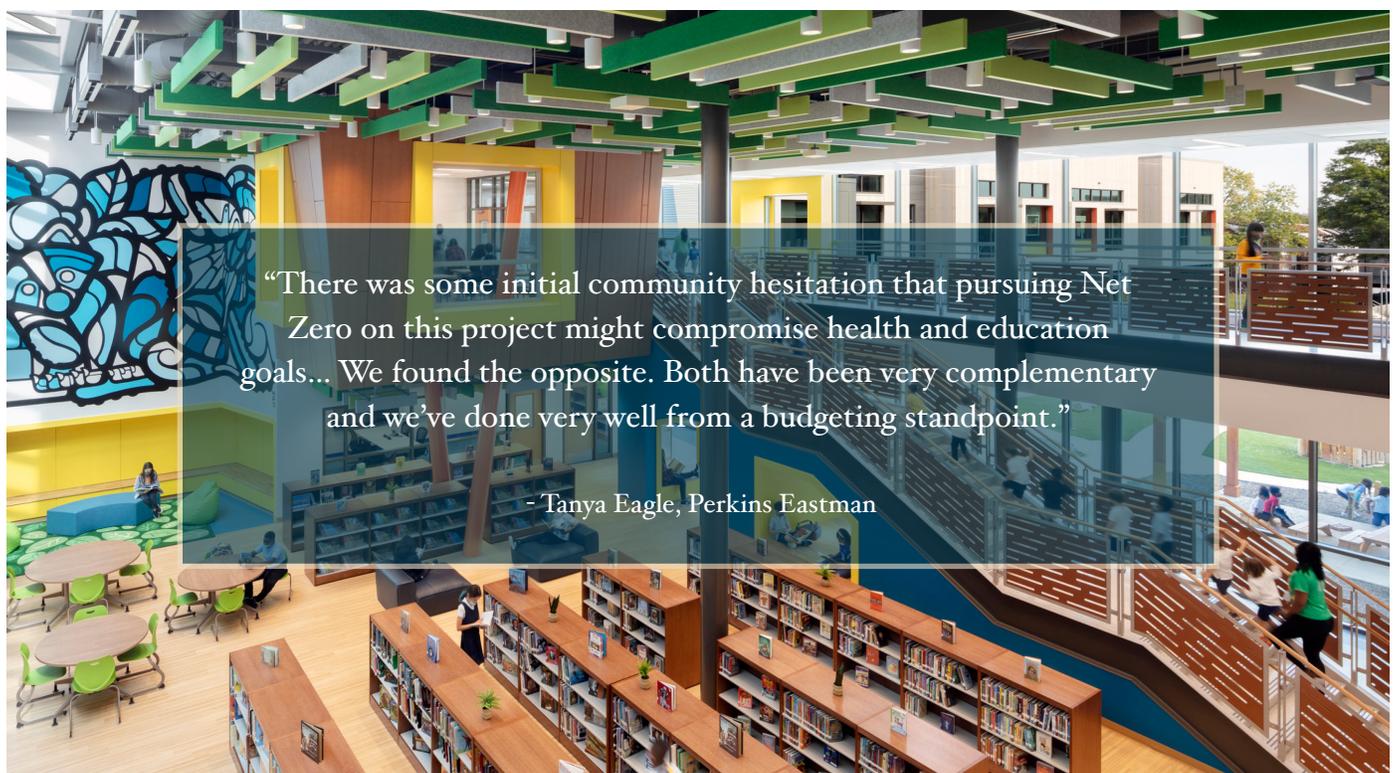
### Mindful Placement to Increase Access

To ensure both access to and use of drinking water stations, the design team chose to place fountains in highly-trafficked areas of the school, like nearby gymnasiums and in cafeterias. Hand-washing support was also provided in these frequented areas to encourage students to practice healthy hygiene.

### Fostering Social and Emotional Well-Being

### Participation in the Civic Community

Participation and collaboration is an important part of building a school community identity and improving mental health. Students were encouraged to use their school building to work together, create displays, and decide to use spaces in a way that is useful and meaningful to them.



“There was some initial community hesitation that pursuing Net Zero on this project might compromise health and education goals... We found the opposite. Both have been very complementary and we’ve done very well from a budgeting standpoint.”

- Tanya Eagle, Perkins Eastman



“All of this wouldn’t have happened as cohesively without the conversations that took place as a part of this process. Bringing everyone together, parties that wouldn’t normally be a part of the conversation, helped us achieve all our goals. It didn’t just help LEED or WELL or Net Zero, it helped everything because we considered it all at once.”

- Tanya Eagle, Perkins Eastman

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**Plan to Monitor.** Perkins Eastman DC and DCPS have created a highly-collaborative, positive working relationship over the years, resulting in many opportunities to conduct pre- and post-occupancy surveys and on-site measurements for IEQ metrics and learn more about the school population. To monitor and evaluate the efficacy of their design and programmatic strategies, the team will continue this health and well-being survey trend for both students and staff members.

A high-performance dashboard will also track the building’s energy consumption, showcase sustainability features, and link to the school’s curriculum to address topics such as social and environmental justice, climate change, and water conservation. Through this interactive online dashboard, students and teachers can continuously discover how they interact with the building and how the building influences the environment.

It was also important for the team to consider monitoring and evaluation strategies throughout the planning and design phase, especially given that achieving Net Zero was a high priority for the project. Selecting strategies with the intention to monitor their impact after implementation ensures that teams are making intentional design decisions throughout the project delivery. Tracking energy and indoor environmental quality data on an ongoing basis will also allow for the design team and DCPS to understand how the building is performing and make sure the school is meeting the design targets.

Planning to monitor from the start will also eventually help districts alter strategies and programs that aren’t hitting the mark and continue with those that are having a measurable impact on health, well-being, and sustainability.

**Conclusion.** With an understanding of how the design of a school building can positively influence the health and well-being of its students and staff, as well as promote sustainability and foster educational objectives, Perkins Eastman DC was able to use an intentional process to support their targeted goals, create health and environmentally-focused programming, and foster a sense of community among the students and staff of John Lewis. The team found that the Net Zero Energy process and the LEED Health Process were complementary - both encouraging collaboration between the design team and the school district and requiring intentionality for design decisions made for the school.

The work that Perkins Eastman DC put into the school shows that intentionally promoting health and well-being can create value for a project beyond what currently exists in standard practice. John Lewis Elementary has become a uniquely wonderful example of how health, energy, sustainability, and educational goals can work in harmony and create an environment that supports both thriving people and a thriving planet.

# John Lewis's Application of the LEED Health Process

## PROJECT TEAM

The interdisciplinary John Lewis team included stakeholders from the following departments and disciplines:

- **DESIGN.** Perkins Eastman DC.
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## The Impact of COVID-19

When the COVID-19 pandemic hit the US in March 2020, school districts had to quickly reconfigure their approach to delivering education and maintaining access to critical services such as free and reduced lunches. The demands of physical school facilities changed rapidly as buildings shut down and schools transitioned to online learning. When schools considered re-opening in the fall, facilities teams had to carefully consider how to manipulate the design and operation of school buildings to minimize the spread of COVID-19. Because of the LEED Health Process pilot credit and WELL certification processes, the design was already well positioned to address new best practices, and the facilities team was able to more quickly and efficiently address these new COVID-related challenges.



**Partner for Health.** Leveraging the experience of school health professionals, Perkins Eastman DC called upon DCPS health & PE, food & nutrition, and facilities teams to serve as health partners.



**Engage Communities.** Perkins Eastman DC set health goals for John Lewis based on the needs of students, staff and community. Physical activity, social well-being, and nutrition were priorities.



**Take Action.** The team selected school design and programmatic health strategies - like "discovery zones" and mindful placement of drinking fountains - to address the needs of the population.



**Plan to Monitor.** Perkins Eastman DC will continue to work with DCPS to monitor the effectiveness of their chosen strategies. The health process will help them reassess their priorities in the face of new health challenges.

## TIMELINE OF EVENTS

2011, SEPTEMBER

LEED Gold mandate established after introduction of the DC Healthy Schools Act of 2010.

2018, SEPTEMBER

DCPS issues RFPs for modernization at four schools, including John Lewis, specifying use of the LEED Health Process pilot credit.

2018, NOVEMBER

DCPS hosts an internal health and design workshop with health partners and stakeholders to begin establishing health goals for John Lewis Elementary.

2019, APRIL

Perkins Eastman DC and DCPS health champions meet to discuss community and school-specific health goals and plans for health promotion.

2019, MAY

The project team conducts visits, observation, and interviews with students and staff to complete community profiles.

2019, JUNE

Designers and health partners workshop to discuss the needs of the community and choose design specific strategies for each health goal.

2019, NOVEMBER

Construction begins. Perkins Eastman DC works with DCPS staff and interns to develop a pre- and post-occupancy survey for health and well-being.

2021, AUGUST

Construction on John Lewis Elementary ends and students move back into the new school building.



[www.centerforgreenschools.org](http://www.centerforgreenschools.org)

## Who we are

Founded in 2013, the Green Health Partnership (GHP) is an academic research and development group between the University of Virginia School of Medicine and the U.S. Green Building Council with funding from the Robert Wood Johnson Foundation. GHP utilizes the green building movement as a platform and blueprint for creating a self-sustaining, scalable market for health promotion within the real estate industry.

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## Acknowledgements

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GHP would also like to acknowledge **Tanya Eagle** of Perkins Eastman and **Andrea Swiatocha** and the many health champions at DCPS. Their collaboration throughout the modernization process at John Lewis Elementary - assisted by DCPS intern **Kayla Clarke** - created extensive inspirations for this case study and for the LEED Health Process in schools.