

LINCOLN PUBLIC SCHOOLS

Ballfield Road Campus



EXECUTIVE SUMMARY

The Lincoln School project in Massachusetts pioneers the state's first Net Zero public school renovation, blending Modernist influence with sustainable design. The project involved renovating and expanding the existing facility to create an innovative learning space for 650 students. The school's design incorporates high-efficiency systems, on-site solar PV panels, and salvaged natural materials, showcasing a commitment to sustainability and environmental conservation.

Supporting next-generation learning, the school layout features grade-level neighborhoods, flexible learning spaces with operable walls, and informal learning areas to encourage collaboration and personalized instruction. Additionally, the design includes new common spaces such as the learning commons, dining commons, and media center, fostering student community. The site design integrates bioretention gardens and porous pavement paths, promoting sustainable site management and offering opportunities for outdoor education.

The new school design honors the town's architectural heritage and Modernist ideas. The thoughtful approach has garnered recognition, as evidenced by the selection of the project for the Lincoln Friends of Modern Architecture (FoMA) 2023 Modernism Award. The design stands as a testament to the enduring legacy of Modernist principles and their impact on the town's architectural character. By retaining the asymmetrical sloped roofs and reinventing the horizontal sunshade datum, the design preserves its modern expression. These architectural shading elements enhance the school's transparency, connection to nature, and energy efficiency.

The Lincoln School renovation project successfully merges sustainability, modern educational design, and architectural heritage. The Net Zero building utilizes efficient systems, salvaged materials, and innovative spaces to create an environmentally conscious learning environment. The project exemplifies a commitment to community engagement, sustainability, and inspiring education for the next generation.





SCOPE OF WORK AND BUDGET

The single-story, 165,000 square foot building is the town's sole public school and a beloved community asset. The project entailed renovating and expanding the existing facility, which was initially built in 1948 and underwent multiple stages of expansion until 1994.

With a project budget of ninety-five million dollars, the project encompassed a range of crucial improvements to the Lincoln School. This included the removal and recladding of the exterior skin, a significant upgrade from the uninsulated walls enabling net zero operation. The project included partial demolition of the existing structure, which proved instrumental

in creating centralized school-wide resources. This allowed for the construction of essential facilities such as the Learning Commons, Media Center, and the relocation of the cafeteria to the former library space. Additionally, the project involved a significant interior reconfiguration to align learning spaces with the curriculum and team-teaching model.

The demolition and subsequent reconfiguration maximized the efficient use of space, ensuring that these key areas were centrally located and easily accessible to all students and staff. The new layout promotes collaboration, engagement, and convenient access to important resources, enhancing the overall learning experience at the Lincoln School.

SCHOOL & COMMUNITY ENGAGEMENT

The Lincoln School project team engaged with the community, including residents, parents, teachers, and government officials. Their input was crucial in shaping the design, addressing challenges, and utilizing available assets. The engagement process built a sense of ownership and pride among stakeholders and fostered a collaborative approach to create a school environment that benefits the community at large. The project's value lies in its ability to meet the community's aspirations while promoting an inclusive and equitable school.

Recognizing the importance of community engagement, the team actively sought the input of residents, parents, teachers, and government officials throughout the design and planning phases. The community's involvement proved invaluable in shaping the overall vision of the project.

The process was characterized by open dialogue, active listening, and collaborative problem-solving. Through town hall meetings, workshops, and regular School Building Committee sessions, community members had the

opportunity to voice their opinions, concerns, and ideas. The project team actively considered these inputs and integrated them into the design, ensuring that the renovated school would meet the community's needs and aspirations.

By involving a diverse range of stakeholders, the project embraced the principles of justice, equity, diversity, and inclusion. The engagement process sought to include voices from different backgrounds and perspectives, ensuring that the design and outcomes of the project would benefit the entire community. This approach fostered a collaborative spirit that celebrated diversity and promoted equal access to quality education.

A key aspect of the Lincoln School renovation project's value is its unwavering commitment to sustainability, a value that holds significant importance within the town. The renovation prioritizes energy efficiency, resource conservation, and environmental stewardship.



The Lincoln School project extends far beyond the physical transformation of the facility. It lies in the project's ability to forge strong connections with the community, create a sense of shared ownership, and deliver an educational environment that reflects the values and aspirations of the community at large. By actively engaging stakeholders, the project team ensured that the renovated Lincoln School would not only meet the functional and educational needs but also serve as a source of pride, unity, and inspiration for the community for generations to come.

By embracing sustainable practices, the project not only reduces its ecological footprint but also serves as an educational tool, teaching students about the importance of environmental responsibility and fostering a culture of sustainability within the community. The project exemplifies how sustainable design can be seamlessly integrated into a facility, providing a healthier and more conducive learning environment while demonstrating a commitment to the long-term well-being of the community and the planet.

Through its sustainable design choices and community-driven approach, the project stands as a testament to the power of collaboration and shared values. By working hand in hand with the community and embracing sustainability principles, the project has created an educational environment that not only meets the needs of the present but also respects the needs of future generations. It sets an example for how educational facilities can embody sustainability, inspire positive change, and contribute to the overall well-being of both the community and the environment



EDUCATIONAL ENVIRONMENT

The educational vision and goals of the Lincoln School renovation were centered around creating an innovative learning environment that nurtures and supports the development of next-generation skills. The design of the facility was carefully aligned with the curriculum to enhance the educational experience for students. The design incorporates flexible spaces that can adapt to different learning needs and teaching styles. These versatile areas allow for easy reconfiguration and customization, providing educators with the freedom to tailor their teaching approaches to individual student requirements. The flexibility of the learning environment encourages collaboration, active participation, and student engagement.





The design prioritized the creation of collaborative areas that facilitate project-based learning and personalized instruction. Collocated with the team “hub” are technology-enabled, small group breakout rooms, offering students and teachers the choice for collaborative learning. Together, these spaces encourage teamwork, problem-solving, and creative thinking. Students can work together, exchange ideas, and actively participate in hands-on projects that promote critical thinking and real-world application of knowledge.

The adaptable and flexible learning environment at the Lincoln School fosters a student-centered approach to education. It supports different learning styles, promotes personalized instruction, and enables educators to create a rich and dynamic learning experience. By incorporating technology, collaborative spaces, and flexible design principles, the renovated Lincoln School provides a forward-thinking educational environment that prepares students for the challenges and opportunities of the future.



“My classroom has a glass wall we can open and close ... And I love that about it, that we move in and out of my classroom into the Hub space on a regular basis. And the kids love being able to move out there and work in small groups.”

- Matt Reed, 4th Grade Teacher

“My favorite space is the learning commons. It’s where I’ve been able to be most engaged with students. Whether I’m having assemblies for them to do bus safety or to have a grade level meeting or to work with faculty.”

- Sara Collmer, K-4 Principal





“We’ve really focused on creating spaces that bring people together, so that all learning both for adults and for students in through collaborative processes. When I walk around the buildings, i see things happening.”

- Becky McFall, Superintendent



RESULTS OF THE PROCESS & PROJECT

The Lincoln School renovation project is successfully aligned with educational objectives, established by the district, providing an environment that facilitates student development and engagement. By incorporating innovative learning spaces, adaptable design, and technology integration, the project has enhanced the learning experiences of students, enabling them to thrive and succeed academically.

In terms of school district goals, the project effectively addressed capacity needs through the expansion and reconfiguration of the facility. The optimized use of space and seamless integration of resources have resulted in a functional and adaptable school environment, accommodating the growing student population and supporting the district's educational mission.

At the community level, the project has been a source of pride and engagement, preserving the town's architectural heritage and inspiring community members. Additionally, unintended positive outcomes include strengthened community relationships, increased sustainability awareness, and the initiation of sustainable practices within the community. These achievements reflect the project's broader impact, extending beyond the physical transformation of the school and fostering a sense of unity and collaboration within the community.





“Through strategic spatial planning and the integration of operable partitions, we created a dynamic and adaptable learning environment that can easily accommodate changing pedagogical requirements. Meticulous attention to detail ensures that every aspect of the design contributes to the overall excellence of the learning environment.”

- Keith Fallon, RA, Education Planner



PHYSICAL ENVIRONMENT DESIGN

FLOOR PLANS

The design of the Lincoln School renovation project embraces the rich history of Ballfield Road and the town's baseball heritage. The school's arrangement in an L-shape around the historic baseball field pays tribute to this community asset and preserves its significance within the campus. The existing trees are carefully preserved, contributing to the campus's greenery, and maintaining its natural beauty.

In addition, the project incorporates outdoor classrooms and a public plaza, providing students with opportunities to learn and connect with nature. This integration of outdoor spaces fosters a dynamic learning environment that promotes exploration, creativity, and engagement. The plaza serves as a welcoming gathering space, enhancing the sense of community and creating a focal point for social interactions.

The design approach also emphasizes sustainability and environmental stewardship. Solar panels installed over parking areas demonstrate the project's commitment to renewable energy generation and reducing the campus's environmental footprint. The preservation and connection to the adjacent wetlands further showcase the project's efforts to protect and integrate with the natural surroundings.

By incorporating donated trees and benches made from salvaged materials, the physical environment design not only adds aesthetic value but also symbolizes the community's active participation and dedication to the project. These elements highlight the collective pride and ownership of the school's transformation.

Overall, the design of the Lincoln School renovation project reflects a light touch to the campus, reframing the site to create a single entrance that welcomes students, staff, and visitors. The integration of community assets, such as the historic baseball field, and the thoughtful incorporation of outdoor spaces and sustainable features result in an inspiring and inclusive learning environment. The design preserves the town's character while providing students with modern facilities and a connection to nature, fostering a sense of belonging and pride within the community.





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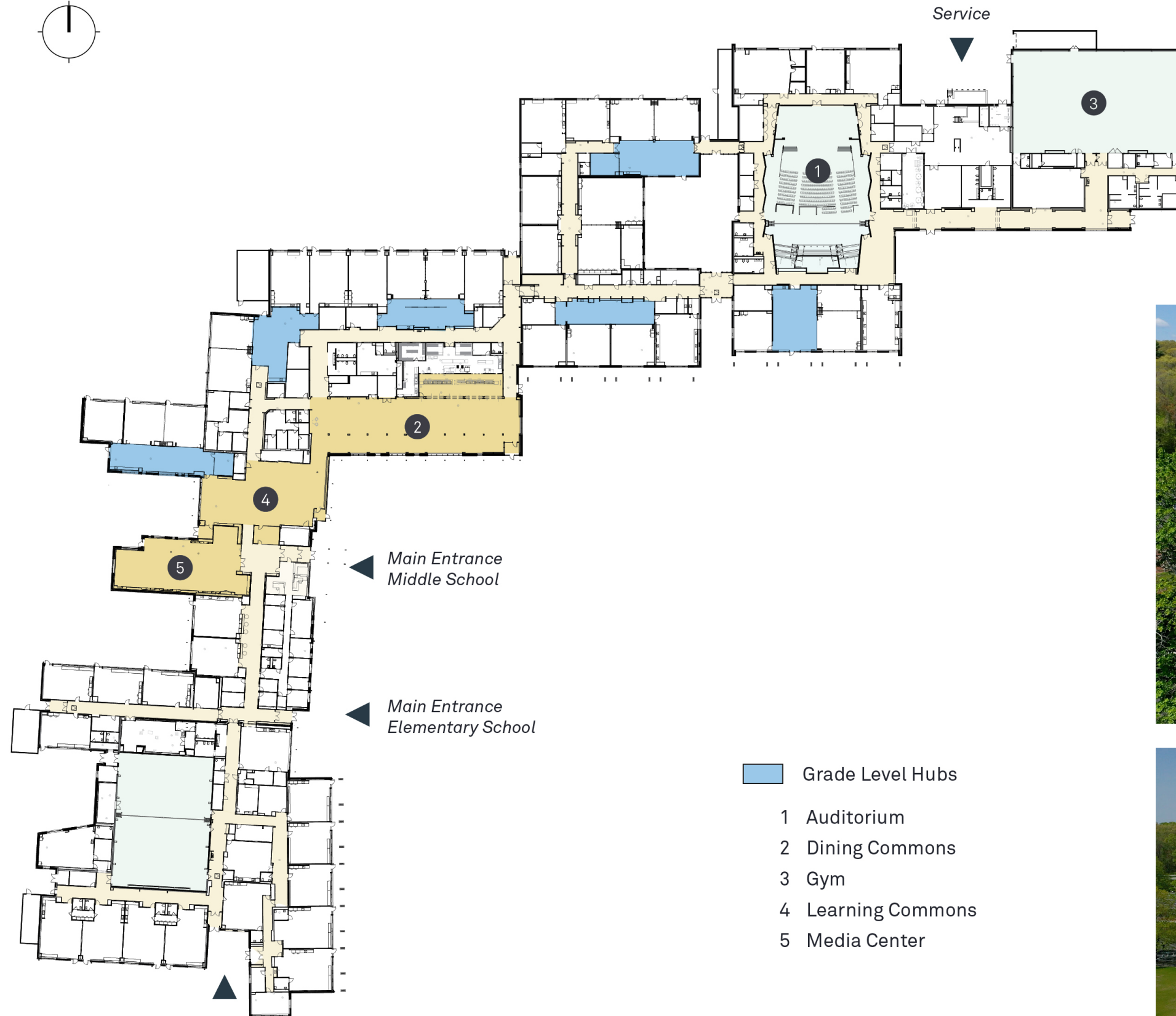
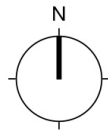



2023



“The community did not want to see the building torn down. They valued the asset of the structure itself and the site itself. That was really important to be maintained, no matter how complicated it might be.”

- Alex Pitkin, AIA, Project Director



-  Grade Level Hubs
- 1 Auditorium
- 2 Dining Commons
- 3 Gym
- 4 Learning Commons
- 5 Media Center



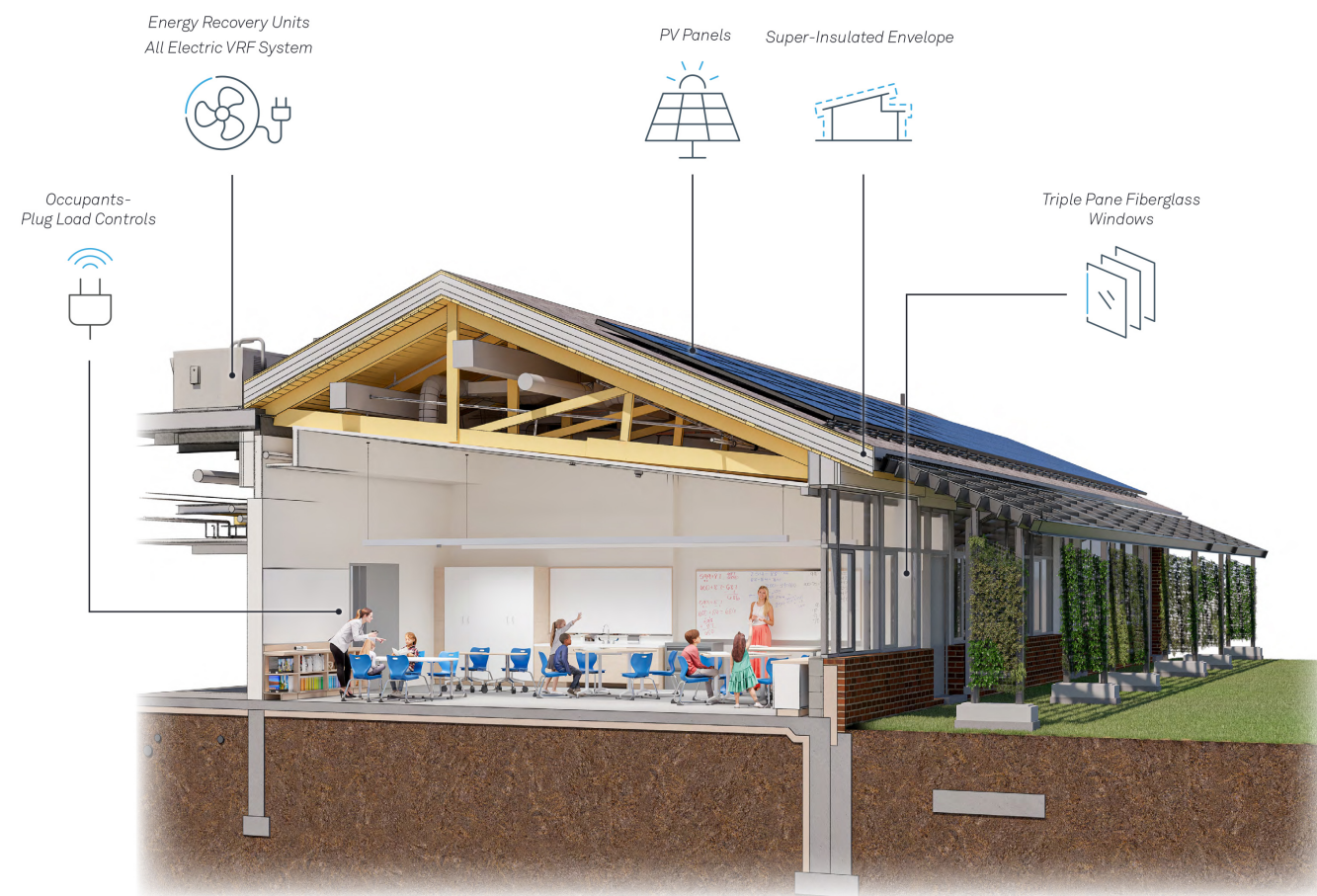


SUSTAINABILITY AND WELLNESS

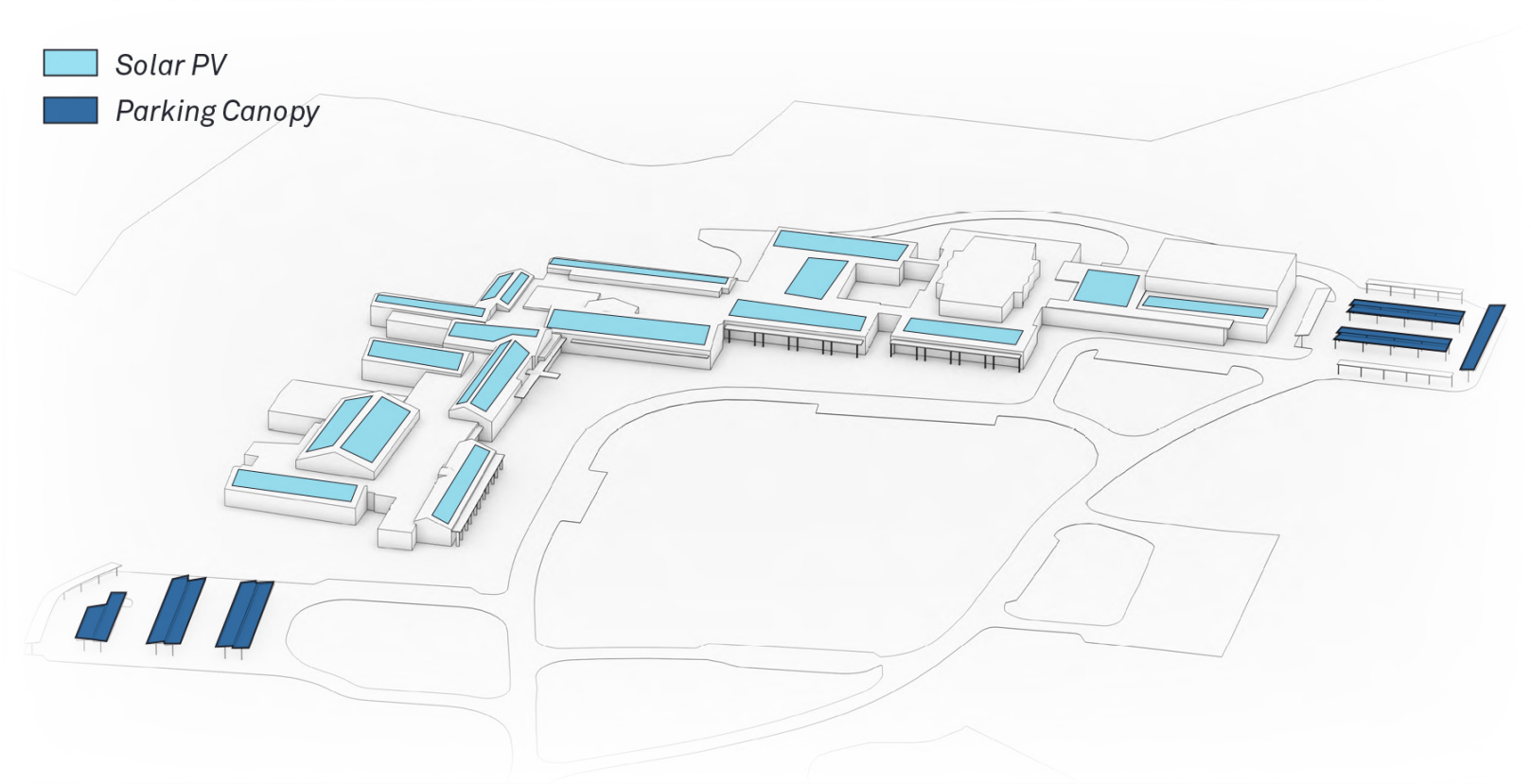
Lincoln School renovation project showcases a holistic approach to sustainability and wellness. Pioneering an approach to sustainability as the first net-zero energy renovation project in the commonwealth. By implementing energy-saving measures and utilizing renewable energy sources, the project is projected to achieve net-zero operation. With a predicted Energy Use Intensity (pEUI) of 24, the school showcases remarkable energy reduction. This achievement not only contributes to the school's environmental sustainability goals but also sets a precedent for future modernist school renovations.

The project's emphasis on all-electric systems further reinforces its commitment to sustainability. By transitioning to all-electric solutions, such as an all-electric kitchen, the school eliminates the use of fossil fuels and reduces harmful emissions. This shift promotes a healthier indoor environment by improving air quality and ensuring the well-being of students, staff, and the surrounding community.

Super insulation and triple-glazed windows minimize heat loss and optimize the building's thermal envelope, significantly reducing heating loads. The integration of a Variable Refrigerant Flow (VRF) system with energy recovery further enhances energy efficiency by capturing and recycling heat energy. These measures not only lower the school's environmental impact but also create a comfortable learning environment for students and staff.



First ever projected Net Zero public school renovation in Massachusetts



Carbon Reduction **48.1%**
Incremental Costs **1.1%**
Payback **3.5yrs**
EUI with PV% **0 (NZE PPA)**

Predicted EUI
23.9 kBtu/sf





The use of durable and environmentally friendly materials showcases a commitment to sustainability and long-term resilience. Careful consideration is given to selecting materials that require minimal upkeep while remaining aesthetically pleasing and in line with the project's design goals. By prioritizing durable and green materials, the project minimizes waste generation and promotes sustainable practices throughout its lifespan. These materials contribute to the project's overall sustainability objectives while ensuring a visually appealing and inviting atmosphere for students and staff.



The incorporation of ample daylighting strategies allows natural light to permeate the spaces, creating a bright and vibrant atmosphere that has been shown to positively impact mood, productivity, and overall health. Additionally, the project prioritizes indoor air quality through proper ventilation systems, ensuring a clean and comfortable environment for all occupants. The integration of nature and access to outdoor spaces further promotes wellness, providing opportunities for relaxation, connection with nature, and physical activity.



“For a lot of the community, the new Lincoln School is an exemplar of modern architecture. For a lot of people, the school is a Net Zero, all-electric, affordable version on how schools should be run.”

- Buck Creel, Lincoln School Administrator

