ELIOT INNOVATION SCHOOL

585 COMMERCIAL STREET

Boston, MA

Association for Learning Environments
Planning & Design Awards Submission

ONE CAMPUS. THREE SCHOOLS. COUNTLESS BRIGHT FUTURES.

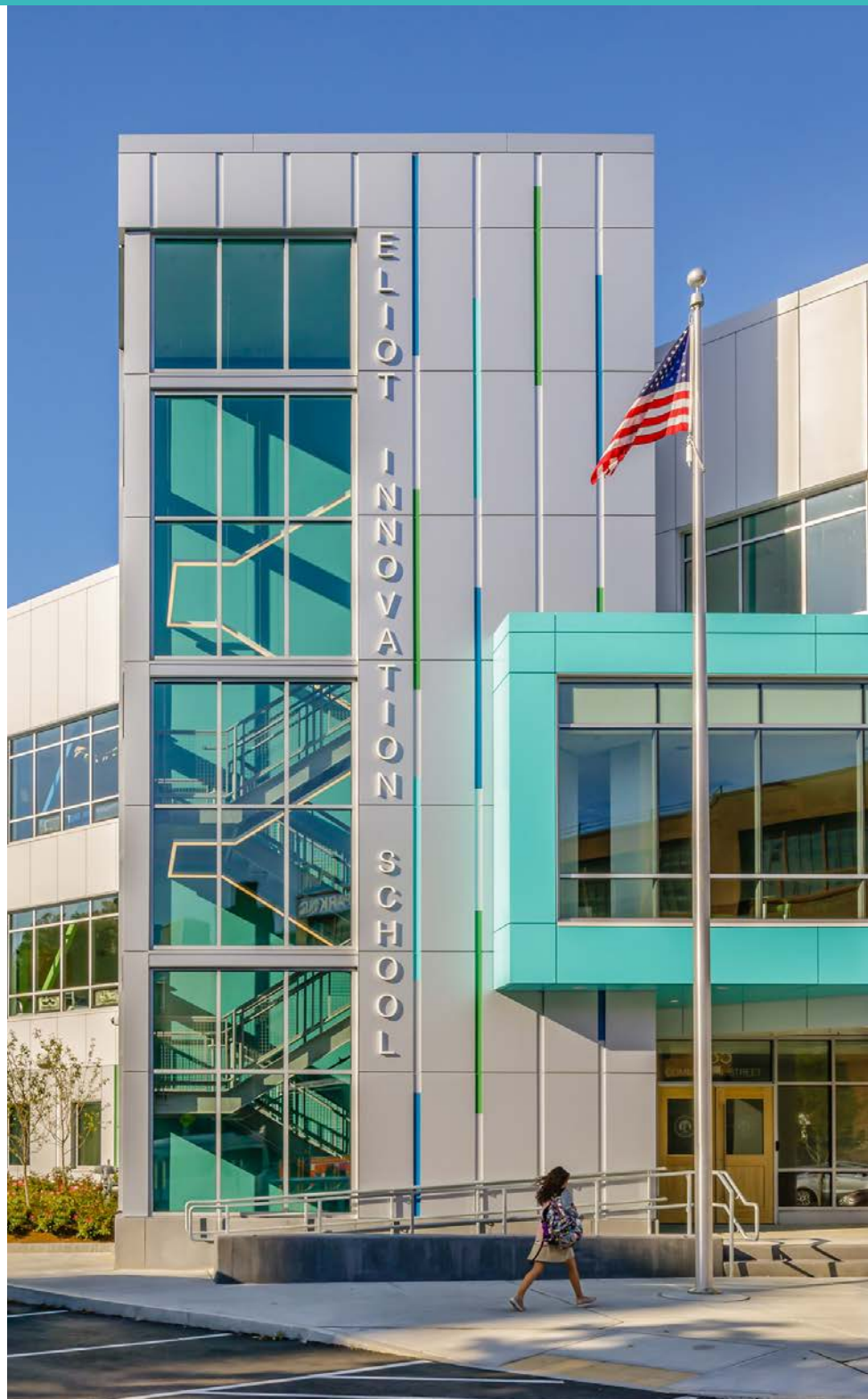
The Eliot Innovation School at 585 Commercial Street serves grades 5-8 and is part of a three-building campus in Boston's North End for grades Pre-K to 8. The project involved the adaptive reuse and renovation of a former office building and includes: 18 classrooms, a media center, robotics/ technology lab, art studio, and a multi-purpose space that accommodates the "My Way Café" school meals program.

The firm worked with the City of Boston and Boston Public Schools on multiple facility assessments, feasibility and programming studies as well as providing design for temporary teaching spaces within the building. The planning, programming and design required detailed coordination with both the city and the school to allow the Eliot Innovation School to continue operations throughout the design and construction.

The building design features eight brightly colored projecting bays, each one a "learning nook" geared for break outs, small group instruction and collaborative learning. Administrative spaces are provided for various teaching specialists who move between the multiple Eliot Innovation School buildings. The 585 Commercial Street building is located adjacent to the Boston Harbor Walk. The first-floor spaces and playground are accessible to the public after hours per Chapter 91 requirements, protecting and promoting public use of waterways.

The building engages with the surrounding historic environment, framing views of the Zakim Bridge, Bunker Hill Monument, The Spire of Old North Church, and the U.S.S. Constitution. As the oldest continuously operating school in the United States, Eliot Innovation School has become and will remain the heart and soul of this community for decades to come.

The school is walking distance from public transportation at North Station. The project promotes sustainability and resiliency with completely new mechanical systems, and a new electrical service located at the second floor for climate resilience. 98% efficient boilers provide for hydronic heating, and on demand domestic hot water reduces energy use. The new building envelope includes high R-Value insulation and glazing maximizing natural light paired with daylighting controls. The school was designed to meet LEED Silver V4 for schools' standards.



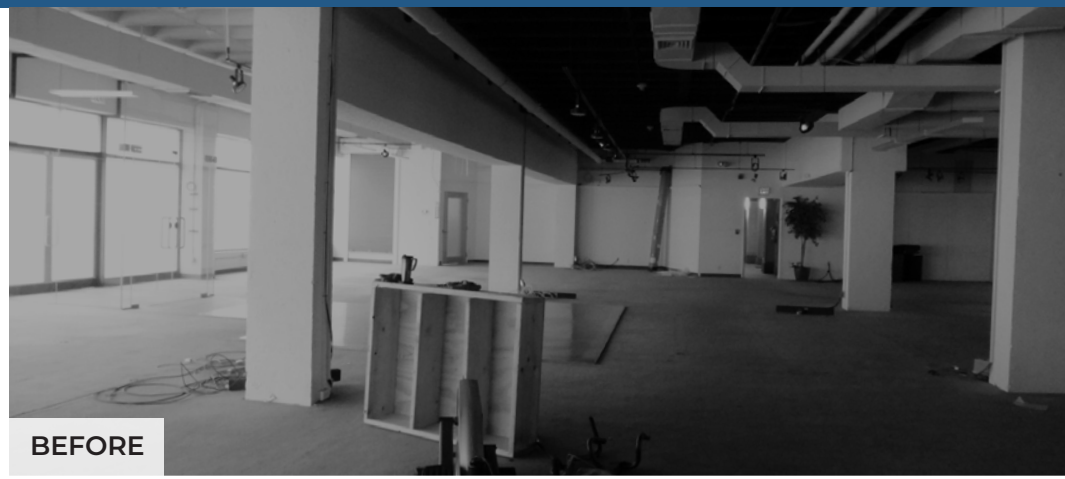
THE MANY LIVES OF A BUILDING

The existing building was a three-story concrete structure, with a footprint of approximately 14,000 GSF and total floor area of 42,000 GSF. Originally constructed in 1962 for the United States Food and Drug Administration, it was substantially renovated in 1988 to house a furniture showroom on the first floor and offices on the upper two floors. The building is situated on the east side of the property. Today, a parking area and outdoor play space occupy the remainder of the parcel.

The existing building interior was completely gutted, the 1980's era low performance EIFS skin was entirely removed, and hazardous materials abated, leaving the building's original concrete frame structure. This structure was reinforced with steel for current seismic codes and its change in use to a school, and a highly insulated rainscreen metal panel skin was installed. The interior layouts had to negotiate within the existing column grid. For budget purposes, it was also determined that the previously installed toilet core would remain. Mechanical shafts and other support spaces were installed around this core, while classrooms and learning nooks were programmed at the floor's perimeter.

The new visually porous egress stair and elevator tower, together with a large bay for resource space defined the entry to the school and together with colorful triangular bays, announce the new life of the structure.

Sitework included the installation of a large stormwater detention system beneath the parking area, whose treated overflow is discharged to the harbor, significantly reducing the loads on the area's older, non-separated sewer infrastructure. A new pedestrian connection to the harborwalk enables off-hours community access to the play area, whose structure and general design is appropriate for older elementary / middle school children.



BEFORE

AFTER

COST SAVINGS: During the design process, construction estimates were significantly above the budget. When the project was bid, however, the winning bid was on budget. Our team lobbied to put elements originally proposed but never fully detailed back into the scope. This required considerable effort and coordination with the construction manager, given the public bid process and the fact that shop drawings needed to be produced as design elements were being added back in, such as casework and additional colors at the metal panel system. This approach proved well worth the effort, enhancing the educational environment, the building's architectural expression, and its prominence on the waterfront.

CONSTRUCTION COST: $15.6 MIL
INITIAL ESTIMATED COST: $19 MIL

COMMUNITY, STAKEHOLDERS, CHALLENGES AND OPPORTUNITIES

The Eliot Innovation School, originally housed within the 1920's Eliot School building on Charter Street in the North End of Boston, required a much larger facility to house its growing population which had increased from 200 to more than 550 students between 2008 and 2015. No single site was available within the dense urban neighborhood to accommodate the projected enrollment of students. Through multiple studies and property acquisitions, it was determined that the school's students would be divided across three sites in the North End neighborhood: 16 Charter Street, 173 Salem Street and 585 Commercial Street.

The firm worked with the city on multiple facility assessments for both 173 Salem Street and 585 Commercial Street. Feasibility, programming studies and design for temporary teaching spaces were provided. The planning, programming and design required detailed coordination with both the City and the Eliot School to enable the school to continue operations throughout the design and construction. Temporary classrooms within 585 Commercial Street enabled growing enrollment while 173 Salem Street was completed. The completion of this first phase at Salem Street then informed the design of 585 Commercial Street.

The Eliot School is the only public school within the North End neighborhood, and the team's collaborative work with community stakeholders and school officials throughout the life of the project was crucial to its success. **Community meetings** reviewed not only design options, but also focused on transportation and construction impacts. The **groundbreaking celebration** involved the entire school community, neighborhood groups and officials, and representatives from the fire department! Our team continued through construction, to **ribbon cutting** and followed up with a Post Occupancy Evaluation (POE) to ensure the school is fulfilling the needs of students, and to provide lessons learned for future designs.

STAKEHOLDERS: Students, Faculty, Boston Public Schools, North End Business Owners, North End Residents, Boston Historic Preservationists

ONE EDUCATIONAL PROGRAM - THREE SHARED FACILITIES

EDUCATIONAL VISION & GOALS: As a public Innovation School, the Eliot's mission is to provide a broad education enabling students of all ethnicities, genders, races, religions, abilities and economic backgrounds to achieve academic excellence, character, leadership, self-confidence and become positive contributors to their community. The project team worked with the Eliot PK-8 School and Boston Public Schools to understand and develop both the full educational program goals, while also determining the best locational fit for certain program elements. Due to the rapid growth in school enrollment and to preserve as much future flexibility, an emphasis was placed on creating as many general-purpose classrooms as possible. Specialized instructional areas, such as art, technology and indoor physical education were strategically located across the three sites depending on constraints of the site and the renovated facility. The ability to create the largest classrooms at 585 Commercial Street was one driver for that building housing the older students. The centrality and creation of new levels at Salem Street made it the natural choice for an indoor physical education area.

The completion of this facility enabled the continuing growth of the only public school in Boston's North End, and the oldest public school in Boston. The two other Eliot School buildings are within walking distance of 585 Commercial Street. Intermediate and upper grades students travel from one building to the others throughout the day to engage in specialized learning, such as science and robotics design, or for indoor physical education. Teaching specialists move between all three buildings and are accommodated by small offices located at the three sites.

PROMOTING COLLABORATION, CURIOSITY AND COMFORT

On upper learning floors, the addition of playful exterior bays that clarify that the building is now a school also allow for interior learning nooks, which was identified as a need during early educational programming sessions. These small group collaboration spaces between classrooms have built-in seating, plugs and whiteboards. The creative “learning nooks” are geared for small group instruction and collaborative learning.

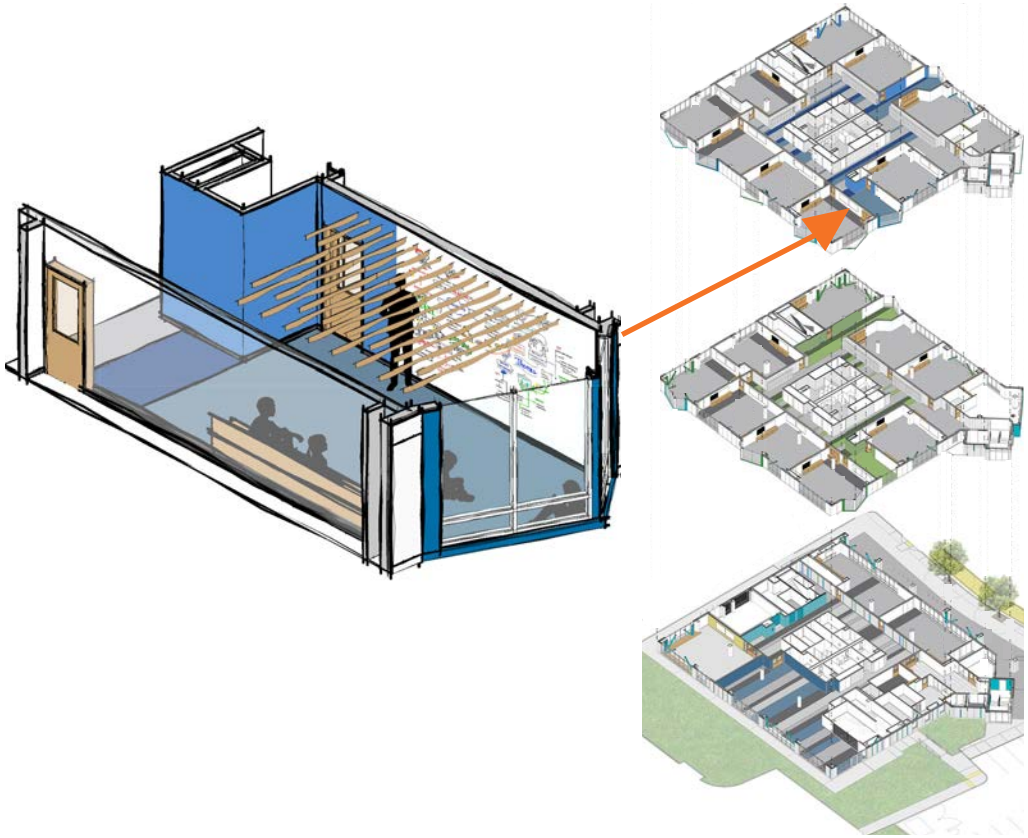
Teachers are using all the learning nooks. Students practice skits and videos and utilize the floor to ceiling whiteboards. The nooks have become a bit of a “watering hole” with kids coming in and out of the adjacent classrooms and hanging out there. The nooks give students a choice in what kinds of learning space works best for them and help them to work collaboratively, communicate, and engage in critical thinking.

CLASSROOM EXAMPLE: Each classroom / nook grouping can serve diverse pedagogical purposes. For example, a music teacher ran a mixed-grade podcasting production course. In the building nooks, students brainstormed podcast ideas while others were in the music studio going through scripting and production.

DESIGNING WITH A VISION OF FLEXIBILITY, WELLBEING AND SUPPORT FOR EACH STUDENT

The Eliot School is home to students from a range of socioeconomic, cultural and environmental backgrounds. The school strives to provide culturally responsive education in support of their students' well-being. Spaces are designed to support interactive work and provide for flexible and adaptable learning modalities.

As illustrated, the third-floor learning nook, one of four located throughout the building, offers a versatile environment for group instruction separate from the main classrooms. Infused with natural light, provided with writable walls, AV technology and both built-in and flexible furnishings, the spaces support diverse activities. Teachers can pull students out for quick instructional or behavioral discussions, provide differentiated instruction in various subjects, or provide for specialized instruction.



BUILDING AS A TEACHER

Mechanical and lighting systems are exposed throughout the building's corridors as part of the school's sustainability learning plan. All fan coil units for the classrooms were placed in the corridors to provide for low background HVAC noise in conformance with LEED V4 for Schools requirements. Additionally, steel seismic bracing is exposed throughout the building, providing a learning opportunity. The braces are painted colors associated with each floor of the building. With the goal of inspiring curiosity and deep thinking for students in relation to their new building, these design decisions were made to engage students in the mechanics and processes that enable the building to function and promote sustainability.

"We are building a learning environment for tomorrow that gives voice and choice to the kids. ***We see physical space as the third teacher.****"*

TRACI WALKER-GRIFFITH
ELIOT INNOVATION SCHOOL PRINCIPAL
SOURCE: POST OCCUPANCY EVALUATION

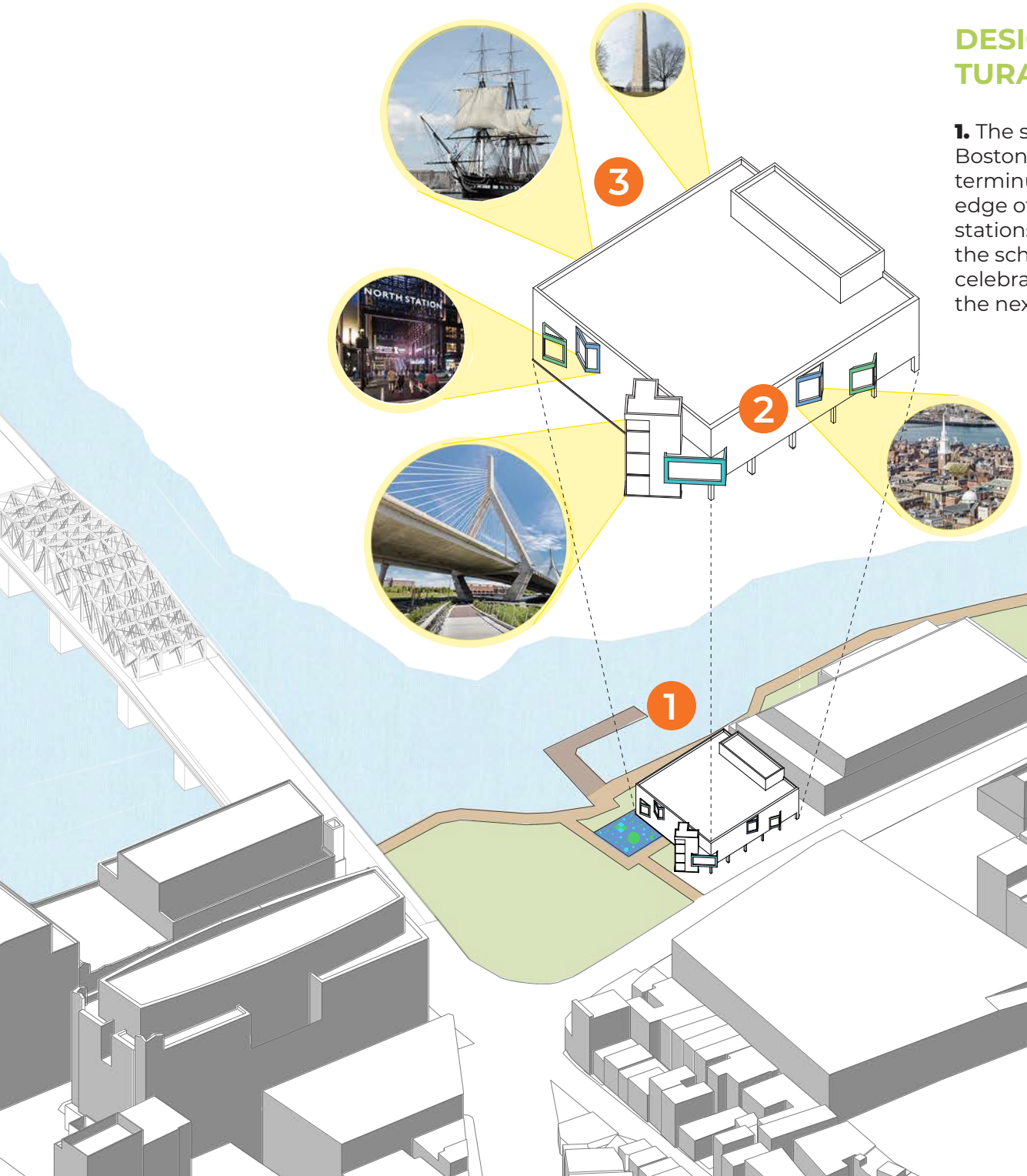
SUPPORTIVE LEARNING ENVIRONMENT WITH FLEXIBILITY AND ADAPTABILITY, FOR TEACHING STYLES OF ALL TYPES

CLASSROOM PROGRAMMING: Classrooms are simple in design, with communicating doors between pairs of classrooms to enable team teaching while also addressing security concerns. A standardized approach to typical classroom storage paired with flexible furnishings enables rooms to serve different teachers or approaches to learning as pedagogies evolve and if staff members shift from year to year.

MATERIALITY: Architectural features of the building exterior, as well as the interior, are derived from the natural environment and relate to the building's site along the inner harbor. Earth, sea and sky are evoked by the calming palette of green, aqua and blue employed at the building's bays, and the walls and floors of the learning nooks. Classroom colors are neutral to enable student work to shine. Casework at classrooms, as well as built in seating at the nooks are natural light wood for durability and to infuse natural materiality into the building. Flexible desks and tables that can be reconfigured easily and soft and wobble seating options are provided for students with attention of sensory needs.

SPECIALIZED CLASSROOMS: The "special" classrooms for art and technology are placed along Commercial Street at the first floor to afford passersbyers a glimpse of student work. The glazing at this level, however, is recessed and treated with a wave silhouette on the windows to avoid overly exposed classroom spaces on the busy Commercial Street.

The robotics and arts room programming accommodates differences in subject matter, materials and equipment use, and learning styles between the youngest fifth grade students, as compared to the eighth-grade students. Due to funding allocation, the rooms were designed initially as largely "blank boxes" with large amounts of storage and simple infrastructure such as sinks at the art room. As funding became available, the Eliot School was able to install additional specialized equipment and furniture based on the provided power infrastructure and programming discussions. Multiple age groups are now using the same spaces; the classrooms create safe, engaging and inclusive spaces for these technical programs.



DESIGNING WITH THE PHYSICAL AND CULTURAL ENVIRONMENT

1. The site layout creates a new point of public access to the Boston Harbor Walk which borders the school. Situated at the terminus of the North Washington Street bridge and at the edge of the "End", with easy access from MBTA rail and bus stations and visible from Charlestown across the Inner Harbor, the school creates a new landmark for the neighborhood and celebrates a group all too often left out of civic monuments – the next generation.

2. Boston's iconic North End is readily identified by its dense urban, midrise fabric of brick and stone buildings housing many residences and businesses. The Eliot School's facade materials were carefully chosen to identify the building as separate from this fabric, and to celebrate the building as a modern learning environment. The deliberate, but sparing use of color calls attention to the building in a sophisticated, yet playful manner. The palette speaks to the local natural environment with it's use of green, blue and aqua elements.

3. Selective full height glazing at the Eliot School in Boston allow the city's natural and historic assets, from Boston Harbor and the Charlestown Navy Yard to the Bunker Hill Monument and the U.S.S Constitution to become part of the classroom design. The building's bays also frame views toward several of these monuments, while the main entry stair's orientation is derived from the view to the Zakim Bridge. These views bring the City's rich history into the building, and also help give the students' minds a chance to rest and reset when they look up and out to historical and natural inspirations outside the windows.

DESIGN BUILT FOR INCLUSIVE COMMUNITY ACCESS

Due to its harbor location, the Eliot Innovation School project was subject to Chapter 91 regulations and Conservation Commission review. To comply with these regulations, and in discussion with the community, the multi-purpose room at the first floor facing the harbor is accessible after hours for community use, as is the exterior playground. All spaces at the first floor outside of the toilet rooms and multipurpose room are card access only, as are the building's stairs, ensuring after hours security. The site layout additionally allows and directs public access to the Boston Harbor Walk.

The play structure and ground patterns were designed to facilitate play and challenge the older elementary and middle school students, while taking the greatest possible advantage of the small footprint available for play.

"Every day our students, families, and faculty enter a magical, state-of-the-art building where they engage in learning and experiences on their path to being change agents of the future."

TRACI WALKER-GRIFFITH
ELIOT INNOVATION SCHOOL PRINCIPAL

COMMUNICATION BEFORE, DURING AND AFTER

Following occupancy, the firm completed a Post Occupancy Evaluation (POE) with the school's principal Traci Walker-Griffith to determine project outcomes and reactions of users/stakeholders.

FULL UTILIZATION
The Eliot is using every single space on a regular basis. The "Teachers are definitely using" the learning nooks. Students practice skits, video, and utilize the whiteboard walls. The nooks have become a bit of a "watering hole" with kids coming in and out and hanging out there.

CASEWORK AND STORAGE!
The built-in casework in the classrooms is great – but more would have been better! For the space programmed for technology that has become a true maker space – eliminate the upper cabinets as they impede the use of the lower counter area – perhaps open shelving? And EVEN MORE storage there as needed. Traci recommends these maker spaces have shelving on runners to store the most amount of materials.

EXTERIOR SPACE
The play-space is great, but it is really tight. This is partly a site limitation, but in hindsight, perhaps we could have eliminated some parking in favor of this outside space.

EXPOSED SYSTEMS
The exposed ceilings have not been an issue, and the acoustics in the spaces are great. The school had planned to incorporate the system into the curriculum and may be able to do that now that Covid restrictions are easing. There were plans for the students to create "Go Pro" tours of the building and showcase the systems.

FLEXIBILITY
Various spaces have now been fit with furnishings to promote multiple uses. For instance, the teacher resource area has done double duty for school testing and meetings with students.


Schedule
Word Wall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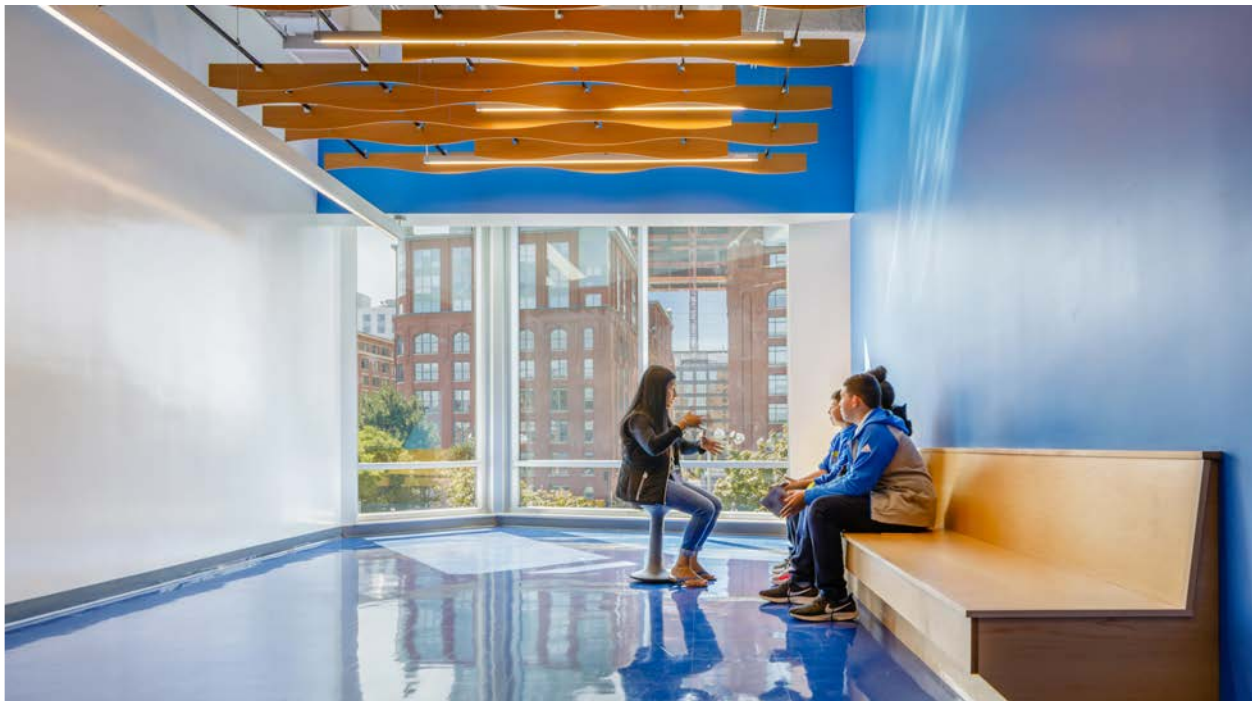
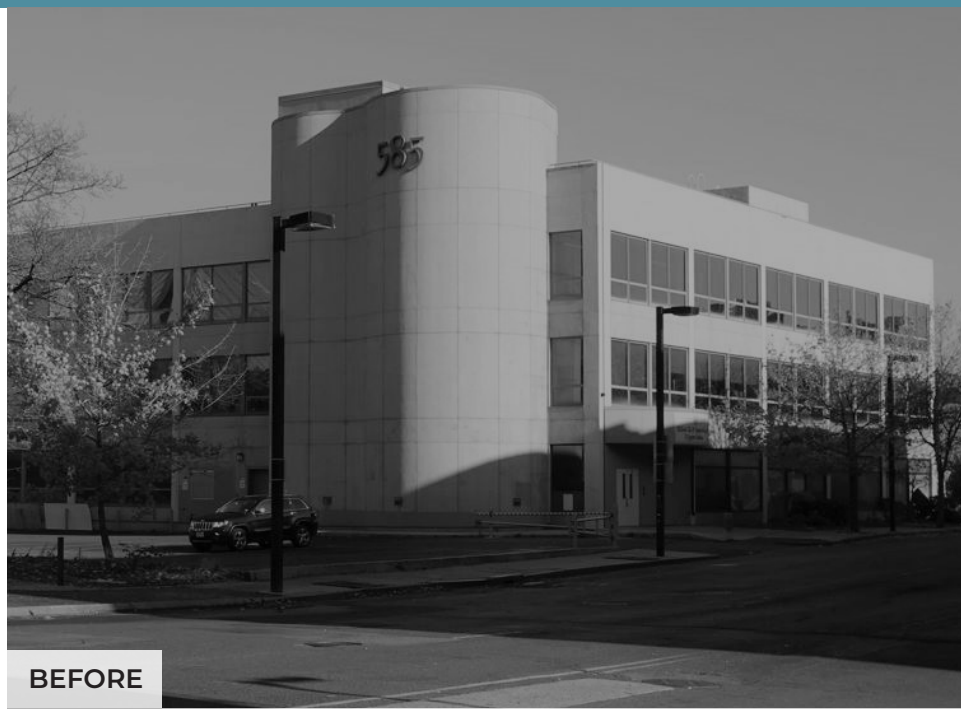
SCHOOL



PLANNING SUSTAINABLE AND INSPIRING SCHOOL ENVIRONMENTS

The City of Boston directed that the design should meet LEED Silver V4 for schools' standards, but that LEED certification would not be pursued. Numerous building features nonetheless promote sustainability and resiliency.

- BUILDING REUSE & REDUCED EMBODIED CARBON
- HIGH R-VALUE BUILDING ENVELOPE
- STORM WATER RETENTION SYSTEM
- HIGH PERFORMANCE GLAZING TO MAXIMIZE NATURAL LIGHT
- LED LIGHTING WITH DAYLIGHT & OCCUPANCY SENSORS
- LOW-FLOW PLUMBING FIXTURES
- HIGH-EFFICIENCY BOILERS
- HEALTHY/GREEN MATERIALS
- LOW VOC MATERIALS
- GREEN CLEANING MATERIALS
- HEAT ISLAND EFFECT
- RESILIENT DESIGN



BEFORE

AFTER

*"It's a **game changer**!*
We're doing things we could not have imagined before having this building."

TRACI WALKER-GRIFFITH
ELIOT INNOVATION SCHOOL PRINCIPAL