FULLER MIDDLE SCHOOL

F-1HT_

LI

11

The City of Framingham, MA

2023 James D. MacConnell Award

EXECUTIVE SUMMARY

The new Fuller Middle School builds on the District's Educational Program by embodying the District's stated commitment to a 21st century STEAM, student-centered approach to education, a commitment acted upon through advanced teaching and learning programs at the elementary school level. STEAM-compatible educational environments were achieved by creating student-driven, problem-based, "hands-on project space" at three different scales within the floor plan. These spaces provide a high degree of visual and functional connectedness.

The three-story building is oriented to the south and the north for energy efficiency and sustainability purposes. This design utilizes a compact footprint to conserve site space and create a sloped campus open space that unifies the District's three buildings into a cohesive educational grouping. The building is on the area which once existed as a parking lot between the existing Fuller Middle School footprint to the west and Farley School to the east.

The site is organized with vehicles removed entirely from the public Flagg Drive. A bus drop-off lane with sufficient queuing space for 17 buses to be parked simultaneously is directly in front of the school and stretches to the west with a separate exit from the main parking area. A new parking area has created sufficient space to accommodate the needs of the school staff and visitors.

The new school floor plan is characterized by two segmented arcs of classrooms facing one another across an open three-story Learning Common atrium. Classroom clusters can be flexibly arranged within the floors or by utilizing monumental stairs, aggregating floors of cohort classrooms. At the center of each of these is a medium-sized collaboration space. These spaces are located on balconies overlooking the main Learning Common and relate visually to one another. Also situated on balconies directly adjacent to the classrooms they serve are several multi-use breakout spaces, also highly visible to one another and the Learning Common. Each cluster also includes a pair of science Exploratories or classrooms at its center.

The school is entered at the second-floor level through the administration suite, where one will arrive on a balcony overlooking the entire array of school educational programs. Stairs branch off from this location upwards or downwards for easy communication between floors. Arriving at the lowest ground-floor level, The Learning Common is surrounded by an array of shared spaces for the school community, including the Media Center, Cafeteria, Maker Space, Music and Art classrooms, Fabrication Lab, Gymnasium and Auditorium. All are arrayed around a single open space that serves as a food court and is flexible for community collaboration and potential assembly space. The eastern end of the Learning Common opens a three-story high glass wall to view the landscape and for access to outdoor classroom spaces. At the west end is the community access lobby joining the Gymnasium and the Auditorium and offers access from the outdoors and from the Learning Common to the shared large event spaces.



Learning Commons/Cafeteria - at the heart of academic life.



Crowning an artificial hill to allow entry direct access to the second floor, the main façade offers a diversity of shapes which reflect the diversity of activities within.

SCOPE OF WORK & BUDGET

- Project Context | Students: Size of school district, college, or cli
- Project Context | People: # of people (excluding
- Site Area: Acres/hectares: 42.1 acres
- Floor Area: (GSF): 137,000
- Number of stories: 3
- Building Area | TGA: New: 137,000
- Actual Costs | Site Development Costs: \$13,372,000
- Actual Costs | Building Costs: \$64,563,0
- Actual Costs | Furnishing Costs: \$1,794,00
- Actual Costs | Technology Costs: \$854,000
- Actual Costs | Total Project Costs: \$98,277,000

The school completes a campus of three public schools including one of its feeder STEAM elementary schools. At the center of the campus is a civic oriented amphitheater for outdoor school concerts and community events.

SCHOOL & COMMUNITY ENGAGEMENT

In October 2017, the Framingham Public Schools Educational Working Group, a group of approximately 20 Fuller Public School administrative leaders, teachers, administrators, students, parents, and community partners, participated in an Educational Visioning Workshop led by the Architect.

The workshop was a collaborative session to inform the Fuller Middle School design process. Participants were led through a step-by-step visioning process aimed at capturing their best thinking about FPS's current and future educational goals and priorities and connecting them to previous visioning work done by the district and to best practices and possibilities in innovative school facility design.

As a public school project, the Fuller Middle School underwent an intensive process of client input incorporating the long-term vision, hopes, desires, educational programming, facilities programming, community programming, and functional detail from a wide variety of constituencies, including:

- Neighborhood Community
- Parents
- Administration
- Faculty
- Staff
- City of Boston Departments
- Local and State Elected Officials
- State School Building Authority
- Students



A wide variety of schematic design alternatives were studied at an in-depth level of detail - indicating not only the composition of the site but also the character of interior spaces. During the design's co-creation, hundreds of meetings were conducted, ranging from large public meetings to small focus groups.

The process began with a study conducted to understand STEM education and precedents elsewhere in the country. Site visits with the architect were undertaken to ascertain the relationship between space and educational outcomes. Chief among the successful principles identified was the value of physical transparency in supporting student-driven learning. Also, it was determined through these exercises to abandon the normal model of teacher ownership of classrooms through the development of separated teacher preparation spaces. Therefore, allowing flexible use of classroom space by both students and faculty.

A further discovery was the central importance of providing dedicated space for both on-going collaborative curriculum design and development together with a home base for external community collaborators such as partners in industry and local higher education.

Though yet to be tested in the upcoming inaugural academic year, the building has already served as a major stimulus to community development with the renovation and reoccupation of numerous properties in the surrounding neighborhood. The building, initiated as it was by the community itself, has become a rallying point for the future and a source of pride and hope.



Visioning sessions included members of the community, parents, faculty and administration; both from the school and citywide.

EDUCATIONAL ENVIRONMENT

FULLER VISION

Through developing resourceful, resilient, academically and career-ready high school graduates, the Fuller school community is a world-class educational institution that enables young people to succeed in college and STEM-related careers.









Clockwise from top left:

1st Floor plan 2nd Floor plan 3rd Floor plan Roof Plan The design supports and encourages personalized and collaborative learning at every turn. The Cohort Commons, larger Commons, removable classroom walls, and breakout spaces invite students and teachers to expand their classroom beyond its four basic walls. By situating the Library Media Center adjacent to the larger Commons, learning spills out into the larger space promoting greater collaboration and learning happening everywhere. The new Fuller Middle School promotes project-based learning by including a Maker Space and Fabrication Lab. These practices encourage shared learning opportunities for all aspects of a child's education and create the values for lifelong learning.

The new Fuller Middle School design builds on the District's Educational Program by embodying the District's stated commitment to a 21st century STEAM, student-centered approach to education, a commitment acted upon through advanced teaching and learning programs at the elementary school level. STEAM-compatible educational environments were achieved by creating student-driven, problem-based, "hands-on project space" at three different scales within the floor plan. These spaces provide a high degree of visual and functional connectedness. In the new facility, The Folded Hands design offers a new three-story environment with a learning commons/cafeteria at the core surrounded by collaboration balconies fronting a perimeter of classrooms, an 8,300-square-foot gymnasium, and a 420-seat auditorium.



The folded hands concept guided the entire vision of what this new STEAM school could be -a place of collaborative learning enfolded by arcs of classrooms.





Section showing the central community commons collaboration space surrounded by classrooms and filled with student-inspiring project areas/breakout rooms.

Concept sketch of the learning commons/cafeteria with destination type breakout pavilions.

The typical academic classroom suite with flexible acoustic partition and shared teacher offices which allow flexible programming of the classrooms proper.



Typical academic classrooms viewed from the exterior, featuring projected small group learning bays and panoptic teaching corners.



Typical science classroom suite

Maker space with exterior maker terrace





The collaboration central learning commons/cafeteria with surrounding core activity spaces.



Detail of the panoptic teaching corner and continuous writeable-magnetic wall-to-wall teaching and display surface.

DESIGNING FOR ENGAGEMENT

Additionally, there is space for instructional areas for Science, Technology, Engineering, Art, and Mathematics "STEAM." Forwarding the broader community's goal of creating a new civic focus for South Framingham, the building is set back beyond a sloped outdoor amphitheater with a performance shell, serving as a gathering lawn for students and a venue for town-wide events and performances. The building is oriented for energy efficiency and sustainability purposes. It utilizes a compact footprint to conserve site space and create a sloped campus open space that unifies the District's three buildings into a cohesive educational grouping. The site is organized with vehicles removed entirely from the public Flagg Drive. A bus drop-off lane with sufficient queuing space for 17 buses to be parked simultaneously is directly in front of the school and stretches to the west with a separate exit from the main parking area. The floor plan is characterized by two segmented arcs of classrooms facing one another across an open three-story Learning Common atrium. Classroom clusters can be flexibly arranged within the floors or by utilizing monumental stairs, aggregating floors of cohort classrooms. At the center of each of these is a medium-sized collaboration space. These spaces are located on balconies overlooking the main Learning Common and relate visually to one another. Also located on balconies directly adjacent to the classrooms they serve are several multiuse breakout spaces, also highly visible to one another and the Learning Common. Each cluster also includes a pair of science Exploratories or classrooms at its center. The school is entered at the second-floor level through the administration suite, where one will arrive on a balcony overlooking the entire array of school educational programs. Stairs branch off from this location upwards or downwards for easy communication between floors. The eastern end of the Learning Common opens a three-story high glass wall to view the landscape and for access to outdoor classroom spaces. At the west end is the community access lobby joining the Gymnasium and the Auditorium.



Student lockers line the corridor balconies thus freeing up transparency for the classroom walls and providing an additional measure of safety for the overlooks. Note the projected teacher planning offices where teachers can see and be seen.





450 seat auditorium: "music made visible."

A menagerie of forms houses student project-based learning areas in order to picque student excitement and interest.

WHOLE CHILD, WHOLE COMMUNITY

The new Fuller Middle School is designed to develop positive relationships with all students. Support personnel have offices directly located within the auxiliary suites of each cohort neighborhood and not in the main office of the building, thus providing students and staff with much greater access to these staff members. Support staff are closer to the students and can directly engage with them not only when they are receiving services but during those informal moments between classes, at locker time and before homeroom. In this way, support staff can get to know their students better so they can more proactively address concerns. The design also embodies the growth mindset and visible learning. All design elements promote opportunities for students to share their learning with others--not just at the final stage of the project but throughout the learning process. From breakout spaces to Cohort Commons, from removable classroom walls to the use of glass to promote visible learning, students can share what they are doing with their peers and teachers. Furthermore, by providing access to outdoor spaces, learning extends beyond the classroom and school walls. In this way, visible learning also extends to the greater Framingham community.

THE SCHOOL AS A CIVIC DESTINATION

Community participation is a big part of STEAM curricula, pulling the community in and reaching out. One of the special ways that we address this is by embracing the idea brought forward by a special group of parents, teachers and administration called the Visioning Group. We embraced the idea of creating the new Fuller School as a civic destination. In order to do that we set the building well back from the street, creating a green space between it and the street. Then we took the dirt that usually gets trucked away from the site and we piled it up in front of the building to create an amphitheater which as a geometry has embodied the idea of gathering community. This created an outdoor amphitheater in front of the school, a place for students to gather before and after school. It's a place for school events, like graduation, and it's also a place for the entire community to gather - perhaps they'll have a jazz festival or theatrical events in the summers. We created a new civic place. It also happens to be a place at the center of a campus of three buildings - including Fuller, an elementary school and a facility for the City which is an adult welcome center, and there's also Framingham State College. Three buildings come together around this new civic open space.



Suspended student breakout destination.



Daylit gymnasium and well-ordered mechanical systems and structure make for a sense of calm and well-being.

Digital fabrication laboratory equipped with flexible infrastructure.

PHYSICAL ENVIRONMENT

This three-story design significantly reduces the building's footprint while conserving building envelope surface area and increasing lifecycle cost performance. Three tiers of classrooms are arrayed around a central Learning Common/Cafeteria atrium and visually related to one another both horizontally and vertically, underpinning the kind of visible learning which enhances STEAM education. The Gymnasium and Auditorium are clustered at the west end of the building, creating a community-use entry node that is axially connected to the main Learning Common atrium. Cohort collaboration spaces are located on balconies visible to one another, forming the nuclei of cohort clusters. Because the building's footprint is reduced, the building is set back further from the street, allowing for a broad, sloped lawn serving as a campus connector for all three buildings on the site. This new campus green space is sloped up almost one story so that students and visitors enter the building at level two with only one flight of stairs to travel to any school level.



Main entry pride and welcome, together with the projected STEAM science classrooms.



A beacon of welcome, and invitation to assimilate, for more than 500 Spanish speaking Englishas-a-second-language parents of the school's students who attend night classes 3 nights a week.

The more economical pallet of materials used at the private rear façade.

Instead of thinking of a classroom as a space with four walls, we consider it a space with four corners. One of the four corners in a classroom is typically thrown away because it is an unteachable area. For the Fuller School, we introduced the panoptic teaching corner, which is a sweeping radiused wall allowing complete continuity between two of the walls of the classroom so that a student or teacher presentation can occur uninterruptedly, rather than stopping and starting at the corner in effect creating a mini teaching theater.

The preferred design carefully addresses the needs of the entire community. By including a fully equipped auditorium and larger gymnasium, the Framingham community can use this facility in the way it needs: for athletic clubs all year long, for community meetings, for concerts and other performances, and for civic engagement. The building setback also created an outdoor amphitheater or a new civic space in front of the school for outdoor events and a community gathering place.



Normally a dark zone, the center of the plan here is bathed in light while celebrating space and structure.



Project based learning space overlooking the general learning commons.



Typical academic classroom; view towards panoptic teaching corner on the left and projected small group learning bay on the right.



The media center - a lofty space for lofty ideas.

The bandstand and amphitheater serve as a hangout space for the students before and after school as well as providing an important new community venue for this underserved section of the city.

NATURAL AND ARTIFICIAL LIGHTING

A large part of the project's design effort was expended in accurately fulfilling 100% daylighting for all primary classroom spaces.

THERMAL COMFORT/INDOOR AIR QUALITY

Environmental control is accomplished using an advanced 'Displacement Air' distribution system, assuring individual room-controlled uniform occupant comfort with minimal air movement or noise, maximized air changes, increased student alertness and decreased absenteeism.

HAPPINESS

The visibility of the entire school community to itself has contributed to a tangible buzz of well-being. Teachers in their glass-enclosed offices are visibly and socially accessible to students and students' ownership of shared collaboration spaces contributes to an upbeat sense of community.

BIOPHILIA/CONNECTION TO NATURE

All occupied spaces have views of the surrounding outdoor environment.

ACOUSTICS

With displacement air distribution, academic spaces are truly silent, supporting communication. All spaces are tested to meet or exceed 'LEED for Schools' separation and room acoustics standards.

FOOD/MOVEMENT/EXERCISE

Instead of sequestration at the perimeter, as in most schools, Fuller's common areas are at its core. Large expanses of glass at the gym promote awareness of health.





An intellectual "playground."

Entrance pylon and canopy lending a sense of purpose and dignity.

RESULTS OF THE PROCESS & PROJECT

Framingham, MA is a model American city. It is considered the kind of archetypal American city. When we began to design, it was a town, now it's a city. That shows how important Framingham is as a community. It is a place of great heterogeneity, a place that is a gateway in the region into the country, where aspiring immigrants come, and they make their way. This city is very receptive to them and very welcoming. The area is mostly dual-language-speaking families. More than 40% are dual-language in Framingham. Many are from Spanish-speaking households, so that represents a challenge and an opportunity. One of the most moving experiences the designer had was visiting the old Fuller Middle School in the evening and witnessing the arrival of over 500 adults in the Framingham community who flock to the school with great hope and great aspiration to become American citizens by learning how to speak English, and by learning how to absorb other kinds of expertise in dual-language situations that the school hosts. This school is really used round-the-clock, several days a week. And many of the adult learners, if not most of them, are the parents of the very students who go to this school during the day, attempting to learn enough English to keep up with their kids and be a part of their kids' success and progress. That's an amazing thing.

IMPACT

The Fuller Middle School Building is directly impacting the direction of education in Framingham for the future. The design of the Fuller Middle School provides a community hub. With a new auditorium, athletic fields, and green space - these aspects are available beyond school hours, all year. The quality and appeal of a city's schools directly affect property values. This school is designed to serve the community for the next 100 years. The features are important now and well into the future.

STEAM

Fuller Middle School (FMS) is presently well into its implementation of a STEAM (Science, Technology, Engineering, Arts and Mathematics) curriculum initiative, which is part of a district-wide effort within Framingham Public Schools (FPS) to deliver instruction through a project-based, interdisciplinary model that engages students through inquiry and emphasizes 21 Century Skills. The opportunity for the school to design a new facility through the MSBA Feasibility Study process has FMS teachers, administrators, students and parents highly excited about creating a new physical environment that brings the school's dynamic and evolving educational program to life. Additionally, the district saw this project as an opportunity to reimagine Fuller Middle School in the eyes of Framingham residents, and it now serves as both a beacon and a resource to the community.

COST SAVINGS

In January of 2023, the Framingham School Building Committee Announced a \$4.3 Million Cost-Savings with the Culmination of the Fuller Middle School Building Project

The School Building Committee (SBC) culminated the 9-year process to replace the aging Fuller Middle School with a new 137,000-square-foot state-of-the-art facility. The City of Framingham submitted its original application to the Massachusetts School Building Authority (MSBA) in 2013, was invited into the program to perform a Feasibility Study in 2016. After a year-long study, the Mayor, City Council, School Committee, and the voters approved its cost in the fall of 2018. At the School Building Committee's final meeting in January 2023, a \$4.3 million cost avoidance was announced as part of the group's final financial review to comply with MSBA and city close-out procedures for the project's end.



A community gathering - bringing together aspiring members of the South Framingham neighborhood.







Enjoying the repose of the new student and community performance center.

View the press release

EDUCATIONAL SPECIFICATIONS

Building on the initial Bubble Diagram, and working in concert with Framingham Public Schools, the Massachusetts state educational space summary guidelines were modified to create a 3-cohort model. The net floor area was shifted from traditional room designations to create project-based, interdisciplinary learning cohorts, general commons, and teacher collaboration spaces.

The largest single modification is the addition of a multiuse auditorium, which supports the school's robust drama and music departments and provides an important community asset. The media center floor area was decentralized from one large room on the ground floor to include several collaboration spaces distributed on the upper floors. In this way, space was carved out for the collaboration commons, which is the educational heart of each grade cohort.

ROOM TYPE	ROOM NFA	# OF ROOMS	AREA TOTALS
			Ar 234
CORE ACADEMIC SPACES	885	21	36,530
ELL Classrooms	885	6	5,310
Teacher Planning	95	15	1,425
Classroom Breakout	280	7	1,960
Small Group Seminar (20-30 seats) / Resource Science Classmon / Lab	1,180	6	7,080
Prep Room	80	6	480
Science Teacher Planning	95	3	285
ODECIAL EDUCATION			9.075
SPECIAL EDUCATION Self-Contained SPED	885	6	5,310
SPED Teacher Planning	95	3	285
SPED Classroom Breakout	300	2	600
Self-Contained SPED Toilet	520	3	1,560
Small Group Room / Reading	345	3	1,035
ART & MUSIC	1.175	1	3,640
Art Workroom w/ Storage & kin	80	2	160
Band / Chorus - 100 seats	950	2	1,900
Music Practice / Ensemble	135	3	405
VOCATIONS & TECHNOLOGY			3.150
Tech Shop - (E.G. Consumer, Wood)	1,960	1	1,960
Fab Lab	1,190	1	1,190
			0.765
HEALTH & PHYSICAL EDUCATION	8,265	1	8,265
Gym Storeroom	315	1	315
Health Instructor's Office w/ Shower & Toilet	150	2	300
Locker Rooms - Boys / Girls w/ Toilets	400	2	800
Unisex Tollet / Shower	<u> </u>	· ·	
MEDIA CENTER			6,085
Media Center / Reading Room	1,990	1	1,990
Cahart Commons	1,365	3	4,095
DINING & FOOD SERVICE			8,840
Cafetorium / Dining	4,725	1	4,725
Stage	1,510	1	1,510
Chair / Table / Equipment Storage	1,820	1	1,820
Staff Lunch Room	365	1	365
		(
MEDICAL	60		610
Nurses' Office / Walting Room	250	1	250
Examination Room / Resting	100	3	300
		<u>.</u>	6 226
ADMINISTRATION & GUIDANCE General Office / Waiting Boom / Tailet	445	1	445
Teachers' Mail and Time Room	100	1	100
Duplicating Room	200	1	200
Records Room	210		210
Principal's Office w/ Conterence Area Principal's Secretary / Weiting	130	1	130
Assistant Principal's Office - AP1	150	1	150
Supervisory / Spare Office	145	1	145
Conference Room	365	1	365
Guidance Office (Student Support)	150	6	900
Guidance Waiting Room W/ Sto Closet	75	3	225
Guidance Storeroom	15	3	45
Teachers' Work Room	150	6	900
Office / Conference Room	145	1	145
CUSTODIAL & MAINTENANCE	385	4	2,545
Custodian's Office Custodian's Workshop	250	1	250
Custodian's Storage	110	3	330
Recycling Room / Trash	395	1	395
Receiving and General Supply	310	3	310
Network / Telecom Room	200	1	200
Outdoor Equipment Storage	300	1	300
		<u></u>	6.767
OTHER	4.390	1	6,705
Stage	1,530	1	1,530
Auditorium Storage	125	3	375
Dressing Rooms	205	2	410
Total Building Net Floor Area (NFA)			91,180
Proposed Student Capacity / Enrollment			630
Total Building Gross Floor Area (GFA)			137,100
Le se			



Diagram showing 'daisy wheel' clusters of educational rooms focused around 3 cohort commons, 1 dedicated to each grade level, to help create more intimate and identifiable "Schools within the School."