ARROWSTREET

SCHEMATIC DESIGN REPORT

SQUANTUM SCHOOL

QUINCY, MA

~~21 JUNE 2024~~

REVISED: 29 AUGUST 2024

PREPARED FOR

QUINCY SCHOOL BUILDING COMMITTEE &
MASSACHUSETTS SCHOOL BUILDING AUTHORITY

August 28, 2024

Ms. Carley Belfield, Project Coordinator
Ms. Christina Forde, Project Manager
Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

Re: Squantum School, Quincy MA Schematic Design Submission

Dear Ms. Belfield & Ms. Forde,

Enclosed for your review is the Schematic Design submission package for the Squantum School project in Quincy, MA, which includes the following documents:

- (1) Hard copy of Schematic Design (SD) binder
- (1) Hard copy set of half-sized Schematic Design drawing - under separate cover
- (1) Hard copy of the Schematic Design Project Manual - under separate cover
- (1) Electronic copy of all SD submission documents (electronic transfer by e-mail)
- (1) Hard copy of the Department of Elementary and Secondary Education (DESE) submittal
- (1) Electronic copy of all DESE submission documents (electronic transfer by e-mail)

We hereby certify that we have reviewed and coordinated the materials contained in this submittal, and that the submittal is complete. We also confirm that the District has approved the materials for submission to the MSBA.

Please contact me or Tom Kervin with any questions or comments.

Sincerely,

Brian Laroche
Project Director

CC: Kevin Mulvey, Superintendent of Schools, Clarksburg
Paul Hines, Commissioner of Public Buildings, City of Quincy
Larry Spang, Arrowstreet Architects

SQUANTUM SCHOOL

Schematic Design Report

~~21 June 2024 29~~ / 29 August 2024

Table of Contents

4.1.2 INTRODUCTION

Introduction - *(Rev)*

The purpose of the Schematic Design Binder, which is based on the preferred solution approved by the MSBA's Board of Directors, is to document in detail the scope, budget, and schedule of the proposed project. The Schematic Design submission addresses the concerns and questions raised by the MSBA during its review of the Preferred Schematic Report. It clearly identifies any changes incorporated during development of the Schematic Design Submission based on further evaluations and considerations. The Schematic Design Submission and all changes have been approved by the Squantum School Building Committee.

The intent of this submission is to document and incorporate revisions to the project's scope and budget based on MSBA review of the initial Schematic Design. It is in the School's and the City's best interest to maintain the project schedule included in the initial Schematic Design submission to the maximum extent possible. This will minimize the construction impact on the students and families at the Squantum School and allow for the construction schedule to align with the school year. Areas of change to the Schematic Design submission are formatted in red italics text throughout. Impacted headers are also noted for ease of navigation.

Overview

Public Meetings and Outreach

During previous phases of the project, the project team has held two community meetings, 2 SBC Meetings, and 12 Working Group Meetings.

Since the PSR was submitted to the MSBA on December 20, 2023, the project team has completed the following:

- ~~2~~ *3* School Building Committee Meetings
- ~~12~~ *5* Working Group Meetings
- ~~1~~ *2* Community Forum Meeting on January 17, 2024 and ~~another planned for~~ June 25, 2024.

The project team worked with the Working Group and School Building Committee to develop the Preferred Option to the Schematic Design level. The Working Group Meetings are also public meetings and met regularly throughout the SD phase.

In addition, the project team presented to the Quincy Historic Commission on March 25, 2024 as part of their regular public meeting. The Historic Commission expressed appreciation for being included in the design process. They noted that it was apparent the effort the design team had put in to be sensitive to the 1919 historic facade as well as the residential scale of the building's context. Overall, the design was well received.

Budget and Local Funding - *(Rev)*

The Total Project Budget for the new Squantum School project is not to exceed $1*08.8*~~23~~ million. On June 6, 2024, the School Building Committee voted to approve the Total Project Budget *from the initial Schematic Design submission*. This results in an anticipated reimbursement rate of 65.40% before caps and ineligible costs.

The School Building Committee met and reviewed a revised Total Project Budget on August 22, 204. At this meeting, they voted to approve this revised version of the Total Project Budget.

Refer to the "Total Project Budget - (Rev)" on page 94 for more details.

Due to the delay in securing a Project Scope and Budget Agreement with the MSBA, the City Council vote to appropriate full project funds has been delayed. This will result in the need for an additional interim funding vote in September to keep the project progressing in the schedule.

Summary of Project Design

The Preferred Schematic Report approved by the MSBA Board of Directors on February 28, 2024, describes an addition and renovation of the elementary school facility on its current site which reflects a thought consideration of the community's needs and priorities. By choosing to maintain the school's location within the Squantum peninsula, the

project aims to preserve the school's close ties to the local community and minimize disruptions for students and families. Designed to accommodate the design enrollment of 380 students from kindergarten to 5th grade, the new school will be equipped to meet the educational needs of current and future generations. By combining renovation with expansion, the project can maintain the historic 1919 building while also providing additional space and amenities to support innovative teaching and learning practices.

The Squantum School is situated on the existing school site. The new school building sits on approximately 2/3 of the site and thus allows the other 1/3 for ample on-site staff parking, safe and separate bus and van drop-off/pick up drive aisles. The site takes advantage of the Winslow Road (paper street) as the new parent drop-off/pick-up zone. This new vehicular arrangement lessens the traffic and congestion significantly on Huckins Avenue.

Special care will be taken to protect existing trees and minimize tree removal. The design team has paid particular attention to the two existing large pin oak trees along Huckins Avenue. It is planned to protect these two large trees. As part of the school design and for the school’s use, improvements are planned at the adjacent Moses Park and Field. An internal building courtyard is included in the school’s available outdoor space. This courtyard provides secure and easy access to the outdoors. It will become integral to the school’s curriculum with many opportunities for learning, gross motor skills, movement, social emotional learning.

The new Squantum School building is designed with its new main entrance from Huckins Avenue and entering upon the “main street” which organizes the buildings into clear distinct areas of public/ community spaces, such as cafeteria, gymnasium, courtyard and media center to its two-story classroom wing. The nurse’s suite is located adjacent to the secondary main entrance which will allow for quick and easy access by emergency medical personnel.

At the start of Schematic Design, the design team reviewed and evaluate the space adjacencies, and their relationships to the 1919 building. Utilizing the 1919 building effectively not only respects its historical significance but also maximizes its potential within the new design. At Preferred Schematic, the interior of the 1919 building was a division of small spaces for the administrative offices and the media center was on the second floor. However, rethinking the significance of the 1919 building, we strongly felt this building should host a community-centered function and a space that would utilize most of the space and celebrate important elements of the building. Therefore, the media center was relocated from the second floor to the 1919 building to become a true representation of the "heart of the school". This careful consideration at the schematic design phase lays a solid foundation for a successful project that honors the past while looking towards the future.

The design choices were carefully crafted to enhance both the functionality and the appeal of the space. Integrating the media center with the courtyard not only brings in natural light but also creates a connection to the outdoors, which can improve the overall atmosphere and user experience. Similarly, relocating the art room to the first floor with direct access to the courtyard offers opportunities for inspiration and creativity in a natural setting. The decision to have direct views and access to the courtyard along the "main street" suggests a deliberate effort to make the space inviting and accessible to the community. By transforming the courtyard into a focal point, it can become a vibrant gathering space for residents of Squantum and Quincy alike, fostering a sense of community and providing opportunities for social interaction and engagement.

The design team encountered a challenge regarding the large massing of the gymnasium relative to the historic building along Huckins Avenue. Recognizing

the potential for the gymnasium to feel overwhelming next to the smaller historic structure, we made a strategic decision to relocate the gymnasium towards Moses Park.

This adjustment serves multiple purposes. By moving the gymnasium away from Huckins Avenue, it reduces the visual impact of the larger structure on the historic building, preserving its architectural integrity. Additionally, positioning the gymnasium towards Moses Park might offer other advantages, such as creating a more cohesive layout with the park and outdoor play areas.

Overall, this decision demonstrates a commitment to thoughtful design that balances the needs of the project with sensitivity to historical context and community aesthetics. It's an example of how design solutions can evolve to address challenges and improve the overall quality of the final project.

Organizing the core classrooms and special education classrooms by grade level within a 2-story wing is a thoughtful approach that fosters a sense of community and inclusivity within the larger school environment. By creating distinct "neighborhoods" for each grade, students and teachers can develop stronger connections and support networks, enhancing the overall learning experience.

Each grade neighborhood demonstrates a commitment to integration and equity, ensuring that students with diverse learning needs have easy access to resources. The presence of Therapy Rooms and breakout spaces within each grade neighborhood further underscores the importance of providing comprehensive support services to all students.

The designation of the Squantum School as a Resiliency Hub underscores its importance as a community resource, particularly during extreme weather events or other emergencies. The strategic adjacency of the cafeteria and gym off the "main street" ensures easy access for community members in need of shelter, food, and other essential services during times of crisis.

Given the vulnerability of the Squantum peninsula to extreme weather conditions like storm surges or king tides, having a resilient facility like the Squantum School is essential for the safety and well-being of residents. Its location outside of flood zones and at a high elevation makes it a reliable refuge during emergencies.

The emergency generator ensures that critical building systems can continue to operate, providing heat/cooling, shower/toilet facilities, power for families to recharge devices and stay connected, and power for essential kitchen appliances. The availability of sufficient diesel fuel to run the generator for 72 hours further enhances the school's capacity to support the community during prolonged emergencies.

Overall, the Squantum School's role as a Resiliency Hub highlights its significance beyond just education, demonstrating its commitment to serving the broader community and promoting safety and resilience in the face of adversity.

The commitment of the City of Quincy and Quincy Public Schools to providing a net-zero energy school for the new Squantum School is commendable and reflects a forward-thinking approach to sustainability and environmental stewardship. By aiming for net-zero energy, the project aligns with broader efforts to reduce carbon emissions and combat climate change.

Designing the building envelope and systems to achieve net-zero energy not only reduces the school's environmental footprint but also offers significant financial benefits. Lower operational costs mean that resources can be redirected towards other important areas, such as educational programs, staff development, or facility maintenance and upgrades.

Furthermore, the decision to pursue net-zero energy reflects a commitment to providing a healthy and comfortable learning environment for students and staff. The new school will offer improved indoor air quality, temperature control/thermal comfort, and natural lighting, which can positively impact

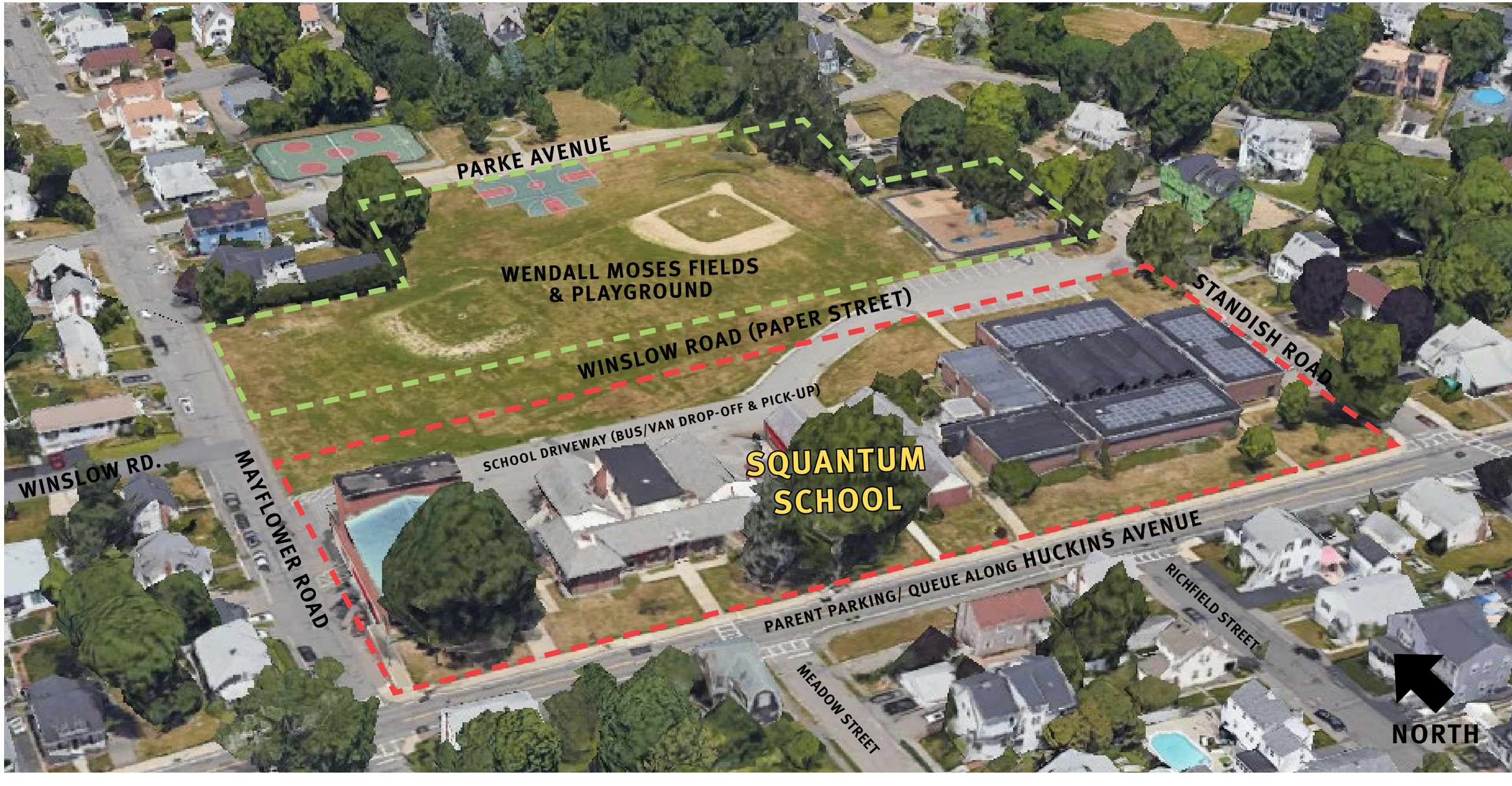
academic performance and overall well-being.

MSBA Review Comments - *(Rev)*

The MSBA Preferred Schematic Report comments were received on February 8, 2024. The District provided written responses to MSBA comments on February 22, 2024. See Appendix A. MSBA PSR Comments & Project Team Responses.

The project team received and responded to two rounds of questions from the MSBA since the initial Schematic Design submission. The first round of comments were received on July 3rd, 2024 and responded to on July 9th, in a Cost Drivers Memo. Subsequently, a conference call was held with the MSBA and the project team on July 18th to further discuss the MSBA's concerns. An updated Cost Driver Memo was issued by the OPM on July 18th, 2024. Finally, the MSBA issued additional written comments and questions on July 25th, 2024. The project team responded to these comments and questions by the provided deadline of August 2nd, 2024. Lastly, the MSBA issued an email memo on August 9th, 2024 requesting the resubmission of the Schematic Design submission. The compiled correspondence between the MSBA and Project Team has been added to this submission under Appendix R. MSBA Initial SD Comments & Project Team Responses - (New).

EXISTING SITE AND PROPERTY BOUNDARIES



EXISTING PLAYGROUND
APPROXIMATE SF: 6,289
*CAPACITY: 83 CHILDREN +/-

EXPANDED PLAYGROUND
APPROXIMATE SF: 4,230
*CAPACITY: 57 CHILDREN +/-

* ASSUMES 75 SF / PER CHILD

terraink
landscape architecture

FLOOR PLAN
FIRST FLOOR

WINSLOW ROAD

NORTH ENTRANCE
Parent Drop-Off / Pick-up

MAYFLOWER ROAD

VAN DROP OFF

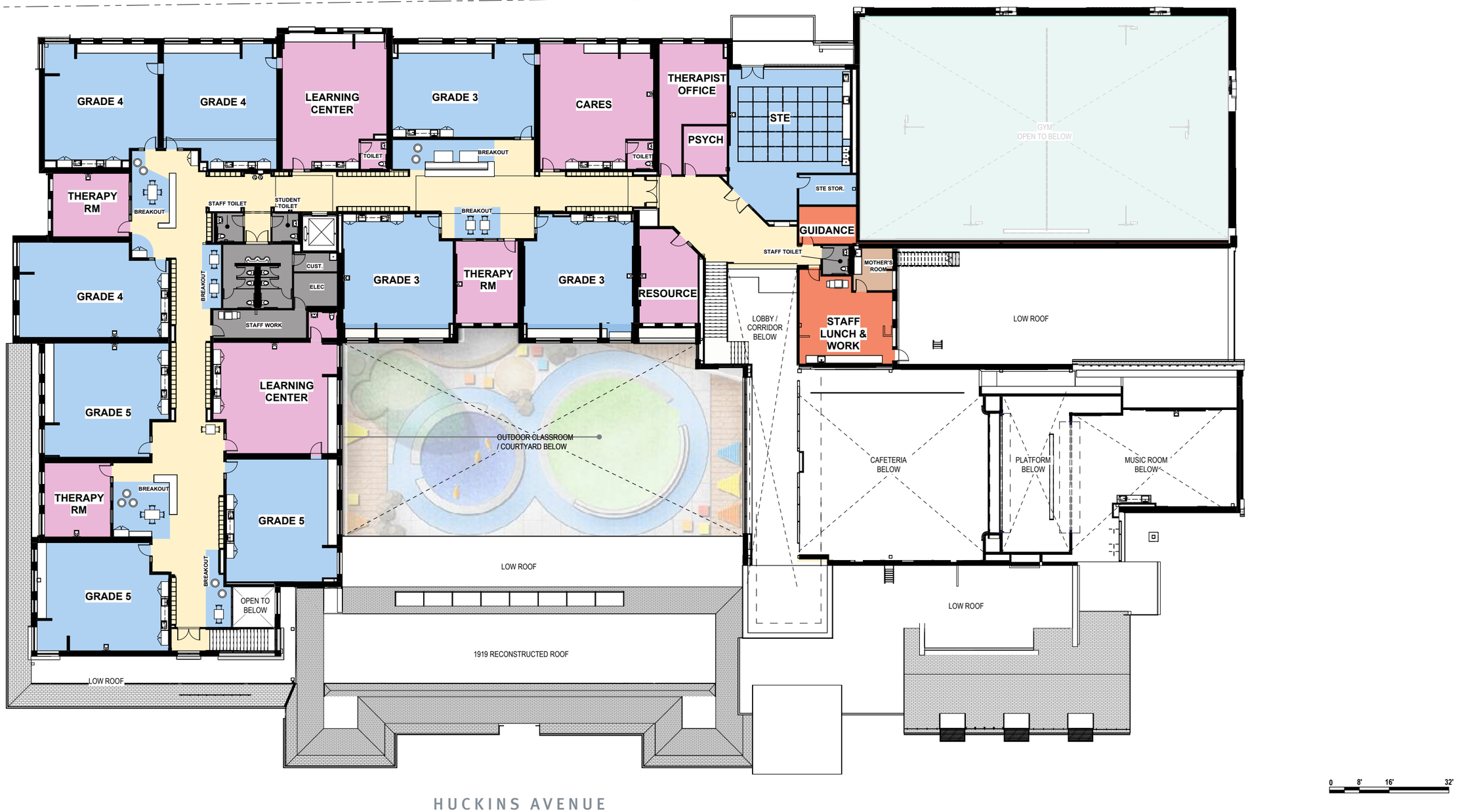
BUS DROP OFF

GRADE 1
GRADE 1
LEARNING CENTER
TOILET
GRADE 2
BREAKOUT
CARES
CARES TOILET
REST
NURSE
GYM OFFICE
GYM STORAGE
GYM
SERVICES
THERAPY RM
STUDENT TOILET
STAFF TOILET
EMER ELEC
IDF
GIRLS TOILET
BOYS TOILET
STAIR 3
BDA CLOSET
STAFF WORK
ELEC
GRADE 2
BREAKOUT
THERAPY RM
GRADE 2
PT
RAMP
SHOWER
SHOWER
GIRLS TOILET
BOYS TOILETS
KITCHEN TOILET
KITCHEN
MDF
EMER ELEC
MAIN ELEC
HALL
CHAIR STOR.
KITCHEN OFFICE
RAMP
TRASH & RECEIVING
GRADE 1
KINDERGARTEN
KINDERGARTEN
KINDERGARTEN
ELL
RAMP
ART STOR.
ART
OUTDOOR CLASSROOM/ COURTYARD
CAFETERIA
PLATFORM
MUSIC
DATA CLOSET
CHAIR STOR.
MUSIC STORAGE
SLOPED FLOOR
VEST
EAST ENTRANCE
Bus & Van
Drop-Off / Pick-up
OPEN TO ABOVE
STAIR 2
THERAPY RM
RESOURCE
MEDIA CENTER
IEP
LITERACY
VESTIBULE
MAIN OFFICE
MAIL & COPY
RECORD
STAFF TOILET
AFTER SCHOOL
PRINCIPAL OFFICE
GUIDANCE
CONF RM
MAIN ENTRANCE

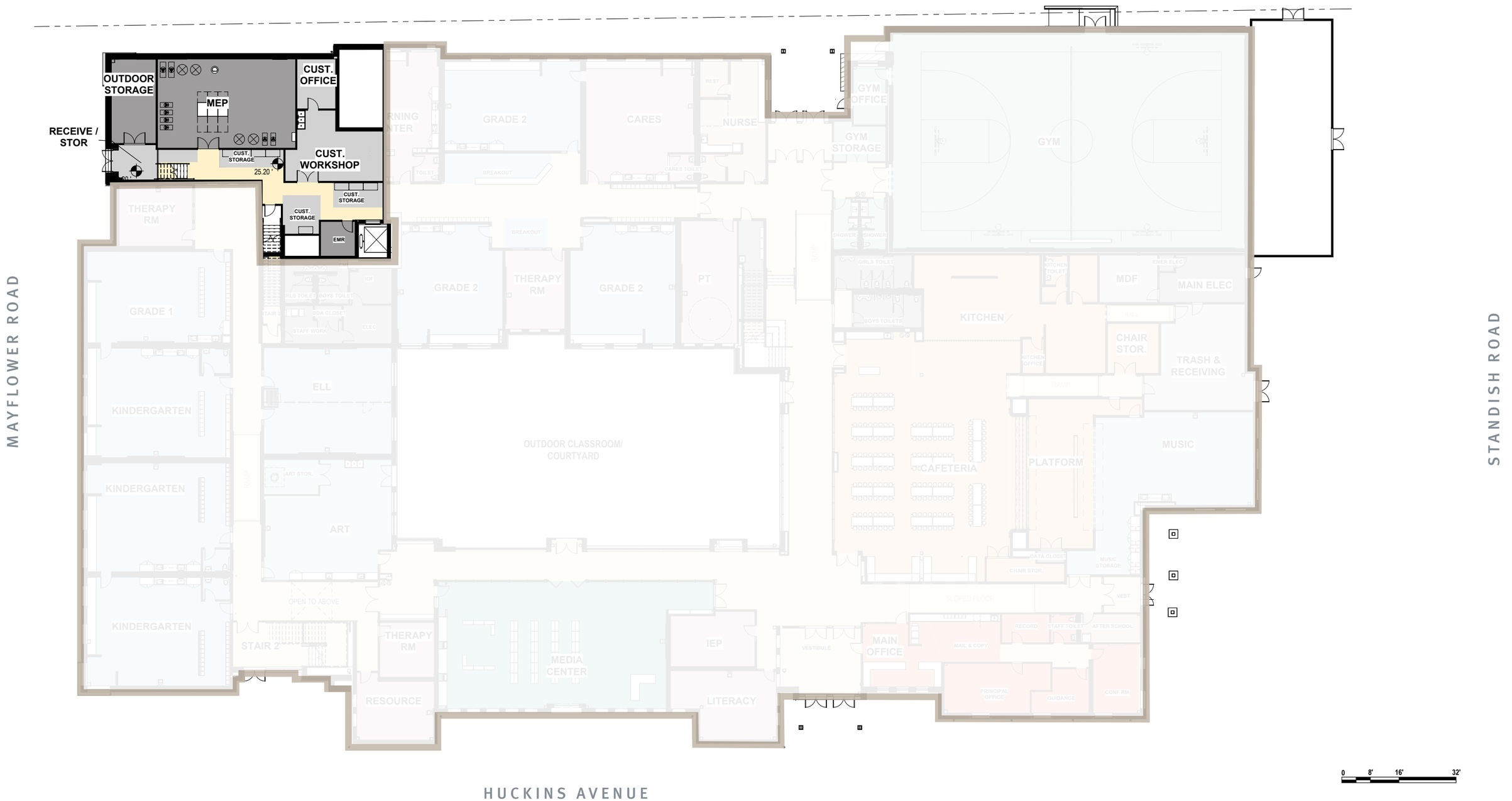
0 8' 16' 32'

HUCKINS AVENUE

FLOOR PLAN
SECOND FLOOR



FLOOR PLAN
BASEMENT FLOOR



EXTERIOR DESIGN STUDIES
SOUTH FACADE / HUCKINS AVENUE

EXTERIOR DESIGN STUDIES
SOUTHEAST CORNER

EXTERIOR DESIGN STUDIES
NORTH FACADE / WINSLOW ROAD

EXTERIOR DESIGN STUDIES
NORTHWEST CORNER / WINSLOW RD. & MAYFLOWER RD.

EXTERIOR DESIGN STUDIES
SOUTHWEST CORNER / MAYFLOWER RD. & HUCKINS AVE.

INTERIOR OF MAIN LOBBY

INTERIOR OF MAIN LOBBY

INTERIOR OF ARTS AND LIBRARY HALLWAY

INTERIOR OF CAFETERIA

INTERIOR OF MEDIA CENTER / LIBRARY

INTERIOR OF TYPICAL CORE CLASSROOM

INTERIORS OF TYPICAL KINDERGARTEN CLASSROOM

4.1.2 SCHEMATIC DESIGN PROGRAM

Architectural Characteristics

The new Squantum School has been designed with a strong focus on blending into its coastal neighborhood context. Aiming to maintain a residential scale and architectural language, the school's design respects the existing 1919 building without attempting to replicate the original architecture or adopting an overly modern style.

During the design process, there was a consistent reference to the old Squantum Inn, a cherished historical building that once stood on the Peninsula. This precedent inspired the use of strong gable forms and a deep porch, features that are prominent in the new school's design. These elements help the building resonate with the neighborhood's historical and architectural character, ensuring the new Squantum School feels like a natural extension of the community rather than an imposition.

To gain a comprehensive understanding of the local Quincy architecture and the specific styles prevalent on the Squantum Peninsula, the Design Team embarked on a tour of the city. During the tour, they meticulously noted historic landmarks and observed the widespread presence of shingle style homes throughout Quincy and particularly on the Peninsula.

A significant architectural feature noted during these observations was the prevalence of strong roof forms with deep overhangs, which are characteristic of the area's architectural context. This insight played a crucial role in shaping the roof design of the proposed Squantum School.

The roof forms of the new Squantum School were carefully considered for optimizing solar potential as well as being contextual appropriate. Ridges that run east-west provide an optimal south-facing surface for solar PV panels. A 20-degree slope can reduce spacing between rows of solar panels, leading to an approximately 15% efficiency boost.

Additionally, the sloped roofs along the outer perimeter of the building serve to screen the central rooftop PV arrays from the view of neighboring properties, addressing aesthetic concerns. For large volume interior spaces such as the gymnasium and cafeteria, flat roofs were purposefully used. This decision enhances structural efficiency and helps maintain a lower overall building height, ensuring the school remains in scale with its residential surroundings.

One of the challenges presented by the site is that there is no "rear side" of the school; all four sides are highly visible to the public. This creates difficulties in screening less desirable back-of-house functions and maintaining a consistent architectural language, as the scale, function, and relationship to the 1919 facade vary around the building.

CONTEXT/MASSING

Residential, New England Style Architecture, Scale and elements should relate to neighboring homes, front porch

HISTORIC REFERENCES

Squantum Inn, Lee's Inn, Squantum Yacht Club

The building's organization can be broken down into three parts: (1) The 1919 building, (2) The two-story classroom L-shape wing, (3) The public block. Refer to the massing diagram on the next page for a visual representation.

A challenge with this organization is the apparent symmetry on Huckins Avenue, which suggests that the 1919 entrance is the main entrance. However, there is a strong desire to keep the 1919 building preserved for a function that requires a large area, such as the Media Center, allowing users to appreciate the vaulted ceilings with exposed wood trusses of the 1919 roof.

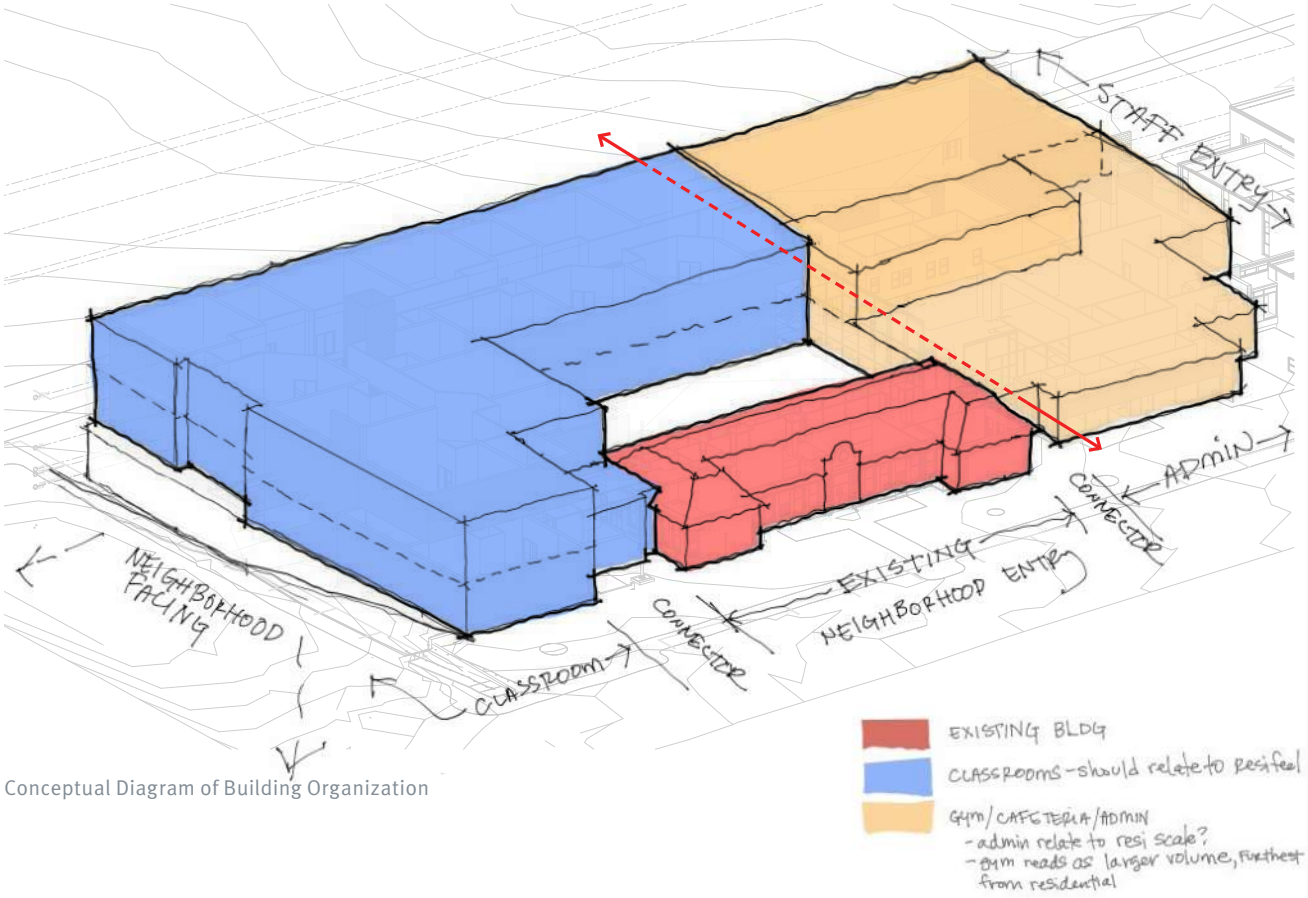
To address this, the Design Team proposed placing the new main entrance to the right of the 1919 building. This location not only preserves the historical integrity of the 1919 building but also provides ample space for a large vestibule

The strategically placed entry doors align with the “main street” and the north entrance, ensuring a coherent flow and accessibility for students, staff, and visitors.

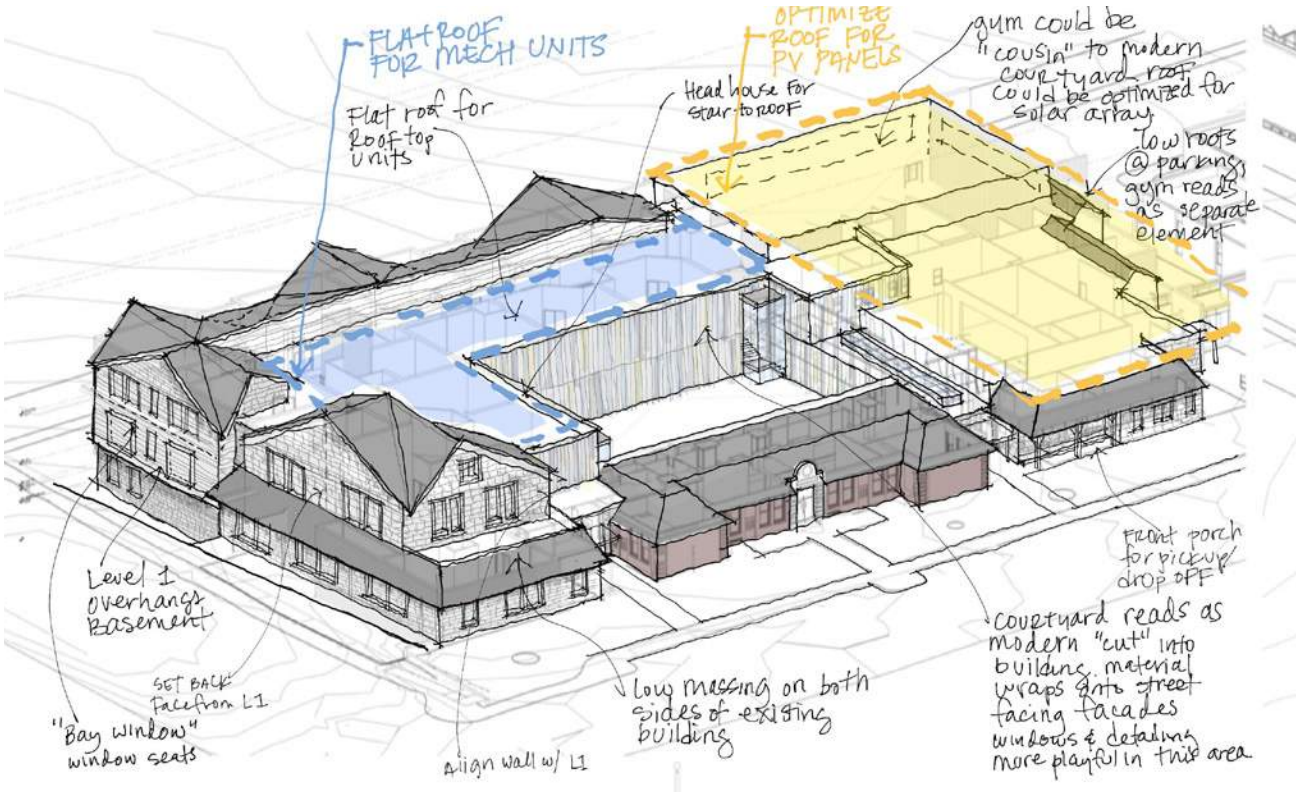
The materiality of the building was considered highly important in addressing the contextual architecture. Masonry materials are very durable, cost-effective, and traditional civic materials. However, shingled surfaces were also desirable to achieve the residential and historical characteristics that were deemed so important. To balance these needs for durability and maintenance with the desired aesthetic, the Design Team proposed using terracotta shingles, which provide the texture and historical feel of traditional shingles but with increased durability and no or low maintenance. Additionally, metal panel accents were incorporated to highlight the entries, adding a modern touch and creating a clear distinction for entrance points.

MATERIALS

Materials that compliment existing masonry, traditional residential facade treatments, but in different applications (orientation, scale, color)



Conceptual Diagram of Building Organization



Early Conceptual Sketch of Roof Massing

EXTERIOR DESIGN STUDIES
SOUTH FACADE / HUCKINS AVENUE

EXTERIOR DESIGN STUDIES
SOUTHEAST CORNER

Focal Points of School Design

There are a few main focal points of the design. These include:

- The 1919 Building & Media Center as a community resource and valued asset. A new vaulted ceiling celebrates the space.
- The Cafeteria, "Main Street", and Courtyard relationship as the "heart" of the school
- Neighborhood classroom pods arranged around central breakout spaces for bringing grade level communities together.

Functional Relationships & Critical Adjacencies - *(Rev)*

The "Main Street" & Courtyard

The central Outdoor Classroom or Courtyard in the middle of the building is the driving force behind the planning and form of the new Squantum School. This space not only provides a secure outdoor area for the school but also brings daylight into the center of the building. This design allows the classroom bar to be compact, ensuring no spaces are entirely interior.

The courtyard is bordered by several key elements:

» The 1919 Building forms the south boundary.

» The classroom wing defines the north and east sides of the Courtyard.

» The “Main Street”, a central corridor, makes up the east boundary.

The “Main Street” serves as a primary thoroughfare for students moving throughout the building. Its design ensures visual continuity from the Cafeteria, through the Main Street, into the Courtyard, as well as through the Media Center. This arrangement brings the space together as the social and academic heart of the school, fostering interaction and a sense of community among students and staff.

Media Center & Art

Located near the Main Street and Courtyard is the Media Center and Art Room. These spaces in conjunction with the courtyard are intended to facilitate learning through exploration, discovery, creativity, and play.

The Classroom Neighborhood

The current existing conditions of the school present several challenges: the grades are not continuous, there is no common area or identity, and classrooms have been added ad hoc over the years. Additionally, special education classrooms are not located near same-age peers, further complicating the learning environment.

The current existing conditions of the school present several challenges: the grades are not continuous, there is no common area or identity, and classrooms have been added ad hoc over the years. Additionally, special education classrooms are not located near same-age peers, further complicating the learning environment.

The proposed new school envisions a more organized and community-oriented structure for each grade level. Key features of the new design include:

Grade-Level Neighborhoods: Each grade will be organized into logical neighborhoods or communities. Each neighborhood will include:

» Three general education classrooms per grade.

» A self-contained special education classroom with an associated toilet.

» Support spaces such as an open Community or Breakout space for Grades 2-5.

» An acoustically private Therapy Room adjacent to every grade.

Kindergarten and Grade 1 Design: For the younger developmental age of Kindergarten and Grade 1 students, larger classrooms will be designed with an internal “mudroom”/ breakout area, replacing the need for a separate Community Breakout space.

These neighborhoods will foster a sense of community among grade-level teams and provide flexible spaces for support services, teacher meetings, and collaboration. They will also offer areas where students can work individually or in small groups under supervision. By integrating special education services into the grade-level communities, transition times are minimized, and inclusivity is enhanced.

This thoughtful organization ensures that each grade has a clear identity and continuity, creating a more cohesive and supportive learning environment for all students.

The Temporary Condition

One of the most critical adjacencies for the team to pay attention to is one that will eventually be invisible, and that is the constraints placed on the design by the existing 1971 wing. While this building will eventually be demolished, it must remain as an active school during the course of construction. This as well as practical concerns around safe egress, underpinning and shoring, and the desire for as much separation as possible has placed limits on the footprint of the new construction on the east side. Student safety and learning during this interim period are paramount. An early package is envisioned to prepare the 1971 wing to stand alone with a connected modular addition in the Summer of 2025. Please refer to the Drawing Set for what is called an Enabling Set at this time that depicts the temporary condition.

A full understanding of the Enabling work required for the project was one of the items for further clarification. The 1971 wing and modulars are anticipated to be demolished at the end of the project. The City has elected to relocate the costs related to the procurement of the modulars (which will be outside of the GC's contract) within the budget from the Construction Costs to the "Swing Space/ Modular" budget line. Enabling work on the 1971 wing will remain as part of the GC's contract and remains part of the overall Construction Budget.

Early in the design process, as documented in the Preliminary Design program, the team considered creating an entirely modular school rather than the ultimately selected hybrid approach of retaining a portion of the existing building and supplementing with temporary modulars. The total cost for an all modular solution was estimated at $11.4 million, supported by pricing received from Triumph Modular.

In addition to considering an all modular solution, the project also considered if there were other options to relocate the students within the city. Although there is no excess capacity in the school system, the City explored options for temporarily housing the school in office buildings at Heritage Drive, Marina Bay, and the Boston Scientific office park. However, the costs to build out these spaces was well in excess of the costs of modulars. Additional challenges with having students occupy buildings along side other tenants, creating traffic, safety, and concerns are present in these alternatives as well. Furthermore, building owners were reluctant to have their office spaces occupied by young children.

Enabling work descriptions were embedded in the systems narratives but have been summarized here and highlighted where more fully described. The following is a summary of the work required to allow the 1971 building stand alone from the rest of the existing building:

- *Demolish the connection between the 1971 wing and the 1949 classroom wing*
- *Construct new rated exterior wall to enclose the 1971 wing*
- *Infill some existing openings with rated construction to comply with Fire Separation Distance and Pedestrian Connection*
- *Provide temporary boiler plant to supply existing hot water unit heaters, need to either construct a temporary enclosure, or alternative protection*
- *Provide temporary disconnect switch and transformer to power the 1971 building and modular classrooms*

- *Construct a temporary vestibule at temporary Main Office*
- *Provide portable hand washing sink, refrigerator, freezer, milk cooler, warming oven for temporary servery*
- *Relocation of technology and data infrastructure from the 1949 classroom wing*

- *Divide three classrooms into four spaces for Main Office and three classrooms*
    - *Remove existing metal partitions & sink*
    - *Construct new drywall partitions, provide new doors*
    - *Provide additional operable window area & electric heat panels at one room for natural ventilation & heat (Room does not have a unit ventilator after subdivision)*
    - *New carpet and paint finishes*

The following is a summary of the work required for the temporary modulars:

- *Prepare grade/ temporary foundations, site work is planned to be by GC due to site constraints and logistics and is priced as part of Enabling Scope*
- *Temporary utility connections*
- *Modulars will need to be fire protected due to size required*
- *Construct secure temporary connector between modular building and 1971 wing, this is also planned to be by the GC and is priced as part of the Enabling scope*

Refer to the "Cost Reconciliation - (Rev)" on page 98 for a breakdown of the cost associated with the Enabling scope of work by Uniformat division.

Due to the scope of work required at the 1971 wing, the 33% valuation threshold for the remaining portion of the building is anticipated to trigger the ADA threshold with the current building evaluation. The City of Quincy has historically not evaluated their buildings with accurate values, and is in the process of evaluating their buildings with more realistic evaluations. Once the City has provided a new evaluation, the project team will re-evaluate if the threshold is anticipated to be applicable. If the threshold is still applicable, the project team will be seeking a time based variance that allows for the new school building to be the accessible solution.

A plumbing variance is also anticipated to be required for the temporary condition.

Educational Program

After the PDP comments from the MSBA were received, the District made minor updates to the educational program to clarify items in MSBA comments. In addition, the MSBA issued Project Advisory 85 in December 2023 with updates to the Educational Program Requirements. Further edits, reorganization, and the integration of the Design Team's Design Response to each component of the educational program into a singular document has been undertaken to match up to these updated requirements. These design responses have been updated as the design has developed.

Please refer to Appendix B. Educational Plan with Design Responses.

In addition to the written educational plan, the design team also met with teachers at the existing Squantum School to discuss the new design and some of the specific elements that they would like in their new space. These conversations have been reflected in the design. The Design Team anticipates that meetings with teachers and staff will continue into the next phases and will strive to provide a school that meets the needs of the students and staff.

Space Summary

There have been minor adjustments to the space summary since the PSR. The majority of these adjustments have been related to swapping the program housed in the renovated portion of the school, to a much more efficient use. This drove the overall efficiency of the building up, resulting in a reduction of over 2,000 GSF since the previous submission.

Core Academic

The proposed project contains 21,400 SF of core academic space. This is 3,300 SF above the MSBA guidelines of 18,100 SF. This has not changed since the PSR.

The existing building currently contains 3 classrooms per grade (18 general education classrooms) housing approximately 60 to 70 students per grade. For the lower K-1 grades, the District desired large classrooms that provide space for differentiation inside the classroom space. For grades 2-5 the District choose to re-allocate 50 sf from each classroom to a breakout area for the grade level. At three contributing classrooms per grade level, the breakout areas at 150 sf each were small. These have been increased to 300 sf each in order to better accommodate the activities and number of students anticipated to be utilizing them.

In addition to grade level classrooms, an STEAM room is anticipated to support the upper grades. Two ELL rooms are planned to support this existing program.

Special Education

The proposed project contains 9,805 SF of special eduction space. This is 5,275 SF above the MSBA guidelines of 4,530 SF. Of this, 1,440 SF is anticipated to be in renovated space. Overall, this reflects a reduction of 345 net square feet since the PSR.

This reduction is a result of the following modifications since PSR:

- The CARES self contained classrooms were reduced from 1,000 sf to 950 sf to reflect the sizing of adjacent general education classrooms.
- The Resource Rooms slightly increased in size due to configuration of the existing facade and alignment with in the building
- Two of the Learning Center self contained classrooms that are located on the second floor were reduced from 1,000 sf to 950 sf to reflect the sizing of adjacent general education classrooms. The third Learning Center remains at

1,000 sf to reflect the Grade 1 adjacency.

- One Therapy Room that serves the Kindergarten area of the building is 120 sf smaller than the rest of the Therapy Rooms due to constraints as a result of being located in the renovated area.
- The PT room reduced by 60 sf due to the alignment within the building.

Art & Music
The proposed project contains 2,575 SF of Art & Music space. This is in line with the MSBA guidelines of 2,575 SF and has not changed since PDP.

This includes an Art Room and Music Room with support spaces. The Art Room is located adjacent to the Media Center and Courtyard. This creates an activation of the Courtyard as a student centered space for exploration and self- expression.

Health & Physical Education
The proposed project contains 6,500 SF of health & physical education space. This is 200 SF in excess of the MSBA guidelines of 6,300 SF. This has decreased by 100 sf since the PSR.

This includes a full sized gymnasium and support spaces. In support of the Resiliency Shelter, this area will contain showers. The decrease in square footage since PSR is related to reducing the square footage of the showers to support the resiliency shelter.

Media Center
The proposed project contains 2,361 SF of Media Center space. This is 19 SF below the MSBA guidelines of 2,380 SF. This areas has reduced by 19 SF since the PSR.

This is due to a slight reshuffling of the floor plan to locate the Media Center as the heart of the preserved 1919 section of the building and emphasis this retained portion as a community space. This resulted in a slight reduction in program area, but a much more efficient reuse of the renovated portion of the building.

Dining & Food Service
The proposed project contains 6,057 SF of dining and food service space. This is in line with the MSBA guidelines of 6,057 SF and has not changed since the PDP.

Medical
The proposed project contains 510 SF of medical space. This is in line with the MSBA guidelines of 510 SF and has not changed since the PDP.

Administration & Guidance
The proposed project contains 2,095 SF of administration and guidance space. This is in line with the MSBA guidelines and has not changed since the PDP. The location of this area within the building has shifted from the renovated portion to the new construction portion.

These spaces are generally in line with the MSBA guidelines. The spare office has been combined with the Guidance Storeroom to create a second Guidance Office of equal size to accommodate the school's two guidance staff.

Custodial & maintenance
The proposed project contains 1,980 SF of custodial and maintenance space. This is in line with the MSBA guidelines and has not changed since the PDP.

Other
The proposed project contains 240 SF of other space This category has decreased by 300 SF since the PSR. This is due to the relocation of the Outdoor Equipment Storage from net to gross per the MSBA's comments on the PSR.

Gross and Net
The proposed project contains 53,523 SF of net space. This is 8,996 SF above the MSBA guidelines of 44,527 SF. This has decrease by 764 sf since the PSR. Please see the above sections for individual increases.

The proposed gross square footage of the project is 79,801 GSF. This is 14,947 GSF more than the MSBA guidelines of 64,853 GSF and has decreased by 2,396 GSF.

Refer to the space summary for a breakdown of this gross area into the respective categories.

Space Measurement Analysis & Certification

The Designer certifies that the total gross square footage of the current plans for the Squnatum School are consistent with the updated and revised MSBA space summary template dated June 4th, 2024.

Basement Level	3,240 sf
Level 1	52,586 sf
Level 2	23,975 sf
Total	79,801 GSF

ARROWSTREET

Laurence Spang, AIA LEED AP
Principal

Proposed Space Summary - Elementary School

Revised June 2023

Date: 5/28/2024 Schematic Design Submittal

Quincy Squantum School		EXISTING CONDITIONS			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
					EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
	ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
CORE ACADEMIC				**15,785**			**0**			**21,400**			**21,400**			**3,300**			**18,100**	STE Guidelines Policy
(List rooms of different sizes separately)																				
1.1	Kindergarten Classroom with Toilet	894	3	2,682			0	1,200	3	3,600	1,200	3	3,600	0	-1	-1,200	1,200	4	4,800	1,100 NSF (minimum size) - 1,300 NSF (maximum size); Minimum of (2) sinks required per Kindergarten Classroom
1.2	General Classroom (Grades 1-6) *Applied to Grades 2-5*	843	15	12,645			0	950	12	11,400	950	12	11,400	0	-2	-1,900	950	14	13,300	900 NSF (minimum size) - 1,000 NSF (maximum size); Minimum of (2) sinks required per General Classroom
1.3	Science, Technology, Engineering (STE) Room (Grades 3-6) (if applicable)			0			0	1,080	1	1,080	1,080	1	1,080	0	1	1,080	1,080	0	-	1,080 NSF (minimum size); Refer to the 2018 STE Guidelines for additional information.
1.4	STE Storage Room (if applicable)			0			0	120	1	120	120	1	120	0	1	120	120	0	-	Minimum of (1) 120 NSF STE Storage Room required per STE Room; Refer to the 2018 STE Guidelines for additional information.
1.5	General Classroom (Grade 1)			0			0	1,000	3	3,000	1,000	3	3,000	1,000	3	3,000				
1.6	Breakouts - Grades - 2-5			0			0	300	4	1,200	300	4	1,200	300	4	1,200				
1.7	ELL	458	1	458			0	500	2	1,000	500	2	1,000	500	2	1,000				
SPECIAL EDUCATION				**4,556**			**1,440**			**8,365**			**9,805**			**5,275**			**4,530**	Special Education spaces require DESE review and approval.
(List rooms of different sizes separately)																				
2.1	Self-Contained SPED - CARES	636	2	1,272			0	950	2	1,900	950	2	1,900	0	-1	-950	950	3	2,850	900 NSF (minimum size) - 1,300 NSF; equal to the size of the proposed General Classrooms that serve the same student population.
2.2	Self-Contained SPED - Toilet Room			0			0	60	5	300	60	5	300	0	2	120	60	3	180	
2.3	Resource Room	326	2	652	360	1	360	375	1	375	735	2	735	235	0	-265	500	2	1,000	1/2 size of a General Classroom
	Small Group Room/ Reading	140	1	140			0							-500	-1	-500	500	1	500	1/2 size of a General Classroom
2.4	Self-Contained SPED - Learning Center	708	3	2,124			0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
2.5	Self-Contained SPED - Learning Center							950	2	1,900	950	2	1,900	950	2	1,900				
2.6	Literacy			0	500	1	500			0	500	1	500	500	1	500				
2.7	Psychologist	92	1	92			0	200	1	200	200	1	200	200	1	200				
2.8	Therapy Rooms (OT / Reading / Speech / BCBA / Other Services)	92	3	276	230	1	230	350	5	1,750	580	6	1,980	580	6	1,980				
2.9	PT						0	540	1	540	540	1	540	540	1	540				
2.1	IEP Conference Room			0	350	1	350			0	350	1	350	350	1	350				
2.1	Therapist Office Suite (4 people at a time) For Staff: BCBA, SLP & Speech, Music Therapist, OT, Reading (OG)			0			0	400	1	400	400	1	400	400	1	400				
	Public Day Education Spaces (List rooms separately below)																			
	Not Applicable to this project			0			0			0	0	0	0	0	0	0				
	Collaborative Program Spaces (List rooms separately below)																			
	Not Applicable to this project			0			0			0	0	0	0	0	0	0				
ART & MUSIC				**0**			**0**			**2,575**			**2,575**			**0**			**2,575**	
3.1	Art Classroom (25 seats)	0	0	0			0	1,000	1	1,000	1,000	1	1,000	0	0	0	1,000	1	1,000	Assumed schedule: 2 times per week per student
3.2	Art Workroom with Storage and Kiln			0			0	150	1	150	150	1	150	0	0	0	150	1	150	
3.3	Music Classroom / Large Group (25-50 seats)			0			0	1,200	1	1,200	1,200	1	1,200	0	0	0	1,200	1	1,200	Assumed schedule: 2 times per week per student
3.4	Music Practice / Ensemble	0	0	0			0	75	3	225	75	3	225	0	0	0	75	3	225	
HEALTH & PHYSICAL EDUCATION				**4,271**			**0**			**6,500**			**6,500**			**200**			**6,300**	Excess Physical Education Spaces Policy
4.1	Gymnasium	4,022	1	4,022			0	6,000	1	6,000	6,000	1	6,000	0	0	0	6,000	1	6,000	
4.2	Gym Storeroom			0			0	150	1	150	150	1	150	0	0	0	150	1	150	
4.3	Health Instructor's Office with Shower and Toilet	249	1	249			0	150	1	150	150	1	150	0	0	0	150	1	150	
4.4	Showers (for Resiliency Shelter Use)			0			0	100	2	200	100	2	200	100	2	200				
MEDIA CENTER				**2,593**			**2,361**			**0**			**2,361**			**-19**			**2,380**	
5.1	Media Center / Reading Room	2,304	1	2,304	2,361	1	2,361			0	2,361	1	2,361	-19	0	-19	2,380	1	2,380	
	Computer Lab	289	1	289			0			0	0	0	0	0	0	0				
DINING & FOOD SERVICE				**1,172**			**0**			**6,057**			**6,057**			**0**			**6,057**	
6.1	Cafeteria / Dining	0	0	0			0	2,850	1	2,850	2,850	1	2,850	0	0	0	2,850	1	2,850	Based on 2 lunch seatings - 15 NSF per seat
6.2	Stage	939	1	939			0	1,000	1	1,000	1,000	1	1,000	0	0	0	1,000	1	1,000	
6.3	Chair / Table / Equipment Storage	0	0	0			0	327	1	327	327	1	327	0	0	0	327	1	327	
6.4	Kitchen	233	1	233			0	1,680	1	1,680	1,680	1	1,680	0	0	0	1,680	1	1,680	1,600 NSF for first 300 students + 1 NSF per additional student
	Staff Lunch Room	0	0	0			0	200	1	200	200	1	200	0	0	0	200	1	200	20 NSF per student
MEDICAL				**169**			**0**			**510**			**510**			**0**			**510**	
7.1	Medical Suite Toilet			0			0	60	1	60	60	1	60	0	0	0	60	1	60	
7.2	Nurses' Office / Waiting Room	169	1	169			0	250	1	250	250	1	250	0	0	0	250	1	250	
7.3	Examination Room / Resting			0			0	100	2	200	100	2	200	0	0	0	100	2	200	

Proposed Space Summary - Elementary School

Revised June 2023

Date: 5/28/2024 Schematic Design Submittal

Quincy Squantum School	EXISTING CONDITIONS			PROPOSED PROGRAM: EXISTING TO REMAIN / RENOVATED			PROPOSED PROGRAM: NEW CONSTRUCTION			PROPOSED PROGRAM: TOTAL			VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
ADMINISTRATION & GUIDANCE			**1,526**			**0**			**2,095**			**2,095**			**0**			**2,095**	
8.1 General Office / Waiting Room with Toilet	256	1	256			0	340	1	340	340	1	340	0	0	0	340	1	340	
8.2 Teachers' Mail and Time Room	52	1	52			0	100	1	100	100	1	100	0	0	0	100	1	100	
Copy Room/Duplicating Room			0			0	150	1	150	150	1	150	0	0	0	150	1	150	
8.4 Records Room			0			0	110	1	110	110	1	110	0	0	0	110	1	110	
8.5 Principal's Office with Conference Area	198	1	198			0	375	1	375	375	1	375	0	0	0	375	1	375	
Principal's Secretary / Waiting			0			0	125	1	125	125	1	125	0	0	0	125	1	125	
Assistant Principal's Office			0			0			0	0	0	0	-120	0	0	120	0	-	
8.7 Supervisory / Spare Office			0			0		0	0	0	0	0	-120	-1	-120	120	1	120	
8.8 Conference Room			0			0	255	1	255	255	1	255	5	0	5	250	1	250	
8.9 Guidance Office	307	1	307			0	150	2	300	150	2	300	0	1	150	150	1	150	
Guidance Storeroom	21	1	21			0			0	0	0	0	-35	-1	-35	35	1	35	
8.10 Teachers' Work Room	692	1	692			0	340	1	340	340	1	340	0	0	0	340	1	340	
CUSTODIAL & MAINTENANCE			**446**			**0**			**1,980**			**1,980**			**0**			**1,980**	
9.1 Custodian's Office	247	1	247			0	150	1	150	150	1	150	0	0	0	150	1	150	
9.2 Custodian's Workshop			0			0	375	1	375	375	1	375	0	0	0	375	1	375	
9.3 Custodian's Storage	162	1	162			0	375	1	375	375	1	375	0	0	0	375	1	375	
9.4 Recycling Room / Trash			0			0	400	1	400	400	1	400	0	0	0	400	1	400	
9.5 Receiving and General Supply			0			0	227	1	227	227	1	227	0	0	0	227	1	227	
9.6 Storeroom	37	1	37			0	253	1	253	253	1	253	0	0	0	253	1	253	
9.7 Network / Telecom Room			0			0	200	1	200	200	1	200	0	0	0	200	1	200	
OTHER			**0**			**0**			**240**			**240**			**240**			**0**	
(List rooms separately below)																			
Pre-Kindergarten Classroom with Toilet (if applicable)			0			0			0	0	0	0	-1,200	0	0	1,200	0	-	1,100 NSF (minimum size) - 1,300 NSF (maximum size)
10.1 Extended Day Program Office/Storage			0			0	120	1	120	120	1	120	120	1	120				
~~Outdoor Equiptment Storage~~			~~0~~			~~0~~			~~0~~	~~0~~	~~0~~	~~0~~	0	0	0				
10.2 Mothers Room							120	1	120	120	1	120	120	1	120				
Total Building Net Floor Area (NFA)			**30,518**			**3,801**			**49,722**			**53,523**			**8,996**			**44,527**	**Total Building Net Floor Area (NFA)**
Proposed Student Capacity / Enrollment																# of Grades	6	**380**	**Total Enrollment (Enter Design Enrollment)**
																K	1	**63**	Kindergarten Enrollment
																Grade 1	1	**127**	Lower Elementary School Enrollment (Grades 1-2)
																Grade 2	1	**190**	Upper Elementary School Enrollment (Grades 3-6)
																Grade 3	1		
																Grade 4	1		
																Grade 5	1		
																Grade 6	0		
NON-PROGRAMMED SPACES					% of GFA	**1,173**		% of GFA	**25,105**		% of GFA	**26,278**							Complete this category with Schematic Design Submittal
Other Occupied Rooms (List rooms separately below)																			
Outdoor Equiptment Storage				-	0.0%			0.4%	300	-	0.4%	300							
To be filled out in SD				-	0.0%		-	0.0%		-	0.0%	0							
To be filled out in SD				-	0.0%		-	0.0%		-	0.0%	0							
To be filled out in SD				-	0.0%		-	0.0%		-	0.0%	0							
To be filled out in SD				-	0.0%		-	0.0%		-	0.0%	0							
Unoccupied MEP / FP Spaces				-	0.0%		-	2.4%	1,774	-	2.2%	1,774							
Unoccupied Closets, Supply Rooms, and Storage Rooms				-	0.0%		-	0.7%	559	-	0.7%	559							
Toilet Rooms				-	0.0%		-	1.6%	1,174	-	1.5%	1,174							
Circulation (corridors, stairs, ramps and elevators)				-	0.0%		-	18.1%	13,569	-	17.0%	13,569							
Remaining[3]				-	23.6%	**1,173**	-	10.3%	**7,729**	-	11.2%	**8,902**							
Total Building Gross Floor Area (GFA)[2]			**45,043**			**4,974**			**74,827**			**79,801**			**14,947**			**64,853**	**Total Building Gross Floor Area (GFA)[2]**
Grossing Factor (GFA / NFA)			**1.48**			**1.31**			**1.50**			**1.49**			**0.03**			**1.46**	**Grossing Factor (GFA / NFA)**
Total Building + Unfinished Below Grade Spaces			58,323																

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

[2] **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls.

[3] **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architecture Firm: Arrowstreet

Name of Principal Architect: Laurence Spang, AIA

Signature of Principal Architect:

Date: 06/04/2024

Instructional Technology

Current

The Squantum School currently strives to integrate technology into classroom instruction, however, is impeded by the current school facility. The use of technology is an integral part of the classroom at every grade level classroom and special educational programs. Two curriculum programs, for reading/ writing and for Mathematics, are used for teaching methodology and rely heavily on technology for instruction, assessment, and skill development.

Each classroom currently has a wall mounted projector, document cameras, touch pads, and Chromebooks. Chromebooks are currently 1:1 in Grades 3-5. Grade 5 students are allowed to take Chromebooks home, with the expectation that the Chromebook will be charged in the morning. Students in Grades 3 & 4 are assigned a Chromebook from the cart in their respective homerooms, and do not take them home. Grades K-2 share access to Chromebook carts, with slightly less then 1:1 devices at this time. In addition to Chromebooks, some special eduction classrooms use iPads as communication tools. The current facility poses challenges with WiFi and power outlet coverage.

Quincy has a QPS Technology Planning and Training Team that supports the research, training, and funding of instructional technology that benefits, digital learning, assessment, management, and communication. The project team has met with the City of Quincy's technology group as well as Keith Segalla, the Executive Director of Technology Planning and Training for Quincy Public Schools to review the technology requirements for this project.

Proposed

As part of Quincy's overall technology strategy, the Squantum School is striving to achieve 1 Chromebook per student in all grades.

In addition to the technology assigned to students each classroom will receive a short throw projector, sound amplification system, document cameras, and Wireless Access Points (WAPs). The facility will also have power outlets to alleviate charging issues present in the existing building.

Evidence suggests that the effective application of these vital skills in a technology-infused life requires acquiring them in a technology-infused learning environment. This technology-infused environment is not about the device, but how it is utilized, calling for the placement of technology into the hands of students, and trusting them with broader and more progressive applications of such technology. Instead of beginning a lesson by listening to a teacher describe or present samples or examples at the front of the classroom, the students can be allowed to utilize the available technology resources for inquiry. Technology-infused discovery activities, Internet research, virtual manipulative applications, and multimedia resources can allow students to explore unanswered questions. They can be challenged to utilize the resources in order to answer probing questions, learning to understand, analyze, and evaluate their research as they compile answers to the posed questions. Investigation and discovery activities will give students hands-on, real-world, problem-solving experience and ownership over their learning. It also will allow them to build on this knowledge base by bringing past investigations and observations into future lessons, debates, discussions, or other creation activities.

Technology infusion will continue beyond the core classrooms into support spaces such as the Media Center, Art Room, STE Room, Music and Platform, as well as the assembly spaces of the Gymnasium and Cafeteria. Teachers will be equipped with laptops in lieu of desktops to facilitate flexibility.

Site Development Requirements

Parking

There are two primary parking types and locations in the proposed project:

- On-site school parking lot provide perpendicular parking spaced in the parking lot intended for staff. On nights and weekends, these spaces would be open to the public. This lot was sized to accommodate the majority of staff on site, with a target of 50 spaces.
  - » Current plans indicate 52 new spaces in parking lot
- On-street parking spaces along streets are intented for parents and public visitors. These spaces were maximized around the school block to accommodate demand. The only location not maximized for parking is the stretch of Huckins Avenue in front of the Pin Oak, where the existing drip line extends into the existing sidewalk. This resulted in the following:
  - » 18 new spaces along Huckins Avenue
  - » 9 new spaces along Mayflower Road
  - » 21 new spaces along Winslow Road

Together, this results in 100 parking spaces around the school. The design of these spaces and the parking lot has been reviewed with the City of Quincy, particularly in relationship to shading requirements for the parking lot. A subsurface infiltration tank for storm water infiltration is planned for under a majority of the parking lot, which limits the ability to plant trees in the middle of the parking lot.

Tree Protection & Tree Replacement

As noted in the Preferred Schematic Report, the project is subject to the City of Quincy's Tree Protection Ordinance. Any tree removal will require equivalent caliper replacement. This requirement, as well as community sentiment, has pushed the project to preserve as many trees as possible. Of particular concern as two large old growth Pin Oaks along Huckins Avenue. Please refer to Appendix F. Tree Health Report for the tree health report for the trees along Huckins Avenue completed by the City of Quincy's arborist. This report notes that the two Pin Oaks are in relatively good health. However, the large Pine is in poor health and is proposed to be removed.

The site constraints were reviewed and it was noted that the project is allowed relief from the absolute interpretation of the Ordinance, as long as the project keeps the Parks department involved in the project and best attempts to meet the intent of the Ordinance are made. It was also confirmed that new trees planted on the park parcel could count towards the tree replacement on the school parcel.

Please refer to the next page for a letter of support for the project from David Murphy, the Commissioner for the Department of Natural Resources.

City of Quincy - Massachusetts
Department of Natural Resources

Thomas P. Koch
Mayor

David C. Murphy
Commissioner
Natural Resources

June 5, 2024

Massachusetts School Building Authority

40 Broad Street – Suite 500

Boston, MA 02109

Dear Mass. School Building Authority:

On behalf of the Department of Natural Resources, who has legal jurisdiction over the parks in the City of Quincy; including Wendall Moses Playground adjacent to the Squantum Elementary School, we approve of the temporary use of the park area to help facilitate the construction of the new elementary school.

My office issues permits regarding the use of our facilities and this use has a tremendous community benefit. I have presented this issue at multiple meetings of the Park and Recreation Board and there is unanimous support for the project. The Board defers formal approval for park uses to this office.

We stand in strong support of the construction of the new school and the new amenities it will provide our community. We understand the temporary impacts to the park property. We have worked closely with the project team to ensure our interests are protected.

Thank you for your support of this important project.

Sincerely,

David Murphy, Commissioner

Department of Natural Resources

Traffic Analysis

Refer to Appendix G. Preliminary Traffic Analysis for the previously completed traffic analysis by MDM. The site is bound on all four sides with city streets. Mayflower Road, Huckins Aveune, Standish Road, and Parke Avenue are two way streets. The driveway for the school that is out of alignment with Winslow Road currently also is a two way path. In the proposed condition, the reconstructed and realignment of Winslow Road will become a one way road from Mayflower Road to Standish Road, to help establish a clockwise traffic pattern around the school block.

The student population of the school and anticipated staff is not substantially increasing, therefore, no increase in traffic loads is anticipated. The project does address a critical safety issue in how parent drop off is conducted today. In order to not impact traffic leaving the peninsula, parents queue on the south side of Huckins Avenue and cross with their students to the school property. The proposed project will relocate parent drop-off and pick-up to the realigned Winslow Road. Huckins Avenue and Mayflower Road will also be widened to accommodate on-street parallel parking that is to be added to the north side of Huckins Avenue and the east side of Mayflower Road. These two improvements will allow for parent and visitor parking to be relocated to the school side of the surrounding streets and reduce the number of pedestrian crossings at Huckins Avenue. To facilitate safe pedestrian crossing on Huckins Avenue, a Rectangular Rapid Flashing Beacon (RRFBO) is proposed at a consolidated centralized crosswalk.

Environmental & Existing Building Assessments

Geo-Environmental Analysis

During previous phases of the project, a Phase I Environmental Site Assessment and Phase II Limited Subsurface Soil Investigation were performed. It was found that two UST tanks were abandoned in place. The City of Quincy removed the existing UST's at the site independently of the project on April 13, 2024. Please refer to Appendix H. UST Closure Assessment Summaryfor the removal report by Coneco Engineers & Scientists, Inc. Refer to Appendix I. UST Disposal Manifest for the final completed disposal manifest.

The soil results showed less than a Class RCS-1 (clean non-regulated), therefore the project has budgeted for clean soil disposal at $25 per ton of soil. The earthwork and soil management should be performed under a Soil Management Plan (SMP) providing guidelines for testing and for the segregation and management of soils that will be disturbed and/or displaced during construction. Soil pre-characterization will occur during construction.

Geotechnical Analysis

Additional geotechnical testing has not occurred since the Preferred Schematic Report. The preliminary geotechnical report identified weathered rock that may or may not be excavatable. Further test pits are planned for DD phase to confirm the density of the potential rock in the area of the proposed basement, behind the existing 1949 gym wing.

Existing Building Assessments

No additional testing of the existing building occurred since the Preferred Schematic Report. All necessary hazardous materials testing occurred at the PDP phase. No testing of the existing to remain masonry is anticipated.

Code Analysis & Permitting Requirements - *(Rev)*

Code Red Consultants has reviewed the project and prepared a code report. Please refer to Appendix J. Code Report for the full code report. The proposed Squantum School will be designed according to all applicable codes and regulations. This Schematic Design submission includes a code summary and code approach drawings, that outline the approach to building and accessibility code compliance, on G0.05 & G0.06. Approval from the local Authorities Having Jurisdiction (AHJ) regarding posting of occupancies on the second floor is required.

A plumbing variance may need to be sought for the temporary condition. The 1971 building contains enough fixtures to meet the counts under the 2021 calculations. However, under the 2023 updated load factors, additional fixtures would be required. It is anticipated that a variance will be achievable as this is a temporary condition that is not worse than existing conditions.

For environmental impacts and permitting, the site is located in an urban residential area in the Squantum Peninsula of Quincy. The school is not located directly adjacent to any environmentally sensitive areas. The site is not located within a 100-year Flood Zone according to the FEMA Flood Map 25021C0067F. The project site is not located within any areas designated as an Estimated Habitat of Rare Wildlife and a Priority Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP). Land disturbance is anticipated to be greater than an acre and would require a local Stormwater Management Permit. In addition, any new drainage connections proposed to the municipal system would require a local Drain Permit.

A geothermal system is planned for the project. During, SD phase, Haley & Aldrich conducted a geothermal study at the Squantum School in May-June 2024. They developed a test well program for two test wells. In anticipation of drilling water during the borings, and the water will be managed as construction wastewater. If little water is produced, it will be pumped to a settling pit , then to a second shallow trench or larger pit for infiltration. If the volume of pumped water exceeds the infiltration capacity of the on-site oils, it will be discharged to a nearby storm drain under National Pollutant Discharge Elimination System (NPDES) Dewatering and Remediation General Permit (DRGP) after receiving discharge authorization from the U.S. EPA. Ransom Consulting assisted with obtaining NPDES permit with the EPA to file electronic Notice of Intent for discharge under DRGP. Ransom monitored and collected samples of the discharge to determine if water meets the effluent limits. The drilling of the test wells did not product large volume of water and contractor was able to allow the wastewater to infiltrate back into the ground.

All historical approvals that may have been required have been addressed. The Massachusetts Historical Commission (MHC) responded to the project's Project Notification Form (PNF) that no adverse affects were found and no further action is required. The project gave the local Quincy Historic Commission an overview of the project in March 2024. The Commission does not require any formal approval. Please refer to the next page for a letter of support for the project from Anthony Ricci, the Chair of the Quincy Historical Commission.

On July 1st, 2024 the MSBA released Project Advisory #88 and a new State Site Permit tracking worksheet. The project team has filled this tracking worksheet out, and is can be found in Appendix S. State Permit Tracking Worksheet - (New). Please note that no state permits are required for this project.

Also, please note that per attached correspondence with MEPA Deputy Director Jennifer Hughes, the first row of the permit tracking sheet regarding distance to Environmental Justice Populations is not a threshold alone. Other thresholds must be triggered for this to apply.

QUINCY HISTORICAL COMMISSION

34 Coddington Street, Quincy, MA 02169
(617) 376-1368
TTY/TDD 1-800-439-2370

April 4, 2024

Paul Hines, Commissioner
The City of Quincy Public Buildings Department
1305 Hancock Street
Quincy, MA 02169

Re: Squantum School Replacement Project

Dear Commissioner Hines:

During the March 25th hearing of the Quincy Historical Commission (QHC), the project architect for the Squantum Elementary School project provided an overview of the initial designs for the proposed replacement of the School. The QHC acknowledges the historical significance of the current Squantum School, as it is listed in the 1986 survey of over 600 buildings in the City of Quincy deemed to be historically significant. Specifically, it is identified on the Massachusetts Historical Commission (MHC) database, Massachusetts Cultural Resource Information System (MCRIS), as a listed historic building.

Furthermore, the QHC is aware that the project architect submitted a Project Notification Form (PNF) to the MHC in December 2023 regarding the proposed project to demolish the existing school, with plans to retain and restore only the façade of the original 1919 school building. In February 2024, the MHC responded, stating that "after review of the MHC files and the materials you submitted, it has been determined that this project is unlikely to affect significant historic or archaeological resources."

The QHC considers the proposed project appropriate, as it involves preserving the original façade of the 1919 school building while providing much-needed upgrades to the educational facility. The QHC appreciated the presentation by the project architect and was encouraged the project is considering using historically appropriate materials to restore the 1919 building, such as windows replicating the original style and simulated slate roofing.

Although the QHC monitors historic preservation throughout the city and encourages the protection of historic resources in Quincy, it's important to note that this particular project does not require QHC approval. The Squantum School is not situated in a historic district nor listed on the National Register of Historic Places, thus exempting it from the QHC's approval process. Thank you very much for your team taking the time to present the school project to the QHC.

Yours Truly,

Anthony Ricci, Chair

Utility Analysis

Project Description

This project involves the renovation of and addition to the existing Squantum Elementary School building, located at 50 Huckins Avenue. The proposed project positions the school on the western half of the property, accompanied by a parking lot with 52 spaces (of which 2 are van accessible spaces and 6 EV spaces) to the east. In addition, the Winslow Avenue paper street will be realigned to function as a parent drive lane with 21 parallel parking spaces, Mayflower Road and Huckins Avenue will be widened along the school property to add on-street parking, and the existing playground will be expanded for school use. Outdoor classrooms will be provided in a secured courtyard located at the center of the school, and an underground geothermal well field will be constructed in the City owned parkland north of the school. Building and parking lot reconfiguration associated with this option will require reconstruction of nearly all site utility infrastructure. This option will locate the MEP room in the northwest corner of the building in the basement, near Mayflower Road. During construction, the parkland may be used for construction lay down and temporary staff parking.

Stormwater Management System

Existing Conditions

The existing site is pitched from east to west, where Standish Road is a high point and Mayflower Road is a low point. The existing site drains to a series of catch basins located on-site, which are connected via a closed drainage system. This system outlets to an existing catch basin in Mayflower Road, which is part of the City's public drainage system. Stormwater runoff from the southern section of Standish Road (near Huckins Avenue) is captured by two public catch basins in Standish Road. These two catch basins connect to the closed drainage system on-site. The on-site drainage system is comprised of 10-inch and 12-inch VCP drainpipes.

As part of the preliminary stormwater assessment, the existing site was modeled to account for different types of land cover, site topography, hydrologic soil groups, and drainage patterns. This information was inputted to a stormwater model, along with local rainfall data, and was used to determine the peak runoff flow rates and volume leaving the site, for various design storms. This same methodology was employed for the project site under proposed conditions.

Proposed Conditions

This project involves reconfiguration of the building and parking lot on-site and will require considerable grading changes across the lot. These modifications will necessitate the removal of all existing on-site drainage infrastructure, and the installation of a new stormwater collection and management system.

Roughly two-thirds of the site will be occupied by the new building footprint, which will be positioned on the lower portion of the property. The staff parking lot is located on the east side of the site at a higher elevation. The proposed construction of Winslow Road begins at a high point near Standish Road and ends at a low point on Mayflower Road. Winslow Road is being considered as off-site area for the preliminary stormwater assessment as part of the school project. The City has plans to construct a closed drainage system in Winslow Road that will capture and convey runoff generated from the road. Coordination with the City will be required to ensure the City's drainage system is sized and designed accordingly to accommodate the drainage design for the school project.

In post-development conditions, the amount of impervious area on-site will increase significantly, which will increase the amount of stormwater runoff generated on-site. To account for this increase, two (2) stormwater Best Management Practices (BMPs) will be required on-site to provide stormwater treatment and mitigation of peak flow rates and runoff volume. Due to limited available space on-site, these BMPs will be subsurface infiltration systems consisting of plastic chambers and crushed stone.

One of the BMPs will be located underneath the staff parking lot to collect and mitigate runoff generated on paved areas in the eastern part of the site, as well as the entire school roof. This BMP will outlet to a new drainage structure in Winslow Road that is being proposed as part of the City's planned drainage improvements. This drainage structure will convey stormwater to the west and ultimately tie into a proposed manhole in Mayflower Road (also proposed as part of the City's planned improvements).

In the staff parking lot, a series of deep sump, hooded catch basins are being proposed to collect runoff from the parking lot. Drainage pipes will convey flow from the catch basins to proposed drainage manhole structures, which will ultimately discharge to the subsurface infiltration system being proposed below the staff parking lot.

The second, smaller BMP will be located closer to Mayflower Road, positioned between the west side of the school building and a proposed retaining wall. This system will receive runoff from paved walkways and sidewalks on the south and west sides of the school, as well as the proposed outdoor classroom. To capture runoff from these areas, a closed drainage system is proposed consisting of yard drains positioned at low points, connected by drainage pipe. The outdoor classroom will be graded to provide pitch away from all building entrances, with a low point near the center of the courtyard where an inlet will be located to drain the area. The drain line exiting this inlet structure will need to run below the building foundation in order to connect to the proposed BMP near Mayflower Road. This BMP will outlet to a new drainage manhole in Mayflower Road that is being proposed as part of the City's planned drainage improvements.

Each BMP will be equipped with an outlet control structure designed to regulate discharge rates to the City's drainage system, and to help meet water quality volume and recharge volume requirements. In addition, each BMP will be equipped with an isolator row designed to improve sediment pre-treatment, pollutant-removal, and system maintenance.

Other Low Impact Development (LID) drainage features that were considered include rain gardens, grassed swales and bioretention basins, which are not feasible due to the limited amount of open space associated with this project.

Design Standards

The proposed stormwater improvements are designed to meet the ten Massachusetts State Stormwater Standards as a new development project. In addition, the proposed design will meet the City of Quincy's stormwater management regulations for 90% TSS removal, 60% Total Phosphorus (TP) removal, and 1-inch water quality volume. The proposed closed drainage system is being developed using TR-55 and NOAA Atlas-14 rainfall data to size the pipe network and subsurface infiltration BMPs. The BMPs will be designed to mitigated up to the 100-year storm event on-site.

Soils

Based on the Natural Resources Conservation Service (NRCS) Soil Survey, soils throughout the project site consist primarily of Canton-Urban land complex and sandy Udorthents, which are both categorized as Hydrologic Soil Group A. This group of soils tend to have a high infiltration rate when thoroughly wet, a low runoff potential, and consist mainly of deep, well drained to excessively drained sands or gravelly sands.

Based on the NRCS Soil Survey and the results contained in the Geotechnical Report for this site, it is presumed that subsurface conditions on the project site are suitable for stormwater infiltration to the groundwater table. It is presumed that the bottom depth of a subsurface BMP will fall within the sand and gravel layer identified in the boring logs. In addition, based on boring logs contained in the Geotechnical Report, it appears that adequate separation can be provided from the bottom of a subsurface BMP to the estimated seasonal high ground water (ESHGW) elevation.

Site Access & Parking

Vehicular site access will be provided through the newly constructed Winslow Road. The alignment of Winslow Road will run straight across the property from east to west, with access being provided through the existing driveway on Standish Road (east), and a new curb cut on Mayflower Road (west). Additional site access will be provided through two (2) new curb cuts on Standish Road, between Huckins Avenue and Winslow Road. One curb cut will function as a one-way entrance to the new staff parking lot, and the other will act as a one-way means of egress. The staff lot will contain 44 standard parking spaces, six (6) EV spaces, and two (2) van accessible spaces. Drop off locations for vans and buses will circulate around the parking lot and will be located adjacent to the east school entrance. Additional parallel parking is provided along Mayflower Road (9 spaces), Huckins Avenue (17 spaces), and Winslow Road (21 spaces).

Sewer

Municipal sewer services the existing school. Based on record documents and the survey plan developed by Feldman Geospatial, an existing 8" VCP sanitary sewer main runs through the middle Huckins Avenue, Mayflower Road, Standish Road, and Park Avenue. This gravity sewer main varies in age, ranging from 1929 to 1945.

Record plans show four (4) sanitary sewer services for the existing school, all of which exit the south side of the building and connect to the municipal sewer system in Huckins Avenue. The service lines exit the school in different locations, including a service at the 1918 classroom building, a service at the 1946 classroom building, and two (2) services at the 1971 classroom building addition. Three (3) services are shown connecting directly to the 8" VCP sewer main, while the last service (furthest east) connects to a sewer manhole in Huckins Avenue. These services are aged and have served their useful life. The existing sanitary sewer services that ran to the existing building will be abandoned or removed. A grease trap will be installed to treat kitchen waste prior to connection to the municipal sewer system, which will connect to the existing sewer system in Huckins Ave. The main sewer service will exit the northwest corner of the proposed building and will connect to the existing sewer system in Mayflower Road. Refer to the narrative provided by the Plumbing Engineer for a description of the recommended sewer service sizes.

Since the population of the school is not expected to grow significantly, it is assumed the municipal sewer system capacity is sufficient for proposed conditions. If this assumption changes, and the number of students and staff is anticipated to increase, further investigation will be required to determine if the municipal sewer system has adequate capacity for the additional sewage flows.

Water

Municipal water services the existing school. Based on record documents and the survey plan developed by Feldman Geospatial, there is an existing 8" CI (cast iron) water main that runs through Huckins Avenue, Mayflower Road, Standish Road, and Winslow Road (paper road). According to record plans, there are three (3) water services at the front of the building that connect to the municipal system in Huckins Avenue.

The main domestic water service is a 4" pipe (material outside of building unknown) located in the 1971 building addition. The water meter for this service appears to be 2" in size. Record plans show a second water service connecting to the 1971 building addition; however, it appears this line was abandoned. The third water service is a 2-½" pipe connecting to the 1918 classroom building. Usage of this service is unknown and needs to be confirmed. The school is not equipped with an automatic sprinkler system.

No fire hydrants are present on the school property. There is an existing hydrant near the corner of Huckins Avenue and Mayflower Road, and a second hydrant across from the school parking lot on Standish Road.

The existing water services will be replaced, and a new dedicated fire protection service will be installed from the water main along Winslow Road. Refer to the narrative provided by the Plumbing Engineer for a description of the recommended water service sizes.

Electric

The school building is planned to be all-electric, eliminating the need for gas services. The proposed improvements include an emergency diesel generator located in a sound attenuated enclosure near the staff parking lot. Refer to the narrative provided by the Electrical Engineer for a summary of improvements related to the proposed electrical system for the school.

Environmental Impacts & Permitting

The site is located in an urban residential area in the Squantum Peninsula of Quincy. The school is not located directly adjacent to any environmentally sensitive areas. The site is not located within a 100-year Flood Zone according to the FEMA Flood Map 25021C0067F. The project site is not located within any areas designated as an Estimated Habitat of Rare Wildlife and a Priority Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP). Land disturbance is anticipated to be greater than an acre and would require a local Stormwater Management Permit. In addition, any new drainage connections proposed to the municipal system would require a local Drain Permit.

LEED

Further analysis will be required to confirm if the site is eligible for points relating to the 'Rainwater Management' credit under Sustainable Sites Credit and 'Electric Vehicles' under Location and Transportation Credit.

Massing Study

The project underwent a series of massing iterations to explore different roof forms and connections with the existing 1919 building. The goal was to reduce the scale of the new structure, lending it a residential quality and breaking down large building masses. Throughout this process, we studied similar architectural typologies to gather references and insights.

By experimenting with various roof configurations, we aimed to achieve a design that harmoniously integrates with the surrounding context while enhancing the overall aesthetic appeal. This iterative approach allowed us to refine the building's form, ensuring that it meets both functional requirements and design aspirations.

EXTERIOR DESIGN PRECEDENTS
BREAKING DOWN SCALE

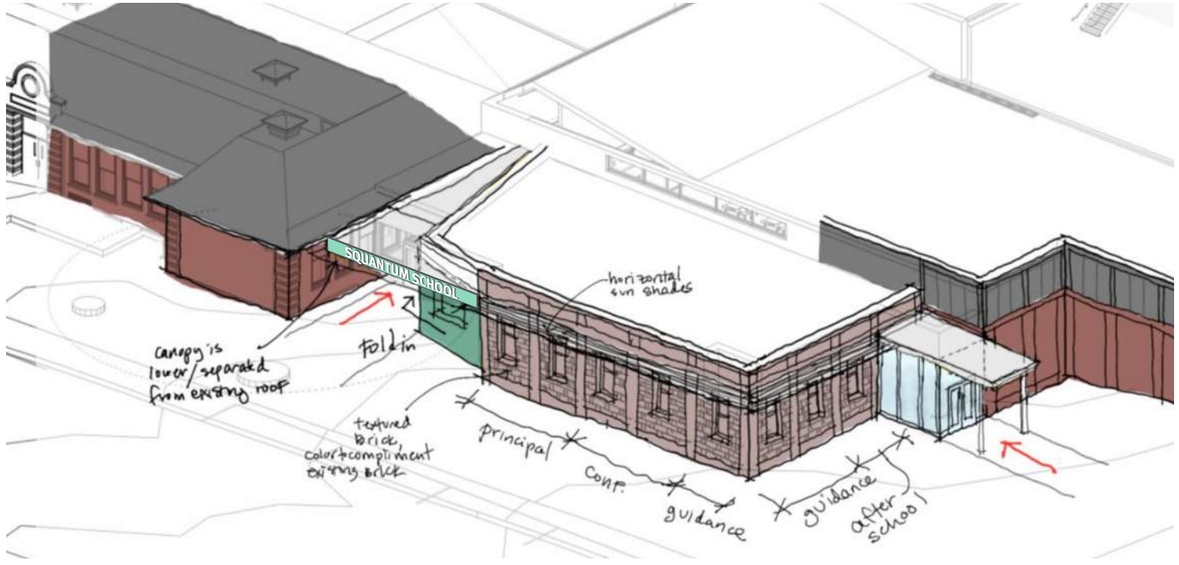




EXTERIOR DESIGN PRECEDENTS
CONNECTORS



Precedent Studies - Note work depicted is not by Arrowstreet



ABOVE: Early Concept sketches of the Main Entrance Design

ABOVE: Early Concept renderings of the Main Entrance Design

ABOVE: Different canopy designs the team studied. The canopy is considered critical to the identification as an entrance due to the visual obstruction challenges presented by the existing to remain tree. The preferred canopy is shown on the right.

BELOW: A progression of the mass of the building at various 3D prints, starting with the existing building on the top left, the mass at Preferred Schematic bottom left, a mass at an interim Schematic Design print on the top right. The final Schematic Design mass is in the bottom right.

Sustainable Design Elements - *(Rev)*

The Squantum School is designed to be an all -electric Net Zero School. This is a result of the City Council resolution in March 2022 that the project should consider a Net Zero build out. The Stretch Code compliance path anticipated to achieve the energy reduction to be net zero is Passive House Certification. *Similar to TEDI, the other compliance path option for schools,* the focus of the Passive House standard is to reduce heating and cooling energy through passive standards. To achieve this, the standard sets required benchmarks for Annual Heating Demand, Annual Cooling Demand, Peak Heating Load, Peak Cooling Load, Source Energy, and Air Tightness that the project must meet in order to achieve certification. Passive House Co-Requisites include requirements for glazing comfort and condensation risk, thermal bridge free construction, radon mitigation, EV charging readiness, indoor air quality, solar ready roof, and Energy Star appliances. The City will engage in a Power Purchase Agreement to provide solar PV panels on the building roofs to produce renewable energy equal to the building's annual energy use.

Geothermal & Energy Efficiency

The HVAC system planned for the school is a result of close discussion between the mechanical engineer, design team, and District and City facility staff, in particular David Scott, Mechanical Engineer for the City of Quincy. An Initial Life Cycle Cost Assessment (LCCA) was conducted that compared three variations of Ground Source Heat Pump (GSHP) systems to a Variable Refrigerant Flow (VRF) system. Once the preferred HVAC option was selected by the district, a 30 year Net Zero LCCA was conducted. In addition to the initial LCCA, this assessment included savings and revenue from solar and GSHP system and cash flow analysis versus the project financing. For more information on the LCCA, please refer to the "Life Cycle Cost Analysis" on page 75.

The planned GSHP system is anticipated to have an EUI of less than 25. The geothermal well field will supply two loops, one to the basement mechanical room for hot water heating, and the other to the RTUs for building ventilation air. This was considered a critical advantage of this system by the City as it means that the heating and cooling are done by separate systems that can be taken off line during the "off season" for maintenance. In addition, this configuration eliminates chilled water piping, which was also considered a maintenance liability by City staff.

Refer to Appendix C. Geothermal Feasibility Study and Test Program Summary for the conceptual well field design by geothermal consultants Haley & Aldrich. This conceptual design was informed by early energy load modeling and typical ground assumptions. A test well program has been undertaken with two test wells installed between May 17 and 29, 2024, and thermal conductivity testing completed by June 3rd, 2024.

Envelope & Fenestration

In addition to standard energy efficiency of the HVAC and hot water systems within the building, the project strives for a high performance building envelope to reduce the loads the mechanical systems has to react to. The glazing is anticipated to be triple glazed with high performing U values. Thermally broken aluminum windows are preferred. However, depending on U-value requirements, fiberglass windows will also be evaluated. Opaque assembly R value targets are below. These are effective values, and thermal bridging derating must be evaluated.

- Flat Roofs: R- 65
- Sloped Roofs: R-45
- Stud Walls (New): R-35
- CMU Backup Walls:R-25.8
- ETR Masonry Walls: R-33.9
- Slab on grade: R-15

As a project under the 2023 Stretch Code, air tightness and thermal bridging are paramount.

Detailing of the air barrier connections and thermal breaks will be carefully reviewed for complexity of installation and continuity of the thermal and air barrier. A blower door test will be completed during construction to confirm an air tight assembly with less than 0.06 CFM/sf @ 50 Pa of air leakage. This leakage rate must be achieved in order to achieve Passive House certification.

Materials & Indoor Environment

Just as important to an overall sustainability strategy are the materials used to create the building; their impacts to the environment, the workers manufacturing them, and the final environment in which they are placed. Intentional material selections include the use of linoleum flooring over vinyl. Vinyl materials are avoided due to the toxic processes required in the manufacturing process, the pollution created when disposed of, and the risk from endocrine disruptors, asthmagens, and carcinogens to occupants during use. All interior materials are vetted through a firm database for basic material health. In addition, each material specified for this project will be evaluated for Health hazards via HPDs or similar reporting labels, and for off gassing concerns via VOC reporting.

In addition to careful material selections that do not off gas or create indoor air quality concerns, natural daylighting has been integrated into the design. The courtyard helps to drop light into the center of the floor plan and extend the amount of exterior perimeter for daylighting that is available. The indoor environment is further improved by displacement ventilation that has better thermal comfort, less noise, and higher IAQ than an overhead mixing system.

Resilience

As part of Project Advisory #88, effective July 1, 2024, there are additional information requests related to Site vulnerability risk assessment and evaluation to be delivered during earlier phases of the project. As this project is beyond these phases, the information is being supplied now as requested.

The project team has used the Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards Tool to screen the project site for climate risks. The results deem the site is not subject to coastal flooding, sea level rise, storm surge, or riverine flooding. Risks that are present on the site include high winds, extreme precipitation events and urban flash flooding, and high heat. The report from this tool can be found in Appendix T. Resilient Mass Action Team Design Standards Tool Report - (New). The tool acknowledges that the projected values, standards, and guidance that are provided may be used to inform plans and designs, but they do no provide guarantees for future conditions. The projected values are not to be considered final or appropriate design guidance for construction documents without supporting engineering analysis. The Design Tools guidance is intended to be general and does not set specific project requirements.

Regarding urban flooding related to extreme precipitation events, this was deemed a relevant risk based on historic flooding near the site, increased impervious area, the existing impervious area is between 10% & 50%, and the maximum annual daily rainfall is anticipated to exceed 10" within the overall project's useful life of 50 years.

The recommended design standard for urban flooding from the RMAT tool is a 50 year storm on a 2070 planning horizon. This results in a projected 24 hour total precipitation depth of 9.7". The current design is to mitigate a 100 year storm on the current planning horizon, resulting in a total precipitation depth of 8.8". As noted above, the RMAT tool's recommendations are general and are based on the catchment area of the site. The project's peak run off rates from pre to post construction are anticipated to be substantially improved within the site's catchment area. In addition, the City has taken the following steps to address this risk within and beyond the limits of the site:

- *The City is installing new stormwater infrastructure around the site this summer, to*

address historical local flooding challenges for the entire local area. This includes a new 18" stormwater pipe down the realigned Winslow Road leading to a new outfall in Dorchester Bay. See design documents in Appendix U. Squantum Drainage Design - (New). The overall impact of this project is anticipated to be greater than the .9" of rain delta between the current design and the recommended target due to it's much larger catchment area than just the site.

- *Multiple exterior trench drains and grade sloping away from entrance doors*
- *Multiple interior drains for redundancy at basement*

If capacity to handle additional precipitation depth is required in the future, on grade bio swales, or rain gardens could be deployed on the school property. Alternatively, additional subsurface systems in the park uphill from the school's most vulnerable low point could be installed.

The project team discussed flood barrier and flood control system options as additional future-proofing measures with the District. Additional mechanical or passive protection systems were deemed undesirable due to maintenance and deployment concerns.

The project team acknowledges the MSBA's concern regarding the location of the mechanical room in the basement. The climate risk assessment along with the city infrastructure, site and building design measures do not indicate a risk to this area for the 2070 50 year storm event. As previously noted, the project site is very tight during the temporary condition and the footprint of the building is unable to grow. The alternative would be to located the Mechanical Room on the second level over the Cafeteria, or on the roof in additional height or increased roof area. The complexities of having an above ground Mechanical room connect to a below ground well field were also considered detrimental.

Regarding extreme heat, this was deemed a relevant risk by the RMAT tool because there are 30+ day increase in the number of days over 90°F within the project's useful life, the project is not located within 100' of a body of water, the increase in impervious area, and the existing site has less than 10% tree canopy cover as well as the removal of some of the existing trees[1]. This risk for the entire general region is part of what has prompted the City to designate this location as a resiliency hub. Nearby Environmental Justice populations will be served by this project as a local cooling center.

The recommended design standard for extreme heat from the RMAT tool is for 90th Percentile climate data on a 2070 planning horizon. However, the tool specifically acknowledges that its purpose is as a reference point or basis of discussion in planning, early design, and or the evaluation of projects. The tool does not replace location specific engineering calculations and analysis, existing code and regulatory requirements, risk and vulnerability assessments, or cost-benefit analyses. Current code requires that the mechanical system be sized for present weather data. This includes an assumption that 0.4% annual hours are to exceed 91°F/74°FWB. Per the ResilientMass Maps and Data Center's Climate Change Projections Dashboard, by 2030 Quincy is expected to see 3.6° increase in the average temperature, and 10 additional days over 90°F as compared to current data. By 2050, this is projected to increase to 5.4° increase in the average temperature, and 17 additional days over 90°F. Note that the projected days over 90°F may not exceed this temperature for the entire duration of the day. A more comparable metric would be the number of hours exceeding 90°F, however, this projected metric is not available. The planned equipment will still perform as designed, although it will be less efficient as temperatures rise above 90°F.

The planned equipment is anticipated to have a life expectancy of 25-30 years, which will be between the

1 *Note that the project is striving to conform to the Tree Protection Ordinance's caliper replacement requirements. If full replacement on site is not feasible, the project will pay the required fee into the replacement fund. The trees that are planned will significantly increase canopy cover, even if calipers are not fully replaced.*

above projected 2030 and 2050 weather increases. At this time the code/ASHRAE will have updated their weather data to the current climate conditions for analysis in selection of the next equipment. At that time in the future, new equipment should be available that would have higher efficiencies to handle more extreme deltas in indoor and outdoor temperature. Future access to remove and install new equipment has been considered with double doors provided at each location required. The site will address the heat island effect with the use of high albedo roofing, site hard scape, and vegetation.

Regarding high winds, this is not a risk identified by RMAT. However, the project is subject to approximately 140 MPH design winds based on proximity to the coast. The project site is located on a rise in the middle of the peninsula, exposing it to ocean winds. Part of the City's response to making the site more resilient in order to locate the Resiliency Hub here is to underground the surrounding electrical infrastructure to protect it from high winds, debris, and damage. Other strategies include planting a row of trees along the North edge of Winslow, as caliper replacement, but also to act as a wind break for winter winds.

Green Schools Program - *(Rev)*

Green Building Rating System

The MSBA's Green Schools Program was updated in June 2023. The new policy requires all MSBA projects to register and achieve the Silver certification level of the most recent version of LEED BD+C Schools (LEED-S) or Verified certification for NE-CHPS. In addition, specific credits from each of the rating systems related to indoor air quality and materiel health are required. Lastly, the project must meet the minimum energy efficiency requirements of the 225 CMR 23 MA Stretch Energy Code. The district has selected to follow the LEED BD+C Schools rating system for this project. The City of Quincy is a Stretch code community.

The updated 2023 Green Schools policy provides incentives to a district to increase the energy efficiency and sustainability for new construction and major renovation/addition projects. For an additional 3% reimbursement, projects must meet the minimum energy efficiency requirements of the Massachusetts DOER "Opt-in Specialized" energy code. For an additional 1% reimbursement, projects must achieve a minimum of 5 of 7 points in the LEED indoor air quality category or 8 of 10 in the NE-CHPS indoor air quality category. This project is targeting both strategies for 4% additional reimbursement.

There are currently two compliance pathways for the Massachusetts DOER Stretch Energy Code, the TEDI Path or Certified Passive House Performance Path. Both pathways are intended by DOER to result in similar levels of performance and building system design. However, these two pathways utilize different energy modeling software, energy metrics, and prescriptive calculations to show compliance. Based on the different compliance models & calculations of the two pathways there is a possibility that the resultant minimum passing envelope performance may differ slightly between the paths. Based on the smaller number of precedent projects that the design team has worked on over the past 12 months, the team feels that the Certified Passive House Path will result in a more flexible envelope assemblies for the Squantum School project and thus equal or lower construction costs than the TEDI path. It is expected that if the project were to follow the TEDI path, differing modeling and prescriptive derating calculations may actually result in additional construction costs due to increasing insulation thickness and thermal breaks with no additional savings in energy use.

The Certified Passive House Path does have some minimal additional soft costs over the TEDI path, mainly associated with the construction verification. However, the intent of these construction phase verifications are intended to provide a built condition that is more thoroughly commissioned and verified to be able to meet the targeted energy performance,

and thus utility savings, once in operation.

The project team has initiated registration with PHIUS to facilitate project questions and review. The first round of PHIUS staff review for the project is anticipated after the DD WUFI model has been updated, in mid to late October.

LEED BD+C Schools Rating System

The current applicable LEED rating system is LEED v4 Building Design and Construction: Schools. Points from LEED v4.1 will be substituted as relevant to the project. For a LEED BD+C Schools Silver design, a project must satisfy all prerequisites and earn a minimum of 50 points of 110 points. The LEED Schools rating system is appropriate for buildings made up of core and ancillary learning spaces on K-12 school grounds. LEED BD+ C Schools certifications are awarded according to the following scale:

Certified 40—49 points, Silver 50—59 points, Gold 60—79 points, Platinum 80—110 points

The LEED Green Building Rating Systems address these topics:

- Integrative Progress
- Location and Transportation
- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation
- Regional Priorities

Optimize Energy Performance

The Massachusetts Department of Energy Resources (DOER) approved an update to the Stretch Energy Code which took affect July 1, 2023. This updated code included new thresholds. As Quincy is a Stretch Code Community, the project will meet the new updated Stretch Energy code as a required baseline. In addition, the project will comply with the Massachusetts Opt-in Specialized Code throught the All-electric Path for an additional 3% reimbursement.

In March 2022 the Quincy City Council issued a resolution that the project should consider a Net Zero build out. The preferred option is anticipated to be designed as a net zero design. Refer to the Energy Code Summary sheets in the Schematic Design Drawing Set for more information on energy code compliance paths and designed R values.

Additional Building Performance Goals

Through the sustainability workshop with the Working Group, several sustainable, wellness, and resilience goals were identified for the project. These include equity and universal design, healthy indoor environment, connection with nature and local ecology, and a low energy use building. The LEED Schools rating system will be used to help provide standards for meeting these goals. See attached for the preliminary LEED Schools Checklist.

21 June 2024

Ms. Carley Belfield
Project Coordinator
Massachusetts School Building Authority
40 Broad Street, Suite 50
Boston, MA 02109

Squantum School / 23008

City of Quincy
Squantum School
Quincy, Massachusetts

Dear Ms. Belfield,

This is an acknowledgement that the City of Quincy has identified a goal of 4% additional reimbursement from the MSBA High Efficiency Green School Program. As their Designer, I have submitted a completed LEED for Schools checklist showing all prerequisites and attempted credits, which will be further evaluated and developed in subsequent phases of the project to meet that goal. This is achieved via an additional 3% reimbursement for meeting the energy code requirements described in the Specialized Energy Code, and 1% for providing a minimum of 5 points in the LEED indoor air quality requirements.

The scope of work for this project will include construction elements and performance tasks to achieve that goal, and all subsequent documents, including but not limited to, specifications, drawings, and cost estimates will match the scope of work to the LEED requirements outlined in the submitted checklist.

Sincerely,

ARROWSTREET

Laurence Spang, AIA, LEED AP
Principal

10 POST OFFICE SQUARE SUITE 700N BOSTON MA 02109 / 617.623.5555 / www.arrowstreet.com

LEED v4.1 for BD+C: Schools

Project Checklist

all credits will follow v4.1 criteria unless otherwise noted

Project Name: Squantum School
Date: 5/23/2024
Prepared By: Arrowstreet

Y	?	N			
1			Credit 1	Integrative Process	1

7	1	7	**Location and Transportation**		**15**
		NA	Credit 1	LEED for Neighborhood Development Location	15
1			Credit 2	Sensitive Land Protection	1
	1	1	Credit 3	High Priority Site	2
2		3	Credit 4	Surrounding Density and Diverse Uses	5
2		2	Credit 5	Access to Quality Transit	4
		1	Credit 6	Bicycle Facilities	1
1			Credit 7	Reduced Parking Footprint	1
1			Credit 8	Electric Vehicles	1

5	4	4	**Sustainable Sites**		**12**
Y			Prereq 1	Construction Activity Pollution Prevention	Required
Y			Prereq 2	Environmental Site Assessment	Required
1			Credit 1	Site Assessment	1
		2	Credit 2	Protect or Restore Habitat	2
	1	1	Credit 3	Open Space	1
2	1		Credit 4	Rainwater Management	3
	2		Credit 5	Heat Island Reduction	2
1			Credit 6	Light Pollution Reduction	1
		1	Credit 7	Site Master Plan	1
1			Credit 8	Joint Use of Facilities	1

4	5	3	**Water Efficiency**		**12**
Y			Prereq 1	Outdoor Water Use Reduction	Required
Y			Prereq 2	Indoor Water Use Reduction	Required
Y			Prereq 3	Building-Level Water Metering	Required
1	1		Credit 1	Outdoor Water Use Reduction	2
2	2	3	Credit 2	Indoor Water Use Reduction	7
	2		Credit 3	Cooling Tower Water Use	2
1			Credit 4	Water Metering	1

23	6	2	**Energy and Atmosphere**		**31**
Y			Prereq 1	Fundamental Commissioning and Verification	Required
Y			Prereq 2	Minimum Energy Performance	Required
Y			Prereq 3	Building-Level Energy Metering	Required
Y			Prereq 4	Fundamental Refrigerant Management	Required
6			Credit 1	Enhanced Commissioning	6
16			Credit 2	v4 Optimize Energy Performance	16
1			Credit 3	Advanced Energy Metering	1
	2		Credit 4	Grid Harmonization	2
	3	2	Credit 5	Renewable Energy	5
	1		Credit 6	Enhanced Refrigerant Management	1

6	3	4	**Materials and Resources**		**13**
Y			Prereq 1	Storage and Collection of Recyclables	Required
Y			Prereq 2	Construction and Demolition Waste Management Planning	Required
2	1	2	Credit 1	Building Life-Cycle Impact Reduction	5
1		1	Credit 2	Building Product Disclosure and Optimization - Environmental Product Declarations	2
	1	1	Credit 3	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2			Credit 4	Building Product Disclosure and Optimization - Material Ingredients	2
1	1		Credit 5	Construction and Demolition Waste Management	2

9	5	2	**Indoor Environmental Quality**		**16**
Y			Prereq 1	Minimum Indoor Air Quality Performance	Required
Y			Prereq 2	Environmental Tobacco Smoke Control	Required
Y			Prereq 3	Minimum Acoustic Performance	Required
2			Credit 1	Enhanced Indoor Air Quality Strategies	2
2	1		Credit 2	Low-Emitting Materials	3
1			Credit 3	Construction Indoor Air Quality Management Plan	1
1	1		Credit 4	Indoor Air Quality Assessment	2
	1		Credit 5	Thermal Comfort	1
1		1	Credit 6	Interior Lighting	2
1	1	1	Credit 7	Daylight	3
1			Credit 8	Quality Views	1
	1		Credit 9	Acoustic Performance	1

6			**Innovation**		**6**
1			Credit 1.1	Exemplary Performance: EPDs	1
1			Credit 1.2	Pilot Credit: Assessment and Planning for Resilience (IPpc98)	1
1			Credit 1.3	Innovation: Design for Active Occupants	1
1			Credit 1.4	Pilot: Composting	1
1			Credit 1.5	Innovation: Green Building Education	1
1			Credit 2	LEED Accredited Professional	1

1	3		**Regional Priority**		**4**
1			Credit 1	Regional Priority: Optimize Energy Performance 8 of 16	1
	1		Credit 2	Regional Priority: Rainwater Management 2 of 3	1
	1		Credit 3	Regional Priority: Outdoor Water Use Reduction 2 of 2	1
	1		Credit 4	Regional Priority: Renewable Energy 2 of 5	1

62	27	22	**TOTALS**	Possible Points:	**110**

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

Building Structure

Foundations

The building substructure will consist of reinforced concrete walls and column pilasters constructed along the perimeter of the building and supported on continuous strip footings, interior isolated spread footings under interior steel columns, and first floor concrete slab-on-grade.

EXTERIOR FOUNDATIONS

The perimeter foundation walls will be 22" thick, including an 10" thick shelf, over continuous strip footings 2'-6" wide and 14" thick. The bottom of the strip footing will be 4'-0" minimum below finished grade. The footings will be stepped as required to accommodate sloping grade where required. A new 12" thick concrete frost wall will be constructed on the inside face of all the existing 1919 building's to -remain stone foundation walls with an L-shaped wall footing.

ELEVATOR PIT

Elevator pit construction will consist of a 12" thick, reinforced concrete walls and an 20" thick reinforced concrete foundation mat, with an integral sump pit. Waterstops will be provided at all construction and all exterior surfaces of the pit will be waterproofed. Elevator shafts will be 100% solid grouted, reinforced CMU masonry construction (8" thick).

INTERIOR CMU WALL FOUNDATIONS

Foundation for the interior CMU walls will be constructed over concrete slab-on-grade thickened to 15"x2' wide along the walls. See Schematic Drawings.

COLUMN FOUNDATIONS

Perimeter steel columns will be supported over concrete pilasters which in turn are supported on concrete footings. The footing dimensions will vary from 4'-6"x4'-6" x15" to 9'-6"x9'-6"x2'-3". See Schematic Drawings. The top of the column footings will be flush with top of the perimeter wall footings.

Interior steel columns will be supported over isolated concrete spread footings. The footing dimensions will vary from 5'-0"x5'-0" x15" to 9'-6"x9'-6"x2'-3". See Schematic Drawings. The top of the interior footings will be approximately 2'-0" from top of the concrete slab-on-grade.

SLABS ON- GRADE

The first floor slab will be concrete slab-on-grade of 5" thick. Slab-on-grade will be underlain by a heavy duty, 15 mil vapor barrier, such as Stego Wrap, continuous 3" thick rigid insulation and 12" of compacted sand and gravel, as noted in the preliminary geotechnical report. The 1919 building's existing first floor framing will be demolished and the existing crawl space will be filled with structural fill. The new first floor will be slab on grade.

REINFORCEMENT

Slab-on-grade will be reinforced with welded wire fabric. Saw-cut control joints will be at column grids and a maximum of 15' in each direction. Under the interior CMU walls the slab will be thickened to 15".

RADON SYSTEM

Two underslab radon gas collection pits are required. The vapor barrier is to be sealed to the interior side of the perimeter foundation wall and the compacted sand and gravel is to be ASTM Size #5 Aggregate or Equivalent.

SUBSTRUCUTRE RELATED ACTIVITIES

The construction site is anticipated to be a compact site with limited room for excavation at certain points. The use of underpinning, temporary sheeting, shoring or bracing is anticipated. The temporary condition elements shall be designed by the engineer retained by the general contractor.

Superstructure

The primary superstructure will consist of structural steel girders and beams supporting composite metal deck floors and metal roof deck for the majority of the building. The gym is steel open web joists and columns supporting steel roof deck. The existing 1919 building superstructure will be demolished except for the exterior brick façade. The demolished roof will be reframed with new steel beams, girders, columns, and metal roof deck. In the Media Center, the roof will

be framed with exposed specialty wood trusses supporting metal deck. As an alternate, the wood trusses would support T&G decking. The existing bricked façade will be tied back to the new superstructure and the slab on grade. An expansion joint will be provided between the reframed existing 1919 building and the new addition on all sides. A double firewall separates the gymnasium from the remainder of the building, with an expansion joint in the middle of the two firewalls.

COLUMNS
Typical columns will be wide flange steel sections or rectangular steel tube (HSS) at exposed to view locations in the gym and cafeteria. At exposed-to-view locations, steel columns are to be classified as Architecturally Exposed Structural Steel (A.E.S.S.) category 3.

LATERAL FORCE RESISTING SYSTEM
Lateral forces will typically be resisted by steel bracing. Brace members will be HSS members square or rectangular in sections. Reinforced CMU masonry shear walls contribute to lateral force resistance at the gymnasium.

FLOOR STRUCTURAL FRAME
Framing of elevated floor structure will consist of steel columns, steel girders, and steel beams. The typical girders will be steel wide flange sections (W-shapes) that span approximately 25' to 38'. See Schematic Drawings. Typical steel beams will be W-shapes spanning approximately 40' to 48' at 8' to 10' spacing.

FLOOR DECKS AND SLABS
The second floor slab will consist of 3.5" thick normal-weight concrete over 3" deep galvanized composite steel deck (6.5" total thickness). A minimum of one row of stud shear connectors, 3/4 inch in diameter and 5" long, will be welded over the top of each supporting beam at an interval of not more than one foot.

ROOF STRUCTURAL FRAME
Columns supporting the floor structure will extend to the roof level. Framing of roof structure will include steel girders, beam, and steel open web joists. The typical girders will be steel W-shapes that span approximately 25' to 38'. Typical steel beams will be W-shapes spanning approximately 40' to 48' at 8' to 10' spacing. Framing for the high roof over gymnasium will be 42" deep steel open web joists spanning 60'. Roof drainage will typically be provided by pitching the steel framing to low points located along the perimeter of the low roof. A part of the 1919 building roof will be reframed with glulam trusses.

ROOF DECKS
Typical roofs will be constructed of 3" deep 18 gage galvanized steel roof decks.

ACOUSTIC ROOF DECK
At the gymnasium the deck will be Type "N-cellular" acoustic deck with NRC rating of 0.9 or better.

Alternate Roof Deck:
At Media Center provide an alternate for heavy timber roof decking, architecturally exposed grade.

STRUCTURAL MATERIALS / ESTIMATE
For the purpose of Schematic Design quantity estimate, the structural steel weight is assumed to be a minimum of 15 PSF. This weight will include structural steel beams, girders, columns, framing for stairs and elevators, relieving angles, plates, hangers, diagonal bracings, etc., but exclude equipment screens, dunnage, shear studs, composite steel floor deck and steel roof deck.

ENABLING WORK

The substructure for the temporary boiler room and a temporary connector between the 1971 building and the temporary modular building consists of floor slabs and perimeter frost walls over strip footings. The frost wall will be a 12" thick concrete wall over 2'-6" wide and 14" thick strip footings. The floor slab will be a 5" thick slab on grade.

The superstructure will consist of a wood-framed roof supported on load bearing stud walls for the temporary boiler room, and a temporary connector between the 1971 building and the temporary

modular building. The roof will be framed with 2x12 rafters spaced at 16" OC, and topped with ¾" thick plywood sheathing. The wall system will be conventional 6" stud walls. All walls will include one sheet of 1/2" thick plywood sheathing.

Mechanical

The following is the HVAC system narrative, which defines the scope of work and capacities of the HVAC system as well as the Basis of Design. The HVAC systems shall be designed and constructed for LEED for Schools v4 where indicated on this narrative.

1. CODES

All work installed under Division 230000 shall comply with the Commonwealth of Massachusetts Adopted Building Codes (IBC, IMC, IECC latest Adopted Editions with MA amendments), Massachusetts Municipal Stretch Energy Code 2023, and all local, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

The work of Division 230000 is described within the narrative report. The HVAC project scope of work shall consist of providing new HVAC equipment and systems as described here within. All new work shall consist of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Heating, Ventilating and Air Conditioning work and all items incidental thereto, including commissioning and testing.

3. BASIS OF DESIGN: (MASS CODE)

Project weather and Code temperature values are listed herein based on weather data values as determined from ASHRAE weather data tables and the International Energy Conservation Code.

Outside: Winter 7 deg. F, Summer 91 deg. F DB 74 deg. F WB

Inside: 70 deg. F +/- 2 deg. F for Heating, 75 deg. F +/- 2 deg. F (55% RH) for Air-conditioned areas (Administration, Nurses Office, Guidance, Cafeteria). 78-80 deg. F +/- 2 deg. F (55% RH) for partial Air-conditioned areas (Classrooms, Teacher Support, Gym). N

Unoccupied temperature setback will be provided (55 deg. F heating (adj.), 85 deg. F cooling (adj.).

Outside air shall be provided at the rate in accordance with ASHRAE Standard 62.1 and the International Mechanical Code (latest adopted editions) as a minimum. All occupied areas will be designed to maintain 800 PPM carbon dioxide maximum.

4. HVAC SYSTEM Description – Geothermal Water Source Heat Pump Hot Water Heating and VAV Displacement System

A. General: Provide a Geothermal Wellfield serving a WSHP (Water Source Heat Pump HW Generator) for Perimeter HW Heating and VAV Energy Recovery Air Handling Units with WSHP w/ Displacement Ventilation

B. Ground Source Wellfield: A new closed loop geothermal wellfield shall be provided to serve the building HVAC system and domestic hot water heating system. The final number and depth of wells shall be determined during later design stages by a geothermal wellfield engineer based on site conditions and cost considerations. A preliminary estimate based upon a preliminary peak heat load of 200 tons would require forty-four (44) 500 ft. deep 1-1/4" U-bend closed loop vertical wells that provide a capacity of approximately 2.5 to 3.0 tons and 7.5-9.0 gpm each. Each well should be 20-25 ft from each other, and a minimum of 10 feet from the building or other utility lines. The ground source water distribution system shall serve two different loops. Final quantity, depth and type of wells shall be determined by a ground-source well field engineer. Each groundwater loop shall be provided with a pump set arranged in a primary-standby manner and each pump shall be equipped with VFDs or EC motors. One loop shall

serve a Hot Water Heating plant loop and the other loop shall serve the building ventilation air handling heat pump units loop. The ground water piping loops located within the building shall be insulated.

C. Ground source to Hot Water Heating Plant: Provide new electric high efficiency modular (non closed coupled) Ground water source to Hydronic Hot Water Heat Pump Generator units that shall be located indoors with a mechanical room area. New hot water pumps sets shall be provided and arranged in a primary standby manner to distribute hot water to/from the heat pump units to the building terminal heating equipment via a new insulated hot water piping distribution loop. The ground water and hot water system distribution pumps shall be provided with EC motors or VFDs. It is estimated that a total of (3) hot water heat pump generators, each with a nominal capacity of 50 tons, shall be provided to meet the terminal heating equipment load.

D. Terminal Heating Equipment: New insulated hot water piping shall be distributed from the plant to a combination of terminal hot water heating equipment. The majority of occupied classroom and office areas shall be provided with finned tube radiation heating (Renovation Areas) or radiant ceiling heating panels (Addition/New Construction). Entry areas and stairwells shall be provided with cabinet unit heaters. Utility rooms and storage areas with exterior exposures shall be provided with unit heaters. Corridors and areas with extensive exterior exposure areas shall be provided with fin tube radiation heating or radiant ceiling heating panels.

E. Ventilation Systems: Provide new indoor mounted and roof mounted air handling units as described below. The air handling units (AHUs) shall be equipped with supply and return/ exhaust fans equipped with VFDs or EC motors, Ground water to Refrigerant heat exchanger and heat pump section, MERV-14 final filter, MERV-8 pre and exhaust filters, economizer control, recirculation air dampers, static pressure control, and demand control ventilation. There shall be separate AHUs as described below. The Classroom areas shall be served by multiple AHUs that shall be designed based on heating/ cooling load exposures. Where possible the indoor AHUs units shall be connected to common outdoor air and exhaust air duct systems to minimize building envelope penetration.

   Preliminary AHU Quantities, zones and airflow capacities are as follows:

   » AHU-1, 2 & 3 – Classrooms – Indoor mounted air handling units, each at an estimated capacity of 8,000 CFM, 25 tons heating and 36 tons cooling.

   » AHU-4 – Media Center – Indoor mounted air handling unit with an estimated capacity of 3,000 CFM, 8 tons heating and 11 tons cooling.

   » AHU-5 Cafeteria/Kitchen – Rooftop mounted air handling unit with an estimated capacity of 6,500 CFM, 18 tons heating and 23 tons cooling.

   » AHU-6 Gymnasium – Rooftop mounted air handling unit with an estimated capacity of 6,500 CFM, 18 tons heating and 23 tons cooling.

   » AHU-7 Admin/Music Classroom – Rooftop mounted air handling unit with an estimated capacity of 6,000 CFM, 16 tons heating and 21 tons cooling.

   » MAU-1 Kitchen (Make-Up Air) – Rooftop mounted makeup air unit with an estimated capacity of 2,500 CFM and 14-ton heating.

F. The AHUs shall be designed to provide air conditioning or partial air conditioning (dehumidification) to the majority of building areas. The Administration, Media Center and Cafeterias areas shall be provided with “full” air conditioning to maintain 75 deg F on a design cooling day, whereas the Gym and Classroom and related Teacher support areas shall be designed for partial air conditioning to maintain a temperature of 78-80 deg F on a design cooling day.

G. It is proposed that building addition and new construction Classrooms and adjacent teacher support and circulation areas, Administration Areas, Cafeteria and Gym Areas are served by a displacement ventilation air system which consists of low wall supply displacement air diffusers and ceiling mounted return/exhaust air registers. Spaces within renovated portions of the existing building would be provided with over-head delivery ventilation systems in-lieu of displacement, as the renovation envelope improvements and the existing special availability may not support the use of a displacement system.

H. Code required exhaust for the majority of building areas, including toilet rooms, shall be provided through the AHUs.

I. Dedicated exhaust air fan systems shall be provided for Kitchen exhaust air (if provided) and Janitor's closet areas.

J. New insulated galvanized sheetmetal ductwork shall be provided to connect the AHUs' supply and return ductwork to each space. New VAV (variable air volume) terminal boxes with temperature and demand control ventilation shall be provided for each classroom, teacher support room and the office areas.

K. Attic Spaces: Attic spaces shall be provided with exhaust fans tied to humidistats, which shall engage the associated exhaust fan as needed to maintain a maximum relative humidity of 60% RH. Hot water unit heaters shall also be provided in the attic mechanical spaces to maintain a minimum of 50°F for freeze protection.

L. Lobby, Corridor, and Entry Way Heating: New hot water convectors, cabinet unit heaters, and fin tube radiation heating equipment shall be installed to provide heating to building entry way and stairwell areas. Corridors shall be ventilated from adjacent air handling unit systems. Main Corridor and Lobby areas shall be heated and dehumidified by the displacement ventilation systems. Hot water air curtains shall also be provided at the two doors to the outdoor courtyard, per code requirements.

M. Utility Areas: Utility areas will be provided with exhaust air fan systems for ventilation and will typically be heated with horizontal type ceiling suspended hot water unit heaters.

The Main Electric Rooms, IDF rooms and elevator machine rooms will be air conditioned by ducted water source heat pump terminal units.

N. Domestic hot water heating systems shall be pre-heated by the building hot water heating loop and a ground source heat pump system shall be utilized to provide additional heating of DHW heating. The DHW storage tank heat exchangers and heat pumps shall be by Plumbing and a geothermal to DHW pre-heat heat exchanger shall be provided by HVAC.

O. A new direct digital automatic temperature control (ATC) and building energy management system (BMS) shall be provided. The new ATC/ BMS system shall be web accessible, include energy metering, and shall be capable of being integrated into the City-wide energy management system.

P. Testing, Adjusting, Balancing & Commissioning: All new HVAC systems shall be tested, adjusted, balanced and commissioned as art of the project scope.

Q. Automatic Temperature Controls – Building Energy Management System: A new DDC (direct digital control) Automatic Temperature Control and Building Energy Management System shall be installed to control and monitor building HVAC systems. Energy metering shall be installed to monitor the energy usage of building HVAC systems and utilities (electric, water). The new DDC/ATC system shall be a BACNet open protocol system that is capable of being integrated into the City Wide Central energy management system.

5. DEMOLITION:

A. Demolish and remove all existing HVAC systems and equipment. Note that the City of Quincy has

already demolished the underground fuel oil tank that previously served the steam heating plant, and shall therefore be excluded from the demolition scope for this project.

B. Blank off & seal all existing unit ventilator outdoor air intake grilles. The building the envelope shall be restored by others in each of these locations to maintain code-required thermal heat transfer resistance.

6. TEMPORARY HEATING OF 1971 BUILDING SCOPE OF WORK:

A. Hot Water Plant: A temporary or rental heating hot water electric boiler shall be provided to back feed the existing hot water heating system. The electric boiler size shall be approximately 350 KW and shall provide 200 deg F HWS when Outdoor air temperature is 0 deg F. A temporary prefabricated boiler enclosure shall be provided. Hot water pumps (primary & standby), expansion tank and air separator accessories, and boiler plant controls shall be provided.

B. Hot Water Piping: The existing 4" hot water supply and return piping should be valved and capped at an accessible location where the existing lines can be removed, and new temporary HWS&R lines can connect to the existing lines. Existing lines should be internally cleaned and flushed. Temporary insulated 4" size hot water supply and return piping shall be provided to connect the temporary or rental boil plant to the existing hot water supply lines. New and existing hot water lines should be filled and vented.

C. Testing & Balancing: Existing heating units shall be tested and balanced for proper hot water flow.

D. Electrical: Provided temporary electric power wiring for the temporary or rental boiler plant equipment (boilers, pumps, controls, etc.).

E. Temporary ATC Controls: Temporary heating and ventilation system controls shall be provided for the 1971 building.

7. TESTING REQUIREMENTS:

A. The Mechanical Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:
   - » Heat pump chiller plant system
   - » Condenser (Ground-Source) water plant system
   - » Back up boiler plant
   - » Air handling unit systems including all rooftop units, indoor air handling systems and exhaust air systems
   - » Terminal heating and cooling devices
   - » Variable Refrigerant Flow and Ductless AC Systems
   - » Automatic temperature control and building energy management system

B. Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

8. OPERATION MANUALS AND MAINTENANCE MANUALS

When the project is completed, the Mechanical Contractor shall provide operation and maintenance manuals to the owner.

9. RECORD DRAWINGS AND CONTROL DOCUMENTS

When the project is completed, an as-built set of drawings, showing all mechanical system requirements from contract and addendum items will be provided to the owner.

10. COMMISSIONING

The project shall be commissioned per the Commissioning Section of the specifications.

Life Cycle Cost Analysis

The Design Team met with the District and City building maintenance and operations staff to review various system options and potential configurations. A Ground Source Heat Pump (GSHP) system was of interest to the district due to the energy goals of the project, the much quieter operation in comparison to

Air Source Heat Pumps, and the current incentives available for these systems. Three variations of GSHP systems were compared with to a Variable Refrigerant Flow (VRF) system (Option 2) in an initial LCCA. The three GSHP systems can be summarized as:

- Option 1: Geothermal wellfield serves a Water Source Heat Pump Hot Water Generator for perimeter Hot Water heating. A second loop from the wellfield serves VAV Energy Recovery Air Handling Units with a Water Source Heat Pump, these units provide displacement ventilation and supplementary cooling.
- Option 3: Geothermal wellfield serves a Closed Coupled Hydronic Heat Recovery Heat Pump Chiller/Heat plant that provides hot and chilled water for perimeter radiant panels and fan coils in the RTU for displacement ventilation.
- Option 4: Geothermal wellfield serves a Non Closed Coupled Hydronic Heat Recovery Heat Pump Chiller/Heat plant that provides hot and chilled water for perimeter radiant panels and fan coils in the RTU for displacement ventilation.

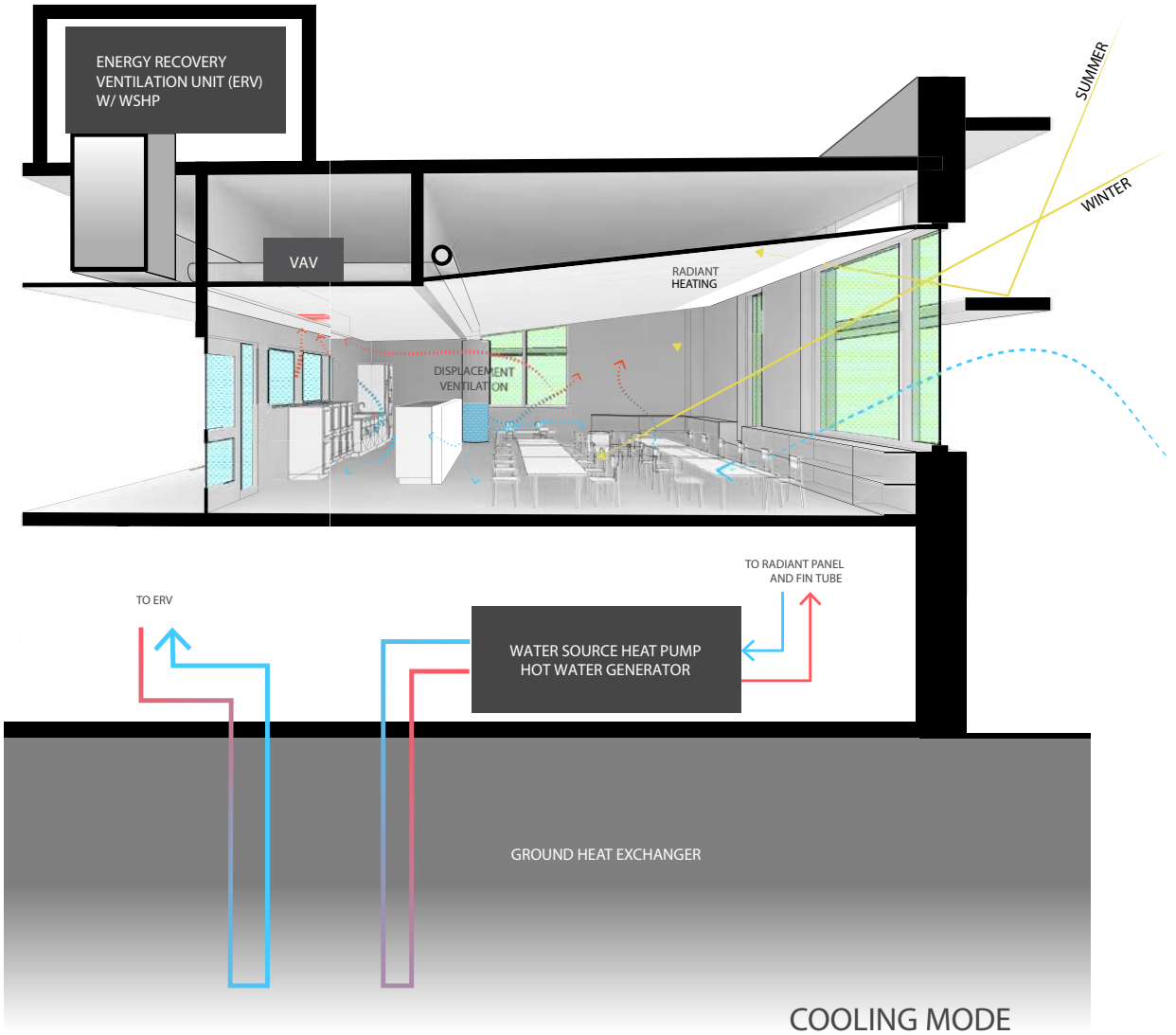
Options 3 & 4 also were studied with variations that eliminated the chilled water loop and increased the set point of 78°F. Refer to technical and architectural system diagrams on the following pages. Note that the required mechanical room size for each option varies significantly.

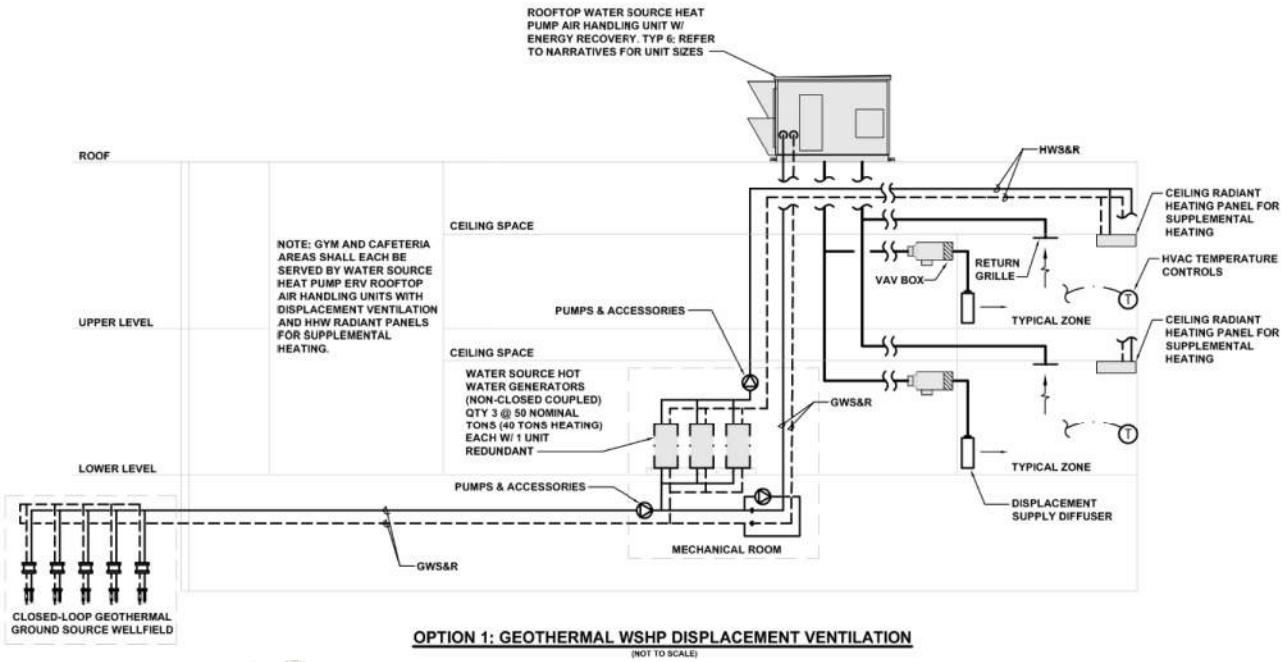
The District's preferred Option 1 was the baseline to compare the other options to. Option 2 represented the lowest life cycle cost for the 50 year study period and an instant payback when compared to Option 1. However, this system does have higher annual maintenance and operations costs. Option 3 is the only other option with a payback when compared to Option 1, with a payback of 23 years. With state and federal incentives, this would decrease to a 16 year payback.

Despite the fact that Option 3 had a lower overall life cycle cost than Option 1, the District felt strongly that Option 1 would be a preferred system to maintain due to the fact that it eliminated chilled water piping from the system and that the cooling and primary heating systems are independent of each other for down time. Once this was determined, a 30 year Net Zero LCCA was conducted, looking at just Options 1 & 2. The baseline was revered with Option 2 as the baseline. In addition to the costs and savings captured in the initial LCCA, this assessment includes savings and revenue from solar and GSHP systems and the cash flow analysis vs the project financing. High, medium and low scenarios are developed to show the range of potential savings and costs. Without any outside incentives, the Option 1 GSHP system could have a 30 year savings of between $1.2 million and $800,000 over the Option 2 VRF system with a payback year between 1 and 7 years. When MassSave, IRA and MSBA incentives are accounted for, payback and savings over Option 2 start immediately in Year 1.

Refer to Appendix K. HVAC Energy Comparison and Appendix L. Economic Engineering Analysis.

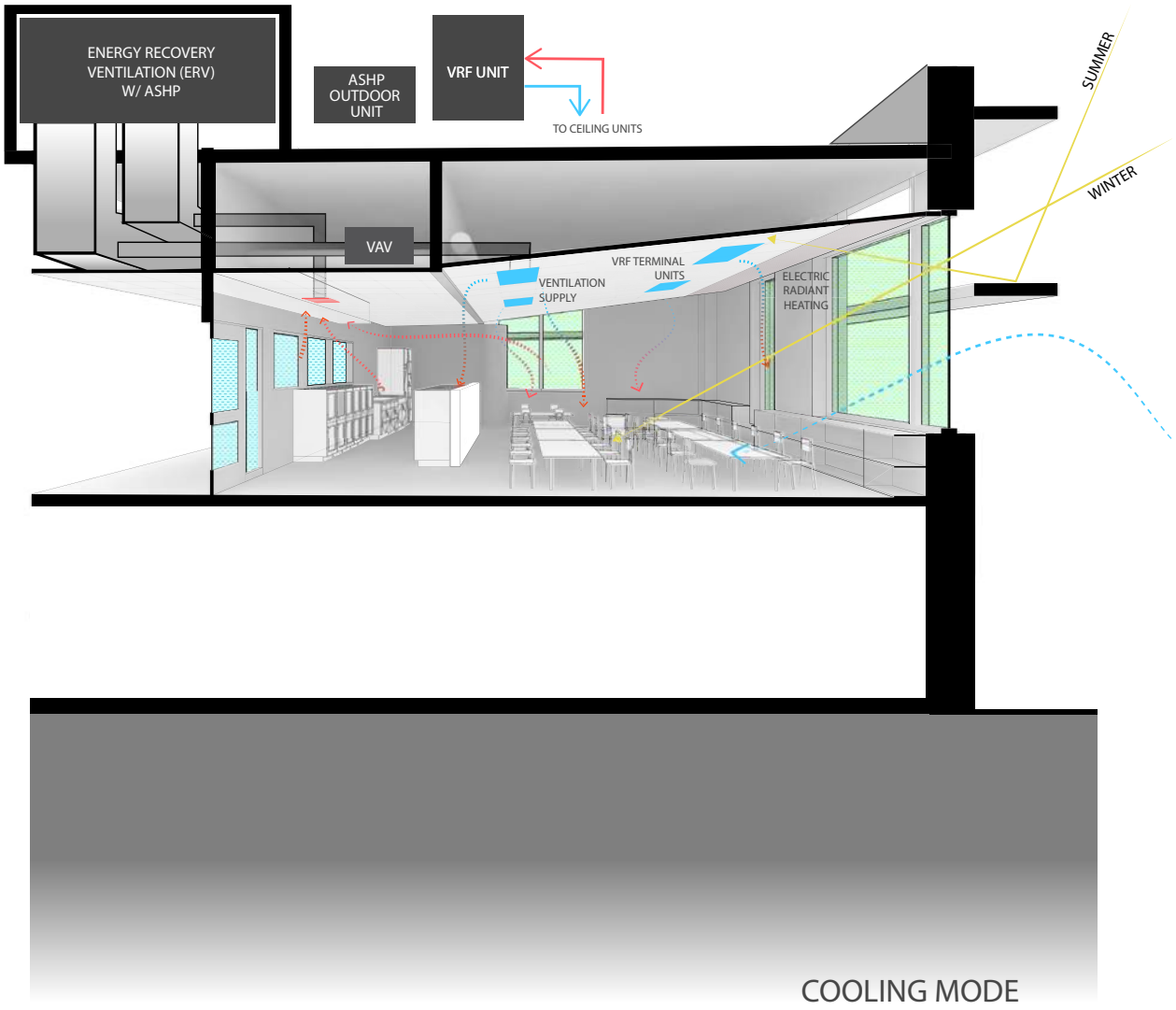
Option 1

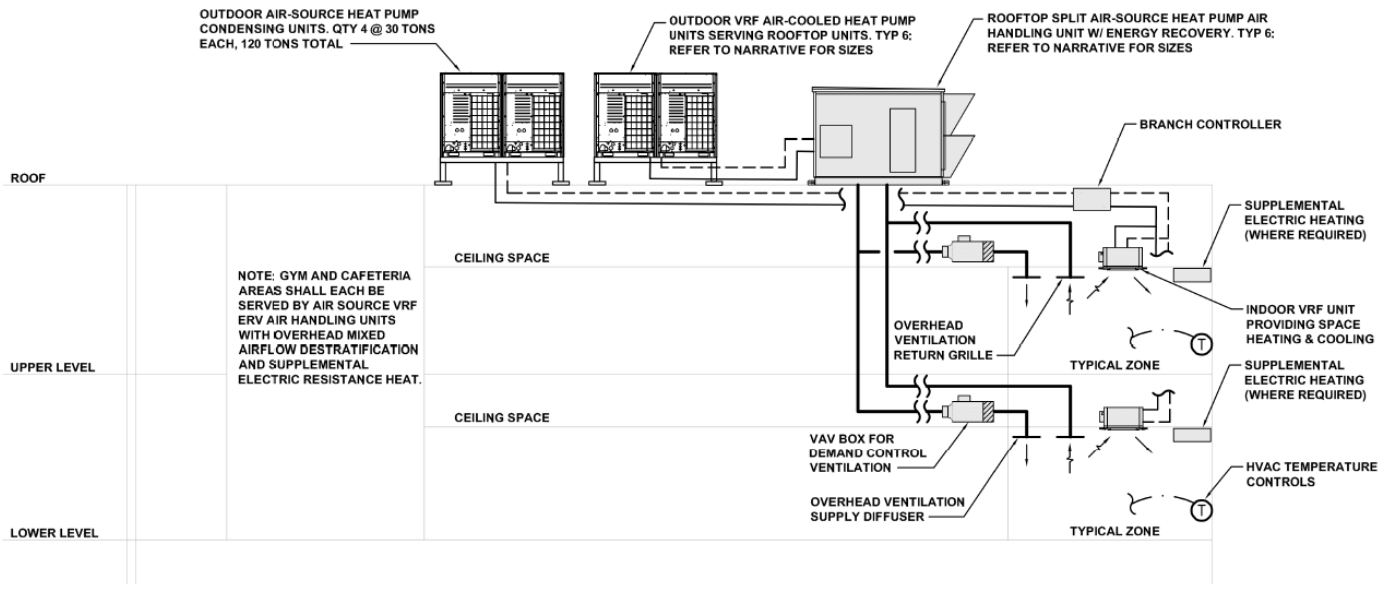




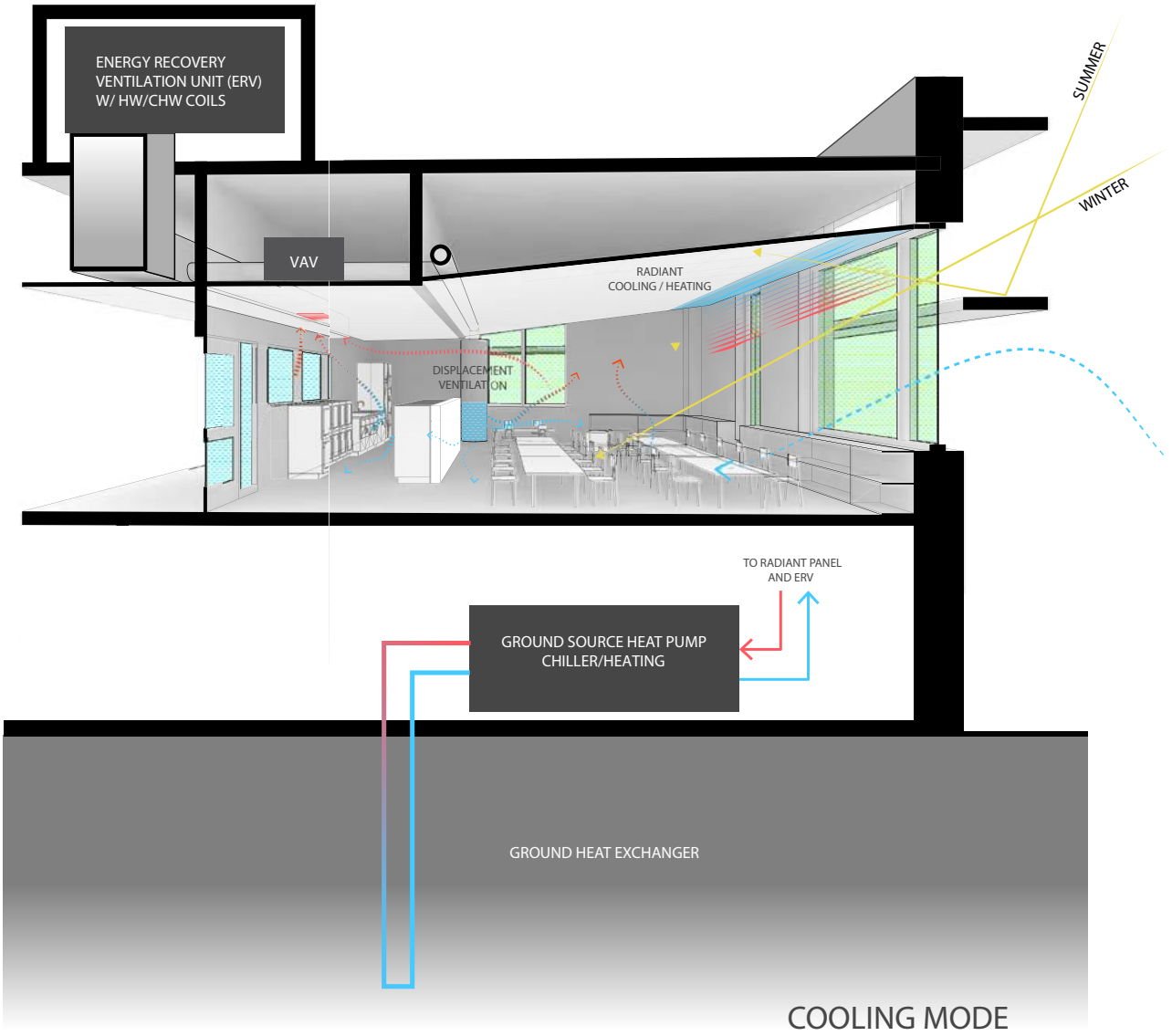
OPTION 1: GEOTHERMAL WSHP DISPLACEMENT VENTILATION
(NOT TO SCALE)

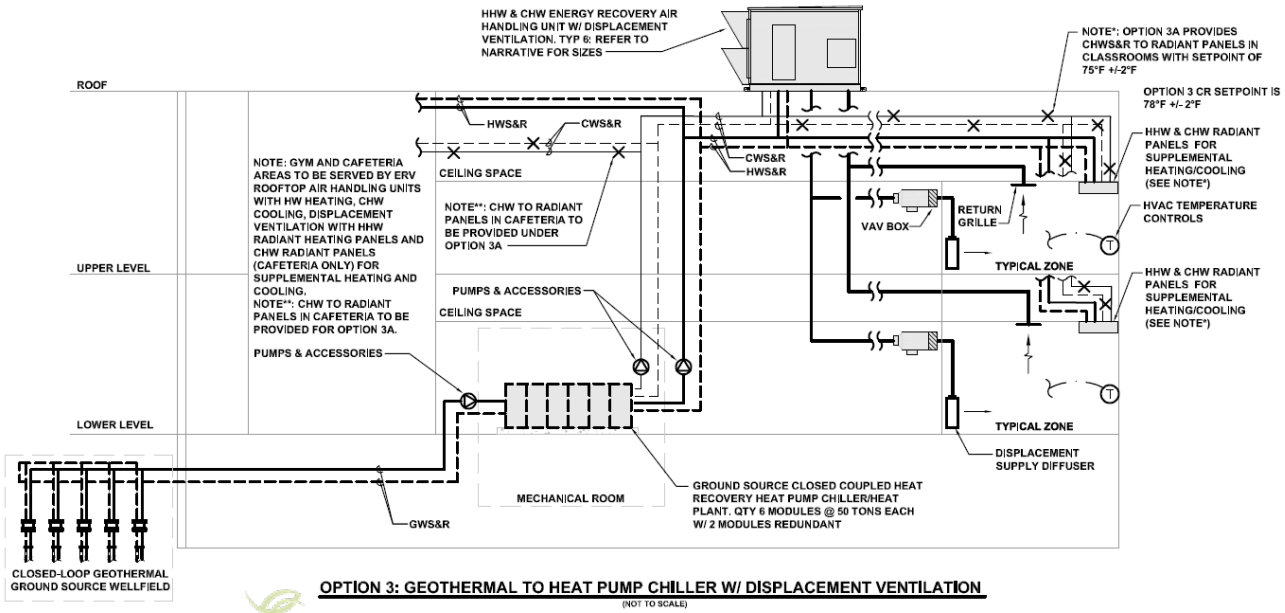
Option 2


ENERGY RECOVERY VENTILATION (ERV) W/ ASHP
ASHP OUTDOOR UNIT
VRF UNIT
TO CEILING UNITS
SUMMER
WINTER
VAV
VRF TERMINAL UNITS
VENTILATION SUPPLY
ELECTRIC RADIANT HEATING
COOLING MODE

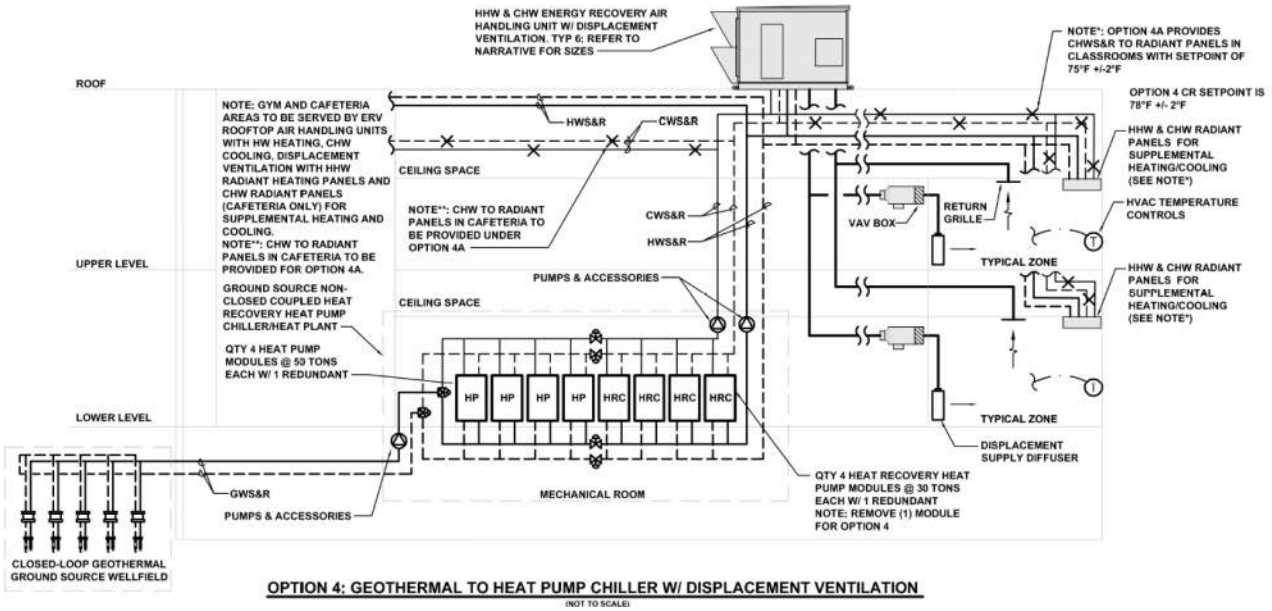

OUTDOOR AIR-SOURCE HEAT PUMP CONDENSING UNITS. QTY 4 @ 30 TONS EACH, 120 TONS TOTAL
OUTDOOR VRF AIR-COOLED HEAT PUMP UNITS SERVING ROOFTOP UNITS. TYP 6; REFER TO NARRATIVE FOR SIZES
ROOFTOP SPLIT AIR-SOURCE HEAT PUMP AIR HANDLING UNIT W/ ENERGY RECOVERY. TYP 6; REFER TO NARRATIVE FOR SIZES
BRANCH CONTROLLER
ROOF
SUPPLEMENTAL ELECTRIC HEATING (WHERE REQUIRED)
CEILING SPACE
NOTE: GYM AND CAFETERIA AREAS SHALL EACH BE SERVED BY AIR SOURCE VRF ERV AIR HANDLING UNITS WITH OVERHEAD MIXED AIRFLOW DESTRATIFICATION AND SUPPLEMENTAL ELECTRIC RESISTANCE HEAT.
INDOOR VRF UNIT PROVIDING SPACE HEATING & COOLING
OVERHEAD VENTILATION RETURN GRILLE
TYPICAL ZONE
UPPER LEVEL
SUPPLEMENTAL ELECTRIC HEATING (WHERE REQUIRED)
CEILING SPACE
VAV BOX FOR DEMAND CONTROL VENTILATION
HVAC TEMPERATURE CONTROLS
OVERHEAD VENTILATION SUPPLY DIFFUSER
TYPICAL ZONE
LOWER LEVEL

Option 3 & 4





OPTION 3: GEOTHERMAL TO HEAT PUMP CHILLER W/ DISPLACEMENT VENTILATION
(NOT TO SCALE)



OPTION 4: GEOTHERMAL TO HEAT PUMP CHILLER W/ DISPLACEMENT VENTILATION

(NOT TO SCALE)

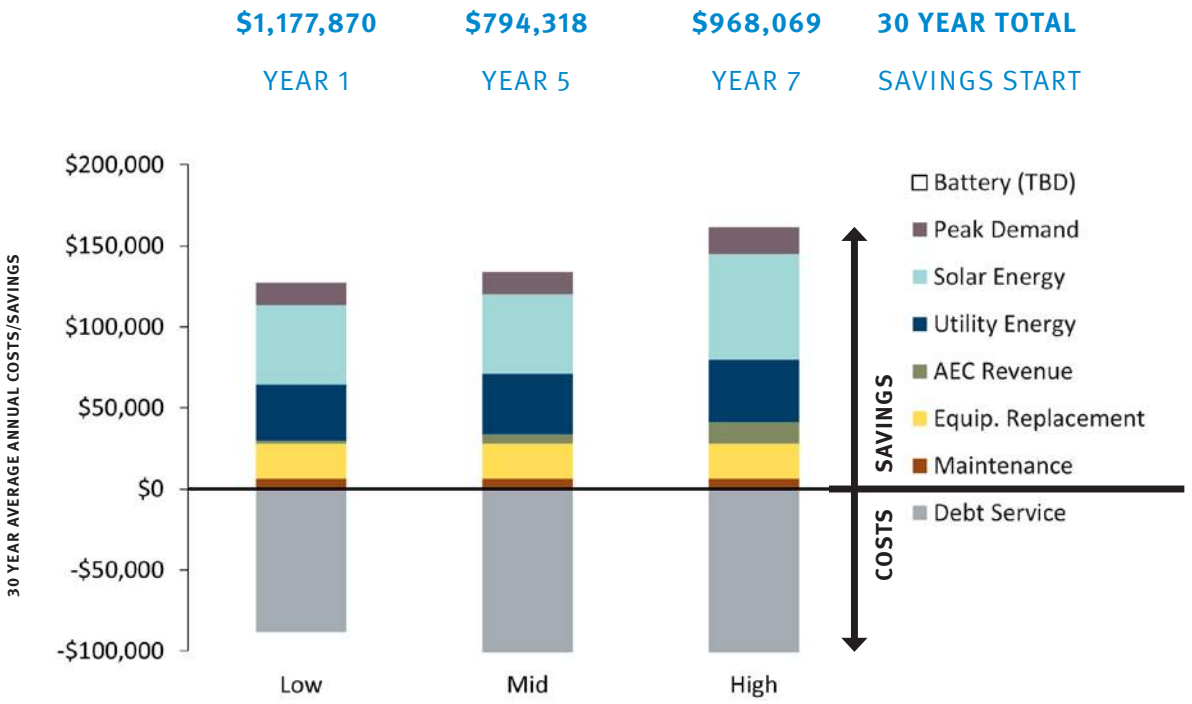
		Net Zero Potential	Passive House Potential	EUI kBtu/sf/yr	Indoor Air Quality	Thermal Comfort	Acoustics	Ease of Maintenance	Annual Energy Cost $/sf	Annual Maintenance Cost $/sf	Capital Investment Cost $/sf	Payback w/o Incentives	Capital Investment w/ Incentive $/sf	Payback w/ Incentives	Life-Cycle Cost Savings
1	**Ground Source Heat Pump HW Generator**	✓	✓	24.9	●	○	●	◔	$1.28	$0.67	$113	-	$74	-	-
2	**ASHP VRF**		✓	27.1	○	◌	○	◌	$1.41	$0.75	$88	0	$85	no	◌
3	**Ground Source Heat Pump Chiller/Heating closed-coupled**	✓	✓	24	●	○	●	●	$1.24	$0.66	$114	23	$75	16	●
3A	**with full cooling in classrooms**	✓	✓	24.4	●	●	●	●	$1.26	$0.66	$121	no	$80	no	○
4	**Ground Source Heat Pump Chiller/Heating non closed-coupled**	✓	✓	24	●	○	●	●	$1.24	$0.66	$116	no	$77	no	○
4A	**with full cooling in classrooms**	✓	✓	24.4	●	●	●	●	$1.26	$0.66	$124	no	$83	no	○

Scale

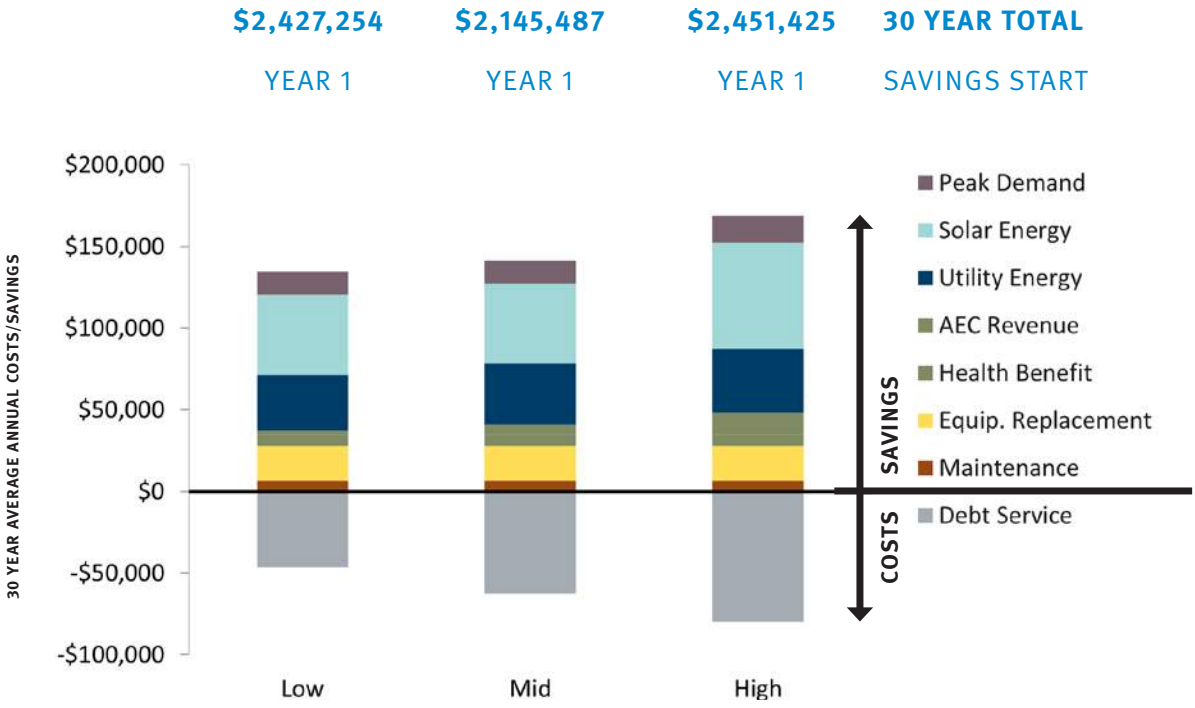
● ○ ◌

Best ← → Good

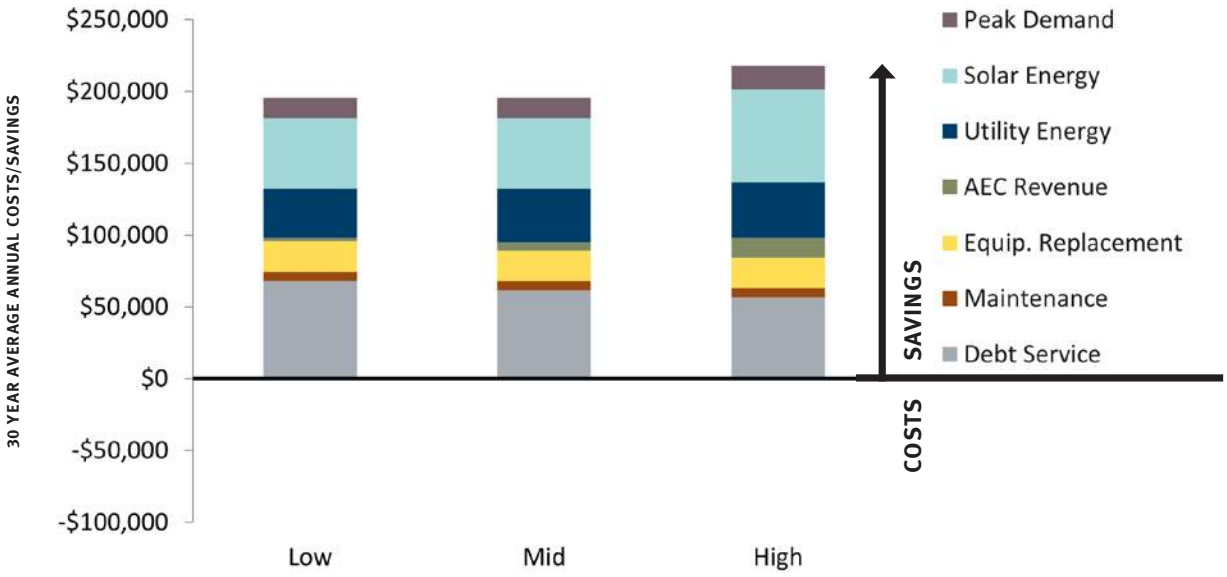
NET ZERO LCCA
WITHOUT INCENTIVES



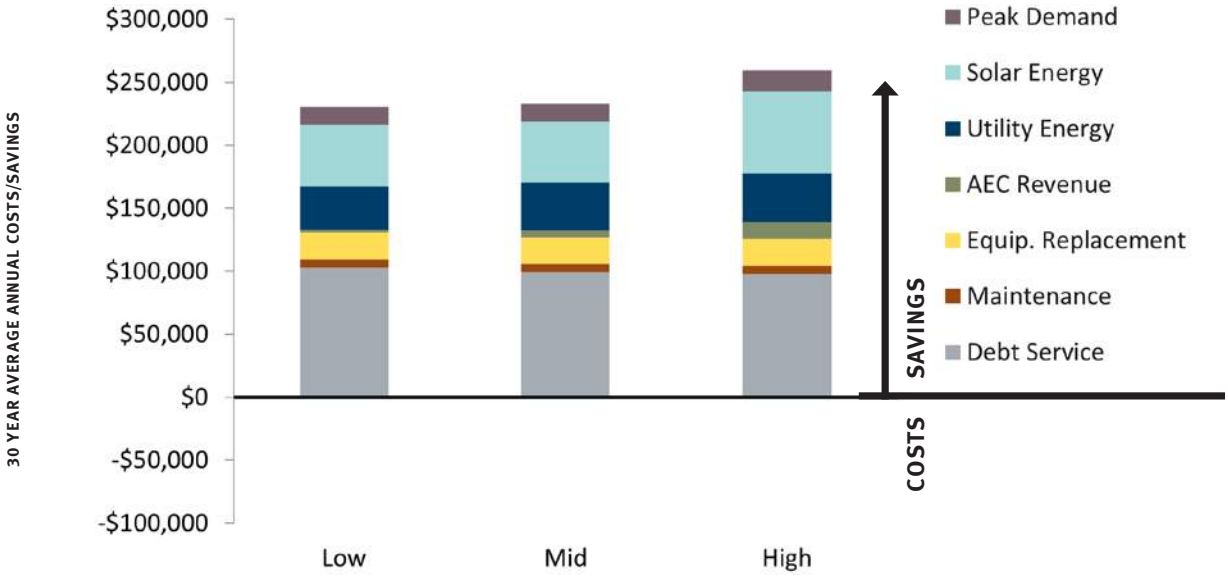
NET ZERO LCCA
WITH MASS SAVE INCENTIVES



NET ZERO LCCA
WITH MASS SAVE & IRA INCENTIVES



NET ZERO LCCA
WITH MASS SAVE & IRA INCENTIVES AND MSBA GRANT



	NO INCENTIVES	MASS SAVE	MASS SAVE & IRA	MASS SAVE & IRA & MSBA
ANNUAL SAVINGS YR 1-30	$39,262	$80,908	$195,602	$230,475
ANNUAL SAVINGS YR 30-50	$127,521	$127,521	$127,521	$127,521
SAVINGS START YR	16	1	1	1

Plumbing

The following is the Plumbing system narrative, which defines the scope of work and capacities of the Plumbing system as well as the Basis of Design. The Plumbing Systems shall be designed and constructed for LEED v4 where indicated on this narrative.

1. CODES

C. All work installed under Section 220000 shall comply with the MA Building Code, MA Plumbing Code and all state, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Plumbing work and all items incidental thereto, including commissioning and testing.

3. GENERAL

A. The Plumbing Systems that will serve the new building are cold water, hot water, sanitary waste and vent system, grease waste system, storm drain system, and natural gas.

B. The new building will be serviced by Municipal water and Municipal sewer system.

C. All Plumbing in the building will conform to Accessibility Codes and to Water Conserving sections of the Plumbing Code.

4. PROJECT PHASING

A. The 1971 Building shall remain during the construction of the new building. The 1971 building has a dedicated 4-inch domestic water service and 6-inch sanitary service that shall be maintained during the construction of the new building.

B. Existing plumbing fixtures in the 1971 building shall remain. A plumbing variance for quantity of toilet room plumbing fixtures will be sought from the State Plumbing Board.

C. The project scope shall provide a new portable wash sink in temporary cafeteria in the 1971 building.

D. A new modular classroom building will be provided during construction. The new modular classroom building will be provided with a new 2-inch domestic water service supplied from the existing water main in Standish Road.

5. DRAINAGE SYSTEM

A. Soil, Waste, and Vent piping system is provided to connect to all fixtures and equipment. System runs from 10 feet outside building and terminates with stack vents through the roof.

B. A separate Grease Waste System starting with connection to an exterior concrete grease interceptor running thru the kitchen and servery area fixtures and terminating with a vent terminal through the roof. Point of use grease interceptors are to be provided at designated kitchen fixtures. The grease interceptor is provided under Division 33 scope.

C. Storm Drainage system is provided to drain all roofs with roof drains piped through the building to a point 10 feet outside the building.

D. Drainage system piping will be service weight cast iron piping; hub and spigot with gaskets for below grade; no hub with gaskets, bands and clamps for above grade 2 in. and larger. Waste and vent piping 1-1/2 in. and smaller will be type 'L' copper.

6. WATER SYSTEM

A. A new 4-inch domestic water service from the municipal water system will be provided. A meter and backflow preventer, if required, will be provided.

B. Cold water distribution main is provided. Non-freeze wall hydrants with integral back flow preventers are provided along the exterior of the building.

C. Domestic hot water heating for Kitchen will be provided with a tank type electric water heater; 36 kW element with 400 gallons of storage. System is to be equipped with thermostatically controlled mixing devices to control water temperature to the fixtures. A pump will re-circulate hot water from the piping system. The water temperature will be 120 deg. to serve general use fixtures.

D. Domestic hot water heating for bathroom lavatories classroom/staff sinks shall be provided with instantaneous electric point of use water heaters.

E. Water piping will be type 'L' copper with wrot copper sweat fittings, silver solder or press-fit system. All piping will be insulated with 1 in. thick high-density fiberglass.

7. FIXTURES LEED v4

A. Furnish and install all fixtures, including supports, connections, fittings, and any incidentals to make a complete installation.

B. Fixtures shall bear the manufacturer's guaranteed label trademark indicating first quality. All acid resisting enameled ware shall bear the manufacturer's symbol signifying acid resisting material.

C. Vitreous china and acid resisting enameled fixtures, including stops, supplies and traps shall be of one manufacturer by Kohler, American Standard, or Eljer, or equal. Supports shall be Zurn, Smith, Josam, or equal. All fixtures shall be white. Faucets shall be Speakman, Chicago, or equal.

D. Fixtures shall be as scheduled on drawings.

» Water Closet: High efficiency toilet, 1.28 gallon per flush, wall hung, vitreous china, siphon jet. Manually operated 1.28 gallon per flush-flush valve.

» Urinal: High efficiency 0.13 gallon per flush urinal, wall hung, vitreous china. Manually operated 0.13 gallon per flush-flush valve.

» Lavatory: Wall hung/countertop ADA lavatory with 0.35 GPM metering mixing faucet.

» Sink: MAAB/ADA stainless steel countertop sink with gooseneck faucet and 0.5 GPM aerator.

» Drinking Fountain: Barrier free hi-low wall mounted electric water cooler, stainless steel basin with bottle filling stations.

» Janitor Sink: 24 x 24 x 10 Terrazo mop receptor Stern-Williams or equal.

8. DRAINS

A. Drains are cast iron, caulked outlets, nickaloy strainers, and in waterproofed areas and roofs shall have galvanized iron clamping rings with 6 lb. lead flashings to bond 9 in. in all directions. Drains shall be Smith, Zurn, Josam, or equal.

9. VALVES

A. Locate all valves so as to isolate all parts of the system. Shutoff valves 3 in. and smaller shall be ball valves, solder end or screwed, Apollo, or equal.

10. INSULATION

A. All water piping shall be insulated with snap-on fiberglass insulation Type ASJ-SSL, equal to Johns Manville Micro-Lok HP.

11. CLEANOUTS

A. Cleanouts shall be full size up to 4 in. threaded bronze plugs located as indicated on the drawings and/or where required in soil and waste pipes.

12. ACCESS DOORS

A. Furnish access doors for access to all concealed parts of the plumbing system that require accessibility. Coordinate types and locations with the Architect.

Fire Protection

The following is the Fire Protection system narrative, which defines the scope of work and capacities of the Fire Protection system, as well as, the Basis of Design.

1. CODES

A. All work installed under Section 210000 shall comply with the MA Building Code and all state, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Fire Protection work and all items incidental thereto, including commissioning and testing.

3. GENERAL

A. In accordance with the provisions of the Massachusetts Building Code/Massachusetts General Law, the building must be protected with an automatic sprinkler system.

4. DESCRIPTION

A. The new building will be served by a new 6-inch fire service, double check valve assembly, wet alarm valve complete with electric bell, and fire department connection meeting local thread standards.

B. The system will be an automatic sprinkler system with control valve assemblies to limit the sprinkler area controlled to less than 52,000 s.f. as required by NFPA 13-2013.

C. Control valve assemblies shall consist of a supervised shutoff valve, check valve, flow switch and test connection with drain. Standpipes meeting the requirements of NFPA 14-2013 shall be provided in the Stage area.

D. All areas of the building, including all finished and unfinished spaces, combustible concealed spaces, all electrical rooms and closets will be sprinklered. Automatic sprinklers shall be provided in the two mechanical room attics.

E. All sprinkler heads will be quick response, pendent in hung ceiling areas and upright in unfinished areas.

F. Fire department valves and cabinets will be provided on each side of the Stage in the Building.

5. PROJECT PHASING

A. A new modular classroom building will be provided during construction. The new modular classroom building will be provided with an automatic sprinkler system.

B. A new 6-fire service will be provided to the modular classroom from the existing water main in Standish Road.

C. It is currently not anticipated that the 1971 wing will require sprinkler protection in th temporary condition during construction.

6. BASIS OF DESIGN

A. The mechanical rooms, kitchen, storage rooms, Attic mechanical rooms are considered Ordinary Hazard Group 1. Stage is considered Ordinary Hazard Group 2. All other areas are considered light hazard.

B. Required Design Densities:

» Light Hazard Areas

0.10 GPM over 1,500 s.f.

» Ordinary Hazard Group 1

0.15 GPM over 1,500 s.f.

» Ordinary Hazard Group 2

0.20 GPM over 1,500 s.f.

C. Sprinkler spacing (max.):

» Light Hazard Areas: 225 s.f.

» Ordinary Hazard Areas: 130 s.f.

D. A flow test was performed by the Boston Water and Sewer on November 28, 2023, with the following results: 89 PSI static, 81 PSI residual, 1,348 GPM flow, 4,430 GPM flow at 20 PSI. A fire pump is not required.

7. DOUBLE CHECK VALVE ASSEMBLY

A. Double check valve assembly shall be MA State approved, U.L./F.M. approved, with iron body bronze mounted construction complete with supervised OS & Y gate valves and test cocks. Furnish two spare sets of gaskets and repair kits.

B. Double check valve detector assembly shall be of one of the following:

» Watts Series 757-OSY

» Wilkins 350A-OSY

» Conbraco Series 4S-100

» Or equal

8. PIPING

A. Sprinkler piping 1-1/2 in. and smaller shall be ASTM A-53, Schedule 40 black steel pipe. Sprinkler/standpipe piping 2 in. and larger shall be ASTM A-135, Schedule 10 black steel pipe.

9. FITTINGS

A. Fittings on fire service piping, 2 in. and larger, shall be Victaulic Fire Lock Ductile Iron Fittings conforming to ASTM A-536 with integral grooved shoulder and back stop lugs and grooved ends for use with Style 009-EZ or Style 005 couplings. Branch line fittings shall be welded or shall be Victaulic 920/920N Mechanical Tees. Schedule 10 pipe shall be roll grooved. Schedule 40 pipe, where used with mechanical couplings, shall be roll grooved and shall be threaded where used with screwed fittings. Fittings for threaded piping shall be malleable iron screwed sprinkler fittings.

10. JOINTS

A. Threaded pipe joints shall have an approved thread compound applied on male threads only. Teflon tape shall be used for threads on sprinkler heads. Joints on piping, 2 in. and larger, shall be made up with Victaulic, or equal, Fire Lock Style 005, rigid coupling of ductile iron and pressure responsive gasket system for wet sprinkler system as recommended by manufacturer.

11. SPRINKLERS

A. All sprinklers to be used on this project shall be Quick Response type.

B. Furnish spare heads of each type installed located in a cabinet along with special sprinkler wrenches. The number of spares and location of cabinet shall be in complete accord with NFPA 13-2013.

C. Sprinklers shall be manufactured by Tyco, Victaulic, Viking, or equal.

D. Upright sprinkler heads in areas with no ceilings shall be Tyco Model "TY-FRB" Quick Response, upright natural brass finish heads. Include heavy duty sprinkler guards in all mechanical rooms and storage rooms.

E. Sidewall heads shall be Tyco Model "TY-FRB" Quick Response with white polyester head and escutcheon.

F. Pendent wet sprinkler heads shall be Tyco Model "TY-FRB" Quick Response recessed adjustable escutcheon, white polyester finish.

G. Concealed heads shall be Tyco Model "RFII" Quick Response concealed type, 1-1/2 inch adjustment white cover plate. In special areas, as may be noted on the Drawings, provide alternate cover plate finishes.

H. Use of flexible stainless-steel hose with fittings for fire protection service that connect sprinklers to branch lines in suspended ceilings is

acceptable. Flexible hoses shall be UL/FM approved and shall comply with NFPA 13 standards. Hose assemblies shall be type 304 stainless steel with minimum 1-inch true-bore internal hose diameter. Ceiling bracket shall be galvanized steel and include multi-port style self-securing integrated snap-on clip ends that attach directly to the ceiling with tamper resistant screws.

Electrical

The following is the Electrical Systems narrative, which defines the scope of work and capacities of the Power and Lighting System, as well as, the Basis of Design. The Electrical Systems shall be designed and constructed for LEED BD+C for Schools v4 where indicated on this narrative.

1. CODES

A. All work installed under Section 260000 shall comply with the Massachusetts State Building Code and all local, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

A. The work of Section 260000 is as described in this Narrative. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Electrical work and all items incidental thereto, including commissioning and testing.

3. SEQUENCE OF OPERATIONS AND INTERACTIONS

A. Classroom and Corridor lighting will be controlled via local occupancy sensors.

B. Automatic control of receptacles based on occupancy will be provided for at least 50% of the receptacles installed in private offices, open offices, conference rooms, rooms used primarily for printing and/or copying functions, break rooms, classrooms, and individual workstations. Controlled receptacles will be marked per NEC 406.3 (E).

C. Exterior lighting will be controlled by photocell "ON" and "scheduled" for "OFF" operation. The parking area lighting will be controlled by "zones" with dimmable capability via wireless.

D. Emergency and Exit lighting will be run through life safety panels and will be "ON" during normal power conditions, as well as, power outage conditions. The emergency lighting system will have time control so that lights are "ON" only when the building is occupied.

4. DESCRIPTION OF THE SYSTEMS

A. Utilities:

» The new building will be supplied with utility power from the utility company National Grid. The new service will be fed via underground primary duct bank to a pad mounted utility company owned liquid filled transformer.

» The service electrical transformer will be furnished, installed, owned and maintained by National Grid, and it will be located adjacent to the building as shown on the civil drawings. The transformer will be of the pad- mounted type with a primary voltage of 13.8 kV and a secondary voltage of 480Y/277 volts. The transformer will be sized by the utility company based on the load data provided by The Design team.

» Concrete pad and grounding grid for the pad-mounted transformer is provided by the Contractor per the National Grid standards.

» Concrete encased duct bank of the two 4" PVC conduits will be provided by the Electrical Contractor for the primary feeder installation from a utility pole to the pad-mounted transformer. Pre-cast concrete manholes 5' x 5' will be provided by the Contractor to facilitate the primary cables field installation. The duct bank routing is shown on the civil drawings.

» Utility company will provide a primary feeder cable from the utility manhole to the

pad-mounted transformer via the new manhole and terminate the feeder cable on both ends.

» Transformer secondary feeder of the copper conductors will be installed underground in the duct bank of four 4" PVC conduits from the pad-mounted transformer to the main electrical switchboard located in the main electrical room. The secondary feeder and terminations at the switchboard side will be provided by the Electrical Contractor and terminated at the transformer side by National Grid. The new service will be metered at the transformer secondary voltage.

» National Grid metering CTs will be installed in a CT section of the switch board, the meter will be located at the direction of the utility company.

» Telephone, Cable TV, and City Fiber will be fed underground into the building's Main Distribution Frame/Head End Room.

» Copper conductors shall be utilized for all branch circuit and feeder wiring. Aluminum conductors will be allowed for feeders 100 amperes or over.

» The building connected electrical load estimate is based on the preliminary building systems design:

Load Type	**KVA**
HVAC Loads (including AHU, Destratification Fans, DCU, Chiller, UH, VRF, Boilers, FCs, Pumps, RTUs, Exhaust Fans, DCU)	640 KVA
Elevator	31.7 KVA
Exterior Lighting	2.0 KVA
Interior Lighting	45 KVA
General Power	160 KVA
Kitchen	75 KVA
EV Charging	144 KVA
Plumbing/Fire Protection (Pumps, etc.)	150 KVA
Total Connected Load	**1,247.7 KVA**

B. Electrical Distribution System:

1. The service capacity will be sized for 1,600 Amperes with a 100% rated main breaker. The main buss will be sized at 2,000 Amperes and will have an available breaker space provision at the end of the switchboard to accommodate a future grid connected photovoltaic array. The switchboard will be furnished with a service entrance surge protection device (SPD) rated at 240 kA and a digital metering unit to monitor voltage, current, power factor, demand KW with a data communication port for interface with BMS. Main switchboard's short circuit rating will be rated for 65 KAIC.
2. New lighting and power panels will be provided to accommodate respective loads. The equipment will be located in dedicated rooms or closets.

C.Interior Lighting System:

1. Classroom lighting fixtures will consist of pendant mounted direct/indirect luminaries with LED lamps and electronic dimmable drivers. The fixtures will be pre-wired for continuous dimming control where natural daylight is available and for multi-level switching. Two daylight dimming zones will be provided in each classroom.
2. Office lighting fixtures will consist of recessed mounted direct LED luminaries and dimming drivers for continuous level dimming capability. Offices on the perimeter with windows will have daylight dimming controls similar to classrooms.

   In general, lighting power density will be 30% less than ASHRAE 90.1-2016. The power density reduction relates to LEED credit EAC2: Optimize Energy Performance.
3. Lighting levels will be approximately 30 foot-candles in classrooms and offices. The daylight dimming foot-candle level will be in compliance with LEED Credit EQC6: Interior Lighting.
4. Gymnasium lighting will be comprised of direct fixtures with LED source and electronic drivers. The fixtures will be provided with clear lens and protective wire guards. The light level will be

designed for approximately 50 foot candles. Multi-level switching will be provided.

Daylight dimming will be provided within daylight zone. Daylight dimming controls will be similar in operation to classrooms.

5. General corridor lighting will be comprised of recessed linear fixtures with LED source and electronic drivers. The Corridor light level will be designed for approximately 20 foot candles. Corridor lighting will be on scheduled source control and only "ON" during occupied hours. The Corridor lighting levels will be controlled by schedule, and occupancy sensors.
6. Main corridor lighting shall be decorative type pendant/surface mounted with direct and indirect sources. Refer to general corridor lighting for control requirements.
7. Cafeteria lighting will be pendant direct/indirect fixtures with LED lamps and electronic drivers. The light levels will be designed for approximately 30 foot candles. Daylighting controls will be provided on perimeter light fixtures within daylight zone.
8. Kitchen and Servery lighting will consist of recessed 2'x2' acrylic lensed gasketed troffers with aluminum frame doors with LED lamps and electronic drivers. Light levels will be approximately 50 foot candles.
9. Media Center lighting will consist of pendant mounted decorative fixture with both direct and indirect sources. Light levels will be approximately 30 foot candles.
10. Attic lighting shall be linear utility type with frosted lensing and finished housing. Fixtures shall be spaces approximately 12' on center." Low voltage lighting controls shall be provided at each entrance to the space or bottom of ladder and occupancy sensors shall be provided for complete coverage of the attic space.
11. Each area will be locally switched and designed for multi-level controls. Each Classroom, Office space, and Toilet room will have occupancy sensors to turn lights off when unoccupied. Manual switches will be provided in each space. Classrooms and offices will have manual dimming capacities.
12. Daylight dimming sensors will be installed in each room where natural light is available for continuous dimming of light fixtures.
13. Interior lighting illumination levels will meet the IES recommended values for applicable activity type, be in compliance with the IECC 2018 energy allowances and LEED for Schools control requirements.

PROPOSED ILLUMINATION LEVELS

Location	Average Illumination Levels
Classrooms	30 FC
Science Labs	40 FC
Offices, Conference Rooms, Library	30 FC
Gymnasium	50 FC
Cafeteria	30 FC
Kitchen	50 FC
Corridors	20 FC
Utility and Storage Rooms	20 FC

D. Emergency Lighting System

1. An exterior 500KW, 625KVA (diesel fired emergency generator with sound attenuated enclosure and base tank with alarms will be provided. An integral resistive load bank will be provided for generator testing under load. Light fixtures and LED Exit signs will be installed to serve all egress areas such as Corridors, Intervening Spaces, Toilets, Stairs, and Exit discharge exterior doors. The Administration area lighting will be connected to the emergency generator.
2. The generator power system has been sized to support emergency (life safety), and optional standby building loads. The life safety branch of

the emergency system will be provided with a manual transfer switch on the emergency line side of the transfer switch in compliance with NEC 700.3(F).

a. Emergency (life safety) Power Loads as required by the Code:

» Emergency exit and egress lighting (interior and building exterior at the exits)

» Fire alarm system

b. Standby Power Loads:

» Heating system with associated heat pumps and controls

» Telephone/ data closets and associated A/C equipment

» Communication systems (telephone and public address systems)

» Building DDC system control panels

» Kitchen refrigeration equipment

» Lighting and power in the nurse/medical area

» Full backup of systems for areas of the building determined to be utilized as a shelter.

E. Site Lighting System: LEED Credit SSC6: Light Pollution Reduction

1. Fixtures for area lighting will be pole mounted cut-off 'LED' luminaries in the parking area and roadways. Pole heights will be 20 feet. The exterior lighting will be connected to the automatic lighting control system for photocell "ON" and timed "OFF" operation. The site lighting fixtures will be dark sky compliant. The illumination level will be 0.5fc for parking areas in accordance with the Illuminating Engineering Society.
2. Building perimeter will be 'LED' wall mounted cut-off fixtures over exterior doors for Exit discharge.

F. Metering:

1. Measurement devices shall be installed to monitor the electrical energy use for each of the following separately:

   a. Total electrical energy

   b. Sub-metering in accordance with ASHRAE 90.1 para. 8.4.3

2. Recording and Reporting:

   a. The electrical energy usage for all loads listed above shall be recorded a minimum of every 15 minutes and reported at least hourly, daily, monthly, and annually. The system shall be capable of maintaining all data collected for a minimum of 36 months.

G. Wiring Devices:

1. Each classroom will have a minimum of (2) duplex receptacles per teaching wall and (2) double duplex receptacles on dedicated circuits at classroom computer workstations. The teacher's workstation will have a double duplex receptacle also on a dedicated circuit.
2. Office areas will generally have (1) duplex outlet per wall. At each workstation a double duplex receptacle will be provided.
3. Corridors will have a cleaning receptacle at approximately 25-40 foot intervals.
4. Exterior weatherproof receptacles with lockable enclosures will be installed at exterior doors.
5. A system of computer grade panelboards with double neutrals and surge protective devices will be provided for receptacle circuits.
6. All receptacles will be of the tamper resistant type.

H. Fire Alarm System: (Proprietary Notifier)

1. A fire alarm and detection system with mass notification will be provided with 60 hour battery back-up, and 15 minute of alarm. The system will be of the addressable type where each detection device will be identified at the control panel and remote annunciators by device type and location to facilitate search for origin of alarms. The notification system will be in conformance with

NFPA 72 Chapter 24 emergency communications systems.

2. Smoke detectors will be provided in open areas, corridors, stairwells and other egress ways.
3. The sprinkler system will be supervised for water flow and tampering with valves.
4. Speaker/strobes with white and amber colored strobes will be provided in egress ways, classrooms, assembly spaces, open areas, and other large spaces. Strobe only units will be provided in single toilets and conference rooms. Amber strobes will be initiated during a mass notification event in which a different district message will be played over the speakers
5. Manual pull stations will be provided at exit discharge doors.

I. Lightning Protection System:

1. A system of lightning protection will be provided. The system will be installed in compliance with the provisions of the latest "Code for Protection Against Lightning" for buildings as adopted by the National Fire Protection Association and the Underwriters' Laboratories, Inc. for UL Master Label System.
2. The lightning protection equipment will include air terminals, conductors, conduits, fasteners, connectors, ground rods, etc.
3. The lightning protection system will be installed for the new facility.

J. Uninterruptible Power Supply (UPS)

1. A 24 KW, three phase centralized UPS system will be provided with seven minutes of battery back-up.
2. The system will provide conditioned power to sensitive electronic loads, telecommunication systems, bridge over power interruptions of short duration and allow an orderly shutdown of servers and communication systems during a prolonged power outage.
3. The UPS system will also be connected to the stand-by generator.

K. Level 2 AC Dual Electric Vehicle Charging Equipment. (EVSE)

1. Conduit provisions will be provided to 10% of parking spaces for future EV charging stations which includes distribution equipment and wiring to within 6' of future charger.

L. Renewable Energy System Provisions:

1. Electrical provisions will be made for a ballasted roof mounted renewable energy system consisting of a grid connected photovoltaic PV system intended to reduce the facilities demand for power.

5. TESTING REQUIREMENTS

A. The Electrical Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:
   - » Lighting and power panels for correct phase balance.
   - » Emergency generator system.
   - » Lighting control system (interior and exterior).
   - » Fire alarm system.
   - » Two-way communication system.

» Distributed Antennae system.

B. Testing reports shall be submitted to the Engineer for review and approval before providing them to the Owner.

6. PHASING

A. Install Permanent Primary duct-bank, pad mount transformer with grounding, with temporary secondary duct-bank and wiring to serve the existing to remain school and modulars. The anticipated service size for the temporary modulars and existing school will be 800 amperes at 277/480 V 3phase 4 wire. New service equipment will be installed outside of the existing 1970's building and will be Nema 3R rated. The equipment will consist of the following:

» 800 amp 65KAIC 277/480V 3phase 4wire Main distribution panel.

» 300KVA exterior Dry-type transformer

» 1200amp 42KAIC 120/208V 3phase 4 wire Distribution panel

B. The 480 Volt MDP will serve the temporary electric boiler plant that will provide heating and will serve the 300KVA transformer and 120/208 distribution panel that will back feed the existing loads in the 1970's building as well as feed the panels in the modulars. A new Addressable voice evacuation fire alarm system will be installed in the existing building and the modulars. This will consist of speaker strobes through out as well as automatic heat or smoke detectors in each space as the building is not sprinklered. A new cellular dialer will be utilized for transmission of signals.

7. OPERATION MANUALS AND MAINTENANCE MANUALS

When the project is completed, the Electrical Contractor shall provide operation and maintenance manuals to the Owner.

8. RECORD DRAWINGS AND CONTROL DOCUMENTS

When the project is completed, an as-built set of drawings, showing all lighting and power requirements from contract and addendum items, will be provided to the Owner.

9. COMMISSIONING

The project shall be commissioned per Commissioning Section of the specifications.

Technology

The following is the Technology System narrative, which defines the scope of work and capacities of the Communications system infrastructure as well as the Basis of Design.

1. CODES

All work installed under Section 270000 shall comply with the Massachusetts Building Code and all local, county, and federal codes, laws, statues, and authorities having jurisdiction.

2. DESIGN INTENT

All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Technology work and all items incidental thereto, including commissioning and testing.

3. TECHNOLOGY

A. The data system infrastructure will consist of fiber optic backbone cabling horizontal wiring will consist of Category 6A UTP Plenum rated cabling for both data and telephone systems for gigabit connectivity. The telephone infrastructure will accommodate VOIP based voice systems.

B. Each classroom will have 2 data outlets for student computers. Two data, one voice with video and audio connections to an LCD monitor will be provided at teacher's station with interconnectivity to a interactive LCD touch screen monitor. A wall phone outlet with 2-way

ceiling speaker will be provided for communications with administration. Wireless access points will be provided in all classrooms and other spaces and consist of (2) CAT6A cables.

C. Classroom Sound reinforcement systems/ assistive listening system will be provided in grade level classrooms, STE Room, Art Room, ELL, Media Center, SPED classrooms (CARES & Learning Center) and neighborhood collaborative areas that will consist of a wireless receiver, handheld microphone, pendant microphone with lanyard, student group speaker wireless pod, and an in-ceiling speaker/amplifier.

D. An IPTV video on demand system equal to Media Master will be provided. IPTV decoders will be provided in each classroom to facilitate the distribution of the media content.

E. A central paging system will be provided and integrated with the telephone system. (Proprietary Telecor)

F. A wireless GPS/LAN based master clock system will be provided with 120V wireless remote clocks that act as transceivers. (Proprietary Telecor)

G. The Main Distribution Frame (MDF) will contain all core network switching and IP voice switch. Intermediate Distribution Frames (IDFs) will serve each floor/wing of the school. A fiber optic backbone will be provided from each IDF to MDF. The backbone will be designed for 10 Gbps Ethernet.

H. Two-way communication call boxes will be provided adjacent to each elevator that is above or below grade level. The base station will be located at a control point on the first floor.

I. Each classroom shall be provided with an ultra short throw interactive projector.

4. TESTING REQUIREMENTS

A. The Technology Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:

- » Telephone and data cabling
- » Fiber optic backbone cabling
- » Paging system
- » Wireless clock system
- » A/V wiring for classrooms

B. Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

5. PHASING

A new temp overhead communication line will be brought into the 1970's building and routed to a new Communication closet. New Data wiring will be run to each room as required for network connectivity as well as new wireless access locations that will provide WIFI throughout the existing building and the modulars.

6. OPERATION MANUALS AND MAINTENANCE MANUALS:

When the project is completed, the Technology Contractor shall provide operation and maintenance manuals to the Owner.

7. RECORD DRAWINGS AND CONTROL DOCUMENTS:

When the project is completed, an as-built set of drawings, showing all tel/data requirements from contract and addendum items, will be provided to the Owner.

8. COMMISSIONING

The project shall be commissioned per Section 019113 of the specifications.

Accessibility

Code Red Consultants have reviewed the project for accessibility concerns. As a primarily new construction project, the proposed project will be designed to meet all applicable MAAB regulations.

The building will be designed to meet all codes and regulations required by authorities having jurisdiction. The building and site will be designed to meet accessibility requirements defined by the Massachusetts Architectural Access Board

Regulations and the Americans with Disabilities Act. Accessibility code compliance will include the layout of accessible spaces, ADA compliant elevator, compliant openings, signage, millwork, and plumbing fixtures and compliant sidewalks, roadways and parking spaces.

It is not anticipated that the 1971 wing will require interim accessibility upgrades for the temporary use condition prior to full demolition. This may require a variance from MAAB.

Room Data Sheets

Refer to Appendix M. Room Data Sheets for the complete set of Room Data Sheets.

Proposed Construction Methodology - *(Rev)*

At the June 6th SBC meeting, PCA360 presented a comprehensive overview of the construction methodologies for the Squantum School project, comparing the Design Bid Build (DBB) method under Chapter 149 and the Construction Manager-at-Risk (CMR) method under Chapter 149a. The presentation highlighted the advantages and disadvantages of each approach. After careful consideration, CMR was chosen as the preferred construction method. This decision was primarily influenced by several critical factors: the need to phase construction to minimize disruption, the ability to bid early packages, the complex task of salvaging the historic 1919 façade, and the challenges of coordinating a construction project on a tight site, especially with students occupying a temporary school directly adjacent to the new construction. Additionally, the requirement for supportive excavation made the CMR method more suitable, as these factors are not conducive to the DBB approach. The selection of CMR ensures a more efficient, flexible, and controlled construction process, aligning with the project's specific needs and constraints.

Since the submission of the initial Schematic Design, the project has received approval from the OIG's office to proceed with CMR. Proposals from nine Construction Mangers were received and reviewed, with all nine firms being pre-qualified. The next steps involve receiving and evaluating proposals, interviews, and the final selection of the CMR. This process is anticipated to be complete by mid to end of October.

District's Anticipated Reimbursement Rate

The District's base reimbursement rate is 60.40%. In addition to this base rate, the project is anticipating achieving the following additional incentive points.

- Maintenance: 1 point
- Energy Efficiency - "Green Schools": 4 points

This results in an anticipated reimbursement rate of

65.40% before caps and ineligible costs.

Total Project Budget - *(Rev)*

The total project budget for the Squantum School is ~~$122.5 million~~. *$108.8 million.* The City of Quincy understands and acknowledges its obligation to participate with the Massachusetts School Building Authority (MSBA) to fund this project. To meet this commitment, the city is prepared to bond its financial obligation, ensuring the necessary resources are available. With an excess levy capacity of over $49 million, Quincy's robust bonding capacity ensures it can comfortably manage a debt exclusion exceeding $500 million. This financial strength supports the successful completion of the Squantum School project and demonstrates the city's commitment to advancing educational infrastructure and providing a state-of-the-art learning environment for its students.

Refer to the following page for OPM's Constructability Review Letter.

Refer to Appendix P. FF&E and Technology Budgets for details on how the budgets were derived.

~~Each project has unique factors that drive costs. For~~

~~this project, factors that impact the project costs are:~~

- ~~Hazardous Materials abatement~~
- ~~Costs associated with retaining, stabilizing, and clipping existing to remain 1919 brick facade to new structure and restoring historic details~~
- ~~New energy code standards are more stringent and require more verification and other soft cost services. This project includes Net Zero and envelope premiums for:~~
  - » ~~Geothermal well field estimated at $1.7 million~~
  - » ~~Triple glazing and additional insulation~~
  - » ~~Additional Structural Thermal Breaks to meet Passive House standards~~
  - » ~~Passive House Consultant & Verifier services required for code compliance~~
- ~~Construction Manager at Risk~~
- ~~Phasing of a tight urban site and swing space including modular classrooms and enabling work to the 1971 wing to allow it to stand alone. This enabling work is estimated at $6 million excluding site work.~~
- ~~Work to improve the surrounding streets including:~~
  - » ~~$6 million to underground overhead wires on Huckins Avenue and Mayflower and Standish Roads~~
  - » ~~$260,000 for road widening on Huckins Avenue and Mayflower Road~~
- ~~Premium for sloped roofs and desired "residential" aesthetic~~

Refer to the compiled initial Schematic Design response in Appendix R. MSBA Initial SD Comments & Project Team Responses - (New) for the provided cost drivers memo dated 8/18/24. This memo covers both new construction and enabling costs.

Efforts to Manage and Reduce Project Costs

*1. **Exploration of Alternative Student Relocation Options:** During the Preliminary Schematic Report (PSR) phase, the City explored options for relocating students within the City. Although there was no excess capacity in the school system, temporary locations such as office buildings at Heritage Drive, Marina Bay, and the Boston Scientific office park were considered. However, the costs to retrofit these spaces far exceeded those of using modular classrooms.*

*2. **Phasing Strategies:** The project team assessed multiple phasing options to balance costs and minimize student disruption. The selected approach, which retains students on-site with a single move into temporary conditions, was determined to be the most cost-effective and least disruptive. A significant cost driver for this project is the temporary swing space and modular classrooms, amounting to approximately $50 per square foot of direct costs for the enabling work, which has a substantial impact on the construction budget. The modular costs have been relocated to outside of the Construction Budget, but are still within the costs of the overall Total Project Budget.*

*3. **Evaluation of Modular School Solutions**: Early in the design process, the team considered constructing an entirely modular school instead of the chosen hybrid approach of retaining a portion of the existing school and utilizing modular units. The current approach, estimated at $9.2 million (including mark-ups), compares favorably to the $11.4 million cost of a fully modular solution. Budget pricing from Triumph Modular confirmed the estimators' valuation of $11.4 million. Although there would be savings in project duration and mobilization costs (estimated at $800,000) with an all-modular approach, the current hybrid plan results in a net savings of $1.4 million and has been confirmed as the most cost-effective solution.*

*4. **Building Area Reductions**: To further reduce costs, the building area was decreased from 82,197 square feet in the PSR submission to 79,801 square feet in*

the SD submission, a reduction of 2,396 square feet. This reduction was achieved by optimizing design efficiencies in circulation, administrative areas, and the music room, facilitated by relocating the gym to the park side of the building, and the media center to the 1919 building.

*5. **Geothermal Heat Pump System:** The geothermal heat pump system, while more expensive than alternative systems, is made comparable in cost by rebates and federal incentives. The 3011 budget construction cost does not reflect over $2 million in rebate costs, which will help offset the higher expense of this HVAC system.*

*6. **Roof Design Decision**: Arrowstreet advised the City early in the design process regarding the comparative costs of a flat roof versus a pitched roof. The City opted for a pitched roof to maintain a scale and aesthetic compatible with the single-family residential neighborhood surrounding the school. Given that the existing school is a single-story structure and the new school will be two stories, incorporating sloped roof areas was essential to address neighborhood concerns. Additional considerations included sound attenuation for equipment (as some homes are only 80 feet away) and better wind resistance in this high-exposure area.*

A comparative costs for a flat roof vs a pitched roof was developed as a comparison tool. See the table below. This is an analysis based on the area of the proposed sloped roofs. In addition, Arrowstreet presented some renderings showing what the massing of the building would look like without the current pitched roofs, except at the historic 1919 building. The team acknowledged that if the project was interested in flat roofs, different massing choices may have been made. The reaction of the committee was that the pitched roofs were preferable despite the additional costs. The benefits from the pitched roofs in scale, massing, extra rain shed for resiliency, and inherent acoustic screening of mechanical equipment were considered to out weigh the cost difference.

Squantum School *Roof Area of Concern:* *22,224*
7/31/2024 *Roof Costs Analysis*

Line Reference - PM&C	Uniformat	Item Description	Pitch Roof	Flat Roof	Delta	Delta per SF
196	B1020	Pitched roof framing premium	$500,000	$0	$500,000	$6.27
197	B1020	Additional Deck for up & over	$155,568	$0	$155,568	$1.95
extrapolated from 201 &	B1020	Acoustic Screens w. thermal breaks	$0	$376,000	($376,000)	($4.71)
249, ave of 222 & 259, 275, 276, 277,	B2010	Reduced Wall Height/ Cladding vs. Add Parapet Wall	$218,144	$154,586	$63,559	$0.80
373 vs. 369	B3010	Assembly Difference from deck up (Asphalt vs. PVC)	$711,168	$514,388	$196,780	$2.47
394 vs 395	B3010	Insulation (Below Deck)	$88,896	$122,232	($33,336)	($0.42)
--		Edge Detailing (Parapets vs. Eaves)	$401,749	$203,040	$198,709	$2.49
761	D20	Extra plumbing drain	$2,600	$0	$2,600	$0.03
812, 824	D30	Extra Unit Heaters & Exhaust Fans	$24,400	$0	$24,400	$0.31
826	D30	Duct run inside Attic (*assumed 1% of overall ducts*)	$16,000	$0	$16,000	$0.20
871	D40	Extra Fire Protection	$75,930	$0	$75,930	$0.95
908, 917, 906*	D50	Extra Electrical	$43,300	$0	$43,300	$0.54
		Total Direct Costs	**$2,237,755**	**$1,370,246**	**$867,509**	$10.87
		10% Contingency	$223,775	$137,025	$86,751	$1.09
		4.33% Escalation	$96,895	$59,332	$37,563	$0.47
		2.62% Bonds & Insurance	$67,031	$41,045	$25,986	$0.33
		5.5% CM Fee & Contingency	$144,400	$88,421	$55,979	$0.70
		Total Marked Up Costs	**$2,769,855**	**$1,696,067**	**$1,073,788**	$13.46

*Number from Ellana estimate
**This analysis is for comparison purposes only and is not intended to be a definitive analysis of any future cost savings

*7. **Adjustments in Design and Escalation Contingencies**: In this resubmission of the Schematic Design package, the City reduced the design and escalation contingency factors to lower overall estimated costs:*

- *Design Contingency: The PSR used a 10% design contingency, while Elana applied a 15% contingency to the initial SD submission, adding $2.7 million to the original cost. This additional amount was removed in the resubmission.*
- *Escalation: The PSR calculated escalation at 3% per year up to the start of construction. Ellana used a 6% escalation rate to the mid-point of construction, which added $2.5 million to the original cost. This amount was also removed in the resubmission.*

*8. **Utility Infrastructure Work Adjustment**: An additional $6 million allocated for utility infrastructure work around the school was removed from the Total Project Budget. This work will be undertaken as a separate City initiative, funded through a separate appropriation, and is not part of Arrowstreet's scope.*

Conclusion

The City of Quincy is committed to delivering a high-quality educational facility that meets the needs of the community while also carefully managing costs. Through a series of strategic decisions and rigorous budget reviews, the project team has worked diligently to optimize the design, reduce unnecessary expenditures, and identify the most cost-effective solutions for the Squantum School. By leveraging Quincy's strong financial standing and applying value-driven approaches, the city is well-positioned to fulfill its financial obligations and ensure the successful completion of this vital project. The measures taken underscore the city's dedication to providing students with a state-of-the-art learning environment that aligns with both educational goals and community values.

Designer's Cost Estimate *(Rev)*

Refer to Appendix N. Designer's Cost Estimate for PM&C's cost estimate, hired by the Designer, dated June 13, 2024. ~~The total construction cost was estimated at $85.3 million. The direct construction of the new school itself without markups is estimated at $45.7 million.~~

The updated cost estimate by PM&C, dated August 20, 2024, is attached in Appendix V. Revised Designer's Cost Estimate - (New). Refer to the Cost Reconciliation section below for a description of changes since the initial Schematic Design submission. The total construction cost is estimated at $81.2 million. This is inclusive of $1.88 million of direct costs for enabling work on the 1971 wing and selective demolition within the 1971 wing, plus an additional $1.94 million in site work, including grading for the temporary modulars. See the next page for a breakdown of the enabling work by Uniformat division. This does not include the temporary modulars themselves which are carried outside of the construction budget. The direct cost of the demolition of the reminder of the building is estimated at $1.11 million. The geothermal scope of work that includes drilling, establishing grade, handling of drill spoils, etc is estimated with a direct cost of $1.73 million.

OPM's Cost Estimate - *(Rev)*

Refer to Appendix O. OPM's Cost Estimate for Ellana's cost estimate, hired by the OPM, dated June 05, 2024. ~~The total construction cost was estimated at $92.6 million. The direct construction of the new school itself without markups is estimated at $45.4 million.~~

The updated cost estimate by Ellana, dated August 19, 2024, is attached in Appendix W. Revised OPM's Cost Estimate - (New). Refer to the Cost Reconciliation section below for a description of changes since the initial Schematic Design submission. The total construction cost is estimated at $79.1 million. This is inclusive of $2.06 million of direct costs for enabling work and selective demolition on the 1971 wing, plus and additional $1.05 million in site work, including grading for the temporary modulars. See the next

page for a breakdown of the enabling work by Uniformat division. This does not include the temporary modulars themselves which are carried outside of the construction budget. The direct costs of the demolition of the reminder of th building is estimated at $2.5 million. The geothermal scope of work that includes drilling, establishing grade, handling of drill spoils, etc is estimated with a direct cost of $1.56 million.

Cost Reconciliation - *(Rev)*

The Design Team and OPM's Team reviewed the detailed cost estimates carefully and reconciled the costs in each trade. The direct construction cost prior to contingency, escalation and markups, are 0.6% within each other.

Refer to the page following the Form 3011 for comparison of the two cost estimates.

As the MSBA noted in review of the initial Schematic Design submission, there were significant differences in markups between the two cost estimates. The differences in markups between the cost estimators is primarily driven by the distinct methodologies and assumptions used by each estimator.

Additional efforts have been made to align the cost estimates for the enabling and site work phases in addition to the markups. Below is a breakdown of the Enabling costs estimates.

		PM&C	Ellana
Substructure		$91,752	$43,742
A10	Foundations	$91,752	$43,742
Shell		$440,385	$353,487
B10	Superstructure	$39,870	$42,517
B20	Exterior Structure	$350,962	$275,720
B30	Roofing	$49,553	$35,250
Interiors		$253,075	$466,321
C10	Interior Construction	$106,222	$228,384
C30	Interior Finishes	$146,853	$237,937
Services		$761,653	$932,313
D20	Plumbing	$10,000	$10,000
D30	HVAC	$235,230	$220,000
D40	Fire Protection	$-	$167,000
D50	Electrical	$516,423	$535,313
Fittings & Fixtures		$55,500	$75,000
E10	Equipment	$10,500	$-
E20	Furnishings	$45,000	$75,000
Special Construction & Demolition		$273,761	$190,000
F10	Special Construction		
F20	Selective Building Demolition	$273,761	$190,000
1971 Wing Work Subtotal		$1,876,126	$2,060,863

Alternates - *(New)*

During the initial Schematic Design, the project team requested alternate pricing from the estimators to consider potential options for value management and to confirm the District's desire for certain elements with a concrete cost. The alternates included to confirm the City's level of commitment or interest in certain elements include the following additions. Some items are notes as items the City is interested in continuing to explore and others are noted as

- ***Deduct Alternate #1**: Faux slate ILO Real Slate at the 1919 Roof - The City has continued to be interested in a real slate roof. This alternate is not planned to be taken at this time.*

- ***Add Alternate #2:** Faux slate ILO Asphalt at the new sloped roofs - The City is interested in pursuing a more durable roofing material. This alternates will continue to be explored for integration into the overall budget.*

- ***Add Alternate #3:** Aluminum Shingle ILO Asphalt at the new sloped roofs - This alternate is mutually exclusive with alternate #2, and will continue to be evaluated with Alternate #2.*

- ***Add Alternate #5:** Lightning Prevention System - It is*

not anticipated that this will be incorporated into the project at this time.

*- **Add Alternate #6:** T&G Roof Deck ILO Metal Deck w. gypsum ceiling in the Media Center - It is not anticipated that this will be incorporated into the project at this time.*

*- **Add Alternate #12:** Porcelain Wall Tile ILO FRP at Toilet Rooms - It is not anticipated that this will be incorporated into the project at this time.*

*- **Add Alternate #16:** Add Irrigation - This is to add irrigation for additional lawn areas outside of the softball field. This is still under evaluation by the City.*

Alternates included for future potential value management options include the following and are intended only to be considered if value management exercises are required. They are mostly related to durability and finishes.

*- **Deduct Alternate #4:** Segmented Retaining Walls ILO Prefabricated Stone Walls*

*- **Deduct Alternate #7:** 2x2 ACT ILO Gypsum ceilings at Toilets*

*- **Deduct Alternate #8:** Linoleum ILO Terrazzo at Main Street*

*- **Deduct Alternate #9:** Porcelain Floor Tile ILO Terrazzo at Main Street*

*- **Deduct Alternate #10:** Linoleum ILO Porcelain Floor Tile at Cafeteria*

*- **Deduct Alternate #11:** FRP ILO Wall Tile at the Kitchen*

*- **Deduct Alternate #13:** FRP ILO Wall Tile at Public Wing Multi-user Toilets*

*- **Deduct Alternate #14:** FRP ILO Wall Tile at Corridors*

*- **Deduct Alternate #15:** Metal Screen ILO Brick equipment enclosure*

Two alternates were included for understanding of alternate systems costs if the design is pushed there by available products and required thermal performance. As these alternatives are less expensive, there is no immediate concern regarding if they eventually get integrated into the design or not.

*- **Deduct Alternate #17:** Fiberglass Windows ILO Thermally Broken Aluminum Windows*

*- **Deduct Alternate #18:** Fiberglass Curtainwall ILO Thermally Broken Aluminum Curtainwall*

Since the initial Schematic Design submission, a few additional alternates have been added to show case the City's willingness to consider additional scope reductions. These alternates are not planned to be taken at this time.

*- **Deduct Alternate #19**: Steel structure w. flat gypsum ceiling ILO Exposed Wood trusses w. vaulted gypsum ceiling*

*- **Deduct Alternate #20**: Reduce parkland scope to basic restoration with no expanded playground*

Updated Project Work Plan - *(Rev)*

This section contains updates to the Project Directory, Roles and Responsibilities, Communications and Document Control Procedures, Designer 's Work Plan, and Project Schedule from the Owner’s Project Manager.

Since the initial Schematic Design submission, the Designer's Work Plan and Project Schedule have been updated in the following section.

6/14/24

Squantum School – OPM Constructability Review Letter

During the Schematic Design phase, the design documents were reviewed for constructability and operability. Review sessions were held with Arrowstreet, various City departments, and PCA360 to ensure that the cost of “means and methods” relative to the phasing and partial demolition of the existing school, as well as the construction of the new school on the same site, were accurately reflected in the cost estimates and overall project budget.

The District was unable to find swing space for the school, necessitating a phased approach to the work. Utilizing modular classrooms and constructing the new building in one phase, with the prior phases focused on enablement and the subsequent phase on site restoration, was deemed the most expeditious and cost-effective approach. Despite the site's limited size and constraints—retaining the 1971 wing, adjacent parkland to the north, and bordering streets to the west, east, and south—the team feels there is sufficient space for construction.

Two independent cost estimates were developed by Arrowstreet’s cost estimator, PM&C, and PCA360’s cost estimator, Ellana. These estimates have been reconciled to ensure consistency in format, scope, and assumptions and are representative of the scope contained in the schematic design pricing set. The cost estimate prepared by PM&C identified the total direct cost of the work as $62,896,868, while Ellana's estimate was $62,321,779, a variance of less than 1%. However, the two estimators used different values and approaches to escalation and pricing contingency, resulting in an overall variance of 8.6% between the total cost estimates. PM&C's total cost was $85,296,631, while Ellana's was $92,633,523 when percentages were applied to the direct cost.

During the cost reconciliation process, the project team evaluated recent bid results from other similar projects, particularly for the mechanical, electrical, and plumbing trades. These market evaluations are also reflected in the cost estimates. The City decided to use Ellana’s reconciled cost estimate values for project budgeting due to recent bidding results for other projects falling short of estimates because escalation was not properly accounted for. The City felt that Ellana's approach properly accounted for escalation by using 6% rate per annum and applied it to the midpoint of construction.

In conclusion, the constructability review has confirmed that the project’s cost estimates are thorough and accurately reflect the scope and constraints of the project. The phased approach, utilizing modular classrooms, ensures that the construction can proceed efficiently and within budget despite the site's limitations. The reconciled cost estimates, particularly Ellana’s, provide a reliable basis for the project's budgeting, considering recent market conditions and escalation trends. Moving forward, the project team is confident that the proposed construction plan is both feasible and fiscally responsible, setting the stage for a successful project completion.

Squantum School
Quincy Public Schools

DRAFT

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Feasibility Study Agreement				
OPM Feasibility Study	$400,000	$0	$400,000	
A&E Feasibility Study	$750,000	$0	$750,000	
Environmental & Site	$300,000	$0	$300,000	
Other	$50,000	$0	$50,000	
Feasibility Study Agreement Subtotal	**$1,500,000**	**$0**	**$1,500,000**	**$981,000**
Administration				
Legal Fees	$0	$0	$0	**$0**
Owner's Project Manager				
Design Development	$226,419	$0	$226,419	
Construction Contract Documents	$316,986	$12,437	$304,549	
Bidding	$212,670	$0	$212,670	
Construction Contract Administration	$1,914,031	$1,736,731	$177,300	
Closeout	$202,795	$0	$202,795	
Extra Services	$0	$0	$0	
Reimbursable & Other Services	$0	$0	$0	
Cost Estimates	$20,000	$0	$20,000	
Advertising	$20,000	$0	$20,000	
Permitting	$0	$0	$0	
Owner's Insurance	$0	$0	$0	
Other Administrative Costs	$50,000	$150,000	-$100,000	
Administration Subtotal	**$2,962,900**	**$1,899,168**	**$1,063,732**	**$695,681**
Architecture and Engineering				
Basic Services				
Design Development	$1,942,500	$0	$1,942,500	
Construction Contract Documents	$3,108,000	$32,376	$3,075,624	
Bidding	$233,100	$0	$233,100	
Construction Contract Administration	$2,331,000	$4,130,945	-$1,799,945	
Closeout	$155,400	$0	$155,400	
Other Basic Services	$0	$0	$0	
Basic Services Subtotal	**$7,770,000**	**$4,163,321**	**$3,606,679**	
Reimbursable Services				
Construction Testing	$10,000	$0	$10,000	
Printing (over minimum)	$25,000	$0	$25,000	
Other Reimbursable Costs	$416,260	$0	$416,260	
Hazardous Materials	$194,150	$0	$194,150	
Geotechnical & Geo-Environmental	$218,900	$0	$218,900	
Site Survey	$8,250	$0	$8,250	
Wetlands	$0	$0	$0	
Traffic Studies	$53,240	$0	$53,240	
Architectural / Engineering Subtotal	**$8,695,800**	**$4,163,321**	**$4,532,479**	**$2,964,241**
CM at Risk Pre-Construction Services				
Pre-Construction Services	$225,000	$0	**$225,000**	**$147,150**
Site Acquisition				
Land / Building Purchase	$0	$0	$0	
Appraisal Fees	$0	$0	$0	
Recording fees	$0	$0	$0	
Site Acquisition Subtotal	**$0**	**$0**	**$0**	**$0**

Construction Costs				
SUBSTRUCTURE				
Foundations	$4,254,827			
Basement Construction				
SHELL				
Super Structure	$5,216,660			
Exterior Closure	$8,575,976			
Exterior Walls				
Exterior Windows				
Exterior Doors				
Roofing	$2,929,705			
INTERIORS				
Interior Construction	$4,866,658			
Staircases	$301,500			
Interior Finishes	$2,882,654			
SERVICES				
Conveying Systems	$243,700			
Plumbing	$2,202,067			
HVAC	$7,516,212			
Fire Protection	$759,640			
Electrical	$5,783,614			
EQUIPMENT & FURNISHINGS				
Equipment	$717,722			
Furnishings	$1,006,304		$2,614,588	
SPECIAL CONSTRUCTION & DEMOLITION			$0	
Special Construction				
Existing Building Demolition	$2,614,588	$0		
In-Building Hazardous Material Abatement		$0		
Asbestos Containing Floor Material / Ceiling Tile Abatement		$0		
Other Hazardous Material Abatement		$32,500		
BUILDING SITE WORK				
Site Preparation	$4,579,078	$0		
Site Improvements	$3,680,956	$0		
Site Civil / Mechanical Utilities	$849,625	$0		
Site Electrical Utilities	$765,380	$0		
Scope Excluded Site Work		$0		
Construction Trades Subtotal	$59,746,866	$32,500		
Contingencies (Design and Pricing)	$8,561,726	$4,657		
Sub-Contractor Bonds		$0		
D/B/B Insurance		$0		
General Conditions	$6,932,344	$3,771		
D/B/B Overhead & Profit		$0		
GMP Insurance	$2,024,230	$1,101		
GMP Fee	$1,931,629	$1,051		
GMP Contingency	$2,049,258	$1,115		
Escalation to Mid-Point of Construction		$0		
Construction Cost over Funding Cap		$30,399,027		
Construction Budget	**$81,246,053**	**$30,443,222**	**$50,802,831**	**$33,225,051**

Alternates				
Ineligible Work Included in the Base Project			$0	
Alternates Included in the Total Project Budget		$0	$0	
Alternates Excluded from the Total Project Budget	$0		$0	
Subtotal to be Included in Total Project Budget	**$0**	**$0**	**$0**	**$0**
Miscellaneous Project Costs				
Utility Company Fees	$100,000	$0	$100,000	
Testing Services	$150,000	$0	$150,000	
Swing Space / Modulars	$5,393,798	$5,393,798	$0	
Other Project Costs (Mailing & Moving)	$373,300	$275,000	$98,300	
Miscellaneous Project Costs Subtotal	**$6,017,098**	**$5,668,798**	**$348,300**	**$227,788**
Furnishings and Equipment				
Furniture, Fixtures, and Equipment	$1,414,341	$958,341	$456,000	
Technology	$1,736,438	$1,280,438	$456,000	
FF&E Subtotal	**$3,150,779**	**$2,238,779**	**$912,000**	**$596,448**
Soft Costs that exceed 20% of Construction Cost		$0	$0	
Project Budget	**$103,797,630**	**$44,413,288**	**$59,384,342**	**$38,837,360**

Board Authorization	
Design Enrollment	380
Total Building Gross Floor Area (GSF)	79,801
Total Project Budget (excluding Contingencies)	$103,797,630
Scope Items Excluded or Otherwise Ineligible	- $44,413,288
Third Party Funding (Ineligible)	- $0
Estimated Basis of Maximum Total Facilities Grant[1]	$59,384,342
Reimbursement Rate[1]	65.40%
Est. Max. Total Facilities Grant (before recovery)[1]	$38,837,360
Cx Costs associated with Ineligible Building Area[2]	- $2,184
Cost Recovery associated with Prior Projects[2]	- $0
Estimated Maximum Total Facilities Grant[1]	$38,835,176

Construction Contingency[3]	$4,062,303
Ineligible Construction Contingency[3]	$3,249,842
"Potentially Eligible" Construction Contingency[3]	$812,461
Owner's Contingency[3]	$893,063
Ineligible Owner's Contingency[3]	$486,833
"Potentially Eligible" Owner's Contingency[3]	$406,230
Total Potentially Eligible Contingency[3]	$1,218,691
Reimbursement Rate	65.40%
Potential Additional Contingency Grant Funds[3]	$797,024
Maximum Total Facilities Grant	$39,632,200
Total Project Budget	**$108,752,996**

60.40	Reimbursement Rate Before Incentive Points
5.00	Total Incentive Points
65.40%	MSBA Reimbursement Rate

NOTES:

This template was prepared by the MSBA as a tool to assist Districts and consultants in understanding MSBA policies and practices regarding potential impact on the MSBA's calculation of a potential Basis of Total Facilities Grant and potential Total Maximum Facilities Grant. This template does not contain a final, exhaustive list of all evaluations which the MSBA may use in determining whether items are eligible for reimbursement by the MSBA. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimates generated by the District using this template.

1 - The Estimated Basis of Total Facilities Grant and Estimated Maximum Facilities Grant amounts do not include any potentially eligible contingency funds and are subject to review and audit by the MSBA.

2 - Costs associated with the commissioning of ineligible building area is estimated to result in the recovery of a portion of the overall commissioning cost. The OPM has estimated this recovery of funds to be $_____. The proposed demolition of the _____ School is expected to result in the MSBA recovering a portion of state funds previously paid to the District for the _____ project at the existing facilities completed in ____. The MSBA will perform an independent analysis based on a review of its records and information and estimates provided by the District for the proposed school project that may or may not agree with the estimated cost recovery generated by the District and its consultants using this template.

3 - Pursuant to Section 3.21 of the Project Funding Agreement and the applicable policies and guidelines of the Authority, any project costs associated with the reallocation or transfer of funds from either the Owner's contingency or the Construction contingency to other budget line items shall be subject to review by the Authority to determine whether any such costs are eligible for reimbursement by the Authority. All costs are subject to review and audit by the MSBA.

Design Estimate Comparison

Project name: Squantum School
Location: Quincy, MA
Square Footage: 79,801
SD Estimates: June 5, 2024 - Reconcilled; August 19, 2024 - Revised

August 21, 2024

			PSR Estimate		Schematic Design				SD Delta		PSR to SD (Ellana) Delta	
EARLY SITEWORK			PM&C	$/sf	PM&C	$/sf	Ellana*	$/sf	DELTA	%	DELTA	%
Site Work		130,680	$ 1,943,750	$ 24.36	$ 1,727,542	$ 21.65	$ 1,564,354	$ 19.60	$ (163,188)	-9.4%	$ (379,396)	-24.3%
G10	Site Preparation		$ 10,000		$ 27,600	$ 0.35	$ 42,874	$ 0.54	$ 15,274	55.3%	$ 32,874	
G30	Site Mechanical Utilities		$ 1,933,750		$ 1,699,942	$ 21.30	$ 1,521,480	$ 19.07	$ (178,462)	-10.5%	$ (412,270)	
	Early Sitework Subtotal:		**$ 1,943,750**	**$ 24.36**	**$ 1,727,542**	**$ 21.65**	**$ 1,564,354**	**$ 19.60**	**$ (163,188)**	**-9.4%**	**$ (379,396)**	**-24.3%**
ENABLING WORK			PM&C	$/sf	PM&C	$/sf	Ellana*	$/sf	DELTA	%	DELTA	%
Substructure			$ -	$ -	$ 91,752	$ 1.15	$ 43,742	$ 0.55	$ (48,010)	-52.3%	$ 43,742	100.0%
A10	Foundations				$ 91,752	$ 1.15	$ 43,742	$ 0.55	$ (48,010)	-52.3%	$ 43,742	
Shell			$ -	$ -	$ 440,385	$ 5.52	$ 353,487	$ 4.43	$ (86,898)	-19.7%	$ 353,487	100.0%
B10	Superstructure				$ 39,870	$ 0.50	$ 42,517	$ 0.53	$ 2,647	6.6%	$ 42,517	
B20	Exterior Structure				$ 350,962	$ 4.40	$ 275,720	$ 3.46	$ (75,242)	-21.4%	$ 275,720	
B30	Roofing				$ 49,553	$ 0.62	$ 35,250	$ 0.44	$ (14,303)	-28.9%	$ 35,250	
Interiors			$ -	$ -	$ 253,075	$ 3.17	$ 466,321	$ 5.84	$ 213,246	84.3%	$ 466,321	100.0%
C10	Interior Construction				$ 106,222	$ 1.33	$ 228,384	$ 2.86	$ 122,162	115.0%	$ 228,384	
C30	Interior Finishes				$ 146,853	$ 1.84	$ 237,937	$ 2.98	$ 91,084	62.0%	$ 237,937	
Services			$ -	$ -	$ 761,653	$ 9.54	$ 932,313	$ 11.68	$ 170,660	22.4%	$ 932,313	100.0%
D20	Plumbing				$ 10,000	$ 0.13	$ 10,000	$ 0.13	$ -		$ 10,000	
D30	HVAC				$ 235,230	$ 2.95	$ 220,000	$ 2.76	$ (15,230)	-6.5%	$ 220,000	
D40	Fire Protection				$ -		$ 167,000	$ 2.09	$ 167,000	100.0%	$ 167,000	
D50	Electrical				$ 516,423	$ 6.47	$ 535,313	$ 6.71	$ 18,890	3.7%	$ 535,313	
Fittings and Fixed Equipment			$ -	$ -	$ 55,500	$ 0.70	$ 75,000	$ 0.94	$ 19,500	35.1%	$ 75,000	100.0%
E10	Equipment				$ 10,500	$ 0.13	$ -	$ -	$ (10,500)	-100.0%	$ -	
E20	Furnishings				$ 45,000	$ 0.56	$ 75,000	$ 0.94	$ 30,000	66.7%	$ 75,000	
Special Construction & Demolition			$ 5,645,812	$ 70.75	$ 1,391,061	$ 17.43	$ 2,305,004	$ 28.88	$ 913,943	65.7%	$ (3,340,808)	-144.9%
F10	Special Construction		$ 3,710,000			$ -		$ -	$ -	#DIV/0!	$ (3,710,000)	
F20	Selective Building Demolition		$ 1,935,812		$ 1,391,061	$ 17.43	$ 2,305,004	$ 28.88	$ 913,943	65.7%	$ 369,192	
Sitework			$ 2,267,820	$ 28.42	$ 1,940,454	$ 24.32	$ 1,052,391	$ 13.19	$ (888,063)	-45.8%	$ (1,215,429)	-115.5%
G10	Site Preparation		$ 1,397,032		$ 1,524,146	$ 19.10	$ 359,829	$ 4.51	$ (1,164,317)	-76.4%	$ (1,037,203)	
G20	Site Improvements		$ 870,788		$ 296,308	$ 3.71	$ 588,317	$ 7.37	$ 292,009	98.5%	$ (282,471)	
G30	Site Mechanical Utilities				$ 60,000	$ 0.75	$ 37,250	$ 0.47	$ (22,750)	-37.9%	$ 37,250	
G40	Site Electrical Utilities				$ 60,000	$ 0.75	$ 66,995	$ 0.84	$ 6,995	11.7%	$ 66,995	
	Enabling Work Subtotal:		**$ 7,913,632**	**$ 99.17**	**$ 4,933,880**	**$ 61.83**	**$ 5,228,257**	**$ 65.52**	**$ 294,377**	**6.0%**	**$ (2,685,375)**	**-51.4%**
NEW BUILDING			PM&C	$/sf	PM&C	$/sf	Ellana*	$/sf	DELTA	%	DELTA	%
Substructure			$ 4,121,915	$ 51.65	$ 4,163,075	$ 52.17	#####	$ 48.51	$ (291,791)	-7.0%	$ (250,631)	-6.5%
A10	Foundations		$ 4,121,915		$ 4,163,075	$ 52.17	$ 3,024,888	$ 37.91	$ (1,138,187)	-27.3%	$ (1,097,027)	
A20	Basement Construction		$ -		$ -	$ -	$ 846,396	$ 10.61	$ 846,396		$ 846,396	
Shell			$ 13,681,560	$ 171.45	$ 16,281,956	$ 204.03	$ 16,716,200	$ 209.47	$ 434,244	2.7%	$ 3,034,640	18.2%
B10	Superstructure		$ 4,495,280		$ 5,176,790	$ 64.87	$ 6,078,099	$ 76.17	$ 901,309	17.4%	$ 1,582,819	
B20	Exterior Structure		$ 7,508,738		$ 8,225,014	$ 103.07	$ 7,752,746	$ 97.15	$ (472,268)	-5.7%	$ 244,008	
B30	Roofing		$ 1,677,542		$ 2,880,152	$ 36.09	$ 2,885,355	$ 36.16	$ 5,203	0.2%	$ 1,207,813	
Interiors			$ 8,253,921	$ 103.43	$ 7,797,737	$ 97.71	$ 7,138,834	$ 89.46	$ (658,903)	-8.4%	$ (1,115,087)	-15.6%
C10	Interior Construction		$ 4,949,400		$ 4,760,436	$ 59.65	$ 4,178,361	$ 52.36	$ (582,075)	-12.2%	$ (771,039)	
C20	Stairs		$ 518,000		$ 301,500	$ 3.78	$ 259,400	$ 3.25	$ (42,100)	-14.0%	$ (258,600)	
C30	Interior Finishes		$ 2,786,521		$ 2,735,801	$ 34.28	$ 2,701,073	$ 33.85	$ (34,728)	-1.3%	$ (85,448)	
Services			$ 16,885,214	$ 211.59	$ 15,743,580	$ 197.29	$ 16,040,054	$ 201.00	$ 296,474	1.9%	$ (845,160)	-5.3%
D10	Conveying		$ 183,000		$ 243,700	$ 3.05	$ 226,275	$ 2.84	$ (17,425)	-7.2%	$ 43,275	
D20	Plumbing		$ 2,222,801		$ 2,192,067	$ 27.47	$ 2,368,025	$ 29.67	$ 175,958	8.0%	$ 145,224	
D30	HVAC		$ 8,008,715		$ 7,280,982	$ 91.24	$ 7,185,604	$ 90.04	$ (95,378)	-1.3%	$ (823,111)	
D40	Fire Protection		$ 701,908		$ 759,640	$ 9.52	$ 769,613	$ 9.64	$ 9,973	1.3%	$ 67,705	
D50	Electrical		$ 5,768,790		$ 5,267,191	$ 66.00	$ 5,490,537	$ 68.80	$ 223,346	4.2%	$ (278,253)	
Fittings and Fixed Equipment			$ 1,878,465	$ 23.54	$ 1,668,526	$ 20.91	$ 1,607,540	$ 20.14	$ (60,986)	-3.7%	$ (270,925)	-16.9%
E10	Equipment		$ 778,245		$ 707,222	$ 8.86	$ 686,825	$ 8.61	$ (20,397)	-2.9%	$ (91,420)	
E20	Furnishings		$ 1,100,220		$ 961,304	$ 12.05	$ 920,715	$ 11.54	$ (40,589)	-4.2%	$ (179,505)	
	New Building Subtotal:		**$ 44,821,075**	**$ 561.66**	**$ 45,654,874**	**$ 572.11**	**$ 45,373,910**	**$ 568.59**	**$ (280,964)**	**-0.6%**	**$ 552,835**	**1.2%**
PHASE 2 - DEMO & SITEWORK			PM&C	$/sf	PM&C	$/sf	Ellana*	$/sf	DELTA	%	DELTA	%
Special Construction & Demolition			$ 933,718	$ 11.70	$ 1,223,527	$ 15.33	$ 1,312,874	$ 16.45	$ 89,347	7.3%	$ 379,156	28.9%
F20	Selective Building Demolition		$ 933,718		$ 1,223,527		$ 1,312,874	$ 16.45	$ 89,347	7.3%	$ 379,156	
Sitework			$ 5,263,399	$ 65.96	$ 6,207,045	$ 77.78	$ 5,649,304	$ 70.79	$ (557,741)	-9.0%	$ 385,905	6.8%
G10	Site Preparation		$ 870,788		$ 1,327,392		$ 1,175,529	$ 14.73	$ (151,863)	-11.4%	$ 304,741	
G20	Site Improvements		$ 3,152,843		$ 3,384,648		$ 3,052,064	$ 38.25	$ (332,584)	-9.8%	$ (100,779)	
G30	Site Mechanical Utilities		$ 953,415		$ 789,625		$ 767,026	$ 9.61	$ (22,599)	-2.9%	$ (186,389)	
G40	Site Electrical Utilities		$ 286,353		$ 705,380		$ 654,685	$ 8.20	$ (50,695)	-7.2%	$ 368,332	
	Phase 2 - Demo & Sitework Subtotal:		**$ 6,197,117**	**$ 77.66**	**$ 7,430,572**	**$ 93.11**	**$ 6,962,176**	**$ 87.24**	**$ (468,396)**	**-6.3%**	**$ 765,059**	**11.0%**
			PM&C	$/sf	PM&C	$/sf	Ellana	$/sf	DELTA	%	DELTA	%
	TOTAL DIRECT COST		**$ 60,875,576**	**$ 762.84**	**$ 59,746,870**	**$ 748.70**	**$ 59,128,699**	**$ 740.95**	**$ (618,171)**	**-1.0%**	**$ (1,746,877)**	**-3.0%**
Des. / Est. Contingency		10.00%	$ 6,859,869		$ 5,974,687		10.00% $ 5,912,870	$ 74.10	$ (61,817)	-1.03%	$ (946,999)	-16.0%
Escalation		4.33%	$ 4,813,341		$ 2,587,039		4.33% $ 2,560,273	$ 32.08	$ (26,766)	-1.03%	$ (2,253,068)	-88.0%
	Subtotal:		**$ 72,548,786**	**$ 909.12**	**$ 68,308,596**	**$ 855.99**	**$ 67,601,842**	**$ 847.13**	**$ (706,754)**	**-1.0%**	**$ (4,946,944)**	**-7.3%**
General Conditions	Months	30	$ 3,900,000		$ 4,200,000	$140,000	30 $ 3,380,092	$ 112,670	$ (819,908)	-19.52%	$ (519,908)	-15.4%
General Requirements		4.00%	$ 2,753,551		$ 2,732,344		4.00% $ 2,704,074	$ 33.89	$ (28,270)	-1.03%	$ (49,477)	-1.8%
Insurance and Bonds		0.37%	$ 1,376,776		$ 2,024,230		2.75% $ 2,026,365	$ 25.39	$ 2,135	0.11%	$ 649,589	32.1%
Building Permit			By Owner		By Owner		By Owner					
	Subtotal:		**$ 80,579,113**	**$ 1,009.75**	**$ 77,265,170**	**$ 968.22**	**$ 75,712,373**	**$ 948.76**	**$(1,552,797)**	**-2.0%**	**$ (4,866,740)**	**-6.4%**
CM Fee		2.50%	$ 1,537,382	$ 19.27	$ 1,931,629	$ 24.21	2.00% $ 1,514,247	$ 18.98	$ (417,382)	-21.6%	$ (23,135)	-1.5%
GMP Contingency		3.00%	$ 1,921,728	$ 24.08	$ 2,049,258	$ 25.68	2.50% $ 1,892,809	$ 23.72	$ (156,449)	-7.6%	$ (28,919)	-1.5%
	RECONCILED TOTAL:		**$ 84,038,224**	**$ 1,053.10**	**$ 81,246,058**	**$ 1,018.11**	**$ 79,119,430**	**$ 991.46**	**$(2,126,629)**	**-2.6%**	**$ (4,918,794)**	**-6.2%**

* PM&C estimate figures were used in the formulation of the Total Project Budget.

ALTERNATES	PM&C	$/sf	Ellana	$/sf	DELTA	%	DELTA	%
Alt #1 Faux Slate Roof ILO Real Slate	$ (227,728)		$ (180,976)		$ 46,752	-20.5%	$ 46,752	#DIV/0!
Alt #2 Faux Slate Roof ILO Asphalt	$ 837,845		$ 933,531		$ 95,686	11.4%	$ 95,686	#DIV/0!
Alt #3 Alum. Shingle Roof ILO Asphalt	$ 66,567		$ 36,195		$ (30,372)	-45.6%	$ (30,372)	#DIV/0!
Alt #4 Segmented Retaining Walls	$ (191,151)		$ (63,981)		$ 127,170	-66.5%	$ 127,170	#DIV/0!
Alt #5 Lighting Prevention System	$ 78,000		$ 100,357		$ 22,357	28.7%	$ 22,357	#DIV/0!
Alt #6 T&G Roof Deck	$ 63,063		$ 74,200		$ 11,137	17.7%	$ 11,137	#DIV/0!
Alt #7 2x2 ACT ILO GWB @ Toilets	$ (27,885)		$ (15,151)		$ 12,734	-45.7%	$ 12,734	#DIV/0!
Alt #8 Linoleum ILO Terrazzo	$ (152,714)		$ (205,122)		$ (52,408)	34.3%	$ (52,408)	#DIV/0!
Alt #9 Porcelain Floor Tile ILO Terrazzo	$ (23,486)		$ (107,020)		$ (83,534)	355.7%	$ (83,534)	#DIV/0!
Alt #10 Linoleum ILO Porcelain FT @ Café	$ (149,612)		$ (115,986)		$ 33,626	-22.5%	$ 33,626	#DIV/0!
Alt #11 FRP ILO Wall Tile @ Kitchen Only	$ (35,194)		$ (14,987)		$ 20,207	-57.4%	$ 20,207	#DIV/0!
Alt #12 Porcelain WT ILO FRP @ Toilets	$ 86,632		$ 5,928		$ (80,704)	-93.2%	$ (80,704)	#DIV/0!
Alt #13 FRP ILO WT @ Toilets 109+111	$ (8,653)		$ (12,484)		$ (3,831)	44.3%	$ (3,831)	#DIV/0!
Alt #14 FRP ILO WT @ Corridors	$ (254,114)		$ (22,895)		$ 231,219	-91.0%	$ 231,219	#DIV/0!
Alt #15 Mtl Screen ILO Brick Trash Screen	$ (42,004)		$ (55,604)		$ (13,600)	32.4%	$ (13,600)	#DIV/0!
Alt #16 Add Irrigation - w/ base scope	$ 239,265		$ -		$ (239,265)	-100.0%	$ (239,265)	#DIV/0!
Alt #17 Fiberglass Win ILO TB Alum Win	$ (205,165)		$ (495,260)		$ (290,095)	141.4%	$ (290,095)	#DIV/0!
Alt #18 Fiberglass CW ILO TB Alum CW	$ (59,348)		$ (135,394)		$ (76,046)	128.1%	$ (76,046)	#DIV/0!
Alt #19 Slimplify Library Roof Structure	$ (51,245)		$ (25,734)		$ 25,511	-49.8%	$ 25,511	#DIV/0!
Alt # 20 Basic scope to restore parkland	$ (1,915,676)		$ (1,019,988)		$ 895,688	-46.8%	$ 895,688	#DIV/0!

City of Quincy - Squantum School

Project Directory

Name	Title	Office Phone	E-mail
Owner			
City of Quincy			
City Hall 1305 Hancock Street Quincy, MA 02169			
Mayor Thomas P. Koch	Mayor of Quincy	(617)376-1991	mayorkoch@quincyma.gov
Chris Walker	Chief of Staff	(617)376-1990	cwalker@quincyma.gov
Mary Mulvey	Executive Assistant	(617)376-1990	mmulvey@quincyma.gov
Danielle Delloiacono	Administrative Assistant	(617)376-1990	ddelloiacono@quincyma.gov
Helen Murphy	Mayors Office Director of Operations	(617)376-1990	hmurphy@quincyma.gov
James Timmins	City Solicitor	(617)376-1511	jtimmins@quincyma.gov
Janet Petkun	Assistant City Solicitor	(617)376-1514	jpetkum@quincyma.gov
Eric Mason	Director of Municipal Finance	(617)376-2706	emason@quincyma.gov
Brian Glavin	Director of IT	(617)376-1120	bglavin@quincyma.gov
Rob Conlon	Director of Inspectional Services	(617)376-1450	rconlon@quincyma.gov
James Anderson	Chief Building Inspector	(617)376-1464	janderson@quincyma.gov
Thomas Pecoraro	Chief Plumbing & Gas Inspector	(617)376-1461	tpercoraro@quincyma.gov
Francis X White	Chief Wiring Inspector	(617)376-1481	fwhite@quincyma.gov
Paul Hines	Commissioner of Public Buildings	(617)376-1512	phines@quincyma.gov
Fiona Durkin	Executive Assistant Public Buildings	(617)376-1542	fdurkin@quincyma.gov
Gary Cunniff	Director of Engineering	(617)376-1539	gcunniff@quincyma.gov
Shelly Dein	Director of Energy and Sustainability	(617)376-1921	sdein@quincyma.gov
Walter Macdonald	Director of Building Maintenance	(617)376-1553	waltermacdonald@quincyma.gov
Ally Sleiman	Director of Emergency Management	(617)376-1105	asleiman@quincyma.gov
Al Grazioso	Commissioner of Public Works	(617)376-1959	agrazioso@quincyma.gov
Paul Costello	City Enginer	(617)376-1937	pcostello@quincyma.gov
Kathryn Logan	Purchasing Agent	(617)376-1063	klogan@quincyma.gov
Joseph Jackson	Chief Fire Department	(617)376-1040	jjackson@quincyma.gov
James Campbell	Captain Fire Prevention	(617)376-1015	jcampbell@quincyma.gov
Brent Campbell	Superintendent of Fire Alarm	(617)376-1020	bcampbell@quincyma.gov
Mark Kennedy	Chief Police Department	(617)745-5712	mkennedy@quincyma.gov
Quincy Public Schools			
School Department 34 Coddington Street Quincy, MA 02169			
Kevin Mulvey, J.D.	Superintendent of Schools	617-984-8701	kevinmulvey@quincypublicschools.com
Erin Perkins	Assistant Superintendent	617-984-8743	erinperkins@quincypublicschools.com
Laura Owens	Assistant to Superintendent	617-984-8702	lauraowens@quincypublicschools.com
Maura Papile, L.I.C.S.W.,	Senior Director of Student Support Services	617-984-8898	maurapapile@quincypublicschools.com
Kim Connolly	Director of Diversity, Equity & Inclusion	617-984-8814	kimconnolly@quincypublicschools.com
Michael Draicchio	Director of Safety, [redacted], and Transportation	617-984-8897	michaeldraicchio@quincypublicschools.com
Sara Dufour	Director of School Nutrition	617-984-8768	saradufor@quincypublicschools.com
Julie Graham	Director of Special Education	617-984-8803	juliegraham@quincypublicschools.com
James Mullaney	Director of Business Affairs	617-984-8771	jamesmullaney@quincypublicschools.com
Kevin Segalla	Coordinator, Custodial Services	617-984-8851	kevinsegalla@quincypublicschools.com
Bob Cavallo	IT Systems Administrator	617-984-6610	robertcavallo@quincypublicschools.com
Stephen Sylvia	Squantum School Principal	(617)984-8706	stephensylvia@quincypublicschools.com
School Building Committee			
Mayor Thomas P. Koch	Mayor of Quincy	(617)376-1991	mayorkoch@quincyma.gov
Kevin Mulvey, J.D.	Superintendent of Schools	(617)984-8700	kevinmulvey@quincypublicschools.com
Erin Perkins	Assistant Superintendent	(617)984-8700	erinperkins@quincypublicschools.com
Kathryn Logan	Purchasing Agent	(617)376-1063	klogan@quincyma.gov
Tina Cahill	School Committee Member	(617)984-8700	tinacahill@quincypublicschools.com
Paul Hines	Commissioner of Public Buildings	(617)376-1512	phines@quincyma.gov
Stephen Sylvia	Squantum School Principal	(617)984-8706	stephensylvia@quincypublicschools.com
Eric Mason	Director of Municipal Finance	(617)376-2706	emason@quincyma.gov
Frank Santoro	Member of Community with Architecture Exp.	(617)984-8700	flsantoro@comcast.net
Susan Vinitsky	Squantum School Parent	(617)877-4565	suevinitsky@gmail.com
Kim Wheelwright	Squantum School Parent	(617)694-2176	kswheelwright@gmail.com
Walter Macdonald	Director of Building Maintenance	(617)376-1553	waltermacdonald@quincyma.gov
Owner Project Manager			
Tom Kerwin	Project Executive	(617)723-5056 x102	tkerwin@pca360.com
Brian Laroche	Project Director	(617)723-5056 x103	blaroche@pca360.com
Mike Ulichney	Project Manager	(617)723-5056 x105	mulichney@pca360.com
Alex Liousas	Assistant Project Manager	(617)723-5056 x107	mulichney@pca360.com

City of Quincy - Squantum School
Project Directory

Name	Title	Office Phone	Cell Phone	E-mail
Architect				
Arrowstreet				
10 Post Office Square, Suite 700N				
Boston, MA 02109				
Larry Spang	Principal	617.666.7078	617.921.8769	spang@arrowstreet.com
Tina Soo Hoo	Project Manager	617.666.7091	310.721.8877	soohoo@arrowstreet.com
Autumn Waldron	Architect	617.666.7082		waldron@arrowstreet.com
Architect's Consultants				
Educational Consultant				
New Vista Design				
32 Sheridan Street, #3				
Boston, MA 02130				
David Stephen	Educational Consutlant	617.733.0847		david@newvistadesign.net
Building Code & Accessibility				
Code Red Consultants				
154 Turnpike Rd., Suite 200				
Southborough, MA 01772				
Paul Moan	Principal – Sr Project Manager	617.500.7633		paulm@crcfire.com
Kevin Lynch	Project Manager			klynch@crcfire.com
Hazardous Materials				
Universal Environmental Consultants				
12 Brewster Road				
Framingham, MA 01702				
Ammar Dieb	President	508.628.5486	617.984.9772	adieb@uec-env.com
GeoEnviromental & Environmental Permitting				
Ransom Consulting, LLC				
50 High Street, Suite 25				
North Andover, MA 01845				
Brian Pettingill	Sr Project Manager	207-772-2891		bpettingill@ransomenv.com
Jay Johonnett	Geotechnical Engineer			
Geotechnical				
Lahlaf Geotechnical Consulting				
23 McGinness Way				
Billerica, MA 01821				
Madjid Lahlaf	Principal Engineer	(978) 330-5912	(781) 771-1933	madjid.lahlaf@lgcinc.net
Survey				
Feldman Land Surveyors				
152 Hampden Street				
Boston, MA 02119				
Joe Zambuto, PLS	Senior Project Manager / Team Leader	617-357-9740		jzambuto@feldmangeo.com
Existing Conditions				
PointKnown				
418 Massachusetts Ave				
Arlington, MA 02474				
Jim Foster		617.575.2222	617.869.3733	jfoster@pointknown.com
Traffic				
MDM Transportation Consultants, Inc				
28 Lord Road, Suite 280				
Marlborough, MA 01752				
Robert Michaud, PE	Managing Principal	508-303-0370, x1115 (Ph)		rmichaud@mdmtrans.com
Dan Dumais	Senior Project Manager			ddumais@mdmtrans.com

Civil

Green International Affiliates, Inc
100 Ames Pond Drive, Suite 200
Tewksbury, MA 01876
978-923-0400

Danielle H. Spicer, P.E.	Stormwater & Permitting	(978) 843-5218		dspicer@greenintl.com
Adel Shahin, PE	Senior Vice President	(978) 923-0400		ashahin@greenintl.com

Landscape Architecture

Terraink
7 Central Street
Arlington, MA 02476

Kellie Connelly	Principal	781.316.1595		kconnelly@terraink.com
Jade Cummings	Principal	781.316.1595		jcummings@terraink.com

Structural Engineering

Lim Consultants, Inc
6 Pleasant Street
Malden, MA 02148

Christine Ye	Project Principal	781-338-9300 x30	617-628-7728	cye@limconsultants.com

Mechanical, Electrical, Plumbing, Fire Protection, Technology

Garcia, Galuska & DeSousa, Inc.
370 Faunce Corner Rd
N. Dartmouth, MA 04727

Chris Garcia	Fire Protection and Plumbing	(508) 998-5700		chris_garcia@g-g-d.com
David Pereira	Electrical	(508) 998-5700		david_pereira@g-g-d.com
Matt DiSalvo	Mechanical	(508) 998-5700		matthew_disalvo@g-g-d.com

Audio Visual / Acoustical

Cavanaugh Tocci Associates, Inc.
327F Boston Post Road
Sudbury, MA 01776

Alex Bagnall	Principal Consultant	978.639.4129		abagnall@cavtocci.com

Specifications

Kalin Associates
21 Eliot Street
Natick, MA 01760

Cynie Linton			617.320.9659	clinton@kalinassociates.com

Food Service

Crabtree McGrath Associates, Inc
161 W. Main Street
Georgetown, MA 01833

John Sousa	Principal	978.352.8500		jsousa@crabtree-mcgrath.com

Cost Estimating

PM&C
20 Downer Avenue, Suite 1C
Hingham, MA 02043

Peter Bradley	Cost Estimator	781.740.8007		peterbradley@pmc-ma.com

Sustainability & Energy Modeling

Thornton Tomasetti
27 Wormwood St #200,
Boston, MA 02210

Xiaoshu (Sunny) Du | Senior Project Director		207-245-6074		XDu@ThorntonTomasetti.com
Irmak Turan	Project Manager			ituran@thorntontomasetti.com
Prudence Ferreira, CPHC	Passive House Practice Lead	207.558.8777		pferreira@ThorntonTomasetti.com

Geothermal

Haley & Alrich
70 Blanchard Road, Suite 204
Burlington, MA 01803
617.886.7400

John Kastrinos	Senior Associate | Hydrogeology	cell: 857-498-1231	JKastrinos@haleyaldrich.com

Lighting

HLB Lighting Design
200 State Street, Suite 325
Boston, MA 02190

Carrie Hawley, IALD, MIES, LEED			

Building Envelope

Building Envelope Technologies, Inc
417 Purchase Street
Easton, MA 02375

Lance E. Robson, AIA, CPH	Principal	508-238-3587		lrobson@buildingenvelopetech.com

Squantum School

Quincy, Massacusetts

COMMUNICATION AND DOCUMENT CONTROL PLAN

June 14, 2024

SQUANTUM SCHOOL, QUINCY, MA

COMMUNICATION AND DOCUMENT CONTROL PLAN

TABLE OF CONTENTS

COMMUNICATION AND DOCUMENT CONTROL PLAN

SUMMARY

What is a document control plan, what all is included in this plan, and why it is a vital document for a project? A project functions efficiently when the channels of authority are unambiguous, policies and systems are particularly comprehensive, and the means are accessible to confirm conformity. A document control plan is important to ensure smooth and efficient functioning of the business procedures of a project.

The document control plan is basically a guide or an outline that the purpose is to establish responsibilities and procedures for all communication and documentation that will be issued through the course of the project from the Design Development Phase through, to project Closeout. Some of the documentation that will be issued includes reports, meeting minutes, construction logs, schedules and distribution lists for all forms of documentation. The Owner's Project Manager (OPM), provides key coordination between the project team members to ensure that everyone involved is kept updated and informed.

This communication and document control plan is critical to making sure the project outcome is successful. This plan is established for ensuring proper documentation in a project, and identifies the individuals who will are to be the initiator of various elements of the plan, who will provide a supporting role and who will be reviewing. This plan will be evaluated annually and updated as necessary, to ensure continuous improvement.

COMMUNICATION AND DOCUMENT CONTROL PLAN
PROJECT DIRECTORY

School Building Committee / Owner

Name	Title	Phone	E-mail
Mayor Thomas P. Koch	Mayor of Quincy	(617)376-1991	mayorkoch@quincyma.gov
Kevin Mulvey, J.D.	Superintendent of Schools	(617)984-8700	kevinmulvey@quincypublicschools
Erin Perkins	Assistant Superintendent	(617)984-8700	erinperkins@quincypublicschools.c
Kathryn Logan	Purchasing Agent	(617)376-1063	klogan@quincyma.gov
Tina Cahill	School Committee Member	(617)984-8700	tinacahill@quincypublicschools.co
Paul Hines	Commissioner of Public Buildings	(617)376-1512	phines@quincyma.gov
Stephen Sylvia	Squantum School Principal	(617)984-8706	stephensylvia@quincypublicschool
Eric Mason	Director of Municipal Finance	(617)376-2706	emason@quincyma.gov
Frank Santoro	Member of Community w/ exp.	(617)984-8700	flsantoro@comcast.net
Susan Vinitsky	Squantum School Parent	(617)877-4565	suevinitsky@gmail.com
Kim Wheelwright	Squantum School Parent	(617)694-2176	kswheelwright@gmail.com
Walter Macdonald	Director of Building Maintenance	(617)376-1553	waltermacdonald@quincyma.gov

PCA360

Name	Title	Phone	E-mail
Tom Kerwin	Project Executive	(617)723-5056 x102	tkerwin@pca360.com
Brian Laroche	Project Director	(617)723-5056 x103	blaroche@pca360.com
Mike Ulichney	Project Manager	(617)723-5056 x105	mulichney@pca360.com
Alex Liousas	Assistant Project Manager	(617)723-5056 x107	aliousas@pca360.com

Arrowstreet Architects

Name	Title	Phone	E-mail
Larry Spang	Principal	617.666.7078	spang@arrowstreet.com
Tina Soo Hoo	Project Manager	617.666.7091	soohoo@arrowstreet.com
Autumn Waldron	Project Architect	617.666.7082	waldron@arrowstreet.com

SQUANTUM SCHOOL, QUINCY, MA

COMMUNICATION AND DOCUMENT CONTROL PLAN

ROLES & RESPONSIBILITIES CHART

L	= Lead	Provides information during process and final issuance of document or recommendation
S	= Support	Provides information during process or otherwise supports Lead role
R	= Review/Input	Provides interim opinion and final review

	ACTIVITY	AS	PCA	CxA	GC/CM	SBC	MSBA
Module 1 - Eligibility Period							
a	Statement of Interest					**L**	R
b	Facilities Master Plan					**L**	R
c	Design and Education Program					**L**	R
d	Budget Statement for Educational Objectives					**L**	R
e	Form School Building Advisory Committee					**L**	R
f	Initial Compliance Certification					**L**	R
g	Facility and Maintenance Assessment					S	**L**
h	Enrollment Projections					S	**L**
i	Pre-Study Review Meeting					S	**L**
Module 2 - Forming the Team							
a	OPM RFS, Selection, OPM Contract					**L**	R
b	OPM Selection Panel		**L**			S	
c	Designer RFS, Preliminary Evaluation		**L**			S	R
d	Designer Selection Panel		S			S	**L**
e	Designer Contract		S			S	**L**
f	Project Kick-off		S			S	**L**
Module 3 - Feasibility Study							
a	Educational Program	S				**L**	
b	Initial Space Summary	**L**	S			S	
c	Evaluation of Existing Conditions	**L**	S				
d	Site Development Requirements	**L**	S				
e	Preliminary Evaluation of Alternatives	**L**	S				
f	Local Actions and Approvals	S	S			**L**	R

COMMUNICATION AND DOCUMENT CONTROL PLAN

ROLES & RESPONSIBILITIES CHART

L	= Lead	Provides information during process and final issuance of document or recommendation
S	= Support	Provides information during process or otherwise supports Lead role
R	= Review/Input	Provides interim opinion and final review

	ACTIVITY	AS	PCA	CxA	GC/CM	SBC	MSBA
g	PDP Submission to the MSBA	**L**	S			S	R
h	Preferred Schematic Report	**L**	S			S	R
Module 4 - Schematic Design							
a	Develop a robust design	**L**	S			S	R
b	Cost Estimate	S	**L**			S	R
c	Develop 3011 Budget	S	**L**			S	R
d	DESE Submittal	**L**	S			S	R
e	Project Scope & Budget Conference	S	S			R	**L**
f	Project Scope & Budget Agreement		S			R	**L**
Module 5 - Funding the Project							
a	Project Controls - Total Project Cost	S	**L**			S	R
b	Meetings with Owner, MSBA & Community	S	**L**		S	R	S
c	Progress Reports (Monthly)		**L**			R	R
d	Communication and Document Control	S	**L**			R	R

COMMUNICATION AND DOCUMENT CONTROL PLAN

ROLES & RESPONSIBILITIES CHART

L	=	Lead	Provides information during process and final issuance of document or recommendation
S	=	Support	Provides information during process or otherwise supports Lead role
R	=	Review/Input	Provides interim opinion and final review

	ACTIVITY	AS	PCA	CxA	GC/CM	SBC	MSBA
e	Review All Project Invoices		**L**			S	R
f	Review Designer's Contract Compliance		**L**			S	R
g	Submit Pro-Pay Application		S			**L**	S
Module 6 - Detailed Design							
	Final Design						
a	Procure Designer for Final Design		**L**			S	S
b	Designer Selection Panel (if change)		S			S	**L**
c	Negotiate Final Design Contract	S	**L**			S	S
d	Assign Commissioning Agent	R	R			R	**L**
e	Design Development	**L**	S	S	S	S	
f	Procure Construction Manager	S	**L**			R	
g	Design Coordination Meetings	S	**L**		S	S	R
h	Value Engineering (Schematic, 30% and 60%)	S	**L**	S	S	S	S
i	60% Construction Documents	**L**	S	S	S		
j	Procure CM at risk (if applicable)	S	**L**			S	S
k	Negotiate CM contract (if applicable)		**L**			S	R
l	90% Construction Documents	**L**	S	S	S	S	S
m	Bid Documents	**L**	S	S	S	S	S
	Bidding Services						
a	Prequalification of Contractors	S	**L**		S	S	R
b	Pre-Bid Meetings/Site Visit	S	**L**		L	S	S
c	Issuance of Addenda	**L**	S		L	R	
d	Response to Technical Inquiries	**L**	S		R		
e	Bid Tabulations	S	S		**L**		
f	Bid Evaluations	S	S		**L**	R	

COMMUNICATION AND DOCUMENT CONTROL PLAN

ROLES & RESPONSIBILITIES CHART

L	=	Lead	Provides information during process and final issuance of document or recommendation
S	=	Support	Provides information during process or otherwise supports Lead role
R	=	Review/Input	Provides interim opinion and final review

	ACTIVITY	AS	PCA	CxA	GC/CM	SBC	MSBA
g	Award Recommendations	S	S		**L**	S	R

COMMUNICATION AND DOCUMENT CONTROL PLAN

ROLES & RESPONSIBILITIES CHART

L	= Lead	Provides information during process and final issuance of document or recommendation
S	= Support	Provides information during process or otherwise supports Lead role
R	= Review/Input	Provides interim opinion and final review

	ACTIVITY	AS	PCA	CxA	GC/CM	SBC	MSBA
h	Pre-Award Conference	S	S		**L**	R	
Module 7 - Construction							
	Construction						
	Meetings						
a	Pre-Construction Conference	S	**L**	R	S	R	
b	Progress Meetings	S	**L**		S	R	
	Project Controls						
a	Scheduling/Work Plan/SOV/Coordination	S	S		**L**	R	R
b	Construction Meetings (weekly)	S	S		**L**	S	
c	Cost Estimates/Budgeting/Cash flows	S	**L**		S	R	R
d	Site Observation - Daily Log		**L**				R
e	Weekly Progress Reports (Field Observation Reports)	**L**	S		R	R	
	Record Drawings						
a	As-Built Drawing Preparation	R			**L**	R	
b	Review As-Built Drawings (Weekly)	R	R		**L**	R	
c	Record Drawing Approval	**L**	S			R	
	Construction Contract Administration						
a	MBE/WBE Monitoring Compliance		**L**		S	R	
b	Review Contractor Payment Requisitions	**L**	S		S	R	
c	Contractor Evaluations - 50%	S	**L**		S	S	
d	Change Order Development	S	S		**L**	R	
e	Change Order Review and Approval	S	**L**		S	R	
f	Claims Processing	S	**L**				
	Resident Inspection						
a	Survey	S	S		**L**		

COMMUNICATION AND DOCUMENT CONTROL PLAN

ROLES & RESPONSIBILITIES CHART

L	= Lead	Provides information during process and final issuance of document or recommendation
S	= Support	Provides information during process or otherwise supports Lead role
R	= Review/Input	Provides interim opinion and final review

	ACTIVITY	AS	PCA	CxA	GC/CM	SBC	MSBA
b	Construction Observation	S	**L**				
c	LSP Services/Support		S		**L**		
d	Independent Quality Assurance	S	**L**				
e	Environmental Compliance	S			**L**		
	Document Interpretation/Submittals						
a	Specification for Submittals	**L**	S	R	S	R	
	Testing & Commissioning						
a	Develop Testing Specifications	**L**	S	S	R	R	
b	Functional Test Performance	R		S	**L**	R	
c	In-Shop Test Witnessing	S	S	**L**	S		
d	Operation & Maintenance Manual Review	S		**L**	S	S	
e	Commissioning	S	S	**L**	S	S	S
	Contracts Closeout						
a	Punch List	**L**	S	S	**L**	S	
b	Certificate of Occupancy	S	S		**L**	S	
c	Contractor Evaluations - Final	S	**L**		S	S	
d	Warranty Consultation (From Date of Final Acceptance of Project)	S	**L**		S	S	
e	Designer Evaluation		**L**			S	
f	OPM Evaluation					**L**	S
g	Record Set for Owner	R	R		**L**		

Squantum School, Quincy, MA

WORK PLAN - FEASIBILITY TO DESIGN DEVELOPMENT

updated 8/4/2023, 9/21/23, 9/28/23, 11/29/23, 01/10/24, 04/02/24, 06/14/24, 7/31/24, 8/20/24

Project No. 23008	**DRAFT**
COMPLETE	**Feasibility - PDP**
	(PDP rows are hidden in Excel file)
COMPLETE	**Feasibility - PSR**
	(PSR rows are hidden in Excel file)
COMPLETE	**Schematic Design**
	(SD rows are hidden in Excel file)
SUMMER 2024	***CITY OF QUINCY UTILITY WORK***
	Design Development
Thursday, August 1, 2024	**Working Group Meeting #27** **Agenda:** **Project Schedule Update** **Project Work Plan** **MSBA Update**
Thursday, August 15, 2024	**Working Group Meeting #28** **Agenda:** **Review MSBA response** **Exterior Studies (Gym, Courtyard)** **Interior Conceptual/Theme(s)** **Review glycol recommendations**
Wednesday, August 21, 2024	**Draft of SD Resubmission of SBC**
Thursday, August 22, 2024	**Working Group Meeting #29** **Agenda:** **Exterior Building Studies (Gym & Courtyard updates)** **Interior Studies (Main Street lobby/hall, Classroom Breakout Spaces)** **Reconfirm Resiliency Design Targets**
Thursday, August 22, 2024	**SBC Meeting #7** **Agenda:** **- Vote on SD Resubmission**

Thursday, August 29, 2024	Working Group Meeting #30 Agenda: Exterior Building Studies (Exterior Materials, Misc. Updates) Interior Studies (Main Street Hallway, Cafeteria & Stage, Breakout spaces updates)
Thursday, August 29, 2024	Re-Submit SD to MSBA & DESE
September TBD	City Building Official to review proposed Enabling 1971 and Modular Building for temporary use. MAAB (Accessibility) Variance may be required. Plumbing review of proposed toilet rooms, drinking fountains.
Thursday, September 12, 2024	Working Group Meeting #31 Agenda: Continue updates on Exterior / Interior Studies Site/Landscape Design Updates LEED Check List
Tuesday, September 17, 2024	Teacher / Staff Meeting
September TBD	Project Update for Police and Fire
Thursday, September 26, 2024	Working Group Meeting #32 Agenda: Interior Studies (Media Center) System Review IT System Review
October TBD	Community Meeting
Thursday, October 10, 2024	Working Group Meeting #33 Agenda: Final Scope review. Review proprietary items.
Thursday, October 24, 2024	Working Group Meeting #34 Agenda TBD
Thursday, October 17, 2024	SBC Meeting #8 Agenda: Project Update Vote on proprietary items
Wednesday, October 23, 2024	Teacher / Staff Meeting (if necessary)
Wednesday, October 30, 2024	MSBA Board Meeting - Vote on SD
Wednesday, October 30, 2024	Send DD Pricing Set to Cost Estimator
Ocotber 2024	Construction Manager on board
Thursday, November 7, 2024	Working Group Meeting #34 Agenda TBD
Wednesday, November 20, 2024	Cost Estimates Received (Designer and OPM's estimates)
Friday, November 22, 2024	Cost Reconciliation Meeting & VE Analysis
December TBD	Community Meeting
Monday, December 2, 2024	SBC to review Draft of DD Submission

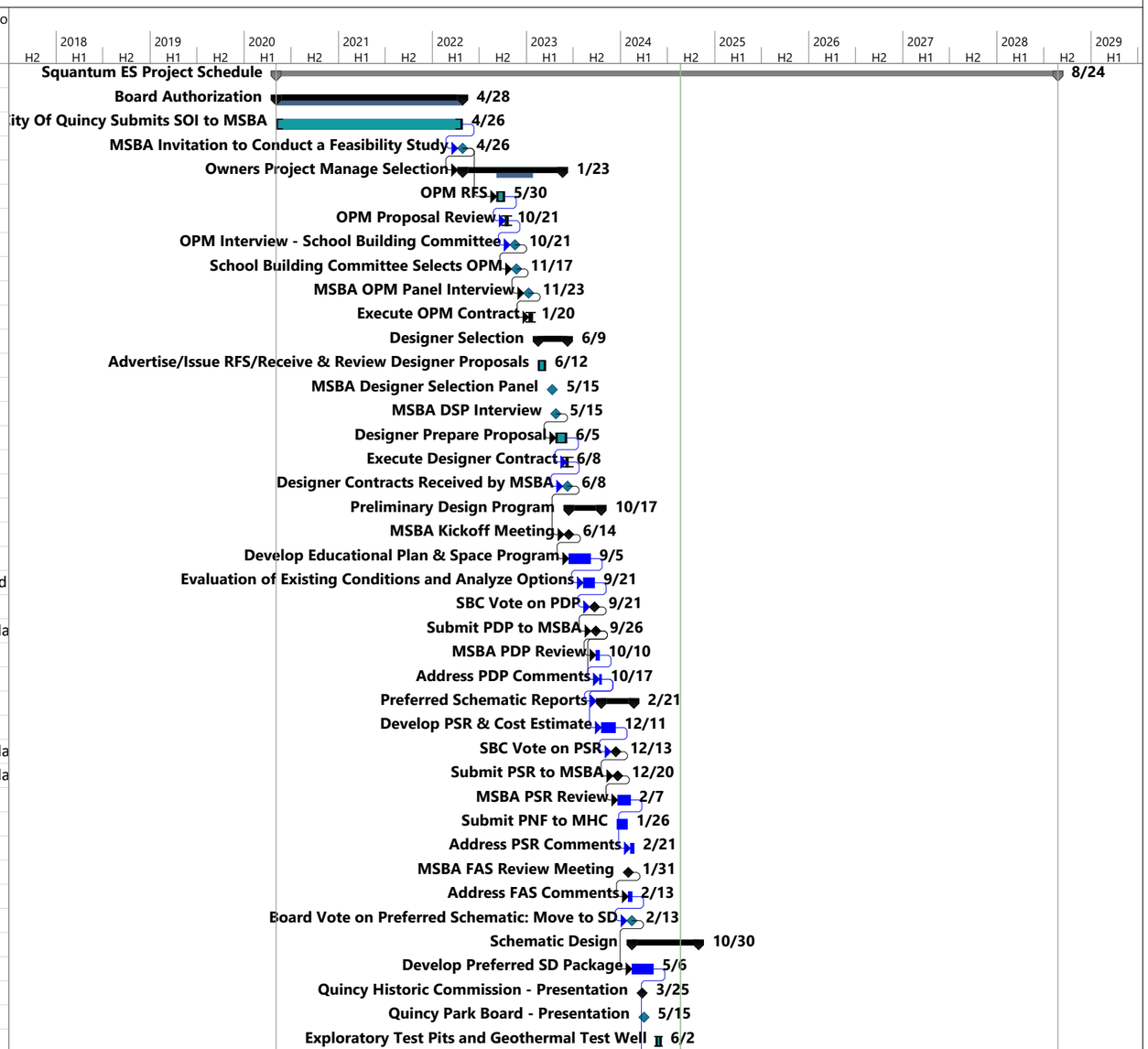
Thursday, December 5, 2024	SBC Meeting #9 Agenda TBD Vote to Submit DD Submission to MSBA
Tuesday, December 10, 2024	Submit Cost Estimate to MSBA
Friday, December 20, 2024	Submit DD to MSBA & DESE
	Construction Documents
Thursday, January 2, 2025	Begin Construction Documents
February TBD	MSBA DD Review Comments
February TBD	14 days Response to MSBA Review Comments
February TBD	Community Meeting
	The topics will be planned for upcoming Working Group Meetings
	SBC Meeting Dates will be scheduled
Winter 2025	Bid - Early Package: Geothermal Wellfield Construction
Spring 2025	Bid - Early Package: Enabling fo 1971 and Modular Classrooms
Spring 2025	Bid - Early Package: Demolition and Hazmat 1919 and 1949 Buildings
Wednesday, March 19, 2025	Submit 60% to MSBA
Wednesday, May 15, 2024	Submit 90% to MSBA
Thursday, July 18, 2024	Submit 100% to MSBA
Februrary 2025	Construction - Early Package: Geothermal Wellfield Construction
June 2025	Construction - Early Package: Enabling fo 1971 and Modular Classrooms
June 2025	Construction - Early Package: Demolition and Hazmat 1919 and 1949 Buildings
Sept 2025	Construction Phase 1 - New School
June 2027	Construction Phase 2 - Site Work
Winter/Spring 2027-2028	Substantial Completion
May - Aug 2028	Project Closeout

Squantum School Project Schedule

PCA360

PROJECT SCHEDULE - *(REV)*

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
0		**Squantum ES Project Schedule**	**2169 days?**	**Mon 5/4/20**	**Thu 8/24/28**	
1		**1 Board Authorization**	**518 days?**	**Mon 5/4/20**	**Wed 4/27/22**	
2		1.1 City Of Quincy Submits SOI to MSBA	517 days	Mon 5/4/20	Tue 4/26/22	
3		1.2 MSBA Invitation to Conduct a Feasibility Study	0 days	Thu 4/28/22	Thu 4/28/22	2
4		**2 Owners Project Manage Selection**	**278 days**	**Thu 4/28/22**	**Sat 5/20/23**	**3**
5		2.1 OPM RFS	23 days	Wed 9/7/22	Fri 10/7/22	3
6		2.2 OPM Proposal Review	10 days	Mon 10/10/22	Fri 10/21/22	5
7		2.3 OPM Interview - School Building Committee	0 days	Thu 11/17/22	Thu 11/17/22	6
8		2.4 School Building Committee Selects OPM	0 days	Wed 11/23/22	Wed 11/23/22	7
9		2.5 MSBA OPM Panel Interview	0 days	Mon 1/9/23	Mon 1/9/23	8
10		2.6 Execute OPM Contract	10 days	Tue 1/10/23	Mon 1/23/23	9
11		**3 Designer Selection**	**82 days**	**Wed 2/15/23**	**Fri 6/9/23**	
12		3.1 Advertise/Issue RFS/Receive & Review Designer Proposals	21 days	Wed 2/15/23	Wed 3/15/23	
13		3.2 MSBA Designer Selection Panel	0 days	Tue 4/11/23	Tue 4/11/23	
14		3.3 MSBA DSP Interview	0 days	Tue 4/25/23	Tue 4/25/23	
15		3.4 Designer Prepare Proposal	30 days	Tue 4/25/23	Mon 6/5/23	14
16		3.5 Execute Designer Contract	3 days	Tue 6/6/23	Thu 6/8/23	15
17		3.6 Designer Contracts Received by MSBA	0 days	Fri 6/9/23	Fri 6/9/23	16
18		**4 Preliminary Design Program**	**90 days**	**Wed 6/14/23**	**Tue 10/17/23**	
19		4.1 MSBA Kickoff Meeting	0 days	Wed 6/14/23	Wed 6/14/23	17
20		4.2 Develop Educational Plan & Space Program	60 days	Wed 6/14/23	Tue 9/5/23	19
21		4.3 Evaluation of Existing Conditions and Analyze Options	32 days	Wed 8/9/23	Thu 9/21/23	20FS-20 d
22		4.4 SBC Vote on PDP	0 days	Thu 9/21/23	Thu 9/21/23	21
23		4.5 Submit PDP to MSBA	0 days	Tue 9/26/23	Tue 9/26/23	22FS+3 da
24		4.6 MSBA PDP Review	2 wks	Wed 9/27/23	Tue 10/10/23	23
25		4.7 Address PDP Comments	1 wk	Wed 10/11/23	Tue 10/17/23	23,24
26		**5 Preferred Schematic Reports**	**91 days**	**Wed 10/18/23**	**Wed 2/21/24**	**25**
27		5.1 Develop PSR & Cost Estimate	39 days	Wed 10/18/23	Mon 12/11/23	25
28		5.2 SBC Vote on PSR	0 days	Wed 12/13/23	Wed 12/13/23	27FS+2 da
29		5.3 Submit PSR to MSBA	0 days	Wed 12/20/23	Wed 12/20/23	28FS+5 da
30		5.4 MSBA PSR Review	7 wks	Thu 12/21/23	Wed 2/7/24	29
31		5.5 Submit PNF to MHC	30 days	Mon 12/18/23	Fri 1/26/24	
32		5.6 Address PSR Comments	2 wks	Thu 2/8/24	Wed 2/21/24	30
33		5.7 MSBA FAS Review Meeting	0 days	Wed 1/31/24	Wed 1/31/24	
34		5.8 Address FAS Comments	2 wks	Wed 1/31/24	Tue 2/13/24	33
35		5.9 Board Vote on Preferred Schematic: Move to SD	0 days	Wed 2/14/24	Wed 2/14/24	34
36		**6 Schematic Design**	**185 days**	**Wed 2/14/24**	**Wed 10/30/24**	
37		6.1 Develop Preferred SD Package	59 days	Wed 2/14/24	Mon 5/6/24	35
38		6.2 Quincy Historic Commission - Presentation	0 days	Mon 3/25/24	Mon 3/25/24	
39		6.3 Quincy Park Board - Presentation	0 days	Mon 4/1/24	Mon 4/1/24	
40		6.4 Exploratory Test Pits and Geothermal Test Well	15 days	Fri 5/17/24	Thu 6/6/24	



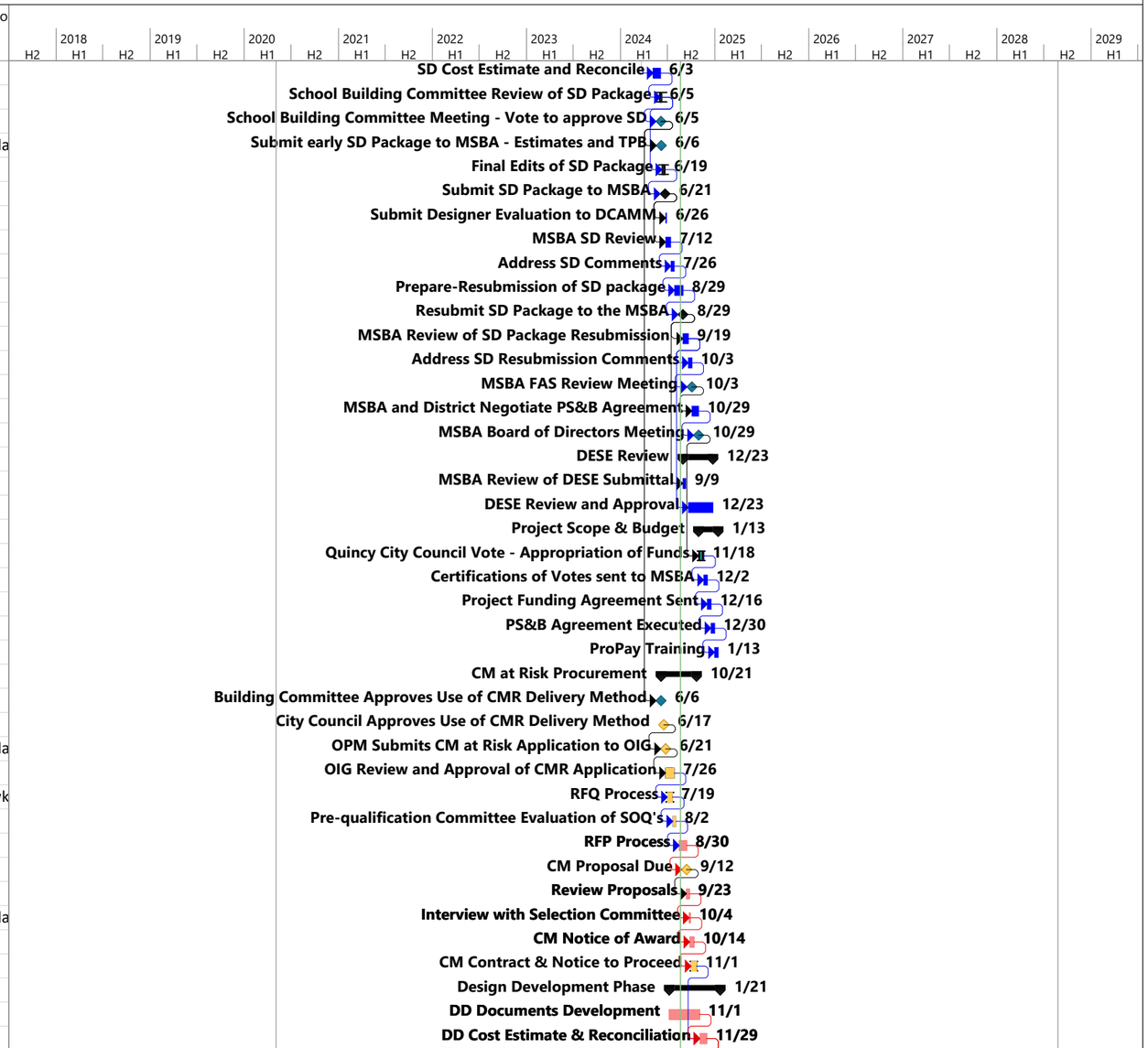
Project: Squantum ES Project S
Date: Wed 8/21/24

Task	Rolled Up Critical Task	Inactive Summary	Deadline	Critical Task			
Split	Rolled Up Milestone	Manual Task	Path Predecessor Milestone Task	Path Driving Predecessor Milestone Task			
Milestone	Rolled Up Progress	Duration-only	Path Predecessor Summary Task	Path Driving Predecessor Summary Task			
Summary	External Tasks	Manual Summary Rollup	Path Predecessor Normal Task	Path Driving Predecessor Normal Task			
Project Summary	External Milestone	Manual Summary	Path Successor Milestone Task	Critical			
Group By Summary	Inactive Task	Start-only	Path Successor Summary Task	Critical Split			
Rolled Up Task	Inactive Milestone	Finish-only	Path Successor Normal Task	Progress			

Squantum School Project Schedule

PCA360

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
41		6.5 SD Cost Estimate and Reconcile	4 wks	Tue 5/7/24	Mon 6/3/24	37
42		6.6 School Building Committee Review of SD Package	2 days	Tue 6/4/24	Wed 6/5/24	41
43		6.7 School Building Committee Meeting - Vote to approve SD	0 days	Thu 6/6/24	Thu 6/6/24	42
44		6.8 Submit early SD Package to MSBA - Estimates and TPB	0 days	Fri 6/7/24	Fri 6/7/24	43FS+1 da
45		6.9 Final Edits of SD Package	2 wks	Mon 6/10/24	Fri 6/21/24	42
46		6.10 Submit SD Package to MSBA	0 days	Fri 6/21/24	Fri 6/21/24	45
47		6.11 Submit Designer Evaluation to DCAMM	3 days	Mon 6/24/24	Wed 6/26/24	46
48		6.12 MSBA SD Review	3 wks	Mon 6/24/24	Fri 7/12/24	46
49		6.13 Address SD Comments	2 wks	Mon 7/15/24	Fri 7/26/24	48
50		6.14 Prepare-Resubmission of SD package	24 days	Mon 7/29/24	Thu 8/29/24	49
51		6.15 Resubmit SD Package to the MSBA	0 days	Thu 8/29/24	Thu 8/29/24	50
52		6.16 MSBA Review of SD Package Resubmission	3 wks	Fri 8/30/24	Thu 9/19/24	51
53		6.17 Address SD Resubmission Comments	2 wks	Fri 9/20/24	Thu 10/3/24	52
54		6.18 MSBA FAS Review Meeting	0 days	Fri 10/4/24	Fri 10/4/24	53
55		6.19 MSBA and District Negotiate PS&B Agreement	18 days	Fri 10/4/24	Tue 10/29/24	54
56		6.20 MSBA Board of Directors Meeting	0 days	Wed 10/30/24	Wed 10/30/24	55
57		**7 DESE Review**	**82 days**	**Fri 8/30/24**	**Mon 12/23/24**	
58		7.1 MSBA Review of DESE Submittal	7 days	Fri 8/30/24	Mon 9/9/24	51
59		7.2 DESE Review and Approval	67 days	Fri 9/20/24	Mon 12/23/24	52
60		**8 Project Scope & Budget**	**54 days**	**Wed 10/30/24**	**Mon 1/13/25**	
61		8.1 Quincy City Council Vote - Appropriation of Funds	14 days	Wed 10/30/24	Mon 11/18/24	56
62		8.2 Certifications of Votes sent to MSBA	2 wks	Tue 11/19/24	Mon 12/2/24	61
63		8.3 Project Funding Agreement Sent	2 wks	Tue 12/3/24	Mon 12/16/24	62
64		8.4 PS&B Agreement Executed	2 wks	Tue 12/17/24	Mon 12/30/24	63
65		8.5 ProPay Training	2 wks	Tue 12/31/24	Mon 1/13/25	64
66		**9 CM at Risk Procurement**	**98 days**	**Thu 6/6/24**	**Mon 10/21/24**	
67		9.1 Building Committee Approves Use of CMR Delivery Method	0 days	Thu 6/6/24	Thu 6/6/24	43
68		9.2 City Council Approves Use of CMR Delivery Method	0 days	Mon 6/17/24	Mon 6/17/24	
69		9.3 OPM Submits CM at Risk Application to OIG	0 days	Mon 6/24/24	Mon 6/24/24	68FS+5 da
70		9.4 OIG Review and Approval of CMR Application	5 wks	Mon 6/24/24	Fri 7/26/24	69
71		9.5 RFQ Process	3 wks	Mon 7/1/24	Fri 7/19/24	70FS-4 wk
72		9.6 Pre-qualification Committee Evaluation of SOQ's	10 days	Mon 7/22/24	Fri 8/2/24	71
73		9.7 RFP Process	4 wks	Fri 8/16/24	Thu 9/12/24	72
74		9.8 CM Proposal Due	0 days	Thu 9/12/24	Thu 9/12/24	73
75		9.9 Review Proposals	7 days	Fri 9/13/24	Mon 9/23/24	74
76		9.10 Interview with Selection Committee	3 days	Tue 9/24/24	Thu 9/26/24	75FS+6 da
77		9.11 CM Notice of Award	12 days	Thu 9/26/24	Fri 10/11/24	76
78		9.12 CM Contract & Notice to Proceed	3 wks	Tue 10/1/24	Mon 10/21/24	77
79		**10 Design Development Phase**	**142 days**	**Mon 7/8/24**	**Tue 1/21/25**	
80		10.1 DD Documents Development	85 days	Mon 7/8/24	Fri 11/1/24	
81		10.2 DD Cost Estimate & Reconciliation	4 wks	Mon 11/4/24	Fri 11/29/24	80,78



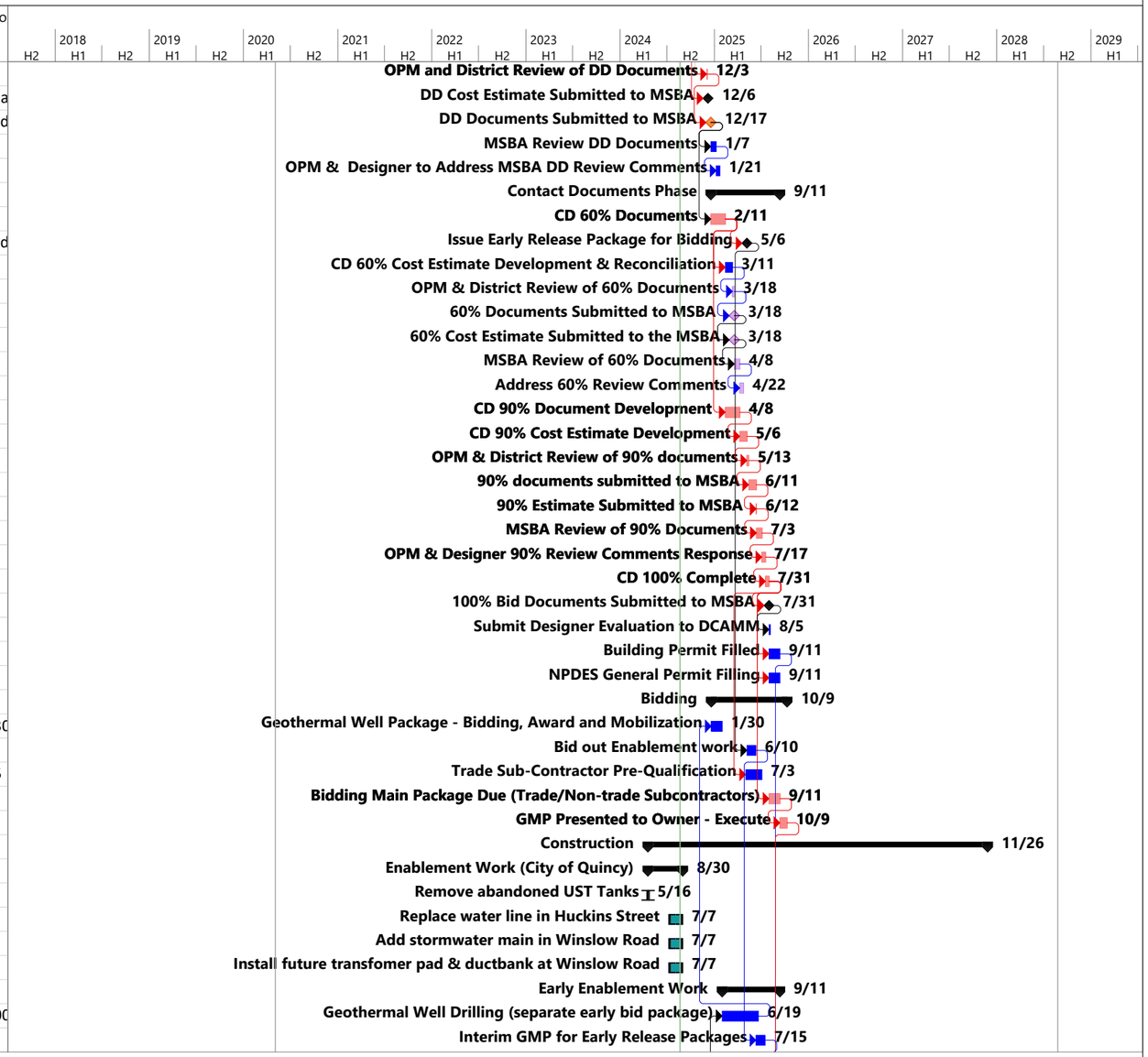
Project: Squantum ES Project S
Date: Wed 8/21/24

Task	Rolled Up Critical Task	Inactive Summary	Deadline	Critical Task			
Split	Rolled Up Milestone	Manual Task	Path Predecessor Milestone Task	Path Driving Predecessor Milestone Task			
Milestone	Rolled Up Progress	Duration-only	Path Predecessor Summary Task	Path Driving Predecessor Summary Task			
Summary	External Tasks	Manual Summary Rollup	Path Predecessor Normal Task	Path Driving Predecessor Normal Task			
Project Summary	External Milestone	Manual Summary	Path Successor Milestone Task	Critical			
Group By Summary	Inactive Task	Start-only	Path Successor Summary Task	Critical Split			
Rolled Up Task	Inactive Milestone	Finish-only	Path Successor Normal Task	Progress			

Squantum School Project Schedule

PCA360

ID	Task Mod	Task Name	Duration	Start	Finish	Predecesso
82		10.3 OPM and District Review of DD Documents	2 days	Mon 12/2/24	Tue 12/3/24	81
83		10.4 DD Cost Estimate Submitted to MSBA	0 days	Fri 12/6/24	Fri 12/6/24	81FS+5 da
84		10.5 DD Documents Submitted to MSBA	0 days	Tue 12/17/24	Tue 12/17/24	82FS+10 d
85		10.6 MSBA Review DD Documents	3 wks	Wed 12/18/24	Tue 1/7/25	84
86		10.7 OPM & Designer to Address MSBA DD Review Comments	2 wks	Wed 1/8/25	Tue 1/21/25	85
87		**11 Contact Documents Phase**	**192 days**	**Wed 12/18/24**	**Thu 9/11/25**	
88		11.1 CD 60% Documents	40 days	Wed 12/18/24	Tue 2/11/25	84
89		11.2 Issue Early Release Package for Bidding	0 days	Tue 5/6/25	Tue 5/6/25	88FS+60 d
90		11.3 CD 60% Cost Estimate Development & Reconciliation	4 wks	Wed 2/12/25	Tue 3/11/25	88
91		11.4 OPM & District Review of 60% Documents	5 days	Wed 3/12/25	Tue 3/18/25	90
92		11.5 60% Documents Submitted to MSBA	0 days	Tue 3/18/25	Tue 3/18/25	91
93		11.6 60% Cost Estimate Submitted to the MSBA	0 days	Tue 3/18/25	Tue 3/18/25	92
94		11.7 MSBA Review of 60% Documents	3 wks	Wed 3/19/25	Tue 4/8/25	93
95		11.8 Address 60% Review Comments	2 wks	Wed 4/9/25	Tue 4/22/25	94
96		11.9 CD 90% Document Development	40 days	Wed 2/12/25	Tue 4/8/25	88
97		11.10 CD 90% Cost Estimate Development	4 wks	Wed 4/9/25	Tue 5/6/25	96
98		11.11 OPM & District Review of 90% documents	5 days	Wed 5/7/25	Tue 5/13/25	97
99		11.12 90% documents submitted to MSBA	21 days	Wed 5/14/25	Wed 6/11/25	98
100		11.13 90% Estimate Submitted to MSBA	1 day	Thu 6/12/25	Thu 6/12/25	99
101		11.14 MSBA Review of 90% Documents	3 wks	Fri 6/13/25	Thu 7/3/25	100
102		11.15 OPM & Designer 90% Review Comments Response	2 wks	Fri 7/4/25	Thu 7/17/25	101
103		11.16 CD 100% Complete	10 days	Fri 7/18/25	Thu 7/31/25	102
104		11.17 100% Bid Documents Submitted to MSBA	0 days	Thu 7/31/25	Thu 7/31/25	103
105		11.18 Submit Designer Evaluation to DCAMM	3 days	Fri 8/1/25	Tue 8/5/25	104
106		11.19 Building Permit Filled	30 days	Fri 8/1/25	Thu 9/11/25	103
107		11.20 NPDES General Permit Filling	30 days	Fri 8/1/25	Thu 9/11/25	103
108		**12 Bidding**	**210 days**	**Fri 12/20/24**	**Thu 10/9/25**	
109		12.1 Geothermal Well Package - Bidding, Award and Mobilization	30 days	Fri 12/20/24	Thu 1/30/25	121FS-130
110		12.2 Bid out Enablement work	25 days	Wed 5/7/25	Tue 6/10/25	89
111		12.3 Trade Sub-Contractor Pre-Qualification	45 days	Fri 5/2/25	Thu 7/3/25	103FS-65
112		12.4 Bidding Main Package Due (Trade/Non-trade Subcontractors)	30 days	Fri 8/1/25	Thu 9/11/25	103
113		12.5 GMP Presented to Owner - Execute	20 days	Fri 9/12/25	Thu 10/9/25	112
114		**13 Construction**	**942 days**	**Thu 4/18/24**	**Fri 11/26/27**	
115		**13.1 Enablement Work (City of Quincy)**	**97 days**	**Thu 4/18/24**	**Fri 8/30/24**	
116		13.1.1 Remove abandoned UST Tanks	2 days	Thu 4/18/24	Fri 4/19/24	
117		13.1.2 Replace water line in Huckins Street	*8 wks*	Mon 7/8/24	Fri 8/30/24	
118		13.1.3 Add stormwater main in Winslow Road	8 wks	Mon 7/8/24	Fri 8/30/24	
119		13.1.4 Install future transfomer pad & ductbank at Winslow Road	8 wks	Mon 7/8/24	Fri 8/30/24	
120		**13.2 Early Enablement Work**	**160 days**	**Fri 1/31/25**	**Thu 9/11/25**	
121		13.2.1 Geothermal Well Drilling (separate early bid package)	100 days	Fri 1/31/25	Thu 6/19/25	123FS-100
122		13.2.2 Interim GMP for Early Release Packages	25 days	Wed 6/11/25	Tue 7/15/25	110



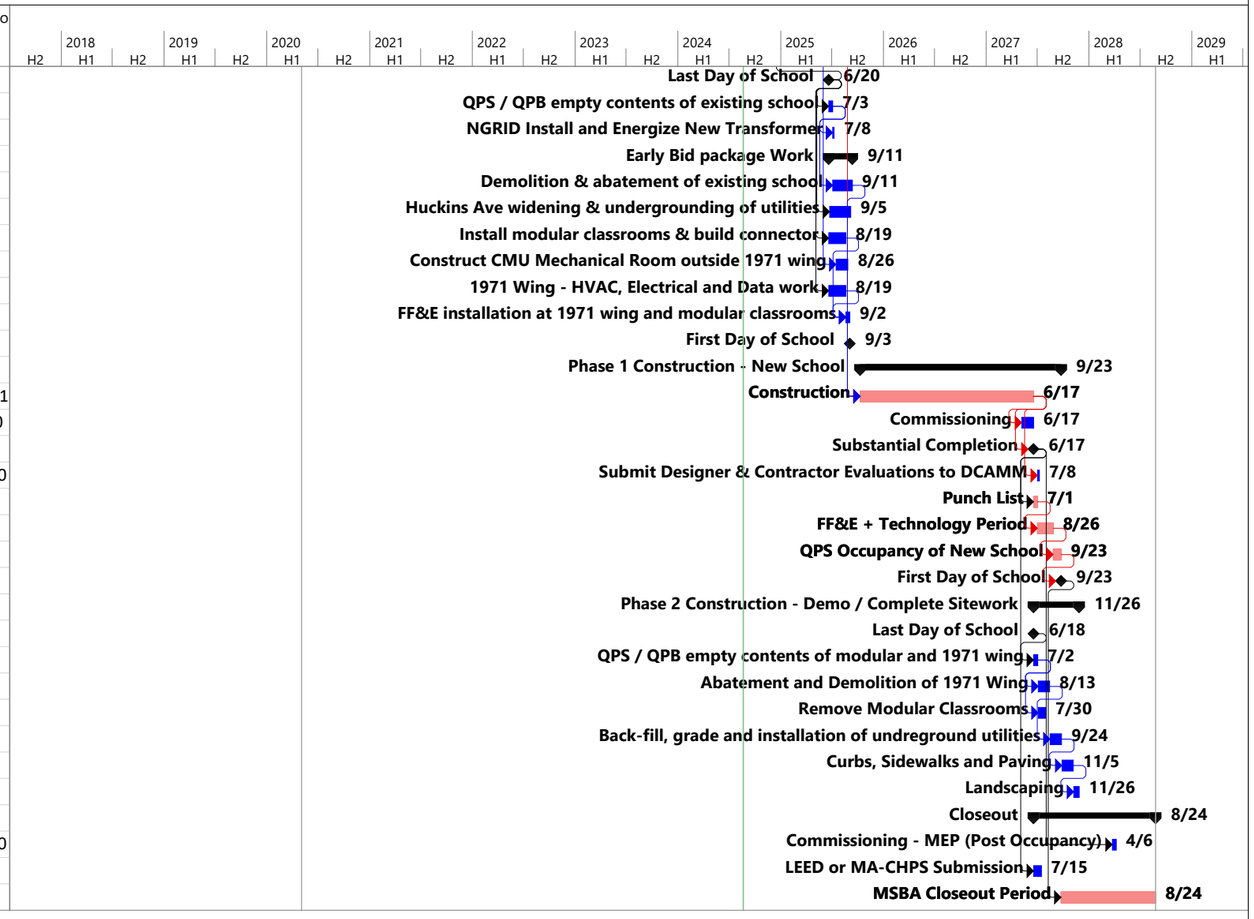
Project: Squantum ES Project S
Date: Wed 8/21/24

Task	Rolled Up Critical Task	Inactive Summary	Deadline	Critical Task			
Split	Rolled Up Milestone	Manual Task	Path Predecessor Milestone Task	Path Driving Predecessor Milestone Task			
Milestone	Rolled Up Progress	Duration-only	Path Predecessor Summary Task	Path Driving Predecessor Summary Task			
Summary	External Tasks	Manual Summary Rollup	Path Predecessor Normal Task	Path Driving Predecessor Normal Task			
Project Summary	External Milestone	Manual Summary	Path Successor Milestone Task	Critical			
Group By Summary	Inactive Task	Start-only	Path Successor Summary Task	Critical Split			
Rolled Up Task	Inactive Milestone	Finish-only	Path Successor Normal Task	Progress			

Squantum School Project Schedule

PCA360

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
123		13.2.3 Last Day of School	0 days	Fri 6/20/25	Fri 6/20/25	
124		13.2.4 QPS / QPB empty contents of existing school	10 days	Fri 6/20/25	Thu 7/3/25	123
125		13.2.5 NGRID Install and Energize New Transformer	3 days	Fri 7/4/25	Tue 7/8/25	124
126		**13.2.6 Early Bid package Work**	**60 days**	**Fri 6/20/25**	**Thu 9/11/25**	
127		13.2.6.1 Demolition & abatement of existing school	50 days	Fri 7/4/25	Thu 9/11/25	124
128		13.2.6.2 Huckins Ave widening & undergrounding of utilities	55 days	Mon 6/23/25	Fri 9/5/25	123
129		13.2.6.3 Install modular classrooms & build connector	43 days	Fri 6/20/25	Tue 8/19/25	123
130		13.2.6.4 Construct CMU Mechanical Room outside 1971 wing	30 days	Wed 7/16/25	Tue 8/26/25	122
131		13.2.6.5 1971 Wing - HVAC, Electrical and Data work	43 days	Fri 6/20/25	Tue 8/19/25	123
132		13.2.7 FF&E installation at 1971 wing and modular classrooms	10 days	Wed 8/20/25	Tue 9/2/25	131,129
133		13.2.8 First Day of School	0 days	Wed 9/3/25	Wed 9/3/25	
134		**13.3 Phase 1 Construction - New School**	**510 days**	**Fri 10/10/25**	**Thu 9/23/27**	
135		13.3.1 Construction	22 mons	Fri 10/10/25	Thu 6/17/27	106,113,1
136		13.3.2 Commissioning	30 days	Fri 5/7/27	Thu 6/17/27	135FS-30
137		13.3.3 Substantial Completion	0 days	Thu 6/17/27	Thu 6/17/27	135
138		13.3.4 Submit Designer & Contractor Evaluations to DCAMM	5 days	Fri 7/2/27	Thu 7/8/27	135FS+10
139		13.3.5 Punch List	2 wks	Fri 6/18/27	Thu 7/1/27	137
140		13.3.6 FF&E + Technology Period	8 wks	Fri 7/2/27	Thu 8/26/27	139
141		13.3.7 QPS Occupancy of New School	4 wks	Fri 8/27/27	Thu 9/23/27	140
142		13.3.8 First Day of School	0 days	Thu 9/23/27	Thu 9/23/27	141
143		**13.4 Phase 2 Construction - Demo / Complete Sitework**	**116 days**	**Fri 6/18/27**	**Fri 11/26/27**	
144		13.4.1 Last Day of School	0 days	Fri 6/18/27	Fri 6/18/27	
145		13.4.2 QPS / QPB empty contents of modular and 1971 wing	11 days	Fri 6/18/27	Fri 7/2/27	144
146		13.4.3 Abatement and Demolition of 1971 Wing	30 days	Mon 7/5/27	Fri 8/13/27	145
147		13.4.4 Remove Modular Classrooms	20 days	Mon 7/5/27	Fri 7/30/27	145
148		13.4.5 Back-fill, grade and installation of undreground utilities	30 days	Mon 8/16/27	Fri 9/24/27	146
149		13.4.6 Curbs, Sidewalks and Paving	30 days	Mon 9/27/27	Fri 11/5/27	148
150		13.4.7 Landscaping	15 days	Mon 11/8/27	Fri 11/26/27	149
151		**14 Closeout**	**310 days**	**Fri 6/18/27**	**Thu 8/24/28**	
152		14.1 Commissioning - MEP (Post Occupancy)	2 wks	Fri 3/24/28	Thu 4/6/28	137FS+10
153		14.2 LEED or MA-CHPS Submission	1 mon	Fri 6/18/27	Thu 7/15/27	137
154		14.3 MSBA Closeout Period	12 mons	Fri 9/24/27	Thu 8/24/28	142



Project: Squantum ES Project S
Date: Wed 8/21/24

Task	Rolled Up Critical Task	Inactive Summary	Deadline	Critical Task
Split	Rolled Up Milestone	Manual Task	Path Predecessor Milestone Task	Path Driving Predecessor Milestone Task
Milestone	Rolled Up Progress	Duration-only	Path Predecessor Summary Task	Path Driving Predecessor Summary Task
Summary	External Tasks	Manual Summary Rollup	Path Predecessor Normal Task	Path Driving Predecessor Normal Task
Project Summary	External Milestone	Manual Summary	Path Successor Milestone Task	Critical
Group By Summary	Inactive Task	Start-only	Path Successor Summary Task	Critical Split
Rolled Up Task	Inactive Milestone	Finish-only	Path Successor Normal Task	Progress

Page 4

4.1.2 LOCAL ACTIONS AND APPROVALS - *(REV)*

Please find the certified Local Actions and Approvals Certification on the following pages.

The meeting minutes for all Squantum School Building Committee Meetings and Working Group Meetings that have occurred since the submission of the PSR are on the following pages.

Since the initial Schematic Design, the Working Group and School Building Committe have had additional meetings. These meeting minutes have been added to this submission.

A second community meeting was held in January 2024. A third community meeting is planned for June 2024.

Refer to Appendix Q. Proprietary Items Letter for proprietary items.

City of Quincy, Massachusetts
Office of the Mayor

Thomas P. Koch
Mayor

City Hall
1305 Hancock Street
Quincy, MA 02169
617-376-1990

August 26, 2024

Ms. Carley Belfield
Project Coordinator
Massachusetts School Building Authority
40 Broad Street
Boston, MA 02109

Dear Ms. Belfield,

The City of Quincy School Building Committee ("SBC") has completed its review of the *Schematic Design resubmission (SD)* for the Squantum School project (the "Project"), and on 8/22/24, the SBC voted to approve and authorize the Owner's Project Manager to submit the Schematic Design related materials to the MSBA for its consideration. A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.

The SBC held three (3) meetings regarding the project during the Schematic Design Phase, in compliance with the state Open Meeting Law. These meetings include:

- June 6, 2024 Quincy Public Schools, 10:00am
- June 20, 2024 Quincy Public Schools, 10:00am
- August 22, 2024 Quincy Public Schools, 10:00am

The SBC working group held nineteen (19) meetings regarding the project during the Schematic Design Phase, in compliance with the state Open Meeting Law. These meetings include:

- January 11, 2024 Quincy Public Schools, 10:00am
- January 25, 2024 Quincy Public Schools, 10:00am
- February 16, 2024 Quincy Public Schools, 10:00am
- February 29, 2024 Quincy Public Schools, 10:00am
- March 14, 2024 Quincy Public Schools, 9:00am
- March 28, 2024 Quincy Public Schools, 1:00pm
- March 29, 2024 Quincy Public Schools, 10:00am
- April 4, 2024 Quincy Public Schools, 2:00pm
- April 11, 2024 Quincy Public Schools, 9:30am
- April 18, 2024 Quincy Public Schools, 9:00am
- April 25, 2024 Quincy Public Schools, 10:00am

- May 2, 2024 Quincy Public Schools, 9:00am
- May 9, 2024 Quincy Public Schools, 10:00am
- May 16, 2024 Quincy Public Schools, 10:00am
- May 23, 2024 Quincy Public Schools, 10:00am
- June 6, 2024 Quincy Public Schools, 10:00am
- June 27, 2024 Quincy Public Schools, 10:00am
- August 8, 2024 Quincy Public Schools, 10:00am
- August 15, 2024 City Hall, 1305 Hancock St, 10:00am
- August 22, 2024 Quincy Public Schools, 11:00am

The meeting notes for each of these meetings are attached.

In addition to the SBC and the SBC working Group meetings listed above, the District has held two (2) community meetings in compliance with the state Open Meeting Law. These meetings include:

- January 17, 2024 Squantum School, gymnasium, 6:00pm, hosted by the Mayor, PSR design images presented, no community comments.
- June 12, 2024 Quincy Public Schools, School Committee, 6:30pm School Committee hosted, Schematic Design images presented, positive support comments received.

Community Meeting:

- June 25th, 2024 Squantum School, gymnasium, 6:00pm

All SBC and SBC working group meetings are open meetings and may be attended by members of the public.

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at the Superintendent's office.

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq*.

If you have any questions or require any additional information, please contact Kevin Mulvey, Superintendent of Schools.

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By: Thomas P. Koch

Title: Mayor

Date: 8/27/24

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By: Kevin Mulvey

Title: Superintendent of Schools

Date: 8/27/24

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By: Thomas P. Koch

Title: Chair of the School Committee

Date: 8/27/24

City of Quincy

SQUANTUM SCHOOL – SCHOOL BUILDING COMMITTEE

MEETING MINUTES – June 6, 2024

The School Building Committee (SBC) meeting convened at 10:00 AM, Thursday June 6, 2024, in person and virtually on Zoom at Quincy Public Schools Headquarters at 34 Coddington St, Quincy, MA.

Committee members present today included: Superintendent Kevin Mulvey, School Building Committee Chair Paul Hines, Assistant Superintendent Dr. Erin Perkins, Walter Macdonald, Frank Santoro, Stephen Sylvia, Tina Cahill, and Kim Wheelwright (online). Unable to attend today's meeting were committee members Mayor Thomas Koch, Kathryn Logan, Eric Mason and Susan Vinitsky. Project team members present included Tom Kerwin, Brian Laroche, and Alex Liousas from the Owner Project Management (OPM) firm PCA360. Design team members from Arrowstreet present today included Larry Spang, Tina SooHoo, and Autumn Waldron.

Introduction: Paul Hines introduced Brian Laroche of PCA360 to take roll call, confirming a quorum was present. Brian provided an overview of the agenda.

Review SD Design: Tina SooHoo of Arrowstreet presented the current Schematic Design plans and renderings. The committee praised the design team's integration of feedback and the alignment of the design with the neighborhood's character. Further study is needed to reduce the masonry massing in the gym, to be addressed in the Design Development phase. The committee approved Arrowstreet to prepare the Schematic Design submission to the MSBA using the current design.

CM At-Risk Ch149a: The committee discussed Design Bid Build (DBB) Ch 149 vs. Construction Manager-at-Risk (CMR) Ch149a methodologies for constructing the Squantum School. After reviewing the pros and cons, CMR was preferred. Paul Hines called for a motion to accept the use of CM At-Risk Ch149a. Superintendent Mulvey motioned, and Tina Cahill seconded. The motion was unanimously approved. PCA360 noted the OIG application for CMR requires City Council certification, to be presented to the Council at their June 17th meeting.

Project Schedule: PCA360 provided an overview of the project schedule. A recent change accelerated the project timeline by 3 months to align better with the school calendar. Permission was granted for Arrowstreet to continue directly into the Design Development phase after the Schematic Design submission at the end of June. Paul Hines secured a City Council interim appropriation to cover design fees incurred before the full project appropriation planned for September 2024. The project schedule now anticipates early enablement work starting in June 2025, construction from Fall 2025 through Spring 2027, and student occupancy in Fall 2027. Removal of the 1971 wing and modular will occur in Summer 2027, with sitework continuing into Fall 2027.

Review of Reconciled Cost Estimates: Brian Laroche summarized the two cost estimates completed by Arrowstreet's estimator, PM&C, and Ellana, hired by PCA360. The Total Direct Cost estimates were within 0.2% of each other: $62.8M (PM&C) and $62.7M (Ellana). Differences in design contingency and escalation resulted in Total Estimated Construction Costs of $85.1M (PM&C) and $93.1M (Ellana).

Total Project Budget Draft: Brian Laroche presented a draft of the 3011 total project budget. There were no questions regarding OPM or A&E soft costs. PCA360 recommended carrying Ellana's construction estimate value. The SBC agreed, noting advantages in carrying the higher figure at this project phase. The total project budget was $115M, and after adding contingencies, it totaled just over $122M. Paul Hines called for a motion to approve the Total Project Budget Draft for a "not to exceed" amount of $123,000,000.00 and authorize the submission of the preliminary budget information to the MSBA as required 10 days in advance of the SD submission. Superintendent Mulvey motioned, and Tina Cahill seconded. The motion was unanimously approved.

Other Business:
A 10-minute school committee presentation is scheduled for June 12th at 6:30 PM to update on the school's current design. The presentation will be a simplified version of what was presented to the SBC. There is a tentative community meeting scheduled for June 18th at 6:30 pm.

Closing: Upon a motion duly seconded, the meeting was Adjourned.

I hereby certify that the foregoing is a true and accurate copy.

Paul Hines, Chairman of the School Building Committee

City of Quincy

SQUANTUM SCHOOL – SCHOOL BUILDING COMMITTEE

MEETING MINUTES – June 20, 2024

The School Building Committee (SBC) meeting convened at 10:00 AM, Thursday June 20, 2024, in person and virtually on Zoom at Quincy Public Schools Headquarters at 34 Coddington St, Quincy, MA.

Committee members present today included: Superintendent Kevin Mulvey, School Building Committee Chair Paul Hines, Assistant Superintendent Dr. Erin Perkins, Walter Macdonald, Frank Santoro, Stephen Sylvia, Tina Cahill, Eric Mason and Kim Wheelwright (online). Unable to attend today's meeting were committee members Mayor Thomas Koch, Kathryn Logan and Susan Vinitsky. Project team members present included Tom Kerwin, Brian Laroche, and Alex Liousas from the Owner Project Management (OPM) firm PCA360. Design team members from Arrowstreet present today included Larry Spang and Autumn Waldron.

Introduction: Paul Hines introduced Brian Laroche of PCA360 to take roll call, confirming a quorum was present. Brian provided an overview of the agenda.

Review SD Design Submittal: Tina SooHoo of Arrowstreet presented an overview of the Schematic Design submittal. The committee praised the design team's tremendous work effort to get the project to this important milestone and to keep the project moving at a quick pace. The committee approved Arrowstreet to submit the Schematic Design submission package as presented to the building committee to the MSBA. The motion was duly seconded and was unanimously approved.

CM At-Risk Ch149a: Paul Hines confirmed that the City Council approved the use of CMR methodology for the construction of the school. PCA360 presented a draft of the OIG application to the building committee. The committee approved the application as presented and provided approval to submit to the OIG as soon as the City Council vote has been certified. The motion was duly seconded and was unanimously approved. PCA360 requested approval to submit the RFQ advertisement to Central Register today so that it will publish on 6/26 with RFQ packages due 7/24. The motion was duly seconded and was unanimously approved.

Total Project Budget Draft: Brian Laroche presented the final 3011 total project budget for submission with the SD submittal to the MSBA. The total project budget amount approved was $122,503,910. The motion was duly seconded and was unanimously approved.

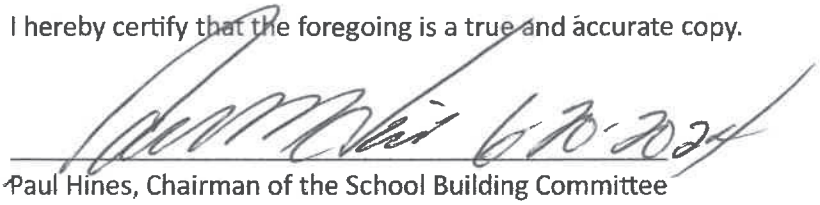
Proprietary Specifications:
PCA360 provided a summary of the proprietary items that are to be included in the project specifications. M.G.L. c.30, §39M(b) requires that proprietary specifications for public construction projects, including buildings, shall only be used "...for sound reasons in the public interest stated in writing in the public records of the awarding authority...such writing to be prepared after reasonable investigation." A governmental body must document the reasons and provide them in writing to anyone making a written request for the information. The City / District is requesting approval for the following items:

Fire Alarm – Notifier Addressable Fire Alarm System
Door Hardware - Cylinder: SARGENT Degree Series Door Cylinders
Interactive Short Throw Projectors - Epson Power Lite Ultra Short-Throw Laser Projector
Access Control - Brivo access Control System
Wireless Access Points - Sonicwall Wireless Access Points
Video Surveillance - Genetec Video Surveillance
Network Switches - HP ProCurve Network Switches

A vote is required of the SBC to recommend approval by the City's Purchasing Agent for the use of proprietary items on the project. The motion was duly seconded and was unanimously approved.

Closing: Upon a motion duly seconded, the meeting was Adjourned.

I hereby certify that the foregoing is a true and accurate copy.



Paul Hines, Chairman of the School Building Committee

City of Quincy

SQUANTUM SCHOOL – SCHOOL BUILDING COMMITTEE

MEETING MINUTES – August 22, 2024

The School Building Committee (SBC) meeting convened at 10:00 AM, Thursday August 22, 2024, in person and virtually on Zoom at Quincy Public Schools Headquarters at 34 Coddington St, Quincy, MA.

Committee members present today included: Superintendent Kevin Mulvey, School Building Committee Chair Paul Hines, Assistant Superintendent Dr. Erin Perkins, Walter Macdonald, Frank Santoro, Stephen Sylvia, Tina Cahill, and Eric Mason (online). Unable to attend today's meeting were committee members Mayor Thomas Koch, Kathryn Logan, Eric Mason, Kim Wheelwright and Susan Vinitsky. Project team members present included Brian Laroche from the Owner Project Management (OPM) firm PCA360. Design team members from Arrowstreet present today included Larry Spang, Tina SooHoo, Autumn Waldron and Andrew Plumb.

Introduction: Paul Hines introduced Brian Laroche of PCA360 to take roll call, confirming a quorum was present. Brian provided an overview of the agenda.

Total Project Budget Draft: Brian Laroche presented a revised 3011 total project budget for the resubmission of the SD submittal to the MSBA. The total project budget amount approved was $108,752,996. The motion was duly seconded and was unanimously approved.

Review SD Design Resubmittal: Brian Laroche presented a revised project schedule to be included in the resubmission of the SD submittal to the MSBA. Arrowstreet is proceeding in Design Development in parallel with the MSBA review of the SD submission. Estimating set of design development drawings will be delivered same day as the MSBA Board meeting on 10/30/24. Autumn Waldron of Arrowstreet presented an overview of revisions to the Schematic Design submittal. The committee approved Arrowstreet to submit the revised Schematic Design submission package as presented to the building committee to the MSBA. The motion was duly seconded and was unanimously approved.

Other items: $1.5M has almost been used up (original allocation); the additional appropriation of $1M is also committed to cover AS services through August. PCA noted that a 2nd interim appropriation will be needed to cover expenses from September through to the City Council appropriation for the full project. PCA360 will provide the SBC chair with a budget.

Modular RFP, SBC discussed that the scope should be limited to just the modular boxes, all other related scope will be addressed in the CM's scope. PCA to update the draft RFP and will post ad to the Central Register today for publishing on 8/28/24.

Closing: Upon a motion duly seconded, the meeting was Adjourned. Unanimous vote.

I hereby certify that the foregoing is a true and accurate copy.

8-23-2024

Paul Hines, Chairman of the School Building Committee