



MORSE ELEMENTARY SCHOOL

40 Granite Street
Cambridge, MA 02139

Facilities Condition Assessment : October 19, 2022

Capacity Analysis
Master Plan

Facilities Condition Assessment, Capacity Analysis and Master Plan for CPS



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7.9 | MORSE SCHOOL BUILDING APPENDIX

Historical Summary

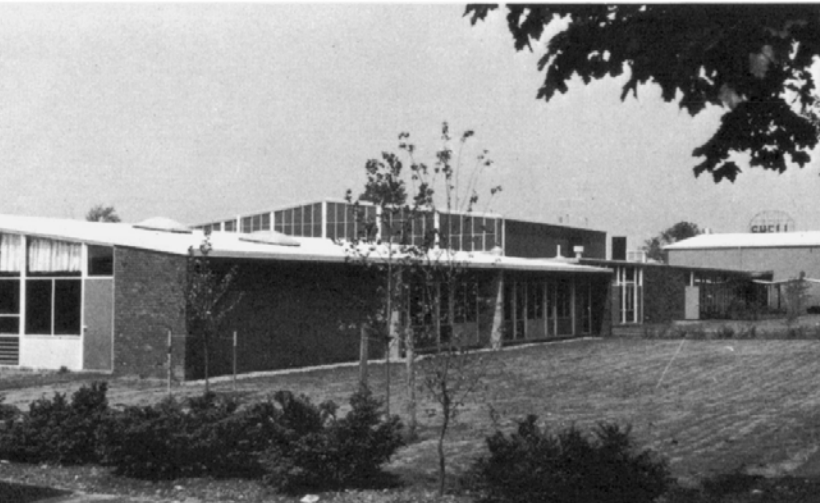
The Morse School Is located on 40 Granite Street in Cambridge, MA. The school is named after Asa P. Morse, an active member of the Cambridge community and member of the School Board. Previous to this location, the school was located on the corner of Brookline and Allston Streets and was designed by Cambridge architect Charles F. Fogerty in 1891. The original school building, a three-story brick building, could no longer meet the needs of the school by the 1950's, due to its lack of a cafeteria, not enough space for classes such as music, and an undersized play area.

As a result the current Morse School building was designed and built in 1956. The building was determined to contain friable and nonfriable ACBs by a 1992 AHERA Report, and all ACMs were found to be in good condition in 2021. The building was designed by local firms Cal Koch and Associates from Worcester and The Architects Collaborative of Cambridge. The building is a one-story glass-walled structure, following the Bauhaus aesthetics of the time, and breaking away from the multi-story brick constructions for school buildings in the area. The focus for the design was light and scale, creating a connection between the children and their space. At the time of construction, Cambridge artists Juliet and Gyorgy Kepes were commissioned by the architect to design art panels for the hallways in the "A" wing of the school. The art, contained in enamel panels, depicts various nature and animal scenes and are a vibrant part of the school to this day.

There was an addition to the building completed in 1999, adding library and theater spaces as well as classrooms and technical updates. There was a strong emphasis on the structure and accessibility throughout the building. In line with the history of art within the school, a mural in the main lobby by Tomie Arai was commissioned to commemorate the school's renovation. Currently, the school houses Junior Kindergarten through 5th grade.



Morse School, Brookline and Allston Sts., 1890. Survey of Architectural History in Cambridge: Cambridgeport by Cambridge Historical Commission, The MIT Press 1971, 94.



Morse School, Granite St., 1995. Survey of Architectural History in Cambridge: Cambridgeport by Cambridge Historical Commission, The MIT Press 1971, 94.

FCA FORMS - SCORING BREAKDOWN

The Facilities Condition Assessment was performed by the architectural team and consultants to assess the current physical conditions of the building and the building systems. Each assessor utilized checklists and the assessment criteria and rating scale below to maintain consistency across all fields.The Conditions criteria grades the overall quality of the building and systems, and the *Priority* criteria sets the time frame for addressing the issues noted. The two numbers were used together to rate the different areas of the facilities. To complete the analysis, each school was given an overall condition and priority score. These were calculated by combining and weighing all individual assessments based on the District’s priorities. Detailed reports for this school individually can be seen in the following pages.

ASSESSMENT CRITERIA				
CONDITION		PRIORITY		
Excellent	A	No visible defects, new or near new condition, may still be under warranty if applicable	Currently Critical (Immediate	1 Requiring immediate action including a cited safety hazard and ares of accelerated deteriorating, returning a building component to normal operation.
Good	B	Good condition, but no longer new, may be slightly defective or deteriorated, but is overall functional	Potentially Critical	2 Requiring action in the next year including components experiencing intermittent operations, potential life safety issues, and rapid deterioration, returning a building component to normal operation.
Adequate	C	Moderately deteriorated or defective, but has not exceeded useful life	Necessary - Not Yet Critical	3 Requiring appropriate attention to preclude predictable deterioration, potential downtime, additional damage, and higher cost to remediation if deferred further
Marginal	D	Defective or deteriorated in need of replacement; exceeded useful life	Recommended	4 Representing a sensible improvement to the existing conditions (not required for the most basic function of the facility; however, will improve overall usability and/or reduce long-term maintenance costs).
Poor	E	Critically damaged or in need of immediate repair; well past useful life	Does Not Meet Current Code but “Grandfathered”	5 No action required at this time, but should substantial work be undertaken correction would be required

2.1 FCA SCORE SUMMARY

ARCHITECTURAL - EXTERIOR	CONDITION	PRIORITY
<ul style="list-style-type: none">◦ A scope of masonry cleaning and repointing should be undertaken in areas of deteriorated mortar and any cracked brick or concrete block shall be replaced. This work should also be performed at the East Elevation of D Wing and in any other areas where the roof drains to the ground and splashes onto the façade.◦ Prepare and paint concrete block and steel lintels.◦ Storefront and Curtain wall in good condition overall.◦ Replacement of all existing insulated metal spandrel panels is recommended.◦ Replacement of exterior door frames, weatherstripping and hardware is recommended.◦ All façade sealants should be replaced, including those within the facades and at the perimeter of fenestrations and façade penetrations.◦ Further review into the roofing around the North downspout at the Courtyard is recommended to determine if there are any failures in the roofing system contributing to the water leakage noted within the fascia.◦ It is also recommended that the trees overhanging the roofs be trimmed to reduce the amount of leaves on the roofs.◦ Roof access ladders to all upper roof areas to allow for access to clear roofs of debris and service any equipment should be installed.◦ Prepare, prime and paint all exterior soffits.	B	3
ARCHITECTURAL - INTERIOR	CONDITION	PRIORITY
<ul style="list-style-type: none">◦ Typical rooms have high acoustical deck with gypsum in low areas and service spaces. ACT in offices.◦ Most walls brick with CMU or gypsum above. Tile also used in many locations. All in good condition.◦ VCT standard in most rooms with terrazzo tile in corridors and other high use areas.◦ HM doors in selected locations.◦ Millwork shows some wear however, higher grade materials have worn well.◦ Classroom sinks and toilet fixtures were well worn.	B	4
STRUCTURAL SYSTEM	CONDITION	PRIORITY
◦ General Construction (Roof, Floor, Foundations)	B	5
<ul style="list-style-type: none">◦ Exterior finishes: Replace panels, repoint masonry, repair steel lintels, repair underside of exposed roof deck.◦ Investigate water damage at cafeteria floor, repair crack in cafeteria floor, monitor gymnasium wall cracks◦ Evaluate and monitor Art Room roof framing	C	4
◦ Lateral force resisting system - General		5
◦ Repair roof deck at Art Room, repair front entry canopy columns		3

FOOD SERVICE	CONDITION	PRIORITY
<ul style="list-style-type: none">Replace serving countersRepair walk-in cooler refrigeration systemProvide additonal prep sink and support equipment	C	4
CONVEYING SYSTEM	CONDITION	PRIORITY
<ul style="list-style-type: none">One-story building	N/A	N/A
BUILDING SYSTEMS	CONDITION	PRIORITY
<ul style="list-style-type: none">Replace plumbing fixture fittings, replace heating system boilers and pumps, replace terminal heating units – 5 years past service life, replace chiller – past service life, replace H&V units including condensing units – 7+ years past service life, replace electrical service and distribution systems, replace some lighting fixtures, upgrade lighting controls with energy code compliant system	C-D	3-4
<ul style="list-style-type: none">Replace classroom unit ventilators and fan coil units – no condensate collection or pipe insulation.	E	1-2
<div>Note: "5" not counted in priority average.</div>	C	3

Site

Existing Condition

Morse Elementary School borders Granite Street, a quiet residential street, on one side, and Memorial Drive, a busy parkway on the other. The front of the school is located on the north side of the site and stretches along Granite Street. The main entrance is preceded by a wide covered walkway in the middle of the site. This side has a mixture of landscaping with wood mulch and hardscaping with brick pavers, both in good condition. In addition to these areas, there are fenced in play spaces running the length of the site as well. Starting from the corner of Magazine Street and Granite Street, there is a large concrete-paved space with a basketball half court, as well as various other play spaces delineated with paint on the ground. This space also has benches for sitting, two sheds, and a rubber-paved area with a play structure. A couple of classrooms and one side egress door open directly into the space. This playground is in good condition, some of the concrete flooring shows large cracks. Following this playground is another side egress door with a couple bike racks and vegetation. Another fenced in play/garden space follows, paved with both wood mulch and rubber. This space features a climbing play structure as well as some sitting areas, a shed, and trees. This is followed by the main entrance and additional bike racks. The next fenced-in playground is paved with wood mulch and rubber, with a series of picnic tables, children’s toys, and trees, all in good condition. A kindergarten classroom opens directly into this space. Another side egress door is located between this fenced area and the adjacent one. The next area has various planter beds, bushes, and trees creating the CitySprouts garden. Outside the fence is one more side egress door with a covered walkway. All spaces on this side are in good condition.

The east side of the site consists of two large outdoor spaces. The closest one to the school is a fenced-in playground, paved with both rubber and wood mulch, and equipped with various play structures and seating options. Classrooms on this wing of the school open directly into the playground as well as a side egress door. Adjacent to this playground and extending to the end of the lot line are a basketball court and baseball field. Spaces on this side of the site were used by community members at the time of the visit. On the south side of the site, bordering Memorial Drive, there is an exterior courtyard only accessible through the school. The space is paved with asphalt and has a series of painted areas for different games. The floor condition is fair with many large cracks. Also located in this space are two large tents with seating as well as benches, all in good condition. On the other end of the south side is a parking lot with X demarcated spots, a trash area, and a loading dock that connects directly to the kitchen area/storage. There are both steps and a ramp to access the back entrance to the school. The west side of the school is directly on the sidewalk.

In addition to the surrounding spaces, the site also has an interior courtyard accessed through the main lobby/cafeteria space. It is hardscaped with brick pavers and lined with planting beds and space for vegetation and includes various seating options. The courtyard is in good condition.



North side - Front Entrance



East side - playground

Architectural - Exterior

Existing Condition

The Morse School was originally constructed in 1957 and most recently renovated and expanded in 1999. The building exterior comprises brick masonry veneer with glazed brick accents and concrete block façade areas which vary between the 1957 and 1999 vintage. The fenestrations are aluminum assemblies with thermally broken frames, insulated glazing and insulated metal spandrel panels. The PVC roof was recently installed.

The masonry façade is in good condition overall with isolated areas in need of repair. The fenestrations are in fair to poor condition and the roofs are in very good condition.

Facade:

The masonry portions of the façade consist of brick masonry veneer, glazed brick accents and painted concrete block. The masonry is largely in good condition, with isolated areas of cracked glazed block (Ref: Photo AE-15) and peeling paint. (Ref: Photo AE-16) Some areas of mortar deterioration, staining and moss growth were observed on the East Elevation where the roof drains to the adjacent ground areas, splashing on the facade. Localized mortar deterioration was noted behind some downspouts. (Ref: Photos AE-14, 17-19)

There is isolated step cracking of concrete block in locations such as the East entrance to B Wing. On the exterior of most façade areas, the steel roof trusses penetrate through the façade and are exposed along the top of the brick masonry and soffit areas. (Ref: Photos AE-21-23)

The façade sealants at transitions within the masonry and around the fenestrations has reached the end of its service life in most locations. There is some rusting of steel lintels at the few punched openings in the building. (Ref: Photos AE-24-25, 37-38)

Fenestrations:

The fenestrations consist of thermally broken aluminum storefront assemblies with fixed and operable components and insulated metal spandrel panels. There are isolated locations of curtain walls such as within the Library and Gymnasium. (Ref: Photos 39-40) The aluminum storefront windows are in fair condition overall, but the insulated metal spandrel panels within the storefront and curtain wall are in poor condition with rusting, corrosion and delamination of many panels observed throughout the building. (Ref: Photos AE-29-33, 35-36) Isolated locations of unsecured glazing gaskets around the spandrel were observed. (Ref: Photo AE-34)



AE-A: Main Entrance at East Elevation of D Wing



AE-B: Representative storefront assemblies

Architectural - Exterior

Exterior doors include both thermally broken aluminum storefront and metal framed assemblies. Rusting was noted on the interior of some door frames and door weatherstripping, and hardware was damaged or missing in some areas. Metal louvers are installed within the masonry façade and metal framed door assemblies. (Ref: Photos AE-43-50)

Roofing:

All roof areas have recently been replaced with a fully adhered PVC roofing assembly that appears to be installed on a mechanically fastened substrate. The extent of insulation (if any) or presence of other existing roofing systems below the current roofing assemblies is unknown. (Ref: Photos 53-58)

The underside of the metal roof deck is painted and exposed as soffits surrounding the perimeter of the building. The paint is peeling and there is surface rusting in many of these areas. Fasteners from the roof penetrate through the soffits and are exposed on the exterior in some locations. (Ref: Photos AE-51-53)

Roof drainage occurs via internal roof drains and downspouts. There are many trees surrounding the building and there are lots of leaves on the roof, filling the downspout scupper boxes. At the North side of the Courtyard, the downspout is clogged and there is significant ponding on the roof. Here, water is dripping from between the aluminum fascia components, indicative of a potential breach in the roof itself. (Ref: Photos AE-61-63) Several downspout scupper boxes were observed with vegetation growth due to leaves filling the boxes. (Ref: Photos AE-64-65)

Access to the roof is achieved by roof access hatches. There are no exterior wall mounted exterior ladders to provide access to the upper roof levels. (Ref: Photo AE-67-68)

Reported Envelope Issues:

While on site, discussions were held with facilities personnel to identify any building exterior-related issues that may exist. Facilities personnel indicated that there are currently no issues related to the building exterior.



AE-C: Representative storefront and masonry façade assemblies

Architectural - Exterior

Recommendations

Facade:
A scope of masonry cleaning and repointing should be undertaken in areas of deteriorated mortar and any cracked brick or concrete block shall be replaced. This work should also be performed at the East Elevation of D Wing and in any other areas where the roof drains to the ground and splashes onto the façade.

All façade sealants should be replaced, including those within the facades and at the perimeter of fenestrations and façade penetrations.

Prepare and paint concrete block and steel lintels.

Fenestrations:
Replacement of all existing insulated metal spandrel panels is recommended.

Replacement of exterior door frames, weatherstripping and hardware is recommended.

Roofing:
Bi-monthly cleaning of the roof including removal of leaves and associated debris is recommended to reduce potential for drainage issues.

Further review into the roofing around the North downspout at the Courtyard is recommended to determine if there are any failures in the roofing system contributing to the water leakage noted within the fascia.

It is also recommended that the trees overhanging the roofs be trimmed to reduce the amount of leaves on the roofs.

Roof access ladders to all upper roof areas to allow for access to clear roofs of debris and service any equipment should be installed.

Miscellaneous:
Prepare, prime and paint all exterior soffits.



AE-D: Representative recently installed PVC roof

Architectural - Interior

Existing Condition

The interior condition of the Morse School is very consistent from room to room throughout the whole school. The building was originally constructed in 1956 and renovated in 1995. The interior finishes are to be original to the building but were constructed out of very durable materials and remain in good condition. There is slightly more damage present in the E Wing; it appears this is due to poor grading adjacent to the building which is allowing water to infiltrate at doors.

Ceilings:
Classroom ceilings throughout are exposed structure with painted acoustic metal decking. These sloped ceilings cover most of the teaching space while lower, flat, gypsum ceilings are over the storage and wet areas in the early childhood classrooms. These are in good condition. Corridor ceilings are 2x4 lay-in ACT which is in good condition except in selected locations where water damage (possibly from mechanical systems) is present. Typical office spaces ceilings are the same as corridors. The auditorium has a gypsum (possibly acoustic) ceiling which looks to be in good condition.

Walls:
The walls are composed primarily of brick and CMU throughout. They are in good condition and have worn well over the years. Some partition walls and office walls are gypsum which are also in good condition. Overall, the design has been very durable and limited damage to walls can be seen in a few locations. Tile has been used in strategic locations and all has been well cared for whether the standard restroom and backsplash tile that is keep clean or the mosaic accent tiles that are maintained annually.

Floors:
The predominant flooring material throughout the school is VCT. This is generally in good condition but is showing signs of wear. The VCT in the E wing has joints that are separating which may be due to moisture. Also, there are isolated areas of VCT damage; in particular, on the day of the assessment one failed mechanical unit had caused VCT to pop off. Ceramic tile is in all restrooms and is in good condition, as is the wood floor in the gymnasium. The carpet in the library is showing wear and is past its useful life. Corridors are consistently terrazzo which is overall in good condition. More significant cracking is present in the E Wing and may be due to moisture or settlement.

Windows:
This section addresses the conditions of the exterior windows from the interior view. All windows at Baldwin School were aluminum framed windows and appear in good condition. They are well within their useful life. There are limited interior windows which are typically hollow metal frames. They are also in good condition.



Typical Classroom – A Wing



Typical Kindergarten Room – B Wing

Architectural - Interior

Doors:
Typical doors are wood doors in hollow metal frames. They are in good condition with limited wear on veneer surface.

FFE:
The furniture, fixtures and equipment vary in age throughout the school with the majority of it being in the good to adequate range. Some furniture appears to be new, while some is worn. The shelving in the media center stands out as very durable with much useful life left.

Millwork:
The millwork is wood veneer and appears to be original to the building. It has held up well over time but there is some evidence of broken and missing hardware as well as some wear on the veneer. Overall, wet areas are in slightly worse condition than the remainder of the cabinets. A creative design to the visual display system allows for flexibility and has served well however, some display surfaces are well worn and could use upgrades.

Plumbing:
Plumbing associated with the classroom is showing some wear but is still mostly functional. Restroom fixtures appear in good condition and are covered in more depth by MEP analysis.

Theatrical Lighting:
This system should be upgraded. Panelboards and/or dimmer racks serving theatrical lighting should be replaced with relay panels. Fixtures should be upgraded to LED spot and wash fixtures. Existing power infrastructure is likely to be able to be reused. Low-voltage control wiring (category cable) must be added to serve each lighting position.

Stage Floor:
The stage floor should be sanded and refinished. If refinishing is impractical the top surface of the floor should be replaced.



Typical Corridor



Typical Classroom – E Wing (note open VCT joints)

Architectural - Interior

Recommendations

The interior of Morse School is in need to deep cleaning and replacement of selected flooring and ceilings. Paint on CMU and structure would brighten up some areas that look a bit worn. Refinishing and replacing hardware could extend the life of the millwork with limited need for replacement. Visual display surfaces should be repaired but it would be ideal if the system could remain in place. Since the roof is fairly new, water damage is quite possibly all related to site grading and/ or mechanical systems. It is important to determine the source and solve that before replacing interior finishes.



Stage Floor in Poor Condition



Theatrical Lighting Control Console



Incandescent Theatrical Lighting Fixtures

Theater

Existing Condition

The theatrical equipment systems at the Morse School are in fair to poor condition. Fixed audience seating is in poor condition with many seats showing damage. Dedicated accessible seating locations were not observed.

The stage rigging consists of fixed pipe battens for stage drapes and tracks and lineshaft hoist-operated linesets for lighting battens connected to directly to structure. Support is by wire rope or chain.

The stage drapes, track, and other hardware are showing signs of wear. Some drapes are damaged.

The theatrical lighting is dimmer rack-based, and all fixtures are older models with incandescent lamps. The lighting control console and house light control stations are obsolete models.

The stage floor surface is in very poor condition.

Recommendations

Audience Seating:
Audience seating should be replaced with new seats. Seating layout should be reviewed and modified to modern standards and to meet all current code requirements including ADA.

Theatrical Rigging:
Fixed batten connections to structure should be inspected by an ETCP Certified rigging professional. Components not rated for overhead suspension or not appropriate for this application should be replaced. Some components may be reused.

Lineshaft hoist sets and related hardware and controls should be inspected by an ETCP Certified rigging professional and appropriate maintenance should be performed.

Stage Drapery:
Stage draperies should be replaced with new, inherently flame-retardant drapes.

All drapery tracks and hardware should be inspected and replaced or maintained as needed.



Damaged Auditorium Seat



House Lighting Control Station

Structural System

Existing Condition

General
The Morse Elementary School was originally constructed in 1956. There was an addition/renovation with drawings dated 1995. Existing structural drawings were available for both the original and addition structures. The building structure consists of steel roof deck, steel joists, steel beams, steel columns, structural concrete slabs, concrete grade beams, and concrete piles and pile caps. The building structure generally appears to be in satisfactory condition.

Existing Structural Systems and Observations
Roof construction consists of steel joists and steel beams spanning to wide flange or tube (HHS) steel columns. The original roof was designed for a live load of 30psf, which meets current snow load requirements for Cambridge. The addition roof was designed for a flat snow load of 30 psf plus drifting and sliding snow where applicable. Roof construction appears to be performing satisfactorily; there is no evidence of structural distress that would indicate significantly overstressed, deteriorated, or failed structural members.

Ground floor and foundation construction consists of structural concrete slabs on grade spanning to cast-in-place concrete grade beams. Grade beams span to concrete pile caps, supported on piles. At the original building, piles are composite piles of concrete and wood and were specified as 20 ton capacity. At the 1995 addition, piles are precast concrete and were driven to a minimum net bearing capacity of 25 tons.

Exterior wall construction consists of architectural storefront infills between steel columns and brick and CMU masonry wall infills between steel columns. Interior walls are a combination of non-bearing masonry construction and cold form metal framing partitions. The exterior brick masonry walls generally appear to be in fair condition.

The lateral force resisting system is not clearly defined for either of the principal directions of the building. The structure does not meet current wind and seismic load requirements (strength and detailing). The perimeter and interior masonry infill walls provide a level of lateral force resistance (by default); however, the construction of these walls does not meet current code requirements.



Photo ST-1: Rusting architectural panel at classroom wing



Photo ST-2: Rusting underside of steel roof deck at classroom roof overhang

Structural System

Recommendations

Structural Comments/Recommendations
Structural conditions were reviewed at the site (to the extent possible) on September 1, 2022. No exploratory demolition or structural materials testing was performed in conjunction with this study. While the building structure was observed to be generally in satisfactory condition, specific structural or structurally related conditions that may require further investigation and/or remediation in the future are listed below.

The building does not meet current seismic code requirements. Lateral force resistance and seismic hazards, including unreinforced masonry wall issues would need to be addressed in conjunction with a future major renovation of the building.

Rusting architectural panels were observed around the perimeter of the building at the classroom wings. Refer to Photo ST-1. These conditions are not an immediate structural concern. It is recommended that these locations be investigated further for leaks.

The underside of the exposed steel roof deck at the classroom roof overhangs was rusting in several locations. Refer to Photo ST-2. These conditions are not an immediate structural concern. It is recommended that the deck be cleaned and touched up with zinc-rich paint.

The base of the steel columns at the front entrance canopy were rusting and have significantly deteriorated in some locations. Refer to Photo ST-3. Deterioration has reduced the steel cross section, which results in a reduction in strength and stiffness. It is recommended that the condition be investigated further, and the columns should be repaired or replaced.

A steel angle supporting the exterior masonry was rusting at one of the classroom wingwalls. Refer to Photo ST-4. It is recommended that the steel angle be mechanically cleaned and coated with zinc-rich paint.

At the exterior wall of the cafeteria, there was standing water and water damaged floor finishes. Refer to Photo ST-5. It is recommended that the source of the water be investigated further.

A crack in the floor finish was observed in the cafeteria, extending across the space. Refer to Photo ST-6. The crack appears to follow a construction joint in the concrete slab and is not an immediate structural concern. However, it may present a tripping hazard. It is recommended that the floor finish be repaired.



Photo ST-3: Deterioration at base of canopy column



Photo ST-4: Rusting steel angle at base of masonry wall

Structural System

Recommendations

At the gymnasium, cracks were observed in the masonry infill walls. These appear to be temperature and shrinkage related, as there are no control joints present in the walls. These cracks are not an immediate structural concern but should continue to be monitored.

At Art Room D41, there was a small section of steel roof deck that had separated and deflected at a side lap, which was also a location for a current water leak. Refer to ST-7. This condition does not appear to be an immediate structural concern; however, it is recommended that it be investigated further. The attachment of adjacent deck units should be repaired.

It was reported that the roof joists above Art Room D41 had experienced significant deflections during a previous major snow event. There did not appear to be any significant permanent deflections within the steel joists. The roof framing should be evaluated further considering any potential snow drift conditions. It should be monitored during future major snow events for excessive deflections.

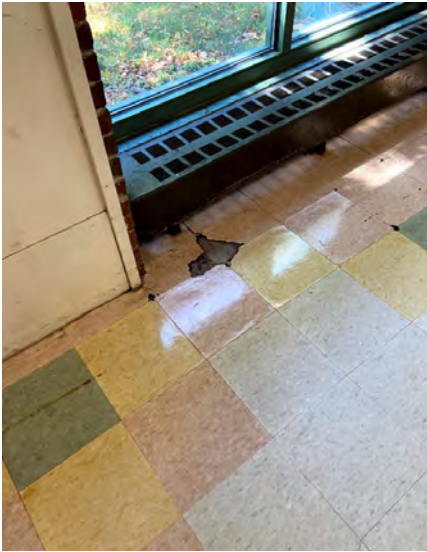


Photo ST-5: Water damage to floor finish at cafeteria



Photo ST-6: Crack in floor finish at cafeteria

Structural System

Recommendations

Comments on Renovations, Alterations, Repairs, and Additions
Renovations, alterations, repairs, and additions to existing buildings in Massachusetts are governed by the provisions of the Massachusetts State Building Code (MSBC – 9th Edition) and the Massachusetts Existing Building Code (MEBC), which defines three compliance methods for the repair, alteration, change of occupancy, addition, or relocation of an existing building. The method of compliance is chosen by the Design Team (based on the project scope and cost considerations) and cannot be combined with other methods. The Work Area Compliance Method (IEBC Chapters 4 through 12) is the most common compliance method chosen.

The design and construction of any proposed addition(s) to the existing building would be conducted in accordance with the Code for new construction. Generally speaking, additions should be structurally separated from the existing, adjacent construction by an expansion (seismic) joint to avoid an increase in gravity loads or lateral loads to existing structural elements.

Where proposed alterations to existing structural elements carrying gravity loads result in a stress increase of over 5%, the affected element will need to be reinforced or replaced to comply with the Code for new construction. Alterations to existing structural elements resisting lateral loads (i.e., masonry infill walls) which result in an increase in the demand - capacity ratio of over 10% should be avoided; otherwise, a seismic evaluation and potential upgrade will be required. Essentially, this means that removal of, or major alterations to the existing interior and exterior unreinforced masonry bearing walls should be avoided if possible. Structurally attached additions (horizontal or vertical) which result in an increase in demand-capacity ratio of over 10% would also trigger a seismic evaluation and potential seismic evaluation.



Photo ST-7: Steel roof deck separated side lap

Mechanical System

Executive Summary

Fire Protection Systems
The existing building is provided with an automatic sprinkler system throughout the building.

The sprinkler system piping consists of black steel pipe. The system was installed in 1995 and appears to be in fair condition with some visible signs of corrosion. This pipe has an expected service life of 75 years.

Mechanical Systems
The existing building is provided with a centralized hot water gas-powered boiler heating system, centralized chilled water chiller cooling system, (6) air handling units for distribution ventilation, perimeter fin tube and unit ventilator heating, ceiling mounted fan coil units, cabinet and propeller unit heaters, general exhaust fans, and a DDC control system. The building has a 2-pipe chilled/hot water changeover system.

Plumbing Systems
The existing building is provided with conventional plumbing systems which include a domestic water distribution system, sanitary waste and vent system, storm water system and a natural gas system.

The plumbing piping systems have an expected service life of 50-100 years. The existing plumbing systems were renovated in 1995. The plumbing systems are generally in good condition.

Electrical Systems
The existing electrical distribution, lighting, fire alarm, and IT systems are mostly original to the 1995 building renovation and new construction project, approximately 27 years old, and have had only minor modifications to support program changes.

This equipment is past its useful life.

Mechanical System

Heating System

Existing Condition
The heating source for the building consists of (2) gas powered H.B. Smith Co. Inc. boilers. The hot water is distributed throughout the building with (2) base mounted pumps. The whole heating system is in the mechanical room. The boilers were installed during the 1995 renovation. The mechanical room is in poor condition with water on the floor, indicating a condensate collection issue.

Unit ventilators and fin tube provide the heating in the classrooms via hot water. The unit ventilators are interfaced with Johnson Controls (JCI) Metasys system. The JCI system is connected to the Cambridge Schools campus BAS network via JCI Facility Explorer. Corrosion is present on the unit ventilators and are in poor condition. Thermostats are situated in classrooms, connected to the JCI system. They were installed during the renovation of 1995.

General areas are heated via ceiling mounted unit ventilators and cabinet unit heaters such as hallways and some interior rooms. Large areas such as the gymnasium, auditorium, and library are heated via fin tube radiation and ventilation. General area cabinet unit heaters are in poor condition with many being held together by tape. Piping is in good condition as well as the insulation.

Recommendations
Boilers: Replace within the next 10-15 years.

Cabinet Unit Heater: Replace as they are physically damaged and past the service life. They should be replaced within the next year.

Unit Ventilators: More on them in the Cooling System section.



M-1: Mechanical Room Conditions



M-2: Cabinet Unit Heater Conditions

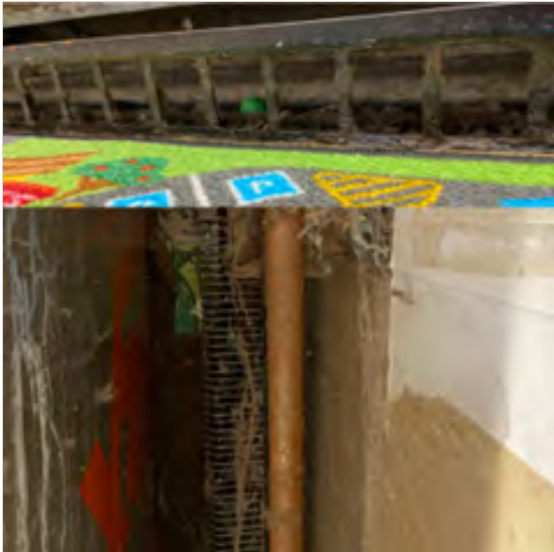
Mechanical System

Cooling System

Existing Condition
The cooling system for the building consists of a McQuay Chiller that services the entire building. The building is a 2-pipe heating/cooling system so the cooling system is retrofitted via the unit ventilators. The piping is uninsulated, resulting in unwanted condensate. The units are not equipped with condensate pans or removal. This has caused significant corrosion and hazardous conditions inside the unit ventilations.

Recommendations
Unit Ventilators: This issue needs to be addressed immediately. A condensate system needs to be retrofitted into the unit ventilators, or the pipes need to be split to these systems with the chilled water pipes being properly insulated and the condensate collected. The unit ventilators should be replaced within the next year.

Chiller: The chiller was installed in the 1995 renovation, so it is at the end of its service life. It is functioning properly but should eventually be replaced.



M-3: Unit Ventilator and Fin Tube Conditions

Mechanical System

Ventilating and Air Conditioning System

Existing Condition
Ventilation for the building is provided primarily through (7) McQuay Air Handler Units. All units utilize hot water coils for heated conditioning only. Two of the units supply the gymnasium, one supplies the auditorium, and the others serve the rest of the building. All air handling units are located on the rooftop (except for Mechanical Room AHU) and show signs of wear. All units were installed in the 1995 renovation. The air handlers are interfaced with DDC on the JCI Metasys network. These units have a 20 year service life.

All exterior classrooms are fitted with unit ventilators and thermostats, both on the JCI Metasys network. The typical perimeter classrooms are ventilated solely by the unit ventilators in the room and exhausted out. The heating is split between perimeter fin tube and unit ventilators. Cooling is done through the unit ventilators as well. Interior rooms are conditioned and ventilated by the air handling units through diffusers and ceiling mounted fan coil units. The fan coil units are from the 1995 renovation and show signs of wear and corrosion, possibly from a lack of condensate collection.

Diffusers, grilles, and ductwork are in good condition as it was outfitted in the 1995 renovation. There are some missing grilles and diffusers that should be replaced, but overall, they are in good condition.

Exhaust fans are in good condition, with some from the original building, some from the renovation, and others installed recently.

Recommendations
The air handling equipment is functioning and in okay condition. They are approaching 30 years of service and should be replaced within the next couple years.

Fan coil units and unit ventilators should be replaced within the next year.

The diffusers, grilles, exhaust fans, and ductwork are in good condition. The focus should be primarily on unit ventilator maintenance to rectify the condensate issue.



M-4: Fan Coil Unit

Mechanical System

Building Automation System

Existing Condition
The whole building was upgraded onto the JCI Metasys network during the 1995 renovation. Controls are tied to the unit ventilators, chiller, and air handlers to provide local controls to the rooms via thermostats. They control fan speed in the unit ventilator to which the hot water/chilled water serves the rooms accordingly. All information is tied to the Cambridge BAS network via JCI Facility Explorer.

Recommendations
Most of the Cambridge School system BAS network resides on a more modern Tridium Niagara platform and ultimately a plan should be developed to transition to this newer platform as the older Metasys system is no longer supported and reaching the end of its expected median service life of 20-years. Control system upgrades should include a complete system of DDC controllers, sensors, actuators, and head-end graphics.



M-5: JCI Controls

Electrical System

Power Distribution

Existing Condition
The electrical service is an 2000A, 480/277VAC, 3-phase, 4-wire, underground service, located in the electrical room at the northern lower level of the school. The Crouse & Hinds Switchboard main service is floor mounted; this panel is from the 1995 upgrade.

Feeder circuits, panels, and branch circuits are also original to the 1995 upgrade. Numerous electrical equipment (panels) were observed during a walk-through of the building. It has been observed that the locations of panel boards are poorly designed, as they are situated in corridors and general areas where students frequent. Panel boards are in fair/poor condition given their age, and there were no signs of maintenance being performed on them since 1995.

Emergency Electrical Distribution

The diesel generator appears to be code compliant and in fair to good condition.

Recommendations
It is generally accepted that the life of an electrical system is thirty (30) years. Beyond that point, it becomes increasingly difficult to cost effectively maintain the system. Wire insulation and equipment failure becomes more common as the system ages, with an increase in outage longevity due to the design of the system and the availability of replacement parts. Often new systems need to be installed to bypass the old system without the benefit of a comprehensive plan designed for the needs of the building. With the aged electrical devices, the devices may not operate under faulty conditions.

The main electrical distribution provides 678KW with an area of 84,021 square feet or 8W/SF. New highly efficient mechanical designs generally require 19- 24W/ SF. The main service would be required to be upgraded complete for a large-scale mechanical upgrade.

The electrical code now requires Arc Fault Protection labeling for the safety of the electrical staff. It is recommended that an Arc Fault/Coordination study be performed, and associated labeling be provided to meet today’s electrical code. Arc fault reduction is now a code requirement for electrical services 800A and larger to reduce the available Arc Fault, this is not available on the existing equipment.



E-1: Main Electrical Service (Entrance)



E-2: Diesel Generator

Electrical System

Due to the age of the existing electrical distribution system, it is recommended that the existing systems be provided with a full range of electrical preventive maintenance, to include:

- Panelboards and switchgear:
- Inspection and cleaning
 - Ground resistance test
 - Thermal imaging
 - Insulation resistance testing

- Cables:
- Inspection
 - Verify tightness of bolted connections
 - Insulation resistance testing
 - Circuit Breakers
 - Inspection and cleaning
 - Measure contact resistance
 - Thermographic Survey
 - Operate circuit breaker to verify smooth operation
 - Verify tightness of bolted connections
 - Verify trip operation of circuit breaker by primary current injection
 - Verify setting required by coordination study
 - Verify operation of any auxiliary function (i.e., remote trip and close)

Due to the age of the existing electrical distribution system, it is recommended that the existing systems be scanned with an infrared camera to identify any loose or weak electrical connections. The generator should be tested, and a testing regime should be established.

The electrical system should be replaced completely with the next renovation or large-scale mechanical upgrade.

Electrical System

Lighting & Devices

Existing Condition
The majority of the lighting installed in the 1995 building renovation was fluorescent lighting. LED lighting has recently been added throughout the building. Lighting control is accomplished with time clock control and occupancy sensors in most spaces.

LED lighting fixtures save energy and have reduced maintenance costs as compared to fluorescent fixtures.

A spot check of wiring devices indicated varying conditions. Light switches and receptacles were generally in poor to fair condition, while many were older and showing wear. Lack of a sufficient quantity of receptacles was noted. In the cafeteria, ground fault circuit breakers were not provided as required by the latest electrical code. Tamper resistance receptacles are also required in Preschools and elementary education facilities.

Recommendations
Emergency lighting should be tested for emergency egress light levels and upgraded by providing additional fixtures in areas that lack sufficient levels of emergency lighting (stairways). Exit lighting should be upgraded to cover all means of egress corridors and exit doors, where required.



E-3: Classroom Lighting



E-4: Cafeteria Lighting

Electrical System

Fire Alarm

Existing Condition
The existing Horn/Strobe fire alarm system has been upgraded since the 1995 renovation and appears in fair to good condition. The system is in good operating condition. There is an additional annunciator at the main entrance. Also at the main entrance is a Knox Box and Beacon.

The International Building Code (IBC) requires that a speaker type system be provided in an education occupancy (K-12). This system is a horn-type system and does not meet today’s code requirements.

Smoke detectors are present in most emergency egress paths. Heat detectors were also noted in utility closets, kitchens, and mechanical spaces. The devices appear to be in fair working order.

Pull stations were observed at most exits and at entrance points to level change. CO detection was not noted in classrooms or areas adjacent to carbon monoxide producing equipment.

Horns/lights are installed in corridors and some common spaces to provide alarm notification to occupants. The devices appear in fair/poor working order with white strobe lenses in several areas, and not clear as required by code.

Recommendations
The existing fire alarm control panel is not code complaint - non-compliant ADA type indicating devices are installed. A new addressable voice system should be installed due to occupancy requirements within the building to replace the existing system. Additional speaker strobe coverage and proper relocation of pull stations should be conducted to meet code.

It is recommended that a speaker type-system be provided for transmitting voice notifications in the event of a fire alarm and/or mass notification.

Install carbon monoxide devices in alarms devices in every classroom where carbon emitting devices are located. Verify all devices are provided as required by 527 CMR, NFPA 72, 780 CMR, and the Mass Fire Alarm code (Missing pull stations, smoke detection not code compliant etc.)



E-5: Existing Fire Alarm Device

Plumbing System

Domestic Water System

Existing Condition
Water Service Entrance: A 4” dedicated domestic service enters the ground level water service room. The domestic water service is provided with a 3-inch Neptune water meter and a 3-inch strainer.

Domestic Water Quality: Cambridge water supply has been known to contain hard water containing minerals below the Maximum Contaminant Level by the Cambridge Water Department. It is suspected that faster than normal corrosion of domestic systems is caused by scale build of from the water being supplied to the building.

Domestic Water Heater: Domestic hot water is generated from a simplex gas fired boiler and remote 115 gallon storage tank. The boiler is manufactured by Raypack Model H3-0330 and has an input rating of 334,000 BTU/HR. The storage tank is manufactured by Rheem Model ST120A and has a date of manufacture of 07/2004. The hot water system is fully circulated back to the heater. The 120-degree return system utilizes a Taco Model 0012-SF4 cartridge circulator, and the 140-degree system uses a Taco Model 0010-BF-2 cartridge circulator. The domestic hot water system is provided with a Leonard master thermostatic mixing valve. The hot water system is not provided with an expansion tank. The heater and storage tank were installed in 2004 and appear to be in good condition. The expected service life for the water heaters is 20 years. The thermostatic mixing valve is starting to show signs of corrosion.

System Piping: The piping serving the domestic water system includes soldered copper with brass ball valves. The piping system appears to be in fair condition. The expected service life for copper pipe is 80 years.

Recommendations
Replace corroded pipe, valves, and fittings as required.

Provide a water quality report for the building to determine the characteristics of the domestic water. Provide water softening equipment on domestic water supply to the building to slow the degradation of existing domestic systems if required.

Perform maintenance on all thermostatic mixing valves including installing new service kit of all wear parts.

Investigate domestic water piping serving handwash sinks at building main entrance. Provide hot water to sinks as required by 248 CMR.



PL-1: Corroded Mixing Valve



PL-2: Cafeteria Handwash Sinks Missing Hot Water

Electrical System

Domestic Plumbing Fixtures

Existing Condition
The domestic plumbing fixtures located within the building include wall mounted 1.6 gpf water closets with manual flush valves while fixtures in the classroom toilet rooms include floor mounted water closets with manual flush valves. The building is also provided with wall mounted 1.0 gpf urinals with manual flush valves, wall mount china lavatories with push button manual metering faucets, stainless-steel wall mount handwashing sinks with push button manual metering faucets, stainless-steel wall mount drinking fountains, and stainless-steel classroom sinks with manual faucets. ADA compliant plumbing fixtures appear to be provided where required.

An exterior stainless steel dual height drinking fountain with integral bottle filler is provided on-site.

The domestic plumbing fixtures in the toilet rooms generally appear to be in good condition. Stainless steel faucets at the classroom sinks typically appear to be in fair condition. The domestic plumbing fixtures have an expected service life of 30-40 years. Some fixtures appeared inoperable at time of survey.

Recommendations
Public lavatories shall be provided with thermostatic mixing valves to limit the outlet temperature to a maximum of 110-degrees. Insulation kits shall be provided at all ADA lavatories at the supplies, stops, p-trap and tailpiece. Replace plumbing fixtures and floor drains which are heavily corroded and exceeded their useful service life.



PL-3: Broken Drinking Fountain



PL-4: Broken Urinal



PL-5: Corroded Classroom Sink

Plumbing System

Sanitary Waste and Vent System

Existing Condition
The building is provided with a sanitary waste and vent system which collects sanitary sewage from the domestic plumbing fixtures located throughout the building.

The building is provided with multiple sanitary sewers which connect to the municipal sanitary sewer located in Granite Street.

The pot sink in the kitchen is provided with a floor-mounted 50 GPM grease interceptor. The outlet of the interceptor is piped to the sanitary waste piping. The sanitary waste and vent system is assumed to be cast iron pipe. The expected service life for cast iron pipe is 80-100 years.

Recommendations
Replace existing corroded piping as required.

Coordinate the need to provide an exterior grease interceptor with the Cambridge Sewer Department. Assure interior grease interceptor is properly maintained.



PL-6: Clogged Roof Drain

Storm System

Existing Condition
The building is provided with a storm system which collects rainwater from the roof drains located on all flat sections of roof. The piping is installed down through the building and discharges to the municipal storm sewer by gravity. The gym roof is provided with gutters and downspouts which are piped to the interior storm drainage system. It appears the roof receives a significant amount of organic debris which is clogging drain bodies.

The mechanical room is provided with a duplex sump pump which receives mechanical condensate.

The storm system consists of cast iron pipe with hub and spigot joints. The piping appears to be in good condition. The expected service life for cast iron pipe is 80-100 years.

Recommendations
Perform periodic maintenance on all roof drain bodies to assure they are free and clear of debris.



PL-7: Obstructed Roof Drain

Plumbing System

Natural Gas System

Existing Condition
The building is provided with a natural gas system. The service entrance is located on the north side of the building. Natural gas serves the mechanical boilers, domestic water heater, and kitchen equipment. The natural gas piping is black steel and appears to be in good condition.

The expected service life of black steel pipe is 75 years.

Recommendations
No Immediate action required.

Fire/Life Safety

Sprinkler System

Existing Condition
The existing building is provided throughout with an automatic sprinkler system. A 6” dedicated fire service enters the ground level water service room and is provided with a 6” Febco double check valve assembly. One 6” GEM wet alarm check valve serves the Magazine Street sprinkler zone and another 6” Gem wet alarm check valve serves the Brookline Street sprinkler zone.

All of the observed fire protection piping is black steel with grooved fittings. Some piping is showing signs of corrosion.

The expected service life of black steel pipe is 75 years.

Recommendations
It is recommended the existing sprinkler system be maintained in conformance with the requirements of NFPA 25, Inspection, Testing and Maintenance of Water-Based Fire Protection Systems.

Replace all sprinkler pipe that is corroded or leaking as required.



FP-1: Leaking Sprinkler Pipe



FP-2: Leaking Sprinkler Pipe

Code

Existing Condition

The Morse Elementary School is an existing 84,021 ft2 single-story Cambridge public school.

- Occupancy Classification
- Use Group E (School)

Construction Type

Based on the field observations the building appears to be a non-fire-rated steel and concrete structure, classified as Type IIB construction. All new construction must be non-combustible except where permitted by IBC Section 603: Combustible Material in Types I and II Construction.

Interior Finishes

The existing interior finish of walls and ceilings in the work area and in all exits and corridors serving the work area must comply with the code requirements for new construction (IEBC 803.4).

Walls & Ceilings (IBC Table 803.11)

Use Group:	E (Sprinklered)
Exit Enclosures	Class B
Exit Access Corridors	Class C
Rooms & Enclosed Spaces	Class C

Existing interior finishes in both buildings typically consist of painted gypsum wallboard, tile, or masonry which meets these requirements.

Means of Egress

Means of egress conforming to the requirements of the building code under which the building was constructed are considered compliant means of egress if, in the opinion of the code official, they do not constitute a distinct hazard to life (IEBC 805.1). This section allows the existing means of egress stairs, doors, etc. to remain unless they are considered hazardous.

The building includes various exterior egress doors around the full perimeter. No hazardous egress conditions were noted during the site visit, with the possible exception of deterioration to the concrete in some exterior egress stair treads and risers that are in need of repair. Illuminated exit signs appear to be provided throughout, emergency lighting wasn’t regularly apparent but may be provided via normal light fixtures connected to an emergency circuit.



Existing Structure



Exterior Egress Stairs

Code

Existing Condition

Fire Protection Systems

The building appears to be fully sprinklered and is protected by a relatively modern fire alarm system (although it does not appear to be a voice/alarm system), and fire extinguishers. Existing previously approved fire alarm systems are permitted to remain if the building undergoes a Level 1 or Level 2 alteration (IEBC 804.4.1). A Level 3 alteration would require the fire alarm system to comply with the code requirements for new construction, which would require a voice-alarm system (IEBC 904.2).

Accessibility for Persons with Disabilities

The building has multiple accessible entrances, drinking fountains and toilet rooms. Therefore, no additional work should be required to comply with 521 CMR if the cost of renovations exceeds \$100,000.

The Cambridge Assessor’s on-line database indicates the Haggerty Elementary School has an assessed value of \$20,015,900 and the Massachusetts Department of Revenue’s website indicates the assessment ratio for Cambridge is 0.92. Therefore, the 100% equalized assessed value is \$21,756,413 and 30% of this value is \$6,526,924. Full compliance with 521 CMR would be required if the aggregate cost of renovations in any three-year period exceed this amount. Although the building is generally accessible some improvements would be required to achieve full compliance with 521 CMR (i.e. wheelchair access from the seating area to the stage, integrated wheelchair seats in the auditorium and gymnasium bleachers, classrooms sinks, etc. (note this is not a comprehensive list)).



Exterior Egress to Grade



Entrance

Code

Existing Condition



Drinking Fountain



Toilet Room

Door Hardware

Existing Condition

Site survey showed the majority of doors are in good shape. All exterior and corridor doors look to meet egress requirements. Building has many exterior doors, some have begun to show deterioration but are still performing basic functions.

Food Service

Executive Summary

The Morse school is a compact kitchen serving a small population of students at the preschool through 5th grade levels. The kitchen equipment in many circumstances is original to the building. Over the many years of use and increasing student population, it appears that the space originally dedicated to the foodservice operation is not enough. This facility has outgrown its originally planned operational expectations. With the small footprint and limitations of this kitchen, the program lacks the flexibility to adapt, grow and efficiently serve the student body.

Improving cooking and serving equipment will modernize the program allowing it to more easily meet the demands of health code regulations as well as improve the appeal of the food offerings. Modernizing workstations, preparation and cooking equipment will allow the kitchen staff to focus on food production resulting in a more efficient operation. Overall, the program is well run and the staff are highly trained and dedicated. However, they lack the full complement of tools needed to truly operate at a higher level of service.

Kitchen and Servery

General Overview
The Morse School Foodservice program currently serves a population of approximately 300 students from Pre-K through the fifth grade. The kitchen is mostly intact with minor modifications and equipment upgrades done over the years. Major infrastructure items such as the serving counters and refrigeration equipment have not been updated in a several years. This program would benefit greatly from updates and upgrades. Overall, the kitchen staff does a great job of maintaining and keeping the kitchen clean. However, due to the date of the equipment and materials they do show some signs of wear and tear.

The kitchen walls and storage areas are finished in painted CMU block and have held up very well over the years. Due to the solid nature of the walls, there’s instances where utilities are exposed and not contained within the wall which can presents cleanability issues if not maintained properly. Ceilings are a smooth and washable drop-in tile in good condition that meets the modern health code. The flooring material in the kitchen is quarry tile and is also in good condition. The quarry tile is provided with the required coved based where the floor meets the walls for proper cleanability.

Refrigerated and dry storage capacities for the school kitchen are limited. The operations team would benefit from additional space to properly store and hold product at food safe temperatures. The facility does have a walk-in cooler, but several reach-in compartments were added over the years and are located in the



FS-1: The serving line is large enough for the school but does contain any refrigerated cold pans for safe display of cold food product at the proper temperatures.



FS-2: The walk-in cooler shows clear signs of refrigeration issues as it’s currently holding at approximately 50°. This temperature is not within a safe range and the system requires service and repairs in the immediate future.

cafeteria servery and back of house kitchen hallways. While the addition of these units assists the staff with refrigerated storage capacity, the small footprint of the kitchen forces these units to be located in inconvenient locations for the operation. The walk-in cooler refrigeration system has issues maintaining temperature as the cooler was close to 50° on the day of inspection. The dedicated dry storage area contains mechanical equipment which takes up a good portion of the space. The grease trap is located within the dry storage area which is not an ideal situation for cleanability. Dry goods product is scattered across the kitchen due to the limited storage space.

The exhaust hood and cooking equipment for this school are older but everything appears to be in fair working condition.

The serving line for this kitchen is more up to date than other schools in the district but could still benefit from some equipment updates. There is hot holding capability however they lack refrigerated holding along the line for cold food offerings to be held at safe and proper temperatures for serving. Sneeze guards on these counters are outdated and no longer in compliance with current NSF regulations.

This facility has no means of mechanical ware washing which requires all cooking utensils to be manually washed by the staff. While it’s a small operation, this does require a lot of time and dedicated staff to keep up with this operation. Modern day ware washing equipment allows staff to properly clean and sanitize cooking equipment and utensils at a higher level within a matter of minutes. This facilities operation could be improved by the addition of a mechanical ware washer.

The following specific issues will reference codes and standards. For the purposes of this report when the health code is referenced, we are citing requirements of the Federal Food Code, 2017 addition, published by the FDA as well as the Merged Massachusetts Food Code 2013 addition.

We will also reference the National Sanitation Foundation (NSF). This is an independent governing body that develops standards for foodservice equipment and facility design. All equipment, in commercial kitchens must be built in accordance to NSF standards as a requirement of the food codes.

FCA FORMS - AMIGOS

Morse School			Architectural				
EXTERIOR							
Room # on Site:							
Area	Part	Type	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Exterior	Façade	Brick Masonry		B	3	AE-13-15, 17-19, 21-25	
Exterior	Façade	CMU		B	3	AE-16, 20	
Exterior	Façade	Storefront / Curtain Wall		B	4	AE-26-30, 39-40	
Exterior	Façade	Storefront Spandrel Panels		D	2	AE-29-36	
Exterior	Façade	Hollow Metal Doors, Entrances		C	3	AE-42-50	
Exterior	Façade	Sealants		D	2	AE-37-38	
Exterior	Roofing	PVC Roofing		A	4	AE-54-68	
Exterior	Façade / Roofing	Metal Soffis		C	3	AE-51-53	

Morse School			Architectural				
INTERIOR							
Room # on Site:							
Area	Part	Type	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Interior	Ceiling	Acoustic Deck/ Gypsum		B	4		Typical rooms have high acoustical deck with gypsum in low areas and service spaces. ACT in offices.
Interior	Wall	Brick/ Tile		B	4		Most walls brick with CMU or gypsum above. Tile also used in many locations. All in good condition.
Interior	Floor	VCT/ Terrazzo Tile		B	4		VCT standard in most rooms with terrazzo tile in corridors and other high use areas.
Interior	Window	Aluminum		B	4		
Interior	Doors	Wood		B	4		HM doors in selected locations.
Interior	FFE	Loose Furniture		B	4		
Interior	Millwork	PLAM		B	4		Shows some wear however, higher grade materials have worn well.
Interior	Plumbing			B	4		Classroom sinks and toilet fixtures were well worn.
				B	4		

MORSE																							
RM NAME	RM #	AREA	CEILING MATERIAL	CEILING CONDITION	CEILING PRIORITY	WALL MATERIAL	WALL CONDITION	WALL PRIORITY	FLOOR MATERIAL	FLOOR CONDITION	FLOOR PRIORITY	WINDOWS MATERIAL	WINDOWNS CONDITION	WINDOWS PRIORITY	DOORS MATERIAL	DOORS CONDITION	DOORS PRIORITY	FFE CONDITION	FFE PRIORITY	MILLWORK CONDITION	MILLWORK PRIORITY	PLUMBING CONDITION	PLUMBING PRIORITY
FIRST FLOOR																							
CLASSROOM - 2ND	A1	975 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
BATHROOM	A1T	62 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B				4 B		N/A	4
CLASSROOM - SPECIAL START	A2	975 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
CLASSROOM - SPECIAL START	A3	948 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
BATHROOM	A3T	54 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
CLASSROOM - 1ST	A4	948 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
BATHROOM	A4T	54 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
CLASROOM - SPECIAL START	A5	942 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
CLASROOM - 1ST	A6	950 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
DATA	A7	34 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
ELECTRICAL	A8	26 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
CORRIDOR	A10	2956 SF	ACT/AD/GYP	B		4 BRICK/GYP	B		4 TERRZ-TILE	B		4 AL	B		4 HM	B		4 B		4 B		4 B	4
BATHROOM	B1	56 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
BATHROOM	B2	56 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
SOCIAL WORKER	B3	175 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
ESL	B5	171 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
CLASSROOM - KINDERGARTEN	B6	1251 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
SHARED SINK	B6A	84 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
STORAGE	B6S	91 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
TOILET	B6T	31 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
CLASSROOM - KINDERGARTEN	B7	1268 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
STORAGE	B7S	91 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
TOILET	B7T	31 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
CLASSROOM - KINDERGARTEN	B8	1151 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 C	3.5
STORAGE	B8S	76 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
BATHROOM	B8T	58 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
MATH INTERVENTION	B9	576 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 N/A	N/A
JANITOR CLOSET	B11	24 SF	GYP	B		4 GYP	B		4 CONC	B		4 N/A	N/A	N/A	WD	B		4 B		4 B		4 B	4
ELECTRIC CLOSET	B12	23 SF	GYP	B		4 GYP	B		4 TERRZ-TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
CLASSROOM - 1ST	C1	862 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	C	3.5	AL	B		4 WD	B		4 B		4 B		4 C	3.5
CLASSROOM - 3RD	C2	844 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	C	3.5	AL	B		4 WD	B		4 B		4 B		4 C	3.5
CLASSROOM - 1ST	C3	842 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	C	3.5	AL	B		4 WD	B		4 B		4 B		4 C	3.5
CLASSROOM - 3RD	C4	826 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	C	3.5	AL	B		4 WD	B		4 B		4 B		4 C	3.5
PHYSICAL THERAPY	C5	854 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	C	3.5	AL	B		4 WD	B		4 B		4 B		4 C	3.5
CLASSROOM - SPEECH	C6	835 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	C	3.5	AL	B		4 WD	B		4 B		4 B		4 C	3.5
CORRIDOR	D1A	1153 SF	ACT/AD/GYP	B		4 BRICK/GYP	B		4 TERRZ-TILE	B		4 AL	B		4 HM	B		4 B		4 B		4 B	4
ELECTRICAL	D1B	11 SF	GYP	B		4 GYP	B		4 TERRZ-TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
CORRIDOR	D1C	6117 SF	ACT/AD/GYP	B		4 BRICK/GYP	B		4 TERRZ-TILE/TILE	B		4 AL	B		4 HM	B		4 B		4 B		4 B	4
SUPPLY STORAGE	D2	167 SF	EXP	B		4 BRICK/GYP	B		4 VCT	C	3.5	N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
LEARNING	D3	314 SF	ACT	B		4 BRICK/GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
SPECIALIST	D4	284 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
GAS	D4A	8 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
LITERACY SPECIALIST	D5	293 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
CLASROOM - JR KINDERGARTEN	D6	873 SF	AD/EXP	B		4 BRICK/CMU	B		4 VCT	B		4 AL	B		4 HM/WD	B		4 B		4 B		4 B	4
BATHROOM	D6T	68 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
BOYS BATHROOM	D7	299 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
GIRLS BATHROOM	D8	302 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
TEACHERS ROOM	D9	532 SF	ACT	C		3 BRICK/GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 C	3.5	C		3.5	N/A
PLANNING	D10	545 SF	ACT	C		3 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 C	3.5	C		3.5	N/A
STORAGE	D10A	65 SF	ACT	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
OT/PT	D11	904 SF	ACT	C		3 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 C	3.5	C	3.5	3.5	N/A
LIBRARY OFFICE	D12	202 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 B	4
WORK ROOM	D13	226 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
LIBRARY	D15	2593 SF	AD/EXP	B		4 BRICK/GYP	B		4 CPT	C-D	3.5	AL	B		4 WD	B		4 B		4 B		4 N/A	N/A
SERVER	D15A	103 SF	EXP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
MUSIC/LANGUAGE	D16	569 SF	ACT	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
ELECTRIC CLOSET	D16A	59 SF	GYP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
BOILER ROOM	D17	1153 SF	EXP	B		4 CMU	B		4 CONC	B		4 N/A	N/A	N/A	HM	B		4 B		4 N/A		N/A	4
ELECTRICAL ROOM	D17A	227 SF	EXP	B		4 CMU	B		4 CONC	B		4 N/A	N/A	N/A	HM	B		4 B		4 N/A		N/A	4
GENERATOR ROOM	D17B	200 SF	EXP	B		4 CMU	B		4 CONC	B		4 N/A	N/A	N/A	HM	B		4 B		4 N/A		N/A	4
GYMNASIUM	D18	6889 SF	EXP	B		4 CMU/WD	B		4 WD	B		4 AL	B		4 HM/WD	B		4 B		4 B		4 N/A	N/A
PE OFFICE	D20	134 SF	ACT	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
BATHROOM	D20T	84 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
GYM STORAGE	D22	538 SF	EXP	B		4 GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
BATHROOM/STORAGE	D23	343 SF	GYP	C	3.5	TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
BATHROOM/STORAGE	D24	330 SF	GYP	C	3.5	TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
CAFETERIA	D25	2758 SF	AD/EXP	B		4 BRICK/GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
GENDER INCLUSIVE BATHROOM	D26	58 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
WOMENS BATHROOM	D27	127 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
HEALTH OFFICE	D28	325 SF	ACT	B		4 BRICK/GYP	B		4 VCT	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	N/A
OFFICE	D29	118 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 N/A	N/A
BATHROOM	D30	57 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A	N/A	WD	B		4 B		4 N/A		N/A	4
PRINCIPAL	D31	212 SF	ACT	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A		N/A	N/A
ASSISTANT PRINCIPAL	D32	161 SF																					

AUDITORIUM	D36	3840 SF	B		4 ?	B		4 VCT/CONC	B-C		4 N/A	N/A		N/A	WD	B		4 B		4 B		4 N/A	N/A	N/A
OFFICE	D37	145 SF	ACT	B		4 GYP/TILE	B	4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A	N/A	N/A	N/A	N/A	
OFFICE	D38	178 SF	ACT	B		4 GYP/TILE	B	4 VCT	B		4 AL	B		4 WD	B		4 B		4 B		4 B		4 N/A	N/A
OFFICE	D39	136 SF	ACT	B		4 GYP/TILE	B	4 VCT	B		4 AL	B		4 WD	B		4 B		4 N/A	N/A	N/A	N/A	N/A	
JANITOR CLOSET	D40	27 SF	ACT	C-D		3 CMU	B	4 CONC	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	
D41	1110 SF	EXP	B		4 GYP	B		4 VCT	B		4 AL	B		4 WD	B	C-D	3 B		4 C-D	3 B		4 C-D	3 B	4
STORAGE	D41A	54 SF	EXP	B		4 GYP	B	4 VCT	C		4 N/A	N/A		N/A	WD	B	4 C-D		4 C-D	3 N/A		4 C-D	3 N/A	4
KILN	D41B	76 SF	EXP	B		4 GYP	B	4 VCT	C		4 AL	B		4 WD	B	4 C-D	3 B		4 C-D	3 B		4 C-D	3 B	4
SCHOOL PSYCHOLOGIST	D42	197 SF	ACT	B		4 CMU	B	4 VCT	B		4 AL	N/A		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
MUSIC	D43	906 SF	AD/EXP	B		4 GYP/CMU	B	4 CPT	B		4 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
STORAGE	D43A	275 SF	AD/EXP	B		4 GYP/CMU	B	4 CPT	B		4 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
CUSTODIAN OFFICE	D44	134 SF	ACT	B		4 GYP/CMU	B	4 VCT	B		4 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
ELECTRIC CLOSET	D44A	17 SF	GYP	B		4 GYP/CMU	B	4 VCT	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
STORAGE	D45	149 SF	ACT	C	3.5	CMU	B	4 VCT	B		3.5 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
D46	196 SF	ACT	B		3 GYP	B		4 VCT	B		4 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
STORAGE	D47	165 SF	ACT	B		4 GYP	B	4 VCT	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
MATH LITERACY COACHES	D48	509 SF	ACT	B		4 GYP	B	4 VCT	B		4 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
CUSTODIAN	D49	111 SF	ACT	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
CORRIDOR	D50	105 SF	ACT	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
EXTERIOR STORAGE	D51	101 SF	ACT	B		4 N/A	B	4 TILE	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
STORAGE	D52	103 SF	ACT	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
BATHROOM	D53	65 SF	GYP	B		4 N/A	B	4 TILE	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
CORRIDOR	D54	184 SF	ACT	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
STORAGE	D56	63 SF	ACT	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
KITCHEN	D57	74 SF	ACT	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	HM/WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
CLASSROOM - DHPS AFTER SCHOOL	E1	881 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
CLASSROOM - SPECIAL START	E2	867 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
BATHROOM	E2T	57 SF	EXP	B		4 BRICK/CMU/G/B	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 N/A	N/A	C		3.5	4	3.5
CLASSROOM - 4TH/5TH	E3	895 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
GENERAL STORAGE	E4	123 SF	EXP	B		4 BRICK/CMU	B	4 VCT	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
GIRLS BATHROOM	E4A	363 SF	GYP	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
JANITOR CLOSET	E4B	31 SF	GYP	B		4 TILE	B	4 CONC	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
E4C	321 SF	GYP	B		4 TILE	B		4 TILE	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
CLASSROOM - 5TH	E5	895 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
CLASSROOM - 4TH	E6	896 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
CLASSROOM - 5TH	E7	912 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
CLASSROOM - 4TH	E8	900 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
SPECIALIST RESOURCE ROOM	E9	267 SF	ACT	B		4 GYP	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
STORAGE	E9A	31 SF	ACT	B		4 W/D	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	N/A	4
IT CLOSET	E10	30 SF	GYP	B		4 GYP	B	4 CONC	B		4 N/A	N/A		N/A	HM	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
BATHROOM	E10A	64 SF	GYP	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
BATHROOM	E10B	67 SF	GYP	B		4 TILE	B	4 TILE	B		4 N/A	N/A		N/A	WD	B	4 B		4 N/A	N/A	N/A	N/A	N/A	4
CLASSROOM - CITY OF CAMBRIDGE	E10B	1080 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	C		3.5 AL	B		4 WD	B	4 B		4 B		4 C		3.5	4	3.5
PRESCHOOL OFFICE	E11A	199 SF	ACT	B-C		3.5 GYP	B	4 VCT	B		4 AL	B		4 WD	B-C	3.5 B		4 B		4 C		4 N/A	N/A	4
LD SPECIALIST	E12	397 SF	AD/EXP	B		4 BRICK/CMU	B	4 VCT	B		4 AL	B		4 WD	B	4 B		4 B		4 C		4 N/A	N/A	4
STORAGE	E12A	13 SF	ACT	B		4 GYP	B	4 VCT	B-C		4 N/A	N/A		N/A	WD	B	4 N/A		N/A	N/A	N/A	N/A	N/A	4
CORRIDOR	E15	1163 SF	ACT/AD/GYP	B		4 BRICK/GYP	B	4 TERRZ-TILE	B		4 AL	B		4 HM	B	4 B		4 B		4 B		4 B		4 B

Morse Elementary School	Structural			
Structural or Structurally-Related Item	Condition (A-E)	Priority (1-5)	Photos	Notes
Roof Construction - General	B	5		Limited Work
Floor Construction - General	B	5		Limited Work.
Foundations - General	B	5		Limited Work.
Lateral force resisting system - General	C	5		Building does not meet the current seismic code. Unreinforced masonry wall issues would need to be addressed in conjunction with a future major renovation.
Exterior walls - General	C	4	ST-1, ST-4	Replacement of rusted architectural panels, repointing of masonry, and repair/replacement of steel lintels recommended.
Exterior exposed roof deck rusting at classroom roof overhangs	C	4	ST-2	Cleaning and coating with zinc-rich paint is recommended.
Deteriorated steel columns at front entrance canopy	D	3	ST-3	It is recommended that the condition be investiaged further. Repair/replacement of canopy columns recommended. Monitor during future snow events and/or high wind conditions.
Water/Moisture Damage at Cafeteria Floor Finish	C	4	ST-5	May be evidence of underlying water/moisture nissues. Further investigation is recommended.
Crack in Cafeteria Floor Finish	C	4	ST-6	Not immediate structural concern but may pose tripping hazard. Repair is recommended.
Cracks in gymanasium masonry walls	C	4		Not immediate structural concern. It is recommended that condition continue to be monitored.
Separation and deflection at Art Room D41 Roof Deck Side lap and roof leak	D	3	ST-7	Not immediate structural concern. It is recommended that condition be investigated further. Connection of adjacent roof deck panels should be repaired.
Reported framing deflections during previous snow event at Art Room D41	C	4		Roof framing should be evaluated further considering any potential snow drift conditions. It should be monitored during future snow events for excessive deflections.

Morse School			Foodservice				
Kitchen							
Room # on Plan:			Room Use on Plan:				
Room # on Site:			Room Use on Site:				
Area	Part	Type	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Kitchen	Finishes	Ceilings, Walls & Floors		B	4		
Kitchen	Refrigerated Storage	Walk-ins and Reach-ins		C	4		
Kitchen	Food Preparation Equipment	Work Tables, Prep Tables, Prep Equipment		C	4		
Kitchen	Cooking Equipment	Hoods, Ovens, Ranges, Kettles, Braising Pans, Steamers, etc.		C	4		
Kitchen	Serving Equipment	Serving Counters, Heated and Refrigerated Holding & Support		D	3		
			Overall	C	4		Comments:

- Replace serving counters
- Repair walk-in cooler refrigeration system
- Provide additonal prep sink and support equipment

Water Heater	D26	P1.02		C	3		
Domestic Water Piping	Building Wide	P1.03		C	3	PL-1	Domestic water pipe fittings throughout the bulding indicate general corrosion at various pipe fittings at fixtures and equipment due to the municipal water. Fittings should be replaced as required.
	Building Wide	P2.02					
	Building Wide	P2.04					
	Building Wide	P2.06					
	Building Wide						

Storm Water System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
		P4.02					
Natural Gas							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Gas Service	Site	P5.01		B	4		
Gas Piping	Building Wide	P5.02	B		4		

Morse School			Fire Protection				
Sprinkler System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Fire Service	D6 and D26	FP1.01		B	4		
Piping	Building Wide	FP1.02		C	3		
Sprinkler Heads	Building Wide	FP1.03		B	4		
Standpipe System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Hose Valves	N/A	N/A	N/A	N/A	N/A		
Piping	N/A	N/A	N/A	N/A	N/A		

Morse School			Mechanical				
Heating							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Boilers	Mech Room	M1.01	2	B-C	4	M-1	Boilers were installed in 1995 and are in okay condition. There is a condensate issue in the mechanical room that needs to be investigated further for its root cause. Replace in 10-15 years.
Pumps	Mech Room	M1.02	2	C-D	3		Pumps were installed in 1995. They should be replaced within the next 5 years.
Piping	Mains, Sub-Mains	M1.03	None	A	4		This refers to piping from the boilers up to right before the units they serve. Great condition, most likely replaced with the boilers.
Piping	End Piping	M1.04	All	D-E	2	M-3	This refers to shoot-off piping directly attached to units. These pipes are in poor condition and drip condensate during the summer. They lack insulation and a proper condensate collection system.
Cabinet Unit Heaters	Building Wide	M1.05	All	D	3	M-2	Poor condition due to physical damage. All were installed in 1995 and are over 5 years past the service life. Should be replaced.
Fin Tube Radiation	Building Wide	M1.06	All	D	3		Poor condition due to physical damage. All were installed in 1995 and are over 5 years past the service life. Should be replaced.
Cooling							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Chiller	Roof	M2.01	1	C-D	3		Chiller was installed in 1995 and is at the end of its service life and should be replaced.
Unit Ventilators	Building Wide	M2.02	All	D-E	2	M-3	Unit Ventilators are dripping condensate under the units and into the fin tube due to a lack of condensate collection and insulation on the pipes. These units need to be replaced within the next year and an alternate piping system should be considered, opposed to a 2-way pipe system. Or a condensate system must be installed.

Ventilation							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Air Handling Unit, HVU-1	Roof	M3.01	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Air Handling Unit, HVU-2	Roof	M3.02	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Air Handling Unit, HVU-3	Roof	M3.03	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Air Handling Unit, HVU-4	Roof	M3.04	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Air Handling Unit, ACU-1	Roof	M3.05	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Air Handling Unit, ACU-2	Roof	M3.06	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Air Handling Unit, ACU-3	Roof	M3.07	1	D	3		Installed in 1995 renovation with a service life of 20 years. Approaching 7 years past service life, should be replaced within next 3-5 years as they are still functioning past service life.
Ductwork	Building Wide	M3.08	TBD	B	4		Diffusers, grilles, and ductwork in good condition. Some sporatic diffusers/grilles missing that need to be replaced.
Fan Coil Units	Building Wide	M3.09	All	D	3	M-4	Fan coil units showing signs of wear, most likely from lack of condensate collection causing corrosion. These should be replaced within the next year.
Building Automation System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
System Controls	Mech Room	M4.01	None	B	4	M-5	The control system is tied to the entire building via the JCI Metasys network. This communicated to the Cambridge BAS network via JCI Facility Explorer. Should be upgraded in the next 10-15 years.

Morse School			Electrical				
Power Distribution Systems							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Main Electric Service	Lower level	E1.01	Main Electric Room	B	4	See Report	Service equipment is ~ 22 years old and in poor condition, equipment is past its useful life
Main and General Distribution	All Electrical Distribution	E1.02	Electrical Distribution	B	4	See Report	Distribution/Feeders & branch circuits were not upgraded during the 1982 renovation and are circa 1960 or ~ 62 years old.
Coordination/Arc Fault Study	All Electrical Distribution	E1.03	Electrical Distribution	C+	5	See Report	Provide Arc Fault labels
Electrical	All	E1.04	Electrical	C+	2	See Report	Provide electrical maintenance on all equipment.
Devices	All Electrical Distribution	E1.05	All	B	4	See Report	Provide tamper resistant outlets, GFCI breakers not provided in kitchen, many devices are aged.
Emergency Power	Main Electric Room	E1.06	N/A	B	4	See Report	Appears in Good Condition. The generator requires its own emergency electrical room per the NEC. We require an installation date to determine if it is grandfathered.
Emergency	Main	E1.07	N/A	B	1	See Report	Provide full system test and full test of all emergency egress paths.
Lighting Systems							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Lighting	Building Wide	E1.08	Building Wide	B	4	See Report	Provide energy code compliant lighting in all areas. Many of the corridors, common spaces, classrooms were recently upgraded.
Lighting	Building	E1.09	Building Wide	D	3 & 5	—	Provide energy code compliant lighting controls.
Fire Alarm							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Fire Alarm	Mechanical Room	E1.10	Building Wide	B	4 & 5	See Report	Provide complete testing of existing fire alarm system and detailed review of devices. The fire alarm system is a horn type system and a speaker type fire alarm system is required for this occupancy type.
CO Detection	Classrooms	E1.11	Building Wide	B	5	See Report	CO detection is required for Group E Class Rooms.

Morse Building Assesment			Doors				
Entire School Door Assesment							
Room # on Plan:		N/A	Room Use on Plan:		All of Morse		
Room # on Site:			Room Use on Site:				
Area	Part	Type	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes:
Interior	Doors	Auditorium	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Auditorium
Interior	Doors	Bathroom	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Bathroom 1 Bathroom 2 Bathroom indicator
Interior	Doors	Cafeteria	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Cafeteria 1 Cafeteria 2 Cafeteria 3
Interior	Doors	Classroom	Survey only for site typcals, quantities and locations not recorded	B	3	See Links	Classroom 2 Classroom 3 Classroom 4
Interior	Doors	Corridor 1	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Corridor 1
Interior	Doors	Corridor 2	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Corridor 2
Interior	Doors	Exterior Exit 1	Survey only for site typcals, quantities and locations not recorded	B/C	3/4	See Links	Exterior Exit 1
Interior	Doors	Exterior Exit 2	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Exterior Exit 2
Interior	Doors	Exterior Exit 3	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Exterior Exit 3

Interior	Doors	Exterior Exit 4	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Exterior Exit 4
Interior	Doors	Exterior Exit 5	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Exterior Exit 5
Interior	Doors	Gym 1	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Gym 1
Interior	Doors	IDF	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	IDF
Interior	Doors	Main Entry 1	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Main Entry 1
Interior	Doors	Main Entry 2	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Main Entry 2
Interior	Doors	Music	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Music
Interior	Doors	Office	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Office 2 Office / Classroom 1
Interior	Doors	Passage	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Passage
Interior	Doors	Storage	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Storage

EAQ FORMS - SCORING BREAKDOWN

The Educational Adequacy Assessment looked at how existing spaces in each school support specific educational criteria and needs as identifies by our research. Each assessor utilized checklists and the assessment criteria and rating scale below to maintain consistency across all fields. All line items were then averaged for the Educational Adequacy Quotient. Detailed reports for this school individually can be seen in the following pages.

ASSESSMENT CRITERIA	
4	Functions excellently
3	Functions well/good enough condition to support educational needs
2	Exists; baseline functionality; doesn't support educational needs
1	Exists; does not function/needs to be replaced
0	Does not exist, but is needed
N/A	Not Applicable; not required

2.1 EDUCATIONAL ADEQUACY FORMS - MORSE

Metric	Description	Score	Comments
SITE- Size, Location, Access, Cultural Context		Consider overall school for this category	
Site Size	Site is 10-15 acres in size; Adequate space for playgrounds & fields	3.5	Site has staff parking, many play areas & fields
Location	Distance to students, near pollution/noise, appropriate to community	3.5	Next to 4 lane Memorial Drive which has lots of traffic, but in a part of the City that does not have many other schools close by
Access	Parent/Bus drop-off & pick-up; space for queuing, separation of cars, bus & peds, ADA; access for community to recreation & events	3.5	No drop-off; public spaces and main office right off front lobby area
Identity & Cultural Context	The campus has a positive identity & represents the mission/values of the school community & surrounding community.	3.5	Nice spaces w/courtyard. Sprawling building w/many doors seen from street. Canopy is understated & not easily seen from a distance because of vegetation. Nice front fence & trees.

SECURITY- Site & Building			
Consider overall school for this category			
Building Entry and Sequence	Are there appropriate sightlines from the building entry to parking? Can you get from parking/bus to the door protected from elements?	4	Front office faces street; can see entry from reception area & offices; canopy extends to public sidewalk. Staff only parking at back of building
Building Security	Secure Vestibule for building entry; internal zones of security	2.5	No vestibule; many exterior doors; There are doors to separate public zone from academic wings, but they are far down the hall w/lots of space to roam.
Site Security	Safe or Secure Perimeter; Minimal entry points with good visibility & lighting.	3.5	
Wayfinding	Building organization is easily understood; students, parents & visitors can find their way	2.5	Corridors are long & there are many off-shoots that make it difficult to find some rooms
Community Connections	Campus provides for community use & interaction; Campus supports after hours use in a secure way.	3.5	Would benefit from a couple more cross-corridor doors to limit access down corridors when only one assembly space in use

LEARNING AREAS			
Consider overall school for this category			
Differentiated Learning	Overall compliment of classrooms provide areas for different learning modalities	3	Classrooms are repetitive, but many have "zones" or alcoves for different activities.
Inquiry Based Learning	Learning area has access to space for project based learning	3	Almost all of the classrooms have sinks; they are in bad shape and not HC accessible;
Large Group Instruction	Area(s) exist for combined classes to gather collectively	2	Only in public spaces like library or cafeteria; no combined classrooms
Distance Learning	Space dedicated for distance learning for individuals or small groups of students; learning labs for distance interventions (infrastructure with computers/technology/display	3	
Independent Study	Areas available for students to study independently	3	L-shape of many classrooms help with this, but it is still within the walls of the classroom
Small Group Instruction	"Pull-out" spaces available for individual instruction for special needs students	2	Distributed - but they are not imbedded in each "cluster" of classrooms; are in the connectors
Self-Contained Classrooms	Space exists for special needs students within an independent classroom	3	
All School Gathering Area	Spaces exist for campus wide meeting/activities	4	Gym; auditorium; cafeteria
Break-Out Areas	Common spaces for students to collaborate and work in small group of 10 or less. Should be assessed on passive supervision, display infrastructure, and spatial acoustics	1	there are a couple areas that could be set-up w/furniture, but no supervision or connection to classrooms
Presentation Areas	Space exists for student, teacher & guest presentations for various size groups	3	space in auditorium, library & cafeteria, but acoustics in cafeteria would be challenge
	Space exists for learning and instruction in appropriate outdoor environments. Should be assessed on passive supervision, display infrastructure, and spatial acoustics		

Metric	Description	Score	Comments
EDUCATIONAL IEQ		Consider overall school for this category	
Student Centered Sustainable Design™			
Stimulating Architecture	The school environment is welcoming and inspiring. The occupants are engaged.	3	There are great ceramic tile art installations in some parts of school; lobby could use an upgrade
Safe & Healthy	The school has good sight lines and connections between spaces & to places of vulnerability (stairs/restrooms) to support sense of community & create a safe environment.	2	Classroom entries have solid door with a sidelight that does provide connection to corridor. However, complex plan with many corners and no supervision at intersections, make for places for kids to be "out of sight".
Views & Connections	Views provided from classrooms/core learning spaces to outdoors, corridors, or other learning spaces	3	Good views to outside; sidelights provide views to corridors; no views or connections between classrooms except some shared bathrooms
Daylighting	Windows/Skylights: daylighting provided with solar shades or overhangs where appropriate	2.5	Large overhangs; may need some additional sun shading at east/west facing rooms. Blinds are vertical & should be replaced. From Survey: Most of the blinds do not work; I can't control sun or shadows so we can't see slides. Certain rooms have no light.
Lighting	Sufficiency (quantity/quality) & differentiation (provides choice/change)	3	
Acoustics	Space should have appropriate sound absorption materials to allow for conversations to be heard. Walls designed to minimize sound transfer	2	acoustic structural deck likely makes internal noise an issue when multiple groups are talking at the same time.
Thermal Comfort/Air Quality	Spaces are not too hot or too cold; not too much heat gain from sun. The air is "fresh" w/o noticeable odors/staleness/mustiness (Ventilation)	2	Need to verify w/engineers & with surveys From Survey: Too hot in winter and too cold in summer. We send regular emails about adjusting the thermostat; one day will be cold air and the next boiling hot. Fan was recently replaced and is only one speed; impossible to adjust temperature without help. When it is hot, it is hard to breathe.
Universal Design	Are spaces designed to meet the needs of all people, including those with physical or SEB challenges or cultural differences	3	
Display of Work	Is there adequate areas for student work to be displayed both inside and outside learning spaces	4	Display in corridors (2D & 3D)
Movement & Exploration	Does the space allow for the different learning modalities to happen dynamically	3.5	Most rooms, yes; some rooms may be a bit small per program
Adaptability & Flexible Space	How much can the space (wall/s) change shape or allow change in use by opening or combine with other spaces.	0	No adaptable spaces

Furniture			
Design	Ergonomic needs of students are met; furniture is appropriately sized for age group, per DLR furniture sizing guide.	1	Furniture should be replaced
Flexibility	Furniture easily moved to allow for classroom reconfiguration	3	
Variety of Seating Types	Combination of formal and soft seating available within the space. Is their choice in seating.	1	Some rooms do, but many don't have soft seating. Everyone is expected to sit at a desk. There is some variety in table arrangements
Movement	Furniture design allows for individual student movement which increases attention	1	Most rooms have hard chairs w/no flex

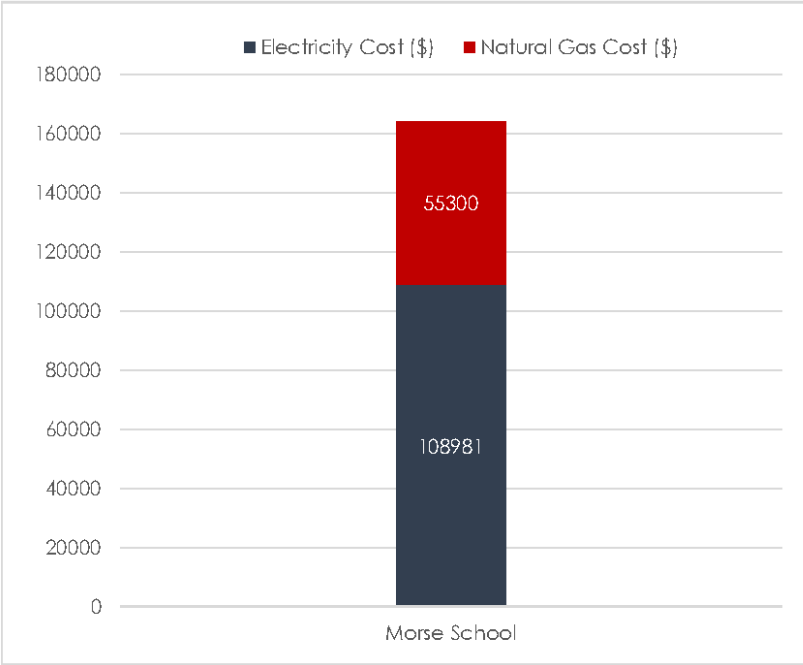
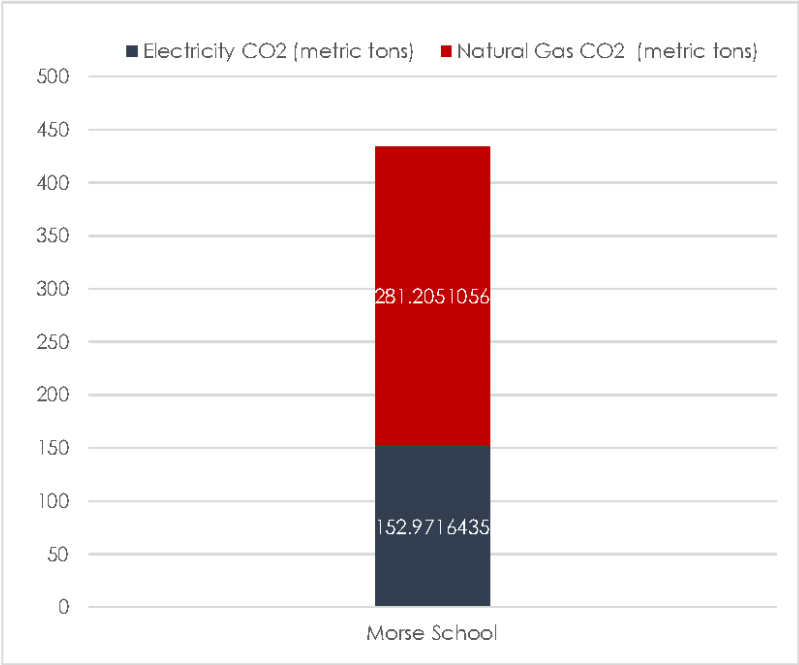
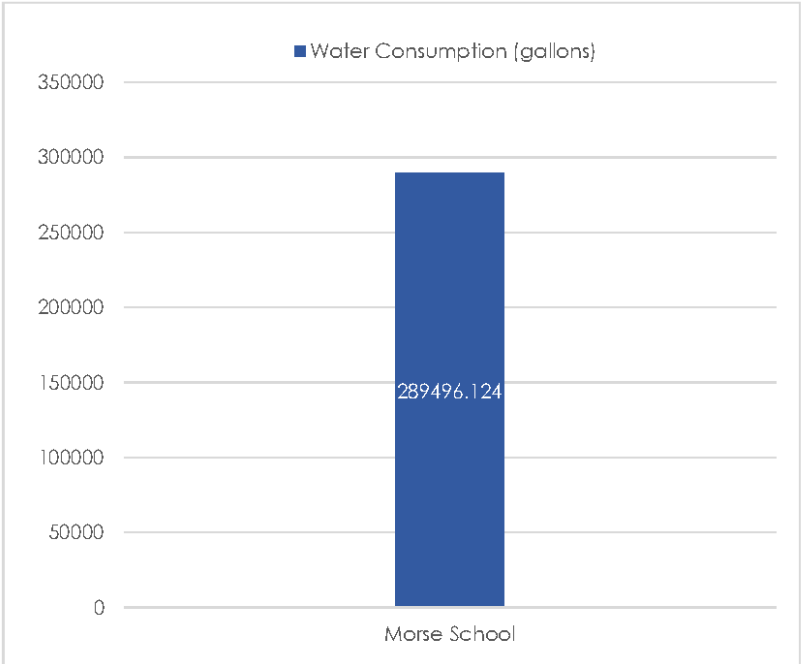
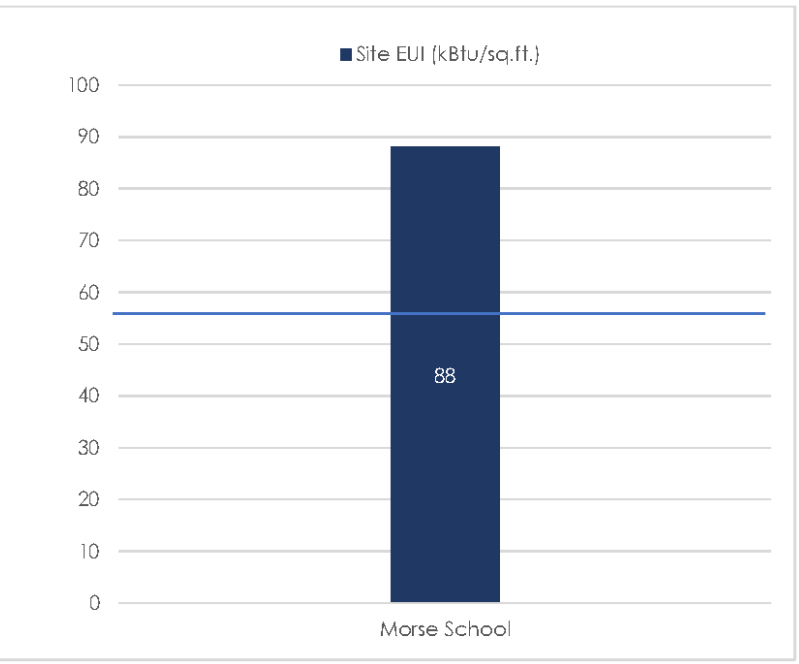
Metric	Description	Score	Comments
INSTRUCTIONAL SPACES			
Classrooms-regular instructional spaces (average for all spaces)			
Size	Physical square footage of rooms as compared to standards	3	Rooms are undersized compared to standards
Appropriate Support Spaces	Resources Classrooms; Small Group Rooms, etc. nearby	2	Small group rooms are down hall & often around corners
Storage for Materials	Space for student material storage including books, work projects, backpacks, coats; Storage for teacher personal materials, classroom supplies	4	Storage & backpack/coat features are old, but they are incorporated into the space.
Technology, power & data	Access to technology in the classroom; sufficient access to power & data to support flexible, student centered learning	2.5	Block walls & lots of windows & casework means limited power
Sink &/or equipment	Provided in-rooms, if needed	3.5	Most rooms have them, but they are not HC accessible
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	2.5	Enough tack boards; limited white boards
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	4	wings create smaller communities; distance to support is only drawback; 1 floor = accessible (ramps as needed)
Classrooms - Specialty spaces: SPED			
Size	Physical square footage of rooms as compared to standards	2	
Appropriate Support Spaces	Testing & Conf. Rooms; Life-Skills; Sensory or Decompression Rooms, etc. as required	2	Small group rooms are down hall & often around corners
Storage for Materials	Space for student material storage including books, work projects, backpacks, coats; Storage for teacher personal materials, classroom supplies	2.5	small group rooms don't have as much storage
Technology, power & data	Access to technology in the classroom; sufficient access to power & data to support flexible, student centered learning	3	Small group often have gwb walls but still power is by code
Sink &/or equipment	Provided in-rooms, if needed	3	Depends on the room - small rooms did not have access to sinks w/o leaving the room, but larger ones typically did.
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	2.5	
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	2.5	

Metric	Description	Score	Comments
Classrooms - Specialty spaces: Science, Applied Learning (Maker Spaces), CTE			
Size	Physical square footage of rooms as compared to standards	1	No maker space or science specific rooms; regular classrooms would be used.
Appropriate Support Spaces	Prep Rooms, Chemical Storage; Equipment Storage; Recording, etc. Public Entrance or Waiting as appropriate to program	N/A	
Storage for Materials	Space for student material storage including books, work projects, backpacks, coats; Storage for teacher personal materials, classroom supplies	N/A	
Technology, power & data	Access to technology in the classroom; sufficient access to power & data to support flexible, student centered learning	N/A	
Sink &/or equipment	Provided in-rooms, if needed	N/A	
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	N/A	
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	N/A	
Classrooms - Specialty spaces: Visual & Performing Arts & Fitness/Health			
Size	Physical square footage of rooms as compared to standards	3	Rooms under-sized
Appropriate Support Spaces	Kiln Room; Practice Rooms; Instrument &/or Music Storage; Equipment Storage	2.5	Looks like music office/instrument storage room may be used by others; new room created; art storage & kiln rooms very small
Storage for Materials	Space for student material storage including books, work projects, backpacks; Storage for teacher personal materials, classroom supplies	3	
Technology, power & data	Access to technology in the classroom; sufficient access to power & data to support flexible, student centered learning	3	
Sink &/or equipment	Provided in-rooms, if needed	3	No sink in music area
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	2.5	Minimal white board in art
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	3.5	Good location within school; music room internal w/o direct windows to outside & interior windows are covered up

Metric	Description	Score	Comments
PUBLIC & SUPPORT SPACES			
Public Spaces: Media Center, Cafeteria, Gymnasium, Auditorium & Stage			
Accessibility & Location	Degree to which spaces are accessible (ADA) & appropriately located in relation to each other & other functions	4	All primary assembly spaces are off of front lobby; secondary public spaces (library, art & music) off primary corridors and can be separated from academic wings
IEQ - average for all	Daylight, Views, Thermal Comfort, Air Quality (Ventilation)	3	
Lighting - average for all	Sufficiency (quantity/quality) & differentiation (provides choice/change) for intended uses	2	Lighting should be upgraded
Acoustics & Privacy - average for all	Do spaces have proper acoustics for intended use & afford ability to achieve visual & auditory privacy when needed.	2.5	Mainly rely on acoustic structural deck (not ACT or wall panels); library has carpet; auditorium has acoustic treatment
Technology, power & data - average for all	Sufficient technology, power & data for intended uses (i.e. public address system in gym; adequate audio-visual for presentations & performances, etc.)	3	
Display of Student Work, Awards, Notices, etc.	Is there adequate areas for display and communication (cases, screens, interactive dashboards, etc.) in appropriate places to be seen.	3.5	Many tack boards in corridors; 3D display at front office
Storage for equipment - average for all	Space for the storage of specialized equipment to meet student needs	2	Seems like limited storage for building this size
Media Center	Exists/Adequacy: size & configuration	4	Carpet/materials & furniture upgrade needed, but good size w/different areas for learning possible; good "bones"
Cafeteria	Exists/Adequacy: size & configuration; Adequate kitchen & Servery	2	worst of public spaces at Morse - seems small; servery windows covered
Gymnasium	Exists/Adequacy: size & configuration	3.5	Does not connect to playground
Auditorium &/or Stage	Exists/Adequacy: size & configuration	4	

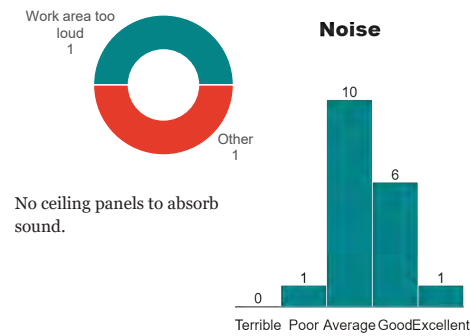
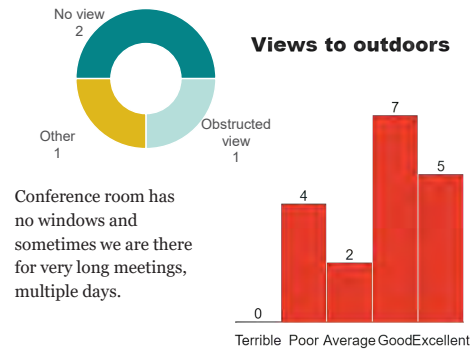
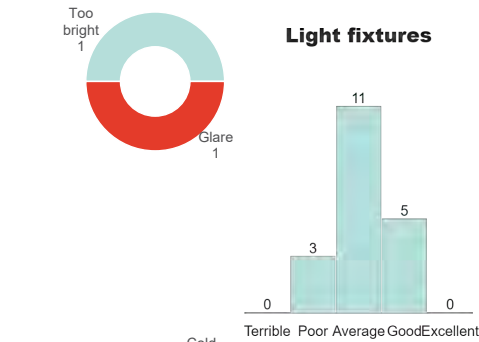
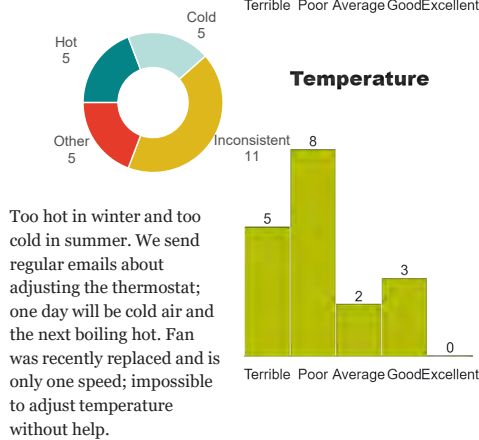
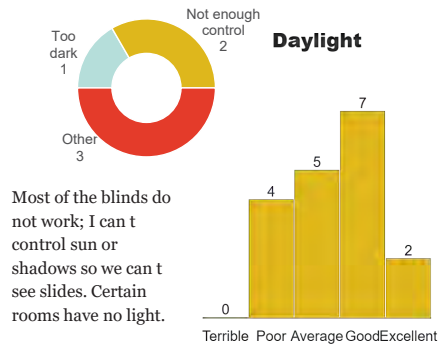
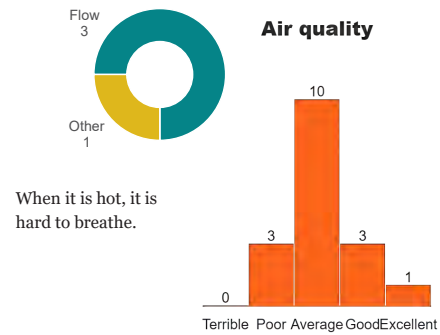
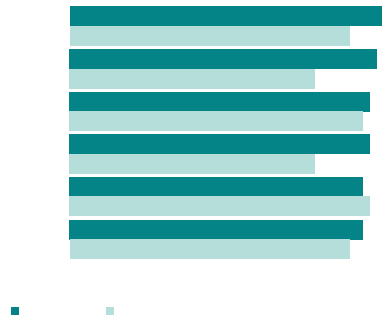
Administrative & Health Offices			
Accessibility & Location	Degree to which spaces are accessible (ADA) & appropriately located in relation to each other & other functions	4	
IEQ - average for all	Daylight, Views, Thermal Comfort, Air Quality (Ventilation)	3.5	Good daylight
Lighting - average for all	Sufficiency (quantity/quality) & differentiation (provides choice/change)	3	Dimming/choice? Color?
Acoustics & Privacy - average for all	Do spaces have proper acoustics for conversations & afford ability to achieve visual & auditory privacy when needed.	4	
Mail, Copy & Storage	Appropriate for number of staff; record storage & supply storage	2	Part of front office
Reception & Welcome Area	Appropriate for the space & size of school; welcoming; appropriate furniture; appropriate acoustics	2	Limited area for waiting in office, but there is more room in building lobby
Admin Offices	Number appropriate for the number of students and configuration the school; indicate how many exist	3	2 offices plus large conference room
Health Office	Size & configuration appropriate for the number of students and configuration the school; secure meds; privacy & acoustics (HIPPA), etc.	3	Does have separate office for private conversations & larger area than most; could use separate exam room
Conference Room (s)	Number appropriate for the number of students and configuration the school; indicate how many exist	2.5	Good sized conference room in main office

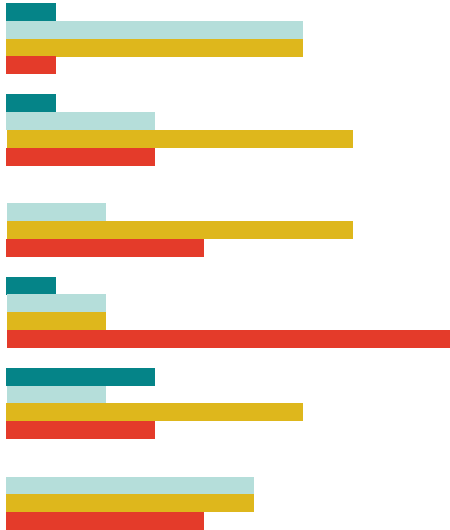
Metric	Description	Score	Comments
Student & Staff Support			
Accessibility & Location	Degree to which spaces are accessible (ADA) & appropriately located in relation to each other & other functions	2.5	Distributed between neighborhoods
IEQ - average for all	Daylight, Views, Thermal Comfort, Air Quality (Ventilation)	3	Most have daylight & views, even if they are internal windows through corridor spaces
Lighting - average for all	Sufficiency (quantity/quality) & differentiation (provides choice/change)	3	Dimming/choice? Color?
Acoustics & Privacy - average for all	Do spaces have proper acoustics for conversations & afford ability to achieve visual & auditory privacy when needed.	3	
Storage for equipment - average for all	Space for the storage of specialized equipment to meet student needs	2	
Counseling, Guidance Offices &/or Career Ctr	Exists/Adequacy: size & configuration	3	
OT/PT & Speech	Exists/Adequacy: size, configuration (sink, swing, mats, equipment, storage)	2	need uses confirmed on plan; did not see swing aparatus; no sink
Conference Rms	Exists/Adequacy: size & configuration	2	
Toilet Rooms	Availability throughout school	4	Many classrooms share a toilet & there are single use and gang RR distributed
Storage	Book Storage; General Storage; Supply Storage	2	Book storage near library in work room; little other storage not in a the rooms
Teacher Lounge; Health & Lactation Rooms	Exists/Adequacy: size & configuration; with kitchenette	2.5	Good daylight and view; too small; no lactation rooms
Teacher Workrooms & Planning	Exists/Adequacy: size & configuration; Copy & print locations; collaboration & focus	2	Saw 1 teacher work near library; not convenient for team collaboration



SURVEY RESPONSE DATA - MORSE







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3.2 PLAN DIAGRAMS

Building plans redacted at the request of Cambridge Public Schools.

Building plans redacted at the request of Cambridge Public Schools.

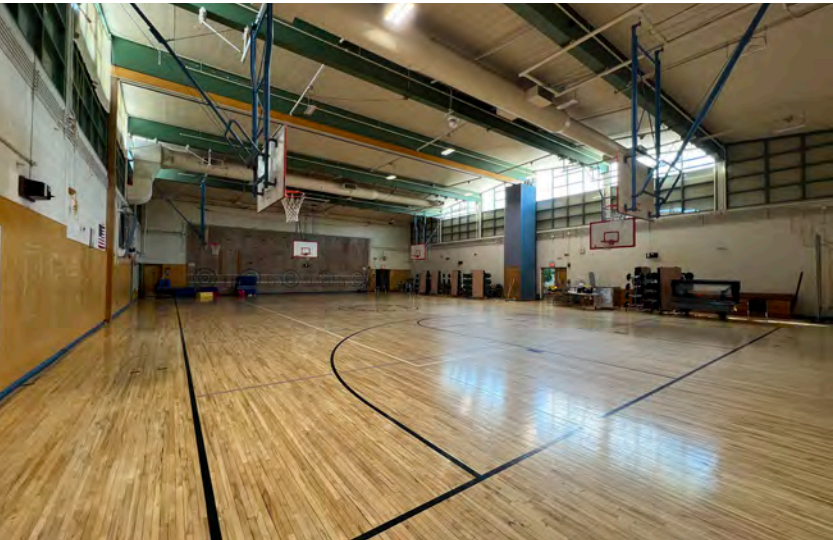
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3.3 SCHOOL IMAGES

Interior



Auditorium



Gym



Library Front



Library Back



Cafeteria



Lobby/Cafeteria



Courtyard



Art Classroom



AE-1: South Elevation at B Wing



AE-2: Representative East Elevation at C Wing



AE-3: East Elevation of D Wing



AE-4: East Elevation of D Wing at Main Entrance



AE-5: West Elevation at D Wing



AE-6: West Elevation at D Wing



AE-9: Representative East Elevation condition at E Wing



AE-10: Typical East façade at E Wing



AE-7: North Elevation of E Wing



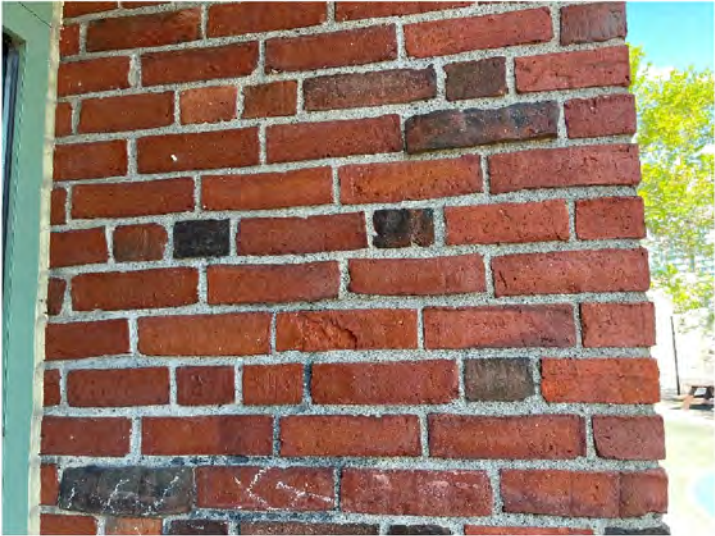
AE-8: Representative East Elevation at E Wing



AE-11: West façade at E Wing



AE-12: Façade within Courtyard



AE-13: Representative brick masonry façade.



AE-14: Atypical precast concrete window sill and brick masonry with evidence of excess moisture due to moss growth.



AE-17: Section of East Elevation at D Wing where roof drains to grade, splashing onto masonry façade. Some deteriorated mortar and vegetation growth on façade.



AE-18: Roof edge at D Wing where roof drains over roof edge, onto façade below.



AE-15: Typical glazed brick accent wall. Typical cracking and some spalling observed.



AE-16: Typical peeling paint at concrete block facade



AE-19: Typical staining and isolated mortar deterioration around gutter at West Elevation near Cafeteria



AE-20: Step cracking of concrete block at East entrance to B Wing



AE-21: Typical exposed metal roof truss end at exterior of facade



AE-22: Typical exposed metal roof truss at exterior of facade



AE-25: Representative rusting of lintel at head of window opening, typical perimeter sealant reaching end of expected service life



AE-26: Typical aluminum storefront assembly with fixed, operable and spandrel components within punched opening



AE-23: Interior of typical classroom where roof trusses extend through facade.



AE-24: Representative failing masonry control joint sealant



AE-27: Typical aluminum storefront assembly with fixed, operable and spandrel components at building entrance condition



AE-28: Typical storefront entrance with operable and fixed components



AE-29: Typical curtain wall with fixed lites and insulated metal spandrel panels. Note rusting / corrosion of spandrel panels in many locations.



AE-30: Typical peeling paint on spandrel panel installed within storefront assembly



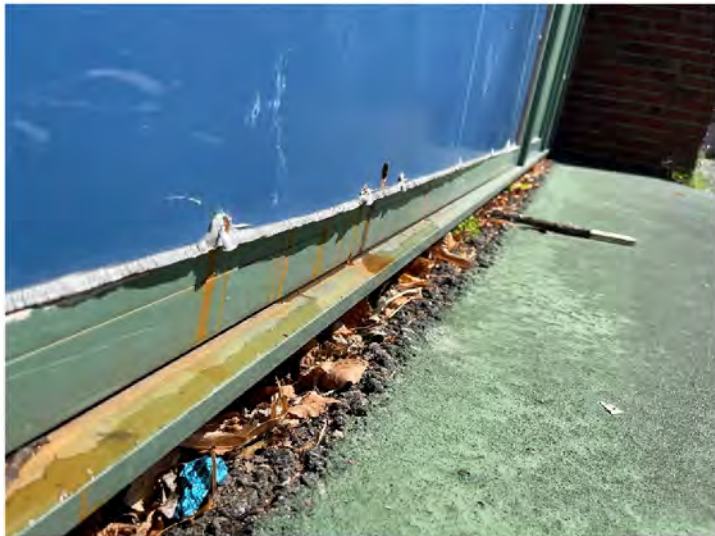
AE-33: Typical light surface rusting on typical spandrel panel within storefront assembly



AE-34: Atypical glazing gasket at perimeter of spandrel panel that is not fully engaged to storefront assembly



AE-31: Typical rusting of spandrel panel within storefront assembly



AE-32: Typical delamination of spandrel panel, failed repair sealant and rusting within storefront assembly



AE-35: Typical storefront assembly with metal panel above, rusting of insulated metal spandrel panel within storefront



AE-36: Representative rusting of spandrel panel installed within storefront assembly



AE-37: Typical failed perimeter sealant at storefront assembly



AE-38: Representative failed sealant between storefront assemblies



AE-41: Typical louver within masonry façade, perimeter sealant nearing end of expected service life



AE-42: Rusting of hollow metal frame below louver infill



AE-39: Interior of typical classroom with storefront facade



AE-40: Interior of curtain wall within Library



AE-43: Typical entrance doors



AE-44: Typical metal framed door assembly with louvers, note surface rusting in various areas



AE-45: Representative exterior metal door with significant rusting



AE-46: Interior of typical exterior metal door frame with rusting at base of jamb framing.



E-49: Interior of door 36 where no weatherstripping was observed at interior between door panels.



AE-50: Typical door hardware lacking full securement, is loose.



AE-47: Early signs of corrosion on interior at base of exterior door.



AE-48: Typical surface rusting on interior at base of typical exterior door.



AE-51: Typical rusting of exposed underside of metal roof decking



AE-52: Typical rusting and peeling paint at exposed underside of metal roof decking, typical in most locations.



AE-53: Typical rusting and peeling paint at exposed underside of metal roof decking, typical in most locations. Not exposed fasteners from roof securement above.



AE-54: Representative PVC roofing assembly



AE-57: Representative PVC roofing assembly



AE-58: Representative PVC roofing assembly



AE-55: Representative PVC roofing assembly



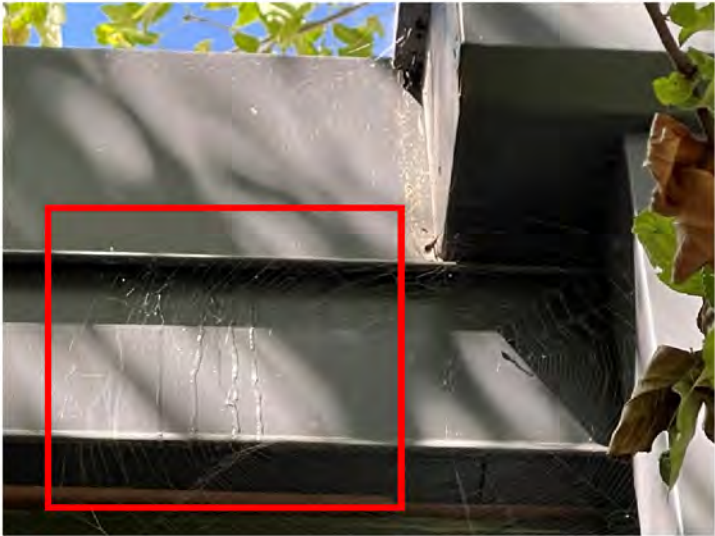
AE-56: Representative PVC roofing assembly with MEP units and unit skylight



AE-59: Representative PVC roofing assembly



AE-60: Typical condenser unit on sleeper curb



AE-61: Water leakage observed between aluminum fascia components in area of ponded water at clogged downspout within Courtyard



AE-62: Base of downspout in Courtyard appears clogged with leaves



AE-65: Typical downspout clogged with leaves at West Elevation



AE-66: Typical internal roof drain with leaves and sediment build up



AE-63: Typical ponding of D Wing roof to North of Courtyard



AE-64: Typical downspout at West Elevation with vegetation growth due to leaves filling top of downspout



AE-67: Interior of wall mounted ladder at roof access hatch



AE-68: Roof access hatch

OPINION OF PROBABLE REPAIR COST

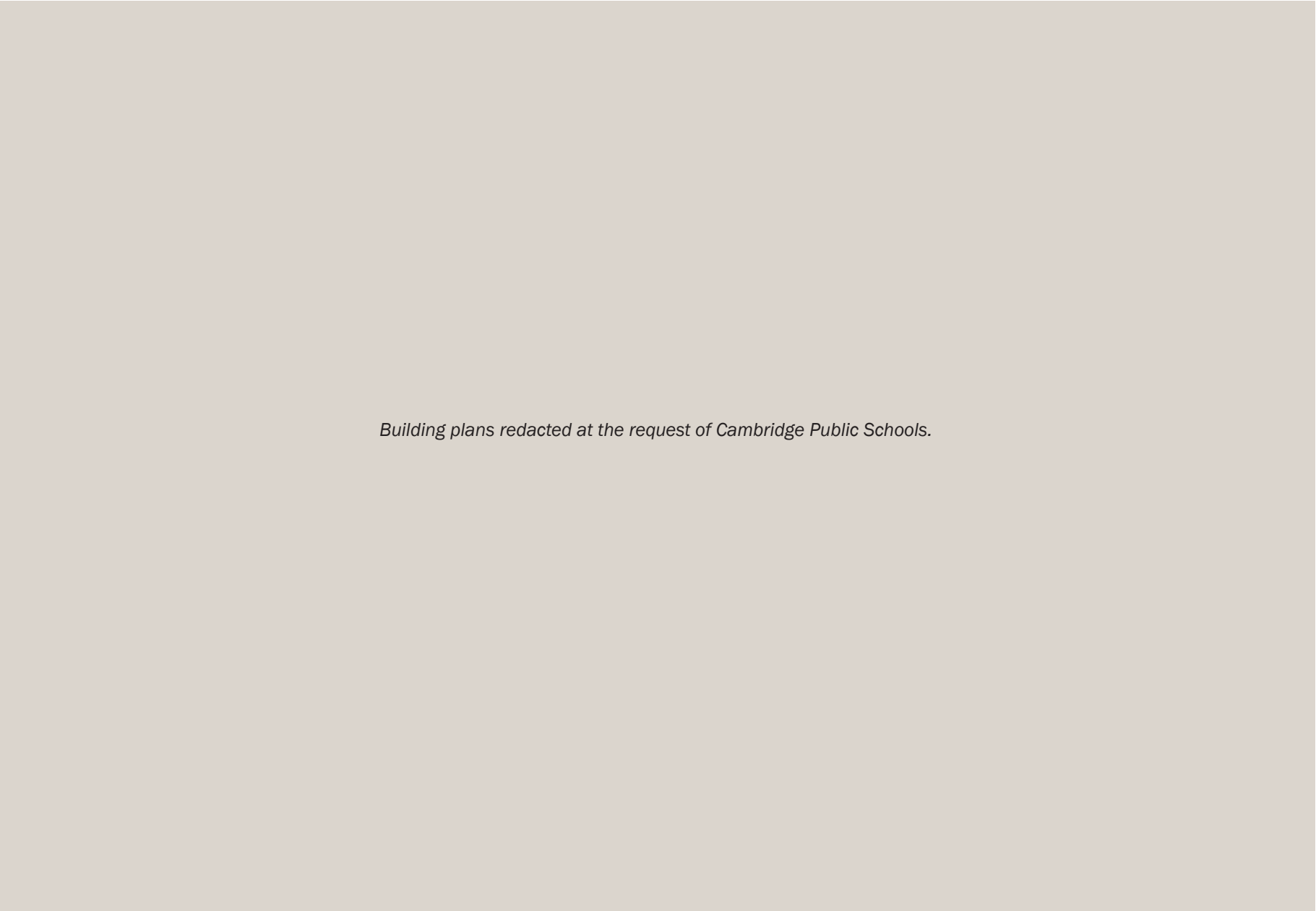
Rough Order of Magnitude Estimates

The rough order of magnitude cost estimation included in this phase is based on aspects of the building in need of repair or at the end of useful life to meet code, it does not necessarily include any intervention with the purpose of improving education or carbon/sustainability goals. This is used to identify from a cost perspective which location has the highest facility improvement need and then be used to compare to a replacement/new build cost.

	Morse			
Gross Floor Area:	84,021			
No. of Students:	286			
Assessed Value:	\$20,015,900			
	Total Project Cost (\$)	Total Construction Cost (\$)	Total Project Cost (\$/GSF)	Total Project Cost (\$/Student)
ARCHITECTURAL - EXTERIOR (EXTERIOR WALLS)	\$ 5,551,459	\$ 4,205,651	\$ 66	\$ 19,411
ARCHITECTURAL - EXTERIOR (ROOFING)	\$ 2,625,435	\$ 1,988,966	\$ 31	\$ 9,180
ARCHITECTURAL - INTERIOR	\$ 1,131,924	\$ 857,518	\$ 13	\$ 3,958
ARCHITECTURAL - DOOR HARDWARE	\$ 62,745	\$ 47,534	\$ 1	\$ 219
ARCHITECTURAL - EQUIPMENT & FURNISHINGS	\$ 279,487	\$ 211,733	\$ 3	\$ 977
STRUCTURAL SYSTEM	\$ 3,766,093	\$ 2,853,101	\$ 45	\$ 13,168
FOOD SERVICE	\$ 209,825	\$ 158,958	\$ 2	\$ 734
CONVEYING SYSTEM	\$ -	\$ -	\$ -	\$ -
BUILDING SYSTEMS - PLUMBING	\$ 1,327,565	\$ 1,005,731	\$ 16	\$ 4,642
BUILDING SYSTEMS - HVAC	\$ 5,659,621	\$ 4,287,592	\$ 67	\$ 19,789
BUILDING SYSTEMS - FIRE PROTECTION	\$ 317,917	\$ 240,846	\$ 4	\$ 1,112
BUILDING SYSTEMS - ELECTRICAL	\$ 3,318,914	\$ 2,514,328	\$ 40	\$ 11,605
DEMOLITION & SPECIAL CONSTRUCTION	\$ 2,969,484	\$ 2,249,609	\$ 35	\$ 10,383
SITework	\$ 10,620,300	\$ 8,045,682	\$ 126	\$ 37,134
TOTAL	\$ 37,840,771	\$ 28,667,251	\$ 450	\$ 132,310

SITE/BUILDING INTERVENTION EXPLORATIONS

MORSE SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)



MORSE SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)

- New construction building, reworked service access and parking ramp leading to below-grade parking.
- Create dedicated area for DHS preschool + afterschool space with separate lobby, maintaining close proximity to public spaces.
- Special Start through Kindergarten classrooms located in first floor, with resource/small and medium group spaces and breakout areas located throughout.
- Small gym and dining space with foldable partitions to create flex space in reception area.

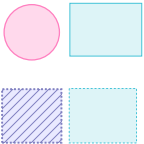
MORSE SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)

Building plans redacted at the request of Cambridge Public Schools.

MORSE SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)

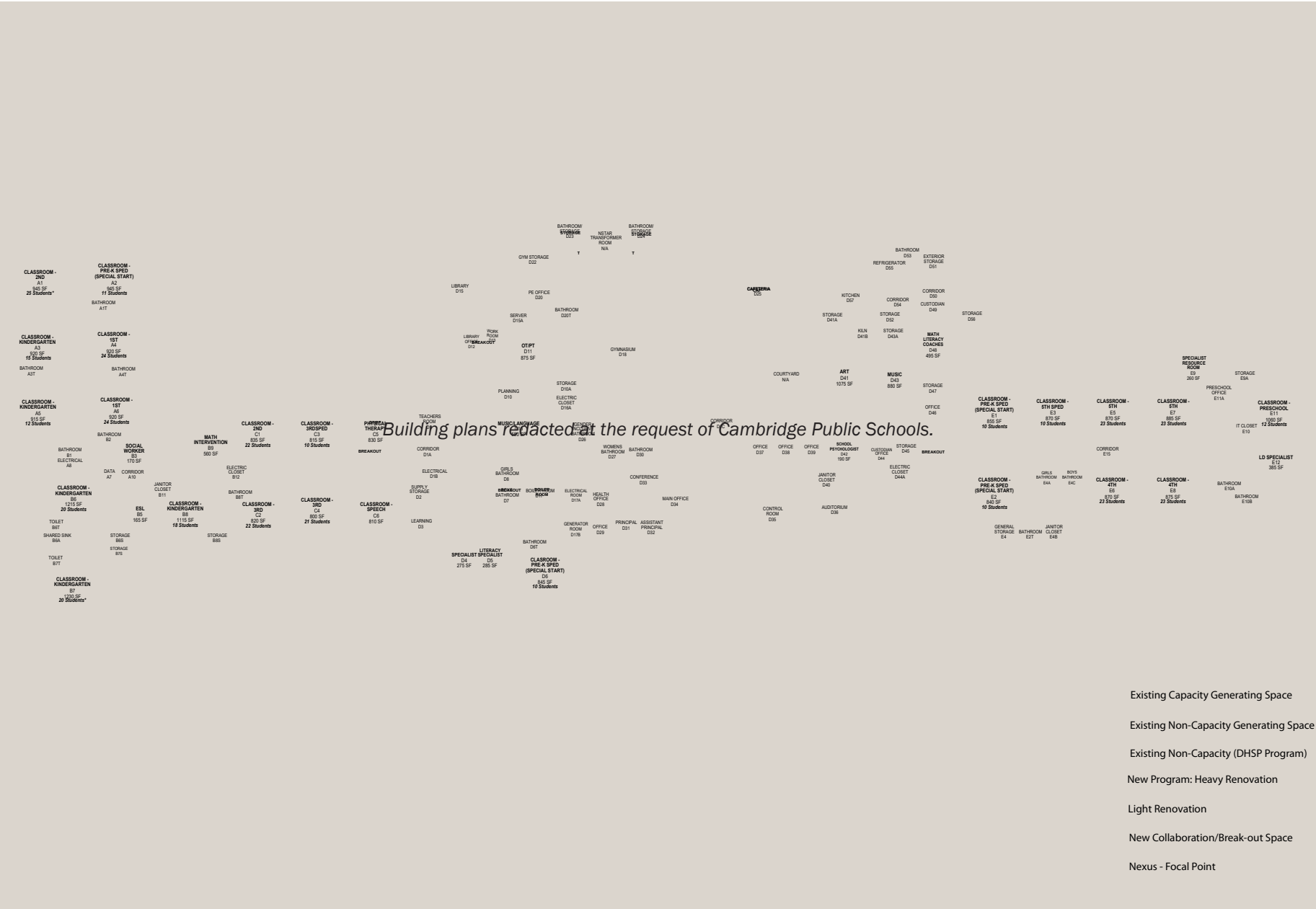


Building plans redacted at the request of Cambridge Public Schools.



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MORSE SCHOOL - DISCARDED OPTIONS



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