



BALDWIN SCHOOL

85 Oxford Street
Cambridge, MA 02138

Facilities Condition Assessment : October 19, 2022

Capacity Analysis
Master Plan

Facilities Condition Assessment, Capacity Analysis and Master Plan for CPS



CITY OF CAMBRIDGE

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7.2 | BALDWIN SCHOOL BUILDING APPENDIX

Historical Summary

The Maria L. Baldwin School is located at 28 Sacramento Street in Cambridge, MA and one block away from Historical Register Historic Places and Landmarks Easements. The site previously housed an original structure, a two-story brick building with granite trimmings, built in 1875 and named The Cambridge Agassiz School after Professor Louis Agassiz. The original school contained 8 rooms and split the spaces between primary grades on the first floor and a “training school” and offices on the second floor. As the community and school grew, the Agassiz School building was demolished in the early 1990’s and replaced with the current building in 1995. To retain some of the history, artifacts from the old structure were incorporated into the cafeteria entrance in the basement of the new building. All asbestos containing materials identified in the original Management Plan were professionally abated prior to demolition procedures. [Ahera 1989-1992].

The school was proudly renamed after Maria L. Baldwin, an African-American Cambridge resident and former Master of the school who was remembered for her leadership and success in growing the school. Currently, the school is comprised of Junior Kindergarten through 5th grade. The new building is seen as an example of collaboration between the surrounding community, the city, and the school system, and proudly carries over the legacy and history of the site.



Maria L. Baldwin Commemoration Plaque. CPS, Explore Baldwin

FCA FORMS - SCORING BREAKDOWN

Two assessments were performed at each school, a Facilities Condition Assessment was performed by the architectural team and consultants to assess the current physical conditions of the building and the building systems. 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. Detailed reports for each field can be found in the Appendix. 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. The summary 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">Brick Masonry in good condition overallWindows - Replacement or repair of existing chain limiters is recommended, adjustments to interior screens should be made to allow window operators to fully close.Hollow Metal Doors - Replacement of existing weatherstripping is recommendedSealants - Sealants are in good condition but will need to be replaced within 5 years due to AgeEPDM Roofing and shingle roofing - Replacement recommended within 5 years due to AgeA scope of masonry cleaning and repointing should be undertaken at the North Elevation lightwells and retaining wall. This work shall include replacement of cracked or spalled brick.	B	3
ARCHITECTURAL - INTERIOR	CONDITION	PRIORITY
<ul style="list-style-type: none">Selected doors HM or AluminumFFE - varying age but most in good condition.Lower grade of casework used. Shows significant damage in most rooms.Plumbing - Low rating due to quality of sinks in classrooms casework. Toilet room fixtures in good condition.	B	4
STRUCTURAL SYSTEM	CONDITION	PRIORITY
<ul style="list-style-type: none">General Construction (Roof, Floor, Foundations)Lateral Force Resisting System - GeneralExterior Brick Masonry Walls - General	B	5
FOOD SERVICE	CONDITION	PRIORITY
<ul style="list-style-type: none">Provide additional refrigerated storageProvide additional prep table with sinkReplace fire suppression system	C	4
CONVEYING SYSTEM	CONDITION	PRIORITY
<ul style="list-style-type: none">Check oil line in hoistway or jack head for leaks; substantial oil leak on pit floor. Repair, clean, and dry pit of leaked oil.Scrape and clean all car and hall door sills of debris.Clean cartop equipment and car door operators.Tighten loose rear wall handrail in cab.Conduct full hoistway cleandown of all hoistway equipment.	C	4
BUILDING SYSTEMS	CONDITION	PRIORITY
<ul style="list-style-type: none">Replace plumbing fixtures and fittings, replace waste and vent piping, replace chill water system, replace indoor air handling units, replace fan coil units, replace exhaust fans, replace terminal heating units and fin tube radiation, replace building automation system, upgrade lighting and lighting controls with energy code compliant system	C-D	3-4
<ul style="list-style-type: none">Replace fire pump	E	1-2
<ul style="list-style-type: none">Electrical for fire pump not per current code	C	5
Note: "5" not counted in priority average.		C 3

PORTFOLIO-LEVEL FINDINGS AND DEFICIENCIES

Site

Existing Condition

Baldwin School has a corner location in a mostly residential setting, although not far from the academic campus of Harvard University. The front of the school, located on the east side of the building, is entirely hardscaped, the main entrance is located on this side, opening directly into the oversized sidewalk. On this area of the site, there are benches next to the school entrance as well as a structure with bulletin boards for school and community announcements located at the corner of Oxford Street and Sacramento Street, all in good condition.

The North side of the school features similar hardscaping, with two additional egress doors two steps up from grade as well as a ramp for accessibility. Bike racks are located directly in front of the raised platform, leaving a narrow walking area. All elements on the north side of the site are in good condition.

Rounding the corner onto the west side of the site, there are some planters with flowers as well as vegetables, creating a small garden with a round walkway, as well as free standing planters with additional vegetation. Two tents can also be found on this side of the site, with chairs and tables set up at the time of the visit. Compost devices are located next to a shed that is used for the CitySprouts program. This side of the site is paved with asphalt and features a painted motif that is fading. This side of the site is in fair to good condition, and the space was used by the general public outside of school hours.

There is a small fence/gate that leads to a narrow and elevated alley on half of the south side of the site. On the other half of the site, there is a fenced in play area, which the kindergarten classrooms open directly into, with a variety of toys, a small play structure, and a sandbox play area. The play area is recessed and closed off to Oxford Street by a wooden fence/gate. A trash area as well as service doors and a small driveway are located outside the gate. The driveway can fit up to two cars as noted by our visit as well as satellite images. This side of the side is in fair condition, the wooden fence has visible signs of weathering, and the ground shows signs of wear and growing weeds. There is no other dedicated parking for the school or drop off area on site.



East Side of Site

Architectural - Exterior

Existing Condition

The building exterior of the Maria L. Baldwin School comprises brick masonry veneer with decorative glazed block, aluminum metal panels and thermally broken aluminum framed windows, storefront and curtain wall assemblies. The roofs are surfaced with exposed and ballasted single ply EPDM roofs and asphalt shingles. The building was constructed in 1993 and it is understood that all building exterior components are original to the building.

The exterior is in good condition overall, with isolated areas of efflorescence and damaged masonry near ground level. The fenestrations and roofing appear to be in good condition.

Masonry:

The masonry façade comprises brick veneer with decorative glazed block and is in good condition overall. Isolated cracked brick and efflorescence is present at the lightwell facades on the North Elevation. (Ref: Photos AE-8-9) There is isolated mortar cracking at the base of the engaged pilasters along the West Elevation. (Ref: Photos AE-10-11)

Fenestrations:

The fenestrations are thermally broken aluminum framed assemblies with insulated glazing, including fixed, spandrel and casement units. The exterior window perimeter sealants observed are in good condition. There is an isolated cracked pane of glass at a lightwell on the North Elevation. There is no interior perimeter sealant between the operable window frame and curtain wall framing. (Ref: Photo AE-14) The operators on the interior of the casement windows hit the internal insect screens, which reduces potential for the operator to be fully closed. Limiting chains have been installed between the window frame and casement sash on the interior to limit the distance these units can be opened. The chains were broken or missing in some locations. (Ref: Photos AE-14-17) Damaged weatherstripping is common at several exterior doors (Ref: Photos AE-18-20)

Roofing:

The roofing assembly is surfaced with an adhered EPDM membrane applied to a mechanically fastened substrate. Asphalt shingles are installed on the steep sloped roofs surrounding the EPDM roof, with ZTCC flashings along the edge of the EPDM roof and at valleys within the shingled roofing system. A small area of the upper roof contains mechanical equipment and is surfaced with EPDM and concrete pavers, surrounded by a parapet and asphalt shingles. Standing seam roofs exist over the North Elevation lightwells and a ballasted EPDM roof covers the Gymnasium at the South Elevation of the building. (Ref: Photos AE-21-32)



AE-A: Main Entrance, representative brick and curtain wall assemblies



AE-B: Representative fenestration with fixed and operable components

Architectural - Exterior

Existing Condition

The roofs are in good condition overall, with some failing lap sealants around EPDM patches which is expected for a roof of this age. A few shingles were missing in isolated locations. (Ref: Photos AE-27-28) Roof drainage is via internal roof drains at the EPDM roof of the mechanical well and the ballasted roof. The remaining EPDM roof areas drain onto the surrounding shingled roofs, which drain via gutters and downspouts. Some drip staining on the South Elevation exists below the soffit adjacent to a downspout, potentially indicative of a clogged downspout. Roof access to the main roof is through a roof hatch. There is no access to the ballasted roof. A lightning protection system is installed.

Miscellaneous:

Efflorescence, deteriorated mortar and spalled brick are present at the retaining wall of the ramp near the North Elevation building entrance. There are deteriorated mortar between the granite stair treads along with some cracked granite at railing penetrations. (Ref: Photos AE-33-36)

Reported Envelope Issues:

While on site, Discussions were held with facilities personnel to identify any building exterior-related issues that may exist. There are interior locations of periodic water leakage at Room 302 where leakage has occurred below the intersection of shingled roofing and an adjacent rising wall. (Ref: Photo AE-37) Previous repairs have been performed over Room 316 at a similar intersection of step flashing, masonry and shingles. (Ref: Photo AE-38) Recurrent water leakage is occurring within the Cafeteria below a lightwell on the North Elevation, resulting in stained ceiling tiles. (Ref: Photos AE-39-40)



AE-C: Partial view of mechanical well



AE-D: Representative MEP penetrations in shingled roof

Architectural - Exterior

Recommendations

Masonry:

A scope of masonry cleaning and repointing should be undertaken at the North Elevation lightwells and retaining wall. This work shall include replacement of cracked or spalled brick.

Fenestrations:

Existing damaged chain limiters should be replaced with new limiters appropriate for these windows that can be attached to the hinge. Adjustment of the interior screens is recommended to ensure the window operators can be fully engaged in the closed position, to reduce potential for air infiltration and water penetration. Replacement of existing weatherstripping at exterior doors is recommended.

Installation of interior perimeter sealant between operable window frames and curtain wall framing will reduce potential for air infiltration and water penetration. A typical location of this condition is within the stairwells.

Roofing:

Repair of the existing roofing assemblies is recommended, including but not limited to replacement of missing asphalt shingles and replacement of EPDM flashings and associated lap sealants.

A visual review of the gutters should be performed along with removal of any debris such as leaves which can clog the gutters and restrict drainage. Based on the age of the roofing systems, replacement should be scheduled within next five (5) years.

Miscellaneous:

A scope of diagnostic water leakage field testing is recommended to be performed at each of the leakage locations, coupled with potential exploratory demolition work to identify the source(s) of water penetration. A scope of remedial work should be executed to address the leakage issues based on the results of the leak evaluation work.

Architectural - Interior

Existing Condition

The interior condition of the Maria L. Baldwin School is consistent from room to room and floor to floor. The building was constructed in 1993 as one whole building and many of the interior finishes appear to be original to the building.

The interior is in good condition overall, with some components in need of repair or replacement. Each type of space is very consistent by type with a few specific exceptions.

Ceilings:
The majority of the ceilings are acoustical tile ceilings (ACT). These are in good condition with some evidence of age and limited staining and damage. One feature of this ceiling are significant gypsum bulkheads which are in good condition. (Ref: Photos AI-2&4 below)

Walls:
The walls are composed primarily of gypsum board throughout. Classrooms typically have millwork along two sides and corridors are mostly lined with lockers; both serve to protect the gypsum. Also, wood trim corners have helped prevent damage to the corridor gypsum walls. Gypsum stair walls have ceramic tile wainscot which protects that lower five feet. There is isolated repair needed to some ceramic tile mortar joints.

Floors:
The predominant flooring material throughout the school is VCT. Rubber treads can be found in the stair towers. Ceramic tile is located in all restrooms and carpet is used in selected locations such as the library reading nook. The overall flooring rating is adequate due to many areas of VCT where gaps are present however, there is only selected areas of cracking tile. The ceramic tile is in good condition however, the carpet is well worn and could use replacement.

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 is a limited amount of interior windows which are typically hollow metal frames. They are also in good condition.

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



Millwork Damage



Typical Corridor

Architectural - Interior

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:
Millwork was the low point of the conditions in this building. It appears that a lower grade of millwork was used at this school and it has not worn well. Hardware is broken or missing, and laminates have failed in almost every location. In particular, edges are broken and missing; in some cases repairs have been attempted but have not been durable either. All classrooms have a significant amount of millwork and that is where the rooms look most in need of attention.

Plumbing:
Plumbing associated with the classroom built-ins has also not worn well. Together with the countertop, there are significant signs of wear and tear. Restroom fixtures appear in much better condition than classroom areas and are covered in more depth by MEP analysis.

Recommendations

Limited repairs such as grout point up and wall prep/ painting would extend the life of the gypsum wall surfaces and wainscot tile. VCT replacement to address gapped joints would require flooring replacement and could be undertaken as systems replacement (possibly summer) project. Millwork repairs could likely be done in-place with new laminates and upgraded edge-banding or wood edging. It may require replacement of all doors and hardware however, back boxes could generally remain. Again, this could be done as an isolated scope. None of these repairs are critical so they are listed as a Priority 4, which would happen later n the overall maintenance program.



Typical Kindergarten



Corridor/ Stair

Theater

Existing Condition

The theatrical equipment systems at the Baldwin School are in fair condition. Most equipment is likely past its functional lifespan.

The stage rigging consists of fixed pipe battens and curtain track from ceiling-mounted strut. Support is by wire rope or chain. Some hardware is not industry standard and may not be appropriate for overhead suspension.

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

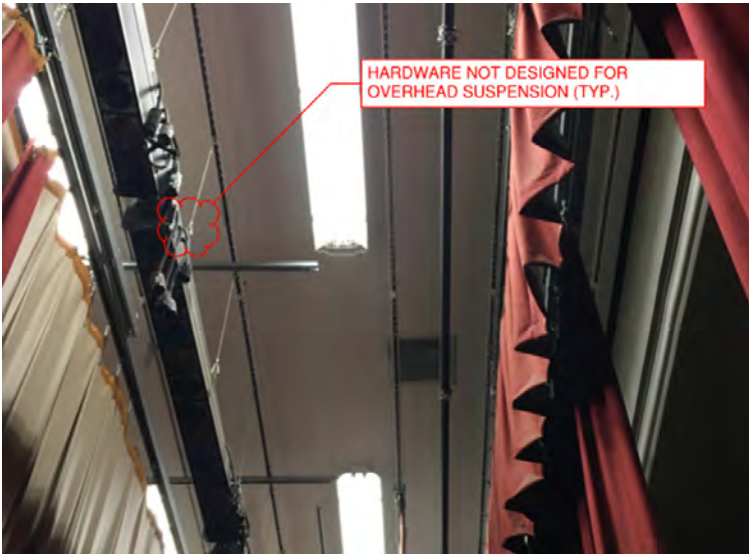
The theatrical lighting is dimmer rack-based, and all fixtures are older models with incandescent lamps. Safety cables were not observed on the fixtures.

Recommendations

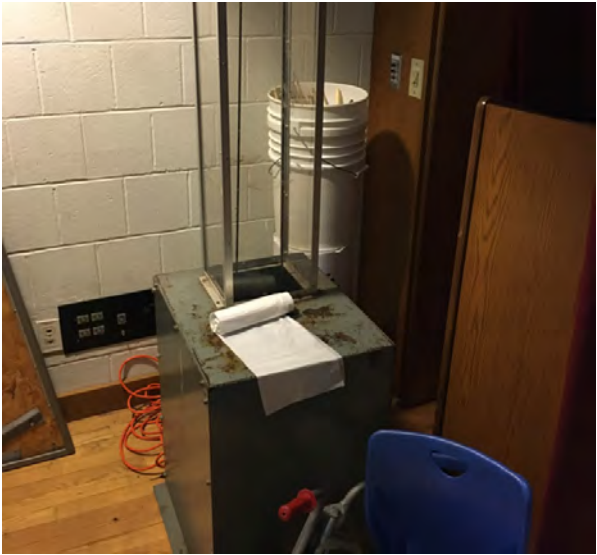
Theatrical Rigging:
Rigging connections to structure should be inspected by a ETCP Certified rigging professional. Components not rated for overhead suspension or not appropriate for this application should be replaced. Some components may be reused.

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. Main curtain draw motor should be inspected and maintained or replaced as needed.

Theatrical Lighting:
This system should be upgraded. Dimmer racks should be replaced with relay panels and fixtures upgraded to LED spot and wash lights. 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.



Fixed Theatrical Rigging



Curtain Draw Machine and Enclosure

Structural System

Existing Condition

General
The Baldwin Elementary School was constructed in 1995. A complete set of existing structural drawings was available to the design team at the time of our visit to the school. The facility has four, above-grade stories and a full basement. The building structure consists of a structural steel building frame, with composite steel floor construction and a reinforced concrete mat foundation. The building structural generally appears to be in good condition.

Existing Structural Systems and Observations
Foundations consist of a reinforced concrete mat foundation and reinforced concrete basement/foundation walls. An underslab drainage system is sandwiched between the structural mat foundation and a secondary “finish” slab on grade. Foundations appear to be performing adequately; there are no apparent signs of significant total or differential settlements.

Floor Construction consists of concrete slabs on galvanized composite metal floor deck supported by steel beams spanning to steel (wide-flange) columns or directly supported on the concrete foundation walls (at the First Floor level). Floor construction appears to be performing satisfactorily; there is no evidence of structural distress that would indicate significantly overstressed, deteriorated, or failed structural members.

Roof Construction consists of galvanized steel roof deck supported by steel beams spanning to steel (wide-flange) columns. Built-up plate girders were provided for the long-span condition of the Gymnasium roof. The roof structure was designed for a snow load of 30 psf, which meets the current building code. Roof construction appears to be performing satisfactorily; there is no evidence of structural distress that would indicate significantly overstressed, deteriorated, or failed structural members.

Exterior Wall Construction consists of brick masonry veneer and cold formed metal framing back up walls. Interior walls are a combination of non-bearing CMU block construction and cold formed metal framing partitions. The exterior brick masonry walls generally appear to be in good condition.

The Lateral Force Resisting System consists of a combination of steel braced frames and steel moment-resisting frames and has been designed for the wind and seismic load requirements of the Massachusetts State Building Code that was adopted at the time of construction.

Structural System

Recommendations

Structural Comments/Recommendations
Structural conditions at the school were reviewed at the site (to the extent possible) on August 29, 2022. The building structure and site elements were observed to generally be in good condition. There were no specific structural/structurally related conditions observed that would require further investigation and/or remediation in the near future.

General 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., steel braced frames or steel moment frames) 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 lateral force resisting elements (steel frames) should be avoided if possible. Structurally attached additions (horizontal or vertical) which result in an increase in the demand – capacity ratio of over 10% would also trigger a seismic evaluation and potential seismic evaluation.

Mechanical System

Executive Summary

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

The sprinkler and standpipe system piping consists of black steel pipe. The system was installed in 1995 and appears to be in good condition with no 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 boiler heating system, chilled water system with a cooling tower and indoor chiller, (16) air handling units for distributed ventilation with heating and chilled water coils on a changeover system, perimeter fin tube radiation, ceiling mounted fan coil units, cabinet and propellor unit heaters, general exhaust fans, and a hybrid (pneumatic and DDC) control system.

The air handling system and classroom/interior room terminal units are original to the building (1995). The boilers and boiler pumps have been more recently replaced (2016+), and the chilled water system is original to the building.

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 installed in 1993 and appears to be in fair to good condition with some visible signs of general wear and corrosion.

Electrical Systems
The existing electrical distribution, lighting, fire alarm, and IT systems were installed in 1995 and are approximately 28 years old, and have had only minor modifications to support program changes or energy saving initiatives. The systems are all reported to be in fair operating condition with no known issues or concerns.

Fire Protection System

Sprinkler System

Existing Condition
The existing building is provided throughout with an automatic sprinkler system. A 6” dedicated fire service enters the basement level water service room and is then piped to the ground floor fire pump room. The fire service entrance is piped to the fire pump and then provided with a Watts Model 709 6” double check backflow preventer and a Reliable Model E wet alarm check valve. The existing electric fire pump is a Peerless horizontal split case rated at 750 GPM and 60 psi boost. The fire pump was observed to have excessive corrosion at the bearings and at the baseplate.

All of the fire protection piping both before and after the backflow preventer is black steel with grooved fittings. 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.

It is recommended all piping on the inlet side of the backflow preventer be provided with pipe rated for domestic water.

It is recommended all existing corroded components on the fire pump be replaced. It should be verified the fire pump and electric motor are aligned due to the corroded base-plate and replace the base-plate in-kind if required.

Standpipe System

Existing Condition
The existing building is provided with a manual-wet standpipe system located in egress stairwells at the intermediate landings. The system includes exposed 2 ½” fire hose valves served with black steel pipe. There are no reported issues with the standpipe system and all the observed piping appears to be in good condition. 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.



FP-1: Excessive Corrosion at Fire Pump



FP-2: Excessive Corrosion at Fire Pump

Mechanical System

Heating System

Existing Condition
The heating source for the building consists of (2) Lochinvar Crest boilers with two heating hot water pumps all located in the mechanical room. Heating hot water is distributed throughout the building using two (2) B&G base mounted pumps located in the mechanical room. The boilers have local controllers which are interfaced to a Johnson Controls (JCI) Metasys system. The JCI system is connected to the Cambridge Schools campus BAS network via JCI Facility Explorer.

The HWP's and motors have been replaced as recent as 2017 and appear to be in very good condition. The boilers are a relatively newly released model and are in very good condition as well.

There are areas where perimeter fin tube has badly corroded.

The median service life is for high efficiency, gas fired, condensing boilers and base mounted pumps of this type is anticipated to be 20-25 years.

Recommendations
Although service life for this type of equipment is ultimately related to run time duty, environmental conditions, quality and periodicity of routine maintenance, etc. it is recommended that replacement of the heating hot water system should be considered in the next 15-20 years. Areas where piping conditions and circulator pumps are visibly degrading are recommended to be replaced and repaired immediately.



M-1: (2) Of Existing Lochinvar Boilers



M-2: Existing Hot Water Pumps

Mechanical System

Cooling System

Existing Condition
The cooling source for the building consists of a rooftop cooling tower, McQuay chiller and two chilled water pumps located in the mechanical room. Chilled water is distributed via a single base-mounted pump through a dual-temp 2-pipe changeover system to the air-handling units and fan coil units.

The chiller is original to the building from 1995; it was observed to be in the process of being repaired. The chilled water pump and motor are also original, dated 1995. VFDs for the cooling tower fans were replaced in 2013 and are handled by Schneider Controls. The Cooling tower appears to be in working order, but considering the age should be replaced simultaneously with the chiller. The Taco condenser water pump is also original to the building, on a platform in need of replacement.

Piping systems are supported by corroded hangers in areas and have ripped and water damaged insulation in need of repair.

Recommendations
The head-end of the chilled water system is well beyond its service life and is recommended to be replaced in its entirety with new equipment, piping and insulation.



M-3: Original Chiller



M-4: Original Chilled Water Pump

Mechanical System

Ventilating and Air Conditioning System

Existing Condition
Ventilation and air conditioning for the building is provided primarily through all-air systems using a mixture of (16) air handling units. Classrooms are generally served by a dedicated overhead fan coil (HVAC-7 through 16) with outside air intake provided by a louver on the exterior wall, and cooling and hot water coils on a changeover 2-pipe system. The gym and other common spaces are supplied by similar, larger units (HVAC-1 through 6) located in various mechanical spaces. The McQuay air handlers are all original to the building and are past the end of their life cycles. The units and their appurtenances are experiencing modest corrosion. The DDC system is Metasys and the actuators are outdated pneumatic controls.

Ductwork is generally uninsulated.

Recommendations
The air handling units and associated distribution systems are functioning beyond their expected service life and should be replaced with new units, insulated duct work, and piping.

It is further recommended that in conjunction with air handling unit replacement all occupied space terminal units such as the induction units, fan coil units, exhaust fans, etc. also be replaced as all this equipment is beyond the excepted service life and are original to the building.



M-7: Original AHU in Mech Room



M-8: Original AHU in Mezzanine

Mechanical System

Building Automation System

Existing Condition
The existing building automation system is a hybrid of the original pneumatic control system and a newer, though vintage, direct digital control system (DDC). The current compressor appears to be in reasonable condition but is nearing the end of its service life. The pneumatics system interfaces to the air handling unit damper heating valve actuators. Additionally, the pneumatics are responsible for control of the occupied space terminal units and associated room thermostats. The air handling units are provided with a minimal DDC interface via JCI Metasys controllers and components. This would have been installed during the boiler replacements and is approximately 20 years old.

Some controllers have replaced over time as needed. Manufacturers that have been installed include but are not limited to JCI, Schneider, and Distech. Original ports for JCI Metasys can be seen as well.

Recommendations
The existing pneumatic system in its entirety should be replaced. It is well past its expected operational service life. This replacement should be concurrent with any replacement or upgrades of the air handling units and/or the occupied area terminal units. Included in this would be the minimal control currently provided to the existing air handling units. The heating hot water/boiler system DDC controls are more technologically current and are still serviceable. However, the majority 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 including a complete system of DDC controllers, sensors, actuators, and head-end graphics.



M-7: JCI Metasys Temperature Sensor



M-8: Air Handler Equipped With Pneumatic Controls

Electrical System

Power Distribution

Existing Condition
The Baldwin School building is currently served by a pad mount utility-owned transformer, located at the exterior area of the building.

The electrical service is a 1600A, 480Y/277VAC, 3-phase, 4-wire, located in the electrical room at the Northwest ground level of the school. The Cutler Hammer Switchboard is a 1600A main service distribution panel floor mounted unit. This panel is original to the building. General 480V electrical distribution panel boards have adequate spares for miscellaneous upgrades in the future.

A second service is provided to a fire pump located in the switchboard, line side of the MCB.

The panel is in fair to good condition. There are no signs of maintenance being performed since original construction.

The 480/277V,3P distribution panel is 1600A-208/120V-22KAIC, 3 phase and provides power to two (2) MCC panels, one located in the mechanical room in the basement and the second in the fourth-floor mechanical room. The MCC panels appear in fair to good condition; electrical distribution is served from a central electric room on each floor. A 480V/277V panel is provided for general lighting and powers a step-down transformer for receptacle loads. The panel /transformers appear to be in fair to good condition.

Numerous pieces of electrical equipment (panels) were observed during a walk-through of the building. Panel boards were in fair to good condition and were optimally located within their spaces.

Emergency Electrical Distribution Panel
There was no generator power noted. Fire pumps now require two energy sources: Normal Power & Standby Power. A single source of power was supplied which is not code compliant.

Emergency lighting is provided by emergency ballast in select fixtures along the emergency egress path. Where fixtures were not upgraded, emergency battery packs are still utilized.

Electrical System

Power Distribution

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 1,064kW with an area of 45,480 square feet or 23.4W/SF. New highly efficient mechanical designs generally require 19- 24W/SF. The main service would be sufficient 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.

Due to the age of the existing electrical distribution system (28 yrs), 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)



E-1: Main Electrical Service (Entrance)



E-2: MCC Panel – General Distribution

Electrical System

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 fire pump now requires a second source of power (Emergency) to provide power in the event power is lost to the building. Provide adequate emergency power for the fire pump.

Overall, the electrical distribution is in fair to good condition and with proper maintenance should provide reliable service in the short term.

Lighting & Devices

Existing Condition
The majority of the lighting has been upgraded since 1995, although there is still fluorescent lighting. Most recently the corridors have been upgraded with new LED style fixtures .The emergency lighting was upgraded in parallel with these installations to provide Emergency Battery Units along emergency egress paths, these are in areas where LED fixtures were installed.

Lighting control is accomplished with manual switches in most spaces and timeclock control through the Building Management System (JCI) in the corridors, parking areas, common space, and exterior lighting. Classrooms are provided with wall switched lighting and mostly fluorescent fixtures. Some classroom pendants were upgraded to LEDs.

Exterior canopy downlights are currently fluorescent downlights. The walkway lighting is accomplished via HID bollards. LED lighting fixtures save energy and have reduced maintenance costs as compared to fluorescent and HID light fixtures. It is recommended that the HID walkway bollards be replaced with LED fixtures.

Emergency egress lighting is provided by fixture emergency ballast at select locations, while EBU’s are used where the lighting has not yet been updated. The lightning protection system appears in fair to good condition.

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. Tamper resistance receptacles are also required in Preschools and elementary education facilities



E-3: Switch and outlet condition



E-4: Typical Corridor (LED Upgrade w/ Emergency Lighting)

Electrical System

Recommendations
If a major renovation is undertaken, RFS recommends that the lighting fixtures are removed, and new fixtures be provided that meet current energy efficiency standards and are available for possible utility rebate programs. Lighting in all spaces should be reviewed to ensure adequate levels are provided.

The lighting design should incorporate modern lighting techniques and controls, such as zoned indirect lighting, dimming capabilities for audio-visual presentations, as well as low-level direct lighting. Additionally, high-efficiency light fixtures with daylight harvesting controls should be used; although not required by code, it may offer additional energy savings.

Occupancy sensors should also be provided to comply with current energy conservation requirements. Provide a full test of the emergency lighting, verify that light levels meet existing code required levels and ensure compliance with 527 CMR, NFPA 70 and NFPA 101.

It is recommended that all devices be replaced with the next major renovation, as ceilings will need to be removed for MEP work.



E-5: Existing Fire Alarm Device



E-6: Fire Alarm Control Panel

Electrical System

Fire Alarm

Existing Condition
The existing Fire Control System (FCI) Fire Alarm System has been upgraded and appears in good condition. The system is in good operating condition and no problems - no capacity or code issues were noted or identified during our site visit. 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 compliant and does 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.

Speakers/lights are installed in corridors and some common spaces to provide alarm notification to occupants. The devices appear in good working order. Overall, the fire alarm is in fair/good condition and with proper maintenance should provide reliable service in the short term.

Recommendations
Provide all required testing and detailed review for a code compliant installation.



E-7: Speaker-type system

Plumbing System

Domestic Water System

Existing Condition
Water Service Entrance: A 3” dedicated domestic service enters the basement level water service room. The domestic water service is provided with a 3-inch Trident turbine 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 H3-0182 and has an input rating of 181,000 BTU/HR. The storage tank is manufactured by Rheem Model ST120A and has a date of manufacture of 10/2005. The hot water system is fully circulated back to the heaters with the use of a Taco Model 010-SF3 cartridge circulator. The domestic hot water system is provided with a Leonard master thermostatic mixing valve delivering 80-degree hot water. The hot water system is not provided with an expansion tank. The heater and storage tank were installed in 2006 and are in good condition. The expected service life for the water heaters is 20 years. The mixing valve appeared to be original to the building and is heavily corroded.

The kitchen is provided with a supplemental electric water heater to supply 140-degree hot water to the pot sink. The heater is manufactured by HTP, has 52 gallons of integral storage, and is rated at 5,500 watts. The heater was manufactured on 8/26/2020 and is in good condition. There is no expansion tank at the heater. The outlet of the heater is provided with a Leonard thermostatic mixing valve which appears to be original to the building and is showing signs of corrosion.

System Piping: The piping serving the domestic water system includes soldered copper with brass ball valves. New plumbing repairs and equipment updates include the use of copper press fittings. The piping system appears to be in fair condition. The expected service life for copper pipe is 80 years.



PL-1: Corroded Mixing Valve



PL-2: Corroded Length of Pipe

Plumbing System

Domestic Water System

Recommendations
Provide adequate hot water to the domestic plumbing fixtures located within the building. The Massachusetts Plumbing Code, 248 CMR, defines hot water at a temperature of at least 120-degrees.

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.

Replace corroded pipe, valves, and fittings as required.

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

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, wall mounted 1.0 gpf urinals with manual flush valves, counter 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.

The domestic plumbing fixtures in the toilet rooms appear to be in good condition. Stainless steel faucets appear to be in fair condition. The domestic plumbing fixtures have an expected service life of 30-40 years.

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: Corroded Mixing Valve



PL-4: Clogged Drinking Fountain



PL-5: Corroded Classroom Faucet



PL-6: Privacy Shields Should Be Provided

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 basement plumbing fixtures are served by underground sanitary piping draining to a duplex sewage ejector pit below the basement floor. The sewage ejector discharges to the gravity sanitary piping at the ceiling of the basement level. The building is provided with multiple sanitary sewers which connect to the municipal sanitary sewer.

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 waste stream from the science classrooms sinks are piped to an acid neutralizing tank located in the basement level adjacent to the sewage ejector.

The sanitary waste and vent system 4” and larger consists of cast iron pipe. The expected service life for cast iron pipe is 80-100 years. Smaller waste and vent pipe is typically copper. There were some visible signs of corrosion on the piping.

Recommendations
Replace existing corroded piping as required. Perform all required service on the pH neutralization tank to assure system is discharging a neutral waste stream.

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

Storm System

Existing Condition
The building is provided with gutters and downspouts to discharge all storm water collected on the roofs. Roof drains are provided in the mechanical chiller well.

Recommendations
No immediate action required.

Plumbing System

Natural Gas System

Existing Condition
The building is provided with a natural gas system. The service entrance is free-standing located on the south side of the building. Natural gas is piped underground directly into the basement. 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
It is recommended piping from the remote free-standing meter be piped above grade before it enters the building.

Code

Existing Condition

The Baldwin Elementary School is an existing 45,480 ft2 four-story Cambridge public school.

Occupancy Classification
• Use Group E (School)

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

Vertical Openings
All existing vertical openings in the work area connecting two or more floors must be enclosed with 1 hour rated construction and approved opening protectives unless the openings meet one of the exceptions in IEBC 803.2.1.

The building includes an open stairway connecting the Basement and 1st Floor. This stairway can be classified as an open exit access stairway permitted by IBC Section 1019.3. The two primary egress stairs appear to be enclosed in 2-hour rated shafts based on the 90 minute labeled doors.

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. Some spaces also include wood finishes which is permitted in areas allowing Class C finishes.



Egress Stair



Entrance

Code

Existing Condition

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.

There are two primary egress stairs, one at the front of the building and one at the rear, as additional exterior doors. No hazardous egress conditions were noted during the site visit. Illuminated exit signs and emergency lighting appear to be provided throughout.

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), standpipe 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 an accessible entrance, drinking fountain and toilet room. Therefore, if the cost of future renovations exceeds \$100,000 no additional accessibility improvements are required.

The Cambridge Assessor’s on-line database indicates the Baldwin Elementary School has an assessed value of \$16,884,300 and the Massachusetts Department of Revenue’s website indicates the assessment ratio for Cambridge is 0.92. Therefore, the 100% equalized assessed value is \$18,352,500 and 30% of this value is \$5,505,750. Full compliance with 521 CMR would be required if the aggregate cost of renovations in any three-year period exceed this amount. Although a detailed accessibility survey was not conducted, it appears that the building is generally compliant as would have been required when it underwent a significant renovation/ addition in 1995.



Drinking Fountain



Toilet Room

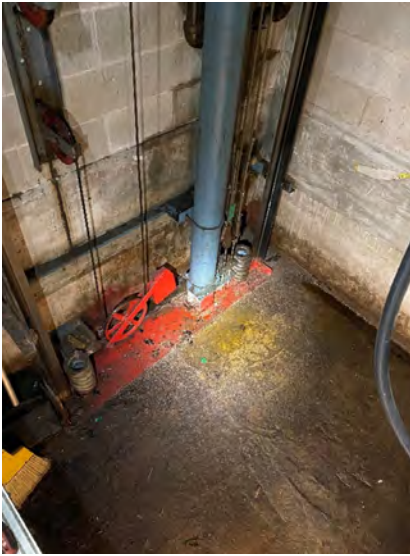
Conveying System

Existing Condition

The Baldwin School is serviced by one (1) roped cantilever hydraulic passenger elevator. The elevator has a rated capacity of 3,000 lbs. and travels at a rated speed of 100 fpm. The entrances are 3’-6” wide by 7’-0” high, front opening only. The elevator services 5 landings – C, *1, 2, 3, 4.

The elevator was originally installed in 1994 by Beckwith Elevator. The controls are Motion Control Engineering (MCE) with a CEMCO hydraulic elevator package. While MCE is a commonly used and supported third party controls manufacturer, CEMCO is no longer in business. Most of the product patents and job information previously held by CEMCO went to a company called Custom Elevator. However, replacement parts such as rollers and guides may be limitedly available. The elevator utilizes a holeless roped cantilever application, which appears to utilize both a machine room-mounted governor assembly and rupture valve for car overspeed regulation. Roped hydraulic applications may have one or the other; having both is atypical and redundant.

- Maintenance Deficiencies:
- Check oil line in hoistway or jack head for leaks; substantial oil leak on pit floor. Repair, clean, and dry pit of leaked oil.
 - Scrape and clean all car and hall door sills of debris.
 - Clean cartop equipment and car door operators.
 - Tighten loose rear wall handrail in cab.
 - Conduct full hoistway cleandown of all hoistway equipment.





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. Many doors had unused holes or missing silencers, if these openings are fire rated they will be non-compliant.

Food Service

Executive Summary

The Baldwin school is an average sized kitchen serving a medium population of students at the preschool through 5th grade levels. The finishes and kitchen equipment appear to be fair condition and constructed within the last 25 years. This kitchen was observed to be properly sized and functioning at a higher level than other schools within the district, but would still benefit from some equipment upgrades to improve its current operation. Updates to cooking, refrigeration and preparation equipment would allow the foodservice operations team some flexibility to adapt and more efficiently serve the district’s needs.

Improving cooking and preparation 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 Baldwin School Foodservice program currently serves a population of approximately 360 students from Pre-K through the fifth grade. The kitchen is mostly intact with minor modifications and equipment upgrades done over the years. While the equipment in this school is newer and in better shape than some of the other schools within the district, the program would still benefit greatly from updates and upgrades. Overall, the kitchen staff does a great job of maintaining and keeping the kitchen very 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 a durable porcelain tile and have held up very well over the years. Ceilings are a drop-in ceiling tile which are washable and in fair condition that meet the modern health code. The flooring material in the kitchen is quarry tile and is also in very 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



FS-1: The dry storage room is combined with mechanical equipment. Therefore, there’s not enough dedicated dry storage for this facility. The grease trap being located in the dry storage room is not an ideal situation for the operations team.

Food Service

Operations team would benefit from additional space to properly store and hold product at food safe temperatures. The dedicated dry storage area also 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.

While there’s several stainless work tables in the kitchen, there is a limited amount of food preparation areas with sinks to properly separate and wash food product prior to the cooking process.

The exhaust hood is in good condition, but the filter system for grease extraction is dated technology and more difficult to clean. There is exposed horizontal fire suppression piping installed within the cavity. Efficient design limits fire protection to vertical drops preventing grease build-up and better cleanability. The existing material used for fire suppression is iron piping and modern standards are stainless steel or chrome. Along the cookline at the braising pan location there is no floor trough. In new construction a floor trough with a non-slip grate is recommended in these areas for proper drainage and containment of the braising pan operation.

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 are four mobile tables with sufficient space for capacity of hot and cold food offerings. While the equipment’s older and will eventually require updates, everything still appears to meet code and there’s no issues in the serving area.

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.



FS-2: The grease filters at the exhaust hood are dated technology and not as efficient as what’s available today. They are also more difficult to clean. The fire suppression piping runs horizontal within the cavity which results in excessive grease build up. Efficient design limits fire suppression to vertical drops only. Iron piping was used for the Ansul system, modern day piping is stainless or chrome for improved cleanability.

FCA FORMS - BALDWIN

Baldwin 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	4	AE-8-11	
Exterior	Façade	Windows		B	4	AE-14-17	
Exterior	Façade	Hollow Metal Doors		C	3	AE-18-20	
Exterior	Façade	Sealants		C	3	AE-12, 14	
Exterior	Roofing	EPDM Roofing		B	3	AE-21-32	Replacement recommended due to Age
Exterior	Roofing	Shingle Roofing		B	3	AE-25-28	Replacement recommended due to Age
Exterior	Landscape	Masonry Walls at Ramp		D	3	AE-33-36	

Baldwin School			Architectural				
INTERIOR							
Room # on Site:							
Area	Part	Type	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Interior	Ceiling	ACT		B	4		
Interior	Wall	Gypsum		B	4		
Interior	Floor	VCT		C	4		
Interior	Window	Aluminum		B	4		
Interior	Doors	Wood		B	4		Selected doors HM or Aluminum
Interior	FFE	Loose Furniture		B	4		Varying age but most in good condition.
Interior	Millwork	PLAM		D	4		Lower grade of casework used. Shows significant damage in most rooms.
Interior	Plumbing	Classroom Sinks		D	4		Low rating due to quality of sinks in classrooms casework. Toilet room fixtures in good condition.
				B	4		

Baldwin 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	B	5		
Exterior Walls - General	B	5		Brick masonry

Baldwin 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		C	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		C	4		
			Overall	C	4		Comments:

Provide additional refrigerated storage
Provide additional prep table with sink
Replace fire supporession system

Baldwin School			Plumbing				
Domestic Water System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Water Service	O17	P1.01		B	4		
Water Heater	410	P1.02		C	3		
Domestic Water Piping	Building Wide	P1.03		C	3	PL-2	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.
Water Heater - Kitchen	009	P1.04		B	4		
Domestic Plumbing Fixtures							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Water Closets	Building Wide	P2.01		C	4		
Lavatories	Building Wide	P2.02		C	4		
Urinals	Building Wide	P2.03		C	4	PL-6	Provide side shielding for privacy as required by the Massachusetts Plumbing Code, 248 CMR
Service Sinks	Building Wide	P2.04		D	3		
Classroom Sinks	Building Wide	P2.05		D	3	PL-5	
Kitchenettes	Building Wide	P2.06		D	3		
Floor Drains	Building Wide	P2.07		D	3		
Drinking Fountains		P2.08		C	3	PL-4	

Sanitary Waste and Vent System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Piping - Above Grade	Building Wide	P3.01		C	3		
Piping - Below Grade	Building Wide	P3.02		C	3		
Sewage Ejectors	012, 001	P3.03		C	3		
Storm Water System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Piping - Above Grade	Building Wide	P4.01		C	3		
Piping - Below Grade	Building Wide	P4.02		C	3		
Roof Drains	Roof	P4.03		B	4		
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		

Baldwin School			Fire Protection				
Sprinkler System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Fire Service	119	FP1.01	N/A	B	4		
Fire Pump	119	FP1.02	N/A	D	2	FP-1, FP-2	
Piping	Building Wide	FP1.03	N/A	B	4		
Sprinkler Heads	Building Wide	FP1.04	N/A	B	4		
Standpipe System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Hose Valves	Stairwells	FP2.01	N/A	B	4		
Piping	Building Wide	FP2.02	N/A	B	4		

Baldwin School		Mechanical					
Heating							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Boilers	Fourth Floor Mech Room	M1.01	2	A	4		Boilers were installed in 2017, replacing the original boilers.
Hot Water Pumps	Fourth Floor Mech Room	M1.02	2	A	4		Pumps were installed at same time as boilers.
Dual Temp Piping	Building Wide	M1.03	N/A	C	3		Consider concurrent replacement with heating plant upgrades.
Cooling							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Chiller	Fourth Floor Mech Room	M2.01	1	D	3		The chiller was down and and maintenance work was being performed on the chiller at the time of our site visit. Noted some damage to drivetrain gear.
Cooling Tower	Roof	M2.02	1	D	3		Consider concurrent replacement with chiller.
Condenser Water Pumps	Fourth Floor Mech Room	M2.03	1	D	3		Consider concurrent replacement with chiller.
Chilled Water Pumps	Fourth Floor Mech Room	M2.04	1	D	3		Relatively new motor. Consider concurrent replacement with chiller.
Dual Temp Piping	Building Wide	M2.05	N/A	C	3		Consider concurrent replacement with HVAC upgrades.

Ventilation and Air Conditioning							
Room # on Site:		Room Use on Site:					
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Indoor Air Handling Units	Building Wide	M3.01	16	D	3		Consider high efficiency system replacement options including use of heat pumps.
Fan Coil Units	Building Wide	M3.02	10	D	3		Consider high efficiency system replacement options including use of heat pumps.
Exhaust Fans	Building Wide	M3.03	13	D	3		Include exhaust energy recovery with replacement options.
Ductless Split AC	Roof	M3.04	1	C	3		2-ton system serving IT Room.
Terminal Heating Units	Building Wide	M3.05		D	3		Finned tube radiation and unit heaters at building entries, stairwells, and utility spaces.
Building Automation System							
System	Location	Item Code	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes
Heating System Controls	Lower Level Mech Room	M4.01	1	D	3		
Cooling System Controls	Lower Level Mech Room	M4.02	1	D	3		
Indoor Air Handling Unit Controls	Building Wide	M4.03	16	D	3		
Fan Coil Unit Controls	Building Wide	M4.04	10	D	3		
Exhaust Fan Controls	Building Wide	M4.05	13	D	3		
Ductless Split AC Controls	Building Wide	M4.06	1	C	4		
Terminal Heating Unit Controls	Building Wide	M4.07		D	3		

Baldwin 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	2-Jan	See Report	Service has existing capacity to provide for future mechanical upgrades (To be confirmed with metering).
Maintenance	All Electrical Distribution	E1.02		Electrical Distribution	C	2.5	See Report
Coordination/Arc Fault Study	All Electrical Distribution	E1.03	Electrical Distribution	C+	5	See Report	Provide Arc Fault labels
Fire Pump	All Electrical	E1.04	Fire Pump	b	5	See- on-	The existing fire pump electrical system is not provided with two (2)
Lighting Systems							
Room # on Site:			Room Use on Site:				
System	Location	Item Code	Quantity to	Condition	Priority	Photos	Notes
Lighting	Building Wide	E1.04	Building Wide	B	4	See Report	Provide energy code compliant lighting.
Lighting Controls	Building Wide	E1.05	Building Wide	D	3 & 5	—	Provide energy code compliant lighting controls.
Fire Alarm							
Room # on Site:			Room Use on Site:				
System	Location	Item Code	Quantity to	Condition	Priority	Photos	Notes
Fire Alarm	Mechanical Room	E1.06	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	E1.07	Building Wide	B	5		CO detection is required for Group E Class Rooms.

Baldwin School			Doors				
Entire School Door Assesment							
Room # on Plan:		N/A	Room Use on Plan:		All of Baldwin		
Room # on Site:			Room Use on Site:				
Area	Part	Type	Quantity to be Replaced	Condition (A-E)	Priority (1-5)	Photos	Notes:
Interior	Doors	Admin / Office	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Admin / Office 1 Admin / Office 2
Interior	Doors	Bathrooms	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Bathroom 1 Bathroom 2
Interior	Doors	Classrooms	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Classroom 1 Classroom 2 Classroom 3
Interior	Doors	Corridor	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Corridor 1 Corridor 2
Interior	Doors	Custodial	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Custodial
Interior	Doors	Double Cylder Style	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Double cylinder
Interior	Doors	Exterior Exit 1	Survey only for site typcals, quantities and locations not recorded	B	3	See Links	Exterior Exit 1
Interior	Doors	Exterior Exit 2	Survey only for site typcals, quantities and locations not recorded	B	3	See Links	Exterior Exit 2
Interior	Doors	Gym	Survey only for site typcals, quantities and locations not recorded	C	3	See Links	Gym 1 Gym 2
Interior	Doors	Institutional style	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Institutional door
Interior	Doors	Library	Survey only for site typcals, quantities and locations not recorded	B	4	See Links	Library
Interior	Doors	Main Entry	Survey only for site typcals, quantities and locations not recorded	B	3	See Links	Main Entry

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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

EDUCATIONAL ADEQUACY FORMS - BALDWIN

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	1	
Location	Distance to students, near pollution/noise, appropriate to community	4	
Access	Parent/Bus drop-off & pick-up; space for queuing, separation of cars, bus & peds, ADA; access for community to recreation & events	2.5	No drop off; good ADA ramps & seamless entry at front & side doors; public spaces are downstairs
Identity & Cultural Context	The campus has a positive identity & represents the mission/values of the school community & surrounding community.	4	Stylistically dated, but has good street presence & identifiable

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?	3	Small canopies at entry; ramp at side door uncovered. No parking except on street public parking
Building Security	Secure Vestibule for building entry; internal zones of security	2	Secure vestibule; no direct window to admin in vestibule; no internal zones of security
Site Security	Safe or Secure Perimeter: Minimal entry points with good visibility & lighting.	4	
Wayfinding	Building organization is easily understood; students, parents & visitors can find their way	2	Not clear how to find main office or gym/cafeteria from front entry; upper levels are more clear
Community Connections	Campus provides for community use & interaction; Campus supports after hours use in a secure way.	3	Security could be better after hours

LEARNING AREAS		Consider overall school for this category	
Differentiated Learning	Overall compliment of classrooms provide areas for different learning modalities	3	Classrooms a bit small; more space would allow more differentiated learning
Inquiry Based Learning	Learning area has access to space for project based learning	1	Classrooms don't have sinks; no maker space (room that was labeled computer room on plan looked like a teacher work room); where do they teach science w/o sinks?
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	4	Lots of small rooms between two classrooms; lots of little bays in classrooms
Small Group Instruction	"Pull-out" spaces available for individual instruction for special needs students	4	
Self-Contained Classrooms	Space exists for special needs students within an independent classroom	3	Classrooms a bit small; more space would allow more differentiated learning, but adjacent small group rooms and many rooms on academic floors
All School Gathering Area	Spaces exist for campus wide meeting/activities	4	
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	
Presentation Areas	Space exists for student, teacher & guest presentations for various size groups	3.5	platform in cafeteria, space in library, stage in gym
	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.	2.5	The upper floors are very nice (Library excellent); first floor & entry need work - feel tight & confusing.
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	Front entry stair is isolated at first floor & basement - need better connections & sightlines. Back corner stair isolated.
Views & Connections	Views provided from classrooms/core learning spaces to outdoors, corridors, or other learning spaces	2.5	2 or 3; door + sidelight provide minimal connection - configuration of corridors & entry does not allow visibility down corridors; great views to outside
Daylighting	Windows/Skylights: daylighting provided with solar shades or overhangs where appropriate	3	Adequate windows in majority of spaces (exception is basement spaces); Blinds should be replaced.
Lighting	Sufficiency (quantity/quality) & differentiation (provides choice/change)	3.5	New LED lights - need to confirm controls w/engineers
Acoustics	Space should have appropriate sound absorption materials to allow for conversations to be heard. Walls designed to minimize sound transfer	4	Many new ceilings
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	From survey: AC broken/too loud/too big; heat is too hot in winter. Most respondents qualified temperature at terrible or poor
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	3	
Movement & Exploration	Does the space allow for the different learning modalities to happen dynamically	3	
Adaptability & Flexible Space	How much can the space (walls) change shape or allow change in use by opening or combine with other spaces.	0	No adaptable spaces

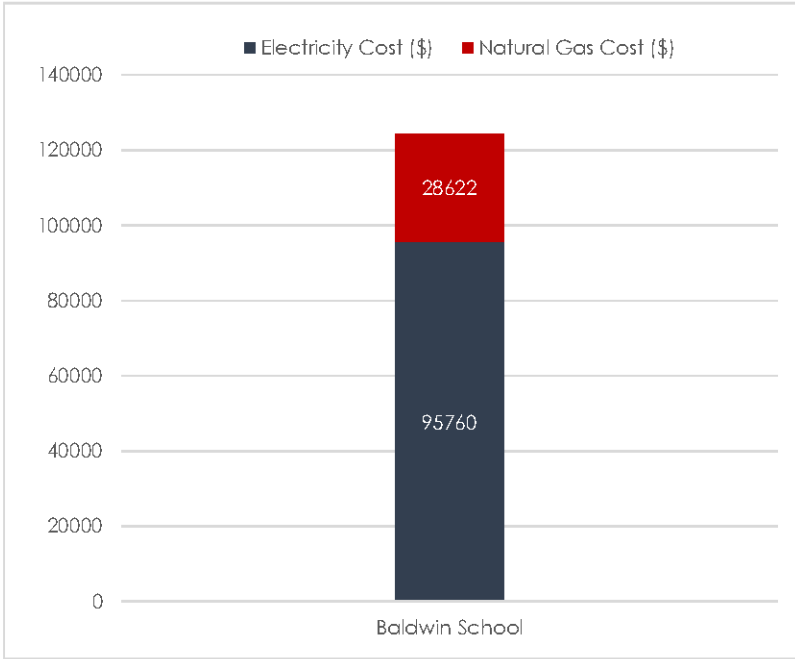
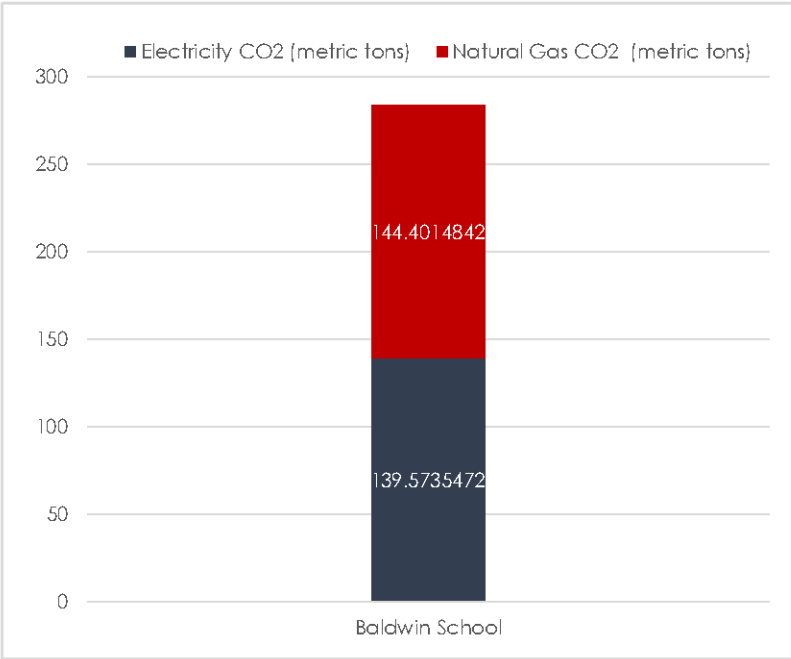
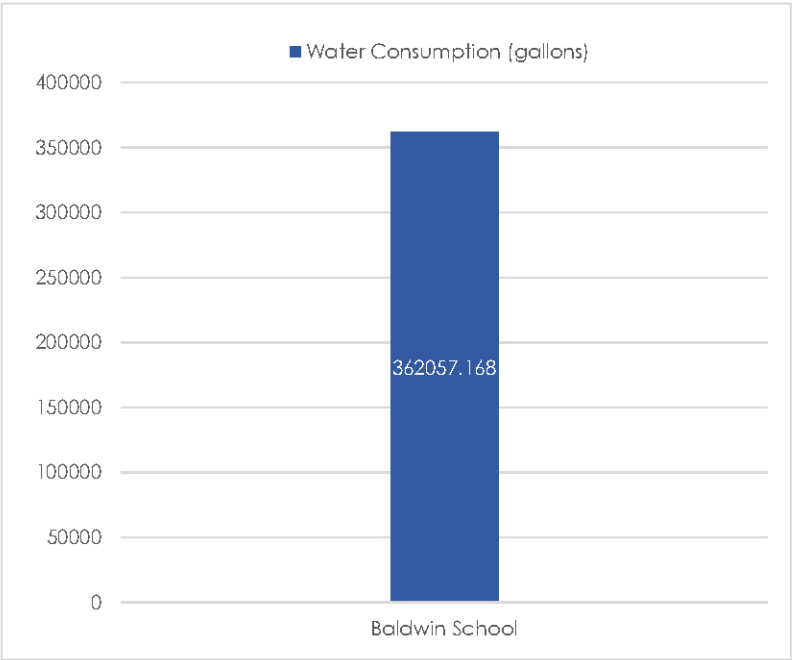
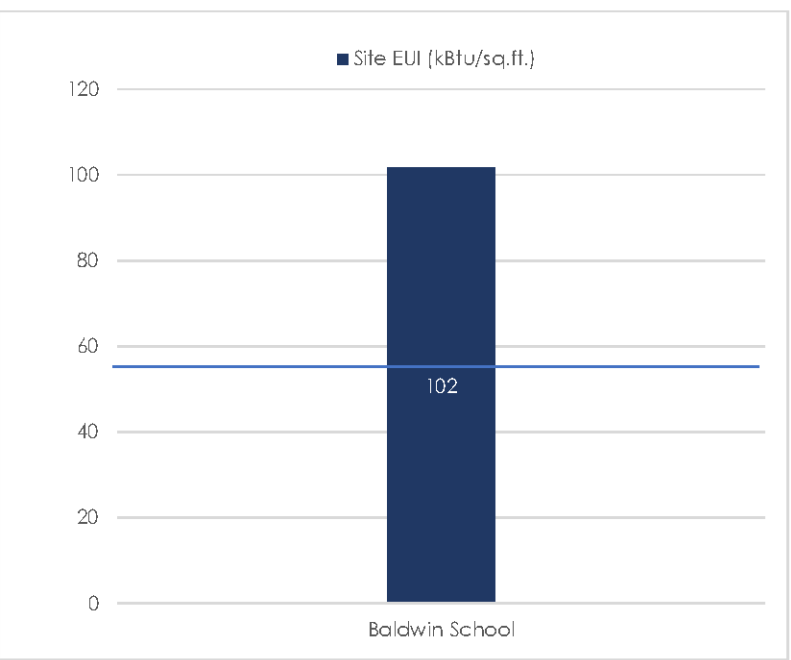
Furniture			
Design	Ergonomic needs of students are met; furniture is appropriately sized for age group, per DLR furniture sizing guide	1	Furniture should be replaced
Flexibility	Furniture easily moved to allow for classroom reconfiguration	3	
Variety of Seating Types	Combination of formal and soft seating 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 and all the same
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 except for those on 1st floor (Kinder?)
Appropriate Support Spaces	Resources Classrooms; Small Group Rooms, etc. nearby	4	every pair of rooms have a connected small group or office
Storage for Materials	Space for student material storage including books, work projects, backpacks, coats. Storage for teacher personal materials, classroom supplies	3.5	Lockers in hall for backpacks
Technology, power & data	Access to technology in the classroom; sufficient access to power & data to support flexible, student centered learning	2.5	so much casework, that there is limited power conveniently available
Sink &/or equipment	Provided in-rooms, if needed	0	Sinks only in 1st floor kindergarten rooms. Where do they teach science?
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	2	so much casework, that there is limited available
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	3.5	Multi-story put even young children on upper levels
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	3	
Storage for Materials	Space for student material storage including books, work projects, backpacks, coats. Storage for teacher personal materials, classroom supplies	3	Some rooms that have been created recently do not have much storage, but most do.
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	1	Only 1 SPED pull-out or counseling room had a sink (former teacher work room)
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	3	
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	3	There was some furniture blocking pathways, but this can be fixed.

Metric	Description	Score	Comments
Classrooms - Specialty spaces: Science, Applied Learning (Maker Spaces), CTE			
Size	Physical square footage of rooms as compared to standards	0	
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	2	
Appropriate Support Spaces	Kiln Room; Practice Rooms; Instrument &/or Music Storage; Equipment Storage	2	Kiln not in appropriate space
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	1	Not ADA; not provided for music
Writeable Surfaces & Tack Surfaces	Availability and quantity sufficient to use	2	
Accessibility & Location	Degree to which classrooms are accessible (ADA) & appropriately located in relation to each other & other functions	3	

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	3	
IEQ - average for all	Daylight, Views, Thermal Comfort, Air Quality (Ventilation)	1.5	No views
Lighting - average for all	Sufficiency (quantity/quality) & differentiation (provides choice/change) for intended uses.	3	
Acoustics & Privacy - average for all	Do spaces have proper acoustics for intended use & afford ability to achieve visual & auditory privacy when needed.	3	Gym could be better
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.)	2	
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.	1.5	Not enough at entry & public spaces; no 3D
Storage for equipment - average for all	Space for the storage of specialized equipment to meet student needs	1	
Media Center	Exists/Adequacy: size & configuration	3	
Cafeteria	Exists/Adequacy: size & configuration; Adequate kitchen & Servery	2	
Gymnasium	Exists/Adequacy: size & configuration	3.5	Not at ground floor - no direct access to outside
Auditorium &/or Stage	Exists/Adequacy: size & configuration	3	Stage in gym; not internally HC accessible (ramp is in corridor)
Administrative & Health Offices			
Accessibility & Location	Degree to which spaces are accessible (ADA) & appropriately located in relation to each other & other functions	3	
IEQ - average for all	Daylight, Views, Thermal Comfort, Air Quality (Ventilation)	3	Need to confirm w/survey
Lighting - average for all	Sufficiency (quantity/quality) & differentiation (provides choice/change)	3	Dimming?
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	small
Reception & Welcome Area	Appropriate for the space & size of school; welcoming; appropriate furniture; appropriate acoustics	2	
Admin Offices	Number appropriate for the number of students and configuration the school; indicate how many exist	2	2 offices + 1 conference + 3 student support at 1st
Health Office	Size & configuration appropriate for the number of students and configuration the school; secure meds; privacy & acoustics (HIPPA), etc.	1	No separate space for exam; does not meet HIPPA
Conference Room (s)	Number appropriate for the number of students and configuration the school; indicate how many exist	1	1 small conference room at 1st floor

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	4	
IEQ - average for all	Daylight, Views, Thermal Comfort, Air Quality (Ventilation)	2	Some internal rooms
Lighting - average for all	Sufficiency (quantity/quality) & differentiation (provides choice/change)	3	lacks differentiation
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	varies
Counseling, Guidance Offices &/or Career Ctr	Exists/Adequacy: size & configuration	2	some are small
OT/PT & Speech	Exists/Adequacy: size, configuration (sink, swing, mats, equipment, storage)	2	
Conference Rms	Exists/Adequacy: size & configuration	0	One at admin
Toilet Rooms	Availability throughout school	3	No Unisex or Family restroom at Basement
Storage	Book Storage; General Storage; Supply Storage	2	
Teacher Lounge; Health & Lactation Rooms	Exists/Adequacy: size & configuration; with kitchenette	0	Did not see staff lounge or lunch room
Teacher Workrooms & Planning	Exists/Adequacy: size & configuration; Copy & print locations; collaboration & focus	2.5	



SURVEY RESPONSE DATA - AMIGOS

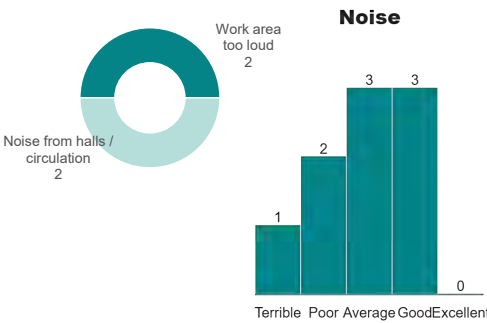
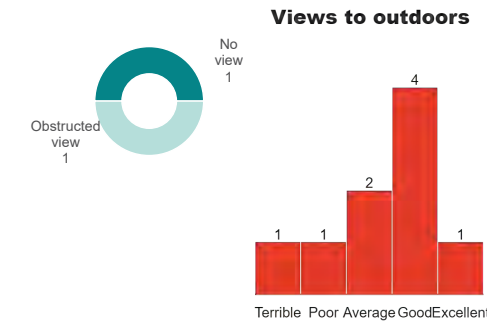
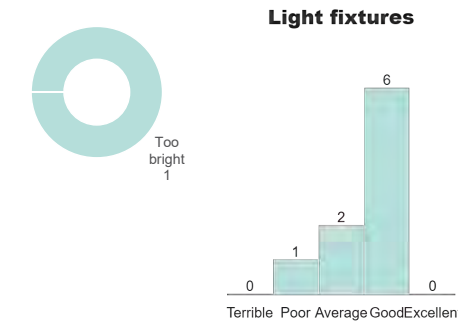
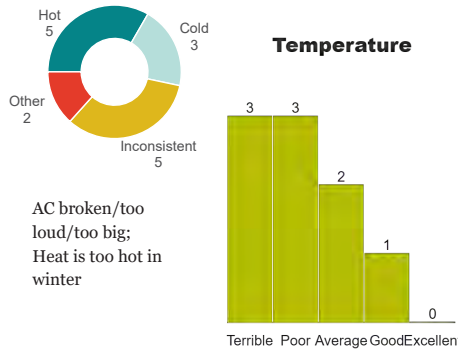
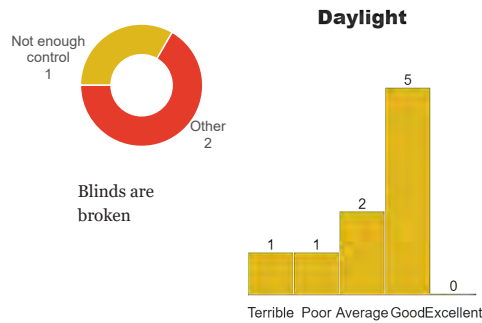
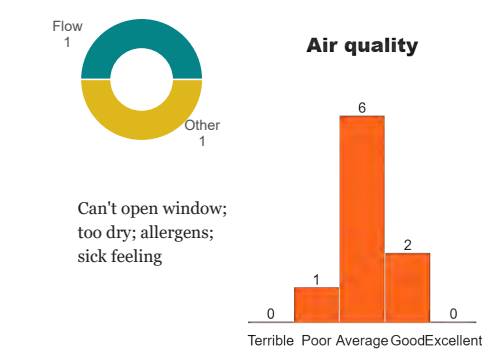


Baldwin

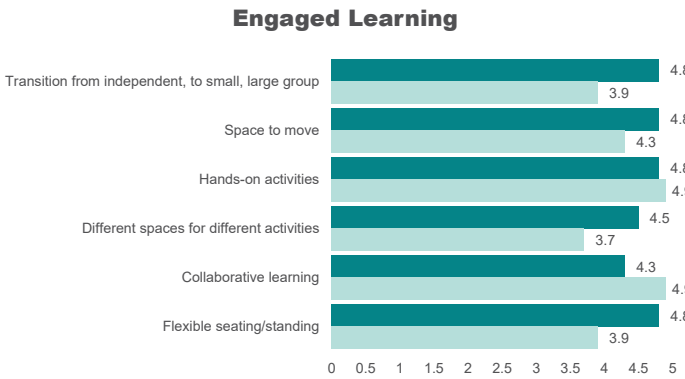




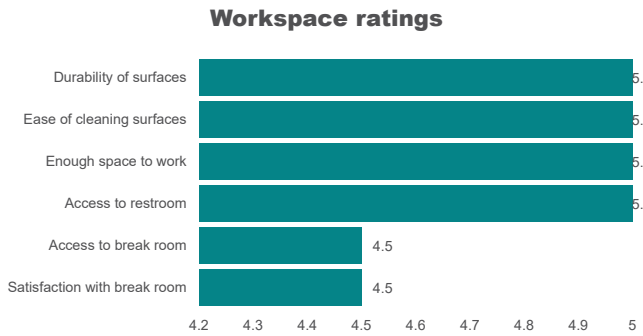
Baldwin: IEQ



Baldwin: Working + Learning



Averages here are determined from a scale of 1 (*Not at all Important*) to 5 (*Extremely Important*). Teachers view all options as important to engaged, active learning. The design of their classrooms could most be improved to support different spaces for different activities.



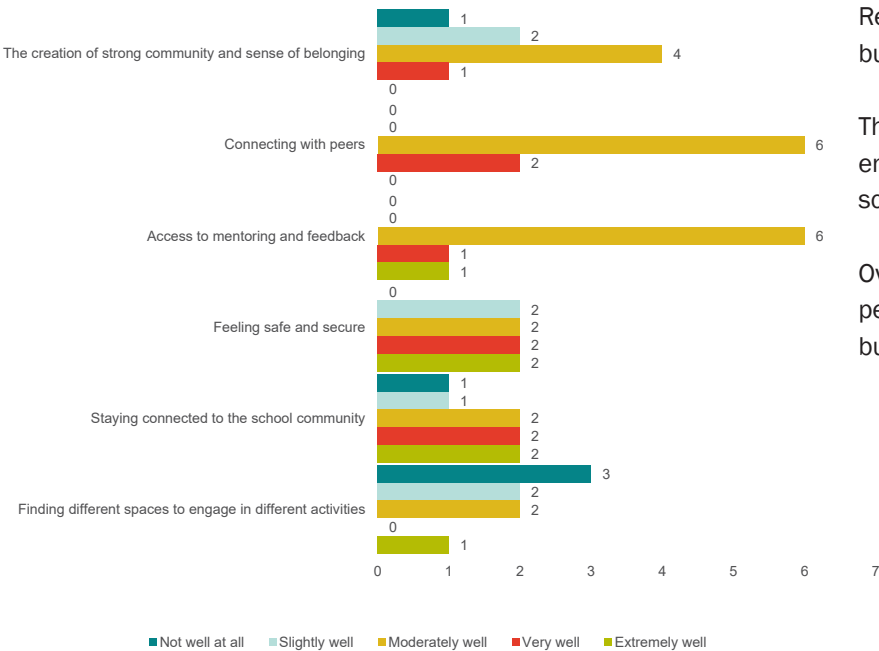
2 administrative, kitchen, custodial, or maintenance respondents evaluated their workspaces on a scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Averages were lowest when it came to break space (access to a break room and satisfaction with a break room), but overall satisfaction was high.



Baldwin: Community



The school's overall design supports...



Respondents were asked to consider how the overall design of their building supported staff and students and a sense of community.

The biggest areas for improvement were finding different spaces to engage in different activities, as well as creating and connecting to a school community.

Overall, respondents feel quite satisfied with the ability to connect with peers and access mentoring/feedback, given the overall design of the building.

PLAN DIAGRAMS

Building plans redacted at the request of Cambridge Public Schools.

Building plans redacted at the request of Cambridge Public Schools.

Building plans redacted at the request of Cambridge Public Schools.

Building plans redacted at the request of Cambridge Public Schools.

Building plans redacted at the request of Cambridge Public Schools.

SCHOOL IMAGES

Interior



Library



Computer/Media Center



Classroom Front



Classroom Back



Shared Room



Art Room



Peeling Millwork



Unpatched hole in wall in Janitor Closet

Exterior



AE-1: East Elevation



AE-2: North Elevation



AE-5: Representative façade conditions: Metal soffit panels, brick masonry and storefront assemblies.



AE-6: Representative façade conditions: Metal soffit panels, brick masonry and storefront assemblies.



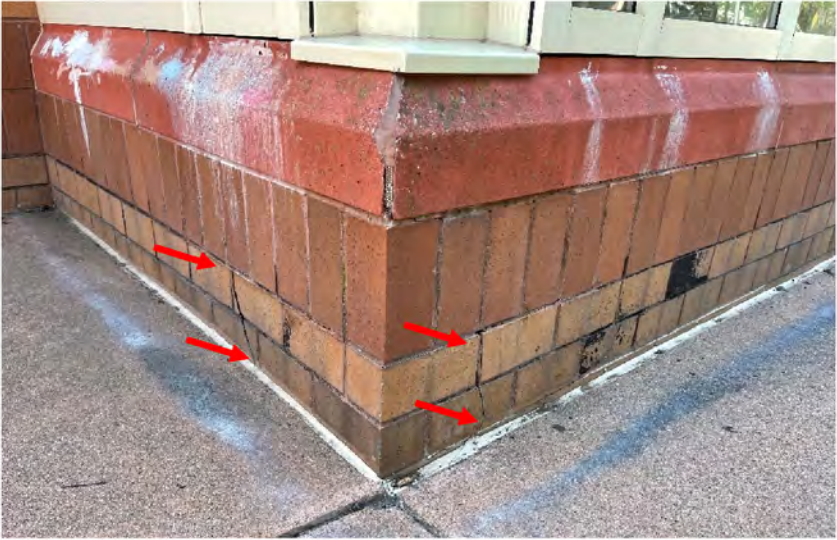
AE-3: West Elevation



AE-4: South Elevation



AE-7: Representative brick masonry facade



AE-8: Representative brick masonry façade along North Elevation. Typical efflorescence, cracked brick and mortar



AE-9: Representative brick masonry façade along North Elevation. Typical efflorescence, cracked brick and mortar



AE-11: Representative cracked mortar at pilasters along base of West Elevation



AE-10: Representative cracked mortar brick masonry façade along West Elevation at base of engaged pilasters



AE-12: Representative window perimeter sealants in good condition



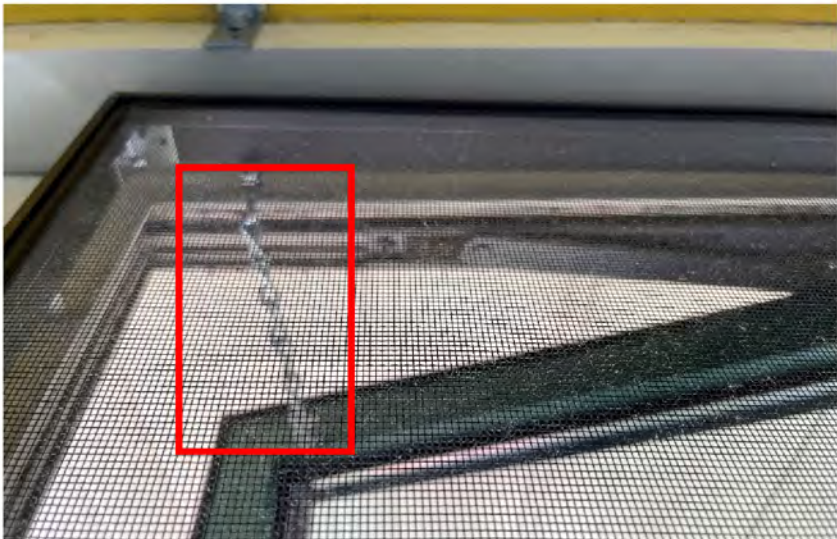
AE-13: Cracked pane of glass at North Elevation



AE-14: Interior of representative curtain wall with operable window. Note lack of sealant around operable window frame



AE-15: Typical window operator that hits interior insect screen, unable to close/engage fully



AE-16: Typical chain fastened to operable vent as limiter



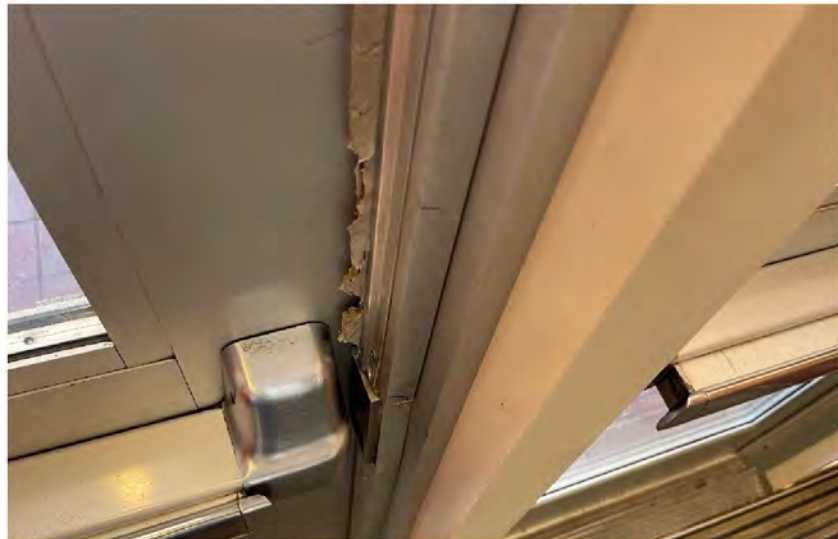
AE-17: Typical broken chain limiter on operable window



AE-18: Damaged weatherstripping at typical hollow metal door on South Elevation



AE-19: Damaged weatherstripping at typical entrance door on East Elevation



AE-20: Damaged weatherstripping at typical entrance door on East Elevation, viewed from interior



AE-21: General view of EPDM roof



AE-22: Representative EPDM membrane, adhered to mechanically fastened substrate. Fastener plates visible from below membrane.



AE-23: Representative roof vent penetrations, vent hood on curb



AE-24: Representative patches in EPDM. Failed lap sealant and unadhered EPDM patch



AE-25: Representative asphalt shingled roofing at transition with EPDM



AE-26: Representative metal valleys, roof edge flashings within shingled roofing system



AE-29: Ballasted roof at South Elevation, looking East



AE-30: Ballasted roof at South Elevation



AE-27: Missing shingle near transition with EPDM



AE-28: Missing ridge shingle



AE-31: Typical standing seam roof over lightwell at North Elevation



AE-32: Drip staining from soffit adjacent to gutter and downspout at base of shingled roof on South Elevation



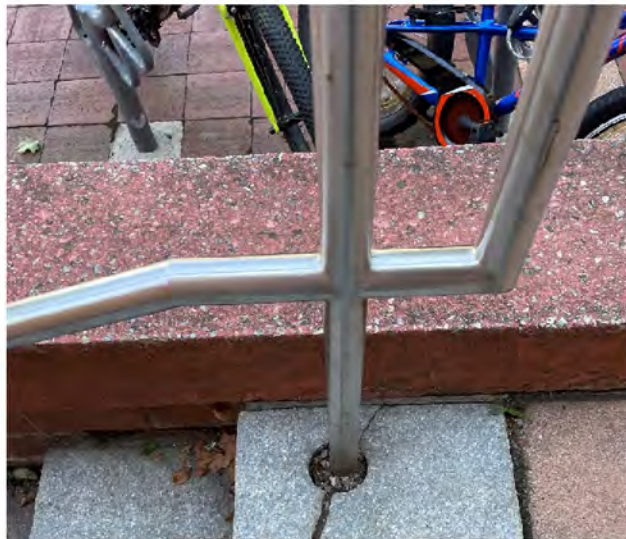
AE-33: Representative masonry walls along ramp at North Elevation



AE-34: Representative masonry walls along ramp at North Elevation. Note spalled brick, efflorescence



AE-35: Representative Stairs at North Elevation. Typical deteriorated mortar at granite stair treads



AE-36: Representative Stairs at North Elevation. Typical cracked granite stair tread, deteriorated mortar



AE-37: Typical broken chain limiter on operable window



AE-38: Interior of 302 where water leakage was observed below step flashing at shingled roof above. Some drywall damage observed.



AE-39: Interior of Cafeteria below typical lightwell where water leakage was identified, see next photo



AE-40: Water damage on ceiling tiles due to leakage within Cafeteria

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.

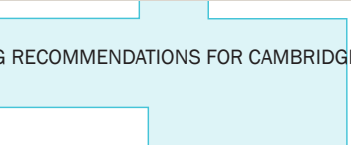
	Baldwin			
Gross Floor Area:	45,480			
No. of Students:	354			
Assessed Value:	\$16,884,300			
	Total Project Cost (\$)	Total Construction Cost (\$)	Total Project Cost (\$/GSF)	Total Project Cost (\$/Student)
ARCHITECTURAL - EXTERIOR (EXTERIOR WALLS)	\$ 1,886,331	\$ 1,429,038	\$ 41	\$ 5,329
ARCHITECTURAL - EXTERIOR (ROOFING)	\$ 2,615,712	\$ 1,981,600	\$ 58	\$ 7,389
ARCHITECTURAL - INTERIOR	\$ 612,703	\$ 464,169	\$ 13	\$ 1,731
ARCHITECTURAL - DOOR HARDWARE	\$ 72,314	\$ 54,783	\$ 2	\$ 204
ARCHITECTURAL - EQUIPMENT & FURNISHINGS	\$ 151,285	\$ 114,610	\$ 3	\$ 427
STRUCTURAL SYSTEM	\$ 582,446	\$ 441,247	\$ 13	\$ 1,645
FOOD SERVICE	\$ 211,534	\$ 160,253	\$ 5	\$ 598
CONVEYING SYSTEM	\$ 52,950	\$ 40,113	\$ 1	\$ 150
BUILDING SYSTEMS - PLUMBING	\$ 718,602	\$ 544,396	\$ 16	\$ 2,030
BUILDING SYSTEMS - HVAC	\$ 2,155,807	\$ 1,633,187	\$ 47	\$ 6,090
BUILDING SYSTEMS - FIRE PROTECTION	\$ 49,168	\$ 37,248	\$ 1	\$ 139
BUILDING SYSTEMS - ELECTRICAL	\$ 1,796,505	\$ 1,360,989	\$ 40	\$ 5,075
DEMOLITION & SPECIAL CONSTRUCTION	\$ 665,471	\$ 504,145	\$ 15	\$ 1,880
SITework	\$ 3,327,355	\$ 2,520,724	\$ 73	\$ 9,399
TOTAL	\$ 14,898,182	\$ 11,286,501	\$ 328	\$ 42,085

SITE/BUILDING INTERVENTION EXPLORATIONS

BALDWIN SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)



- General upgrade of millwork and finishes.



BALDWIN SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)



- General upgrade of millwork and finishes.
- Create a more defined lobby, bring out reception from the main office.
- Move mediation office by Parent Room creating a secondary lobby entrance on the side entrance.
 - Reduces the size of storage from Kindergarten Classroom (104)

Building plans redacted at the request of Cambridge Public Schools.



BALDWIN SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)



- General upgrade of millwork and finishes.

Building plans redacted at the request of Cambridge Public Schools.

BALDWIN SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)



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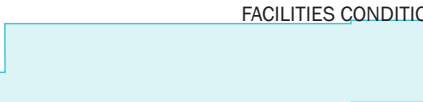
- General upgrade of millwork and finishes.

BALDWIN SCHOOL - MAXIMUM INTERVENTION (RECOMMENDED SIM.)



Building plans redacted at the request of Cambridge Public Schools.

- General upgrade of millwork and finishes.
- Reconfigure library space and office.



BALDWIN SCHOOL - DISCARDED OPTIONS

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