

EXISTING CONDITIONS ASSESSMENT



EXISTING SITE & BUILDING DATA

GENERAL SITE DESCRIPTION

Broadmeadow Elementary School is one of eight public schools in the town of Needham, Massachusetts and one of five serving grades K-5. The school is located at 120 Broad Meadow Road in the south east section of town just east of RT 95. The property is bound on the west side by Broad Meadow Road and single family residences. The north, south and east property boarders abut single family residential properties. Barbara Road on the east side provides vehicle access to the site. A paved pedestrian walkway is provided from Enslin Road (Image 2).

TOPOGRAPHY

The site topography is generally flat on the north side of the building and slopes to the south at approximately the mid point of the building providing a fully daylit lower level on both the south west and south east sides of the building.

Kindergarten playgrounds are located on the north side of the building and an older student playground and hardscape play area is located on the north east side of the building. Ball fields are located on the east and south areas of the property. The 2019 tax card indicates the site is 11.2 acres.



Image 1 - MA GIS aerial image of Broadmeadow Elementary School

PARKING

The main driveway entrance is accessed from Broad Meadow Road. The front loop provides two accessible parking spaces in close proximity to the front door. There is a parking lot with 82 striped spaces and 2 handicap spaces located adjacent to the front entrance drive. The access drive can fit an additional 8 vehicles (approximately) in unmarked spaces.

A bus loop and emergency vehicle access is provided at the rear of the school, no parking is provided at the rear of the building.

ZONING & LAND USE

The 2019 property tax card (see appendix CX.1) indicates that the facility sits on 11.2 acres of land with a land value of \$651,700. The Broadmeadow Elementary School is located in zoning district 'Single Residence B (SRB)'. Public Schools are permitted in this zone.



Image 2—View of path from Enslin Road



Image 3—Drop in grade from entrance loop to parking area (looking north)



Image 4—Drop in grade looking south toward parking



Image 5—Slope of grade on east side of building

GENERAL BUILDING DESCRIPTION

The original building was constructed in 1951 and underwent extensive renovations and the addition of the two-story wing on the south end of the building and the kindergarten wing on the north end of the building in 2003. The new two story wing includes the gymnasium, cafeteria and general classrooms.

The 2019 property tax card indicates that the 116,466 sq. ft. facility has a value of \$12,542,200. Overall building floor plans are included below.

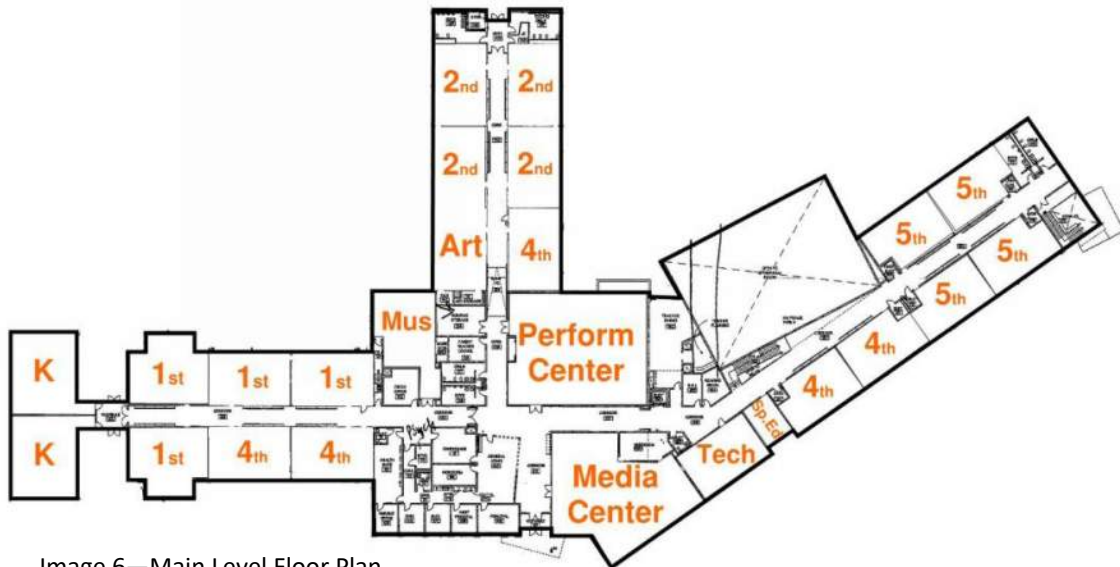


Image 6—Main Level Floor Plan

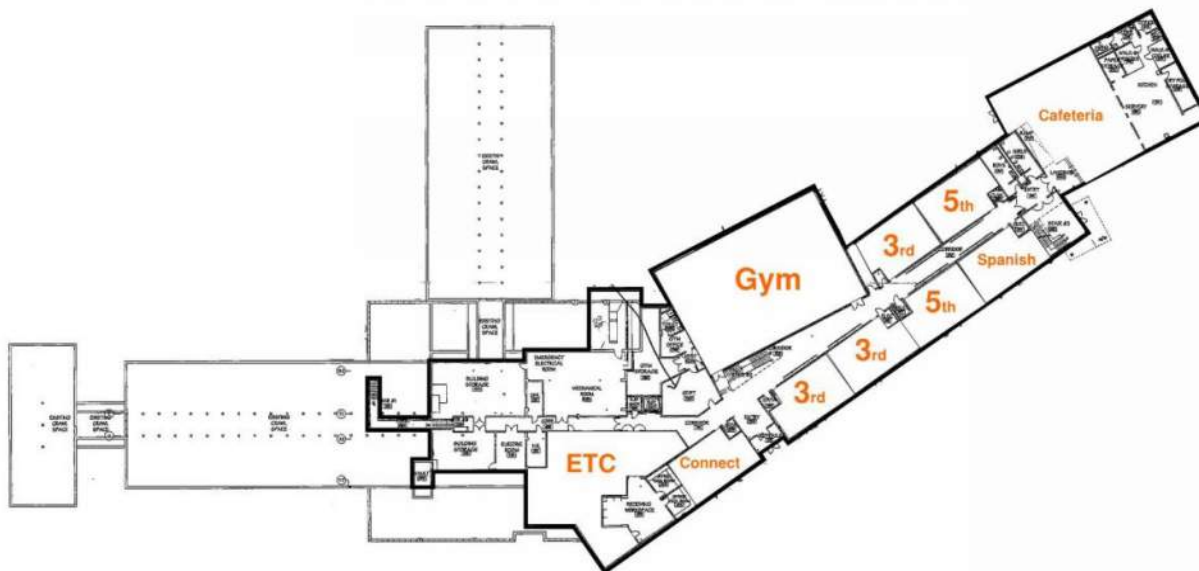


Image 7— Lower Level Floor Plan



Image 8: North west elevation



Image 9: Main entrance (North west elevation)



Image 10: South west elevation



Image 11: South east elevation



Image 12: North east elevation.



Image 14: North east corner

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REGULATORY ASSESSMENT

INTRODUCTION

This Regulatory Assessment will seek to convey to what degree the **Broadmeadow Elementary School**, in its current condition, complies with current building codes and regulations. The Assessment does not attempt to define a scope of work, but rather highlight specific non-complying conditions and identify which conditions would require correction if a repair, alteration, addition, or change of use were to be proposed for the facility.

It is important to note that a building or a portion of a building does not require correction simply because it does not comply with current codes; any building that is legally occupied and adequately maintained can remain so without bringing the building into full compliance with codes and regulations. This *principal of non-conforming rights* (that a newly adopted regulation cannot impose the undue burden of compliance on legally existing occupancies) is reflected in how the codes identify to what degree existing buildings must be brought into compliance when a scope of work is proposed. The greater the scope of work, the greater the burden of compliance with a given code or regulation will be required.

For some regulations, such as 521 CMR Accessibility Rules or the Massachusetts special sprinkler provisions of MGL c.148 s.26G, these compliance thresholds are “hard lines” comprised of specific dollar value thresholds. When determining the dollar value thresholds for compliance, the cash value of the building is used as the basis for the determining the requirements for compliance. The full and fair cash value of the *building*, as determined from the Town Assessor's online database is calculated as follows:

Property Value	\$ 13,193,900
Land Value	(\$ 651,700)
Full and Fair Cash Value	\$ 12,542,200

This value will be used later in this Assessment to calculate the applicable compliance thresholds. The Existing Building Code uses the type of work and the affected area to determine when increasing levels of compliance are required. When considering a proposed scope of work for the building, a detailed examination of the various degrees of compliance will need to be considered. Refer to the Regulatory Overview section of this report for a more detailed description of the various compliance paths outlined in the Existing Building Code.

THE INTERNATIONAL EXISTING BUILDING CODE (IEBC)

The Performance Compliance path provides a simple yet comprehensive overview of the general life safety aspects of a building. Although designed as a building code compliance path, it can also be used as an assessment tool. This assessment utilized the value and scoring based method of the Performance Compliance path to assign a score to the building as it is currently configured and maintained. Similar to previous comments, a failing score in any category as part of an assessment does not compel any corrective action; it simply indicates how the building would be viewed under current codes. It is intended to illustrate the relative general and life safety performance of the existing building.

The original building was constructed using both non-combustible structural members such as concrete floors and framing, as well as combustible wood framing members. Subsequent additions (including those done in the 2000) and alterations used unprotected non-combustible framing and structural components. While the building is mostly non-combustible, the original construction did incorporate unprotected wood framing and the building would best be classified as type III-B construction.

Because the building is fully sprinklered, the lower floor area is less than the allowable floor area for the construction type. The upper floor is actually larger than allowable under current codes, but when the relatively smaller area is incorporated on an area-weighted average, these areas result in a neutral score of 0 under the Performance Compliance Path.

The neutral fire-area score along with generally compliant or beyond-code life safety features such as a modern fire alarm system, modern emergency power system, and more than adequate means of egress result in a passing score in all categories under the performance compliance path.

Future alterations or additions would need to be executed in compliance with current codes. Any major alterations should consider a re-design of the means of egress from classroom pods.

The scope of this study is limited to the review of existing building and accessibility regulations. However, there were a few conditions observed during the visit that appear to be out of compliance with the Fire Code. The Fire Code is enforced by the Fire Department and these items may require correction in order to maintain building compliance with the Code. The specific items we noted were:

1. At one enclosed egress stair, the space appears to be used as an occupied instructional space with tables, chairs, classroom cubbies, papers, and other instructional media at both the upper landing and the lower level of the stair enclosure. Egress stairs are not to be used as occupied spaces and storage of materials is not permitted.
2. At several classrooms doors, large amounts of paper were taped within five feet of the door or taped directly to the door; in school buildings, no combustible materials are to be attached to the walls within five feet of a means of egress doorway.

Table 1401.7 Summary Sheet - IEBC PERFORMANCE GRADE - 1964 ORIGINAL CONSTRUCTION

Existing Occupancy	Educational	Proposed Occupancy	Educational
Year building was constructed	1951	Number of Stories	2 Height in feet 24
Type of construction	III-B	Area per floor	39,441 / 63,158
Percentage of open perimeter increase	100%		
Completely Supressed	Yes	Corridor wall rating	0 hr
		Type	N/A
Compartmentation		Required door closers	Yes
Fire resistance rating of vertical opening enclosures			
Type of HVAC system	Unit Vent	serving number of floors	2
Automatic fire detection	Yes	Type and location	Smoke, pull station. Loc Varies
Fire alarm system	Yes	Type	Horn/Strobe, voice evacuation
Smoke control	No	Type	
Adequate exit routes	Yes	Dead ends	No Length in feet
Maximum exit access travel distance	177'	Elevator controls	No
Means of egress lighting	Yes	Mixed Occupancies	No
Standpipes	No	Patient ability for self preservation	N/A
Incidental use	No	patient concentration	N/A
Smoke compartment less than 22,500 sq. ft.	No	Attendant-to-patient ratio	N/A

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
1401.6.1 Building Height	1	1	1
1401.6.2 Building Area	0	0	0
1401.6.3 Compartmentation	0	0	0
1401.6.4 Tenant and Dwelling Unit Separations	0	0	0
1401.6.5 Corridor Walls	0	0	0
1401.6.6 Vertical Openings	14	14	14
1401.6.7 HVAC Systems	0	0	0
1401.6.8 Automatic Fire Detection	8	8	8
1401.6.9 Fire Alarm System	5	5	5
1401.6.10 Smoke Control	****	0	0
1401.6.11 Means of Egress	****	8	8
1401.6.12 Dead Ends	****	0	0
1401.6.13 Maximum Exit Access Travel Distance	****	5	5
1401.6.14 Elevator Control	0	0	0
1401.6.15 Means of Egress Emergency Lighting	****	4	4
1401.6.16 Mixed Occupancies	0	0	0
1401.6.17 Automatic Sprinklers	6	3	6
1401.6.18 Standpipes	0	0	0
1401.6.19 Incidental Use	-1	-1	-1
1401.6.20 Smoke Compartmentation	0	0	0
1401.6.21.1 Patient Ability for Self-preservation	****	0	0
1401.6.21.2 Patient Concentration	****	0	0
1401.6.21.3 Attendant-to-patient Ratio	****	0	0
Building Score - total value	33	43	50

Table 1401.9 Evaluation Formula

1951 Original Construction as Altered Evaluation:					Score	Pass	Fail
33	(FS) -	29	(MFS)=	4		X	
43	(MS) -	40	(MMS)=	3		X	
50	(GS) -	40	(MGS)=	10		X	

SPRINKLER PROTECTION REQUIREMENTS

The Broadmeadow School had additions and alterations completed in 2000. The building is fully protected with an automatic sprinkler system fed from the municipal water supply which means it is in compliance with M.G.L. c.148 s.26G. Any future alterations or additions would require extension or modification of this sprinkler system in order to maintain full coverage.

ACCESSIBILITY

Any proposed work will be required to comply with the accessibility requirements of 521 CMR (The Massachusetts Architectural Access Board, or MAAB Rules). The entire facility was significantly altered in 2000 and much of the facility was brought into compliance with the accessibility regulations in place at that time. The most recent edition of MAAB regulations was adopted in 2006 and the most recent ADA Architectural Guidelines are from 2010; both well after the most recent alterations. Therefore, any proposed alterations or additions would need to consider the scoping thresholds for both AAB and ADA.

If the cost of any proposed work exceeds \$100,000, an accessible entrance, toilet room, drinking fountain, and telephone (if drinking fountains and telephones are provided) will be required in addition to the compliance requirements of the proposed work.

When the cost of work exceeds 30% of the full and fair cash value of the building (calculated above), then the entire facility will be required to comply with the MAAB Rules. For the Broadmeadow Elementary School, this 30% threshold dollar value would be **\$3,759,660**.

Because the building is a public school, owned and operated by the local municipality, it is considered a Title II facility under the Americans with Disabilities Act (ADA). As such, any proposed work to the facility would be required to comply to the maximum extent feasible with the ADA Architectural Guidelines (the ADAAG) except where it would be structurally impractical. The ADA does not have a threshold for requiring full facility compliance, but does require that when there are alterations to an area of "primary function" (including classrooms, gymnasium, cafeteria, and administration areas), then the path of travel as well as the restrooms, telephones, and drinking fountains serving the areas of primary function are also accessible.

There were very few deficiencies or non-compliant conditions noted at Broadmeadow, and so they will not be organized by category. Still, if a major alteration exceeding the 30% threshold were undertaken, all of the following items would require correction:

GENERAL

- Classroom telephones were noted to be mounted higher than the 48-inch reach range required by ADAAG.
- The sink in the staff break-room did not include the required knee-space below the sink and the counters appear to be installed at 36 inches, providing no counter space at the maximum height of 34 inches.

- The exterior sloped walk leading to the main entry appeared to be graded steeper than 1:20 and may be considered a ramp, which would require hand rails to be installed.
- The playground utilized wood-chip surfacing, which does not provide an accessible path to any play equipment.
- The egress door from the lower level exiting through the music room does not have a level landing outside the door. This does not comply with accessibility requirements or the building code.
- No accessible path is provided to site furnishings such as picnic tables and benches.
- Detectable warning surfaces are not provided at curb ramps, but are not required by AAB regulations or ADAAG; such surfaces are a recommended best practice to be incorporated into any future sidewalk or paving improvement projects.

STANDARDS FOR THE TREATMENT OF HISTORIC STRUCTURES

The building and property is not listed on, nor is it eligible for listing on the National Register of Historic Buildings. See section 3.1.4 A for Historical Regulations.

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CIVIL ASSESSMENT

GENERAL BUILDING INFORMATION

Nitsch Engineering has performed research of the existing site conditions for the Broadmeadow Elementary School at 120 Broad Meadow Road in Needham, Massachusetts. Nitsch Engineering also conducted a site visit on December 13, 2019 to observe the overall site, take pictures and provide a preliminary outline of short and long term needs for the school. Nitsch Engineering included anticipated site permitting requirements for the Broadmeadow Elementary School for any proposed site work in this report.

Nitsch Engineering's research included an initial site visit/walk through the school and review of existing conditions plans compiled by Dore and Whittier. Nitsch Engineering's observations and findings are summarized on the following pages.

Broadmeadow Elementary School is located in a residential neighborhood. The front entry and access drive to the school is from Broad Meadow Road. A rear entrance and access drive is located on Barbara Road. A gated emergency access is also located on Broad Meadow Road north of the main entrance. All parking is located in a lot to the southwest of the building and can be accessed from the front entrance drive. Both the front and rear entrances have a loop to allow for student drop off via bus and private vehicle.

Hard surface and grassed play areas are located to the East of the school building. Two baseball fields are located to the south and southeast of the building. There does not appear to be any resource areas within the site that would be under the jurisdiction of the Conservation Commission.



PARKING AND ACCESS

The main entrance access to the Broadmeadow School is via Broad Meadow Road (Image 1). The access drive includes a drop-off loop at the front of the school (Image 2) and an access drive to the main parking area. Parent queue for drop-off / pick-up of students takes place in the main parking area. Parents queue through the main parking area in a one way loop and stage along the sidewalk (Image 3). Students enter the building at the lower level door near the gym entrance.

Buses and vans drop students off at the rear of the building. The access to the site is through a gated entrance from Barbara Road (Image 4). A bus loop that doubles as outdoor hardscape play area is provided.

Handicapped accessible access to the building is available at the main entrance (Image 5), parent drop-off location (Image 6), and at the bus / van drop-off (Image 7).

A parking area with 82 striped parking spaces is located on the south west side of the building. There are two (2) designated handicap spaces in this area, including a space for van parking. These spaces provide access to the lower level near the gym. There is additional parking for approximately eight (8) cars along the entrance drive, although the spaces are not marked. Two (2) accessible parking spaces are located near the main entrance on the north side of the entrance loop (Image 8).

The pavement in the parking area and entrance loop is in fair condition (image 1, 2 & 3). The sidewalk and curb are in good to fair condition with some cracking and disrepair of the sidewalk and damage to curbing (Image 8).

An emergency access drive from Broad Meadow Road (Image 9) provides vehicle access to the north side of the building and site. Approximately 30% of the building is accessible by emergency vehicles. A paved sidewalk loops the south side of the building (Image 10) and connects to the bus loop. This pavement could provide access for emergency vehicles if it were made wider.

There are sidewalks leading to the school and sidewalks around the campus. The sidewalks leading to the school appear to be handicapped accessible. The sidewalks around the school building appear to be accessible as well. There is substantial wash out adjacent to the walkways in many areas (Images 11 & 12).

A site topographic study would be required to determine if all site walkways and ramps are within acceptable requirements.

<i>Specific Issues</i>	<i>Recommendations</i>
Walkways around the building are too narrow to allow emergency vehicle access	Consider making the sidewalks wider and structurally capable of supporting emergency vehicles
Paving area is in fair to poor condition	Mill and overlay pavement where cracking has occurred



Image 1: Access drive from Broad Meadow Road



Image 2: Front drop-off loop—looking south west



Image 3: Main parking area and parent drop-off zone



Image 4: Access drive from Barbara Road



Image 5: Accessible curb cut near ramp to main entrance



Image 6: Accessible curb cut near student drop off

UTILITIES

Water

Broadmeadow Elementary School is serviced by the municipal sewer and water services.

There are three fire hydrants on the property: one hydrant is located on the island of the front drop off loop (Image 13), one is located at the south end of the parking lot, and one is located along the rear drop-off loop.

DRAINAGE

Drainage for Broadmeadow Elementary School consists of a series of catch basins and an area drain (Image 14). There are two catch basins in the front loop. There is a single catch basin at a low point in the landscaped area to the west of the building. The rest of the western side of the building sheet flows to the parking lot which has 4 catch basins. Stormwater not captured by the catch basins sheet flows to the baseball field at the south end of the site (Image 15). The stormwater on the east side of the site flows to catch basins and one area drain. The rear drop off loop contains a catch basin as well. It appears that the roof drains capture all of the roof runoff.

It appears that the drainage system is adequate for moving stormwater off the site. However, the existing drainage system does not meet current Massachusetts Department of Environmental Protection (MADEP) Stormwater Standards.

<i>Specific Issues</i>	<i>Recommendations</i>
The existing drainage system does not meet current Massachusetts Department of Environmental Protection (MADEP) Stormwater Standards.	Provide new drainage structures and pipe including water quality structures, review overall drainage system for the site

PERMITTING

Any site work at the Broadmeadow Elementary School site would require Planning Board Approvals and compliance with MADEP stormwater management. There does not appear to be any resources areas that would fall under the jurisdiction of the Conservation Commission.



Image 13: Hydrant at front loop



Image 14: Typical catch basin



Image 15: Tear parking lot sheet flow to field



Image 7: Accessible entrance at bus / van drop-off



Image 8: Accessible parking near front entrance



Image 9: Emergency access from Broad Meadow Rd.



Image 10: Sidewalk on south end of building



Image 11: Sidewalk around the building



Image 12: Sidewalk around the building

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STRUCTURAL ASSESSMENT

BASIS OF THE REPORT & GENERAL INFORMATION

The purpose of this report is to assess the structure of the existing building and provide comments regarding the existing structure and the structural integrity of the building.

This report is based on visual observations during our site visit on December 12, 2019 and a review of the available Architectural drawings of the renovations to the existing school prepared by Dinisco Design Partnership, dated December 18, 2000. During the visit we did not remove any finishes or take measurements; so, our understanding of the structure is limited.

EXISTING CONDITIONS

The school is located on Broad Meadow Road in Needham, Massachusetts. The school is a one and two story structure. The original portion of the school is a wood, concrete and masonry structure. The school was extensively renovated and additions were constructed in 2003. The new additions are steel framed with composite concrete floor slabs on metal deck and the roof structure is metal deck supported on open web steel joists and wide flange steel beams. The lowest level is a concrete slab on grade and the structure is founded on reinforced concrete foundations.

FINDINGS

We observed some minor cracking in the interior masonry walls and slabs-on-grade. The school was essentially in good repair with no major concerns. We observed shoring posts under wood beams in the original part of the school structure, we are not sure whether these posts were added during the renovations to the school in 2003 or were added recently to support the beams. The shoring posts appear to be supported directly on the slab on grade. **The existing beams being shored will have to be evaluated and a permanent repair may be required to stabilize the beams.**

RECOMMENDATIONS

The structure is in good repair and performing well. Other than the existing beams being shored in the original portion of the school there are no major concerns for any immediate repairs.

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ARCHITECTURAL ASSESSMENT

GENERAL BUILDING INFORMATION

Broadmeadow Elementary School was originally constructed in 1951 as a single story “L” shaped building. Significant renovations to the existing building and a two story classroom and gymnasium addition were completed in 2003. Overall the building is in good condition and has been well maintained.

The following information addresses specific architectural issues observed during our recent site visit.

EXTERIOR

FOUNDATION WALLS

The original building has a reinforced concrete foundation with concrete slab on grade and over a crawl space. The 2003 addition is also reinforced concrete foundation walls with slab on grade.

The interior areas of exposed foundation wall are in good condition, and where not visible the adjacent interior areas appear dry and intact.

There were a few areas of exterior wall where patching has taken place, and other areas in need of patching where there is cracking and spalling.

<i>Specific Issues</i>	<i>Recommendations</i>
Cracking and spalling of concrete foundation wall will increase with freeze / thaw cycles (Image 1, 2 & 3)	Remove loose materials, prep substrate for patching, apply appropriate patching materials and parge as necessary
Wet areas near foundation walls due to flat or negative sloped grades	Review grading and drainage to create positive drainage away from building

Exterior Walls

The original building is predominantly standard running bond brick and mortar with a running Flemish bond every 7th course (Image 4). The 2003 additions are made of masonry veneers and incorporate several patterns, brick colors and both ground face and split face CMU (Images 5 & 6).

The exterior walls appear to be in good condition with a few minor areas in need of cleaning and / or minor patching.

<i>Specific Issues</i>	<i>Recommendations</i>
Areas of growth on masonry surfaces (Image 7)	Clean areas with appropriate surface wash
Small areas of rust / dark discoloration on the grey ground face CMU (Image 8)	Appear to be inherent with the unit masonry product used for the project—no action required.
Minor areas of damaged brick and cracking (Image 9 & 10)	Remove loose, cracked or damaged bricks and replace with new.
Additional areas of brick and exterior wall that need to be cleaned (Image 11)	Clean and scrape areas with appropriate surface wash



Image 1: Previously patched foundation area



Image 2: Some foundation cracking in corner



Image 3: Spalling concrete at joint



Image 4: Original brick with Flemish bond course



Image 5: 2003 addition brick and CMU pattern



Image 6: 2003 addition with CMU and glazed brick

Doors

The exterior doors are almost entirely aluminum storefront and curtain wall doors, with a few hollow metal doors with hollow metal frames at service areas. The aluminum curtain wall and storefront doors are all in good condition. The hollow metal doors and frames are in good condition as well. All doors were installed in 2003 as part of the comprehensive addition / renovation.

<i>Specific Issues</i>	<i>Recommendations</i>
None	Continue to maintain hardware, caulking, backer rod assemblies, and paint systems on HM assemblies as part of an ongoing maintenance program

Exterior Windows

The primary exterior window type is aluminum with insulated glazing with operable sections in curtain-walls and in punched openings. The windows as a whole are in good to excellent condition as they were installed in 2003 as part of the comprehensive addition / renovation.

<i>Specific Issues</i>	<i>Recommendations</i>
None	Continue to maintain hardware, caulking, and backer rod assemblies as part of an ongoing maintenance program



Image 13: Typical windows



Image 14: Typical window detail



Image 7: Staining and mildew on brick



Image 8: Staining on CMU walls



Image 9: Cracked Bricks



Image 10a: Damaged Bricks



Image 10b: Excess grout on walls



Image 11: Main entrance doors

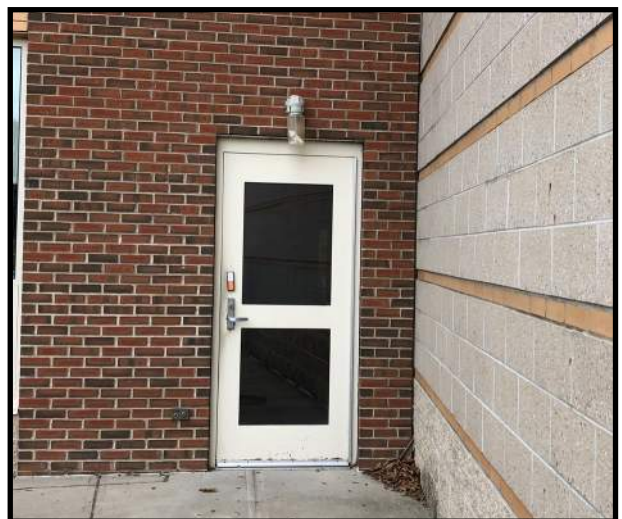


Image 12: Typical exterior door

Soffits & Facia

Metal soffits and facia around the building are in very good condition (with the exception of one location where there has been impact damage).

<i>Specific Issues</i>	<i>Recommendations</i>
Impact damage has occurred to the gutter at the soffit	Remove and replace gutter system in area of damage

Roof

Both the low slope / flat roofs of the new addition and the low slope roofs of the original building are ballasted membrane in good condition. The flashings, trims, gutters, downspouts and drain hardware are in good condition.

Installed at the time of the 2003 project the roof should have another 5-10 years of serviceable life. Replacement cost should be included in the capital improvement plan for mid to long range projects.

<i>Specific Issues</i>	<i>Recommendations</i>
None	Include replacement cost in long range planning

Ramps, Stairs, Railings & Guardrails

The exterior handrails are in good condition and include extensions at both the top and bottom landings to meet ADA / MAAB requirements. The main entrance area includes a sloped bituminous sidewalk that appears to meet ADA / MAAB requirements. All other entrance areas are level with the sidewalk and do not require ramps and stairs.

<i>Specific Issues</i>	<i>Recommendations</i>
None	



Image 15: Soffit at entrance canopies



Image 16: Exposed columns and beams



Image 17: Typical fascia



Image 18: Damage to gutter system at soffit

INTERIOR

FLOORS

The flooring throughout the facility is a mix of durable, institutional grade materials. The main entrance area (Image 1) and most of the hallways, classrooms, and cafeteria is Vinyl Composition Tile (VCT) with rubber or tile base (Image 2&3). The VCT is in good condition with some signs of age (Image 4) and cracking at transition joints (Image 5).

The entrance in the kindergarten wing has the original stone flooring (Image 6) , which is in good to fair condition.

The kitchen and servery, janitor closets and restrooms in the older section of the school have quarry tile floors in good to fair condition (Image 7). The tiles themselves are in good condition however the tile and grout appear to be dirty and aged. Multi-student use restrooms in the renovated portion of the building have tile flooring in good condition (Image 8).

Ramps, stair risers, treads, and landings have raised rubber flooring. Stair nosing has yellow paint and directional footprint markings (Image 10). The nosing paint is worn through to the tread in many locations.

<i>Specific Issues</i>	<i>Recommendations</i>
Aged VCT	Replace VCT in areas where it appears aged and worn
VCT cracking at transition joints	Replace cracked VCT tiles
Quarry tile and grout is stained	Clean quarry tile and grout—replace any tiles that are cracked and damaged
Painted stair nosing is worn	Repaint nosing or replace treads with integrated color strip

WALLS

There are a number of different wall finishes throughout the school including brick, ceramic wall tile, and painted GWB. Walls are in generally good condition with isolated areas of damage and staining.

Corridors have a tile wainscot with painted gypsum drywall above. The tile base and grout are stained (Image 11) throughout the corridor. The painted drywall above the tile has been damaged in many locations where posters have been attached to the wall (Image 11& 12).

Multi user toilet rooms also have a ceramic tile wainscot with drywall above (Image 8), these high use rooms have stained tile and grout and damaged drywall.



Image 1: Main entrance



Image 2: Typical corridor



Image 3: Typical classroom



Image 4: VCT in teacher's room



Image 5: Damaged flooring at transition

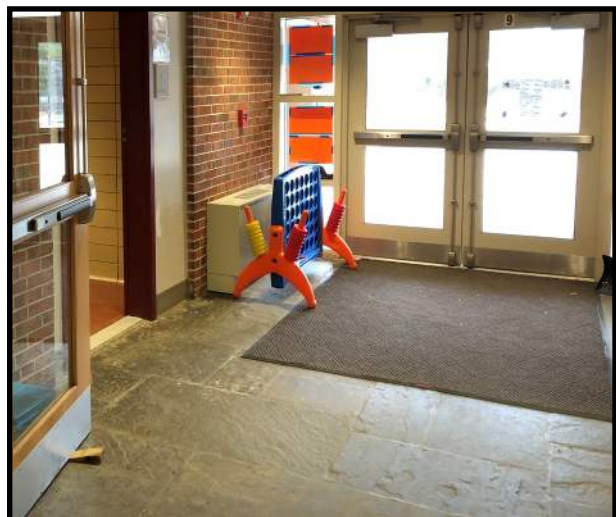


Image 6: Stone flooring at entrance

Millwork panels and built in wood cubbies are located in the corridor. These appear to be in good condition aside from usual wear & tear. However, in areas where the millwork connects with the floor the base of the millwork is dirty (Image 12).

Several corridors have exposed brick walls (Image 13). Most of the brick is in good condition with some locations of staining (Image 14).

<i>Specific Issues</i>	<i>Recommendations</i>
Stained tile and grout	Tile base in the corridors and tile walls in the restrooms require cleaning with a tile and grout cleaner. Consider replacing the lowest two rows of tile in the corridor with a darker tile and grout to reduce the appearance of dirt and staining
Base of wood work is stained	Clean woodwork with wood cleaner. Assess floor cleaning methods to avoid continued staining of wood and tile base
Damage to GWB walls	Repaint areas that have had damage due to the hanging of posters. Where walls are damaged from impact patch and repair walls. Consider use of plastic laminate wall covering in restrooms and other means of attaching notifications on painted corridor walls
Staining on brick walls	Review source of staining. Use brick and grout cleaner to remove staining



Image 13: Brick walls in corridor

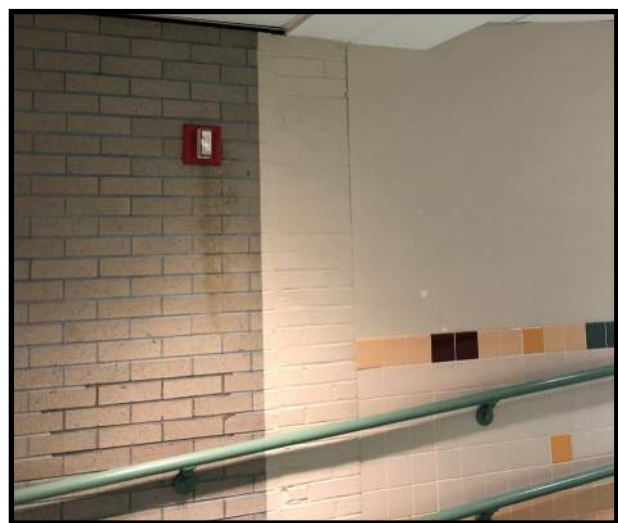


Image 14: Staining on brick walls

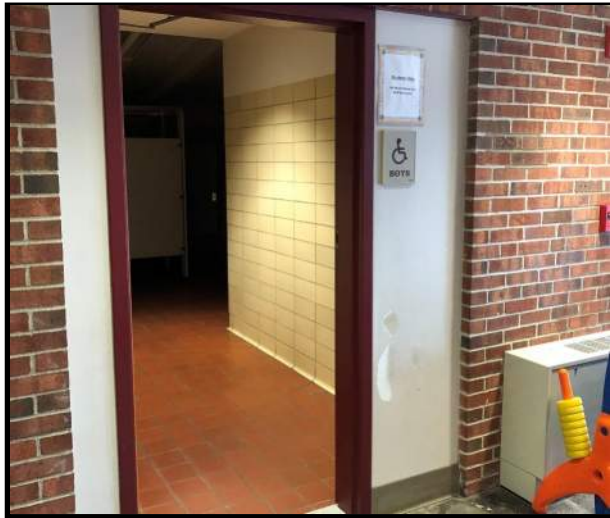


Image 7: Quarry tile in restroom



Image 8: Ceramic tile in restroom



Image 9: Raised rubber flooring at ramp



Image 10: Raised rubber flooring on stairway



Image 11: Tile and GWB walls



Image 12: Damaged drywall and wood base

CEILINGS

Most of the interior ceilings throughout the facility are 2' X 2' lay in Acoustical Ceiling Tile (ACT). Long corridors include gypsum soffits, the main corridor has a painted gypsum ceiling. A few of the spaces (auditorium, cafeteria, and gymnasium) have exposed structural system. Overall the ceilings appear to be in good condition. with no signs of water damage at the time of the visit.

<i>Specific Issues</i>	<i>Recommendations</i>
None	Continue maintenance and replacement of ceiling tiles

DOORS, FRAMES & HARDWARE

Interior doors are a mix of institutional grade curtainwall / storefront glazed aluminum systems, solid wood and hollow metal (HM) in HM frames. The door hardware is in good condition and functions properly where tested. Doors and door hardware appear compliant with ADA / MAAB requirements.

<i>Specific Issues</i>	<i>Recommendations</i>
None	Continue maintenance of doors and hardware

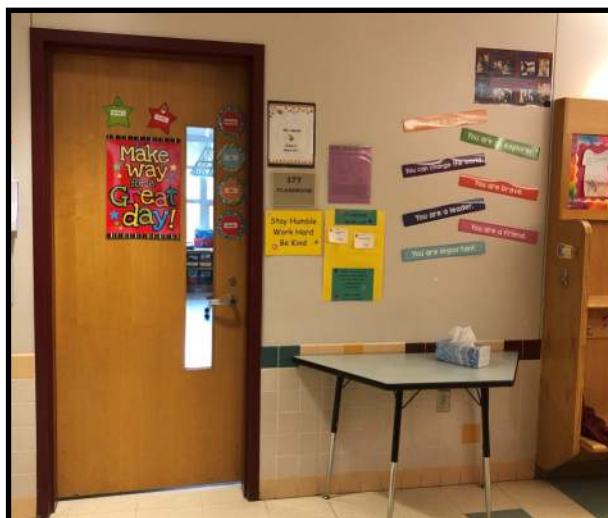


Image 21: Typical classroom door and frame



Image 22: Typical solid WD door and HM frame



Image 15: ACT ceiling with GYP. Soffits



Image 16: Typical ACT ceiling



Image 17: Exposed structural system



Image 18: Main corridor gypsum ceiling



Image 19: Typical classroom ceiling



Image 20: Typical exterior and corridor doors

WINDOWS

Throughout the school views have been provided between spaces with clear glass in storefront metal frames. This includes glazing between the corridor and community room (Image 23), cafeteria, library, and gymnasium (Image 24). Sidelights around the corridor doors provide a more open feeling in the corridors and sidelights adjacent to classroom and office doors (Image 25) help to connect these spaces to the corridors. These windows and frames are in good condition.

Additionally, a clearstory area (Image 18) and skylight (Image 26) help to bring daylight into the center of the building. No leaks were observed at the time of the visit

<i>Specific Issues</i>	<i>Recommendations</i>
None	

BUILT-IN FURNISHINGS & EQUIPMENT

Cubbies are located in corridors and are in good condition (Image 27). Classrooms have built-in shelving with laminated tops along the window walls. These are in good condition.

Library furnishings and shelving are in good condition. The entrance lobby includes a large built-in administration desk; with the exception of the previously noted condition of the base this desk is in good condition.

Kitchen cabinets and equipment are included in the teacher's work room; these are in good condition and appear to have been recently upgraded.

Most multi-user restrooms have partitions that are in fair condition (Image 29) .

<i>Specific Issues</i>	<i>Recommendations</i>
Student cubbies do not provide dividers between students belongings—this should be reviewed for health reasons.	Consider adding dividers between student belongings to reduce the transfer of lice and other health related issues



Image 23: Views into the community room



Image 24: View into gym



Image 25: Sidelight into office space



Image 26: Skylight



Image 27: Student cubbies



Image 28: Teacher work room kitchenette

SECURITY

The main entrance is locked throughout the day with an AI Phone –Camera / Electronic door opener to control access to the building. The front desk can visibly see visitors at the door and access to the school is controlled within the vestibule.

<i>Specific Issues</i>	<i>Recommendations</i>
None	

FUNCTIONAL USE OF SPACE

It appears that small groups and one on one tutorial sessions occur in the corridors. This is an indication that special education teaching spaces are missing or not located within the academic wing of the school.

<i>Specific Issues</i>	<i>Recommendations</i>
Teaching spaces in the corridors	Review the educational delivery program and space needs. Consider the addition of modular classrooms or reorganization of spaces to provide the proper learning environments for students.

OTHER

The school is equipped with an elevator that serves all levels. The elevator appeared to be in good working condition during the site visit.



Image 29: Restroom partitions



Image 30: Teaching spaces in corridor



Image 31: Student learning area in corridor



Image 32: Teaching area in stairwell



Image 33: Elevator

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MECHANICAL ASSESSMENT

GENERAL BUILDING INFORMATION

In general the mechanical systems at the Broadmeadow School are in good to fair condition. Many parts of the system have surpassed their life expectancy and will become more difficult and costly to repair over time. Of particular concern is the report of mold in the IT department, located on the lower level. This space was previously a storage area. The space does not have windows or other natural ventilation and appears to have limited HVAC. Continued use of this space may require additional analysis of the heating and ventilation system in this area.

HEATING SYSTEM

The building heating plant consists of two (2) natural gas-fired “Weil-McLain” model 1388 hot water boilers with Powerflame model WCR3-G-25 modulating burners (Image 1). The boilers each have a max. input of 4113 MBH and were installed in 2003 when the building was newly constructed. A separate stainless steel vent system with barometric dampers transfers the boiler flue gasses from each boiler up through the roof directly above the mechanical room (Image 2). Exterior wall louvers are ducted to terminate high and low within the space to provide combustion air to the boilers and hot water heater (Image 3). An inline fan is mounted high within the boiler room and ducted to an exterior wall louver for cooling; make-up air comes from an adjacent exterior wall louver with a motorized damper.

Two (2) 10 HP pad-mounted pumps circulate water through the building to terminal heating and air-handling units; each pump is provided with an “ABB” VFD for speed modulation and a vibration-isolation pad including springs (Image 4). Building terminal heating units consist of cabinet hot water unit heaters in the stairways and vestibules, propeller-type hot water unit heaters in the mechanical room and electric unit heaters in the main electric room and the generator room (Image 5).

Perimeter baseboard fin-tube radiators are provided at the majority of exterior walls as the primary heat source for regularly occupied areas.

The majority of hot water piping insulation is in good condition and includes PVC covers at all fittings.

It has been noted that the IT department, located in the former storage area on the lowest level, has limited heating. This condition should be specifically analyzed for this space and occupant load.

<i>Specific Issues</i>	<i>Recommendations</i>
The electric unit heaters have surpassed their life expectancy of 13 years.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain/ replace as necessary.
The hot water unit heaters, base-mounted pumps, and indoor air handler are approaching their 20 year life expectancy.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain as necessary.
Limited heating supply in the current IT department area	Additional assessment of the existing HVAC conditions specific to these spaces and their use is required



Image 1:



Image 2:



Image 3:



Image 4:



Image 5:



Image 6:

VENTILATION SYSTEM

Ventilation for the building spaces is provided by indoor and roof-mounted air-handling units manufactured by “McQuay”. Two (2) high-space mounted indoor air handling units with hot water coils provide heating and ventilation to the Gymnasium space; space pressurization is maintained by two (2) roof-mounted exhaust fans.

Four (4) gas-fired packaged DX roof-mounted air-handling units provide cooling, heating, and ventilation to the classrooms, cafeteria, admin/ nurses area, media center, and performing arts center (Image 6). The Cafeteria and Performing arts center are each provided with a dedicated constant volume unit, model RPS 050, with exposed duct distribution systems hung high within the space (Image 7).

The remaining two (2) roof-mounted air-handling units, model RPS 090, both include variable air volume boxes in the supply air duct systems that vary airflow to areas of the building for individual space temperature and CO2 control.

Toilet rooms are provided with general exhaust grilles connected to roof-mounted exhaust fans and transfer grilles communicating with adjacent corridors for make-up air.

The Kitchen is provided with a range hood including cleanable grease filters and a roof exhaust fan (Image 8). Make-up air for the range exhaust hood is pulled through the server from the cafeteria when the hood is in use.

The indoor generator is contained within a dedicated room adjacent to the mechanical room; this generator engine-cooling fan is ducted to an exterior wall louver directly behind the generator and adjacent intake louvers with a motorized control dampers provides make-up air to the space (Image 9).

The main electric room includes a roof-mounted fan interlocked with a space temperature sensor for cooling of the space; make-up air for this system is transferred from the adjacent mechanical room.

It has been noted that the IT department, located in the former storage area on the lowest level, has limited ventilation. This condition should be specifically analyzed for this space and occupant load.

<i>Specific Issues</i>	<i>Recommendations</i>
All packaged roof-mounted air-handling units have surpassed their expected service lives of 15 years.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain/ replace as necessary.
All indoor air-handling units are approaching their expected service lives of 20 years.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain as necessary.
Limited ventilation in the current IT department area	Additional assessment of the existing HVAC conditions specific to these spaces and their use is required



Image 7:



Image 8:



Image 9:



Image 10:

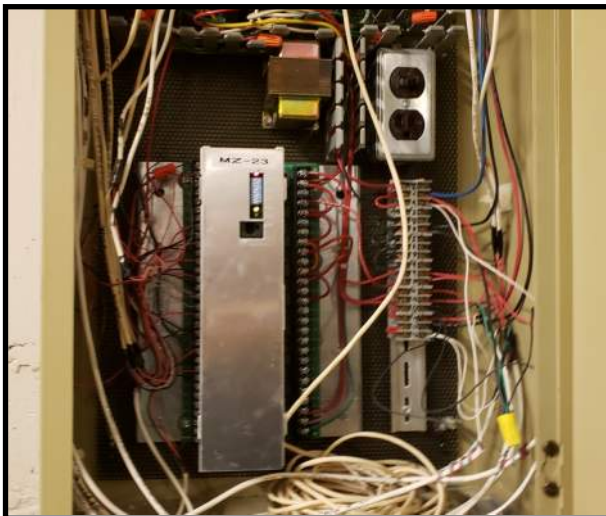


Image 11:

COOLING SYSTEM

The building is not provided with a central cooling system. A dedicated “Daikin” split dx cooling system with roof-mounted condenser is provided for the Head end room (Image 10). Each of the four (4) packaged RTU’s provides cooling to the spaces served.

<i>Specific Issues</i>	<i>Recommendations</i>
The Split systems appear to be in poor condition and have surpassed their expected service lives of 15 years.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain/ replace as necessary.
IT area requires dedicated cooling	Access the existing HVAC conditions specific to these

CONTROLS

The building’s HVAC systems are monitored and controlled by a direct digital central building management system manufactured by “Invensys” and installed by “ENE Systems”. The main automatic temperature control (ATC) panel is located in the main mechanical room with the boiler plant (Image 11).

Blank-plate temperature sensors are located in each space; these do not offer adjustment by the space occupants other than temporary occupancy over-ride, but adjustments of set points may be made through the central control system at a front end workstation.

Large spaces such as the performing arts center, the cafeteria, and the gymnasium are also provided with CO2 space sensors for demand control ventilation capabilities. All control components and systems appear to be in good working order.

Additional note provided by the Building Design & Construction Department: *The Building Maintenance Department is considering replacing / upgrading the existing controls system to the StruxureWare System, similar to the other buildings, in the town when replacement of the AHU’s occurs. The Legacy system will likely not be upgradable to serve the new units. The cost of the controls upgrade should be integrated into the RTU upgrade.*

<i>Specific Issues</i>	<i>Recommendations</i>
None	None

ELECTRICAL ASSESSMENT

GENERAL BUILDING INFORMATION

The Broadmeadow Elementary School was originally constructed in 1951 with extensive renovations conducted in 2003. The school service is a 2000 Amp, 480Y/208V, 3-phase, 4-wire service and is fed from a pad mounted transformer located near the main parking lot. Secondary feeders come in underground to the electric switchgear located in the Main Electric Room on the lower level.

Equipment is in excellent condition. The emergency generator is located in the Emergency Electric Room on the lower level and emergency panels are located within this room.

Lighting for the school consists of direct/indirect pendant fixtures in classrooms, indirect lighting and wall wash fluorescent fixtures in corridors, and pendant direct/indirect fixtures in offices. Exit signs appear in appropriate locations and emergency lighting is powered via the generator in the Emergency Electric Room.

The fire alarm system control panel is in excellent condition, and located in the Main Electric Room.

POWER DISTRIBUTION SYSTEM

The schools 2000A, 480Y/208V, 3-phase, 4-wire secondary service comes underground from a utility transformer located adjacent to the parking lot, and terminates at the switchgear located in the lower level electric room.

Switchgear and panels are all manufactured by Siemens and are in excellent condition. All panels are marked, directories filled out, and switchgear breakers labeled.

Emergency power is provided by a 150KW Kohler natural gas generator located in the Emergency Electrical Room located on the lower level. Life safety and optional standby panels are located in this room along with an automatic transfer switch. While not acceptable by current code, this arrangement of emergency panels was allowed at time of construction.

<i>Specific Issues</i>	<i>Recommendations</i>
Insufficient quantity of receptacles throughout the classrooms and in some cases, providing tripping hazards. (Image 1) (Image 2) (Image 3)	Provide more receptacles in classrooms.
Some classrooms have surface mounted dual-channel wiremold. (Image 1)	Provide recessed receptacles where able.
Life safety panels (panels dealing with emergency lighting only), life safety transfer switch, or separate emergency lighting panels are not in dedicated 2-hour rated rooms, per current code. (Image 4) (Image 5) (Image 6)	While designed to code at the time of construction, this arrangement does not meet current code. A new 2-hour rated life safety electrical closet is needed, to meet current code, which would house life safety lighting panels and new life safety transfer switch.
Panels PP1 and PP2 do not have the code required unobstructed working clearances. (Image 7)	Remove any obstructions in front of panels.
Miscellaneous boxes were being stored in the main electric room. (Image 8)	Remove stored materials.

INTERIOR LIGHTING

Lighting in classrooms consists of rows of fluorescent direct/indirect fixtures with baffled housings. Corridors are lit via a mixture of downlights, indirect cove lighting, recessed 2'x4' troffers, linear wall washers, and track lighting. Offices have pendant fluorescent direct/indirect linear fixtures with either perforated or baffled housings.



Image 1:



Image 2:



Image 3:



Image 4:

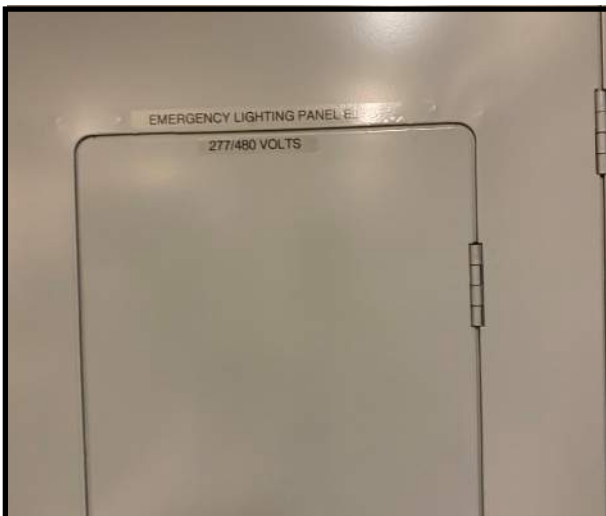


Image 5:



Image 6:

Exit signs are in appropriate places, though some showed some wear. Exterior lighting is provided by pole mounted lighting and building mounted lighting.

All fixtures throughout are in good condition and lighting levels are appropriate for respective work spaces.

<i>Specific Issues</i>	<i>Recommendations</i>
Lighting levels are adequate for classrooms and offices. Fixtures look to be in good condition but the fixtures are inefficient fluorescent lamps. (Image 9) (Image 10) (Image 11) (Image 12) (Image 13)	Lighting throughout the building should be upgraded to energy efficient LED lighting
Lighting controls are provided by line voltage occupancy sensors and toggle switches. There are no photo sensors, dimming switches or centralized controls. (Image 14) (Image 15) (Image 16)	Provide an automatic lighting control system(ALCS) with vacancy and photo sensors, dimming controls, and centralized management
Some exit signs are nearing the end of their serviceable life. (Image 17)	Replace older exit signs with new LED exit signs
Exterior lighting pole mounted fixtures and building mounted sconces are in very good condition and appear appropriately spaced in walk-ways and parking areas. At time of visit it was impossible to determine	Review lamping type for all exterior lighting fixtures and provide new energy efficient LED fixtures if needed.

FIRE ALARM SYSTEM

The fire alarm system is an Edwards EST2 system with microphone module for fire department, and is in excellent condition.

The FACP is located in the main electric room while a remote annunciator is located at the main vestibule, but does not have a microphone module.

Fire alarm speaker/strobes, strobes, and smoke detectors are in very good condition. A Knox Box, red beacon, and masterbox are provided on the exterior of the building.

<i>Specific Issues</i>	<i>Recommendations</i>
Fire alarm system is not compliant with current code, as it is not equipped with voice evacuation.	Although the system was compliant at the time of installation, any major renovation or alteration will result in the requirement of replacing the fire alarm system.



Image 7:



Image 8:



Image 9:



Image 10:



Image 11:



Image 12:

GENERAL MISCELLANEOUS

The facility does not have a lightning protection system. The facility does not have a bi-directional system.

<i>Specific Issues</i>	<i>Recommendations</i>
There is no BDA system present in the building, although this is not a requirement for existing buildings, the fire dept. may require this to improve safety.	Contract with a Radio systems vendor on the state contract to determine if the building requires a BDA system.



Image 19:



Image 20:



Image 21:



Image 13:



Image 14:

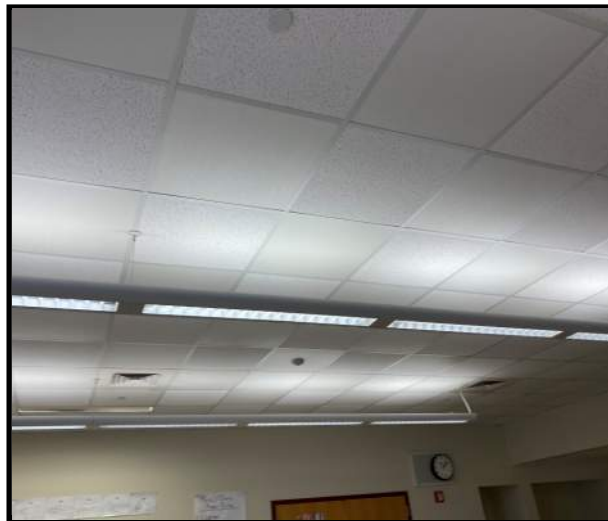


Image 15:

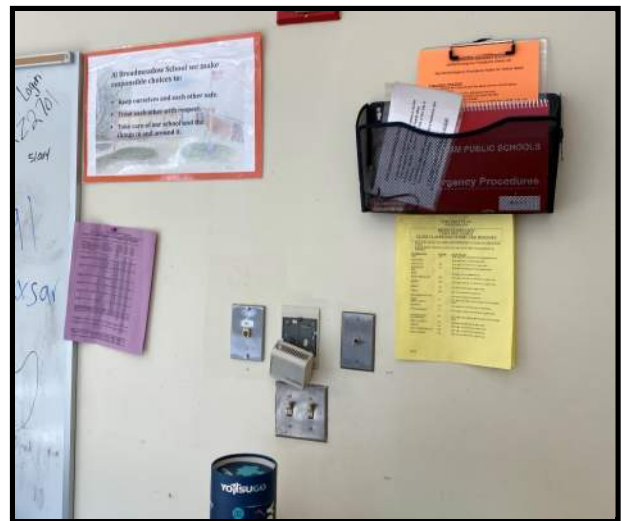


Image 16:



Image 17:



Image 18:

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PLUMBING ASSESSMENT

GENERAL BUILDING INFORMATION

The Broadmeadow Elementary School was constructed in 1951 and was completely renovated in 2003. The majority of the equipment and systems installed appear to have been well maintained and are generally in good condition. Presently, the plumbing systems serving the building are cold water, hot water, sanitary, waste and vent system, kitchen waste and vent system, storm drain piping, and natural gas. Municipal sewer and municipal water service the Building.

The majority of the plumbing systems are original to the construction of the building. The school plumbing systems could continue to be used with maintenance and replacement of failed components.

The plumbing fixtures are in good condition. Current Access Code requires accessible fixtures wherever plumbing is provided. In terms of the water conservation fixtures, their use is governed by the provisions of the Plumbing and Building Code. Essentially, the code does not require these fixtures to be upgraded, but where new fixtures are installed, as may be required by other codes or concerns, the new fixtures need to be water conserving type fixtures.

Cast iron is used for sanitary and storm drainage. Rainwater from roof areas is collected by interior rain leaders which appear to discharge to a below grade site drainage system. Where visible, the cast iron pipe appears to be in good condition. Smaller pipe sizes appear to be copper. In general, the drainage piping can be reused where adequately sized for the intended new use.

Domestic water piping is copper with soldered fittings and is in good condition. The domestic water piping is insulated, labeled and all of the valves are tagged.

PLUMBING FIXTURES

The water closets are predominately wall hung vitreous china with manually operated flush valves (Image 1).

Urinals are wall hung vitreous china with manually operated flush valves (Image 2).

Lavatories are wall hung vitreous china. The majority of lavatories have been fitted with metering faucets on 4 inch centers. Accessible lavatories include protective insulation on p-trap, stops and supplies (Image 3).

Electric water coolers are recessed, wall hung, accessible with in-wall chiller (Image 4).

Janitor's sinks are generally terrazzo floor receptors. Faucets are equipped with vacuum breakers.

Classroom sinks are stainless steel, drop-in type with cold and hot water faucets. Faucets are equipped with lever handles on 4 inch centers. Classroom sinks also include a bubbler (Image 5).

The Mechanical Room contains an emergency shower/eye wash fixture fed by the cold water system; water is not tepid.

Kitchen area fixtures are in good condition. The pot washing sink is fitted with a grease interceptor in the floor (Image 6).

<i>Specific Issues</i>	<i>Recommendations</i>
Not all fixtures are water conserving type.	Consider replacing toilet fixtures with high efficient, low flow fixtures, to increase water savings.

DOMESTIC WATER SYSTEM

The main domestic water service is located in the Ground Floor Mechanical Room. The service is 4" in size and includes a 4" meter (Image 7). The main domestic cold-water distribution is 4" in size. The majority of the domestic distribution piping is located in the ceiling of the ground floor throughout the facility.

Piping, where exposed, appears to be copper with sweat joints. The domestic water piping is insulated and labeled including direction of flow. Ball valves are utilized for isolation purposes and are tagged for identification corresponding with valve tag chart posted in Mechanical Room.



Image 1:



Image 2:



Image 3:



Image 4:



Image 5:



Image 6:

Domestic hot water in the building is generated through (2) two high-efficiency, gas-fired storage type water heaters (Image 8). The hot water systems are recirculated (Image 9). There are thermostatic mixing valves on the systems to prevent scalding (Image 10). Each water heater has a natural gas input of 300,000 BTUH and 100 gallon storage capacity. Water heaters are relatively new and in good condition.

A cold water make-up line for boilers includes a reduced pressure backflow preventer (Image 11).

Wall hydrants with vacuum breakers are provided around the building's perimeter (Image 12).

<i>Specific Issues</i>	<i>Recommendations</i>
None	None

NATURAL GAS SYSTEMS

An elevated pressure natural gas service is supplied to the building. The exterior gas service includes a pressure regulator and gas meter at exterior wall (Image 13). Natural gas is distributed throughout the building from this location to the boilers, rooftop heating equipment, domestic water heaters, kitchen equipment and gas emergency generator (Image 14).

Gas piping is black steel with a combination of screwed and welded joints and fittings depending on the size of the pipe.

Gas piping on the roof is painted to prevent rust from forming. Kitchen supply is equipped with an automatic shutoff valve.

<i>Specific Issues</i>	<i>Recommendations</i>
None	None



Image 7:



Image 8:



Image 9:



Image 10:



Image 11:



Image 12:

DRAINAGE SYSTEMS

Cast iron is used for sanitary and storm drainage. Where visible, the cast iron pipe appears to be in good condition. Smaller pipe sizes appear to be copper (Image 15).

In general, the cast iron drainage piping can be reused even in a major renovation where adequately sized for the intended new use.

The pot washing sink is fitted with a grease interceptor in the floor (Image 6). The Kitchen waste is directed to an exterior grease trap.

Roof drains are located throughout flat roof areas. The horizontal storm piping which is collecting rain-water from roof drains is insulated. In addition to an interior roof drainage system, some roof drainage is being directed by gutters and downspouts to the site storm system by downspout boots (Image 16).

<i>Specific Issues</i>	<i>Recommendations</i>
None	None



Image 13:



Image 14:



Image 15:



Image 16:

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FIRE PROTECTION ASSESSMENT

GENERAL BUILDING INFORMATION

The Broadmeadow Elementary School was constructed in 1951 and was fully renovated in 2003. The school is fully protected by an automatic sprinkler system.

The School is 102,599 square feet. The majority of the equipment and systems installed are relatively new, appear to have been well maintained and are generally in good condition.

EXISTING CONDITION

There is a 6" fire water service that enters the Building in the Lower Level Mechanical Room on the Lower Floor. This fire service reduces to serve a 4" Ames double check valve assembly with 4" wet alarm valve (Image 1) and wall mounted Storz Fire Department connection (Image 2). The sprinkler main distributes as a 4" after the alarm check valve. The system provides sprinkler protection to the entire School building.

The School is isolated by (2) two zone control valve assemblies, located in the Lower Level Mechanical Room on the Ground Level. Each of the (2) two floors, Lower and Upper, are isolated.

Fire Hose Cabinets are provided in the building's corridors and on the Stage.

In areas of the school with no ceilings, sprinkler protection is provided by quick response upright sprinkler heads and sidewall sprinkler heads (Image 3). In locations where there is potential of damage to the sprinkler heads by a foreign object, sprinkler guards are provided. (Image 4). In areas of the school with ceilings, sprinkler protection is provided by quick response concealed pendent sprinkler heads (Image 5).

<i>Specific Issues</i>	<i>Recommendations</i>
There are no existing issues.	In the event of a renovation or addition, the existing automatic sprinkler system shall be modified or extended to suit the proposed work.



Image 1:



Image 2:



Image 3:

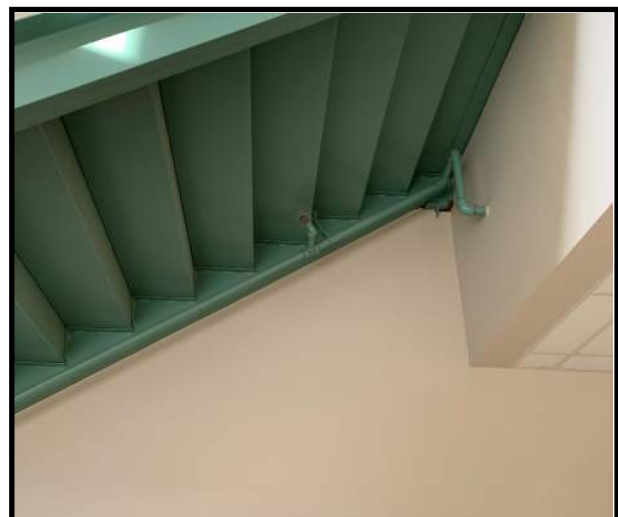


Image 4:



Image 5:

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CAPITAL IMPROVEMENT PLAN

BROADMEADOW ELEMENTARY SCHOOL									Health, Safety & Welfare	Code Compliance	Functional Use of Building or Site	Handicap Accessibility	Extending the Life of the Building (Maintenance)	Energy Efficiency / Energy, Water Saving	Hazardous Material Abatement	Quantity	Cost of Repair / Replacement (x\$)	Designer / Pricing Contingency (15%)	Soft Cost (20%)	Estimated Project Cost (2020)	High Priority (1-3 yrs)	Medium Priority (4-6 yrs)	Low Priority (7-10 yrs)	On Going Maintenance	High Priority (1-3 yrs)	Medium Priority (4-6 yrs)	Low Priority (7-10 yrs) or under full renovation project	On Going Maintenance	Notes						
102,599 GSF																																			
1 Site & Civil																																			
1.01	Mill and overlay pavement where cracking has occurred												X		X			entire parking and driveway	\$138,000	\$20,700	\$31,740	\$190,440		X				\$190,440							
1.02	Increases pathways around the building to support emergency vehicles										X		X				pathways around east side of building	\$34,500	\$5,175	\$7,935	\$47,610	X					\$47,610								
1.03	Provide new drainage structures and pipe including water quality structures, to meet MADEP standards										X	X	X		X		entire site	\$172,500	\$25,875	\$39,675	\$238,050			X					\$238,050						
TOTAL																\$345,000	\$51,780	\$79,350	\$476,100					\$47,610	\$190,440	\$238,050	0		\$476,100						
2 Structural Elements																																			
2.01	Provide a permanent repair for the beams that have been stabilized by shoring posts										X	X		X			beams to the original portion of the building	\$57,500	\$8,625	\$13,225	\$79,350	X					\$79,350								
TOTAL																\$57,500	\$8,625	\$13,225	\$79,350					\$79,350	\$0	\$0	\$0		\$79,350						
3 Exterior Architectural Elements																																			
3.01	Remove loose concrete materials, prep substrate for patching, apply appropriate patching materials & parge as necessary.													X			isolated areas (6" x 12" areas)	\$8,280	\$1,242	\$1,904	\$11,426		X				\$11,426								
3.02	Clean areas of growth on masonry surfaces with appropriate surface wash and seal as needed.												X				isolated areas (1000' x 10' areas)	\$8,625	\$1,294	\$1,984	\$11,903			X				\$11,903							
3.03	Remove loose and broken brick, prepare and make ready hole(s) and install similar infill materials.												X				isolated areas (100' x 8' areas)	\$43,125	\$6,469	\$9,699	\$59,513	X					\$59,513								
3.04	Remove damaged gutter and soffit, replace with new section												X				3 location (see report)	\$11,500	\$1,725	\$2,645	\$15,870	X					\$15,870								
TOTAL																\$71,530	\$10,730	\$16,402	\$98,711					\$75,383	\$11,426	\$0	\$11,903		\$98,711						
4 Interior Architectural Elements																																			
4.01	Replace VCT that is aged and discolored, or cracked at transition areas													X			approx. 1000 sq. ft.	\$13,800	\$2,070	\$3,174	\$19,044		X				\$19,044								
4.02	Clean quarry tile and grout													X			approx. 1000 sq. ft.	\$17,250	\$2,588	\$3,968	\$23,805			X				\$23,805							
4.03	Repaint nosing on steps in each stairwell										X						all stairwells	\$3,450	\$518	\$794	\$4,761	X					\$4,761								
4.04	Clean ceramic tile and grout at base in corridors													X			Along all corridor walls	\$46,000	\$6,900	\$10,580	\$63,480			X				\$63,480							
4.05	Clean wood base of administration desk in lobby													X			Admin desk	\$17,250	\$2,588	\$3,968	\$23,805			X				\$23,805							
4.06	Patch and paint damaged gyp walls in corridors												X				(20) 9'x10' locations	\$17,969	\$2,695	\$4,133	\$24,797	X					\$24,797								
4.07	Install P-Lam walls in multi user toilet rooms (all walls)													X			all multi user restrooms	\$132,480	\$19,872	\$30,470	\$182,822		X				\$182,822								
4.08	Clean brick walls and grout.													X			30' x30'	\$36,225	\$5,434	\$8,332	\$49,991			X				\$49,991							
4.09	Install p-lam dividers between student cubby spaces										X						100 partitions	\$34,500	\$5,175	\$7,935	\$47,610	X					\$47,610								
TOTAL																\$316,804	\$47,639	\$73,852	\$440,315					\$77,168	\$201,866	\$0	\$161,081		\$440,315						
5 Mechanical - HVAC																																			
5.01	Replace electric unit heaters													X	X		25	\$34,500	\$5,175	\$7,935	\$47,610			X				\$47,610							
5.02	Replace hot water unit heaters, base-mounted pumps, and indoor air handlers													X	X		all	\$235,978	\$35,397	\$54,275	\$325,649			X				\$325,649							
5.03	Replace roof mounted air handling units													X	X		all	\$589,944	\$88,492	\$135,687	\$814,123			X				\$814,123							
5.04	Replace indoor air handling units													X	X		all	\$235,978	\$35,397	\$54,275	\$325,649			X				\$325,649							
5.05	Replace split systems													X	X		all	\$57,500	\$8,625	\$13,225	\$79,350			X				\$79,350							
TOTAL																\$1,153,900	\$173,086	\$265,397	\$1,592,382					\$0	\$0	\$1,592,382	\$0		\$1,592,382						
6 Electrical																																			
6.01	Install 4 additional outlets in each classroom										X	X	X		X		4 / classroom	\$31,050	\$4,658	\$7,142	\$42,849			X				\$42,849							
6.02	Provide recessed receptacles where surface mounted dual channel wire mold is existing										X	X	X		X			\$11,500	\$1,725	\$2,645	\$15,870			X				\$15,870							
6.03	Construct a 2-hour rated electrical closet to house life safety lighting panels and new life safety transfer switch										X	X	X		X		1 electrical closets	\$17,250	\$2,588	\$3,968	\$23,805			X				\$23,805							
6.04	Develop storage space to store items that are currently located in front of the panels										X	X	X		X		storage area and 12' of shelving	\$5,750	\$863	\$1,323	\$7,935			X				\$7,935							
6.05	Upgrade lighting throughout the building to energy efficient LED lighting												X		X	X	entire building	\$825,922	\$123,888	\$189,362	\$1,139,772			X				\$1,139,772							
6.06	Provide an automatic lighting control system(ALCS) with vacancy and photo sensors, dimming controls, and centralized management												X		X	X	entire building	\$117,989	\$17,698	\$27,137	\$162,825			X				\$162,825							
6.07	Replace older exit signs with new LED exit signs												X		X	X	entire building	\$2,875	\$431	\$661	\$3,968			X				\$3,968							
6.08	Provide new energy efficient LED exterior fixtures.												X		X	X	exterior building area	\$6,900	\$1,035	\$1,587	\$9,522			X				\$9,522							
6.09	Replace fire alarm system											X					exterior building area	\$412,961	\$61,944	\$94,981	\$569,886			X				\$569,886							
TOTAL																\$1,432,197	\$214,830	\$329,405	\$1,976,432					\$0	\$0	\$1,976,432	\$0		\$1,976,432						
7 Plumbing																																			
7.01	Replace non water conserving fixtures with high efficient low flow fixtures														X		50% of fixtures	\$52,613	\$7,892	\$12,101	\$72,605							\$72,605							

CAPITAL IMPROVEMENT PLAN

	BROADMEADOW ELEMENTARY SCHOOL	Health, Safety & Welfare	Code Compliance	Functional Use of Building or Site	Handicap Accessibility	Extending the Life of the Building (Maintenance)	Energy Efficiency / Energy, Water Saving	Hazardous Material Abatement	Quantity	Cost of Repair / Replacement (xx)	Designer / Pricing Contingency (15%)	Soft Cost (20%)	Estimated Project Cost (2020)	High Priority (1-3 yrs)	Medium Priority (4-6 yrs)	Low Priority (7 10 yrs)	On Going Maintenance	High Priority (1-3 yrs)	Medium Priority (4-6 yrs)	Low Priority (7-10 yrs) or under full renovation project	On Going Maintenance	Notes
	TOTAL									\$12,613	\$7,892	\$12,103	\$72,605					\$0	\$0	\$72,605	\$0	\$72,605
8	Fire Protection																					
	TOTAL																	\$0	\$0	\$0	\$0	\$0
9	Hazardous Material																					
	HAZMAT ALLOWANCE											\$0	\$0								\$0	
										\$3,431,662.68	\$514,749.40	\$789,282.42	\$4,735,694.49					\$279,510.38	\$403,732.80	\$3,879,468.32	\$172,983.00	
										\$3,946,412	\$38.46											
GENERAL NOTES																						

1. Refer to each section of the Report for more detailed information. Before moving forward with a specific project, a detailed review of the scope of work and a re-assessment of the cost estimate for that scope should be performed.

2. Some items should be completed in combination with other items. Some of these suggestions may be noted above. We recommend that once a scope of work is desired to be pursued, a mini study should be done to confirm which work should be done together. See the next general note below for additional information.

3. Due to the conceptual nature of these recommendations and estimates and the complexity of existing conditions, several cautions may be provided to achieve the end result. Existing conditions in some areas may limit the ability to fully implement the proposed scope of work. Part or all of this work may trigger other renovation requirements related to code, seismic, sprinklers or handicap accessibility. Once a determination is made to move forward with a specific improvement line item, a mini study specific to the scope of work should be done to confirm the scope of work, prepare sketches as necessary and prepare a refined cost estimate.