CONTEXT STUDIOS LLC
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ph. 508_400_3284

20 April 2016

Existing Building Analysis for existing structure:

Lake Street School
Spencer Massachusetts

Intent of Report and brief Building Summary:

This report is an existing building analysis for the structure located at 17 Lake Street and 42 Highland street in Spencer Massachusetts. The intent of the report is to consider options for the future of the structure. The building, now vacant, has been a school since it was first constructed in 1956. Originally designed as a middle school, during the last years of its occupancy, it was primarily used for elementary age students including kindergarten until it was abandoned in 2015 and the students relocated.

The original structure is a brick veneer on steel frame and ribbon windows with a flat roof. It contained 12 classrooms with spaces converted from their original design into libraries and other uses such as in the case of the shop and locker areas. Additional spaces included an administration area, kitchen with other support areas and a large multi-purpose room that served as a cafeteria, an auditorium and a gymnasium. In 1977 an addition was constructed that added 11 classrooms with accessible bathrooms. In addition to the classrooms, the 1977 alterations included additional area at the kitchen for walk in freezers and an enlargement of the cafeteria / gym multipurpose room. The addition has similar brick veneer with a flat roof.

Other upgrades over the years were minimal and included modifications to existing bathrooms to meet a minimum for accessibility, a new roof approximately 15 years ago (which is at the limit of most manufacturer's standard warranties now), limited window replacement at the original structure and the addition of storm units to enhance the remaining original single pane units not replaced. An emergency generator system that sits outside adjacent to the walk in freezers was also added.

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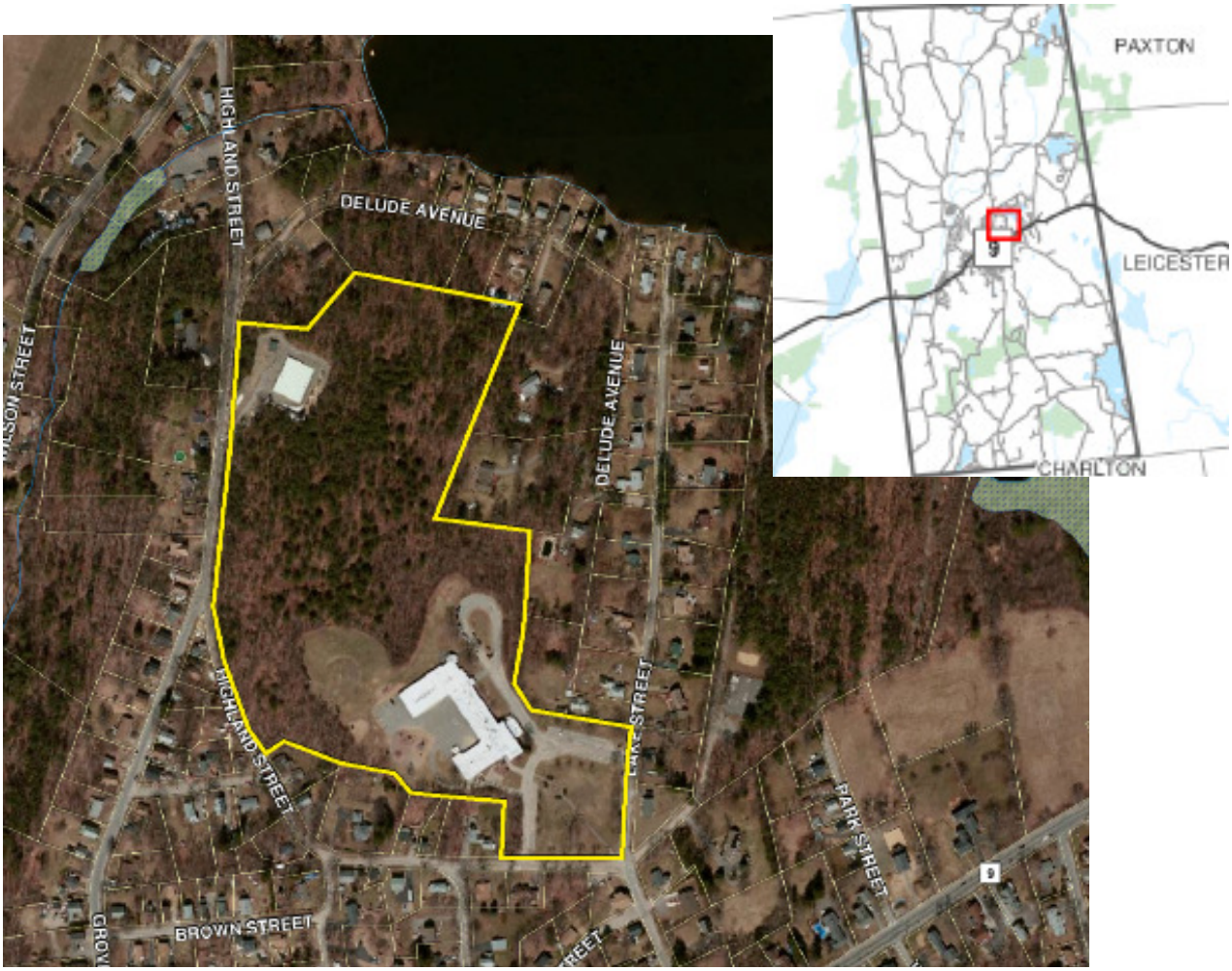
The school is approximately 44,770 gross square feet (from Town of Spencer property card), sits on a site that is close to 23.4 acres in size and is nestled within a residential area. The site has ample recreational areas including playground equipment and a ball field. There are paved parking areas and a scattering of small outbuildings. There does exist a 10,000 -gallon underground storage tank for the structure's fuel oil. The building is moderately accessible although the grade leading to the entrance at the addition appears slightly steeper than desired. Refer to general building code evaluation (Attachment A) at the end of this report for additional information.



Interior Environment Including Air Quality and Hazardous Materials:

Each of the areas of the school, the original structure and the addition, are representative of their respective time periods of construction in terms of layout, materials and infrastructure. Glazed ceramic block is the predominate wall surface in the entire school while there is a mix of floor and ceiling finishes depending on which area of the school. In the 1956 original structure, there appears to be VAT flooring in most areas and hard (plastered) ceilings, some with the traditional "popcorn" finish that may contain hazardous materials. In the 1977 addition, VCT is the major flooring material and acoustic tile ceiling

panels and grids is the significant ceiling material (though there is a hard ceiling in the restrooms and other smaller spaces of the addition).

While attempts were made to provide an accessible environment, there are areas which are not completely available for use by all due to changes in levels with only stairs leading into them as in the case of the art rooms. As mentioned previously, there are spaces in the existing building that were modified from their original purpose to fulfill new roles through time. Most significant of these is the end shop area which resulted in the need for a wheel chair lift to be installed. Another lift was installed during the school's previous accessibility upgrades that provides access from the lower level to the main and the stage in the multi-purpose room. Both lifts appear to operate, though they are showing signs of their age (the larger lift enclosure was not accessible during the time of this visit). Accessible bathrooms are provided for the students in the 1977 addition and the original bathrooms were crudely modified to provide an accessible stall and sink in each of the boy's and girl's rooms, additionally there is a unisex accessible toilet that was created in the original building. There are numerous sinks located in several classrooms, not all of which are accessible or are protected as required.

In general, the interior finishes have held up fairly well considering the age and limited maintenance effort over the years, though are dated and exhibit signs of their age. There have been a few roof leaks over the years that can be identified by the repaired finishes in some areas but nothing of great significance.

There are areas that exhibit cracking in the finishes as well as the substrate and potentially structure below. In addition to an area in a corridor, there appears to have been significant settling along the line of the extension of the multi-purpose room with cracking evident across the entire line of the addition at the floor, walls and ceiling finish. ***Please refer to detailed structural information contained within this report (Attachment C).***

Air Quality

In a report authored by the Massachusetts Department of Public Health dated March 2014 and provided by the Town of Spencer, air quality in the school had been previously identified as poor in many areas including high levels of carbon dioxide in the cafeteria, teacher's lunchroom, library, counseling and more than a few classrooms. The high levels of carbon dioxide can be mostly attributed to poor ventilation. At the time of this visit, external air registers on a good deal of the unit ventilators had been blocked or covered and the roof top exhaust fans were not operational. Additionally, the equipment for the most part is original to each of the areas of construction (1956 & 1977) and as such, many were not operating adequately and have exceeded their life expectancy. The report identifies other areas found to be deficient such as relative humidity, microbial concerns due to moisture content, and conditions optimal for mold propagation. At the time of the visit for this report, extremely strong exhaust odor from the boiler was detected in areas around the boiler though high levels of carbon monoxide were not found to be present two years ago. It is presumed since the school has been uninhabited, the door to the boiler room being left open is contributing to this occurrence but if the boiler plant continues to operate in the future, this should be evaluated.

Hazardous Materials

While actual testing of samples is beyond the scope of this report, there are materials in the building that are commonly known to possess carcinogens or other hazardous materials based on experience and historical precedents. These materials include but are not limited to the VAT tile located in numerous areas of the original building constructed in 1956. Additionally, in the older section, it is likely that asbestos is contained in the window glazing of the windows that were not replaced but were covered with storm windows which is the majority of the windows. Hazardous materials are most likely also found in some of the plaster finishes used in that portion of the building as well. In the boiler room, it appears as much of the pipe wrapping work at the elbows possibly known to contain asbestos have already been mitigated, but that is unclear. Additionally, the boilers themselves also contain hazardous fibers in the internal chambers of the units. At the time of the visit, none of the potentially compromised materials were friable. Responsible removal is always recommended, but depending on the level of potential renovations, encapsulation is also an option.

Life Safety

The school is currently lacking in certain life safety systems including incomplete fire detection, incomplete signaling and a complete lack of fire suppression (sprinklers). The building is currently not sprinkled but does contain limited fire detection and signaling systems in the form of smoke detectors and horn / strobes in some areas but not in all required locations. Sprinklers are required for a building of this size and former use group. ***Please refer to detailed electrical and fire protection information contained within this report (Attachments D & E).*** Egress components appear to be of the size and number required, though not all egress routes are accessible which would be required by today's codes. There does exist illuminated exit signs (though not all meet today's requirements) and portable fire extinguishers.

Building Systems / Energy Conservation

Located in Climate Zone 5A and constructed many years ago, the building does not meet today's standards for energy efficiency in terms of overall thermal performance, insufficient U-values at fenestrations, and air leakage**.** Additionally, the building has most of its original systems including heating, ventilation, plumbing, electrical and communications which are not consistent with today's standards and are not energy efficient, prone to failure and difficult to repair and/or obtain parts for as needed. ***Please refer to detailed mechanical, plumbing and electrical information contained within this report (Attachments F, G & D).*** While no coring was performed to determine the thickness of the insulation above the roof deck, it is assumed at only approximately 4" and again, at the end of its life cycle expectancy.

Conclusion

The building is representative of the construction techniques of the period. The majority of the building has held up well over the years but has reached the end of serviceable system life expectancies for most of the building's infrastructure. Systems found to be insufficient or in need of replacement include, but are not limited to the following;

- **life safety components** (sprinklers, addressable fire alarm system & detection devices): All systems need complete upgrades or installation of a new system in its entirety including but not limited to;
    - Sprinklers (fire suppression)
    - Addressable fire alarm, signaling and detection devices
- **Accessibility:** Accessibility upgrades required include but are not limited to;
    - vertical transportation (new/ refurbished lifts or install an elevator),
    - accessible routes including parking/ drop off areas, entry sequences including ramps and doorways and complete horizontal circulation to all spaces.
    - interior environments including allowable reach distances, signage, controls, and access to services
- **Interior environments**: The interior environments are outdated, in need of repair, cleaning and or removal such as in the case of any rugged surface, most of the original dropped acoustical tile ceilings, countertops
- **Electrical Distribution and Wiring:** The entire electrical distribution and wiring for the structure should be removed and replaced with new.
- **Interior, exterior and emergency lighting systems:** All lighting systems should be removed and replaced.
- **Water piping**: All domestic water piping including valves should be removed and replaced.
- **Sanitary, Waste, Vent and Storm Piping**: All sanitary, waste, vent and storm piping should be removed and replaced.
- **Bathroom Fixtures:** All bathroom fixtures should be removed and replaced with water conserving models, mounted at accessible heights**.**
- **Hot Water System:** The entire hot water system should be removed and replaced.
- **Grease Interceptor**: A grease interceptor should be added if required by local sewer department standards.
- **Technology Systems:** Technology systems including CATV, CCTV, sound, data wiring, computer / projector outlets & data ports, intrusion system, card access should be installed.

- **Heating, Ventilation and Cooling Systems:** All heating, ventilation and cooling systems including boilers, unit ventilators, convectors, fin tube and unit heaters should be removed and replaced.
- **Hazardous Materials**: All hazardous materials should be identified and mitigated in an appropriate manner.
- **Building Envelope**: The existing building envelope is in need of repair and major components have reached their life expectancy or are inefficient in terms of energy savings and should be replaced or updated to meet today's energy standards including, but not limited to the following;
    - **Sealants / mortar pointing**: All exterior sealants and masonry mortar joints should be raked and re-installed with appropriate materials.
    - **Windows, doors and other fenestration**: The windows should be replaced in the entirety due to the energy inefficiency and the possibility of hazardous materials being present in the glazing of the older single pane units that were covered in the past with storm windows. Additionally, all entry doors should be reviewed and replaced individually for accessibility, condition and energy compliance.
    - **Roof System**: The existing roof is at or nearing its effective usefulness as a weather protectorate and will need to be replaced. Additionally, the insulation has been compromised over the years by many leaks and does not satisfy current energy codes. The existing system should be removed and a completely new system with proper insulation should be installed

In the absence of an intended use by the Town or a potential large tenant, either of which will need to expend considerable monies to update the facility, it is the opinion of this office and its consultant's that the building should be decommissioned and possibly demolished if not sold off completely if the sale of the property does not inhibit the future needs of the Town, but that is beyond the scope of this report.

Estimated Budgetary Costs

In an effort to provide some basic costs associated with possible future work, we have performed a budgetary design estimate that assumes an attempt will be made to maintain and update the existing building envelope while removing all items indicated in our report as deficient. The end result of the demolition work and envelope restorations would result in a "white box" – a completely refurbished shell including repointed masonry, new windows and new roof. As there is no current plan for future work, design cost estimations are schematic in nature. The estimated cost of the work noted above would be in the range of 2.2 million. Estimated costs to provide various uses in the "white box" may include the following in addition to the 2.2 million for demolition / restoration;

Use Type	Fit-out Costs	Demolition / restoration	Total
• Independent Living Facilities	2.8 million	2.2 million	5 million
• Community Center	3.8 million	2.2 million	6 million
• School	7.6 million	2.2 million	9.8 million

Costs anticipated with the complete removal (demolition) of the building are estimated to cost between $350,000 to $700,000 depending on the amount of hazardous materials and the condition of the underground storage tank among other factors.

Please refer to detailed design estimate information contained within this report (Attachment H).

End of Report

Attachment A: General Building Code Evaluation

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The following report examines requirements for renovated or new work under the current edition of the Massachusetts State Building Code.

Codes in Effect:

780 CMR, Eighth Edition of the Massachusetts State Building Code (including by reference the International Building Codes)
Massachusetts Architectural Access Board (MAAB) and Americans with Disabilities Act guidelines (ADA)
248 CMR, Massachusetts Fuel Gas and Plumbing Code
1993 BOCA Mechanical Code

Use or Occupancy (existing):

Existing Use Group Classification (former as of 2015)**: E – Educational**

Building Description

Total Gross Floor Area = 44,770 sq. ft.
Number of stories above grade = 1

Actual & General Building Limitations:

Actual building footprint (gross square footage): +/- 44,770 SQ. FT.

Height and Area Limitations (Table 503):

Construction type: **Type 3B - unprotected** Use Classification: **E**

Allowed (see below for tabular increases) ***Actual*** (Existing)
3 stories, 25,500 sq. ft. per floor 1 story – 44,770 sq. ft.

Area Modifications: $A_a = \{A_t + [(A_t)(I_f)] + [(A_t)(I_s)]\}$ where:
Aa = Allowable building area per story (square feet).
At = Tabular building area per story in accordance with Table 503 (square feet).
If = Area increase factor due to frontage as calculated in accordance with Section 506.2.
Is = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3.

$A_a = 25{,}500 + [(25{,}500)(1)] + [(25{,}500)(1)]\}$ = **76,500 sq. ft. allowed**

Height increase – not applicable
Fire Resistance Rating Requirements (Table 601)**:**

Construction Type Classification: **Type 3B- Unprotected**

Structural Frame	0 hrs
Bearing Walls	
Exterior	2
Interior	0 hrs
Nonbearing exterior walls and partitions	1 hr.w/ fire separation dist. between 10 and 30 ft. 0 hrs. at distances greater than 30
Nonbearing interior walls and partitions	0 hrs
Floor construction including beams and joists	0 hrs
Roof Construction including beams and joists	0 hrs

All components of the existing appear to meet the above required ratings.

Attachment B: Images

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Cracking at multi-purpose room addition

Wheel chair lifts

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Attachment C: Structural report by Northeastern Engineering

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Structural Engineers & Construction Consultants
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Woburn, MA 01801
www.NortheasternEng.com
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Client:
Context Studios, LLC
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Date: March 4, 2016

Project Name:

Lake Street School – Spencer, Massachusetts

Project Scope:

Structural Engineering Discipline – On Site Observation – General Overall Building Assessment

Northeastern Engineering Corp. (NEC) has conducted a technical review of the existing building as described through general field measurements and engineering interpretations regarding the existing building framing.

Structural Review
The purpose of this section of the report is to broadly describe the existing building structure, comment on the structural integrity of the building and comment on the structural code issues related to any future renovations and expansions.

Basis of the Report
This report is based on visual observations during our site visit during the month of January of 2016. A partial set of original construction documents were obtained prior to the site visit for both the main building, dated 1957, as well as the rear wing addition dated 1977. During our site visit, we did not remove any of the plaster finishes; therefore, our understanding of the structure is limited to the plan documents and visual interpretation of the current building performance. There were no indications that major discrepancies were present between the as-built conditions and the original construction documents on file. If any renovation plans come to fruition it would be required to conduct an in depth survey with selective exploratory demolition to validate the structural framing members currently in place.

Building Description
The original school 1957, is a two-story building with a small boiler room recessed in foundation wall below level 1. The structural system is comprised of metal roof decking and concrete fill over metal decking and all on open web bar joists and steel beams supported on steel framed building columns and assumed conventional spread footings. The newer building, dated 1977 and located at the rear wing, his a one-story building and adjoined to the original main building. The newer addition is similar in construction to the original building, having metal roof decking over open web bar joists, however the gravity support comes from the exterior and interior corridor walls being constructed from concrete load bearing masonry units CMU. The cafeteria / gymnasium / auditorium is a shared space having a two story roof height and an assumed newer building extension of approximately 20’ located towards the front of the school. The foundations are cast-in-place concrete foundations with a concrete slab-on-grade at the 1st floor level. There is a boiler room below the first floor level with cast-in-place reinforced concrete walls. The roof was not accessible at the time of the inspection and its original ballast roof system could not be verified.

Lateral Force Resisting System
There appears to be no deliberately designed lateral force resisting system as part of the original structural design. Currently, lateral loads (wind loads, potential seismic forces) are resisted by the exterior and interior masonry walls. This is fairly typical of school structures built in this time period, as deliberate lateral force resisting systems (i.e. shear walls, brace frames, moment frames) were not addressed by the building code until after the 1970’s.

Existing Conditions

The overall building appears to be in sound structural condition with no substantial structural defects. There are some isolated areas in the masonry where minor cracking and repointing would be addressed as a secondary part of any retro-fit plan. Updated building code articles relative to roof live load capacity would need to be considered given the age of the structures. Currently there is no distress present but the available live load would need to be determined and reviewed against the current building code standards.

Primary Structural Code Issues Related to the Existing Structure

If any repairs, renovations or additions are made to the structure, a check for compliance with the Massachusetts State Building Code (780 CMR, Chapter 34 "Existing Structures") is required. The intent of 780 CMR, Chapter 34 is to permit repairs, alterations, additions and/or a change of use without requiring full compliance with the code for new construction. However, depending on the scope of any proposed renovations, a comprehensive structural analysis may need to be performed to determine the impact on the existing structural system. Due to the fact that the lateral force resisting system of the structure is, by default, the interior and exterior masonry walls, any modifications to them will need to be thoroughly reviewed to determine if seismic upgrades to the lateral system is required as a result of proposed building alterations. If any future additions are planned for this building, they should be seismically isolated from the existing structure.

Summary

The existing structure appears to be in sound condition and is performing satisfactorily. A thorough investigation of the existing structure is required if, by nature of the proposed renovations: 1) The capacity of the lateral force resisting system is decrease a (i.e. reduce the amount of, or configuration of the existing masonry walls; 2) There is an increase the seismic loads on the building (i.e. additional building mass in or on top of the structure, such as mechanical roof top units); 3) There is an increase in the effects of the wind loads on the building (i.e. additional roof top mechanical units/roof screens or other projections collecting wind and transferring additional lateral forces to the existing masonry walls).

This concludes our technical review on this project, if there are any questions please call our office for further assistance.

Sincerely,

Kevin M. Finnegan, P.E.

Northeastern Engineering Corp.

COMMONWEALTH OF MASSACHUSETTS
KEVIN M. FINNEGAN
STRUCTURAL
No. 41289
REGISTERED
PROFESSIONAL ENGINEER

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Attachment D: Electrical report by Garcia Galuska DeSousa Engineers

Lake Street School
Spencer, MA
Existing Conditions Systems Report
J#683 001 00.00
L#511101/Page 1/March 3, 2016

ELECTRICAL

Executive Summary:

The facility is currently vacant. The facility was constructed in 1956. A classroom addition was constructed during 1977. Most of the electrical systems are original to the building and although functioning, have outlived their intended useful life. The facility's electrical power is provided by National Grid and is secondary metered. Other incoming utilities include telephone and cable TV.

The power distribution system is original, Westinghouse for the 1956 building and Federal Pacific for the 1977 building and are in poor condition. The lighting systems are generally original with minor upgrades but overall in fair to poor condition. The fire alarm system is not addressable and detection and notification coverage is inadequate and consists of horns; current code requires voice evacuation for K-12 occupancy. The exterior generator, transfer switch and exterior panelboard are in good condition, however, the interior emergency equipment that it backfeeds is in poor condition and not up to current codes for life safety systems.

The electrical systems for this facility should be replaced under a renovation program.

Existing Conditions:

Power Distribution System

The primary three phase service runs overhead to (3) pole mounted transformers with the utility pole located near the boiler room.

Pole Mounted Transformers

The secondary service runs underground in (2) 4" conduits between the pole and the switchboard in the boiler room. The switchboard is rated at 800 amperes, 120/208V, 3 phase, 4 wire and is located in the boiler room. The switchboard and most panelboards were manufactured by Federal Pacific during the 1977 addition and are in poor condition. Other panelboards are original to the 1956 building and are also in poor condition. Panelboards are located throughout the facility in none electric closets. Switchgear is obsolete and replacement breakers are difficult to obtain.

Switchboard & Distribution Panel

Exposed Secondary Conduits

Motor Controls

The (2) 4" incoming secondary conduits run exposed through the stair platform within the boiler room prior to connecting to the main breaker; code requires minimum 2" concrete cover over conduits.

Most motor starters and disconnect switches are also original and in poor condition.

The switchgear should be replaced under a renovation program.

Emergency Standby System

The facility has a 30kW, 120/208V, 3 phase, 4 wire exterior diesel generator with an integral base mounted fuel tank. The generator has a 2 /12" flue pipe to above the roof line.

Generator

Exterior ATS & Panel

An exterior automatic transfer switch and panelboard and throughout the facility is located outside the boiler room the emergency system backfeeds the existing emergency panels in the boiler room. The generator and ATS were manufactured by Kohler and are in good condition. The generator is undersized for the facility.

The interior emergency equipment in the boiler room is in poor condition and does not meet current codes to service life safety systems which are required to be housed in 2-hour rated rooms.

A generator annunciator is located adjacent to the fire alarm panel.

There are no emergency lights at exterior doors. Most exit signs are not of the LED type. Exit signs in gym/multi-purpose room are locally switched; code requires exit signs to be “ON” during the occupied mode.

Exit Sign

The emergency system should be replaced under a renovation program.

Fire Alarm System

The fire alarm system consists of a Fire-Lite MS-4424, 4 zone, non-addressable control panel located in the boiler room area. The alarm transmission is via a digital communicator to a remote central station.


FACP & Generator Annunciator

Smoke detectors and horn/strobes exist in corridors and stairwells. Classrooms do not have smoke detectors or horn/strobes. Corridor doors have magnetic hold opens. A knox box and flush annunciator are located at the exterior main entrance.

Knox Box & Annunciator

Horn/Strobe

Heat detectors exist in garage, stage, kitchen and boiler room.

The fire alarm system offers inadequate coverage of detection and notification devices for a non-sprinklered building. Current code requires voice evacuation in lieu of horns for K-12 Educational Facilities.

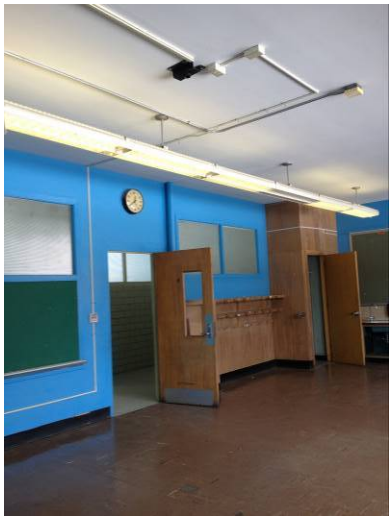
The fire alarm system should be replaced under a renovation program.

Interior Lighting

The corridor lighting consists of 1x4 wraparound fixtures with acrylic lens and T8 lamps. The addition has recessed 2x4 troffers. Corridor lighting is controlled with local switches.

Corridor Lights

Typical classrooms in the 1956 building have two rows of pendant direct/indirect fixtures with steel baffles with (2) T12 lamps. The 1977 addition has recessed 2x4 troffers with T8 lamps. Classrooms have dual switches and occupancy sensors.



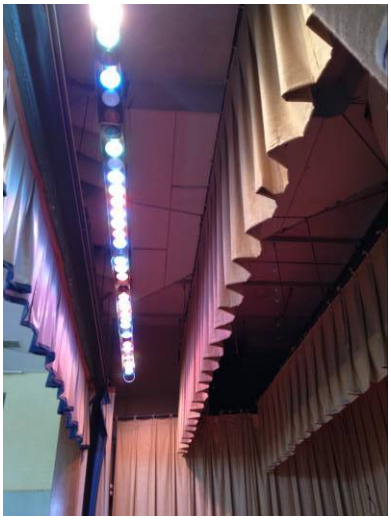
Classroom Lights

Gymatorium Lights

The gymatorium and platform have 18" square recessed HID lensed fixtures retrofitted with compact fluorescent lamps.

The lighting is breaker controlled from a local panel.

The platform has one electric strip with border lights, also breaker controlled.



Stage Lights

While the lighting in the addition is in fair condition, the lights in the original building are generally in poor condition.

Exterior Lighting

The exterior lighting consists of building mounted HID wall packs. There are no pole lights for parking areas.

Wall Pack on Building

Utility pole mounted cobra heads exist for roadways.

Wall sconces over doors have compact fluorescent lamps, some damaged.

Wall Sconce Over Door

Exterior lights should be replaced with LED sources of the cut-off type.

Communications/Miscellaneous

The intercom paging and bell system consist of a Dukane Sixty desk mounted console located in the main office.

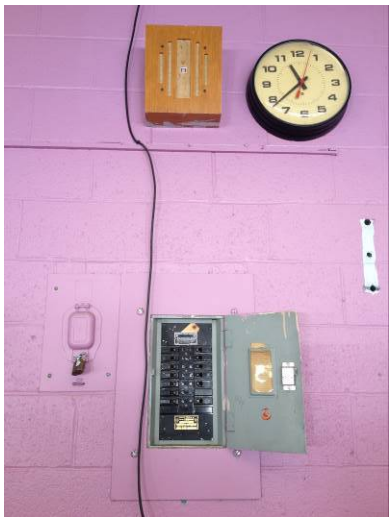
Platform Local Sound System

Paging Console

Classroom Call-In Switch

Each classroom has a wall mounted speaker and a call-in switch to communicate with the Main Office. Edwards tone bells are located in corridors.

The master time clock system consists of a Simplex master time controller located in the Main Office. Each classroom has a clock.



Clock & Speaker

Time Controller

The main entrance door has a video/intercom station with the Aiphone master at Main Office with door release.

There is a Honeywell security intrusion system with passive infrared sensors. A remote annunciator/keypad exists in the Main Lobby.

Remote Keypad

There facility does not have card access or closed circuit TV, CCTV.

The facility does not have a lightning protection system.

The facility does not have a distributed antenna system, DAS to enhance radio communications for First Responders.

Coverage of data outlets and receptacles is minimal throughout facility.

Recommendations

Electrical Distribution System:

- New construction service rating is generally designed for a demand load of 10 watts/s.f. The existing building is approximately 44,770 sq.ft.

- It is recommended that a new service rated at 1200 amps, 120/208/, 3Ø, 4 wire be installed under a full renovation program. In addition, a new switchboard, distribution panel and subpanels and feeders should be replaced.

Interior Lighting System:

- New LED lighting should be installed throughout the facility as areas are renovated. Although some fixtures were retrofitted with T8 lamps, most of the fixtures are in poor condition. It is recommended that lighting controls such as dimming photo sensors and dimmable lighting be provided where natural daylight is available. Occupancy sensors should be provided for classrooms, toilets and offices.

Emergency Lighting System:

- All existing emergency lighting should be replaced with all new distribution to serve all egress areas such as corridors, intervening spaces, toilets, and above exterior doors.

- A new stand-by generator and emergency distribution systems should be provided to serve egress lighting and exit signs, boilers, pumps, communication systems, fire alarm system, refrigeration, elevator, and other life safety and essential equipment.

Site Lighting System:

- New “LED” fixtures for area lighting should be installed for energy conservation. Pole mounted fixtures should be provided in parking area to maintain minimum light of 0.5-1.0 foot-candles. The “LED” fixtures can reduce the energy consumption with instant on and be dark sky compliant.

Wiring Devices:

- Each classroom should have a minimum of (2) duplex receptacles per wall and (2) double duplex receptacles at classroom computer workstations.

- A system of computer grade panelboards should be provided for receptacle circuits.

Fire Alarm System:

- The fire alarm system should be replaced with an addressable system. The new system requires voice evacuation for Group "E", Education Occupancy with audio/visual devices in all classrooms.

Technology:

- The data system infrastructure should be updated to include fiber optic backbone cabling and Category 6 UTP cabling for the both data and telephone systems for gigabit connectivity at the work station.

- Each classroom should have 4 data outlets for student computers. Two data, one voice and CATV with video and audio connections to a projector should be provided at teacher's station with interconnectivity to an interactive white board. New clock system should be wireless, part of a GPS/LAN based centralized clock system. Wireless access points with CAT 6 cabling will be provided on selected classrooms and other spaces.

- The gymatorium should have a local sound system with assistive listening devices.

- A central paging system should be provided an integrated with the telephone system.

CCTV:

- A Closed Circuit TV system should be installed and include computer servers with image software, computer monitors and IP based closed circuit TV cameras. The head end server should be located in the head end MDF room and will be rack mounted. The system should have accessibility from any PC within the facility or externally via an IP address. Each camera can be viewed independently. The network video recorders (NVR's) should record all cameras and store this information for 21 days at 15 images per second (virtual real time).

- The location of the cameras should generally be in corridors and exterior building perimeter. The exterior cameras may be pan-tilt-zoom type.

- The system should fully integrate with the access control system to allow viewing of events from a single alarm viewer. Camera images and recorded video should be linked to the access system to allow retrieval of video that is associated with an event.

Intrusion System:

- The intrusion system should include security panels, keypads, motion detectors and door contacts. The system should be addressable which means that each device will be identified when an alarm occurs. The system is designated so that each perimeter classroom with grade access will have dual tech sensors along the exterior wall and corridor, door contacts at each exterior door.

- The system should be partitioned into several zones. Therefore, it is possible to use one while the remainder of the school remains alarmed.

- The system should include a digital transmitter to summon the local police department in the event of an alarm condition.
- The intrusion system should be connected to the automated lighting control system to automatically turn on lighting upon alarm.

Card Access:

- A card access system should include a card access controller, door controllers and proximity readers/keypads. Proximity readers should be located at various locations. Each proximity reader should have a distinctive code to identify the user and a log will be kept in memory. The log within the panel should be accessed through a computer.

- The alarm condition should also initiate real time recordings on the integrated CCTV System. The system may be programmed with graphic maps allowing the end-user to quickly identify alarm conditions and lock/unlock doors.

- The system is modular and may be easily expanded to accommodate any additional devices.

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Attachment E: Fire Protection report by Garcia Galuska DeSousa Engineers

Lake Street School
Spencer, MA
Existing Conditions Systems Report
J#683 001 00.00
L#51049/Page 1/February 29, 2016

FIRE PROTECTION

The Building does not contain an automatic sprinkler system.

In general, Massachusetts General Law M.G.L. c.148, s.26G requires that any existing building over 7,500 square feet that undergoes major alterations or modifications or a building addition that results in a gross floor area over 7,500 square feet must be sprinklered.

A hydrant flow test will be required to determine adequate Municipal water supply.

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Attachment F: Mechanical report by Garcia Galuska DeSousa Engineers

Lake Street School
Spencer, MA
HVAC Existing Conditions Systems Report
J#683 001 00.00
L#51453/Page 1/February 29, 2016

HVAC

Executive Summary:

The Lake Street School was built in 1956 with an addition built in 1977 and for the most part all the equipment are original to the building. The piping system throughout the building is provided with schedule 40 black steel. All of which is wrapped in original fiberglass insulation which may still have asbestos insulation on the elbows. The school mostly consists of unit ventilators for all the classroom spaces and indoor air handling unit for the Gym. The indoor air handling unit is associated with a duct distribution system for the supply and return air. The Administration area utilizes wall mounted fin tube for heating and window air conditioners for cooling, there is no mechanical ventilation system for this area therefore operable windows is the areas main source for ventilation. Exhaust air is provided throughout the building through the use of roof mounted exhaust fans. The buildings overall temperature control system is handled with a combination of original pneumatic controls and standalone electronic controls. It appears that the building has received minimal maintenance over the years and some components are beginning to fail or show signs of possible future issues. Based on the current equipment within the building, its antiquated nature and todays code requirements, the building would require a complete upgrade whether it would remain a school or be renovated for a different use.

Heating Plant:

The heating plant consists of (2) HB Smith 44 mills cast iron sectional boilers which are original to the building. One boiler is provided with a No.2 fuel oil burner manufactured by Iron Fireman, model Whirl Power and the second boiler is equipped with a No.2 fuel oil burner manufactured by Industrial Combustion. Each boiler is provided with a single low water cut-off and all operating and safety controls and the entire system is considered to be in poor condition. The original boilers are equipped with asbestos gaskets between the cast iron sections. At the time of the visit there appeared to be an odor resembling that of burning fossil fuel, one boiler was operating which could have caused this odor. Further determination should be made and servicing provided to ensure the boilers are firing properly. Each boiler is also equipped with jockey pumps which help maintain water flow through the boiler so there is a constant flow. Each burner is of the single fuel No. 2 fuel oil type and is served through a recirculating schedule 40 black steel uninsulated fuel oil transport system. The system is provided with a duplex fuel oil transfer pump which is of the gear driven type and each pump is provided with a duplex strainer. The entire system is in poor condition and however is functioning at this time. No. 2 fuel oil is stored in a 10,000 gallon outdoor underground containment storage vessel and circulates fuel oil through an underground double wall piping system. The entire storage system and transport system outside of the building was original to the building. Breeching is provided from each boiler through a heavy gauge black steel welded system which is not insulated but if fan induced. The breeching system conveys combustion gases from each boiler to a masonry chimney. The entire breeching system is in poor condition, however is operating at this time. Combustion air for the power plant is through (1) individual combustion air duct which travels from a wall mounted louver and drops down to approximately 18” above the floor. The opening was equipped with a pneumatic motorized damper. The piping throughout the boiler room is schedule 40 black steel. We do have concerns considering the age of the piping system that the system could be nearing its maximum serviceable life and before a determination can be made various sections of piping should be removed and examined internally for corrosion. The entire piping system is insulated with original fiberglass insulation which appears to be provided with asbestos elbows.

Circulation of hot water throughout the building is achieved by (5) inline Bell & Gossett pumps. These pumps serve the original 1956 building through the use of underground tunnels. There is another set of pumps, (2) inline Bell & Gossett pumps which serve the 1977 addition. Some of these pumps are showing signs of failure or leakage, this basically applies to the original pump/motors that have not been replaced. Two of the five pumps appear to have had their motors replaced. None of these pumps are associated with variable frequency drives and are activated through typical starters. Thermal expansion of the hot water system is maintained through the use of three horizontal non-insulated expansion tanks which are mounted high within the space, these are also original to the building. Overall the heating plant is functioning however it has reached the end of its serviceable life and all the equipment is antiquated and showing signs of failure, a complete upgrade is required.

Hot Water Boilers

Oil Fired Burners

Typical Piping and Insulation

Typical Asbestos Elbow Insulation

Horizontal Non-Insulated Expansion Tanks

Boiler Jockey Pumps

Fan Induced Breeching System

Combustion Air Duct

Inline System Pumps for the Original Building

Inline System Pumps for the Addition

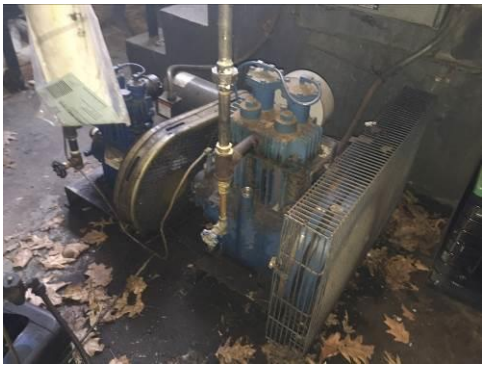
Automatic Temperature Controls:

The building is equipped with the original pneumatic controls which was manufactured by Powers. All related equipment such as the air compressor and the refrigerant air dryer are all original as well. The pneumatic system controls all building components such as the unit ventilators, dampers and control valves associated with the indoor air handling unit and the wall mounted fin tube radiation. The existing control system is equipped with a master panel which provides manual control of all exhaust fans and unit ventilators, it also has a day cycle option for manual control or automatic control. Scheduling is completed through the use of a building time clock which connected to pneumatic control system. Overall the functionality of the existing control system is not adequate nor is it energy efficient. Complaints of spaces overheating or under heating is typical throughout the building which causes uncomfortable temperatures for the occupants. A complete upgrade of this system is required and a direct digital control system with web access should be considered.

Lake Street School
Spencer, MA
HVAC Existing Conditions Systems Report
J#683 001 00.00
L#51453/Page 4/February 29, 2016

Powers Pneumatic Control System


Pneumatic Transducers


Air Compressor for Control System


Refrigerant Air Dryer for Control System


Typical Pneumatic Thermostat


Typical Damaged Thermostat

Administration Area:

The administration area is provided with wall mounted fin tube radiation for heating purposes only. There is no mechanical ventilation system within this area and the operable windows are utilized for the spaces ventilation needs. Residential style window air conditioners are used for cooling purposes and are located throughout the areas. The fin tube radiation in some areas are damaged and missing components. Temperature controls for this area is accomplished with wall mounted pneumatic thermostats. Overall all, the components within this area is in poor condition and should be replaced.

Typical Wall Mounted Fin Tube Radiation

Typical Wall Mounted Air Conditioner

Classrooms:

The original 1956 building and the 1977 addition both utilize unit ventilators for the heating and ventilation needs of the classrooms. These unit ventilators contain supply fans, hot-water heating coils, filters and a pneumatic actuator for outside air damper control and hot water control valve. The original building has Trane unit ventilators while the addition has Nesbitt units. Each unit is provided with outside air ventilation through the unit ventilators outside air louver which is wall mounted. Alongside each unit ventilator is wall mounted fin tube radiation which is also original to the building. This fin tube is not consistent throughout every classrooms. Each classroom is equipped with a low wall mounted exhaust register which is utilized to maintain a neutral pressure within the space due to the outside air that is introduced through the unit ventilator. This exhaust system is provided with a galvanized sheet metal duct distribution system which communicates to roof mounted exhaust fans. Each space is also provided with a Powers wall mounted pneumatic thermostat. These unit ventilators are internally dirty, missing components, some hot water coils have been disconnected due to potential freezing issues and overall antiquated and at the end of their serviceable life. The functionality of all the units is poor including the pneumatic controls.

Typical Wall Mounted Unit Ventilator in Original Building

Typical Wall Mounted Exhaust Grille

Typical Wall Mounted Pneumatic Thermostat

Typical Wall Mounted Louver for Unit Ventilator

Typical Wall Mounted Unit Ventilator in the Addition

Typical Wall Mounted Fin Tube Along Side of Unit Ventilator

Lake Street School
Spencer, MA
HVAC Existing Conditions Systems Report
J#683 001 00.00
L#51453/Page 7/February 29, 2016

Gym/Café/Auditorium:

The gymnasium is utilized as several spaces, a Gym, a Cafeteria and an Auditorium. This space is provided with heated and ventilated air through a single central heating and ventilating unit located high within the stage area. The air handling unit is provided with outside air, return air, and supply air galvanized sheet metal duct distribution systems and provides heated ventilation air to the occupied space. None of the ductwork system are insulated. The tempered air terminates high within the space at the ceiling level. The style diffusers that are utilized are not appropriate for the height at which these diffusers are located. This causes heating issues since the tempered air cannot reach the occupied zone. The return air is captured and returned to the unit through a low wall mounted grille located at the base of the base. It was further noted that an individual roof exhaust fan is provided for minimum outside air control which is interlocked with the air handling unit. Generally speaking the entire installation would be considered in fair condition. Temperature control for the space is handled with wall mounted pneumatic thermostats. There are two, one is for day setpoint and the other is for night setpoint. Overall the system is in fair condition with the exception of the thermostats.

Indoor Air Handling Unit

Ceiling Mounted Diffusers

Low Wall Return Grille

Space Day/Night Thermostat

Kitchen:

The kitchen is equipped with a cooking hood however it does not contain a fire suppression system, it does have a dedicated roof mounted exhaust fan however there is no mechanical ventilation unit for makeup air. Makeup air for the hoods exhaust system is accomplished through a wall mounted louver which opens upon activation of the kitchen hood. The kitchen itself is heated through the use of a vertical style propeller unit heater which is controlled via a standalone thermostats, which does appear to be damaged. The adjacent locker room area is heated with wall mounted fin tube radiation which is controlled via a wall mounted pneumatic thermostat which is damaged. Also located within the kitchen is a dishwashing system, this system is equipped with what appears to be a stainless steel exhaust duct which travels up to the roof. This system appeared to be relatively new however it was unknown if the system was functional. Overall the equipment associated with the equipment within this space does not meet today's standards and code requirements.

Kitchen Exhaust Hood

Makeup Air Louver

Vertical Unit Heater

Dishwasher Exhaust System

Common Areas:

The common areas such as corridors, vestibules, restrooms and lobbies are provided with supplemental heat through the use of wall mounted convectors, fin tube radiation and unit heaters. Each component appears to have an original wall mounted pneumatic thermostats associated with it however, it's unclear as to whether or not the thermostat is functioning. The corridors do not have any ventilation air provided which is not code compliant.

Typical Convector

Typical Unit Heater

Exhaust Systems:

Throughout the building general exhaust is provided through the use of roof mounted exhaust fans. These fans are located in areas such as toilet rooms, storage rooms, custodial closets, mechanical spaces and electric rooms. The manufacture varies and so does the installation date, some fans are original while other appear to have been replaced. All the fans are associated with their own independent galvanized sheet metal duct distribution systems and all terminate within the spaces with ceiling or wall mounted grilles. Overall some fans were operating while others were not, the original exhaust fans appear to have reached the end of their serviceable life.

Original Roof Mounted Exhaust Fan

Original Roof Mounted Exhaust Fan

Roof Mounted Exhaust Fans in Addition

Typical Ceiling Register in Corridor

Typical Ceiling register in Toilet Rooms

Typical Register in Addition

Recommendations:

In general the school was in poor condition, many pieces of equipment were antiquated and not properly functioning. Average maintenance appears to have been provided however, due to the age of the equipment serviceability is decreased.

We recommend the following HVAC system repairs and/or renovations:

- The existing hot water plant including hot water boilers, pumps, accessories and controls should be replaced with a new high efficiency gas fired boilers, if gas can be obtained on the site. If gas cannot be obtained then provide a high efficiency non-condensing fuel oil boiler. The hot water pumps should be provided with VFD drives for added energy saving during low load conditions.
- The exiting building hot water heating equipment, including classroom unit ventilators, indoor air handling unit, fin tube radiation, convectors and unit heaters should be replaced. Depending on the building future use, unit ventilators may not be the best option considering outside air ventilation is limited with unit ventilators and they are high maintenance. In a situation where higher ventilation needs would be required due to occupancy use group modifications then central roof top units or indoor air handling units should be utilized.
- The existing hot water piping system should be drained and pressure tested and faulty valves and pipe sections should be replaced and insulated. Damaged piping insulation should be replaced. Any piping insulation containing asbestos should be removed and replaced.

- Additional hot water heating zone controls and hot water distribution system modifications should be made to provide improved system balancing and zone control.
- All the exhaust air fans should be replaced.
- A high efficiency air conditioning and ventilation system should be provided for areas that require air conditioning. This would provide a more efficient method to cooling spaces in lieu of residential style air conditioners.
- All existing ductwork should be replaced.
- A new kitchen exhaust hood should be provided, along with a new exhaust fan and make up air system.
- Ventilation air systems should be provided for the corridors.
- A new Direct Digital Control system utilizing an energy management system should be provided. The system should be equipped with scheduling, web access, alarm notification via email or text, colored graphics representing all equipment throughout the building and trending capabilities for troubleshooting systems.

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Attachment G: Plumbing report by Garcia Galuska DeSousa Engineers

Lake Street School
Spencer, MA
Plumbing Existing Conditions Systems Report
J#683 001 00.00
L#51048/Page 1/February 29, 2016

PLUMBING

Executive Summary:

Presently, the Plumbing Systems serving the building are cold water, hot water, sanitary, 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 building and its additions. Portions of the system have been updated as part of building renovation and upgrade projects. The plumbing systems, while continuing to function, have served their useful life. The school plumbing systems could continue to be used with maintenance and replacement of failed components; however other non-dependent decisions will likely force the plumbing upgrade. Due to its age, complete new water piping systems are recommended. The copper piping distribution, valves and insulation is in poor condition and has served its useful life.

The plumbing fixtures are in fair condition. Attempts have been made to make bathroom fixtures accessible, however, the majority of fixtures do not meet current accessibility codes. In general, the fixtures appear to have served their useful life. 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. All new fixtures are recommended.

Cast iron is used for sanitary and storm drainage and appears to be original. Rainwater from roof areas is collected by interior rain leaders which appear to discharge to a below grade drainage system. Where visible, the cast iron pipe appears to be in poor to fair condition. Smaller pipe sizes appear to be copper. We recommend a contractor videotape the drainage piping to determine interior condition. In general, the drainage piping can be reused where adequately sized for the intended new use if evidence from videotaping suggests this. Otherwise, all original drainage piping should be replaced.

A new high efficiency domestic water heating system with thermostatic mixing valve, expansion tank and recirculation pump is recommended.

Fixtures:

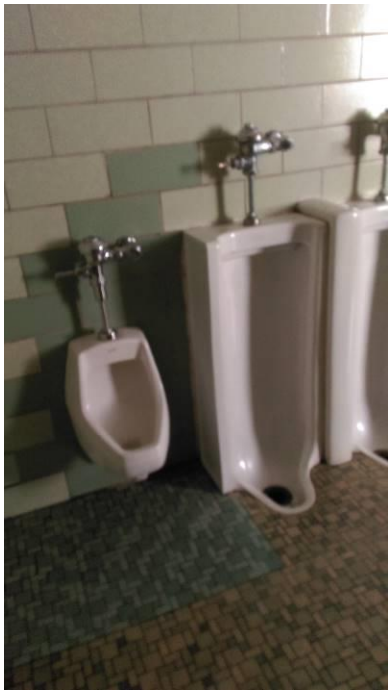
The water closets are predominately wall hung vitreous china with manually operated flush valves.

Urinals are wall hung vitreous china with manually operated flush valves.

Lavatories are wall hung vitreous china. The majority of lavatories have been retrofitted with dual handle metering faucets. Most lavatories are fitted with hot and cold water handle faucets.

Typical Water Closet

Typical Lavatory



Typical Urinal

Drinking fountains consist of vitreous china, recessed fixtures.

Electric water coolers are wall hung, surface mounted and non-accessible.

Drinking Foundation

Water Cooler

Janitor's sink are generally trap standard mounted, enameled cast iron sinks. Faucets are equipped with vacuum breakers.

Classroom sinks are vitreous china, drop-in type with cold and hot water faucets and bubbler.

Classroom Sink

Kitchen area fixtures are in fair condition. The pot washing sink is fitted with a point-of-use, in-ground grease interceptor. The General Kitchen drainage is not directed to an exterior grease trap.

Pot Washing Sink

Grease Interceptor in Floor

Water Systems:

The main domestic water service is located in the Water Service/Storage Room. The service is 2" in size and includes a 1-1/2" meter. The main domestic cold-water distribution is 2" in size. The majority of the domestic distribution piping is located at or above ceilings throughout the facility.

The domestic water is in fair condition in general but there are locations where the aggressive water is leading to severe corrosion and early failure of piping, fittings, and valves.

Water Meter

Backflow Preventers for Make-up Water

Piping, where exposed, appears to be copper with sweat joints. The majority of the piping is insulated although there are many locations where insulation is missing. Original gate valves are used for isolation purposes. The gate valves have exceeded their life expectancy. In portions of piping that have been replaced, ball valves have been installed. Due to the lack of accessibility a major renovation should include all new domestic water piping.

Water Piping with Gate Valves

Domestic hot water in the building is generated through an oil-fired boiler with a newer indirect storage tank. A large insulated storage tank which may have been original is located in the Boiler Room appears to have been left abandoned. The hot water systems are recirculated. There is a thermostatic mixing valve on the system used to prevent scalding. The domestic hot water system is inefficient by today's standards.

Indirect Storage Tank


Recirculation Pump


Mixing Valve

Gas:

An elevated pressure natural gas service is supplied to the building to serve the Kitchen equipment only. The pressure regulator and gas meter are located in the building interior room which may have been a Garage at one time.

Gas Service Regulator

Gas Meter

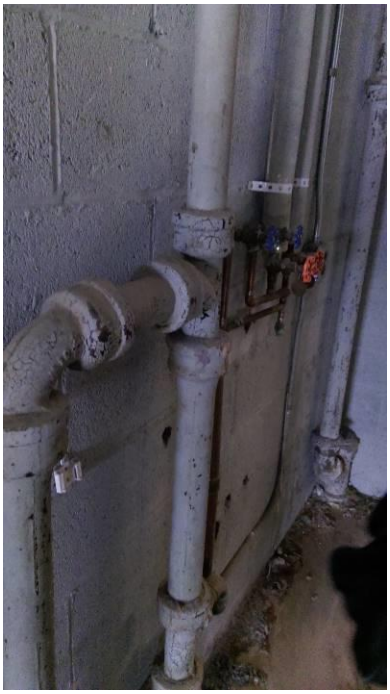
Gas piping is black steel with threaded joints and fittings.

Natural gas is provided for kitchen cooking equipment. Kitchen supply is not equipped with an automatic shutoff valve.

Drainage Systems:

Cast iron is used for sanitary and storm drainage. Where visible, the cast iron pipe appears to be in fair to poor condition. Smaller pipe sizes appear to be copper.

We recommend a contractor videotape the drainage piping to determine interior condition. In general, the drainage piping can be reused where adequately sized for the intended new use if evidence from videotaping suggests this. Otherwise, all original drainage piping should be replaced.



Cast Iron Piping

Recommendations:

- All original domestic water piping should be replaced with new piping including fittings. Existing gate valves should be replaced with ball valves. All domestic cold water piping should be insulated to prevent condensation. All domestic hot water and recirculation piping shall be insulated to limit heat loss. All new ball valves should tagged and charted for ease of maintenance.
- All original sanitary, waste, vent and storm piping shall be replaced in its entirety. All horizontal storm piping shall be insulated to prevent condensation.
- Original plumbing fixtures should be replaced. New toilet rooms shall be made accessible per current Accessibility Codes. Fixtures should be water conserving type.
- If required, Kitchen waste shall be directed to a large grease interceptor per local sewer department standards.
- High efficiency domestic hot water heater should be provided. Domestic hot water should be stored at 140 degrees in storage tank. Include thermostatic mixing valve to distribute 120 degree hot water to plumbing fixtures. Hot water shall be recirculated back to water heater by a new recirculation pump.

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Attachment H: Design Estimate Report by Boston Estimating Service

Please note that the information contained in the attached design estimate is schematic in nature and is not based on a completed proposed scope of work and as such, actual costs may vary.

Please also note the following;

1. The total area used in report (51,200) represents the entire building including the area of the underground tunnel where services are run.
2. The term “assisted living” as it appears at the end of this report is meant to indicate Independent Living as the costs do not include facilities for assisted living.

DESIGN ESTIMATE

Lake Street School
Spencer, Massachusetts
Developer: City of Spencer
Architect: Context Studios

Date: 20 April 2016

ENCLOSED AREA: 51,200.00 SF
COST PER SF: $42.55

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
01000 GENERAL CONDITIONS	%	15		$253,500
TRADE CODE 01000 SUB-TOTAL=				$253,500
02500 DEMOLITION				
CUT CAP AND MAKE SAFE MEP's	LS	1	5,000.00	$5,000
ASBESTOS REMOVAL (ALLOWANCE)	LS	1	100,000.00	$100,000
CEILINGS	SF	51,200	1.00	$51,200
FLOORING	SF	51,200	2.00	$102,400
INTERIOR PARTITIONS	LF	2,500	5.00	$12,500
MEP's	SF	51,200	3.00	$153,600
ROOFING	SF	34,450	4.50	$155,025
WINDOWS	SF	11,000	3.00	$33,000
DUMPSTER 40 CY	EA	50	450.00	$22,500
TRADE CODE 02500 SUB-TOTAL=				$635,225
04510 MASONRY RESTORATION AND CLEANING				
MASONRY REPAIRS:				
CLEAN MASONRY	SF	10,500	6.25	$65,625
REPOINT BRICK FACADE	SF	10,500	8.00	$84,000
REPLACE BRICK (ALLOWANCE)	SF	500	55.00	$27,500
WASH AND SEAL BRICK AND STONE	SF	10,500	2.50	$26,250
TRADE CODE 04200 SUB-TOTAL=				$203,375
07410 MANUFACTURED ROOFING AND FLASHING				
FLASHING @ WINDOWS LLC	LF	1,500	10.00	$15,000
TAPERED INSULATION	SQ	345	200.00	$69,000
ROOFING	SQ	345	225.00	$77,625
ROOF FLASHING	LF	1,300	22.00	$28,600
TRADE CODE 07410 SUB-TOTAL=				$190,225
07900 JOINT SEALANT				
JOINT SEALANT	LF	1,500	10.00	$15,000
TRADE CODE 079000 SUB-TOTAL=				$15,000

DESIGN ESTIMATE

Lake Street School
Spencer, Massachusetts
Developer: City of Spencer
Architect: Context Studios

Date: 20 April 2016

ENCLOSED AREA: 51,200.00 SF
COST PER SF: $42.55

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
08400 STOREFRONT				
NEW STOREFRONT	EA	4	15,000.00	$60,000
TRADE CODE 08400 SUB-TOTAL=				$60,000
08600 WINDOWS				
REPLACE WINDOWS	SF	11,000	45.00	$495,000
TRADE CODE 08600 SUB-TOTAL=				$495,000
08700 FINISH HARDWARE				
HARDWARE SETS WINDOWS	EA	4	1,500.00	$6,000
TRADE CODE 08700 SUB-TOTAL=				$6,000
09900 PAINTING				
PAINT WINDOWS	LS	1	2,500.00	$2,500
TRADE CODE 09900 SUB-TOTAL=				$2,500
16000 ELECTRICAL				
MISC. LIGHTS AND WIRING	LS	1	2,500.00	$2,500
TRADE CODE 16000 SUB-TOTAL=				$2,500

DESIGN ESTIMATE

Lake Street School
Spencer, Massachusetts
Developer: City of Spencer
Architect: Context Studios

Date: 20 April 2016

ENCLOSED AREA: 51,200.00 SF
COST PER SF: $42.55

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
17000 CONTINGENCY	%	15		$80,500
TRADE CODE 17000 SUB-TOTAL=				$80,500
17500 PERMITS	%	2.5		$40,246
TRADE CODE 17500 SUB-TOTAL=				$40,246
18000 CONSTRUCTION FEE	%	10		$194,400
TRADE CODE 18000 SUB-TOTAL=				$194,400
19000 TOTAL				$2,178,500
TRADE CODE 19000 TOTAL=				$2,178,500
Assisted living / elder housing (Approx. 26 apts.)	EA	26	110,000.00	$2,860,000
Community center	SF	51,200	75.00	$3,840,000
School	SF	51,200	150.00	$7,680,000