

PHYSICAL NEEDS ASSESSMENT

TOWN OF LITTLETON, MASSACHUSETTS

37 Shattuck Street, Room 306

Littleton, Massachusetts 01460

Keith Bergman



PHYSICAL NEEDS ASSESSMENT

of

SHAKER LANE SCHOOL

35 Shaker Lane

Littleton, Massachusetts 01460

PREPARED BY:

EMG

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EMG Project #: 104477.13R-004.017

Date of Report: July 15, 2013

On site Date: June 19 and 20, 2013

Replacement Reserves Report
Shaker Lane School
7/15/2013

Report Section	ID	Cost Description	Lifespan (EUL)	E	Age	RUL	Quantity	Unit	Unit Cost	Subtotal	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Deficiency Repair Estimate
3.2	209273	C1031 ADA, Wrap drain pipes below accessible lavatory	0	0	0	3		EA	\$65.00	\$195	\$195																				\$195
3.2	209272	D1011 Add ADA raised markings at elevator control panel, jambs and hall buttons	0	0	0	2		Floor	\$550.00	\$1,100	\$1,100																				\$1,100
3.2	209500	D1011 ADA Audible Signals at Floor Change	20	20	0	2		Floor	\$400.00	\$800	\$800																				\$800
3.2	209267	G2025A ADA - Install signage indicating Van Accessible Parking, pole mounted	0	0	0	1		Sign	\$280.00	\$280	\$280																				\$280
5.1	209276	D2023 Hydronic circulating pump,7.5 HP; Replace	20	15	5	3		EA	\$7,200.00	\$21,600						\$21,600															\$21,600
5.2	209279	G1022 Demolition of existing asphalt pavement 3" to 6"	25	24	1	3240		SY	\$9.57	\$31,007		\$31,007																			\$31,007
5.2	209282	G2022 Crack sealing and seal coating of the asphalt	5	4	1	6311		SY	\$3.56	\$22,467		\$22,467					\$22,467					\$22,467					\$22,467				\$89,869
5.2	209284	G2022 Crack sealing and seal coating of the asphalt	5	0	5	3240		SY	\$3.56	\$11,534						\$11,534					\$11,534					\$11,534					\$34,603
5.2	209315	G2031 Asphalt walk, replace	20	20	0	1700		SF	\$0.59	\$1,003	\$1,003																				\$1,003
5.2	209287	G2031 Remove & replace concrete sidewalk	25	25	0	1152		SF	\$8.96	\$10,322	\$10,322																				\$10,322
5.5	209337	G2016 Property ID Sign, painted wood, install new	0	0	0	2		EA	\$3,000.00	\$6,000	\$6,000																				\$6,000
5.5	209513	G2023A Steel bollards, install, 6" dia	25	24	1	3		EA	\$885.00	\$2,655		\$2,655																			\$2,655
5.5	209329	G2041 Remove and replace 4-foot chain link fence	25	24	1	50		LF	\$22.12	\$1,106		\$1,106																			\$1,106
5.5	209339	G2045 Replace Play Structure, Medium	20	10	10	2		EA	\$27,500.00	\$55,000											\$55,000										\$55,000
5.5	209334	G2045 Replace Play Structure, Small	20	19	1	2		EA	\$15,000.00	\$30,000		\$30,000																			\$30,000
5.5	209326	G4022 Replace Wood electrical utility pole, 40' with 180W LPS Roadway Luminaire	20	15	5	2		EA	\$4,310.71	\$8,621						\$8,621															\$8,621
5.5	209323	G4022 Aluminum light pole, over 15 ft. and single fixture, replace	20	15	5	6		EA	\$2,300.00	\$13,800						\$13,800															\$13,800
6.3	209349	B3011A Roof leaks, minor repairs	0	0	0	1		EA	\$435.00	\$435	\$435																				\$435
6.3	209341	B3011G Single Ply EPDM Roofing system with Ballast 45 mills, including demo	20	15	5	175		SQ	\$634.10	\$110,968						\$110,968															\$110,968
6.3	209346	B3011G Single Ply EPDM with insulation, fully adhered 45 mills, including demo	20	15	5	270		SQ	\$500.00	\$135,000						\$135,000															\$135,000
6.3	209351	B3021 Replace plexi-glass skylight 20 to 30 sf	20	15	5	25		SF	\$33.15	\$829						\$829															\$829
6.4	209402	B2011 Caulking, polyurethane,1/4"x1/4", remove and replace	15	14	1	1600		LF	\$3.84	\$6,144		\$6,144															\$6,144				\$12,288
6.4	209369	B2011 Recaulk expansion and control joints up to 1/2" wide	10	9	1	120		LF	\$13.16	\$1,579		\$1,579									\$1,579										\$3,158
6.4	209354	B2011 Repoint masonry	40	35	5	825		SF	\$7.68	\$6,336						\$6,336															\$6,336
6.5	209418	B1015 Remove and replace steel pipe railings, 3 rail galvanized,inc paint	0	0	0	47		LF	\$90.88	\$4,271	\$4,271																				\$4,271
6.5	209417	G2035 Cast-in-place concrete stair repair	0	0	0	75		LF Nosing	\$6.75	\$506	\$506																				\$506
6.6	209422	B2021 Vinyl replacement window, casement, double glazed, 71 to 96 united inches	30	15	15	88		EA	\$546.48	\$48,090																\$48,090					\$48,090
6.6	209421	B2021 Vinyl replacement window, fixed, double glazed, 200 to 240 united inches	30	15	15	100		EA	\$922.19	\$92,219																\$92,219					\$92,219
6.6	209433	B2031A Replace 6'-0" x 7'-0" steel double door with frame and hardware	35	34	1	1		EA	\$2,573.50	\$2,574		\$2,574																			\$2,574
6.8	209517	C3011 Replace ceramic tile, low walls	50	49	1	40		CSF	\$980.00	\$39,200		\$39,200																			\$39,200
6.8	209441	C3011 Paint and patch interior walls, drywall	7	6	1	6252		SF	\$0.84	\$5,252		\$5,252							\$5,252							\$5,252					\$15,755
6.8	209439	C3011 Paint interior walls, CMU,including surface prep	7	6	1	11740		SF	\$0.89	\$10,449		\$10,449							\$10,449							\$10,449					\$31,346
6.8	209481	C3024 Replace Vinyl tile	18	10	8	1235		SY	\$67.75	\$83,671									\$83,671												\$83,671
6.8	209447	C3024 Sand and refinish maple hardwood	10	9	1	630		SF	\$5.50	\$3,465		\$3,465										\$3,465									\$6,930
6.8	209434	C3025 Replace carpet, standard commercial, medium traffic	8	7	1	500		SY	\$59.90	\$29,950		\$29,950							\$29,950									\$29,950			\$89,850
6.8	209446	C3032 Replace acoustical ceiling tile system, fire rated,including demo	20	15	5	120		CSF	\$498.00	\$59,760						\$59,760															\$59,760
6.8	209448	D5021 Mercury Vapor light removal, replace with Metal Halide, 500W	20	19	1	6		EA	\$1,608.00	\$9,648		\$9,648																			\$9,648
7.1	209452	D3021 Replace water boiler, gas 3820 to 4500 MBH	30	16	14	2		EA	\$78,625.00	\$157,250															\$157,250						\$157,250
7.1	209489	D3041 Replace Unit Ventilator 1250 CFM	15	14	1	6		EA	\$7,685.00	\$46,110		\$46,110															\$46,110				\$92,220
7.1	209482	D3041 Replace split System Ductless wall mount 2-ton	15	12	3	8		EA	\$3,951.00	\$31,608				\$31,608															\$31,608		\$63,216
7.1	209492	D3041 Replace split System Ductless wall mount 2-ton	15	12	3	21		EA	\$3,951.00	\$82,971				\$82,971															\$82,971		\$165,942
7.1	209499	D3041 Make up air unit up to 3,000 CFM	15	14	1	1		EA	\$3,147.00	\$3,147		\$3,147															\$3,147				\$6,294
7.1	209498	D3041 Air handler 15,100-18,000 CFM	15	14	1	1		EA	\$12,076.00	\$12,076		\$12,076															\$12,076				\$24,152
7.1	209488	D3041 Replace Unit Ventilator 1250 CFM	15	13	2	4		EA	\$7,685.00	\$30,740			\$30,740															\$30,740			\$61,480
7.1	209486	D3041 Replace Unit Ventilator 1250 CFM	15	4	11	16		EA	\$7,685.00	\$122,960												\$122,960									\$122,960

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7.1	209490	D3041 Replace Unit Ventilator 1250 CFM	15	12	3	4	EA		\$7,685.00	\$30,740				\$30,740															\$30,740		\$61,480
7.1	209515	D3043 Hydronic heating, refurbish the piping and traps, per radiator	25	25	0	20	EA		\$43.83	\$877	\$877																				\$877
7.1	209514	D3044 Circulation Pump, 7 to 10 HP	20	15	5	4	EA		\$7,842.03	\$31,368					\$31,368																\$31,368
7.1	209237	D3052 Single zone rooftop unit 10-ton	15	13	2	1	EA		\$16,000.00	\$16,000			\$16,000															\$16,000			\$32,000
7.1	209497	D3052 Single zone rooftop unit 12.5-ton	15	13	2	1	EA		\$18,540.00	\$18,540			\$18,540															\$18,540			\$37,080
7.1	209496	D3052 Replace Roof-Mounted Condenser 1.5-ton	15	14	1	2	Each		\$2,248.00	\$4,496		\$4,496															\$4,496				\$8,992
7.2	209467	C1031 Replace toilet room partitions overhead braced	0	0	0	4	EA		\$4,500.00	\$18,000	\$18,000																				\$18,000
7.2	209470	D2011 Replace Commercial Grade water closet with 1.6 GPF unit	25	15	10	24	EA		\$630.00	\$15,120									\$15,120												\$15,120
7.2	209518	D2012 Remove and replace institutional cabinet, counter & sink up to 5'	30	15	15	6	Each		\$3,122.00	\$18,732															\$18,732						\$18,732
7.2	209516	D2012 Remove and replace institutional cabinet, counter & sink up to 5'	30	28	2	20	Each		\$3,122.00	\$62,440			\$62,440																		\$62,440
7.2	209468	D2012 Replace urinal	35	32	3	6	EA		\$1,013.90	\$6,083				\$6,083																	\$6,083
7.2	209464	D2018 Replace drinking fountain	10	5	5	5	EA		\$1,195.00	\$5,975					\$5,975											\$5,975					\$11,950
7.2	209512	D2021 1-1/4" globe or ball valves, replace	20	20	0	1	Each		\$465.00	\$465	\$465																				\$465
7.2	209463	D2023 Replace Domestic water boiler, up to 200 MBH	20	15	5	1	Each		\$5,543.00	\$5,543					\$5,543																\$5,543
7.4	209459	D5092 Replace Generator, Natural Gas, 45 KW	25	15	10	1	EA		\$23,350.00	\$23,350											\$23,350										\$23,350
7.5	209473	D1011 Modernize hydraulic elevator controller and signals, to 3 stories	25	15	10	1	EA		\$61,600.00	\$61,600											\$61,600										\$61,600
7.6	209474	D5037 Fire alarm panel addressable, with voice	15	12	3	1	EA		\$12,114.90	\$12,115				\$12,115															\$12,115		\$24,230
7.6	209476	D5038 Video Camera, wireless	15	15	0	4	-		\$551.44	\$2,206	\$2,206															\$2,206					\$4,412
7.6	209475	D5038 Video Camera, industrial quality in weatherproof housing	15	15	0	3	EA		\$4,593.85	\$13,782	\$13,782															\$13,782					\$27,563
8.1	209479	C3011 Paint and patch interior walls, drywall	7	6	1	133380	SF		\$0.84	\$112,039		\$112,039						\$112,039								\$112,039					\$336,118
8.1	209477	C3024 Replace Vinyl tile	18	15	3	2222	SY		\$67.75	\$150,541			\$150,541																		\$150,541
8.1	209478	C3032 Replace acoustical ceiling tile system, fire rated,including demo	20	15	5	306	CSF		\$498.00	\$152,388					\$152,388																\$152,388
8.2	209480	E1093 Kitchen equipment replacement allowance	5	3	2	2	EA		\$12,000.00	\$24,000			\$24,000					\$24,000					\$24,000					\$24,000			\$96,000
Totals, Unescalated											\$60,241	\$373,363	\$151,720	\$314,058	\$0	\$563,722	\$22,467	\$24,000	\$211,411	\$29,950	\$166,604	\$150,471	\$24,000	\$0	\$157,250	\$320,277	\$94,440	\$119,230	\$157,434	\$0	\$2,940,640
Location Factor (1.00)											\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Totals, Escalated (3.0%, compounded annually)											\$60,241	\$384,564	\$160,960	\$343,179	\$0	\$653,509	\$26,827	\$29,517	\$267,809	\$39,078	\$223,902	\$208,288	\$34,218	\$0	\$237,855	\$498,982	\$151,549	\$197,069	\$268,021	\$0	\$3,785,567

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CERTIFICATION

EMG has completed a Physical Needs Assessment (PNA) of the subject property, Shaker Lane School, located at 35 Shaker Lane in Littleton, Massachusetts. The PNA was performed on June 19 and 20, 2013.

The PNA was performed at the Housing Authority's request using methods and procedures consistent with good commercial and customary practice conforming to ASTM E2018-01, *Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process*. Within this Physical Needs Assessment Report, EMG's follows the ASTM guide's definition of User, that is, the party that retains EMG for the preparation of a baseline PNA of the subject property. A User may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the subject property.

This report is exclusively for the use and benefit of the Town of Littleton. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the Housing Authority and EMG.

This report is exclusively for the use and benefit of the Client identified on the first page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report is not for the use or benefit of, nor may it be relied upon by, any other person or entity without the advance written consent of EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained in this report which has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses and opinions are not representations regarding the building design or actual value of the property. Factual information regarding operations, conditions and test data provided by the Client or their representative have been assumed to be correct and complete. The conclusions presented are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG's PNA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and the performance of a subject property's building systems. Preparation of a PNA in accordance with Public Housing Modernization Standards Handbooks 7485.2 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system may not be initially observed. This PNA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints, formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the physical deficiency. EMG's opinions are generally formed without detailed knowledge from individuals familiar with the component's or system's performance.

Any questions regarding this report should be directed to Edward Beeghly at ebeeghly@emgcorp.com or at 800.733.0660, x7607.

Prepared by: Jill Orlov, Field Observer

Reviewed by:



Solomon Rosenbaum, PE,
PNA Reviewer for
Edward Beeghly
Program Manager

1. EXECUTIVE SUMMARY

1.1. SUMMARY OF FINDINGS

The Town of Littleton contracted with EMG to conduct a Physical Needs Assessment (PNA) of the subject property, Shaker Lane School, located at 35 Shaker Lane in the Town of Littleton, Middlesex County, Massachusetts. The PNA was performed on June 19 and 20, 2013.

The school property has one 2-story building containing 30 classrooms and a separate septic system pump house. The school building site area is approximately 6.12 acres; there are two softball fields with approximately 6.71 acres. The property was constructed in phases. Phase I, which consists of the south classroom wing and gymnasium, was constructed in 1966. Phase II, which consists of the main office suite, library, cafeteria, and kindergarten wing, was constructed in 2000.

On site amenities include children's playgrounds and two softball fields.

Generally, the property appears to have been constructed within industry standards in force at the time of construction, to have been well maintained during recent years, and is in good overall condition.

According to property management personnel, the property has had an active capital improvement expenditure program over the past three years, primarily consisting of univentilator replacements and the addition of air-conditioning in some classrooms. Supporting documentation was not provided, but some of the work is evident.

There are a number of Priority Deficiency Costs that have been identified during the evaluation period. These needs are identified in the various sections of this report and are summarized in the attached Replacement Reserves Report.

1.2. FOLLOW UP RECOMMENDATIONS

No additional evaluation is necessary.

1.3. OPINIONS OF PROBABLE COST

This section provides estimates for the repair and capital reserves items noted within this Physical Needs Assessment (PNA).

These estimates are based on invoice or bid documents provided either by the Owner/facility and construction costs developed from construction resources such as *R.S. Means* and *Marshall & Swift*, EMG's experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions.

1.4. METHODOLOGY

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, EMG opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its effective age. Projections of Remaining Useful Life (RUL) are based on continued use of the Property similar to the reported past use. Significant changes in tenants and/or usage may affect the service life of some systems or components.

The evaluation period identified in this report is defined as 20 years.

The physical condition of building component to be repaired is typically defined as being in one of five categories: Priority One through Five. For the purposes of this report, the following definitions are used:

Priority One - These items are to be addressed as Immediate. Items in this category require immediate action and include corrective measures to:

1. Correct life safety and/or code hazards
2. Repair item permitting water leaks into the building or structure
3. Repair mold or mildew conditions
4. Down unit repairs
5. Further study investigations

Priority Two - These items are to be addressed within the next 1 year. Items in this category require corrective measures to:

1. Return a system to normal operation
2. Stop deterioration to other systems
3. Stop accelerated deterioration
4. Replace items that have reached or exceeded their useful service life
5. ADA/UFAS deficiencies

Priority Three - These items are to be addressed within the next 2-3 years. Items in this category, if not corrected expeditiously, will become critical in the next several years. Items in this category include corrective measures to:

1. Stop intermittent interruptions
2. Correct rapid deterioration
3. Replace items that will reach or exceed their useful service life
4. Correct functionality and/or aesthetic issues that are not critical

Priority Four - These items are to be addressed within the next 3-5 years. Items in this category include conditions requiring appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.

Priority Five - These items are to be addressed within 6-20 years. Items in this category represent a sensible improvement to the existing conditions. These are not required for the most basic function of the facility; however, Priority 5 projects will improve overall usability and/or reduce long-term maintenance costs.

2. PURPOSE AND SCOPE

2.1. PURPOSE

The purpose of this Physical Needs Assessment (PNA) is to assist the Client in evaluating the physical aspects of this property and how its condition may affect the soundness of the Client's financial decisions over time. For this PNA, representative samples of the major independent building components were observed and their physical conditions were evaluated. This included site and building exteriors, representative interior common areas, and a representative sample of the apartment units. Apartment unit observations include a minimum of 50 percent of the vacant units and all of the down units.

The property management staff and code enforcement agencies were interviewed for specific information relating to the physical property, code compliance, available maintenance procedures, available drawings, and other documentation. The property's systems and components were observed and evaluated for their present condition. EMG completed the *Systems and Conditions Table*, which lists the current physical condition and estimated remaining useful life of each system and component present on the property, as observed on the day of the site visit. The estimated costs for repairs and/or capital reserves are included in the enclosed cost tables. All findings relating to these opinions of probable costs are included in the narrative sections of this report.

The physical condition of building systems and related components are typically defined as being in one of three conditions: Good, Fair, or Poor, or a combination thereof. For the purposes of this report, the following definitions are used:

- Good = Satisfactory as-is. Requires only routine maintenance over the evaluation period. Repair or replacement may be required due to a system's estimated useful life.
- Fair = Satisfactory as-is. Repair or replacement is required due to current physical condition and/or estimated remaining useful life.
- Poor = Immediate repair, replacement, or significant maintenance is required.

2.2. DEVIATIONS FROM THE ASTM E2018-01 GUIDE

ASTM E2018-01, *Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process* requires that any deviations from the Guide be so stated within the report. EMG's probable cost threshold limitation is reduced from the Guide's \$3,000 to \$2,000, thus allowing for a more comprehensive assessment on smaller scale properties. Therefore, EMG's opinions of probable costs that are individually less than a threshold amount of \$2,000 are omitted from this PNA. However, comments and estimated costs regarding identified deficiencies relating to life/safety or accessibility items are included regardless of this cost threshold.

In lieu of providing written record of communication forms, personnel interviewed from the facility and government agencies are identified in Section 2.5. Relevant information based on these interviews is included in Sections 2.5, 3.1, and other applicable report sections.

2.3. ADDITIONAL SCOPE CONSIDERATIONS

Items required by ASTM E2018-01 and Fannie Mae's *Exhibit III Specific Guidance to the Property Evaluator* are included within the Physical Needs Assessment (PNA). Additional "non-scope" considerations were addressed at the recommendation of EMG and subsequent contract with the Client. These additional items are identified as follows:

- PNA is reviewed by a Engineer or Architect, other than the Field Observer
- Property disclosure information was obtained from the EMG's *Pre-Survey Questionnaire*
- An assessment of accessibility utilizing EMG's *Accessibility Checklist*.
- A limited visual assessment and review of the property for mold growth, conditions conducive to mold growth, and evidence of moisture in accessible areas of the property
- Provide cross reference indexing between cost tables and report text

2.4. PROPERTY'S REMAINING USEFUL LIFE ESTIMATE

Subject to the qualifications stated in this paragraph and elsewhere in this report, the Remaining Useful Life (RUL) of the property is estimated to be not less than 35 years. The Remaining Useful Life estimate is an expression of a professional opinion and is not a guarantee or warranty, expressed or implied. This estimate is based upon the observed physical condition of the property at the time of EMG's visit and is subject to the possible effect of concealed conditions or the occurrence of extraordinary events such as natural disasters or other "acts of God" that may occur subsequent to the date of EMG's site visit.

The Remaining Useful Life for the property is further based on the assumption that: (a) the immediate repairs, short term repairs, and future repairs for which replacement reserve funds are recommended are completed in a timely and workman-like manner, and (b) a comprehensive program of preventive and remedial property maintenance is continuously implemented using an acceptable standard of care. The Remaining Useful Life estimate is made only with regard to the expected physical or structural integrity of the improvements on the property, and no opinion regarding economic or market conditions, the present or future appraised value of the property, or its present or future economic utility, is expressed by EMG.

2.5. PERSONNEL INTERVIEWED

The following personnel from the facility and government agencies were interviewed in the process of conducting the PNA:

Name and Title	Organization	Phone Number
Steven F. Mark Business Manager	Town of Littleton	978.540.2508 978.423.9048 (cell)
Roland J. Bernier Building Commissioner/Zoning Officer	Littleton Building Department	978.540.2420
Keith Dunn Fire Inspector/Fire Prevention Officer	Littleton Fire Department	978.952.2302

The PNA was performed with the assistance of Steven Mark, Business Manager, Town of Littleton, the on site Point of Contact (POC), who was cooperative and provided information that appeared to be accurate based upon subsequent site observations. The on site contact is knowledgeable about the subject property and answered all questions posed during the interview process. The POC's management involvement at the property has been for the past six years.

2.6. DOCUMENTATION REVIEWED

Prior to the PNA, relevant documentation was requested that could aid in the knowledge of the subject property's physical improvements, extent and type of use, and/or assist in identifying material discrepancies between reported information and observed conditions. The review of submitted documents does not include comment on the accuracy of such documents or their preparation, methodology, or protocol. The following documents were provided for review while performing the PNA:

- Floor plans
- Septic system contractor information – Neofostistos, McRae & Associates, technician Steve Laughlin 978.957.1983 or 978.621.1456
- Concrete flatwork repair quote – MAC Masonry 339.368.3286
- Phase IV for replacement of six (6) univentilators - quotes from various companies
- Certificate of Inspection – whole school – expires August 2013
- Radon survey results

No other documents were available for review. The Documentation Request Form is provided in Appendix E.

2.7. PRE-SURVEY QUESTIONNAIRE

A Pre-Survey Questionnaire was sent to the POC prior to the site visit. The questionnaire is included in Appendix E. Information obtained from the questionnaire has been used in preparation of this PNA.

2.8. WEATHER CONDITIONS

June 19, 2013: Partly cloudy, with temperatures in the 70s (°F) and light winds.

June 20, 2013: Clear, with temperatures in the 80s (°F) and light winds.

3. CODE INFORMATION, ACCESSIBILITY, AND MOLD

3.1. CODE INFORMATION, FLOOD ZONE AND SEISMIC ZONE

According to Roland J. Bernier of the Littleton Building Department, there are no outstanding building code violations on file. The Building Department inspects the property on an annual basis and was last inspected in the Fall of 2012. Copies of the Certificate of Inspection are included in Appendix C.

According to Keith Dunn of the Littleton Fire Department, there is one outstanding fire code violation on file. A violation on compliant concerning a locked timeout room dated February 5, 2013. The most recent inspection was conducted by the Fire Department on August 28, 2012. The Fire Department inspects the property on semi-annual basis.

According to the Flood Insurance Rate Map, published by the Federal Emergency Management Agency (FEMA) and dated June 4, 2010, the property is located in Zone X, defined as an area outside the 500-year flood plain with less than 0.2% annual probability of flooding. Annual Probability of Flooding of Less than one percent.

3.2. ADA ACCESSIBILITY

The Uniform Federal Accessibility Standard (UFAS) 24 CFR part 40 was adopted by HUD and made effective October 4, 1984. The UFAS applies only to new construction or to alterations to the existing buildings. Alterations are defined as work that costs 50 percent or more of the building's value when the work performed occurs within a twelve month period. Apartments modified for mobility impaired residents are to comply with UFAS.

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" on the basis of disability. Generally the rental office and access from the site to the rental office must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Buildings completed and occupied after January 26, 1992 are required to comply fully with ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of complying to the extent allowed by structural feasibility and the financial resources available; otherwise a reasonable accommodation must be made.

During the PNA, observations and sample measurements for accessibility were conducted. The scope of the observations is set forth in the EMG Accessibility Checklist provided in Appendix D. It is understood by the Client that the observations described herein does not comprise an Accessibility Compliance Survey of every unit and only those units where access was provided by the client were reviewed. Only a representative sample of areas were observed and, other than as shown on the accessibility checklist, actual measurements were not taken to verify compliance.

The accessibility standards that apply to the Property are UFAS and the ADA. Based on EMG's observations and interview of the Property Manager, the property is generally non-compliant with ADA.

Based on EMG's assessment, the property is in general compliance with the requirements of Section 504 and the ADA.

In addition, although defined as accessible, non-compliant components and features were observed throughout the designated accessible units, accessible routes, general site, and common areas. Consideration should be given to correcting these features and components to comply 24 CFR 8.23 (b) *Other Alternations*.

Based on EMG's observations, the facility generally appeared to be accessible as stated within the defined priorities of UFAS and the ADA.

Parking

- Signage indicating accessible parking spaces for vans is not provided. Stall and access aisle appear compliant in size; although, there is no signage for vans.

Elevators

- Standard raised and Braille marking on both jambs of the hoist way entrance are not provided. Braille and signage is only on one side of the elevator swing door. Raised elevator markings at control panel and hall buttons are not provided in Braille and Standard Alphabet.
- Audible signals are not provided at floor level changes or elevator lobbies indicating car arrival.

Restrooms

- Wrap drain pipes below lavatory with insulation; protect against contact with hot, sharp, or abrasive surfaces.

Corrections of these conditions should be addressed from a liability standpoint, but are not necessarily code violations. The UFAS and Americans with Disabilities Act Accessibility Guidelines concern civil rights issues as they pertain to the disabled and are not a construction code, although many local jurisdictions have adopted the Guidelines as such. The cost to address the achievable items noted above is detailed in the Replacement Reserves Report. Unless Life/Safety (Immediate Repair) is a concern, the accessible improvements are defined as short term improvements (Year 1).

3.3. MOLD

As part of the PNA, EMG completed a limited, visual assessment for the presence of visible mold growth, conditions conducive to mold growth, or evidence of moisture in readily accessible areas of the property. EMG interviewed property personnel concerning any known or suspected mold contamination, water infiltration, or mildew-like odor problems.

This assessment does not constitute a comprehensive mold survey of the property. The reported observations and conclusions are based solely on interviews with property personnel and conditions observed in readily accessible areas of the property at the time of the assessment. Sampling was not conducted as part of the assessment.

EMG observed the presence of water damaged ceiling tiles, in the areas cited below:

- A full ceiling tile in the women's common area restroom across from the gymnasium was water stained.
- Storage/office area off gymnasium exhibited four square feet of moisture damaged ceiling tile. The damage appears to be under a roof drain.
- Room 116 has seven square feet of moisture damaged ceiling tiles. It is believed to be from the method of floor cleaning involving saturating the floor above.
- Roof 113 has five square feet of moisture damaged ceiling tiles. It is believed to be from a past leak at the univentilator above. The univentilator above has been repaired but not replaced.

EMG recommends replacing the affected ceiling tiles and routinely clean and clear roof drains. Monitoring is also recommended for any active leaks as none were observed.

4. EXISTING BUILDING EVALUATION

4.1. APARTMENT UNIT TYPES AND UNIT MIX

The gross area measurements in the chart below are an approximation, are based on information provided by on site personnel, and are not based on actual measurements. Due to the varying methods that could be utilized by others to derive square footage, the area calculations in the chart below do not warrant, represent, or guarantee the accuracy of the measurements.

Apartment Unit Types and Mix		
Quantity	Type	Floor Area
30	Classrooms	930 SF each
1	Gymnasium plus stage	2560 SF
1	Admin Office Suite plus Principal's Office	1,200 SF
13	Restrooms	1,250 SF
1	Health/Nurse suite (with bathroom)	Not provided
1	Boiler room	Not provided
1	Generator room	Not provided
1	Media/Library	1507 SF
1	Commercial Kitchen (with 2 staff bathrooms)	Not provided
1	Cafeteria/Stage	3300 SF
There are currently no vacant rooms		
There are currently no "down" rooms		
51	TOTAL	

4.2. APARTMENT UNITS OBSERVED

At least 90 percent of the interior space was observed by EMG in order to gain a clear understanding of the property's overall condition. Other areas accessed included the exterior of the property, a representative sample of the roofs, and the interior common areas.

A "down area" is a term used to describe a space that cannot be occupied due to poor conditions such as fire damage, water damage, missing equipment, damaged floor, wall or ceiling surfaces, or other significant deficiencies. According to the property staff, there are no down rooms or areas. No down rooms or areas were observed during the site visit.

The following area was not available for observation during the site visit:

- The outside storage room at the southeast corner of the south classroom wing – no key was available.

5. SITE IMPROVEMENTS

5.1. UTILITIES

The following table identifies the utility suppliers and the condition and adequacy of the services.

Site Utilities		
Utility	Supplier	Condition and Adequacy
Sanitary sewer	Septic System	Good and adequate
Storm sewer	Town of Littleton Highway Department	Good and adequate
Domestic water	Littleton Electric Light and Water Departments (LELWD)	Good and adequate
Electric service	Littleton Electric Light and Water Departments (LELWD)	Good and adequate
Natural gas service	National Grid	Good and adequate

Observations/Comments:

- According to the POC, the utilities provided are adequate for the property. There are no unique, on site utility systems such as water or waste water treatment plants, or propane gas tanks.
- The septic pumping equipment is located in a masonry structure to the north of the main building. There are three pumps rated at 7.5 HP. It was reported that there are periodic back-ups and minor pump issues. The system is monitored with monthly reports including monitoring the pH levels. Based on the estimated Remaining Useful Life (RUL), the pumps will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- See Section 7.4 for descriptions and comments regarding the emergency electrical generator.

5.2. PARKING, PAVING, AND SIDEWALKS

The main entrance drive is an extension between Roxbury Drive on the west side of the property and Rosewood Road to the south side of the property. The parking areas, drive aisles and service drives are paved with asphaltic concrete.

Based on a physical count, parking is provided for 85 cars. All of the parking stalls are located in open lots. Six handicapped-accessible parking stalls are located at the front of the school or at the northeast corner of the main parking lot, five of which are sized for vans; although, none have van signage.

Type Space	Number of Spaces
Open Self Park	79
Handicapped-accessible	6
Total	85

The sidewalks throughout the property are constructed of asphalt and cast-in-place concrete.

The curbs are constructed of cast-in-place concrete or extruded asphalt curbing placed at the edge of the pavement. Surface runoff is directed to landscaped areas, which border the paved areas.

Observations/Comments:

- The asphalt pavement at the west side of the building, entrance drives and portions of the service drive are in fair condition. It was reported that the Highway Department maintains the parking lot; although, the lot is worn. There are no significant signs of cracks or surface deterioration. In order to maximize the pavement life, pothole patching, crack sealing, seal coating, and re-striping of the asphalt paving will be required over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The asphalt lot at the east side of the building and service drive east of the kindergarten wing are in poor condition. It is severely deteriorated with significant alligator cracking and extensive potholes. Complete replacement is required. The cost of this work is included in the Replacement Reserves Report.
- In addition to the work above, resealing and restriping of the east lot and service drive will be required over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The concrete curbs and sidewalks throughout the property are in fair to poor condition. Significant cracking and deterioration was observed. Replacement is required. The cost of this work is included in the Replacement Reserves Report.
- The asphalt curbs and sidewalks throughout the property are in fair to poor condition. Significant cracking and deterioration was observed such as at the southeast corner of the building. Partial replacement is required. The cost of this work is included in the Replacement Reserves Report.

5.3. DRAINAGE SYSTEMS AND EROSION CONTROL

Storm water from the roofs, landscaped areas, and paved areas flows into on site inlets and catch basins with underground piping connected to the municipal storm water management system. Additional draining flows across the surface into the adjacent public streets and landscaped areas.

Observations/Comments:

- There is no evidence of storm water runoff from adjacent properties. The storm water system appears to provide adequate runoff capacity. There is no evidence of major ponding or erosion.

5.4. TOPOGRAPHY AND LANDSCAPING

The property slopes moderately down from the south end of the property towards the rear of the building on the east, the parking lots and the immediate surroundings of the building are generally flat and then the proper slopes moderately down again from the north service drive towards the fields at the far north of the site.

The landscaping consists of trees, shrubs, and grasses. Flower beds are concentrated around the entrance sidewalks and there are raised beds at the rear of the building.

Surrounding properties include single-family residential developments on the south, east, and west with wooded areas to the north.

Observations/Comments:

- The topography and adjacent uses do not appear to present conditions detrimental to the property.
- The landscape materials are in good condition and will require routine maintenance over the assessment period.

5.5. GENERAL SITE IMPROVEMENTS

Site lighting is provided by metal street light standards and light fixtures mounted on metal poles. The pole lighting is located throughout the parking lot.

Exterior building illumination is provided by light fixtures surface-mounted on the exterior walls and surface or recessed mounted in the soffits.

Fencing surrounds the south playground, east playground, and softball fields. The fences are constructed of chain link with metal posts.

One children's play area, which contains plastic playground equipment and a metal swing set, is located south of the building. The larger children's play area, which contains metal and plastic equipment and a metal swing set.

Dumpsters are located in the loading dock and are placed on the asphalt paving. The dumpsters are not enclosed. The concrete loading dock has rubber bumpers. Bollards are placed along portions of the service drive.

Observations/Comments:

- There is no property identification signage other than on the building directly which is not visible from the street. Install signage for emergency departments to find building from public streets. The cost of this work is included in the Replacement Reserves Report.
- The exterior site and building light fixtures are in good condition. Based on the estimated Remaining Useful Life (RUL), the light poles will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The playground fencing is in good condition and will require routine maintenance over the assessment period. Scraping and painting is considered to be routine maintenance.
- The softball field fencing is in good to poor condition. Isolated areas are bent and require replacement. The cost of this work is included in the Replacement Reserves Report; although, the costs may be the responsibility of the Parks and Recreation Department.
- The equipment in the south children's play area is in fair to poor condition. It is worn and deteriorating. It was reported that the equipment will be replaced this summer. The cost of this work is included in the Replacement Reserves Report.
- The equipment in the east children's play area is in good condition. Based on the estimated Remaining Useful Life (RUL), the equipment will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The dumpsters are owned and maintained by the refuse contractor.
- The loading dock and bumpers are in good condition and will require routine maintenance over the assessment period.
- Most of the bollards have been knocked over and require replacement including new footings. The cost of this work is included in the Replacement Reserves Report.

6. BUILDING ARCHITECTURAL AND STRUCTURAL SYSTEMS

6.1. FOUNDATIONS

Based on structures of similar size, configuration, and geographic location, it is assumed that the foundations consist of cast-in-place concrete perimeter wall footings with masonry foundation walls and concrete slabs on grade. The foundation systems include reinforced concrete column pads.

Observations/Comments:

- The foundations and footings could not be directly observed during the site visit. There is no evidence of movement that would indicate excessive settlement. Isolated cracking and spalling was observed at the north end of the cafeteria foundation wall. Repairs should be performed as soon as possible to avoid moisture infiltration which may cause further damage during freezing and thawing cycles. The cost of this work is relatively insignificant and can be done through routine maintenance.

6.2. SUPERSTRUCTURE

The building has concrete masonry unit (CMU) exterior and interior bearing walls, which support the upper floor and roof diaphragms. The upper floors have concrete-topped metal decks and are supported by steel beams and open-web steel joists. The roofs are constructed of metal decks which are supported by steel beams and open web steel joists.

Observations/Comments:

- The superstructure is exposed in some locations, allowing for limited observation. Walls and floors appear to be plumb, level, and stable. There are no significant signs of deflection or movement. Isolated settlement cracking was observed at the second floor interior wall of the stairwell closest to the mechanical room. The cracks have been marked and monitored for further settlement over the years. No major settlement was observed and continuing monitoring should be performed by the maintenance staff personnel.

6.3. ROOFING

The primary roofs are classified as flat roofs. The roofs are finished with a single ply EPDM membrane. Some of the roofs are adhered with stone ballast. The roofs are insulated with rigid insulation boards.

The roof membrane terminates at sheet metal copings or metal gravel stops. The roofs have sheet metal flashing elements base and edge flashing.

Storm water is drained from the roofs by internal drains, which discharge to the underground storm drainage system. Gutters and downspouts drain rainwater from the gymnasium roof to the lower roofs.

A curb-mounted skylight provides natural illumination in the main lobby.

There are no attics. The ceilings of the upper floor are bottom side of the roof diaphragm above the suspended ceiling tiles.

Observations/Comments:

- The roof finishes are approximately 15 years old. According to the POC, the roofs are not covered by a warranty. The roofs are maintained by an outside contractor.
- The fields of the roofs are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the roof membranes will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- According to the POC, there are isolated active roof leaks. There is isolated evidence of active roof leaks such as at a roof drain in an office/storage room off the gymnasium. Any active roof leaks should be repaired immediately. The cost of this work is included in the Replacement Reserves Report.
- There is no evidence of roof deck or insulation deterioration. The roof substrate and insulation should be inspected during any future roof repair or replacement work.
- There is no evidence of fire retardant treated plywood (FRT) and, according to the POC, FRT plywood is not used.
- The roof flashings are in good condition and will require routine maintenance over the assessment period.
- The copings and gravel stops are in good condition and will require routine maintenance over the assessment period.
- Roof drainage appears to be adequate; although, debris was found clogging the drains. Clearing and minor repair of drain system components should be performed regularly as part of the property management's routine maintenance program.
- The skylight is in good condition. Based on the estimated Remaining Useful Life (RUL), the skylight will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- During severe wind storms, roofing aggregate (ballast) may become wind-borne and may harm nearby persons or may damage surrounding properties or building or site elements of the subject property. National, regional, and local building codes vary widely in the treatment of this issue and should be consulted during any future roofing repairs or replacements.

6.4. EXTERIOR WALLS

The exterior walls are finished with brick masonry veneer. The soffits are concealed and are finished with stucco or panel strips.

Building sealants (caulking) are located between dissimilar materials, at joints, and around window and door openings.

Observations/Comments:

- The exterior finishes are in good to fair condition. Isolated repointing or caulking in lieu of repointing was observed. Isolated repointing will be required. The cost of this work is included in the Replacement Reserves Report.
- In addition, painting and patching will be required over the assessment period. The cost of this work is relatively insignificant and can be performed through routine maintenance.
- The sealant and expansion joints are dry, cracked and separated from the surfaces. Replacement is required. The cost of this work is included in the Replacement Reserves Report.

6.5. EXTERIOR AND INTERIOR STAIRS

The interior stairs are constructed of steel and have closed risers and concrete-filled steel pan treads. The handrails and balusters are constructed of metal.

The exterior stairs are constructed of reinforced concrete. The handrails are constructed of metal.

Observations/Comments:

- The interior stairs, balusters, and handrails are in good condition and will require routine maintenance over the assessment period.
- The exterior stairs and handrails are in fair to poor condition. The stairs on the rear/east side of the building are damaged on the corners and railings are loose due to the lack of stable support. Immediate replacement is required. The cost of this work is included in the Replacement Reserves Report.

6.6. WINDOWS AND DOORS

The windows are vinyl-framed, double-glazed fixed or hopper units and have exterior screens.

There are two pairs of front entrance doors which are aluminum storefront. All other doors are painted hollow metal doors set in metal frames. Some of these steel doors have glass vision panels. Exterior entrance doors contain cylindrical locksets with lever handle hardware and keyless deadbolts.

Observations/Comments:

- According to the POC, the property does not experience a significant number of complaints regarding window leaks or window condensation. There is no evidence of window leaks or condensation. The windows and screens are in good condition. Based on the estimated Remaining Useful Life (RUL), the windows will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The exterior storefront doors and door hardware are in good condition and will require routine maintenance over the assessment period.
- The hollow metal doors are in fair to poor condition. Some door finishes are faded and some have rust and deterioration such as the exterior storage doors at the rear of the original classroom wing. Replacement will be required during the assessment period. The cost of this work is included in the Replacement Reserves Report. Painting of the doors will be required as part of routine maintenance.

6.7. PATIO, TERRACE, AND BALCONY

Not applicable. There are no patios, terraces, or balconies.

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

The main lobby contains a sitting area next to the administration offices. An elevator, corridors, and stairways are accessed beyond the lobby at the north end of the south wing.

The classrooms, offices, cafeteria and gymnasium are accessed from corridors beyond the lobby and from corridors on each floor. The library is accessed directly from the lobby.

Common area restrooms are located throughout the building with access from the corridors and locker rooms. There is one pair of adult only restrooms across from the gymnasium. There are three pairs of student restrooms along the south wing. Each kindergarten classroom in the northwest wing has an in-classroom restroom. The nurse's suite has a restroom. There are a total of nine common area restrooms.

It was reported that the lighting in the gymnasium uses mercury vapor.

The following table identifies the interior common areas and generally describes the finishes in each common area.

Common Area	Floors	Walls	Ceilings
Lobby	Vinyl tile	Painted drywall	Suspend T-Bar with acoustic tiles and painted drywall
Corridor	Vinyl tile	Painted drywall and CMU	Suspend T-Bar with acoustic tiles
Administrative Offices	Carpet	Painted drywall	Suspend T-Bar with acoustic tiles
Gymnasium	Vinyl tile	Painted CMU	Metal roof framing
Stage	Hardwood	Painted CMU	Metal roof framing
Nurse/Health Suite	Vinyl tile	Painted drywall	Suspend T-Bar with acoustic tiles
Library	Carpet	Painted drywall	Suspend T-Bar with acoustic tiles
Cafeteria	Vinyl tile	Painted drywall	Suspend T-Bar with acoustic tiles
Common Area Restroom	Ceramic tile	Ceramic tile	Suspend T-Bar with acoustic tiles

Observations/Comments:

- It appears that the interior finishes in the common areas have not been renovated within the last 15 years other than some carpeting.
- The interior finishes in the common areas are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the common area carpet will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report. Scuffs and damage was observed in the cafeteria and kitchen lunch line due to minor impact damage. Interior painting and patching will also be required during the assessment period. The cost of this work is included in the Replacement Reserves Report. A chair rail or bumper is suggested to avoid future damage. This can be installed through routine maintenance. Isolated areas of ceiling tiles in the classrooms directly over univentilators exhibit peeling paint finishes and some water staining. These damaged tiles can be replaced through routine maintenance once the univentilators have been replaced. Based on the estimated Remaining Useful Life (RUL), the ceiling tiles will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The hardwood flooring of the stage is in fair condition. It is worn and will require refinishing. The cost of this work is included in the Replacement Reserves Report.
- The lighting in the gymnasium was reported to be poor quality due to the mercury vapor and should be upgraded to brighter and more energy efficient lighting. The cost of this work is included in the Replacement Reserves Report.

- The ceramic tile is in fair condition with several mismatched patches. Replacement will be required during the assessment period. The cost of this work is included in the Replacement Reserves Report.

7. BUILDING MECHANICAL AND ELECTRICAL SYSTEMS

7.1. BUILDING HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

The building is heated by a central heating system. Hot water for the central heating system is supplied by two natural gas-fired hot water boilers located in mechanical room. Each boiler has a rated input capacity of 3,844 MBH.

Circulating pumps provide hot water to each temperature-controlled space by a two-pipe distribution system. The hot water supplies the rooftop units, univentilators, energy recovery unit, cabinet radiator units and wall-mounted radiant heaters in the gymnasium.

There is one direct gas-fired, make-up air heater unit, located on the roof. The unit provides heating and ventilation to the commercial kitchen and receiving area.

Heating is provided to the classrooms by univentilators mounted along the exterior walls. The univentilators are supplied with heated water by the central system and supply fresh air to each conditioned space through an exterior wall louver. The univentilators have limited control provided by local thermostats. A univentilator is provided in the teachers' lounge, which provides fresh air and heat, similar to the classroom units.

Heating and cooling is provided to some common areas by an individual, direct-expansion, constant-volume, gas-fired, packaged, rooftop-mounted, HVAC unit. There is one unit, with an 11 ton capacity. The cooling equipment uses R-22 as a refrigerant. Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are located in each space. The heating and cooling systems are controlled by local thermostats.

Heating and cooling are provided in some common areas by a central roof-mounted air handler.

Cooling is provided to eight classrooms by mini-split ductless air conditioners. They are approximately 1.5 to 2 tons each. The condensing units are mounted on the roof or at grade. The cooling equipment uses R-410A as a refrigerant. Supplemental cooling is provided by a split system air-conditioning system. The condensing units are mounted on the roof.

Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are located adjacent to the fan coil units. The cooling system is controlled by local thermostats.

Heating is provided to the mechanical and electrical rooms by unit heaters suspended from the ceiling. The unit heaters are supplied hot water from the central heating system.

The restrooms are ventilated by mechanical exhaust fans. High-capacity ventilation fans are mounted on the roofs and are connected by concealed ducts to each ventilated space.

The newer univentilators only are controlled by a building energy management system (EMS), located in the custodial office/generator area. The EMS provides individual control and performance data for the heating system in the building.

Observations/Comments:

- The HVAC systems are maintained by an outside contractor. Records of the installation, maintenance, upgrades, and replacement of the HVAC equipment have been maintained since the property was first occupied.

- According to the POC, the HVAC equipment varies in age. HVAC equipment is reportedly replaced on an "as needed" basis. The mini-split units are one (south wing) to three (kindergarten wing) years old.
- The boilers appear to be in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the boilers will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The circulating pumps appear to be in fair condition. Based on the estimated Remaining Useful Life (RUL), the circulating pumps will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The makeup air unit appears to be in good condition. Based on the estimated Remaining Useful Life (RUL), the makeup air unit will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The rooftop units appear to be in fair condition. Based on the estimated Remaining Useful Life (RUL), the rooftop units will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The air handler unit appears to be in fair condition. Based on the estimated Remaining Useful Life (RUL), the air handler unit will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report. Some isolated moss growth was observed at the duct junction on the roof. Clearing and sealing is required and should be performed through routine maintenance.
- The split systems appear to be in good condition. They are 16 years old. Based on the estimated Remaining Useful Life (RUL), the split systems will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The mini-split ductless systems appear to be in good condition. They are one to two years old. Based on the estimated Remaining Useful Life (RUL), the mini-split ductless systems will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- In addition, the remainder of the classrooms will be getting similar systems. The cost of this work is included in the Replacement Reserves Report.
- The older univentilators appear to be in fair condition. Based on the estimated Remaining Useful Life (RUL), the older univentilators will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- In addition, the remainder of the classrooms will be getting replacement univentilators. It was reported that six more systems will be installed this year. The cost of this work is included in the Replacement Reserves Report.
- The newer univentilators appear to be in good condition and will require routine maintenance over the assessment period.
- The radiant heaters are in fair to poor condition. The wall-mounted units in the gymnasium have some corrosion and the cover plates are not properly secured. Replacement is required. The cost of this work is included in the Replacement Reserves Report.

7.2. BUILDING PLUMBING

The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The soil and vent systems are reported and observed to be cast iron.

The water meter is located in the receiving area.

Domestic hot water is supplied to the common areas by one gas-fired domestic water boiler with a rated input capacity of 199,000 BTUH and is located the receiving area.

Drinking fountains are provided in the corridors. A pair of high-low drinking fountains are located in the cafeteria area.

Each classroom has a lavatory built into the cabinetry. The cabinetry is wood and the countertops are plastic laminated wood.

The common area restrooms have commercial-grade fixtures and accessories including water closets and lavatories.

Observations/Comments:

- The plumbing systems appear to be well maintained and, according to the POC, are in good condition. According to the POC, the water pressure is adequate. The plumbing systems will require routine maintenance over the assessment period.
- There is no evidence that the property uses polybutylene piping for the domestic water distribution system. According to the POC, polybutylene piping is not used at the property.
- According to the POC, the pressure and quantity of hot water are adequate.
- The domestic water boiler appears to be in good condition. Based on the estimated Remaining Useful Life (RUL), the domestic water boiler will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The accessories and fixtures in the common area restrooms are in fair condition. Based on the estimated Remaining Useful Life (RUL), some fixtures will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- It was reported that the shut-off for the restrooms between classrooms 210 and 212 are located in 116 on the floor below. This creates a potential hazardous situation. Alterations are required to provide a shut-off in the vicinity of the restrooms. A cost allowance has been included in the Replacement Reserves Report.
- The drinking fountains are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the drinking fountains will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The toilet stall partitions are in fair condition. It was reported that the toilet stall partitions will be replaced this year. The cost of this work is included in the Replacement Reserves Report based on the estimate given from client supplied material.
- The lavatory and cabinetry are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the lavatory and cabinetry will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.

7.3. BUILDING GAS DISTRIBUTION

Gas service is supplied from the gas main on the adjacent public street. The gas meter and regulator are located along the exterior walls of the building. The gas distribution piping is malleable steel (black iron).

Observations/Comments:

- According to the POC, the pressure and quantity of gas are adequate.
- The gas meter and regulator appear to be in good condition and will require routine maintenance over the assessment period.
- Only limited observation of the gas distribution piping can be made due to hidden conditions. The gas piping is in good condition and, according to the POC; there have been no gas leaks.

7.4. BUILDING ELECTRICAL

The electrical supply lines run underground to a pad-mounted transformer, which feeds an interior-mounted electrical meter. The common area lighting is metered separately.

The main electrical service size to the building is 1,600-amp, 120/208 volt three-phase four-wire alternating current (AC). The electrical wiring is reportedly copper, installed in metallic conduit. Circuit breaker panels are located throughout the building.

- A natural gas-powered 49 KVA (39 kW) emergency electrical generator is located in the mechanical room between the maintenance supervisor and the main boiler room. The generator provides back-up power for elements of the fire and life safety systems

Observations/Comments:

- The on site electrical systems are owned and maintained by the respective utility company. This includes transformers, meters, and all elements of the on site systems.
- According to the POC, the electrical power is adequate for the property's demands.
- The switchgear, circuit breaker panels and electrical meters appear to be in good condition and will require routine maintenance over the assessment period.
- The generator is in fair condition and is reportedly tested on a weekly basis. Based on the estimated Remaining Useful Life (RUL), the generator will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.

7.5. BUILDING ELEVATORS AND CONVEYING SYSTEMS

There is one hydraulic passenger elevator. The elevator is manufactured by Concord Elevator. The elevator has a rated capacity of 750 pounds and a speed of 30 fpm. The elevator machinery is located in a room adjacent to the shaft.

The elevator cab has steel plate floors, painted metal wall panels, and surface-mounted ceiling light fixtures. The doors are fitted with mechanical safety stops. The door is a swing door with a manually operated metal gate. Emergency communication equipment is provided in the cab.

Observations/Comments:

- According to the POC, the elevator, and its responsiveness, provides adequate service. The elevator is serviced by Thyssen on a routine basis. The elevator machinery and controls are 15 years old. Based on the estimated Remaining Useful Life (RUL), the elevator equipment will require replacement over the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The elevator is inspected on an annual basis by the municipality, and a certificate of inspection is posted in the elevator machine room. The inspection certificate has no date. It is common for inspections to occur behind schedule. A new inspection should be scheduled as soon as possible if due.
- According to the POC, the emergency communication equipment in the elevator is functional. Equipment testing is not within the scope of a Property Condition Assessment.
- The finishes in the elevator cab appear to be in fair condition. Based on the estimated Remaining Useful Life (RUL), some of the cab finishes will require replacement over the assessment period. The cost to replace the finishes is relatively insignificant and the work can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.

7.6. FIRE PROTECTION SYSTEMS

The fire protection system consists of fire extinguishers and smoke detectors. Fire extinguishers are located in the common areas. At least one hard-wired smoke detector is located in each classroom. The nearest fire hydrant is located along the property's drive aisle and is approximately 55 feet from the building.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns, and strobe light alarms.

A central fire alarm panel is located in the entrance vestibule and monitors the pull stations, smoke detectors, and flow switches. The alarm panel also sounds the alarm and automatically notifies the monitoring service or the police department in the event of trouble.

Surveillance of the property is assisted by a "CCTV" (close circuit television) security system. Interior and exterior cameras are placed strategically throughout the interior and exterior areas of the building, typically at entry doors. The security system is monitored at the main office, as well as off site by the police department.

The commercial kitchen is equipped with a dry chemical fire extinguishing system. Fire suppression heads are located in the commercial kitchen exhaust hood above the cooking areas, and the chemical tank is mounted behind the hood.

Interior fire exit stairwells are accessed from the common area corridors. The walls of the fire stairwells are finished with painted exposed masonry. The stairs discharge at the ground floor, directly to the exterior of the building. The fire exit stairwells are not pressurized. Smoke evacuation in the stairwells is not provided.

Observations/Comments:

- Information regarding fire department inspection information is included in Section 3.1.
- The fire extinguishers are serviced annually and appear to be in good condition. The fire extinguishers were serviced and inspected within the last year.
- The pull stations and alarm horns appear to be in good condition and will require routine maintenance over the assessment period.
- Smoke detector replacement is considered to be routine maintenance.
- Exit sign and emergency light replacement is considered to be routine maintenance.
- According to the POC, the central alarm panel is in good condition and is serviced regularly by a qualified fire equipment contractor. Equipment testing is not within the scope of a Property Condition Assessment. Based on the estimated Remaining Useful Life (RUL), the central alarm panel will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- The security equipment appeared to be in good condition. Routine maintenance will be required over the assessment period. According to the POC and principal, additional cameras are needed. Areas lacking are the first and second floor corridors along the south wing and at the exterior towards the softball fields. The cost of this work is included in the Replacement Reserves Report.
- The dry chemical extinguishing systems appears to be in good condition and is serviced regularly by a qualified fire equipment contractor.
- According to the POC, the exit stairwells were constructed in accordance with applicable codes in force at the time of construction. The stairwells appear to be in general compliance.
- According to the POC, the stairwell doors and door hardware are fire-rated. Components bearing certification labels are displayed on the doors.

8. INTERIOR SPACES

8.1. INTERIOR FINISHES

The following table generally describes the interior finishes in the classrooms and offices:

Typical Apartment Finishes			
Room	Floor	Walls	Ceiling
Offices	Carpet	Painted drywall	Suspend T-Bar with acoustic tiles
Classrooms	Vinyl tile	Painted drywall	Suspend T-Bar with acoustic tiles
Kitchen	Quarry tile	Painted CMU	Suspend T-Bar with acoustic tiles

The interior doors are clear sealed solid-core wood doors set in metal frames.

Observations/Comments:

- The interior finishes are in good to fair condition. Based on its estimated Remaining Useful Life (RUL), the vinyl tile will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report. Interior painting and wall finish replacement will also be required during the assessment period. The cost of this work is included in the Replacement Reserves Report. Some of the ceilings are 1'x1' concealed grid ceiling tiles which are difficult to access the equipment above. Replacement with standard suspended acoustic tile is recommended. Based on their estimated Remaining Useful Life (RUL), the ceiling tiles will require replacement during the assessment period. The cost of this work is included in the Replacement Reserves Report.
- Carpet replacements in the offices are included in Section 6.8.
- The interior doors and door hardware are in good condition and will require routine maintenance over the assessment period.

8.2. COMMERCIAL KITCHEN EQUIPMENT

Each commercial kitchen typically includes the following appliances:

Appliance	Comment
Refrigerators	Up-right
Freezers	Up-right
Range	Gas
Pizza Oven	Gas
Griddles / Grill	Gas
Fryers	No
Hood	Exhaust ducted to exterior
Dishwasher	Owned
Microwave	No

Appliance	Comment
Ice Machines	Yes
Steam tables	Yes
Work tables	Stainless steel
Shelving	Stainless steel

Observations/Comments:

- The kitchen equipment appears to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL), some of the kitchen equipment will require replacement over the assessment period. A cost allowance for this work is included in the Replacement Reserves Report.

8.3. HVAC

Not applicable. See Section **Error! Reference source not found.** for descriptions and comments regarding the HVAC systems.

8.4. PLUMBING

Not applicable. See Section **Error! Reference source not found.** for descriptions and comments regarding the building plumbing systems.

8.5. ELECTRICAL

Not applicable. See Section **Error! Reference source not found.** for descriptions and comments regarding the building electrical systems.

8.6. FURNITURE, FIXTURES AND EQUIPMENT (FF&E)

The school is equipped with furniture and fixtures (FF&E), including office desks and chairs and classroom tables, chairs, cabinets and sinks.

Observations/Comments:

- The school FF&E is in good condition. Routine maintenance will be required during the assessment period.

9. OTHER STRUCTURES

The septic system pump house building is located at the north of the main school building. The pump house building is constructed of painted concrete masonry bearing walls with precast concrete panel roofing. Three pumps are located inside the pump house rated at 7.5 HP.

The softball dugouts are constructed of painted concrete masonry bearing walls with concrete slabs on grade. The roofs are plywood sheathed supported by wood joists and finished with asphalt shingles.

Observations/Comments:

- The septic system pump house building is in good condition and will require routine maintenance during the assessment period.
- The softball dugouts are in good to fair condition and will require routine maintenance during the assessment period.
- The pumps are in good to fair condition. Based on their estimated Remaining Useful Life (RUL), the pumps will require replacement over the assessment period. A cost allowance for this work is included in the Replacement Reserves Report in Section 5.1.

10. APPENDICES

APPENDIX A: Photographic Record

APPENDIX B: Site Plan

APPENDIX C: Supporting Documentation

APPENDIX D: EMG Accessibility Checklist

APPENDIX E: Pre-Survey Questionnaire

APPENDIX F: Acronyms

**APPENDIX A:
PHOTOGRAPHIC RECORD**

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #1:	Front entrance and deteriorated curb cut
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Photo #2:	West elevation of south classroom wing
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Photo #3:	South elevation of classroom wing
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Photo #4:	East elevation of south classroom wing
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Photo #5:	Kindergarten wing – east elevation
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Photo #6:	Kindergarten wing – north elevation
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EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #7:	North elevations of cafeteria and receiving
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Photo #8:	West elevations of cafeteria
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Photo #9:	Roof
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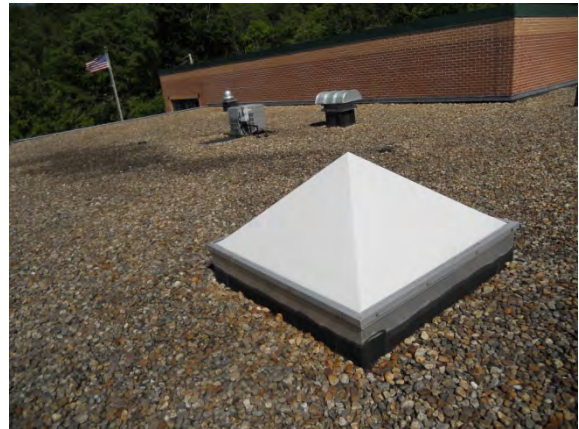


Photo #10:	Roof and skylight
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Photo #11:	ADA parking across from main entrance
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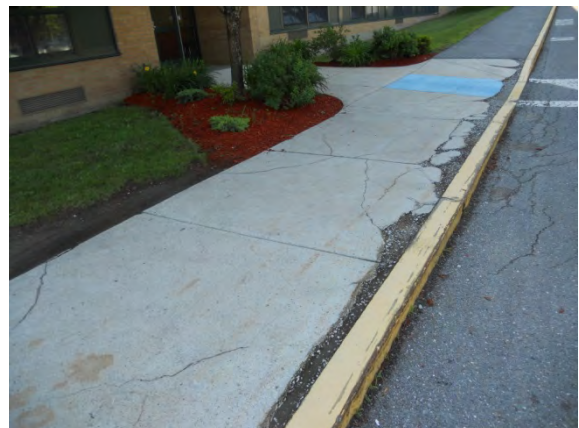


Photo #12:	Cracked and deteriorated sidewalk along west side of building
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EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #13: Deteriorated sealant at spandrel panels



Photo #14: Deteriorated expansion joint



Photo #15: Deteriorated concrete at rear steps



Photo #16: Main entrance vestibule and fire alarm panel



Photo #17: Corridor



Photo #18: Common area restroom with no drain pipe insulation

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #19: ADA toilet stall

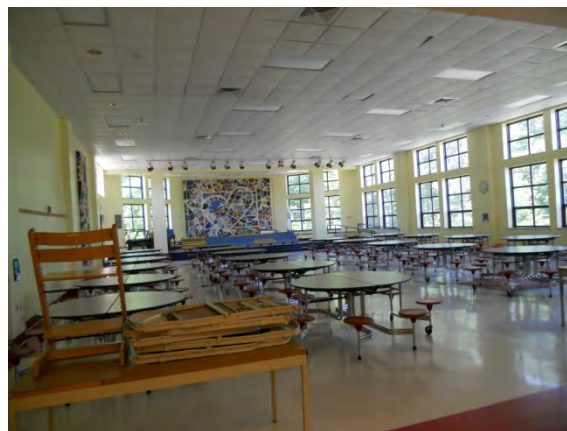


Photo #20: Cafeteria



Photo #21: Commercial kitchen equipment



Photo #22: Library



Photo #23: Gymnasium



Photo #24: Wall mounted radiant heater with missing cover

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #25: Water staining



Photo #26: Drain line above stained ceiling tiles



Photo #27: Elevator equipment

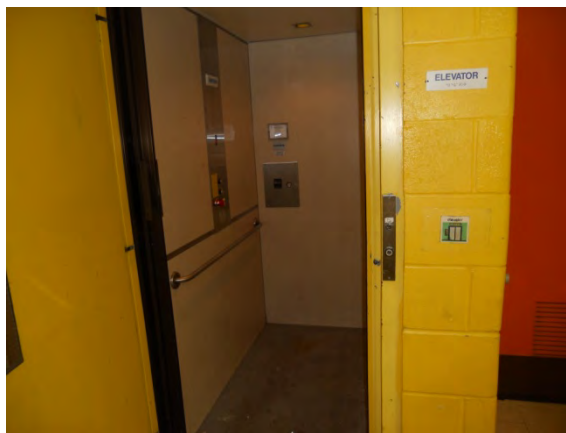


Photo #28: Elevator cab



Photo #29: Typical sink and cabinetry in original classrooms



Photo #30: New univentilator

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #31: Typical classroom



Photo #32: Stairwell



Photo #33: Older univentilator



Photo #34: Older univentilator piping and grill



Photo #35: Kindergarten class in addition



Photo #36: Sink and cabinetry in kindergarten class in addition

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #37: Restroom within kindergarten class in addition



Photo #38: Pump house



Photo #39: Septic system pump equipment



Photo #40: Deteriorated sealant at rear of building at kindergarten classroom addition



Photo #41: Loading dock with damaged bollards



Photo #42: Settlement cracking at second floor of stairwell adjacent to generator room

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #43: Cracking in gymnasium



Photo #44: Ancillary building for softball field use



Photo #45: Softball field and dugouts



Photo #46: Dugout interior



Photo #47: Rear and roof of dugout



Photo #48: Fencing along softball field

EMG PHOTOGRAPHIC RECORD

Project No.: 104477.13R-004.017

Project Name: Shaker Lane School



Photo #49: Upper playground



Photo #50: Ductless mini-split air conditioner



Photo #51: Rusted and deteriorated service door



Photo #52: Playground east of kindergarten addition



Photo #53: Rooftop unit - single zone



Photo #54: Rooftop makeup air handling unit with rooftop unit behind to the left and exhaust fans to right

**APPENDIX B:
SITE PLAN**

Site Plan



Key:

- - - = Approximate site border



The north arrow indicator is an approximation of 0° North.

Project Number:

104477.13R-004.017

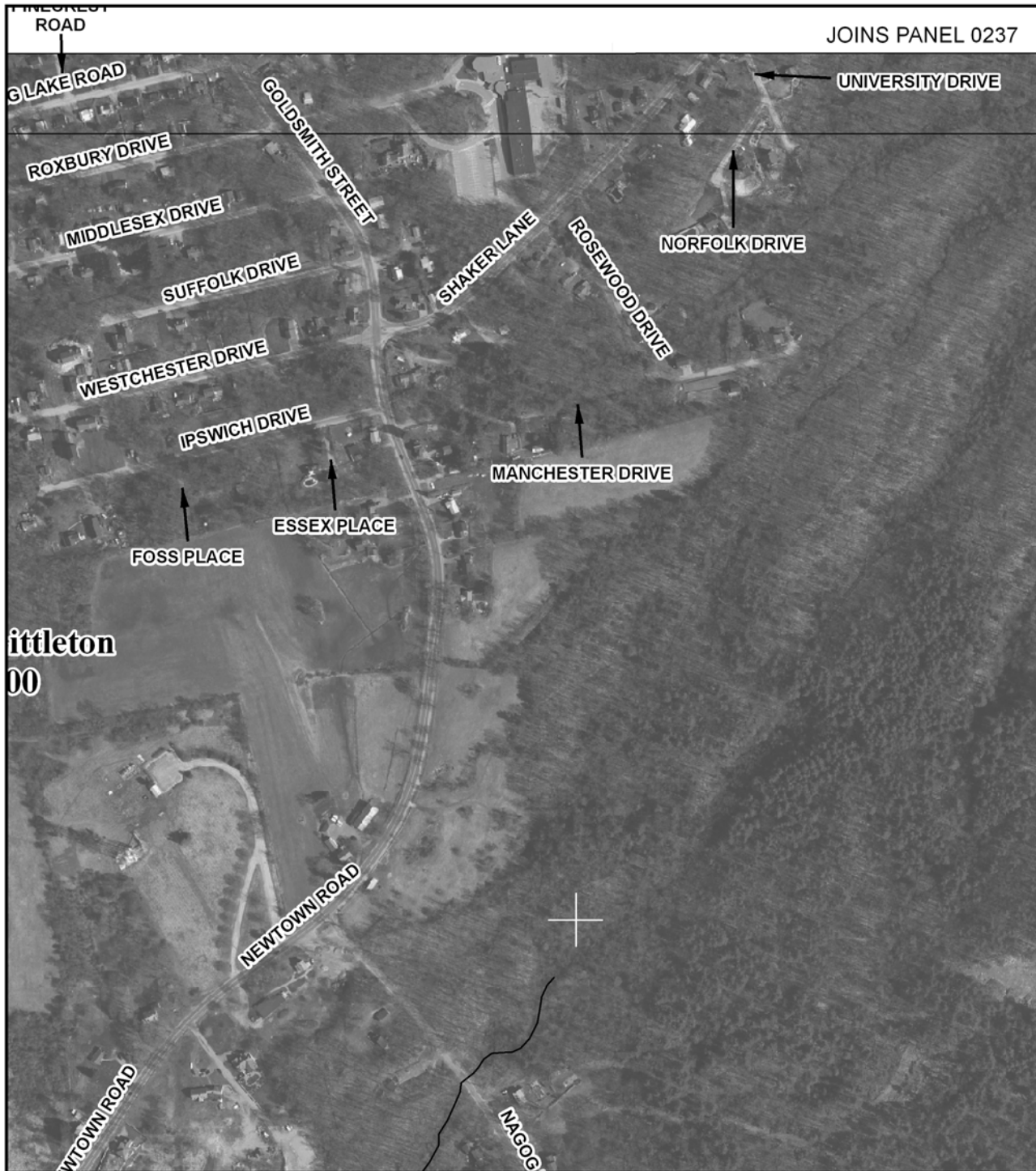
Project Name:

Shaker Lane School

On-Site Date:

June 19 and 20, 2013

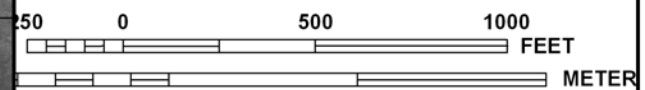
**APPENDIX C:
SUPPORTING DOCUMENTATION**



JOINS PANEL 0237



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0239E

FIRM

FLOOD INSURANCE RATE MAP

MIDDLESEX COUNTY,
MASSACHUSETTS
(ALL JURISDICTIONS)

PANEL 239 OF 656

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ACTON, TOWN OF	250176	0239	E
LITTLETON, TOWN OF	250200	0239	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
25017C0239E

EFFECTIVE DATE
JUNE 4, 2010

Federal Emergency Management Agency

Littleton
00

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

NEOFOTISTOS, McRAE & ASSOCIATES, INC.

Telephone: (978) 957-1983 Facsimile: (978) 957-7306

November 28, 2012

Ms. Margaret T. Webber, P.E.
Bureau of Resource Protection
Commonwealth of Massachusetts
Department of Environmental Protection
Central Regional Office
627 Main Street
Worcester, Massachusetts 01608

RE: Innovative/Alternative Technology Subsurface
Wastewater Disposal System
Shaker Lane School
Littleton, MA

Dear Ms. Webber:

Enclosed please find the October 2012 Innovative/Alternative Technology Treatment System Report with laboratory analysis report from the certified laboratory for the above referenced location.

Should you have any questions, please contact our office at (978) 957-1983.

Sincerely yours,
NEOFOTISTOS, McRAE & ASSOCIATES, INC.



Ellis G. Neofotistos, P.E.
President

EGN/ego

cc: Watershed Permitting Director, MDEP - Boston
Littleton Board of Health
Nashoba Associated Boards of Health
Mr. Steve Mark, Littleton Public Schools
Innovative/Alternative Subsurface Wastewater Disposal System Files

Technician

Steve Loughlin

*cell
978-621-7456*

Suite # 7
1595 Lakeview Avenue
Dracut, MA 01826

Mailing Address:
P.O. Box 1195
Lowell, MA 01853

MAC MASONRY

145 Renfrew St, Arlington MA 02476
(339) 368-3286

Shaker Lane Elementary School
Bill Meagher
35 Shaker Lane
Littleton, MA
978-490-7230

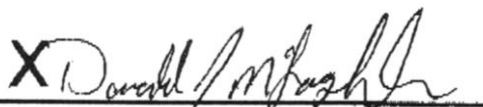
We hereby propose to furnish the materials and perform the labor necessary for the completion of work at 35 Shaker Ln, Littleton MA

MAC Masonry proposes the following:

Repair Walkway:

- Pull up thirty two sections of concrete walkway each section measuring 6Ft x 6Ft.
- Clean the areas and form, then lay wire mesh for each section of the walkway.
- Pour new concrete down for each section of the walkway.

Total cost includes clean up and disposal of all debris, as well as all labor and materials needed to complete required work. All material is guaranteed as specified, and the above work to be performed in accordance with the specifications submitted for above work and completed in a substantial workmanlike manner for the sum of **\$5800** with payments to be made as follows: Initial deposit: **\$3500.** Balance due upon completion: **\$2300.**



Donald J. McLaughlin
MAC Masonry

Two copies of this proposal are enclosed. To accept, please sign below and mail the signed copy back to MAC Masonry at 145 Renfrew St, Arlington MA 02476. Upon receipt of the signed proposal, the client will be contracted and the time frame for scheduling the work will be discussed.

Acceptance of Proposal

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payments will be made as outlined above.

Signature _____ Date _____

cessing the
times.

To replace up to six (6) unit ventilators. The exact units and rooms to be replaced to be determined before this contract is awarded so the contractor will know how many right or left hand supply units will be needed. Old unit-ventilators to be removed and disposed of by the contractor. LPS may ask the contractor to remove certain parts of the old units to be used by LPS in servicing any remaining older units still in the building. Replacement units shall be as close in size as the existing UV's, connected to the existing ducted louver and controlled through a local thermostat to be located adjacent to the entry door.

UV must be replaced with a McQuay, AVS S13 Floor Mounted Unit Ventilator in order to remain consistent with current replacements to include all finish work.

Contractor to install for each McQuay AVS S13 UV, the Digital Controller by Delta, DAC-633.

Littleton uses RP O'Connell, Inc as our HVAC digital controller service company. Any questions on settings, hvac requirements, etc. should be referred to RP O'Connell.

4 Description of Work

- a. Bids will be for replacement of UV with new thermostat located near door to hallway from classroom. Thermostat will have junction box above ceiling and conduit through a wall to corridor for future tie into a DDS system.
- b. Existing piping and electrical to remain and be re-used, if possible. If not possible, then replacement will be on a time and materials basis. Contractor shall provide hourly rate for this work. Materials to be supplied with a maximum of a 15% vendor markup for handling.
- c. Removal and disposal of old units, certain old parts may be retained by LPS. See section 3 above.
- d. Interior and Exterior finish work including any trim or trim plates necessary if applicable to completely enclose the unit ventilator units, pipes, electrical units, etc, to be included in the bid price. Some trim may need to be custom made per the needs of each classroom. Dark sheet metal or a similar weight product may be used. Previous and current covers are 0.050 bronzed aluminum. LPS has used Kelly Sheet Metal services for this work. LPS is not requiring the use of Kelly, only suggesting that they have done prior work on previous projects related to this unit ventilator work. The winning contractor is responsible for this work with a vendor of their choice and will subcontract this work directly with the vendor of their choice. LPS will not be involved in that work. LPS will provide if requested, a contact name from that prior work. Littleton Public Schools must approved the final trim materials prior to final installation of that trim as suggested by the contractor.
- e. Old pneumatic pipes to be capped and sealed.

Littleton Public Schools

Shaker Lane Univentilators

Phase IV – Six Units

April 10, 2013 9:00 am

Location: LPS – Superintendents office

Company	Total Contract
Jemar	49,350
Worcester County Refrigeration	67,212
Falick Bros, Inc.	76,750
Ambient Temp Corp	60,000
Enterprise Equip	69,330
MM Environmental	69,699
Mechanical Air	59,322
AALanco	49,969

Stan Zelnick
APR
4/10/2013



The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
Western Regional Health Office
23 Service Center Road, Northampton, MA 01060

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

JOHN W. POLANOWICZ
SECRETARY

LAUREN A. SMITH, MD, MPH
INTERIM COMMISSIONER

Tel: 413-586-7525
800-445-1255
Fax: 413-784-1037
TTY: 800-769-9991
www.mass.gov/dph

April 3, 2013

Steven Mark, Business Manager
33 Shattuck Street
PO Box 1486
Littleton, MA 01486

Re: Radon Survey Results: Shaker Lane Elementary School, 35 Shaker Lane, Littleton, MA

Dear Mr. Mark,

We have completed the comprehensive radon screening of the Shaker Lane Elementary School. Testing was conducted on February 26, 2013 through February 28, 2013. You should have received a copy of the results directly from AccuStar Labs.

We have reviewed the lab results from AccuStar Labs and found all quality assurance parameters were within acceptable limits.

As you are aware, one of fifty four areas screened was at the EPA action guide level of 4 picocuries per liter of air (pCi/L) indicating the need for follow-up. Please feel free to contact us to discuss possible strategies.

Finally, we would like to thank you and all your staff for your interest and participation in taking this important step to ensure the safety of all concerned in the school environment. As you know, we urge all members of your community to test their homes and are available to offer advice on proper residential testing.

Sincerely,


Lisa Hebert, R.S., M.P.H.
Radon Unit

NRPP 101193 AL
 SB ARL0017

 EPA Method #402-R-92-004
 Liquid Scintillation
 NRPP Device Code 8088
 NRSB Device Code 12193

Laboratory Report For
Property Tested

 Steve Mark-Business Manager
 33 Shattuck Street
 PO BOX 1486
 Littleton MA 01460

~~Shaker Lane Elementary~~
 35 Shaker Lane
 Littleton MA 01460

Log Number	Device Number	Exposure Period				Area Tested	Result (pCi/L)
1448071	2215178	2/26/2013	4:45 pm	2/28/2013	4:55 pm	Principal's Room	0.9
1448072	2215179	2/26/2013	4:45 pm	2/28/2013	5:00 pm	Office	1.4
1448073	2215180	2/26/2013	4:45 pm	2/28/2013	5:00 pm	Nurse's Room	1.1
1448074	2215181	2/26/2013	4:50 pm	2/28/2013	5:00 pm	Kitchen Dry Storage Area	1.3
1448075	2215182	2/26/2013	4:50 pm	2/28/2013	5:00 pm	Kitchen Prep	1.2
1448076	2215183	2/26/2013	4:50 pm	2/28/2013	5:05 pm	Receiving Room	1.3
1448077	2215184	2/26/2013	4:55 pm	2/28/2013	5:05 pm	Electrical Room	2.6
1448078	2215185	2/26/2013	4:55 pm	2/28/2013	5:05 pm	Cafeteria Flagpole	1.2
1448079	2215186	2/26/2013	5:00 pm	2/28/2013	5:05 pm	Cafeteria Under Table Near Ramp	1.2
1448080	2215187	2/26/2013	5:00 pm	2/28/2013	5:05 pm	Library Near Entrance	1.2

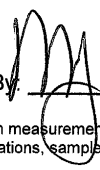
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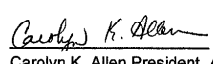
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NRPP 101193 AL
 SB ARL0017

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Laboratory Report For
Property Tested

 Steve Mark-Business Manager
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 PO BOX 1486
 Littleton MA 01460

 Shaker Lane Elementary
 35 Shaker Lane
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Log Number	Device Number	Exposure Period				Area Tested	Result (pCi/L)
1448081	2215188	2/26/2013	5:00 pm	2/28/2013	5:05 pm	Library Rear	1.0
1448082	2215189	2/26/2013	5:05 pm	2/28/2013	5:30 pm	Room 124 Former Tech Lab	1.3
1448083	2215190	2/26/2013	5:05 pm	2/28/2013	5:35 pm	Room 125 Former Special Education Room	1.0
1448084	2215191	2/26/2013	5:05 pm	2/28/2013	5:35 pm	Gym Storage/Office	0.6
1448085	2215192	2/26/2013	5:10 pm	2/28/2013	5:35 pm	Kitchen Storeroom off Gym	1.7
1448086	2215193	2/26/2013	5:10 pm	2/28/2013	5:35 pm	Gym Chin-Up Bar	0.6
1448087	2215194	2/26/2013	5:10 pm	2/28/2013	5:35 pm	Gym	0.5
1448088	2215195	2/26/2013	4:45 pm	2/28/2013	5:00 pm	Quality Assurance 1	1.2
1448089	2215196	2/26/2013	4:50 pm	2/28/2013	5:05 pm	Quality Assurance 2	1.2
1448090	2215197	2/26/2013	5:10 pm	2/28/2013	5:35 pm	Quality Assurance 3	< 0.4

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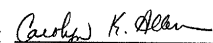
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1448091	2215198	2/26/2013	5:15 pm	2/28/2013	5:35 pm Storage Room	3.3
1448092	2215199	2/26/2013	5:20 pm	2/28/2013	5:40 pm Room 121 Former Special Education Room	1.2
1448093	2215200	2/26/2013	5:20 pm	2/28/2013	5:40 pm Room 122 Former Special Education Room	2.0
1448094	2333801	2/26/2013	5:20 pm	2/28/2013	5:40 pm Stage West	0.7
1448095	2333802	2/26/2013	5:20 pm	2/28/2013	5:40 pm Stage East Near Chemical Storage	0.7
1448096	2333803	2/26/2013	5:20 pm	2/28/2013	5:40 pm Kinder Kitchen	2.0
1448097	2333804	2/26/2013	5:25 pm	2/28/2013	5:40 pm Kinder Storage	2.4
1448098	2333805	2/26/2013	5:25 pm	2/28/2013	5:40 pm Room 100	4.0
1448099	2333806	2/26/2013	5:25 pm	2/28/2013	5:45 pm Room 101	1.9
1448100	2333807	2/26/2013	5:30 pm	2/28/2013	5:45 pm Room 102	1.8

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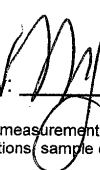
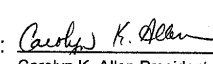
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Log Number	Device Number	Exposure Period		Area Tested		Result (pCi/L)
1448101	2333808	2/26/2013	5:30 pm	2/28/2013	5:45 pm Room 103	1.1
1448102	2333809	2/26/2013	5:35 pm	2/28/2013	5:45 pm Room 104	1.2
1448103	2333810	2/26/2013	5:35 pm	2/28/2013	5:45 pm Room 105	1.1
1448104	2333811	2/26/2013	5:35 pm	2/28/2013	5:45 pm Faculty Room	1.2
1448105	2333812	2/26/2013	5:40 pm	2/28/2013	5:50 pm Telephone Room	1.3
1448106	2333813	2/26/2013	5:40 pm	2/28/2013	5:50 pm Guidance Room	1.4
1448107	2333815	2/26/2013	5:40 pm	2/28/2013	5:50 pm Quality Assurance 4	1.5
1448108	2333817	2/26/2013	5:40 pm	2/28/2013	5:50 pm Quality Assurance 6	< 0.4
1448109	2333818	2/26/2013	5:45 pm	2/28/2013	5:55 pm Custodial Office	0.8
1448110	2333819	2/26/2013	5:50 pm	2/28/2013	5:55 pm Boiler Room	< 0.4

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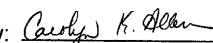
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Log Number	Device Number	Exposure Period		Area Tested		Result (pCi/L)
1448111	2333820	2/26/2013	5:50 pm	2/28/2013	5:55 pm Generator Room	0.8
1448112	2333821	2/26/2013	5:50 pm	2/28/2013	5:55 pm Electrical Room	1.6
1448113	2333822	2/26/2013	5:50 pm	2/28/2013	5:55 pm Old Incinerator Room	1.0
1448114	2333823	2/26/2013	5:50 pm	2/28/2013	5:55 pm Elevator Room	1.0
1448115	2333824	2/26/2013	5:55 pm	2/28/2013	5:55 pm Room 106	0.6
1448116	2333825	2/26/2013	5:55 pm	2/28/2013	6:00 pm Room 108	0.9
1448117	2333826	2/26/2013	6:00 pm	2/28/2013	6:00 pm Room 107	0.9
1448118	2333827	2/26/2013	6:00 pm	2/28/2013	6:00 pm Room 109	0.6
1448119	2333828	2/26/2013	6:00 pm	2/28/2013	6:00 pm Room 110	< 0.4
1448120	2333829	2/26/2013	6:00 pm	2/28/2013	6:00 pm Room 111	0.7

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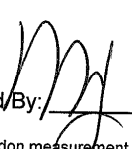
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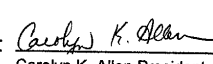
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1448121	2333830	2/26/2013	6:00 pm	2/28/2013	6:00 pm Room 112	0.7
1448122	2333831	2/26/2013	6:05 pm	2/28/2013	6:20 pm Room 113	0.6
1448123	2333832	2/26/2013	6:10 pm	2/28/2013	6:20 pm Room 114	0.4
1448124	2333833	2/26/2013	6:10 pm	2/28/2013	6:20 pm Room 115 Technology Lab	0.5
1448125	2333834	2/26/2013	6:10 pm	2/28/2013	6:20 pm Room 116	0.8
1448126	2333835	2/26/2013	6:05 pm	2/28/2013	6:20 pm Quality Assurance 7	0.4
1448127	2333836	2/26/2013	6:10 pm	2/28/2013	6:20 pm Quality Assurance 8	0.5
1448128	2333837	2/26/2013	6:10 pm	2/28/2013	6:20 pm Quality Assurance 9	< 0.4
1448129	2333838	2/26/2013	6:15 pm	2/28/2013	6:25 pm Listening Room	1.3
1448130	2333839	2/26/2013	6:15 pm	2/28/2013	6:25 pm Room 116 Storage Room	0.7

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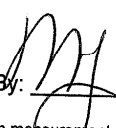
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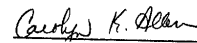
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1448131	2333840	2/26/2013 6:15 pm 2/28/2013 6:25 pm	Room 118	1.5
1448132	2333841	2/26/2013 6:20 pm 2/28/2013 6:25 pm	Room 117 Storage	1.0
1448133	2333842	2/26/2013 6:20 pm 2/28/2013 6:25 pm	Room 117	1.4
1448134	2333843	2/26/2013 6:20 pm 2/28/2013 6:25 pm	Quality Assurance 10	1.2
1448135	2333844	2/26/2013 6:20 pm 2/28/2013 6:25 pm	Quality Assurance 11	1.4
1448136	2333845	2/26/2013 6:20 pm 2/28/2013 6:30 pm	Quality Assurance 12	< 0.4

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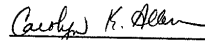
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Massachusetts State
Building Code 780 CMR
Eighth Edition

The Commonwealth of Massachusetts Town of Littleton



In accordance with Massachusetts State Building Code, Section 111.5.5, this

CERTIFICATE OF INSPECTION

is issued to the premise known as

SHAKER LANE SCHOOL

located at

35 SHAKER LANE, Littleton, MA 01460

Roland J. Bernier
BUILDING COMMISSIONER

Shirley D. ...
FIRE PREVENTION OFFICER

Use Group E

Use Group Description TOTAL SCHOOL

Map U13 Parcel 1 District R

Construction Type 2C Maximum Live Load 150 psf

Certificate Expiration Date 8-2013

Occupancy Load 1686 persons

General Notes

SF TOTAL:

LEVEL 1 = 42,250 SF

LEVEL 2 = 18,540 SF

SEE INDIVIDUAL CERTIFICATES FOR
CLASSROOMS, CAFETERIA, STORAGE,

GYM, LIBRARY, OFFICE

ctbwindoccol2

This certificate shall be posted in a conspicuous place on all floors of every building and part thereof where practical for use groups
H, S, M, F, B, A, I, R-1, R-2, E

The Building Commissioner shall be notified of any changes in the above information.

All posting signs shall be furnished by the owner and shall be of permanent design; they shall not be removed or defaced, and if lost, removed or defaced, shall be immediately replaced.

**APPENDIX D:
EMG ACCESSIBILITY CHECKLIST**

Date Completed: 6/19/2013

Property Name: Shaker Lane School

EMG Project Number: 104477.13R-004.017

Abbreviated Accessibility Checklist						
	Building History	Yes	No	Unk	Comments	Field Instructions
1	Has an ADA survey previously been completed for this property?		✓			NOTE: Questions 1-6 are to be answered by the POC and are also on the Pre-Survey Questionnaire. If the POC does not complete this section of the PSQ, then the answers should be "Unk".
2	Have any ADA improvements been made to the property?		✓			
3	Does a Transition Plan / Barrier Removal Plan exist for the property?		✓			
4	Has building ownership or management received any ADA related complaints that have not been resolved?		✓			
5	Is any litigation pending related to ADA issues?		✓			
	Parking	Yes	No	NA	Comments	Field Instructions
1	Are there sufficient accessible parking spaces with respect to the total number of reported spaces?	✓				NA if ADA parking not required. The space must have pavement markings, sign, have access aisle and be relatively level to count. See special count requirements for Outpatient Hospitals and Rehab/PT Outpatient facilities in the Hot Sheet above
2	Are there sufficient van-accessible parking spaces available?	✓			No signage; although, access aisles appear compliant in width	NA if ADA parking not required. The space must have pavement markings, van signage, access aisle, be relatively level and meet size requirements to count. <u>One of out every six</u> ADA stalls should be van accessible.
3	Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?		✓			NA if ADA parking not required. Stall should be painted with Wheelchair symbol. Each van stall should be signed with "Van Accessible".

	Parking (cont.)	Yes	No	NA	Comments	Field Instructions
4	Is there at least one accessible route provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, if provided, and public streets and sidewalks?	✓				NA if accessible route not required. Accessible route must have no significant changes in elevation or excessive running slopes (5% or less)/cross slopes (2% or less).
5	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths, and drop-offs?	✓				NA if no curbs. Built-up ramps are non-compliant if they encroach on parking stall or access aisle.
6	If required does signage exist directing you to accessible parking and an accessible building entrance?			✓	Main entrance is visible and accessible	Signage typically only required if the main entrance is not accessible, or the parking spaces are not located near the main entrance. For 2010, 60% of building public entrances are required to be accessible.
	Ramps	Yes	No	NA	Comments	Field Instructions
1*	Do all ramps along accessible path of travel appear to meet slope requirements? (1:12 or less)	✓				NA if no ramps. Do not measure or calculate slope. NO if unsure.
2	Are ramps that appear longer than 6 ft complete with railings on both sides?	✓				Under ADA, a "ramp" must have handrails and is between 5% and 8.33% with a horizontal projection of six feet or longer. Slopes cannot exceed 8.33%(1:12) for any distance.
3	Does the width between railings appear at least 36 inches?	✓				NA if no ramps. Do not measure height or size of railings.
4	Is there a level landing for approximately every 30 ft horizontal length of ramp, at the top and at the bottom of ramps and switchbacks?	✓				NA if no ramps. Each landing must be level for five feet and provide 60" turn radius if a turn is required.
	Entrances/Exits	Yes	No	NA	Comments	Field Instructions
1	Do all required accessible entrance doorways appear at least 32 inches wide and not a revolving door?	✓				For 2010, 60% of building public entrances are required to be accessible. If a building has two public entrances both should be compliant. Service entrances or employee entrances should not be considered.
2	If the main entrance is inaccessible, are there alternate accessible entrances?			✓		NA if main entrance is accessible. If not accessible, check for directional signs to accessible entrance(s).

	Entrances/Exits (cont.)	Yes	No	NA	Comments	Field Instructions
3	Is the door hardware easy to operate (lever/push type hardware, no twisting required and not higher than approximately 48 inches above the floor)?	✓				Latches that require thumb-press or grasping are not compliant.
	Paths of Travel	Yes	No	NA	Comments	Field Instructions
1	Are all paths of travel free of obstruction and wide enough for a wheelchair (appear at least 36 inches wide)?	✓				NOTE: For accessing areas of public accommodation. Includes access to <u>all</u> facilities/amenities at hotels/resorts/public golf clubs. Generally excludes mezzanine or employee only areas. Path of travel is for the “accessible routes”. It includes interior common areas and EXTERIOR areas, such as route from parking to entrance and to any public amenities such as pools, fitness centers, etc.
2	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	✓				Signage required only if some are accessible and some are not. Includes designation and directional signage. Must contain raised letters, Braille and international symbol of accessibility
3	Is there a path of travel that does not require the use of stairs?	✓				Confirm at least one accessible route to all facilities/amenities at hotels/resorts/public golf clubs.
	Elevators	Yes	No	NA	Comments	Field Instructions
1	Do the call buttons have visual and audible signals to indicate when a call is registered and answered when car arrives?		✓		No audible sound	Lamp should turn on/off when call button is pressed/car arrives
2	Are there visual and audible signals inside cars indicating floor change?		✓		No audible sound	Listen for audibles at each floor change when inside car. The visually impaired must be able to count floor changes. An audible that ‘speaks’ the floor # is also acceptable.
3	Are there standard raised and Braille marking on both jambs of each hoist way entrance as well as all cab/call buttons?		✓			<u>All</u> markings at lobby and the hoist way should be raised with Braille also.
4	Do elevator doors have a reopening device that will stop and reopen a car door if an object or a person obstructs the door?		✓		Door is a swing door; gate and door are mechanically operated	Electronic or mechanical acceptable.

	Elevators (cont.)	Yes	No	NA	Comments	Field Instructions
5	Are elevator controls low enough to be reached from a wheelchair (appears to be between 15 and 48 inches)?	✓				
6	If a two-way emergency communication system is provided within the elevator cab, is it usable without voice communication?	✓				Must be push button operation with lamp indicating message sent/received in addition to voice communication. Handheld devices and cabinets that require twisting or pinching of hand to open are non-compliant.
	Toilet Rooms	Yes	No	NA	Comments	Field Instructions
1	Are common area public restrooms located on an accessible route?	✓				NOTE: This section covers Common Area Public Restrooms ONLY. It does not cover Apartment Units, Hotel Guestrooms, Nursing Home Resident Rooms, Retail tenant restrooms, or employee restrooms. Enter NA for all questions if there are no applicable restrooms. If representative sampling of the restrooms was necessary indicate which restrooms were visited under Comments.
2	Are pull handles push/pull or lever type?	✓				
3	Are there audible and visual fire alarm devices in the toilet rooms?	✓				NA if the building does not have a central fire alarm system. NA if no alarm devices are provided within the toilet room.
4	Are toilet room access doors wheelchair-accessible (appear to be at least 32 inches wide)?	✓				
5	Are public restrooms large enough to accommodate a wheelchair turnaround (appear to have 60" turning diameter)?	✓				
6	In unisex toilet rooms, are there safety alarms with pull cords?			✓		NA if the building does not have pull cord alarm system. Typically only applies to healthcare properties.
7	Are toilet stall doors wheelchair accessible (appear to be at least 32" wide)?	✓				NA if the bathroom is not divided into stalls.

	Toilet Rooms (cont.)	Yes	No	NA	Comments	Field Instructions
8	Are grab bars provided in toilet stalls?	✓				Requires two, one at side wall and one at rear. Do not comment on height or length.
9	Are sinks provided with clearance for a wheelchair to roll under (appear to have 29" clearance)?	✓				If multiple sinks, only one is required to have adequate clearance, but it must be located outside of a toilet compartment.
10	Are sink handles operable with one hand without grasping, pinching or twisting?	✓				Knob or atypical handles that cannot be operated with a closed hand are non-compliant
11	Are exposed pipes under sink sufficiently insulated against contact?		✓			NA if the pipes are not exposed.
	Guest Rooms	Yes	No	NA	Comments	Field Instructions
1	How many total accessible sleeping rooms does the property management report to have? Provide specific number in comment field. Are there sufficient reported accessible sleeping rooms with respect to the total number of reported guestrooms? See attached hot sheet.			✓		NOTE: This section is NA if the property is not Hotel/Healthcare. If applicable, respond to each item under Comments The answer to each question is based on response from the POC and the room requirements listed in the Hot Sheet. You do not need to confirm the POC's statements. Indicate if grab bars, lever hardware, etc, are observed in the ADA units you visit.
2	How many of the accessible sleeping rooms per property management have roll-in showers? Provide specific number in comment field. Are there sufficient reported accessible rooms with roll-in showers with respect to the total number of reported accessible guestrooms? See attached hot sheet.			✓		

	Guest Rooms (cont.)	Yes	No	NA	Comments	Field Instructions
3	How many assistive listening kits and/or rooms with communication features are available per property management? Provide specific number in comment field. Are there sufficient reported assistive listening devices with respect to the total number of rooms? See attached hot sheet.			✓		For hotel, compare number of rooms for hearing impaired + hearing impaired kits reported by POC against the Hot Sheet to answer this question
	Pools	Yes	No	NA	Comments	Field Instructions
1	Are public access pools provided? If the answer is no, please disregard this section.			✓		NOTE: This section is NA unless recreation facilities are provided for public use(hotel/resort/golf club)
2	How many accessible access points are provided to each pool/spa? Provide number in comment field. Is at least one fixed lift or sloped entry to the pool provided?			✓		At least one fixed lift or sloped entry required. A portable lift is compliant only if in use prior to 3/15/2012. Pools with 300' or more of pool wall need two means of entry (second means may be transfer wall, transfer system or pool stairs). Spa and wading pools must meet this requirement as well. If spa pools are clustered, at least one should have an accessible means of entry.
	Play Area	Yes	No	NA	Comments	Field Instructions
1	Has the play area been reviewed for accessibility? All public playgrounds are subject to ADAAG standards.		✓			NOTE: This section is NA unless recreation facilities are provided for public use(hotel/resort/golf club/retail)
	Exercise Equipment	Yes	No	NA	Comments	Field Instructions
1	Does there appear to be adequate clear floor space around the machines/equipment (30" by 48" minimum)?			✓		NOTE: This section is NA unless recreation facilities are provided for public use(hotel/resort/golf club)

*Based on visual observation only. The slope was not confirmed through measurements.

APPENDIX E:
PRE-SURVEY QUESTIONNAIRE

~~Russell Street~~
Shaker Lane Schol

9am
35
Shaker
Lane

This questionnaire must be completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. **The completed form must be presented to EMG's Field Observer on the day of the site visit.** If the form is not completed, EMG's Project Manager will require **additional time** during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final Property Condition Report.

Project Name:

Lafayette Public School

Project Number:

Person completing form:

Steve MARK

Date:

Association with Project:

School Business Manager

Phone Number: 978-540-2304

Years associated w/Proj.:

Fax Number:

Unk = Unknown, NA = Not Applicable

	Yes	No	Unk	NA	Comments
1. Does the property have full-time maintenance personnel on-site?		✓			full time custodial staff
2. Have there been any capital improvements in the last five years?	✓				Replacing unibank filter - on going - 6 mos sum + 22
If so, are details available?					
3. Are there any unresolved building, fire, or zoning code issues?		✓			(done - 9) out of 8 units left
If so, what additional info is available?					1/1 2000 - 1 rev 2-2011 - 97m AC
4. Are there any "down", unusable spaces?		✓			
5. Are there any problems or hazards at the property?		✓			
6. Has the property ever had an ADA accessibility review?		✓			
If so, is a copy available?					
7. Does a Barrier removal plan exist for the property?		✓			
8. Are there any unresolved accessibility issues at the property?		✓			
9. Is there any pending litigation concerning the property?		✓			
10. Is site drainage adequate?		✓			in our opinion - Back parking lot
11. Has a termite inspection occurred within the last year?	✓				regular inspection + service
If so, is a copy of an inspection report available?					
12. Are there any problems with foundations or structures?		✓			
If so, are there plans to address?					
13. Is there any water infiltration in basements or crawl spaces?		✓			
14. Are there any wall or window leaks?		✓			
15. Are there any poorly insulated areas?		✓			
16. Are there any current roof leaks at the property?		✓			
17. Are any roof finishes more than ten years old?	✓	✓			
18. Is the roofing covered by a warranty or bond?		✓			
19. Is Fire Retardant Treated (FRT) plywood used at the property?			✓		
20. Does the property have an exterior insulation and finish system (EIFS) with a synthetic stucco finish?		✓			
21. Do the utilities (electric, gas, sewer, water) provide adequate service?	✓				
22. Is the property served by an on-site water system?	✓	⊙			FAST SYSTEM
	Yes	No	Unk	NA	Comments
23. Is the property served by an on-site septic system?	✓				FAST SEPTIC

periodic backups
minor
pump issues

managed by
NeoFatis Associates
9-1-1983

Innovative/alternative
Technology subsurface
sewage disposal system
+ A

24. If present, do irrigation systems function properly?	✓			✓	
25. Are HVAC systems at the property inspected and maintained, at a minimum, annually?	✓				
26. Is the HVAC equipment more than ten years old?	✓				
27. Do any of the HVAC systems use R-11, 12, or 22 refrigerants?		✓	✓	✓	possibly split units
28. Do tenants contract for their own HVAC work?					
29. Has any HVAC system, or any other part of the property, ever contained visible suspect mold growth?		✓			
If so, where and when?					
30. Has the property ever been tested for indoor air quality or suspect mold?		✓			
If so, where and when? Results?					
31. Is there a response action in place to prevent mold growth or respond to its presence?		✓			
If so, describe. Is a copy available?					
32. Are the water heaters/boilers more than ten years old?	✓				
33. Is polybutylene piping used at the property?		✓			
34. Are there any plumbing leaks or water pressure problems?		✓			
35. Are there any leaks or pressure problems with natural gas service?		✓			
36. Does any part of the electrical system use aluminum wiring?			✓		
37. Do Residential units have a min. of 60-Amp service?				✓	
38. Has elevator equipment been replaced in the last ten years?		✓			
39. Are the elevators maintained by a contractor on a regular basis?	✓				
40. Is the elevator emergency communication equipment functional?	✓				
41. Is the elevator emergency communication equipment ADA compliant?	✓				
42. Have the fire/life safety systems been inspected within the last year?	✓				
43. Are there any smoke evacuation or pressurization systems?		✓			
44. Are there any recalled Omega or Central brand fire sprinkler heads that have not yet been replaced?			✓		
45. Are there any emergency electrical generators?	✓				
46. Are the generators maintained on a regular basis?	✓				
47. Do tenants contract for their own improvement work?				✓	
48. Are tenants responsible for any roof, HVAC, or exterior wall maintenance, repair, or replacement?				✓	
If so, what, where and how?					
49. Have there been previous due diligence, engineering, environmental, or geological studies done?		✓			
If so, are copies available?					
50. Is there anything else that EMG should know about when assessing this property? If so, what?		✓			

On the day of the site visit, provide EMG's Field Observer access to all of the available documents listed below. Provide copies if possible.

INFORMATION REQUIRED 1. All available construction documents (blueprints) for the original construction of the building or for any tenant improvement work or other recent construction work. 2. A site plan, preferably 8 1/2" X 11", which depicts the arrangement of buildings, roads, parking stalls, and other site features. 3. For commercial properties, provide a tenant list which identifies the names of each tenant, vacant tenant units, the floor area of each tenant space, and the gross and net leasable area of the building(s). 4. For apartment properties, provide a summary of the apartment unit types and apartment unit type quantities, including the floor area of each apartment unit as measured in square feet. 5. For hotel or nursing home properties, provide a summary of the room types and room type quantities. 6. Copies of Certificates of Occupancy, building permits, fire or health department inspection reports, elevator inspection certificates, roof or HVAC warranties, or any other similar, relevant documents. 7. The names of the local utility companies which serve the property, including the water, sewer, electric, gas, and phone companies.	8. The company name, phone number, and contact person of all outside vendors who serve the property, such as mechanical contractors, roof contractors, fire sprinkler or fire extinguisher testing contractors, and elevator contractors. 9. A summary of recent (over the last 5 years) capital improvement work which describes the scope of the work and the estimated cost of the improvements. Executed contracts or proposals for improvements. Historical costs for repairs, improvements, and replacements. 10. Records of system and material ages (roof, MEP, paving, finishes, furnishings). 11. Any brochures or marketing information. 12. Appraisal, either current or previously prepared. 13. Current occupancy percentage and typical turnover rate records (for commercial and apartment properties). 14. Previous reports pertaining to the physical condition of property. 15. ADA survey and status of improvements implemented. 16. Current / pending litigation related to property condition.
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Your timely compliance with this request is greatly appreciated.

APPENDIX F:
ACRONYMS

ASTM E2018-01 ACRONYMS

ADA - The Americans with Disabilities Act

ASTM - American Society for Testing and Materials

BOMA - Building Owners and Managers Association

BUR - Built-up Roofing

DWV – Drainage, Waste, Ventilation

EIFS - Exterior Insulation and Finish System

EMF – Electro Magnetic Fields

EMS - Energy Management System

EUL - Expected Useful Life

FEMA - Federal Emergency Management Agency

FFHA - Federal Fair Housing Act

FIRMS - Flood Insurance Rate Maps

FRT- Fire Retardant Treated

FOIA - U.S. Freedom of Information Act (5 USC 552 et seq.) and similar state statutes.

FOIL - Freedom of Information Letter

FM - Factory Mutual

HVAC - Heating, Ventilating and Air-conditioning

IAQ - Indoor Air Quality

MEP – Mechanical, Electrical and Plumbing

NFPA - National Fire Protection Association

PNA – Capital Needs Assessment

PCR - Property Condition Report

PML - Probable Maximum Loss

RTU - Rooftop Unit

RUL - Remaining Useful Life

STC – Sound Transmission Class

UBC – Uniform Building Code