Thomas C. Passios Elementary School
1025 Massachusetts Avenue
Lunenburg, MA 01462

Property Condition Assessment

February 6, 2018

PREPARED FOR:

Town of Lunenburg
17 Main Street, P.O. Box 135
Lunenburg, MA 01462

PREPARED BY:

The Vertex Companies, Inc.
400 Libbey Parkway
Weymouth, MA 02189

PHONE 781.952.6000

VERTEX Project No: 48237

February 6, 2018

Town of Lunenburg
17 Main Street, P.O. Box 135
Lunenburg, MA 01462
Attn: Heather R. Lemieux

Re: Property Condition Assessment
Thomas C. Passios Elementary School
1025 Massachusetts Avenue
Lunenburg, MA 01462
VERTEX Project No. 48237

Dear Ms. Lemieux:

The Vertex Companies, Inc. (VERTEX) is pleased to submit this Property Condition Assessment (PCA) report for the above referenced property (the site).

Our work was conducted in general conformance with P.2489.17, dated September 29, 2017, and in general accordance with the provisions of ASTM E2018-15 (Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process) for commercial real estate.

Please do not hesitate to contact us at your convenience should you have any questions or comments regarding this report.

Sincerely,

The Vertex Companies, Inc.

Philip Russo, R.A.
Field Observer & Report Author
Project Manager

Matthew Quigley, PE
Field Observer & Report Author
Forensic Structural Engineer

Jason Mohre
Field Observer & Report Author
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APPENDICES

1.0 EXECUTIVE SUMMARY

The VERTEX Companies, Inc. (VERTEX) performed a Property Condition Assessment (PCA) of the Thomas C. Passios Elementary School located at 1025 Massachusetts Avenue in Lunenburg, MA, on December 19, 2017. Overall, the property and improvements appeared to be in good to fair condition with respect to age, use and location.

A table of salient information associated with the project is presented below and utilized throughout this report.

SALIENT PROPERTY INFORMATION	
Property Name:	Thomas C. Passios Elementary School
Location/Address:	1025 Massachusetts Avenue, Lunenburg, MA 01462
Construction Year(s):	1952/1976
Property Type:	School Administration Offices & Special Education Classes
Number of Units:	Not Applicable
Reported/provided Building Area (SF):	55,000 (Prior Condition Report)
Reported/provided Site Area (Acres):	Shared with adjacent properties (Brooks House, High School, and Middle School)
Surrounding Property Usage:	Retail, vacant land, agriculture, commercial, residential, recreational
Utility Service:	
Gas:	National Grid
Electric:	Unitil
Water:	Lunenburg Water District
Sanitary:	Town of Lunenburg
Storm:	Town of Lunenburg

The "Quick Look Summary Checklist" presented on the following page, is intended to provide a general, objective* evaluation based on the issues identified at the property and their associated projected costs. Recognizing that the evaluation is general in nature, and subject to the limitations of the assessment as well as cost estimating accuracies, the Summary is simply calculated utilizing a modification of the recognized Facility Condition Index (FCI) utilized by many professionals to evaluate the condition of buildings or groups of buildings. For this assessment, issues identified (Immediate, ADA and Capital Needs) were categorized by building system in

appropriate sections of the report and Cost Table 1. The sum of dollar values for these issues was then divided by an estimated value for building replacement costs, weighted each building category. The following definitions were utilized for these ratings.

- **Good:** Aggregate of identified issues is less than 5% of total replacement costs estimated for the associated system.
- **Fair:** Aggregate of identified issues is greater than 5% and less than 10% of total replacement costs estimated for the associated system.
- **Poor:** Aggregate of identified issues is greater than 10% of total replacement costs estimated for the associated system.

**It is important to note that the ratings assigned in the Quick Look Summary are objective measures based solely on projected dollar amounts relative to total system replacement costs. These ratings may differ from our overall subjective opinion of the condition of the same system or category identified in the text descriptions and discussions in Section 5 of this report.*

"QUICK LOOK" PROJECT SUMMARY AND ESTIMATE OF PROJECTED COSTS

Site Name:	Thomas C. Passios School	# Buildings:	1
Site Location:	Lunenburg , MA	Est. Bldg Area, SF:	55,000
Building Age, yrs:	66	Eval. Term, Yrs:	5
Building Type:	School	Per SF replace cost:	$211

GENERAL CATEGORY	SUMMARY RATING G	F	P	NA	# Items	Immediate Needs Estimate	# Items	Capital Needs Est., Uninflated
SITE DEVELOPMENT		x			1	$14,683	4	$77,515
BUILDING STRUCTURE	x				0	$0	0	$0
BUILDING EXTERIOR			x		0	$0	7	$821,106
ROOF			x		0	$0	2	$681,214
BUILDING INTERIOR			x		1	$755,500	6	$565,897
MECHANICAL SYSTEMS		x			0	$0	2	$701,774
ELECTRICAL SYSTEMS	x				1	$5,372	1	$20,910
PLUMBING SYSTEMS	x				0	$0	0	$0
CONVEYANCE				x	0	$0	0	$0
LIFE SAFETY / FIRE PROTECT	x				2	$10,377	0	$0
ANCILLARY STRUCTURES	x				0	$0	0	$0
OVERALL RATING / TOTALS			x		**5**	**$785,932**	**22**	**$2,868,417**
ADA IMPROVEMENTS					2	$7,153		

This "Quick Look" Summary is intended to provide an overall picture of the number of identified and quantified issues at the subject property. The summary ratings above are objective, and are based on the aggregate estimated dollar amount for identified repairs associated with each category. The definitions used for these summary ratings are based on a modified Facility Condition Index (FCI) which is calculated by dividing aggregate costs for Immediate and Short Term Needs by a simply modeled replacement cost value weighted for each category and based on building type.

$$FCI = \frac{\text{(Immediate Needs + Short Term Needs*)}}{\text{Replacement Cost**}}$$

GOOD: 0 to 5 percent
FAIR: 5 to 10 percent
POOR: 10 to 100 percent

**Capital Needs identifed in Years 1 and 2 including ADA*
*** For each individual building category*

Overall Property FCI = 26%

2.0 PURPOSE AND SCOPE OF SERVICES

2.1 PURPOSE

The purpose of the Property Condition Assessment (PCA) was to observe and document readily visible material and building system defects that might significantly affect the value of the property. The PCA also assessed existing conditions that might have a significant impact on the continued operation of the facility during the requested term of assessment. The requested term of assessment for this report was five years.

It is understood that the Client is considering the appropriate renovation or re-use of the property described in this report. The report will be utilized to assist with planning decisions, as well as provide information for future capital planning.

Observations performed during the PCA were made without operational testing and/or removing or damaging components of the building systems. Consequently, some system specific assumptions were made regarding the existing conditions and operating performance of each system. Furthermore, recommendations developed for this report were based on information discovered during the PCA. If additional information is discovered concerning the facility, the assumptions, conclusions, and recommendations presented herein may require re-assessment.

The recommendations and opinions of cost provided in this report were also based on the understanding that the facility will continue to operate under similar use and occupancy as observed on the date of the site reconnaissance.

2.2 SCOPE OF SERVICES

The PCA included the following: site reconnaissance; limited interviews with property management and maintenance personnel; and a review of available construction documents as provided by the building management. Operational testing of building systems or components was not conducted. Although the building was visually reviewed for suspected hazardous materials, sampling was not conducted and thus, this PCA does not confirm the presence or absence of asbestos, polychlorinated biphenyls (PCBs), mold, or contaminated soils or groundwater on the property.

During the PCA, unless noted otherwise, VERTEX made visual observations of the following facility features: site development systems; building structure systems; building exterior systems;

building interior systems; roof systems; mechanical systems; electrical systems; plumbing systems; conveyance systems; and, life and fire safety systems.

VERTEX utilized ASTM E2018-15 as a guideline for the evaluation of the building. This recognized assessment protocol gives specific guidance for the condition assessment of buildings, and provides a framework for an objective and repeatable methodology from an independent assessor.

2.3 REPORT RELIANCE

This report is intended for review as a complete document. Therefore, interpretations and conclusions drawn from the review of any individual section are the sole responsibility of the user.

2.4 DEVIATIONS FROM THE GUIDE

ASTM E2018-15 "Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process," was utilized as a guideline for the site visit and associated report preparation. ASTM requires that deviations from the guidelines be stated in the report.

The following items were not required by the ASTM standard but were provided as part of this PCA at the request of the client or as value added considerations.

- ★ The field observations were performed by registered professional staff
- ★ Determination of USGS Seismic Hazard and IRC Termite Zone
- ★ A Capital Needs Assessment with a term length of five-years was performed
- ★ A visual review of specific accessibility related issues and general compliance was performed

2.5 INACCESSIBLE AREAS / OBSERVATION LIMITATIONS

Representative observations were made at the facility in accordance with ASTM E2018-15. The following areas were not accessed, or access was limited during the site visit.

- ★ Roof (roof was accessed but visibility was limited due to snow cover)
- ★ Landscaping (due to snow cover)

2.6 AREAS REVIEWED

Observations of the various systems, materials and building areas were performed as part of the site walk-through. Site observations of similar portions of the building or similar systems or materials were performed until, in VERTEX's professional opinion, a representative sampling was adequate for extrapolation to the remainder of the building.

3.0 REPORT INFORMATION

3.1 ASSESSMENT DEFINITIONS

GOOD: Material or building system was in average to above-average condition. Opinion is rendered with consideration to the item's type, age, design, and location. Generally, other than normal maintenance, no work is recommended or required.

FAIR: Material or building system was in average condition. Some work is required or recommended, primarily due to normal aging and wear of the building system, to return the system or material to a good condition.

POOR: Material or building system was in below average condition. Significant work is anticipated to return the building system or material to an acceptable condition.

Unless stated otherwise in this report, the material and building systems reviewed were considered to be in good condition and their performance appeared to be satisfactory.

3.2 COMMON ABBREVIATIONS/ACRONYMS

ALEC	Aluminized Emulsion Coating	**HP**	Horse Power
AC	Alternating Current	**HVAC**	Heating Ventilation & Air Conditioning
ASHRAE	American Society of Heating, Refrigeration & Air Conditioning Engineers	**IN**	Inches
		IRMA	Inverted Roof Membrane Assembly
A/V	Audio Visual Device	**KVA**	Kilo-volt Amp
BLDG	Building	**KW**	Kilowatt
BOCA	Building Officials & Code Administrators (Building Code)	**LF**	Linear Feet
		LS	Lump Sum
BTU	British Thermal Unit (HVAC / MEP)	**MBH**	1,000 BTUs per Hour
BUR	Built-Up-Roof	**MEP**	Mechanical, Electrical, Plumbing
CF	Cubic Feet	**MIL**	1/1000th of an inch
CIP	Cast Iron Pipe	**MP**	Manual Pull Station (fire alarm)
CMP	Corrugated Metal Pipe	**PSI**	Pounds per square inch
CMU	Concrete Masonry Unit	**PVC**	Poly-Vinyl-Chloride (pipe)
CY	Cubic Yard	**QA/QC**	Quality Assurance/Quality Control
DC	Direct Current	**RCP**	Reinforced Concrete Pipe
DIP	Ductile Iron Pipe	**RUL**	Remaining Useful Life
DM	Deferred Maintenance	**SOG**	Slab-on-grade
DX	Direct Expansion (air conditioning)	**SF**	Square feet
EIFS	Exterior Insulation & Finish System	**SY**	Square Yard
EMS	Energy Management System	**TN**	Ton (12,000 BTU cooling, HVAC)
EPDM	Ethylene-Propylene-Diene-polymer-Monomer ("rubber" roofing)	**UBC**	Uniform Building Code
		VAT	Vinyl Asbestos Tile
EUL	Estimated Useful life	**VAV**	Variable Air Volume (HVAC)
FT	Feet	**VCT**	Vinyl Composition Tile
HID	High Intensity Discharge (lighting)	**VWC**	Vinyl Wall Covering

3.3 REPORT TENSE

This report was prepared in the past tense as it is intended to only describe observed conditions at the time of the site reconnaissance.

3.4 OPINIONS OF COST

The cost tables associated with the PCA include total amounts for *Immediate Repair* items, *Short-Term Repair* items, and *Capital Needs*. A separate cost table (Table 2) is provided to address accessibility issues.

Immediate Repair items are defined as physical deficiencies that cannot be remedied with routine maintenance, normal operating maintenance, etc., excluding de minimis conditions that generally do not present a material physical deficiency to the subject property. Immediate Repair items are typically considered to be: (1) material existing or potential unsafe conditions resultant from damage or deterioration (2) material building or fire code violations as revealed by municipal agencies; or (3) conditions that if left unremedied, have the potential to result in or contribute to critical element or system failure within one year, or will result most probably in a significant escalation of its remedial cost.

Short-Term Repairs are defined as physical deficiencies, such as deferred maintenance, that may not warrant immediate attention, but require repairs or replacements that should be undertaken on a priority basis in addition to routine preventative maintenance. In some cases, Short-Term repairs may include recommendations for testing, exploratory probing, and/or further analysis. Generally, the expected time frame for Short-Term Repairs is within one to two years.

Capital Needs are those items of a capital nature which are expected to require repair, renovation or replacement during the requested evaluation term, in this case five years.

ADA/MAAB Items are those items that would be required to upgrade or update existing systems to provide improved accommodations for handicapped persons.

The opinions of cost presented herein were based on readily visible material and building system defects that might significantly affect the value of the property during the requested assessment term. These opinions were based on approximate quantities and values, and do not constitute a warranty or guarantee that all item(s) requiring repair were included. The estimated costs developed in this report were for the aforementioned Immediate Repair items, Short-Term

Repair items, Capital Needs and ADA/MAAB items. Items not incorporated into the cost tables include operational costs, such as landscaping maintenance and utility (gas or electricity) usage, unpredictable (aesthetic) upgrades, or normal operation and maintenance. The availability of parts or qualified personnel for repairs or renovations may be limited and is not factored into cost estimates unless specifically stated.

Estimated costs were developed with published unit price data and industry experience as summarized below.

Estimating/Quantity Take Off: Costs for selected items were estimated based on provided documentation, general calculations of capacity, area, size or other item features, and VERTEX's experience with buildings of similar size, construction and geographic location.

Like-with-Like Replacement: This assessment was not an attempt to design or address future programming needs, but rather an objective, independent assessment of the current condition of the buildings with a focus on repair, renovation or replacement of building materials, components or systems that have reached or are expected to reach the end of their useful lives in the next five (5) years.

Primary Estimating Source: RS Means 2017 Commercial Cost Renovation Data was utilized as the primary resource and some costs were modified based on our local experience. Unit costs were standardized for the geographic area and for prevailing wage rates and a percentage escalation was added for uncertainty.

It is important to understand that actual costs will vary depending on such factors as contractor expertise, previous contractor commitment, seasonal workload, insurance and bonding, and local labor conditions. These factors may cause wide variations in the actual costs as estimated by different bidders. In addition, since some projected projects may not require general contracting or significant design, GC soft costs (overhead & profit, bond and insurance, general conditions), design fees, owners project management fees and other potential fees are not included in these estimates. In view of these limitations, the costs presented herein should be considered "order of magnitude" estimates and used for preliminary budgeting purposes only. Preparation of scopes of work and contractor bidding are recommended to forecast actual costs.

3.5 ACTIVE CONSTRUCTION

The building was complete, and areas of active construction were not observed during the on-site visit.

4.0 ASSESSMENT INFORMATION

4.1 GENERAL SUMMARY

The VERTEX Companies, Inc. (VERTEX) performed a Property Condition Assessment (PCA) of Thomas C. Passios Elementary School located at 1025 Massachusetts Avenue in Lunenburg, MA, on December 19, 2017. Overall, the property and improvements appeared to be in good to fair condition with respect to age, use and location.

In our opinion, the Site Contact (Owner's Representative) was fully familiar with the building's operation, condition and associated systems. Our conclusions are based on our visual observations, statements by on-site personnel, review of available records, and limited documentation obtained during the course of follow-up research.

4.2 SITE RECONNAISSANCE

The site reconnaissance portion of the PCA was performed on December 13, 2017, by Philip Russo, R.A., Matthew Quigley, PE, and Jason Mohre, Brian Dunn, AIA, NCARB and Scott Katzer, PE., CFEI all of VERTEX. Weather conditions during the site reconnaissance were as follows:

On-site Date	Weather Description	Average Temp.
December 19, 2017	Sunny	30° F

The following building features were assessed, if applicable.

- Exterior Site Elements
- Building Structure System
- Building Exterior System
- Roof System
- Mechanical System
- Electrical System
- Plumbing System
- Building Interior System
- Life & Fire Safety System
- Conveyance System

4.3 BUILDING HISTORY

According to the Site Contact, the building was originally constructed as an elementary school and converted into use for school administration offices and special education class use at a later date. Reportedly the building ceased operations as an elementary school in 2012. Reportedly in 1976 an addition was constructed at the northwest corner of the building.

4.4 INTERVIEWS

Interviews were conducted with personnel familiar with the facility to obtain information relative to the condition of the various building systems. Information obtained during the interviews has been incorporated into this report in the applicable sections. The following individuals or agencies were interviewed or contacted.

- Jack Rodriquenz, DPW Director, Town of Lunenburg (Site Contact)
- Adam Burney, Land Use Director, Town of Lunenburg
- John Londa, Director of Facilities, Town of Lunenburg
- Jim Breault, Facilities Manager, Town of Lunenburg

4.5 PRE-SURVEY QUESTIONNAIRE AND REQUEST FOR DOCUMENTATION

Due to ownership of the building and property by the municipality, VERTEX opted not to issue a Pre-Survey Questionnaire and Request for Documentation (PSQ). Information relating to the property history was obtained from other sources as documented in this report.

4.6 DOCUMENTS

The following documents were provided or discovered during VERTEX's research of the property history.

Description	Author	Date	Reviewed	
			No copy obtained	Copy obtained
Flood Insurance Rate Map (Community Panel # 2503150005B)	Federal Emergency Management Agency	June 15, 1982		✓
Building Assessment & Space Needs Study	Tappe Architects	January 11, 2016		✓

4.7 MUNICIPAL RESEARCH & CODE COMPLIANCE

A detailed analysis of whether or not the building and site is compliance with current codes was not performed as part of this assessment. Code compliance research and evaluation was limited to the following.

a) Visual observation of materials, components or systems that due to obvious deterioration or damage have resulted in an unsafe condition. Such conditions must have been visible without probing, dismantling or uncovering or unblocking access, and must not have required specialized knowledge of any particular code or any measurement or calculation for dimensional, clearance, or other compliance.

Issues of unsafe conditions related to visual deterioration or damage, if observed, are identified and discussed in the various sections of this report specific to the material, component or system.

4.8 SITE CHARACTERISTICS

General site characteristics including site topography, flood zone, seismic considerations, and termite considerations are tabulated and discussed below.

Topography

The property was relatively flat, with crowns in pavements and landscaped areas provided for runoff of surface water.

Flood Zone

VERTEX visually plotted the general property location on FEMA Flood Insurance Rate Map. This should not be considered a flood zone certification. Actual determination of flood zones should be performed by a registered surveyor.

Subject Property Flood Zone: Zone C, defined as an area of minimal flooding.

Seismic Considerations

The probability of ground damaging motion within each Seismic Zone is defined below based on the Seismic Zone Map in Figure A, (1997 Uniform Building Code).

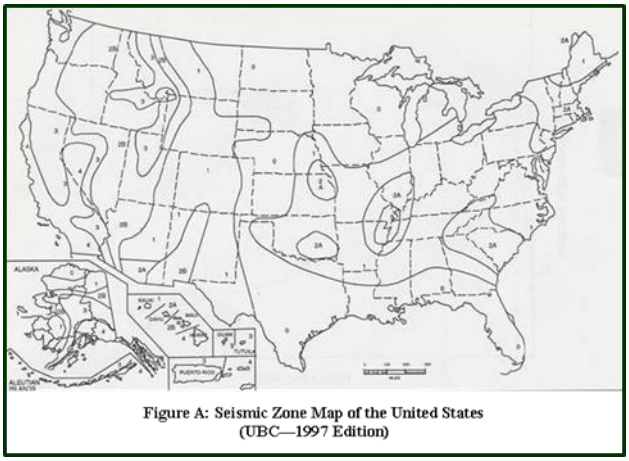

Figure A: Seismic Zone Map of the United States
(UBC—1997 Edition)

- (0 or 1) low probability
- (2A) low to moderate probability
- (2B) moderate probability
- (3) moderate to high probability
- (4) high probability

While there are more recent seismic risk maps, they generally require specific information on the seismic response characteristics of the site and structure. For ease and consistency, and comparision with previous standards, the ASTM standards associated with Probable Maximum Loss (PML) seismic studies, rely on this 1997 map.
The subject property for this evaluation was located in Seismic Zone:

2A

In general terms, those properties located in Zones 3 and 4 have a greater risk of ground damaging motion, and PML studies are typically recommended in these zones. Based on the property location, a PML is not recommended for this site.

Termite Considerations

Termite Zones identified in the 2000 International Residential Code (IRC) are shown in Figure B. Based on the general location, the subject property is located in the following Termite Infestation Region:

Moderate to Heavy

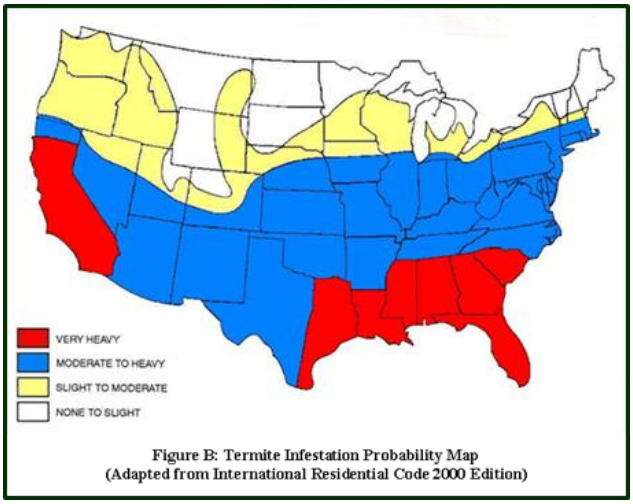

Figure B: Termite Infestation Probability Map
(Adapted from International Residential Code 2000 Edition)

The foundation and exterior walls of the building are constructed with concrete, steel, masonry and glass, which may serve to minimize the risk of building damage due to wood destroying insects.

We did not observe evidence of wood destroying insect activity, and none was reported; however, in the event that certification of the absence or present of termite activity is required, a licensed pest inspection professional should be engaged to perform a formal survey.

4.9 CLIENT SPECIFIC INFORMATION

After the completion of our site visits, the Town of Lunenburg requested cost information relating to the demolition of this building. VERTEX developed a general rough 'order of magnitude' estimate for demolition, tabluated as follows. These costs would be incurred after completion of abatement of hazardous materials, which are outlined in Table 1 and discussed in Section 5.5, Building Interior, Hazardous Material Considerations.

Building	Sq. Ft.	Demolition Labor and Contractor Cost	Trucking and Disposal	Total Budget Cost
Passios School	55,000	$172,920	$165,000	$337,920

5.0 SYSTEM DESCRIPTION AND CONDITION

The following sub-sections describe the major building systems as observed during the PCA. Comments and/or recommendations offered by VERTEX regarding each system are presented immediately after each description in italic print. Each deficiency is assigned an item number and is cross-referenced in Table 1. Numbered photographs are presented in Appendix A and cross-referenced in Table 1.

5.1 SITE IMPROVEMENTS

Site development systems are those that relate to geographic features of the property and surrounding area, and improvements that serve ancillary roles for the facility. Components of the observed site development systems included paving and parking, sidewalks, retaining walls and fencing, signage, loading docks and dumpster areas, irrigation systems, site lighting and utilities, landscaping, and surface drainage. Operational testing of site development components was not conducted. Clear lines of property demarcation were not provided and as such, our observations relating to the site grounds and surrounding amenities are to be considered approximate.

SITE IMPROVEMENTS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Site Access	The site was accessed from the north side of Massachusetts Avenue. The site was easily accessible from major area roadways. The site was located within five miles of Route 2.	G	
Parking	The property was snow covered at the time of our assessment. A few areas of exposed paving were observed and indicated areas of asphalt paving. Parking was provided on open surface lots on the east side of the building. Painted striping was provided to delineate parking stalls and directional markings. The site had a reported total of 35 surface parking spaces, three of which was specifically designated for handicapped use.	G	

<table>
<tr><th colspan="4">SITE IMPROVEMENTS</th></tr>
<tr><th>Item</th><th>Description of System or Component</th><th>Overall G, F, P</th><th>Cost Item #</th></tr>
<tr><td></td><td>There was a gravel and dirt parking area at the northeast corner of the site. The parking area appeared to provide parking for approximately 34 vehicles.</td><td></td><td></td></tr>
<tr><td>Asphalt Pavements</td><td>The parking lots, driving lanes and access roads serving the property were constructed with asphalt, except as noted. Information relating to the materials and thicknesses utilized in the construction of the pavement section was not available.

In general terms, the asphalt pavement areas appeared to be in good to fair condition. We observed the following types of deterioration in relation to <u>asphalt pavement conditions.</u>

<table>
<tr><th colspan="6">Observed ASPHALT Pavement Deficiencies</th></tr>
<tr><td>X</td><td>Surface Weathering</td><td></td><td>Potholes</td><td>X</td><td>Transverse Cracks</td></tr>
<tr><td></td><td>Loss of Aggregate</td><td></td><td>Rutting</td><td>X</td><td>Longitudinal Cracks</td></tr>
<tr><td></td><td>Map Cracking</td><td></td><td>Alligator Cracking</td><td>X</td><td>Random Cracks</td></tr>
<tr><td></td><td>Birdbaths</td><td></td><td>Heaving</td><td></td><td>Vegetation Growth</td></tr>
<tr><td colspan="6">Conditions Observed were: Minor</td></tr>
<tr><td colspan="6">Extent of observed deficiencies: Scattered Locations</td></tr>
</table>

We did not observe any asphalt conditions that appeared to require immediate repairs; however, longer term repairs and asphalt pavement renovations should be expected during the evaluation term. Budgetary allowances and forecasts for implementation are included in Table 1.</td><td>G to F</td><td>1, 2</td></tr>
<tr><td>Concrete Pavements</td><td>Not Applicable.</td><td>N/A</td><td></td></tr>
</table>

SITE IMPROVEMENTS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Sidewalks	The property was snow covered at the time of our assessment. A few areas of exposed sidewalk were observed and indicated areas of asphalt and granite pavers at the sides of the building. *The observed asphalt and granite sidewalks appeared to be in good to fair overall condition with some evidence of deteriorated asphalt paving and spalled mortar joints at the granite pavers observed. Based on the estimated RUL of the sidewalks, replacement of some sections of asphalt paving and re-grouting of the mortar joints at the granite pavers should be anticipated during the evaluation term. A budgetary estimate of cost for such repairs is included in Table 1.*	G to F	3, 4
Curbs	Concrete and extruded asphalt curbing was installed around the east and south sides of the site. *The curbing appeared to be in good overall condition requiring routine maintenance during the evaluation term.*	G	
Fencing	A chain link fence was observed at the north side of the property. The fence provided security. Wood guardrails were observed at the east side of the site. *Observed fencing and guardrails appeared to be in good condition requiring routine inspection, repairs and maintenance during the evaluation term.*	G	
Retaining Walls	Not Applicable.	N/A	

SITE IMPROVEMENTS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Drainage	The building roof areas, landscaped areas and open parking surfaces drained to an underground, on-site storm drainage collection system that discharged to the municipal storm water management system. *Rooftop drain discharges, inlets and drainage collection structures were visible, free from debris, and appeared to be in good overall condition. Regular inspection and maintenance of drainage components and clearing of the inlets and drainage paths will be required during the evaluation term as part of routine maintenance.*	G	
Utilities	Electric, water, natural gas, sanitary and storm sewer services were provided to the site. • Water provider: Lunenburg Water District • Electric provider: Unitil • Natural gas provider: National Grid • Sanitary sewer provider: Town of Lunenburg • Storm sewer provider: Town of Lunenburg	G	
Exterior Lighting	Lighting was provided at the sides and rear of the building. Observed fixtures consisted of wall-mounted units located above the secondary entrance doors. *The site lighting fixtures appeared to be in good overall condition. VERTEX did not visit the site at night to observe the operation of the site lighting.*	G	
Landscaping	The property was snow covered at the time of our assessment. A few areas of exposed landscaping were observed and indicated areas of grass and shrubs along the perimeter of the building.	G	

SITE IMPROVEMENTS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	The observed landscaping elements appeared to be in good overall condition and were well-maintained.		
Modular Classrooms	The site included two modular classrooms that appeared to be joined together. The combined structure measured approximately 68 feet long by 28 feet wide. Construction consisted of typical trailer construction with light gage metal on a steel frame with wheels. The structure was located on the west side of the property, was reported to have mold issues and reportedly has not been in use since 2012. *According to site contact, the modular classrooms are scheduled to be demolished and removed early in the evaluation term. A budgetary allowance for this action is included in Table 1.*	P	5
Recreational Facilities	Not Applicable.	N/A	

5.2 BUILDING STRUCTURE

Structural issues are related to those building components that transfer loads within a building and to the underlying ground. Loads may be the result of constant forces such as the weight of the building or other stationary objects within the building (dead loads), or variable forces such as people, operational equipment, vehicular activity or wind (live loads). The building structure assessment included the review of available geotechnical reports and drawings depicting the foundation, floor slab, and framing systems. Visual observations of exposed features were also performed when possible.

BUILDING STRUCTURE & SHELL			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Foundations	According to the provided foundation plans, the building's foundation system consisted of conventional continuous and spread concrete footings with steel reinforcement. The building contained a crawl space below the gymnasium. Access to the crawl space was limited to visual review from the access hatch. *No visual indications of significant foundation failure or visual evidence of significant settlement were observed. No evidence of past water intrusion or evidence of significant water damage was identified during VERTEX's on-site visit. We observed isolated cracks in the concrete foundation around the perimeter of the building. The cracks were typically hairline and consistent with concrete shrinkage. The cracks are not indicative of a structural issue.*	G	
Floors	The primarily one-story building was constructed with a cast-in-place concrete floor slab at the grade level. According to the building plans, the floor section consisted of a cast-in-place concrete slab 4-inches in thickness. The slab was placed over a 6-inch thick bed of gravel fill. Per the drawings, the slabs were reinforced with 6x6 #6 wire mesh. The gymnasium was constructed over a crawl space and was constructed with wood plank flooring supported by 2x14 wood joists spaced 16-inches on center. The wood joists were supported by steel beams. Adjacent to the gymnasium, above the stage was a mezzanine constructed with wood framing. On the mezzanine we observed a crown in the middle of the room. The framing for the mezzanine was inaccessible. *The floor slabs appeared to be in good condition with no evidence of significant deterioration or failure. In most areas, the floor slab surfaces were concealed by flooring finishes; however, floors appeared to be level and stable in observed locations.*	F	

BUILDING STRUCTURE & SHELL			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Super-structure	Based on our review of provided plans, the building structure consisted of a structural steel frame with concrete masonry unit (CMU) and brick masonry exterior walls. The roof deck typically consisted of wood planks, and was supported by wood rafters and structural steel frames. At the northwest corner, a 1976 addition was constructed with CMU bearing walls, steel joists and a steel roof deck. The maintenance shop located on the east side of the building was constructed with CMU bearing walls, steel beams and a steel roof deck. *Overall, visible portions of the building slabs and superstructure appeared to be in good condition. Observed floors appeared to be level and stable with no obvious evidence of structural failure. Observed columns appeared to be plumb and free from visible impact damage. Throughout the building facades, we observed isolated areas of deteriorated CMU block, cracked brick masonry and moisture damage. The isolated deterioration should be repaired under a normal maintenance plan.* *At the maintenance shop, we observed step cracks in the CMU walls, deteriorated mortar joints and evidence of moisture intrusion through the exterior walls. Due to the extent of step cracking, we recommend the areas experience distress be rebuilt. In our opinion the maintenance shop may be partially rebuilt and does not require full demolition and reconstruction.* *On the east side of the building, we noted a brick masonry chimney attached to the mechanical room. Throughout the chimney, we observed staining, deteriorated mortar joints, horizontal and vertical cracking, evidence of past repairs and peeling paint on the interior. At the time of our assessment, we did not observe evidence of movement or loose materials at the chimney. The chimney appeared plumb. We recommend the chimney be repaired including repointing, partial rebuilding and cleaning to prevent further deterioration.*	G to F	Refer to Item #7 In Exterior Wall Section

BUILDING STRUCTURE & SHELL			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	In the cafeteria, we observed a section of the interior wall, near the southwest corner, cracked adjacent to an exterior door. The step crack extended from the door head to the ceiling and from the building corner to the door. We did not observe cracking on the exterior opposite the interior cracks. In our opinion the cracks were formed due to differential movements between perpendicular walls. The cracks have affected the interior finishes only and do not pose a structural concern at this time.		

5.3 BUILDING EXTERIOR

Building exteriors are typically composed of various systems and materials intended to serve three main purposes: (1) aesthetic appeal; (2) weather resistance; and, (3) structural support. Items included in the building exterior assessment include wall assembly, glass and glazing, doors, and sealant.

BUILDING EXTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Wall Assembly	The building was clad primarily with brick veneer with some walls constructed of concrete masonry units primarily at the Mechanical and Maintenance areas. (Photos 1-8, 19-24, 31-36) Some areas of brick and CMU exhibited deteriorating mortar. There were some isolated instances of cracked units and/or cracks in the mortar joints. The Maintenance garage was observed to have a crack in the CMU wall at the northeast corner originating from the entry door. (Photos 7-8). Cracks were observed at the east side entry door wall at the south facade adjacent to the Cafeteria. (Photos 1-2). Also at the east	F	

BUILDING EXTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	facing wall of the Cafeteria we observed foundation to top of wall cracks at 3 locations. (Photos 19-22). The chimney at the Mechanical area was observed to have been repaired in the past with caulk. (Photos 9-10). There were also some instances of minor cracking and deficient mortar joints observed at various locations throughout the building. (Photo 24, 28, 31-35). *The exterior walls appeared to be in good to fair condition. Renovation of walls including minor brick repair brick pointing, and façade cleaning will be required during the evaluation term. A budgetary estimate of cost is provided in Table 1.* *Based on the observed condition, age and estimated RUL of the coatings, renovation of walls including cleaning and painting of the CMU, fascia's, soffits and window trim will be required during the evaluation term. A budgetary estimate of cost is provided in Table 1.*		6, 7, 8 9, 10
Sealants	Caulking was observed at exterior wall joints, at material interfaces and around window and door penetrations. *Observed caulk joints at wall penetrations (window and door openings) and at the window systems appeared to be cracked and brittle with significant deterioration and failure. (Photo 16). Replacement will be required early in the evaluation term. A budgetary estimate of cost is provided in Table 1.*	P	11
Windows	The building windows typically were operable, single-hung units with insulated glass set in metal frames. The administration and gym area windows were replaced in 2000 and appeared to be in good condition. *The classroom window units and clerestory windows were replaced in 1986. They appeared to be in fair to poor overall condition and have surpassed their useful lives. Based on the age, apparent condition and estimated RUL of the windows, replacements are recommended*	F-P	12

BUILDING EXTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	during the evaluation term. A budgetary allowance for replacement of windows with insulated glass is presented in Table 1. *The wood window shutters were observed to be in poor condition and will require replacement during the evaluation term. A budgetary estimate of cost is provided in Table 1.*		
Exterior Doors	The main entrance doors and corridor egress doors to the building typically were storefront style swing doors with full glass vision panels set in metal frames. The metal service doors provided building access at back-of-house areas and secondary building entrances. *The exterior entrance doors and the associated storefront systems appeared to be in good condition.*	G	
Porches	Not Applicable.	N/A	
Exterior Stairs	Exterior stairs were observed at the south and east sides of the building and were constructed of concrete assemblies with closed risers and metal handrails. *The metal edging on the concrete treads was rusted. The exterior stairs appeared to be in fair condition requiring routine repairs and maintenance during the evaluation term.*	F	

5.4 ROOF

The purpose of roof system(s) is to protect the building components and occupants from adverse moisture, temperature, collapse, and other unwanted elements. The selection, design, and installation of a roof are critical to a building's financial performance and can be one of the most expensive building systems to repair, maintain, and replace. Items included in the roof assessment include roof type, age, drainage, warranty status, ancillary roofs, skylights, and roof accessories.

ROOF			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Roof Covering	At the time of the assessment, the roof was mostly covered with snow limiting the ability to observe the membrane. Observations were made of the roofing components that could be seen on that day. The low-slope/flat roof system at the building was constructed with a combination of wood planks and metal decking supported by structural steel. The roof covering consisted of an EPDM elastomeric single-ply roofing membrane. The portions that were observed appeared to be in fair condition. (Photos 37-42, 44, 48). The roof generally had single-ply EPDM base and edge flashing. The perimeter of the roofs was lapped over with the membrane that was then secured to the fascia with a termination bar. We requested a copy of the warranty, but none had been provided at the time of this report. Any active warranties should be provided, so that warranty limitations can be reviewed. According to the Site Contact John Londa, the roof was installed in 1986 and re-seamed in 2012, except for the northwest addition which was installed in 2007. If additional documentation relating to roofing age is available, it should be provided to VERTEX for review. *Where exposed, the roof coverings appeared to be in fair overall condition considering the age of the installation. No active leaks or evidence of chronic historical leaking issues was observed. Based on the age, apparent condition and estimated RUL of the roofing membrane, replacement is recommended early in the evaluation term. A budgetary allowance for replacement of the membrane, except for the covering over the northwest addition, is presented in Table 1.*	F	13
Roof Drainage	The roof system was relatively flat with surface drainage provided by a series of internal roof drains, which discharged into the site's storm water collection system.	G	

ROOF			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	The roof drains appeared to be functioning adequately. Ponding water or evidence of significant ponded areas was not observed on the roof.		
Skylights & Roof Accessories	The building included clerestory windows at the main corridors, see Window section above. The building also included 2 domed acrylic skylights located at the north end of the central spine. One was observed to have a broken dome. (Photo 46). *The clerestory windows appeared to be in fair to poor overall condition and have surpassed their useful life. A budgetary allowance for replacement for clerestory windows with insulated glass alternatives is presented in Table 1.* *The skylights appeared to be in fair condition. Repair of a broken glazed dome will be required early in the evaluation term.* *Due to the minimal aggregate quantity and associated cost, this item is considered to be routine maintenance.*	F to P	Included in 12
Roof Access	Fixed roof access was not provided at the building. Access was gained via a ladder positioned at the north wing of the building at the west façade from the sidewalk. *Fixed access to each roof is recommended so that roof inspections, clearing of roof drains and equipment maintenance can be performed quickly in the event of an emergency. This is considered to be an item of Routine Maintenance.*	N/A	
Ancillary Roofs	There was a standing-seam metal mansard roof, located at the center of each of the classroom wings that housed mechanical equipment. (Photos 38-43). The mechanical enclosures were topped with EPDM roofing in the same manner as the main roof. The standing seam panels appeared to be in good to fair condition. There was some	F	

ROOF			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	minor rusting evident at a few observed locations. There were no reports of active leaks attributable to the standing seam panels on the day of inspection. *The roof may be a candidate for renovation, which often includes replacement of fasteners, neoprene washers, reworking of panel seams, and application of EPDM patches and application of elastomeric liquid applied coatings. Such actions can serve to extend the service life of metal roofs and a budgetary allowance is included in Table 1. In addition, these portions of roofing may be covered with an alternative type of membrane roof.*		14
Roof evaluations should be conducted by a professional roofing inspector on an annual basis and corrective or preventative repairs should be made accordingly. A qualified inspector will be the best judge of the need to recover/replace the roofs and the specific timing associated with such actions.			

5.5 BUILDING INTERIOR

Building interior systems are those that relate to the visible features of finished rooms, hallways, common areas, service areas, tenant spaces, stairwells and restrooms. Items included in the interior assessment are the floor, wall, ceiling, stair and restroom finishes.

BUILDING INTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Public Areas	Public areas at the building included corridors, lobby, entrance and administration offices. Public area interior finishes at the building included a mixture of the following. Floor Coverings: Resilient tile/ Vinyl asbestos tile	G to F	

BUILDING INTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	Wall Coverings: Painted drywall/plaster, wood paneling, CMU Ceiling Coverings: Painted plaster/drywall, suspended grid with drop-in tiles, and 1' x 1' acoustical ceiling tile (tacked on) *The interior components within the public areas appeared to be in generally good to fair overall condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including replacement of resilient floor tile and ceiling systems, re-painting of drywall/plaster wall finishes and re-staining of wood paneling.*		15, 16, 18, 19
Administrative Offices	Finishes in the offices typically were resilient tile floors, painted drywall/plaster walls with some stained wood paneling, and 1' x 1' acoustical ceiling tiles. *The interior components within the office areas appeared to be in generally good to fair overall condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including replacement of resilient floor tile and ceiling systems, re-painting of drywall/plaster wall finishes and re-staining of wood paneling.*	G to F	15, 16, 18, 19
Classrooms	Finishes in the classrooms typically were resilient tile/vinyl asbestos tile floors, painted drywall/plaster walls with some stained wood paneling, and 1' x 1' acoustical ceiling tiles, with some suspended acoustical ceiling systems. *The interior components within the classrooms appeared to be in generally good to fair overall condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including replacement of resilient floor tile and ceiling systems, re-painting of drywall/plaster wall finishes and re-staining of wood paneling.*	G to F	15, 16, 17, 18, 19

BUILDING INTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Kitchen-Cafeteria	Finishes in the kitchen-Cafeteria typically were resilient tile/vinyl asbestos tile and quarry tile flooring, painted drywall/plaster walls with glaze-faced CMU, and painted plaster/drywall ceilings and 1' x 1' acoustical ceiling tiles. The cafeteria was furnished with a folding partition at its mid-point. *The interior components within the classrooms appeared to be in generally good to fair overall condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including replacement of resilient/VAT flooring and ceiling systems and re-painting of drywall/plaster walls.*	G to F	15, 16, 19
Gymnasium	Finishes in the gymnasium typically was stained maple strip flooring, CMU walls, and exposed underside of structure above (steel framing with wood plank decking). The gymnasium included a stage at its east side that was sealed off with a wall constructed at its original opening. *The observed interior finishes in the gymnasium appeared to be in good condition, requiring routine maintenance during the evaluation term.*	G	
Mezzanine	Finishes in the mezzanine typically were resilient tile/vinyl asbestos tile flooring, painted brick and drywall/plaster walls, and 1' x 1' acoustical ceiling tiles. *The interior components within the classrooms appeared to be in generally good to fair overall condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including replacement of resilient/VAT flooring and ceiling systems and re-painting of drywall/plaster and brick walls.*	G to F	15, 16, 17, 19

BUILDING INTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Corridors	Finishes in the corridors typically were resilient tile/vinyl asbestos tile flooring, painted drywall/plaster walls with glaze-faced CMU at the lower portion, and 1' x 1' acoustical ceiling tiles. *The interior components within the corridors appeared to be in generally good to fair overall condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including replacement of resilient/VAT flooring and ceiling systems and re-painting of drywall/plaster walls.*	G to F	15, 16, 18, 19
Stairs	Observed stairs were constructed with wood assemblies with closed risers and stained wood handrails. The stairwells typically had painted drywall/plaster and brick walls and wood treads with rubber nosing's. *The interior components within the stairway appeared to be in generally good to fair condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including re-painting of walls and ceilings and re-staining of the wood components.*	G to F	13, 15, 16, 18
Restrooms	Typical restroom finishes at the building included ceramic tile flooring, painted drywall/plaster walls with glaze-faced CMU at the lower portion of the walls and 1' x 1' acoustical ceiling tiles. *The restrooms appeared to be in good to fair condition; however, based on the age and condition of the finishes, renovation should be expected during the evaluation term including re-painting of walls and ceilings.*	G to F	15, 16
Interior Doors	Typical interior door assemblies included solid core stained wood doors in steel frames with accessible hardware. Reportedly all of the hardware was upgraded with accessible hardware in 2005.	G to F	

BUILDING INTERIOR			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	The interior door assemblies appeared to be in generally good to fair overall condition. However, based on the age and condition of the assemblies, replacement of some of the assemblies should be expected during the evaluation term. A budgetary estimate of cost for this item is included in Table 1.		20
Hazardous Material Considerations	As part of this assessment, VERTEX conducted a general, visual survey for hazardous materials. The findings of that assessment are included in a letter report attached in Appendix C. *The letter report provides some general order of magnitude costs for next steps and actions that will be required prior to renovations. The aggregate sum of these items is included in Table 1 as an immediate repair.*	N/A	21

5.6 MECHANICAL SYSTEMS

The mechanical systems evaluated include the readily visible components of the heating, ventilation, and air conditioning (HVAC) equipment. The evaluation was intended to be a general overview of the component type, equipment capacity, and distribution methods. Operational testing of mechanical systems was not conducted. Specific equipment included air conditioning and heating units, distribution and ventilation mechanisms, boilers (where applicable), and facility controls.

MECHANICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Air Conditioning	The building did not have a central air conditioning system. Selected classroom and office spaces were cooled by window units.	F to P	

MECHANICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	According to the Site Contact, the units are approximately 10-15 years old. The installed air handling unit (AHU) systems provide ventilation and heating only. The facility has a reported total of ten (10) AHU's which provide heating and ventilation airflow for the classrooms, gym and office areas. Each AHU is located either above the ceiling of the corridors or in the upper attic area of the facility. Except for the AHU serving the kitchen/breakroom area behind the Gym, the original air handling units were manufactured by New York Blower Company around 1951. Specific nameplate data was not available but according to available mechanical drawings and discussions with the Site Contact, the AHU's are rated for approximately 5,000 to 10,000 cubic feet per minute (cfm) each. Each AHU was reported to have a supply and exhaust fan plenum section; hot water heating coil section and a filter section typically with 1-inch thick pleated filters. Each of the main ventilation AHU's were reportedly replaced with new belts, fan motors and similar preventative maintenance work in 2004. The AHU located in the kitchen/breakroom area adjacent to the Gym was manufactured by McQuay and reportedly installed in 2004. This unit is located directly above the ceiling area of the kitchen and provides heating and ventilation only for the respective area. The 1976 addition utilizes a small ventilation and heating only AHU, manufactured by Temptrol (Model FC-214) and rated for approximately 2100 cfm. This unit has a supply fan section, pre-filter section and pre-heat hot water coil. This unit was reported to be installed in 2004. *The observed interior ventilation air handling units appeared to be in fair to poor condition with evidence of general wear, corrosion and noisy operation. Due to the age, observed condition and*		18

MECHANICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	estimated RUL of the observed units, replacement of the AHU equipment and associated components is expected during the evaluation term. A budgetary estimate of cost for HVAC replacements is included in Table 1. *It should be noted that the current location of the AHU's is such that access to this equipment for routine maintenance is extremely difficult. In addition, should major work be required such as replacement of coils and/or fan assemblies, it will be required to remove and replace a portion if not all of the adjacent ceiling system below to access the respective equipment. This equipment should be relocated to a mechanical room or an appropriate easily accessible ground location at such a time when the equipment is to be replaced. In addition, except for select wall air conditioning systems, no central air conditioning system was provided at the building. Should a central air conditioning be desired for the facility, new mechanical equipment and space to install this equipment as well as upgrades to the electrical system to support such equipment will be required. Due to the various types, configurations and locations for such equipment as well as potential reconfiguration of select spaces to accommodate new HVAC equipment and upgrade of the electrical system, associated costs for these types of issues cannot be predicted, and no budget is included for them in Table 1.* *The observed window units appeared to be in good to fair condition with evidence of general wear. Due to the age, observed condition and estimated RUL of the observed units, replacement is expected during the evaluation term. Due to the limited aggregate quantity, this item is considered Routine Maintenance.*		
Heating	Three (3) gas-fired hot water boilers were located in their respective boiler room and provided heating hot water to respective ventilation AHU heating coils and hot water baseboard heaters. Information regarding each boiler per available nameplate data and discussions with the Site Contact are as follows:	G to F	

MECHANICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	• Boiler 1 – Gas-fired condensing boiler, manufactured by Viemann in 2003. 3,361 MBH input / 2,955 MBH output • Boiler 2 - Gas-fired condensing boiler, manufactured by Buderus in 2003. 4,113 MBH input / 2,958 MBH output • Boiler 3 - Dual-fired (gas/oil) cast iron boiler, manufactured by Weil-McLain in 2002. 5,773 MBH input / 4,650 MBH output According to the Site Contact, the three boilers were manifolded together and used to serve the entire campus including the adjacent buildings. Although the systems are still connected between the buildings, Boilers 2 and 3 are typically not utilized. Boiler 1 is the primary boiler for the Passios Elementary building. Heating hot water is distributed to the hot water coils and hot water baseboard radiators via a total of four (4) base mounted hot water pumps located in the Boiler Room each manufactured by Bell & Gossett (B&G) and installed around 2002/2003. Two (2) of the pumps are rated for 375 gallons per minute (gpm) and 5 horsepower (hp) each. The other two (2) pumps are rated for 420 gpm and 7.5 hp each. According to the site contact, the 7.5-hp pumps used to serve the adjacent high school but are no longer utilized. In addition, the heating source for the mechanical and utility areas of the building included gas-fired unit heaters suspended below the roof structure of their respective area. The main ventilation AHUs originally were installed with a steam preheat coil which was removed and replaced with a glycol system loop in 2004 which operates in conjunction with the pre-heat coils to prevent the coils from freezing in each of the main AHUs.		

MECHANICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	The condition of the ventilation AHUs is discussed above in Section 5.6, Mechanical Systems, Air-Conditioning. *The observed unit heaters and hot water pumps appeared to be in good overall condition requiring routine inspection and maintenance during the evaluation term.* *The hot water baseboard radiators appeared to be in good to fair condition and due to the age and estimated RUL of the equipment; replacement primarily of the valves and coils associated with the equipment is expected during the evaluation term. A budgetary allowance of cost for this item is included in Table 1.*		19
Ventilation	Mechanical ventilation to the classrooms was provided by the various ventilation AHU's located above the ceiling in the corridors. Ventilation was supplied to each classroom via ductwork to wall mounted registers in each room and exhausted via an exhaust plenum thru an opening near the floor of each classroom. Ventilation to the corridors and office areas were delivered directly via ceiling or wall mounted registers. *Additional information relating to the condition of the ventilation AHUs is discussed above in Section 5.6, Mechanical Systems, Air-Conditioning.* Bathrooms were provided with exhaust by powered centrifugal ventilation units mounted on the roof or individual fans tied to a central duct. The cafeteria kitchen was equipped with an exhaust hood with discharge at the roof level through a fan powered central duct. According to the Site Contact, this kitchen and associated kitchen hood is not currently utilized. Passive ventilation was provided by operable windows and natural air infiltration.	G to F	

MECHANICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	Indoor air quality was not studied as part of this assessment. Observed exhaust and air movement equipment appeared to be in good to fair condition. Renovation of selected ventilation equipment including fan motor replacement, lubrication and general repairs should be expected throughout the evaluation term as part of Routine Maintenance.		
Control Systems	The heating equipment was generally controlled by wall mounted analog thermostats. The building included a dedicated Energy Management System (EMS) originally manufactured by Honeywell but recently revised to a JAVA web-based operating system. The original building utilized pneumatic controls which were reportedly replaced with DDC in 2004. According to the site contact the system allowed for central station manipulation of set-point temperatures and on-off times of the larger ventilation (AHU) and boiler equipment. *The observed control systems appeared to be in good overall condition. Installation of updated software and additional programmable controls at the time major equipment is replaced could offer a measure of improved control and building comfort as well as energy savings.*	G	

5.7 ELECTRICAL SYSTEMS

Electrical items are related to the readily visible components of the electrical systems installed at the facility. This assessment is intended to be a general overview of the component type, equipment capacity, and distribution methods. Operational testing of electrical systems was not conducted. Items included in the electrical assessment are service distribution, transformers, switchgear, panelboards, conductors, and lighting.

ELECTRICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Transformers and Power Delivery	Electrical service to the building was provided via overhead lines to 4160-volt transformers, manufactured by Westinghouse, located in their respective electrical transformer vault.	G	
Main Switchgear	The switchgear units were located in the main electrical room adjacent to the Boiler Room. The main electrical service switchgear provided 800-amp, 208/120-volt, 3-phase, 4-wire, alternating current (AC). Existing equipment observed was manufactured by Square D and reportedly was original to the building. According to the Site Contact, a majority of the electrical system was upgraded in 2004 which include subpanels manufactured by General Electric (GE). This newer equipment supports a majority of the major components; however, several sections of the original electrical equipment still remains. *The electrical equipment appeared to be in good condition, but has not been inspected, tested or serviced in recent years. As such, a thermographic inspection and associated repairs should be performed by a qualified electrician. An estimated cost for this type of inspection is included in Table 1 as an item of Immediate Repair. It should be noted that following the inspection, recommended actions may result in required shutdown of selected equipment for repairs, tightening of lugs or other maintenance related procedures. Associated costs for these types of issues cannot be predicted, and no budget is included for them Table 1.* *The electrical equipment generally appeared to be in good condition but somewhat dated. The building is considered to have adequate capacity and power available for the current occupancy. The main electrical gear was accessible and was free from debris or stored materials. Due to the age of the existing original equipment, upgrade of the existing Square D electrical equipment should be anticipated during the evaluation term. Budgetary costs are included in Table 1.*	G to F	22 23

ELECTRICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Electrical Distribution	Existing equipment observed was manufactured by Square D and reportedly was original to the building. According to the Site Contact, a majority of the electrical system was upgraded in 2004 which include subpanels manufactured by General Electric (GE). Secondary electrical panels were observed at various locations in the building. Several electrical panels observed in the corridors and select areas were manufactured by Square D and utilized screw-in type fuses. Electrical panels manufactured by GE and reportedly installed as part of the 2004 renovation were equipped with circuit breaker overload protection. It was reported that the distribution wiring providing power to the branch circuits within the tenant spaces and common areas consisted of copper. Where observed, wiring was located in rigid and flexible metal conduit and Romex. *Based on the age and condition of the fuse-type electrical subpanels and associated distribution wiring, significant replacements should be performed immediately, and estimated costs are included in Table 1 in anticipation of a future renovation and as a measure of improved safety.*	G to F	Included In 23
Interior Lighting	Lighting fixtures within building common areas and in office spaces typically were fluorescent fixtures recessed in the suspended ceilings. Observed fluorescent units included older T-T-8 lamps with electronic ballasts. Lighting within the Gym area consisted of T-5 lamps with motion sensors. *Lighting fixtures appeared to be in good overall condition requiring routine inspection, repairs and maintenance during the evaluation term.*	G to F	

ELECTRICAL SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Emergency Power	A Kohler brand, 87.5 kVa, 70 kW emergency generator was located adjacent to the main electrical transformer vault and provided power to life safety items, hot water pumps and boilers. According to maintenance staff representatives, the unit is exercised on a weekly basis, with a full load test scheduled for once a year. The unit is fueled by diesel and the 300-gallon tank is an integral part of the generator. *The unit appeared to be in generally good condition and observed gauges indicated the unit had a total service time of 690.1 hours.*	G	

5.8 PLUMBING SYSTEMS

Plumbing items are related to the readily visible components of the plumbing systems installed at the facility. This assessment was intended to be a general overview of the component type, system capacity, and distribution methods. Operational testing of plumbing systems was not conducted. Items included in the plumbing assessment were sanitary sewers, roof drains, domestic water supply, natural gas distribution, and insulation.

PLUMBING SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Water Supply	The building was supplied with water underground from Lunenburg Water District's main line.	G	
Domestic Water Distribution	An 8-inch diameter main water service line entered the building in the kitchen area of the main cafeteria. A 2-inch diameter domestic water meter was observed at the service connection at this location.	G	

PLUMBING SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	In exposed locations, observed distribution piping for domestic water systems was constructed of copper. *It was not determined if the domestic water supply main contained a backflow prevention device. It was reported that backflow prevention was provided in a vault outside of the building. The presence of backflow prevention devices should be confirmed.* *Where exposed, observed domestic water piping appeared to be in good condition and free from damage or deterioration. Active piping leaks were not reported or observed during the on-site visit.*		
Hot Water Systems	Two (2) 125-gallon commercial gas-fired hot water heaters manufactured by PVI (Model 300N 125A-QW) located in the Boiler Room provided domestic hot water for the building. According to the Site Contact, the heaters were installed in 2004 and only one of the water heaters is utilized for the building. *The water heaters appeared to be in good condition. Water pressure and volume were reported to be adequate for the building needs.*	G	
Sanitary Sewer	The sanitary wastes generated at the building were conveyed to underground piping, which discharged to the municipal sewer system owned and maintained by the Town of Lunenburg. According to the Site Contact, the building was originally designed to discharge to a septic system, but this septic system was removed, and the sanitary sewer piping has been connected to the town system since 2005. A grease trap was observed under the 3-compartment sink in the Cafeteria kitchen area.	G	

PLUMBING SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	Sanitary sewer systems and waste piping were not observed due to hidden (underground) conditions. No evidence of odor or problems with the wastewater systems were observed or reported.		
Natural Gas	The building's gas service line entered the rear side of the building near the main boiler room. The gas piping within the building was observed to be steel. The gas meter was located at the exterior wall of the building.	G	

5.9 CONVEYANCE SYSTEM

Conveyance systems include readily visible and accessible equipment installed at the facility. This evaluation was intended to be a general overview of the systems observed. No operational testing was conducted. These systems included equipment used to transport people or objects vertically or horizontally within the building and include elevators, escalators, conveyors, and platform lifts.

CONVEYANCE SYSTEM			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Elevators	Not Applicable.	N/A	
Escalators	Not Applicable.	N/A	
Platform Lifts	Not Applicable.	N/A	

5.10 LIFE AND FIRE SAFETY

Life and Fire Safety Systems were observed to the extent that components were visually accessible. This evaluation was intended to be a general overview of the systems observed and not an opinion of safety or adequacy. Operational testing was not conducted. These systems include sprinklers and standpipes, emergency lighting, alarm and annunciation components, smoke evacuation, and fire separation.

LIFE & FIRE SAFETY SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Sprinkler Systems	The corridors, assembly spaces and mechanical rooms within the building were protected by an automatic, wet-pipe fire sprinkler system, which relied on municipal water pressure to operate. Classroom areas were reported to not be connected to the fire sprinkler system. Pressure read from gauges on the risers where applicable indicated a static pressure of 75 psi at the ground floor. These readings compared favorably to readings recorded on the tags on the risers. The building was provided with two separate fire sprinkler risers. One was located in the cafeteria kitchen area and the other was located in the janitor's closet off of the main hallways near the front entrance. *The fire suppression system water service did not appear to be equipped with a backflow prevention device. It is likely that future renovation of the water connection will require the installation of a backflow prevention or cross contamination device. Installation of such a device is also considered to be a measure of improved health and safety, and a measure to reduce potential liability. Installation of backflow devices is currently required by the municipality, regardless of building age. As such, an estimated cost is included in Table 1 as an item of Immediate Repair.* *The sprinkler system appeared to be in good condition. A private fire protection contractor (Simplex Grinnell) last inspected the sprinkler system on October 10, 2017.*	G to F	24

LIFE & FIRE SAFETY SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	Pressure gauges on the fire sprinkler riser located in the cafeteria kitchen area do not appear to be working properly. These gauges should be changed. This is considered an item of Routine Maintenance.		
Sprinkler Heads	Sprinkler heads were observed throughout the building except for the classroom areas and spares observed in the wall mounted cabinet near the risers were manufactured by Viking, Tyco and Firematic. *Observed sprinkler heads were not part of any past or current product recalls and appeared to be in generally good condition.*	G to F	
Specialty Suppression Systems	The range hood in the cafeteria kitchen included a wet chemical ANSUL fire suppression system. According to the Site Contact, this kitchen is not currently utilized. *The inspection tags on the range hood fire suppression system were not current and immediate testing and inspection of the system is required should the kitchen hood wish to be utilized in the future. An estimated cost for this item is included in Table 1.*	G to F	25
Fire Hydrants	Municipal fire hydrants were located on site and along the access roads to the property.	G	
Fire Pump	Not Applicable.	N/A	
Standpipes & Hose Connections	Not Applicable.	N/A	
Emergency Lighting	Emergency lighting fixtures were provided throughout the building. The office areas and corridors contained emergency lighting fixtures powered by the emergency generator.	G	

LIFE & FIRE SAFETY SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
	Emergency lighting units appeared to be in good condition; however, the emergency lighting units were not operated or tested as part of this PCA.		
Illuminated Exit Signs	Illuminated exit signs were provided throughout the building. The common spaces, corridors, stairwells and selected office areas contained exit light fixtures with battery backup power. *Exit signs appeared to be in good condition; however, exit signs were not operated or tested as part of this PCA.*	G	
Alarm Systems	The building was provided with a fire alarm system with battery backup consisting of sprinkler flow and tamper switches, smoke detectors and pull stations. The building was equipped with audible alarms, which included visual strobe components. A Honeywell Silent Knight Model 5207 Model central alarm panel located in the main hallway adjacent to the front entrance monitored the system. In the event of an emergency, the panel notified a central monitoring station, which notified the fire department. The fire alarm panel was reportedly installed in 1999. *The alarm panel was functioning in the "Normal" mode at the time of our visit. VERTEX did not test the system or observe its operation as part of this assessment. A fire equipment vendor reportedly performs inspections on the equipment on a regular basis. The last inspection was performed on September 7, 2017 by Protective Services Corporation.*	G	
Smoke Detection and Control	Hard-wired smoke detectors were observed in the main corridors. *Smoke detectors appeared to be in good condition; however, smoke detectors were not operated or tested as part of this PCA.*	G	

LIFE & FIRE SAFETY SYSTEMS			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Fire Extinguishers	Fire extinguishers were provided at various locations throughout the building. *According to equipment tags, observed fire extinguishers were serviced or re-charged in August 2017 by Simplex Grinnell.*	G	

6.0 ANCILLARY STRUCTURES

Ancillary structures are those elements contained within a property, which are considered to be physical plants subject to the provisions of building codes, which may or may not be considered occupied structures, and may or may not include associated mechanical, electrical or plumbing systems. Typical ancillary structures might include parking garages, annex buildings or storage sheds.

ANCILLARY STRUCTURES			
Item	**Description of System or Component**	**Overall G, F, P**	**Cost Item #**
Parking Garage	Not Applicable.	N/A	
Annex Building	Not Applicable.	N/A	
Storage Shed	Not Applicable.	N/A	

7.0 Accessibility (ADA)

The Americans with Disabilities Act (ADA) is not a building code; it is a civil rights law that was enacted in 1990 to provide persons with disabilities with accommodations and access equal to, or similar to, that available to the general public. Title II of the ADA requires that owners of public buildings considered to be places of public accommodations remove those architectural barriers and communications barriers that are considered readily achievable in accordance with the resources available to the building ownership to allow use of the facility by the disabled. The Massachusetts Architectural Access Board (MAAB) Section 521 CMR is the standard designed to make public buildings and facilities accessible to, functional for, and safe for use by persons with disabilities.

As part of this PCA, VERTEX performed a "Baseline Evaluation" of ADA and MAAB requirements consisting of a limited scope visual survey and completion of a checklist extracted from ASTM E2018-15 X2 (Figure X3). This visual review most closely resembles what was previously known as a "Tier I ADA survey."

Our survey was limited to visual observations unless specifically stated. Measurements were not taken, and compliance with dimensional tolerances stated by the guidelines was only visually assessed. While opinions of cost to correct noted barriers have been provided, they do not constitute a recommendation that removal of the barriers are "readily achievable" and not an "undue burden" as stated in the ADA.

In addition, we have attempted to evaluate the total cost of projected renovations identified in our assessment for calculation of MAAB 'trigger' requirements as outlined in CMR 521 Section 3 for Existing Buildings.

If the work being performed amounts to less than 30% of the full and fair cash value of the building and:

a. if the work costs less than $100,000, then only the work being performed is required to comply with 521 CMR, or

b. if the work costs $100,000 or more, then the work being performed is required to comply with 521 CMR. In addition, an accessible public entrance and an accessible toilet room, telephone, drinking fountain (if toilets, telephones and drinking fountains are provided) shall also be provided in compliance with 521 CMR.

The value for full and fair cash value of the building will need to be provided by the Town of Lunenburg to appropriately calculate threshold values.

Representative areas of the following portions of the site were surveyed:

1) **Parking** – Comparison of the number of provided parking stalls designated for handicapped use to the number required for the reported parking stall total for the site.
2) **Exterior Accessible Route and Building Entrances** - Visual identification of physical barriers from parking to the building entrances.
3) **Building Entrances** - Review of the building entrance access to the interior.
4) **Interior Accessible Routes and Amenities –** Review of the interior route, obstructions, path of travel and access to public features and equipment.
5) **Interior Doors –** Review of doors, clear width, hardware and apparent opening force.
6) **Elevators** – Observation of elevator floor area, signals, signs, safety devices, and emergency call systems.
7) **Toilet Rooms -** Visual review of common area restrooms available for public use (toilet stalls designed with accessible features, sinks at lower heights with adequate clearances, appropriate sink fixtures and accessories).

ASTM E2018-15 - Uniform Abbreviated Screening Checklist - 2010 Americans with Disabilities Act

Item		Yes	No	NA	Comments
A.	**History**				
1.	Has an ADA survey previously been completed for this property?		✓		
2.	Have any ADA improvements been made to the property since original construction?		✓		
3.	Has building ownership/management reported any ADA complaints or litigation?		✓		
B.	**Parking**				
1.	Does the required number of standard ADA-designated spaces appear to be provided?	✓			
2.	Does the required number of van-accessible designated spaces appear to be provided?	✓			
3.	Are accessible spaces part of the shortest accessible route to an	✓			

	ASTM E2018-15 - Uniform Abbreviated Screening Checklist - 2010 Americans with Disabilities Act				
	accessible building entrance?				
4.	Is a sign with the International Symbol of Accessibility at the head of each space?	✓			
5.	Does each accessible space have an adjacent access aisle?		✓		***ADA-1***
6.	Do parking spaces and access aisles appear to be relatively level and without obstruction?	✓			
C.	**Exterior Accessible Route**				
1.	Is an accessible route present from public transportation stops and municipal sidewalks on the property?		✓		
2.	Are curb cut ramps present at transitions through curbs on an accessible route?			✓	
3.	Do the curb cut ramps appear to have the proper slope for all components?			✓	
4.	Do ramps on an accessible route appear to have a compliant slope?			✓	
5.	Do ramps on an accessible route appear to have a compliant length and width?			✓	
6.	Do ramps on an accessible route appear to have compliant end and intermediate landings?			✓	
7.	Do ramps on an accessible route appear to have compliant handrails?			✓	
D.	**Building Entrances**				
1.	Do a sufficient number of accessible entrances appear to be provided?	✓			
2.	If the main entrance is not accessible, is an alternate accessible entrance provided?			✓	
3.	Is signage provided indicating the location of alternate accessible entrances?			✓	
4.	Do doors at accessible entrances appear to have compliant clear floor area on each side?	✓			
5.	Do doors at accessible entrances appear to have compliant hardware?	✓			
6.	Do doors at accessible entrances appear to have a compliant clear opening width?	✓			
7.	Do pairs of accessible entrance doors in series appear to have the minimum clear space between them?			✓	
8.	Do thresholds at accessible entrances appear to have a compliant height?	✓			
E.	**Interior Accessible Routes and Amenities**				

	ASTM E2018-15 - Uniform Abbreviated Screening Checklist - 2010 Americans with Disabilities Act				
1.	Does an accessible route appear to connect with all public areas inside the building?	✓			
2.	Do accessible routes appear free of obstructions and/or protruding objects?	✓			
3.	Do ramps on accessible routes appear to have a compliant slope?			✓	
4.	Do ramps on accessible routes appear to have a compliant length and width?			✓	
5.	Do ramps on accessible routes appear to have compliant end and intermediate landings?			✓	
6.	Do ramps on accessible routes appear to have compliant handrails?			✓	
7.	Are adjoining public areas and areas of egress identified with accessible signage?	✓			
8.	Do public transaction areas have an accessible, lowered counter section?			✓	
9.	Do public telephones appear mounted with an accessible height and location?			✓	
10	Are publicly-accessible swimming pools equipped with an entrance lift?			✓	
F.	**Interior Doors**				
1.	Do doors at interior accessible routes appear to have compliant clear floor area on each side?	✓			
2.	Do doors at interior accessible routes appear to have compliant hardware?	✓			
3.	Do doors at interior accessible routes appear to have compliant opening force?	✓			
4.	Do doors at interior accessible routes appear to have a compliant clear opening width?	✓			
G.	**Elevators**				
1.	Are hallway call buttons configured with the “UP” button above the “DOWN” button?			✓	*Unless the future use of the facility is changed to a facility that houses a shopping center, a shopping mall, the professional office of a health care provider, a terminal, depot, or other station used for specified public*
2.	Is accessible floor identification signage present on the hoistway sidewalls?			✓	
3.	Do the elevators have audible and visual arrival indicators at the entrances?			✓	
4.	Do the elevator hoistway and car interior appear to have a minimum compliant clear floor area?			✓	
5.	Do the elevator car doors have automatic re-opening devices to prevent closure on obstructions?			✓	

	ASTM E2018-15 - Uniform Abbreviated Screening Checklist - 2010 Americans with Disabilities Act				
6.	Do elevator car control buttons appear to be mounted at a compliant height?			✓	*transportation, an elevator is not required.*
7.	Are tactile and Braille characters mounted to the left of each elevator car control button?			✓	
8.	Are audible and visual floor position indicators provided in the elevator car?			✓	
9.	Is the emergency call system at the base of the control panel and not require voice communication?			✓	
H.	**Toilet Rooms**				
1.	Do publicly-accessible toilet rooms appear to have a minimum compliant floor area?	✓			
2.	Does the lavatory appear to be mounted at a compliant height and with compliant knee area?	✓			
3.	Does the lavatory faucet have compliant handles?	✓			
4.	Is the plumbing piping under lavatories configured to protect against contact?	✓			
5.	Are grab bars provided at compliant locations around the toilet?	✓			
6.	Do toilet stall doors appear to provide the minimum compliant clear width?	✓			
7.	Do toilet stalls appear to provide the minimum compliant clear floor area?	✓			
8.	Do urinals appear to be mounted at a compliant height and with compliant approach width?		✓		***ADA-2***
9.	Do accessories and mirrors appear to be mounted at a compliant height?	✓			
I.	**Hospitality Guestrooms**				
1.	Does property management report the minimum required accessible guestrooms?			✓	
2.	Does property management report the minimum required accessible guestrooms with roll-in showers?			✓	

8.0 REPORT QUALIFICATIONS & LIMITATIONS

This report was prepared in accordance with the scope of work, and terms and conditions associated with VERTEX Proposal No. P.2489.17, dated September 29, 2017.

This report was prepared in general conformance with the guidelines of ASTM E2018-15 for Property Condition Assessments. This report was intended to provide a general overview of the building systems at the facility and the general conditions of such. The evaluation was performed using that degree of skill and care normally exercised by reputable consultants performing similar work. The activities of this evaluation included observations of visible and readily accessible areas. In some cases, additional study may be warranted to more fully assess concerns noted.

The opinions and recommendations presented in this report are based on VERTEX's observations, evaluation of the information provided, and interviews with personnel possessing knowledge of the facility. No calculations were made to determine the adequacy of the facility's original or existing design. The possibility exists that defects and deficiencies are present at the subject facility, which were not readily visible or accessible. The development of future problems not identified in this report, on any observed system, at the subject property should be anticipated.

The opinions and recommendations in this report should not be construed in any way to constitute a warranty or guarantee regarding the current or future performance of any system identified.

The following paragraphs are intended to summarize VERTEX's Definition of Property Condition Assessment (PCAs).

A Property Condition Assessment ("PCA") is the process by which VERTEX observes researches and documents in a written report (the PCA Report") the current physical condition of commercial property and, in addition, provides required estimated expenditures to remedy physical deficiencies. A physical deficiency is defined to be a patent, conspicuous defect, or significant deferred maintenance of the subject property's material systems, components or equipment. It could also include material systems, components or equipment that are approaching, have realized, or have exceeded their typical expected useful life ("EUL") or whose remaining useful life ("RUL") should not be relied upon as a result of actual age, abuse, excessive wear and tear, exposure to the elements, lack of proper maintenance, or other factors. This definition specifically excludes routine maintenance, miscellaneous repairs, operating maintenance, etc. It should be noted that items considered as routine or operating maintenance may be defined by the current practices of the management or property personnel operating the

site. Specific definitions of categories of physical deficiencies including Immediate Repairs, Short-Term Repairs, and Capital Needs including the time-period associated with each, are presented within the body of the PCA Report.

This assignment was performed as a **Level II PCA**. For the purposes of clarification and comparison, VERTEX's levels of PCA service are defined as follows:

- Level I PCA: This assessment will be prepared by a qualified professional, performing a visual survey of the property to assess the general condition of the property, structures and associated mechanical components. This PCA may be escalated to a more thorough Level II or Level III PCA following the initial site visit and evaluation, following discussion with the Client.
- ***Level II PCA: This assessment includes the Level I PCA, with specific items of concern investigated in more detail by one or more specialist in the respective fields (mechanical, roofing, elevators, etc.). These more detailed visual assessments may be incorporated into a single PCA report discussion, or may be presented in a separate report.***
- *Level III PCA:* This assessment includes the Level I PCA, with specific items of concern investigated in more detail by a team of specialists, including subcontractors where warranted, and including operation, testing, and potentially destructive testing of individual systems or components where warranted and approved. These more detailed assessments may be incorporated into a single PCA report discussion, or may be presented in a separate report, which may include test and evaluation data.

The visual observation portion of the PCA consisted of a walk-through survey of the subject property undertaken to observe readily accessible property components, systems, and elements for the purposes of providing a brief description of same, providing an opinion on their general apparent physical condition, and identifying material physical deficiencies as of the time of VERTEX's site visit. This portion of the PCA was a non-intrusive, visual survey; it is not to be construed as a punch list or detailed survey of the property's major physical deficiencies. It is also not considered to be an inventory of building system or material components.

VERTEX extrapolated representative findings to typical areas and systems of the subject property to provide the Client with a reasonably estimated magnitude of commonly anticipated conditions and to use as a basis for estimating the cost of required expenditures to remedy physical deficiencies at the subject property.

In some cases, where additional study or specific expertise is required to define appropriate repair or renovation methods, an estimated cost for the study is presented. In these cases,

associated repair or renovation costs are typically excluded, unless reasonable order of magnitude budgetary estimates can be assumed without the benefit of a specific scope of work.

Unless specifically requested by Client and included in the agreed upon, written scope of services the following items were excluded from the scope of services for this PCA:

- Removal of materials, furniture or finishes; conducting any exploratory probing or testing; dismantling or operation of any equipment; or disturbing any personal items or property which obstructs access or visibility.
- Preparation of engineering calculations (civil, structural, mechanical, electrical, etc.) to determine any system's components or equipment's adequacy or compliance with any specific or commonly accepted design requirements and building codes, or the preparation of designs or specifications to remedy any physical deficiency.
- Reporting on the condition of subterranean conditions such as underground utilities, separate sewage disposal systems, wastewater treatment plants, wells or systems that are either considered process related or peculiar to a specific tenancy or use, or items or systems that are not permanently installed.
- Entering or accessing any area of the premises deemed to pose a dangerous or adverse condition to the consultant or to perform any procedure which may damage or impair the physical integrity of the property, any system or equipment.
- Providing an opinion on the condition of any system or component which is seasonally shut down.
- Provision of a warranty or guarantee of any systems or component's physical condition or use. A PCA is not to be construed as a substitute for any system's or equipment's warranty transfer inspection.
- Review of compliance with any federal, state, city, trade/design, or insurance industry building codes, local laws, health codes or local zoning ordinances. However, violations of codes, laws and ordinances that are observed by VERTEX and any retroactive or pending requirements contained in such codes, laws, and ordinances that are known to VERTEX, or identified during interviews with code authorities, may be identified in the report.

TABLE 1

IMMEDIATE AND REPLACEMENT RESERVES COST ESTIMATES

TABLE 1
IMMEDIATE REPAIRS, SHORT TERM REPAIRS, and CAPITAL NEEDS ESTIMATE

VERTEX

Site Name:	Thomas C. Passios School
City, ST:	Lunenburg , MA
Age, Yrs:	66
Project No.:	48237

# Buildings:	1
Est. Building SF:	55,000
Eval. Term, Yrs:	5
CPI:	2.50%
# Units:	NA

	Total	*Per SF*	*Per SF/YR*
Immediate Repairs $:	$785,932	$14.29	
Short Term $ (no inflation):	$2,172,916	$39.51	$19.75
Short Term $ (inflated):	$2,189,338	$39.81	$19.90
Capital Needs $ (no inflation)	$2,868,417	$52.15	$10.43
Capital Needs $ (inflated)	$2,932,253	$53.31	$10.66

ITEM						Immediate	Reserves	SHORT TERM					RESERVE
ITEM No.	PHOTO No.	DESCRIPTION	QTY	UNIT	UNIT COST	YEARS 0-1	YEARS 1-5	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
SITE DEVELOPMENT													
1	97, 98, 99, 101	Cut & patch deteriorated asphalt pavement areas	3,202	SF	$6.65		$21,293	$10,647			$10,647		$21,293
2	97, 98, 99, 101	Renew asphalt pavement surface, including crack sealing (moderate), seal coat and re-stripe	107,640	SF	$0.27		$29,063	$14,531				$14,531	$29,063
3	94, 95	Renovate granite pavers, re-grout/mortar joints at front main entrance	968	SF	$19.88		$19,244	$19,244					$19,244
4	103, 106	Repair and sectional replacement of asphalt-paved sidewalks	1,750	SF	$8.39	$14,683							$0
5	59	Allowance to demolish and remove modular classrooms on west side of property	1	LS	$7,915.50		$7,916	$7,916					$7,916
BUILDING STRUCTURE													
No significant BUILDING STRUCTURAL costs identified													$0
BUILDING EXTERIOR													
6	24, 28 thru 32, 35	Brick - mortar repair, clean, pressure-wash, repoint mortar, 5% of brick area estimated	500	SF	$16.12		$8,060	$8,060					$8,060
7	110 thru 114	Allowance to rebuild partial or all of Maintenance Shop exterior masonry walls	1	LS	$13,430.00		$13,430	$13,430					$13,430
8	1, 2, 7, 8, 19-22	CMU (plain) block repair and replacement, less than 5000 SF of wall surface	1,000	SF	$13.43		$13,430	$13,430					$13,430
9	1 thru 8	Scraping, surface preparation and re-painting of exterior walls, 2-coat, spray applied - CMU block	5,000	SF	$1.18		$5,900	$5,900					$5,900
10	17, 18, 27, 29, 30, 31, 63	Scraping, surface preparation and re-painting of exterior window trim, soffits and fascias, 2-coat, roller applied - Wood siding	7,000	SF	$1.58		$11,060	$11,060					$11,060
11	16	Cut out and replace sealants between masonry and wall penetrations (perimeter of windows and doors) and window and skylight sealants	5,000	LF	$4.29		$21,450	$21,450					$21,450
12	13 thru 16	Replace windows, operable-single hung and clerestory windows-double pane glass - Metal	6,400	SF	$116.84		$747,776	$249,259	$249,259	$249,259			$747,776

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ITEM						Immediate	Reserves	SHORT TERM					RESERVE
ITEM No.	PHOTO No.	DESCRIPTION	QTY	UNIT	UNIT COST	YEARS 0-1	YEARS 1-5	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
ROOF													
13	37 thru 42, 44, 48	Remove existing roof and replace with single ply EPDM - 60 mil, fully adhered	53,000	SF	$11.75		$622,750	$622,750					$622,750
14	39 thru 42	Remove and replace fasteners, replace sealants at flashing seams or apply EPDM membrane patches to extend useful life, metal panel roofing systems	11,600	SF	$5.04		$58,464	$58,464					$58,464
BUILDING INTERIOR													
15	67, 73 thru 78, 79, 83, 84	Replace existing VAT and VCT with resilient floor tile, vinyl composition tile	39,000	SF	$4.89		$190,710	$95,355	$95,355				$190,710
16	73, 76, 77, 81, 83, 84, 85, 87	Painting of interior walls, drywall/plaster	15,084	SF	$1.10		$16,592	$16,592					$16,592
17	91, 92, 93	Painting of interior walls, CMU	4,500	SF	$1.45		$6,525	$6,525					$6,525
18	69, 73, 77, 78, 79, 84, 86	Interior wall refinishing, wood re-staining	2,036	SF	$4.03		$8,205	$8,205					$8,205
19	67, 77, 79, 83, 85, 87	Acoustical tile ceiling including suspended grid, replace existing 1' x 1' tacked on acoustical tiles and ACT systems	39,000	SF	$7.66		$298,740	$149,370	$149,370				$298,740
20	77, 78, 79,	Allowance to remove and replace interior doors and frames with new assemblies (solid core wood doors with steel frame) as required	24	EA	$1,880.20		$45,125	$22,562	$22,562				$45,125
21	73 thru 84	Budgetary allowance for evaluation and abatement of hazardous materials	1	LS	$755,500.00	$755,500							$0
MECHANICAL SYSTEMS													
18	131 thru 134	Replace constant volume ventilation air handling units	200	Ton AC	$2,896.45		$579,290	$115,858	$115,858	$115,858	$115,858	$115,858	$579,290
19	140, 141, 142	Budget for replacement of hot-water baseboard radiators and associated valves	1,200	LF	$102.07		$122,484	$24,497	$24,497	$24,497	$24,497	$24,497	$122,484
ELECTRICAL SYSTEMS													
22	147, 148, 150, 151	Infrared testing and inspection of switchgear and service panels	1	LS	$5,372.00	$5,372							$0
23	147, 150, 151	Replace older Square D main switchgear and fuse type panelboards	1	EA	$20,910.28		$20,910	$20,910					$20,910

TABLE 1
IMMEDIATE REPAIRS, SHORT TERM REPAIRS, and CAPITAL NEEDS ESTIMATE

VERTEX

Site Name:	Thomas C. Passios School	# Buildings:	1		*Total*	*Per SF*	*Per SF/YR*
City, ST:	Lunenburg , MA	Est. Building SF:	55,000	Immediate Repairs $:	$785,932	$14.29	
Age, Yrs:	66	Eval. Term, Yrs:	5	Short Term $ (no inflation):	$2,172,916	$39.51	$19.75
Project No.:	48237	CPI:	2.50%	Short Term $ (inflated):	$2,189,338	$39.81	$19.90
		# Units:	NA	Capital Needs $ (no inflation)	$2,868,417	$52.15	$10.43
				Capital Needs $ (inflated)	$2,932,253	$53.31	$10.66

ITEM						Immediate	Reserves	SHORT TERM					RESERVE
ITEM No.	PHOTO No.	DESCRIPTION	QTY	UNIT	UNIT COST	YEARS 0-1	YEARS 1-5	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
PLUMBING SYSTEMS													
No significant PLUMBING SYSTEM costs identified													$0
CONVEYANCE SYSTEMS													
Not Applicable													$0
LIFE SAFETY/FIRE PROTECTION SYSTEMS													
24	162, 164	Install backflow preventer for fire suppression water line	1	EA	$9,705.93	$9,706							$0
25	145	Engage fire protection vendor to inspect and test ANSUL range hood system, minimum charge	1	EA	$671.50	$672							$0
ANCILLARY STRUCTURES													
No significant costs identified													$0
TOTAL - Immeddiate Repairs						**$785,932**							
TOTAL - Capital Needs							**$2,868,417**						
TOTAL CAPITAL NEEDS, BY YEAR, UNINFLATED								$1,516,015	$656,901	$389,613	$151,001	$154,886	$2,868,417
Inflation Factor								1.000	1.025	1.051	1.077	1.104	
TOTAL CAPITAL NEEDS, BY YEAR, WITH INFLATION								$1,516,015	$673,323	$409,338	$162,612	$170,965	$2,932,253

Notes/Abbreviations:

**Item Number corresponds to item described in supporting "cost item #" in text report.*

LS = Lump Sum; LF = Linear Foot; SF = Square Feet; SY = Square Yard; EA = Each; TN = Ton; kW = Kilowatt; FL = Floor; RUL = Remaining Useful Life

Immediate Needs = material existing or potential unsafe conditions resultant from a damaged or deteriorated condition, material building or fire code violations on file with municipal agencies, or conditions that if left uncorrected, have the potential to result in or contribute to critical element or system failure within one year or will result most probably in a significant escalation of its remedial cost. Also included as immediate needs are items, materials or systems that have exceeded their useful life. Immediate Repair time frame for repair is between 0 and 1 year. These items are generally included regardless of cost.

Short Term Repairs = Items that may not warrant immediate attention, but require repairs or replacements that should be undertaken on a priority basis in addition to routine preventive maintenance. Such opinions of probable costs may include costs for testing, exploratory probing, and further analysis should this be deemed warranted by VERTEX. Short Term repairs are the aggregate sum of Capital Needs repairs within years 1 and 2. See report text for cost thresholds defining Short Term Repairs/Capital Needs versus items of Routine Maintenance.

Capital Needs = Items which are expected to require significant repair, replacement or renovation during the specified evaluation term due to the observed condition and estimated RUL.See report text for cost thresholds defining Short Term Repairs/Capital Needs versus items of Routine Maintenance.

TABLE 2

IMPROVED ADA COMPLIANCE

PRIORITES AND ESTIMATED COSTS

TABLE 2
GENERAL ADA IMPROVEMENTS

# of ADA Items	2
Site Name:	Thomas C. Passios School
Site Location:	Lunenburg , MA
Building Age, yrs:	66
Project No.:	48237

ADA Observations

Item #	Photo #	Description	QTY	Unit	Unit Cost	Total
PARKING - EXTERIOR ROUTE - BUILDING ENTRANCES						
ADA- 1	99	Stripe access aisle adjacent to existing parking stall	3	EA	$235.00	$705
INTERIOR ACCESSIBLE ROUTES - AMENITIES - INTERIOR DOORS - ELEVATORS						
No significant issues observed for interior routes, amenities, interior doors or elevators						
TOILET ROOMS						
ADA- 2	80	Provide urinal at lowered height	4	EA	$1,612.00	$6,448
HOSPITALITY GUEST ROOMS						
Not Applicable						
					TOTAL	**$7,153**

Notes/Abbreviations:

LS = Lump Sum; LF = Linear Foot; SF = Square Feet; SY = Square Yard; EA = Each; TN = Ton; kW = Kilowatt; FL = Floor

Any future alterations are subject to compliance with local, state and federal requirements. In some cases, the tenants do not offer services which interface with the general public, and reasonable accommodations appear to be in place for employee accessibility.

ADA related issues are included on this table regardless of magnitude of cost.

ADA Priorities :
1 = Accessible approach and entrance
2 = Access to goods and services
3 = Access to restrooms
4 = Other measures

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

Photo #1: East side entry door near Cafeteria.

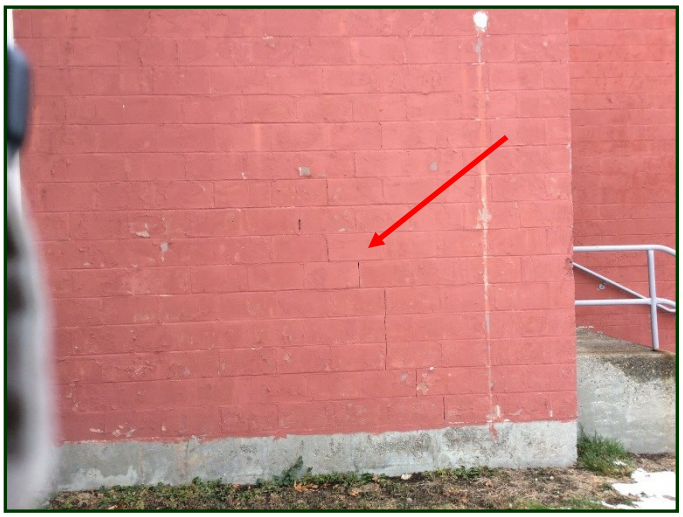

Photo #2: Crack in the south facing wall at the entry stair.

Photo #3: : Roof to wall intersection at the Cafeteria entry. Note the peeling paint at the eaves.

Photo #4: Mechanical area entry door on the east side.

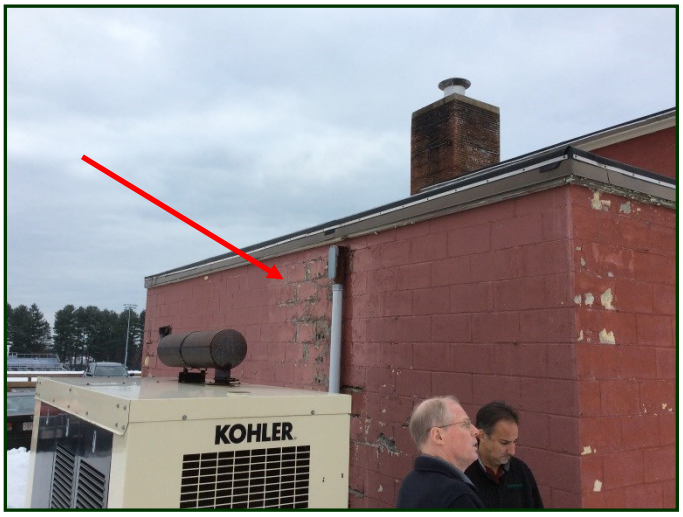

Photo #5: North facing wall of the maintenance area at the generator. Note the peeling paint next to the conduit.

Photo #6: Detail of the emergency power conduit in the north wall. Note the water draining from the roof down the face of the wall.

Photo #7: Maintenance garage facing east. Note the crack in the CMU wall originating from the door head.

Photo #8: Detail photo of the cracked CMU at the garage.

Photo #9: The Mechanical Room chimney.

Photo #10: Chimney detail showing previous caulk repairs and some mortar cracking.

Photo #11: East Courtyard looking south.

Photo #12: Loose soffit board at the Mechanical Room eave on the west façade.

Photo #13: Overall view of the metal window system at the northwest corner of the east courtyard.

Photo #14: Wood trim over the window transoms on the north wing at the east courtyard. Note the loose board and peeling paint.

Photo #15: Detail view in a loose fascia panel in the window system.

Photo #16: Detail view of dried and brittle caulk in the classroom windows.

Photo #17: The canopy over the entry door at the east side of the north wing.

Photo #18: Detail of the entry canopy. Note the exposed wood and peeling paint.

Photo #19: The east façade of the Cafeteria. Note the crack at the foundation.

Photo #20: The east façade of the Cafeteria. Note that the crack in photo 19 continued to the top of the wall.

Photo #21: The east façade of the Cafeteria, Note the crack that was observed to run from foundation to top of wall.

Photo #22: The top of wall at the same crack in photo 21.

Photo #23: The roof to wall intersection at the east side of the south façade where the Gym meets the Cafeteria.

Photo #24: Detail of the window head of the window in photo 23. Note the cracked brick and the deteriorating mortar.

Photo #25: The main entry on the south façade.

Photo #26: Detail of the wood window sill at the main entry.

Photo #27: Wood framed glass vestibule. Note the peeling paint.

Photo #28: Detail of the separated mortar joint at the stone/brick transition at the main entry.

Photo #29: The secondary entrance at the southwest corner of the building. Note the staining originating from the canopy/wall intersection.

Photo #30: Detail of the canopy . Note the peeling paint and staining at the soffit and fascia.

Photo #31: Detail of the canopy intersection at the brick wall. Note the deteriorating mortar under the soffit.

Photo #32: Detail of deteriorated mortar at the base of the wall in the west side courtyard.

Photo #33: The building entry at the west courtyard at the north wing. Note the cracked masonry at the lintel.

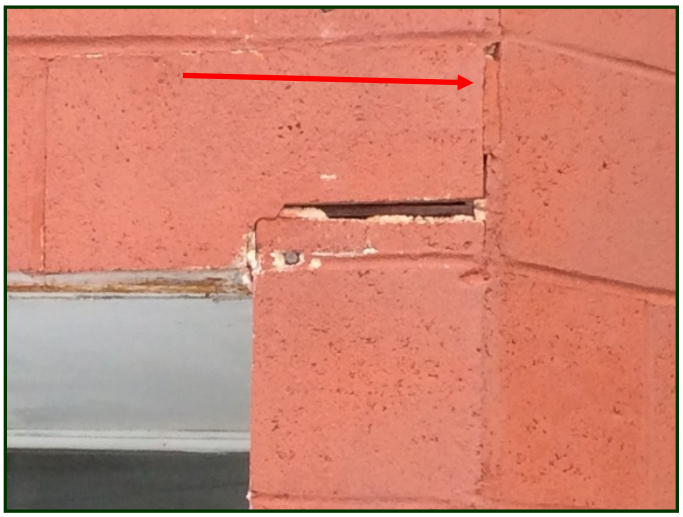

Photo #34: Detail of the lintel in photo 33. Note the exposed metal and deteriorated mortar.

Photo #35: Intersection of CMU and brick walls at the west courtyard. Note the repairs at the soffit and the deteriorated mortar at the material transition.

Photo #36: The west façade of the north wing. Note the peeling/missing paint at the wood window trim.

Photo #37: Roof at the garage.

Photo #38: Roof section at the buildings central corridor showing the EPDM on the backside of the clerestory windows. Note the missing roof drain cover.

Photo #39: The north wing roof looking west.

Photo #40: Detail of the standing seam panel. Note the slight rust and patch over the termination bar.

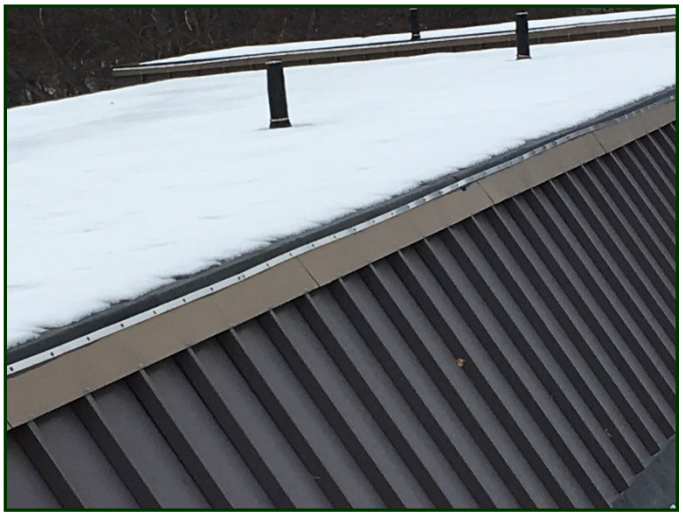

Photo #41: The top of the mechanical enclosures consisted of EPDM membrane that overlapped the edges and was secured with a termination bar at the metal panel trim.

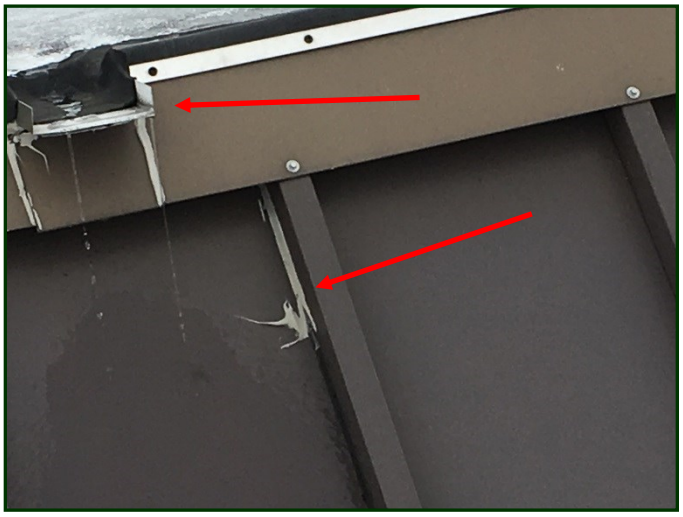

Photo #42: Detail of a "scupper" at the enclosure top. Note the sealant on the standing seam.

Photo #43: The clerestory windows at the north wing. Note the brittle sealant and rusted fasteners at the counterflashing.

Photo #44: Detail of the pipe boot shown in photo 43.

Photo #45: The EPDM roof at the north wing of the building.

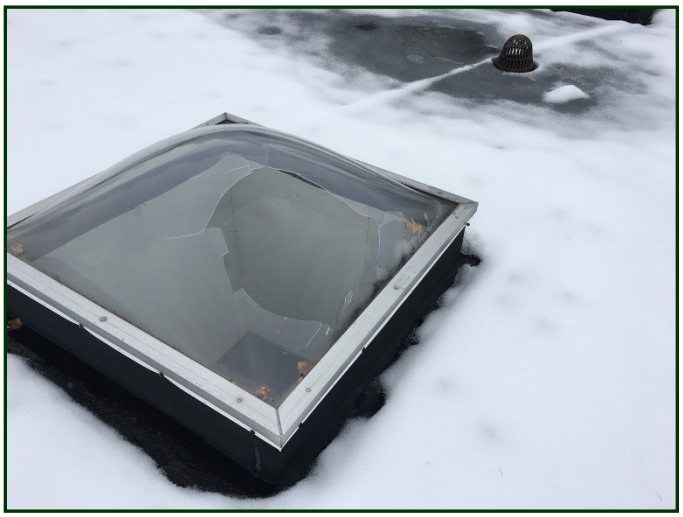

Photo #46: Detail of the skylight in photo 45 that exhibited a broken acrylic dome.

Photo #47: Detail of the main corridor clerestory windows that were clad in metal panel and topped with EPDM membrane.

Photo #48: Detail of the EPDM membrane showed the partial manufacturer's mark on the membrane that indicated the 60 mil thickness.

Photo #49: Main front (south elevation) building entrance. Note accessible ramp

Photo #50: Close-up view of entrance doors

Photo #51: Southeast portion of the building. Note high roof at gymnasium

Photo #52: Southwest portion of the building with class-rooms

Photo #53: Partial east elevation

Photo #54: Partial east elevation. Note mechanical room in foreground

Photo #55: Courtyard at north side of building. Note high roof at gymnasium beyond

Photo #56: View of classrooms at northside courtyard

Photo #57: Partial east elevation at north wing

Photo #58: Partial north elevation at north wing

Photo #59: View of modular classrooms on west side of site

Photo #60: Partial west elevation

Photo #61: North side of west wing

Photo #62: West elevation at west wing

Photo #63: Partial south elevation at west wing

Photo #64: Secondary entrance at south elevation

Photo #65: Interior view of main entrance doors at south elevation

Photo #66: Main building lobby at south entrance. Note cut stone at walls

Photo #67: Cafeteria with glaze faced CMU walls, resilient tile flooring and acoustical ceiling tiles (tacked)

Photo #68: Food serving area at cafeteria

Photo #69: Kitchen with quarry tile flooring

Photo #70: Cooking area with range hood

Photo #71: Dishwashing area

Photo #72: Gymnasium with maple flooring, CMU walls and exposed underside of structure above

Photo #73: Stairs serving mezzanine adjacent to gymnasium

Photo #74: Crawl space below mezzanine

Photo #75: Kitchen space at mezzanine

Photo #76: South side of mezzanine with painted brick walls and resilient floor tile

Photo #77: Typical corridor with clerestory windows, glaze faced CMU and painted plaster walls & resilient floor tile

Photo #78: Corridor smoke compartment doors (south wing)

Photo #79: Corridor-north wing

Photo #80: Urinals at boys toilet room

Photo #81: Accessible hand washing sink at boys toilet room

Photo #82: Accessible toilet with grab bars at boys toilet room

Photo #83: Typical classroom with resilient floor tile. Note exterior egress doorway-typical at each classroom

Photo #84: Typical classroom with sink, corridor doorway and borrowed lights

Photo #85: Administrative offices

Photo #86: Entrance to Administrative offices

Photo #87: Classroom. Note 1’ x 1’ acoustical ceiling tiles (tacked on) and painted plaster walls with wood wainscot

Photo #88: Toilet room within classroom-typical

Photo #89: Wall-mounted rendering of the school


The Commonwealth of Massachusetts
TOWN OF LUNENBURG
CERTIFICATE OF INSPECTION
is issued to T.C. Passios Elementary School
BY STORY
BY PLACE OF ASSEMBLY OR STRUCTURE

Photo #90: Wall-mounted Certificate of Inspection showing capacities for egress and assembly spaces

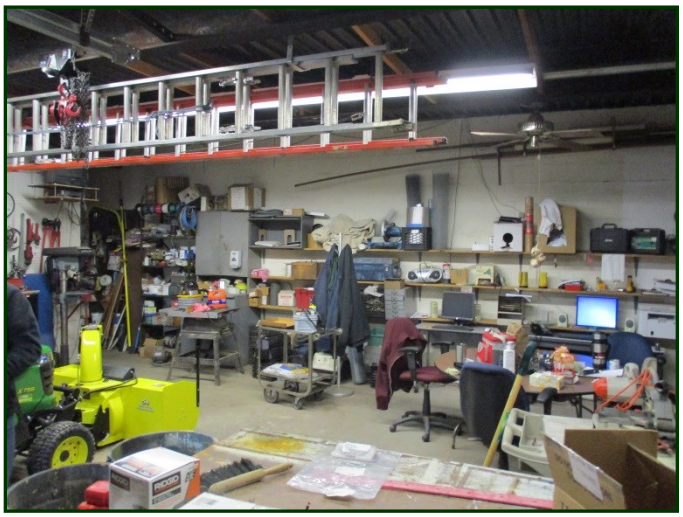

Photo #91: Maintenance shop on east side of building

Photo #92: Mechanical room at east side of building

Photo #93: Main electrical room

Photo #94: Large granite pavers at entrance landing (south side of building)

Photo #95: Close-up view of photo #94 with deteriorated mortar joints at large granite pavers

Photo #96: Concrete ramp with steel pipe railings at main entrance (south side of building)

Photo #97: Asphalt-paved driveway with random cracking-south side of building (looking east)

Photo #98: Asphalt-paved driveway with random cracking-south side of building (looking west)

Photo #99: Accessible parking spaces adjacent to the main building entrance

Photo #100: Cast-in-place concrete steps with steel nosing and pipe railings

Photo #101: Asphalt-paved parking area at east side of building

Photo #102: Asphalt-paved sidewalk (east side of north wing)

Photo #103: Deteriorated asphalt-paved sidewalk at south side of north wing

Photo #104: Gravel-surfaced parking lot at northeast corner of site

Photo #105: Chain link fencing at north side of north wing

Photo #106: Deteriorated asphalt-paved sidewalk at south side of west wing

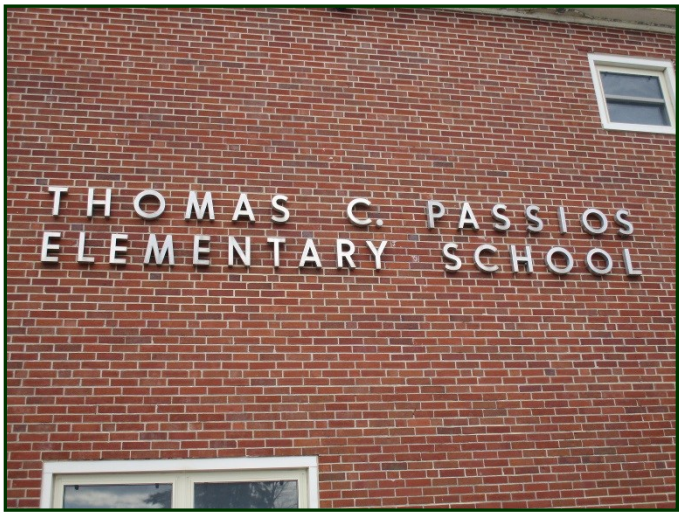

Photo #107: Building name on wall at south elevation

Photo #108: Landscape at south side of property

Photo #109: View of the front (south) elevation of the Passios School.

Photo #110: View of the brick chimney on the east side of the building. Note staining around chimney.

Photo #111: View of the maintenance shop on the east side of the building.

Photo #112: View of a step crack in the maintenance shop CMU wall.

Photo #113: View of deteriorated CMU block on the north elevation of the maintenance shop.

Photo #114: View of the brick chimney from the interior. Note the peeling paint and deteriorated mortar joints.

Photo #115: View of the typical roof structure. Photo taken in the gymnasium.

Photo #116: View of a step crack in the cafeteria.

Photo #117: View of the brick exterior opposite the interior step crack. Note no visible cracks in the masonry.

Photo #118: View of the steel truss framing supporting the roof at the northeast wing of the building.

Photo #119: Photograph depicts general view of Side A of the Site Building

Photo #120: Photograph depicts general view of Side B of the Site Building

Photo #121: Photograph depicts general view of Side C of the Site Building

Photo #122: Photograph depicts general view of Side D of the Site Building

Photo #123: Photograph depicts general view of asbestos-containing 9” Floor Tile within Cafeteria

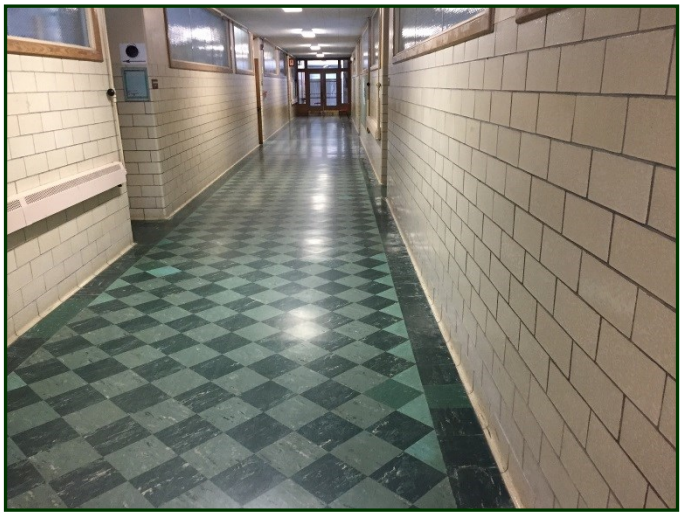

Photo #124: Photograph depicts general view of asbestos-containing 9” Floor Tile within Hallway

Photo #125: Photograph depicts general view of asbestos-containing 9” Floor Tile and Covebase within Classroom

Photo #126: Photograph depicts general view of suspect asbestos-containing Chalkboards within Classroom

Photo #127: Photograph depicts general view of asbestos-containing pipe insulation above ceiling area in hallway

Photo #128: Photograph depicts general view of florescent lights within Classroom

Photo #129: Photograph depicts general view of trans-formers within the Site Building

Photo #130: Photograph depicts general view of 275-Gallon Oil AST and Portable Classroom

Photo #131: Access to a typical ventilation air handling unit in corridor

Photo #132: Typical main ventilation AHU fan

Photo #133: Typical main ventilation AHU above ceiling of corridor. Note no adequate space for routine maintenance

Photo #134: Ventilation AHU for kitchen breakroom area adjacent to Gym

Photo #135: Typical gas-fired unit heater in maintenance shop area

Photo #136: Boiler 1-Viemann

Photo #137: Boiler 2—Buderus

Photo #138: Boiler 3—Weil McLain

Photo #139: Heating hot water pumps

Photo #140: Typical hot water radiator in corridors

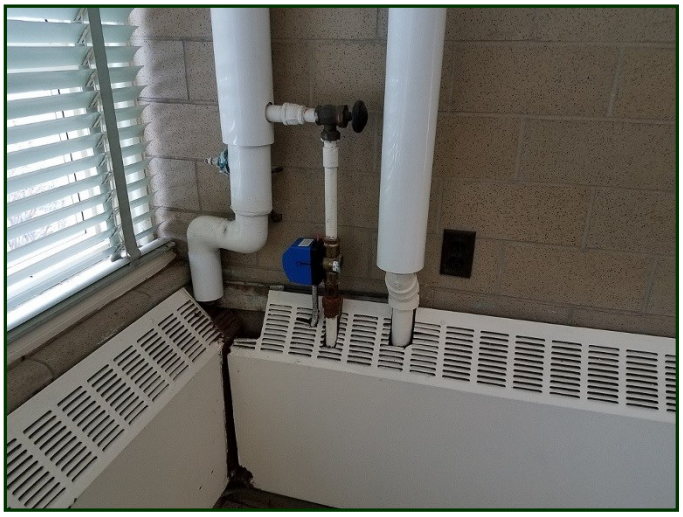

Photo #141: Typical hot water radiator and water valves in cafeteria

Photo #142: Typical hot water radiator in classroom

Photo #143: Typical ventilation supply register (top) and exhaust plenum (bottom) for classroom

Photo #144: Wall mounted controls

Photo #145: Kitchen hood in cafeteria. Not in use

Photo #146: Main electrical transformers in electrical vault

Photo #147: Original Square D main panel

Photo #148: Secondary electrical panels and automatic transfer switch for generator

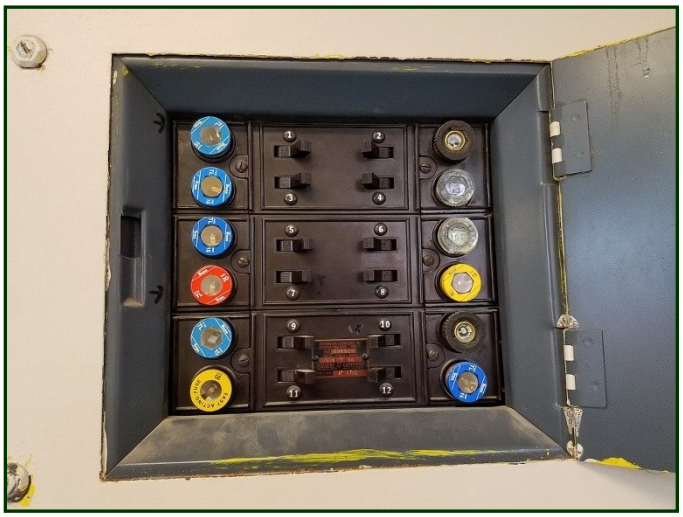

Photo #150: Square D fuse electrical panel in corridor serving classroom areas

Photo #151: Square D fuse electrical panel in kitchen/ breakroom area

Photo #152: Lighting at main entrance

Photo #153: Lighting at Gym

Photo #154: Lighting in corridor

Photo #155: Cafeteria lighting

Photo #156: Generator

Photo #157: Main water line and meter to building

Photo #158: Domestic hot water heaters

Photo #159: Grease trap at cafeteria sink

Photo #160: Natural gas piping

Photo #161: Typical window air conditioning unit

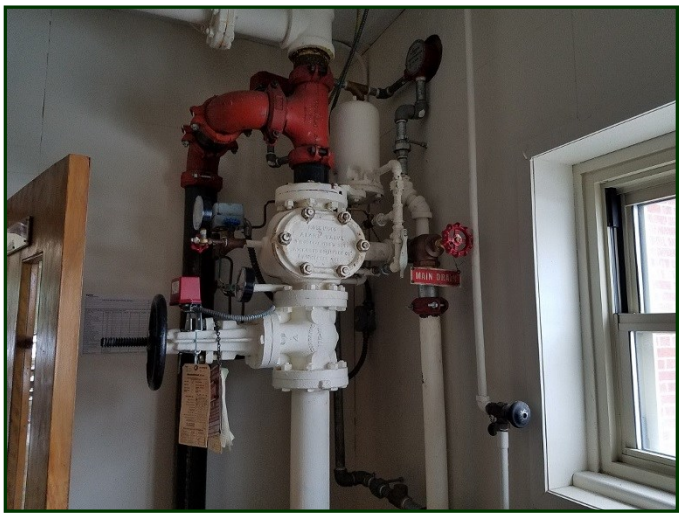

Photo #162: Fire sprinkler riser in cafeteria area

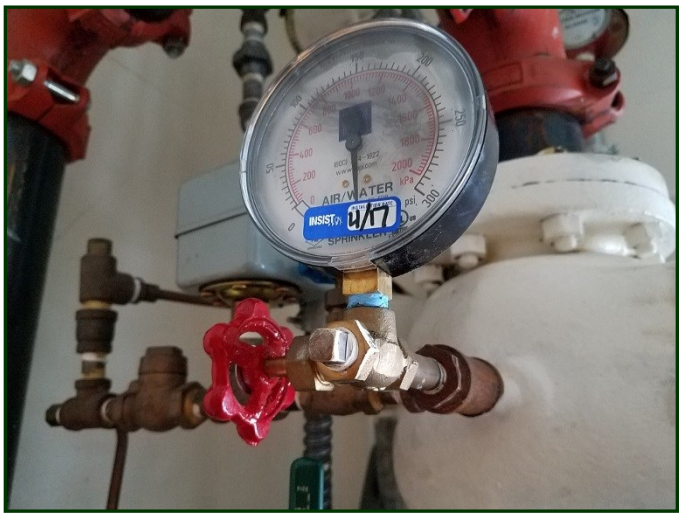

Photo #163: Non-working pressure gauge at cafeteria fire sprinkler riser

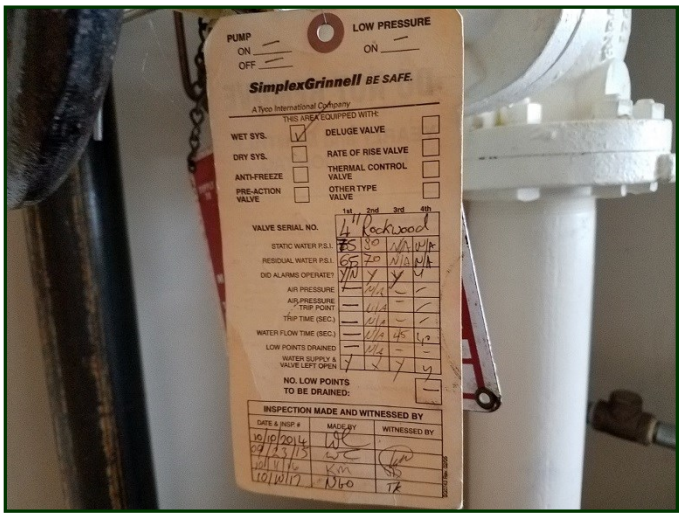

Photo #164: Fire sprinkler riser inspection tag

Photo #165: Fire sprinkler riser in Janitor closet

Photo #166: Spare fire sprinkler heads

Photo #167: Typical exit sign and fire alarm strobe

Photo #168: Fire alarm panel

Photo #169: Fire extinguisher and inspection tag

Photo #170: Backup battery lighting

APPENDIX B

RELEVANT SUPPORTING DOCUMENTATION

DOCUMENTS NOT PROVIDED FOR THIS SITE

APPENDIX C

VISUAL HAZARDOUS MATERIALS SURVEY

January 16, 2018

Ms. Heather R. Lemieux, Town Manager
Town of Lunenburg
17 Main Street
P.O. Box 135
Lunenburg, MA 01462

Reference: **Hazardous Materials Visual Assessment**
Former Passios Elementary School
1025 Massachusetts Avenue
Lunenburg, MA 01462
VERTEX Project No. 48237

Dear Ms. Lemieux:

The Vertex Companies, Inc. (VERTEX) is pleased to provide you with this letter report summarizing the visual hazardous materials assessment performed at the Former Passios Elementary School (the Site).

The Former Passios Elementary School is a one-story brick and concrete masonry unit (CMU) building reportedly constructed in 1950's. Interior finish materials include various colored 9" and 12" floor tile, plaster walls, plastered ceilings and/or acoustical drop ceiling tile. Exterior finish materials generally include a brick finished façade with a flat rubber membrane roof.

The following sections identify suspect asbestos-containing materials (ACMs), suspect lead based painted (LBP) surfaces, and regulated materials/universal wastes identified during the assessment.

Suspect Asbestos Containing Materials (ACMs) Assessment

VERTEX was provided with an Asbestos Hazard Emergency Response Act (AHERA) 3-Year Reinspection Report for the site building prepared by Cardno/ATC dated April 12, 2016.

Review of the 2016 Cardno/ATC 3-Year Reinspection Report revealed the following asbestos-containing building materials (ACBMs) present at the school:

- Various Colored 9” Floor Tile and Associated Mastics
- 12” x 12” White/Black Floor Tile
- Various Colored Covebase and Adhesives
- Ceiling Plaster
- Cement Board Paneling
- Pipe and Pipe Fitting Insulation

Review of the 2016 Cardno/ATC 3-Year Reinspection Report revealed the following building materials not to contain asbestos at the school:

- 1’ x 1’ Dotted Ceiling Tile
- 1’ x 1’ Textured Ceiling Tile
- 1’ x 1’ Smooth Ceiling Tile
- Paper Above 1’ x 1’ Dotted Ceiling Tile
- 2’ x 4’ Ceiling Tile
- Sheetrock
- Joint Compound
- 12” x 12” Tan/Brown Fleck Floor Tile and Mastic
- 12” x 12” Blue Floor Tile and Mastic
- 12” x 12” Tan/Pink Floor Tile and Mastic

It should be noted that under the AHERA regulations ACBMs are only identified within the school building, other ACMs may be associated with the school that do not fall under AHERA ACBM definition. Examples of materials which have been found to contain asbestos include but are not limited to exterior window caulking, window glazing, and roofing material. Prior to school renovations any suspect materials not sampled or listed within the school’s Asbestos Management Plan (AMP), must be tested prior to disturbance.

Based on the age of the site building (1950) it is likely that additional ACMs are present at the site building. Known or suspect ACMs observed and assumed to be present during the assessment included:

- Various Colored 9” Floor Tile and Associated Mastics
- Carpet Adhesive
- Various Colored Covebase and Adhesive
- Plaster Skim and Base Coat
- Wall Board
- Joint Compound
- Cement Board Paneling
- Chalkboards

- Fire Doors
- Pipe and Pipe Fitting Insulation
- Exterior Window Glazing
- Exterior Window Caulking
- Exterior Door Caulking
- Roofing Materials (i.e. tar and gravel assumed under rubber membrane, etc.)

At the time of the assessment, the suspect ACMs identified were observed to be in fair condition. Please refer to Attachment A which includes photographic documentation of the suspect ACMs identified during the assessment.

Suspect Lead Based Painted Surfaces Assessment

Based on the age of the site building (1950) it likely that LBPs are present at the site building. Various colored painted surfaces were observed to be in fair condition on the interior and fair to poor condition on the exterior. Please refer to Attachment A which includes photographic documentation of the suspect LBP surfaces identified during the assessment.

Regulated Materials/Universal Waste Assessment

The following regulated materials/universal wastes were identified during the visual assessment:

- Fluorescent Light Bulbs
- Poly-Chlorinated Biphenyl (PCB)/Non-PCB Light Ballasts
- Emergency Light/Exit Sign Batteries
- 275-Gallon Fuel Oil Above Ground Storage Tank
- Assumed PCB Transformers
- Window Mounted Air Conditioner

Recommendations

Based on the visual assessment conducted, VERTEX offers the following recommendations:

Prior to any renovation or demolition activities, sampling of suspect ACMs that may be disturbed would need to be conducted in applicable areas to determine asbestos content. A comprehensive ACM survey is required to be conducted to comply with the Environmental Protection Agency (EPA) National Emission Standard for Hazardous Air Pollutants (NESHAPs) 40 CFR Part 61. Until these materials have been sampled and determined to be non-asbestos containing, these materials should be managed in place as presumed asbestos-containing materials (PACMs).

The General Contractor is required to comply with all applicable Federal, Commonwealth and local Regulations concerning lead-based paint located on surfaces that will be impacted. The General Contractor is required to ensure the protection of workers performing any related demolition work that will affect lead painted surfaces as well as protecting the public and the environment from exposure to lead dust. It is the General Contractor's responsibility to ensure that all applicable regulations are followed. This may include but may not be limited to air quality testing, medical screening of workers, dust barriers, testing of waste for disposal requirements, etc. In addition, composite samples of painted surfaces, including wood, require testing by the Toxicity Characteristics Leaching Procedure (TCLP) for waste classification in accordance with disposal requirements of the EPA. The General Contractor is required to comply with all applicable Federal, Commonwealth and local Regulations concerning lead-based paint located on surfaces that will be affected.

Identified regulated materials/universal wastes are required be properly packaged, removed and disposed/recycled in accordance with federal, state and local regulations if renovation and/or demolition is planned to disturb.

Estimated Costs

- Preparation of a Lead Based Paint Operations and Maintenance Plan: $500.00
- Comprehensive Pre-Renovation/Demolition Survey: $10,000.00
- Abatement of Identified /Assumed ACMs and Regulated Materials: $625,000.00*
- Environmental Consulting/Clearance Inspections/Monitoring: $120,000.00*

***The Estimated Costs for Abatement and Consulting provided above will be dependent on the findings of a Comprehensive Pre-Renovation/Demolition Survey as well as the Selected Contractor schedule.*

Limitations

Professional opinions presented in this summary letter are based on information made available to VERTEX either by review of data provided by others or data gained by VERTEX personnel.

Conditions described in this summary letter were observed at the time of the inspection, unless otherwise stated.

VERTEX observed only the conditions and locations described in the summary letter at the time indicated.

This survey was limited to a visual assessment only and should not be utilized for renovation and/or demolition activities.

Please do not hesitate to contact us at your convenience, should you have any questions or comments regarding this summary letter or our recommendations.

Sincerely,
The Vertex Companies, Inc.

Jason Mohre
Senior Project Manager

Attachments:
Photographic Documentation

ATTACHMENT A

Photo #1: Photograph depicts general view of Side A of the Site Building

Photo #2: Photograph depicts general view of Side B of the Site Building

Photo #3: Photograph depicts general view of Side C of the Site Building

Photo #4: Photograph depicts general view of Side D of the Site Building

Photo #5: Photograph depicts general view of asbestos-containing 9” Floor Tile within Cafeteria

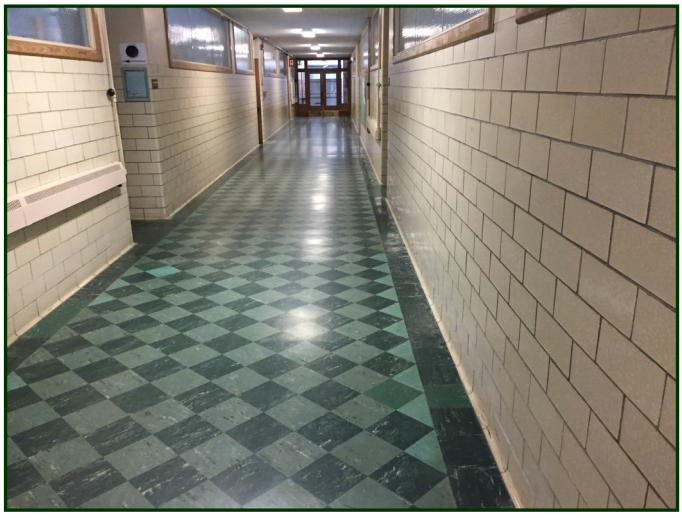

Photo #6: Photograph depicts general view of asbestos-containing 9” Floor Tile within Hallway

Photo #7: Photograph depicts general view of asbestos-containing 9” Floor Tile and Covebase within Classroom

Photo #8: Photograph depicts general view of suspect asbestos-containing Chalkboards within Classroom

Photo #9: Photograph depicts general view of asbestos-containing pipe insulation above ceiling area in hallway

Photo #10: Photograph depicts general view of florescent lights within Classroom

Photo #11: Photograph depicts general view of transformers within the Site Building

Photo #12: Photograph depicts general view of 275-Gallon Oil AST and Portable Classroom

APPENDIX D

STAFF QUALIFICATIONS

Brian Dunn, AIA
Forensic Architect

[bdunn@vertexeng.com / 203-517-4917]

Expertise:

Loss Control
Construction Defect
Owner's Representation
Architecture
Litigation Support & Expert Testimony (Construction)
Property Claim - Personal Property Condition Assessments
Litigation Support & Expert Testimony
Consultation
Builder's Risk Claim
Design Plans
Premise Liability Claim

Education/Training:

Architecture, Boston Architectural College, B.Arch, 2008

Biography:

Mr. Dunn possesses over 25 years of experience in the construction and design industries with an emphasis on preventing and solving issues related to the built enviornment. As a design professional Mr. Dunn has garnered expertise in all phases from the initial concept generation to the delivery of the completed building, including post occupancy analysis. He has been responsible for the successful coordination of the various disciplines that make up the finished product including site work.

Mr. Dunn provides valuable services to clients by performing on site inspections and construction document reviews as it pertains to litigation matters and pre-construction loss prevention reviews. Through his use of modern technology and his knowledge of myriad construction types and materials he is able to deliver accurate analyses and provide forward thinking solutions for clients that encompass their specific needs. He is adept at finding the source of problem and then providing the appropriate response that yields the best outcomes for clients.

Mr. Dunn's background in the construction and utility industries prior to him becoming an architect has given him experience with the technical aspects of construction not typically found in the architecture profession. It is this background that has led him to be proficient in the detailing of buildings and his ability to produce solutions to problems that arise during the course of construction in a timely manner as neccessitated once projects have broken ground. In post construction analysis he is able to examine conditions from large scale proportions down to minute details, interpret those findings, and communicate to clients the scope of the issue and how best to remedy that particular situation to the satisfaction of the client.

Licenses/Certifications:

Registered Architect, CT, 13888
Registered Architect, MD, 18019
Registered Architect, NY, pending
NCARB

Associations:

American Institute of Architects- AIA

Chamber of Commerce Ridgfield CT Advisory Council (2016)

Eric Nelson, PE, LEED AP, CEA
Vice President, Property Condition Assessments

[enelson@vertexeng.com / 484-487-2727]

Expertise:

Indoor Air Quality
Construction Due Diligence
Loan Monitoring
Property Condition Assessments
Construction Estimating
LEED Assessment & Certification
Litigation Support & Expert Testimony (Construction)
Civil Engineering
Civil/Structural
Engineering Geology
Structural
Green Building
Energy Certified Efficiency Auditing
Compliance Audits
PCA

Education/Training:

B.S., Civil Engineering, University of Illinois, 1989
Shallow Foundation Design, University of Missouri-Rolla, 1992
Deep Foundation Design, University of Florida, 1994
Environmental Chemistry, Illinois Institute of Technology, 1996
Earth Retaining Structures, University of Delaware, 2004

Biography:

Mr. Nelson is a Vice President directing the Property Condition Assessment and Energy Savings Investigation practices at VERTEX. He has over 27 years of experience with construction-related services such as construction materials testing and inspection, Geotechnical engineering, foundation design and analysis and design of pavement systems. Since 1997, he has been extensively involved in the performance, review and management of Property Condition Assessments (PCAs) for projects of variable size and complexity throughout North America. In addition, he has provided Construction-Monitoring services to evaluate construction progress, and approve or deny contractor payment requests on multiple projects in the northeast. He has also managed a number of large scale projects involving pre- and post-construction condition assessments of structures to monitor and assess damage from construction-related vibration. Mr. Nelson has also directed VERTEX's building analysis program with respect to energy usage and savings strategies for projects at various locations in North America.

Mr. Nelson has been involved in over 3,000 construction and assessment projects during his career, with extensive involvement in new construction, remodeling and re-development, property acquisition, lender due diligence and financial needs assessments and development of replacement reserves for numerous property types.

Licenses/Certifications:

Professional Engineer (PE) – Civil, DE, 10924
Professional Engineer (PE) – Civil, IL, 62.049214
Professional Engineer (PE) – Civil, IN, PE19500266
Professional Engineer (PE) – Civil, MD, 27232
Professional Engineer (PE) – Civil, NJ, 24GE03972000
Professional Engineer (PE) – Civil, NY, 754035
Professional Engineer (PE) – Civil, PA, PE050115E
Professional Engineer (PE) – Civil, WI, 31086-6
Professional Engineer (PE) – Civil, NC, 041964
Professional Engineer (PE) - Civil, AZ, 62072
LEED® AP
Certified Energy Auditor
Certified Building Inspection Engineer (BIECI)
Photovoltaic Entry Level Certificate of Knowledge
40 Hour OSHA Hazardous Waste Op. Training
Ground Source Heat Pump Loop Installer

Jason Mohre
Senior Project Manager

[jmohre@vertexeng.com / 781-952-6016]

Expertise:

Asbestos
Indoor Air Quality
Industrial Hygiene
Investigations & Remediation
Lead
Mold
O&M Program
LEED Assessment & Certification
Environmental
Green Building
Compliance Audits
Database Review
Environmental Portfolio Reviews
Peer Review
Phase I ESAs
Phase II LSI
Transaction Screen
Claim Investigation
Biology
Environmental Health & Safety
Environmental Permitting
Groundwater & Soil Characterization
Hazardous Materials/Waste
PCB
Remedial Design & Feasibility Studies
Remediation & Construction Management
Site Characterization
UST Removal
Vapor Intrusion Investigations & Remediation
Water & Wastewater
Sustainability Consulting

Education/Training:

B.A., Earth & Geographical Studies, University of Massachusetts
A.S., Environmental Technology, Cape Cod Community College (CCCC)
Coastal Zone Management Certificate, CCCC
Water Supply Certificate, CCCC/Massachusetts Maritime Academy (MMA)
Wastewater Technology Certificate, CCCC/MMA
Geographical Information Systems Certificate, CCCC/MMA
Hydrogeology Certificate, UMASS Boston

Biography:

Mr. Mohre has over 17 years of experience in the environmental industry. Field expertise includes AHERA consulting, Asbestos Inspections, Indoor Air Quality Assessments, Hazardous Material building surveys and Water Intrusion/Mold Cause and Origin Investigations as well as on-site project management related to remedial action oversight, Phase I Environmental Site Assessments (ESAs), Commercial Property Transaction Screens, and Phase II Subsurface Investigations.

Mr. Mohre is currently responsible for managing industrial hygiene projects involving asbestos abatement, mold remediation and indoor air quality. Management tasks include: asbestos inspections; indoor air quality assessments; site investigations; cause and origin determinations; delineation of contaminated media; development of remediation strategies; and oversight and management of contractors. He also provides comprehensive investigative reports, remedial protocols, and operational plans.

Mr. Mohre also works closely with the other divisions of the VERTEX Companies which include environmental site investigations for insurance claims, property development/redevelopment, and/ or property transactions.

Licenses/Certifications:

Asbestos Inspector, RI, AAC-0828
Asbestos Management Planner, MA, AP000080
Asbestos Inspector, MA, AI000262
Asbestos Management Planner, RI, AAC-0828
Asbestos Project Monitor, MA, AM000144
OSHA 10
OSHA 40 Hour HAZWOPER Training
8 Hour OSHA HAZWOPER Refresher Certification, Annual
Transportation Workers Identification Credential (TWIC), US

Presentations:

2-Hour Asbestos Awareness Training for the MBTA and Various MA School Districts

Matthew Quigley, PE
Forensic Engineer

[mquigley@vertexeng.com / 781.952.6070]

Highlights:

Professional Engineer (PE), Structural
Passed 16 HR. Structural Engineering (SE) Exam
B.S. Civil Engineering

Expertise:

Civil/Structural
Structural
Damages
Design Plans
Property Claim - Commercial
Property Claim - Personal

Education/Training:

B.S., Civil Engineering, Northeastern University, 2010

Special Training:

SEAMASS - Wind and Waves
SEAMASS - Structural Forensics: Lessons Learned

Biography:

Mr. Quigley has a strong background in structural engineering analysis and design, building envelope review and design and construction administration services. He is a licensed engineer in 5 states and has experience with consultation and design of concrete, steel, masonry, and wood structural systems in residential and commercial applications. He is experienced in state and federal building codes and implementation through forensic analysis of failures and design of new structures.

He has experience in the evaluation, design and rehabilitation of historic structures including structural reinforcement, building envelope renovation and building code upgrades. His responsibilities include evaluating historic materials, designing to match existing material strengths and aesthetics, coordinating with historic commission requirements, implementing building code upgrades for historic structures and review and approval of construction materials and implementation.

Mr. Quigley uses these skills and experience as an integral member of the forensic engineering division within VERTEX to provide cause and origin investigations, damage assessments, and repair and design recommendations for structural and building envelope components on residential and commercial applications.

Licenses/Certifications:

Professional Engineer (PE) – Structural, MA, 51620
Professional Engineer (PE) – Structural, CT, 31035
Professional Engineer (PE) – Structural, NH, 15152
Professional Engineer (PE) – Structural, VT, 123335
Professional Engineer (PE) – Structural, RI, 11959
Professional Engineer (PE), NY, 097406
OSHA 10
Structural Safety Assessment Program Inspector, CA, 74255

Associations:

- American Concrete Institute (ACI)
- American Society for Testing and Materials (ATM)
- American Institute of Steel Construction (AISC)

Presentations:

Presentation and training: ***"Expansion and Control Joints"*** as part of

Philip Russo, R.A.
Project Manager

[prusso@vertexeng.com / 617-830-1542]

Highlights:

Registered Architect MA Lic #9077

Expertise:

PCA
Construction Defect
Civil Engineering
Structural
Architecture
Property Claim - Personal
Civil/Structural
Construction Due Diligence
Property Condition Assessments
Peer Review
Analysis
PCS
Consultation
Design Plans

Education/Training:

B. Arch, Bachelor of Architecture Degree, Boston Architectural College, Boston, MA, 1984
Diploma in Architectural and Civil Design, Porter School of Design, Rocky Hill, CT

Biography:

Mr. Russo is a Massachusetts Registered Architect with over 32 years of experience. He has extensive knowledge related to assessment, architectural design, code review, construction documents, specifications, project costs, project forecasting, and construction administration. He has worked on a wide range of building types, including public governmental buildings such as libraries and K-12 school buildings, as well as hospitals and healthcare facilities and other multi-functional buildings of numerous types. Currently, Mr. Russo serves as Project Manager at VERTEX.

Since 2002, he has been extensively involved in the development and review of Property Condition Assessments (PCAs), Property Condition Screens (PCS's), Mold Investigations, review of construction documents for constructability and other due diligence projects for projects of variable size and complexity throughout North America, Europe, Russia and India.

As Project Manager at VERTEX, Mr. Russo's responsibilities include building/site assessment, technical report writing, coordination of external contractors, ADA compliance, municipal research, cost estimating, capital reserve planning and engineering data analysis. Additional responsibilities include peer review and mentoring of junior staff.

Licenses/Certifications:

Registered Architect, MA, MA#9077
Roofing 101 Module 1 : The Basics
Roofing 101 Module 2 : Roof Systems Basics
Roofing 101 Module 3 : Low-slope Roof Assemblies
Roofing 101 Module 4 : Steep-slope Roof Assemblies
Roofing 101 Module 5 : Roof Flashings and Accessories

Scott Katzer, PE
Division Manager / Senior Forensic Engineer

[skatzer@vertexeng.com / 954-626-8893]

Highlights:

Mechanical Engineering Degree
Professional Engineer
Expert with many building related components
Nationwide Due Diligence Experience
Registered Professional Engineer in 12 States
Performed Numerous Forensic Investigations
Expert Consultant, Litigation Experience
Construction Defect
Nationwide Property Condition Assessments Expertise
Project Management Experience Nationwide
Experience in Hospital Facilities
MEP Systems

Expertise:

Litigation Support & Expert Testimony (Insurance Support)
Indoor Air Quality
Mold
PCA
Construction Defect
Construction Management
Catastrophe Claim
Contract Claim
Owner's Representation
Electrical Consulting
Litigation Support & Expert Testimony (Construction)
Commissioning
Construction Claim Analysis & Prep
Property Claim - Personal Reconstruction/Restoration
Tenant Improvement
Mechanical
Feasibility Studies
Construction Due Diligence
Property Condition Assessments
Litigation Support & Expert Testimony (Air Quality)
Energy Management System Design, Installation & Support
Peer Review
Claim Investigation
Vapor Intrusion Investigations & Remediation

Education/Training:

B.S., Mechanical Engineering, Northeastern University, Boston, MA, 1992

Special Training:

Florida Wind Mitigation Inspection Training
Water Vapor Diffusion
Florida Professional Engineering Rules & Ethics
Concrete Deficiencies, Causes & Evaluation
Exterior Insulation & Finish Systems (EIFS)
Property Claim Training
Seismic Damage
Building Envelope & Stucco
Vibration Damage
Construction Defect Disputes & Litigation
National Association of Fire Investigators
Role of Cool Thermal Storage in Sustainable Design
Florida Wind Mitigation Inspection

Biography:

Mr. Katzer is a Senior Engineer and Florida Division Manager. He earned a B.S. in Mechanical Engineering from Northeastern University and is a licensed professional mechanical engineer, Certified Fire & Explosion Investigator (CFEI) and a Haag certified residential roof inspector.

Mr. Katzer's engineering experience encompasses a wide variety of building issues. He is an experienced mechanical engineer in the evaluation and design of healthcare, institutional, commercial, residential and industrial technically complex projects, as well as the investigation and analysis of building related components including heating, ventilating and air conditioning (HVAC), electrical, plumbing, fire protection, building envelope and indoor air quality (IAQ) issues. He is also experienced in the evaluation of buildings relating to identifying and mitigating the risks associated with hurricanes and similar catastrophic events.

Licenses/Certifications:

Professional Engineer (PE) - Mechanical, FL, 52678
Professional Engineer (PE) - Mechanical, GA, 26933
Professional Engineer (PE) - Mechanical, MA, 46899
Professional Engineer (PE) - Mechanical, CA, 33806
Professional Engineer (PE) - Mechanical, IL, 062060482
Professional Engineer (PE) - Mechanical, TX, 101536
Professional Engineer (PE) - Mechanical, NC, 035481
Professional Engineer (PE) – Mechanical, NY, 092091-1
Professional Engineer (PE) - Mechanical, CT, 30928
Professional Engineer (PE) - Mechanical, NV, 023556
Professional Engineer (PE) - Mechanical, CO, PE.0050936
Professional Engineer (PE) - Mechanical, NJ, 24GE05277500
Certified Fire & Explosion Investigator (CFEI), National, 20278-11429
Haag Certified Inspector – Residential Roofs , HCI #201302562