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## **SECTION 5.0      EXISTING CONDITION REPORTS**

### **INTRODUCTION**

The Town of Stow had previously commissioned a feasibility study of their elementary schools in 2002 which included existing condition reports for Center and Pompositticut Schools. Furthermore, some repairs and capital maintenance as a result of those studies was undertaken in 2004 under the direction of previous school building committees.

The SBTF determined that a repeat of this existing condition analysis could be a redundant task and an unnecessary cost to the Town. Therefore it was decided that SMMA would review the previous reports and incorporate into the SMMA report format. If any information was missing SMMA could work with the School and Town departments to obtain this information. The 2002 study did not include the Hale Middle school and therefore a full on-site evaluation was requested and performed for that facility.

### **Purpose Objectives**

The purpose of this report is to evaluate and document findings for all major systems and physical components of the existing buildings and sites under the caveats noted above.

This report will provide a basis for guiding the decisions and recommendations that will be presented as part of the overall Study. Several options will be presented following this report and the report will help to inform those designs.

This report, however, it is not intended to represent an exhaustive study of the building and its systems. No destructive testing was undertaken to arrive at the study conclusions. Certain assumptions of unseen conditions are made based on existing drawings, documentation, input from school district personnel and experience of the team.

### **Background Information**

In January of 2007, SMMA Civil Engineer and Architect (only) visited the Elementary School facilities to observe and assess the 'as-built' condition of the buildings and their operating systems. Corkey Tindel (Stow School Department Head Custodian) reviewed concerns and conditions of existing buildings with

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the SMMA architectural/engineering team and provided insight on the facilities operation. The structural, mechanical, electrical, fire protection and plumbing engineers reviewed the existing condition report contained within the 2002 Design Partnership of Cambridge (TDPC) Feasibility Study and input said information into the attached “evaluation” reports.

The original scope of building reviews included only the Center and Pompositticut schools. This scope was increased in December 2006 to include the Hale Middle School.

In February of 2007 the entire SMMA architectural and engineering team visited the Hale Middle School and developed the attached “summary of existing conditions” and “evaluation” report.

Prior to visiting the building the A/E team reviewed the available as-designed building documents to become generally familiar with the building and to utilize as the basis for defining the existing conditions.

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## **SECTION 5.1A    CENTER SCHOOL EVALUATION REPORT**

### **GENERAL INFORMATION**

Name of School: **CENTER SCHOOL**

Address: 403 Great Road,  
Stow, Massachusetts 01775

Name of Owner: Gregory J. Irvine (Principal)

Grade Levels Served: 3-5

Student Population: 272

Years in Service: 52

Year Constructed: 1954

Designer: Kilham, Hopkins, Greenley & Brodie

Additions: 1957 and 1964

Designer: Kilham, Hopkins, Greenley & Brodie

Other Site Buildings: 1917 Stone Building

Designer: Unknown

Existing Drawings: Kilham, Hopkins, Greenley & Brodie

1 through 24 - Plot Plan, Foundation and Architectural and MEP Drawings  
Dated November 1954

Kilham, Hopkins, Greenley & Brodie

2 Through 6 – Roof and Floor Plans, Plumbing and Heating Addition Plans

Dated May 1957

Drummey Rosane Anderson

E-1 – Site Plan and Details

Dated July 1967

The Design Partnership of Cambridge (MEP – Fitzmeyer and Tocci)

A2.0 Roof Plan

M1.0 Through E3.0 - HVAC, Plumbing and Electrical Modifications

Dated March 2004

**INFORMATION CONTAINED WITHIN THIS REPORT IS DERIVED  
FROM THE 2002 STOW ELEMENTARY SCHOOLS FEASIBILITY STUDY,  
BY THE DESIGN PARTNERSHIP OF CAMBRIDGE (TDPC) AND THE  
2004 SCHOOL BUILDING COMMITTEE IMPROVEMENTS DESIGNED  
BY TDPC.**

**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed  
 1 – Poor/Fair – Failure Expected  
 2 – Fair – serviceable, maintenance required  
 3 – Fair/Good – functioning, maintained  
 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**CONSTRUCTION CLASSIFICATION DATA:**

Construction Type: (from State Building Code)	
Original Building:	1954 – Not verified
Addition 1:	1957 – Not verified
Addition 2:	1964 – Not verified
Occupancy Group:	E – Educational
Area Sub-Basement:	NA
Basement:	NA
Ground Floor:	34,258 SF
Upper Floors – 2 <sup>nd</sup> :	NA
Upper Floors – 3 <sup>rd</sup> :	NA
Stone Building:	1,749 SF
Total:	36,007 SF

	Height	# of Stories
Height/Stories:	32'- 1 7/8" (pitched roof)	1
Original Building:	12'-0" (flat roof)	1
Addition 1:	12'-0" (estimated)	1
Addition 2:	12'-0" (estimated)	1

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**SITE DATA:**

	Description
Land Used:	School Building/Pavement- 15%, Play Area/Ballfields- 35%, Wooded- 25%, Wetlands- 25% (Areas are Approximate)
Lot Area:	15 acres
Topography:	Flat area for buildings, fields higher with surrounding wetlands; slight rise to the wooded area in the north and west.
Wetlands:	Wetlands to the northeast, northwest (Clay Pond) and southwest (Clay Pond outlet) <span style="float: right;">Note 4</span>

	Size: <i>(If septic system – verify if aggregate systems applies)</i>	Material:	Source of Info:	Date Installed	Conditions
Utilities –Sanitary:	Pumped Septic System and leach field 4” forced main	Asbestos (transite)	2002 Report, 1957 Plans	1957	Note 5
Water:	284’ deep well at 5GPM	M	2002 Report	M	M
Electricity:	Overhead Wire	N/A	2006 Site Walk, 1957 Plans	1957	M
Gas:	NStar	M	2002 Report	M	M
Oil Tank:	None, previously removed	N/A	2002 Report, 1957 Plans	1957 (Previous Tank)	M
Storm Water Management:	24” Outlet	Transite	2002 Report, 2006 Site Walk	Post 1957 (not shown on 1957 Plans)	Note 6 2
Athletic Fields – Field 1:	Baseball/Softball	Lawn, dirt baselines	2006 Site Walk	Post 1957 (not shown on 1957 Plans)	Note 7 2
Field 2:	Softball	Lawn, dirt baselines	2006 Site Walk	Post 1957 (not shown on 1957 Plans)	Note 7 2
Field 3:	Soccer	Lawn	2006 Site Walk	Post 1957 (not shown on 1957 Plans)	Note 7 3
Track:	None	N/A	2006 Site Walk	N/A	N/A
Tennis Courts:	2	Bituminous	2006 Site Walk	Post 1957	2-3

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	Size: (If septic system – verify if aggregate systems applies)	Material:	Source of Info:	Date Installed	Conditions
Basketball Courts:	2 half courts & paved play area	Bituminous	2006 Site Walk	(not shown on 1957 Plans) Post 1957 (not shown on 1957 Plans)	(puddles, good pav't) 1
Playground/Total Lot:	75'x50'	Wood & Steel with wood chip ground	2006 Site Walk	Post 1957 (not shown on 1957 Plans)	3

	Type:	Source	Date Installed	Conditions
Site Lighting:	1 flood light at parking and 1 at play structure	2006 Site Walk, 2002 Report	Post 1957 (not shown on 1957 Plans)	3
Fire Hydrant:	None	2006 Site Walk	N/A	N/A

	# Spaces	Material	Date Installed	Conditions
Parking – Lot 1/2/3:	13/34	Bituminous	1957 & Later	Note 8
Bus Drop/Pick-Up Area:	5 buses	Bituminous	1957	2
Parent Drop/Pick-Up Area:		Bituminous	Post 1957 (not shown on 1957 Plans)	3
Loading & Service	1 raised bay, combined with stairway	Bituminous	1957	1
Signage:	N/A	Metal Post	M	3
Trash Management Area:	2 Dumpsters (1 recycling, 1 trash)	Steel	M	3

**PROVISIONS FOR ACCESSIBILITY:**

Exterior – Accessible Route:	Width	Material
Curb Cuts:	15' & 4'	Bituminous; Note 9
Walkways:	8'	Concrete; Note 9 & 11
Ramps:	None	N/A
Parking:	2 spaces	Bituminous; Note 9

**SITE NOTES:**

- The site is not within a Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife area as designated by the Natural Heritage and

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Endangered Species Program. No certified vernal pools are identified (Massachusetts Natural Heritage Atlas, 12th Edition, 2006)

2. Per DEP there are no Areas of Critical Environmental Concern (ACEC) within the Town of Stow.
3. Per FEMA Flood Maps, this property is located within Zone C “Area of Minimal flooding” (outside the 100yr flood).
4. The clay Pond outlets through a culvert that runs beneath the field area.
5. A second septic tank and a second 1600 linear foot leaching field was constructed in 1957 to compliment the existing system.
6. The storm water system described is a buried, intermittent stream that drains the uplands and wetlands, including Clay Pond, at the North side of the site. Three large area drains along the northeast corner of the building likely drain to this buried stream. There is no site drainage for the building roof drains or pavement area. All roofs drain through down spouts to grade and all pavement area drains overland. Ponding regularly occurs on the east side of the building (2002 report).
7. The baseball field includes a second set of baselines for softball. Baseball and softball infields are overgrown. The softball field backstop is in poor condition. The baseball field backstop is in fair condition. Both fields share outfields. The soccer field is located in the outfields.
8. The parking area in front of building is in good condition, the adjacent service drive is in poor condition. The bus turn-around and west side parking is in fair condition.
9. Only the main entrance is accessible, most secondary entrances have a step. The handicap parking is adequately signed and within 200’ of the main entrance, but it is not striped correctly to the accessible route. Tennis courts and play areas are not on an accessible route.
10. There is no fire road around the building.
11. The outdoor Classroom near Clay Pond is in disrepair. The bridge to Outdoor Classroom is virtually uncrossable. There is no accessible route to the Outdoor Classroom.

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**BUILDING SYSTEMS & ASSEMBLIES OF ORIGINAL BUILDINGS:**

Structure	Material	Remarks	Conditions
Foundation System:	<b>Original 1954 Building:</b> Spread footings at the interior columns, with continuous concrete walls and footings at the perimeter of the building. There are haunched slabs supporting the masonry walls between the classrooms, and continuous walls with footings supporting the interior corridor masonry bearing walls.  <b>Additions 1957 and 1964:</b> Same as 1954 building.	The stone building has a stone/rubble foundation.	3
Vertical Support Systems:	<b>Original 1954 Building:</b> Masonry load bearing walls at interior, at the classroom corridors, and a mix of steel pipe & wide flange columns and masonry bearing walls at the perimeter & exterior walls of the building.  <b>Additions 1957 and 1964:</b> Same as 1954 building.	Perimeter stone walls up to 24" thick at the "Stone" building. Load bearing walls and foundations at the classroom wings. The boiler room walls have some visible signs of settlement, cracking, and spalling of the brick veneer. This may be evidence of an on-going process. Similar settlement cracks also exist at the 1957 and 1964 additions.	2
Floor Framing Systems:			
Ground:	<b>Original 1954 Building:</b> 5" Slab-on-Grade reinforced with #4 rods at 16"oc each way, mid depth (typical), except at spaces adjacent to the boiler room where there is a 6.5" thick reinforced framed slab.  <b>Additions 1957 and 1964:</b> Same as original 1954 structure.		3
Upper Floors:	N/A		
Roof Framing System:	<b>Original 1954 Building:</b> Steel, built-up angle trusses @ 14'-10" o.c., supported on steel columns hidden in the masonry walls at the gym/cafetorium.	Roof framing at the "Stone" building includes 2x6 rafters 24" o.c. supported on the exterior stone walls. The attic floor is framed with 2x6 joists	3

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Structure	Material	Remarks	Conditions
Lateral Force Resisting System:	<p>Eight inch deep steel roof purlins, 6' to 8' o.c. frame the roof between trusses. These trusses frame the roof as well as the attic floor space. The attic floor is framed with 2x12 @ 24" wood joists. Classroom roofs are framed with 3x14 wood joists over the classrooms, framed onto double cantilevered steel beams over the corridors, and onto perimeter steel beams at the exterior walls. The roof is sheathed with wood decking.</p> <p><b>Additions 1957 and 1964:</b>          The roof framing for the four and six classroom additions is wood framing similar to the original 1954 building. Wood joists are supported on masonry bearing walls, as well as some steel beams.</p>	<p>framing to a center beam that is hung from the roof rafters, by a threaded rod supported by two collar channels bolted to the roof rafters at approx. 6 feet on center. Attic floor is decked over with 2 layers of ¾" tongue and grooved plywood. Even though the roof appears to be in good condition, it needs further investigation to determine its adequacy.</p>	
	<p>None: Existing interior and exterior un-reinforced load and non-load bearing masonry walls provide some, but limited lateral load resisting capability.</p>	All wings.	2

**STRUCTURE NOTES:**

1. All repair, alterations, and additions to the school will need to meet the requirements of 780 CMR Chapter 34. All additions will need to be completely separated from the existing structures to avoid impacting the limited lateral system of the buildings.

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**BUILDING SYSTEMS & ASSEMBLIES OF ORIGINAL BUILDINGS CONT'D:**

Exterior Envelope	Material – Original Building	Material – Additions	Conditions
Exterior Wall Assembly:	Brick Veneer CMU backup/ Stone building – no insulation	Brick Veneer CMU backup – no insulation	
Exterior Trim/Fascia:	Plywood soffits and wood fascia	Same as original	1
Sloped Roof Assembly:	Asphalt shingles	Same as original	
Flat Roof Assembly:	15-20 year old Insulated EPDM system	Same as original	2
Windows:	Wood/ Metal single with pane glass – brick rowlock sills	Same as original	No thermal breaks
Clerestory Windows:			
Glazed C- Wall:	N/A	N/A	
Doors – Exterior:	Metal/ Wood	Same as original	None compliant
Interior:	Solid core wood	Same as original	
Cross-Corridor:			
Hardware:			Non compliant

**EXTERIOR ENVELOPE NOTES:**

1. Copper gutters and downspouts are in poor condition. Gravel stops are in a deteriorated state.
2. Wood gable ends at gymnasium/ cafetorium are deteriorated.

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Interior	Materials – Walls, Floor & Ceiling Original Building			Materials – Walls, Floor & Ceiling Addition			Conditions
	Walls	Floor	Ceiling	Walls	Floor	Ceiling	
Typical Classrooms:	CMU/ GWB	*CPT/ VAT	CSAT/ PLAS	Same as Original	Same as Original	Same as Original	
Offices:	CMU/ GWB	*CPT/ VAT	CSAT/ PLAS				
Gym:	CMU/ WD	Wood	CSAT				
Cafeteria:	CMU/ GWB	Wood	CSAT				
Library:	CMU/ GWB	*CPT/ VAT	CSAT/ PLAS				
Auditorium:	N/A	N/A					
Corridors:	CMU/ GWB	*VAT	CSAT/ PLAS				
Stairs:	CMU/ GWB						Non compliant
Toilets:	CMU/ GWB						
Kitchen:	CMU/ GWB	*VAT	CSAT/ PLAS				
Service/Mechanical:	CMU/ GWB	*VAT	CSAT/ PLAS				

**INTERIOR FINISHES NOTES:**

1. Perimeter casework has cosmetic and structural damage.
2. Cubbies are in poor condition.
3. Basketball backstops are in poor condition.
4. Platform fire curtain and rigging appear to be old.
5. Chalk and Tack boards are in poor condition.

**ABBREVIATIONS:**

CMU – Concrete Masonry Unit, or Concrete Block  
 CONC - Concrete  
 ACT – Suspended Acoustic Tile Ceiling  
 CSAT – Suspended Concealed Spline Acoustic Tile  
 PLAS – Plaster  
 GWB – Gypsum Wallboard  
 VCT – Vinyl Composition Tile  
 VAT – Vinyl Asbestos Tile

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CPT – Carpet  
VB – Vinyl Base  
CT – Ceramic Tile  
PT – Porcelain Tile  
WD - Wood

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**PLUMBING SYSTEM:**

Service	Pipe Size	Meter Size	Pressure Regulator	Oper. Pressure	Pipe Material	Source	Age	Miscellaneous
Water:	4"	UNKNOWN N	UNKNOWN N	UNKNOWN N	UNKNOWN N	WEL L	UNKNOWN N	1
Gas:	UNKNOWN N	UNKNOWN N	UNKNOWN N	UNKNOWN N	STEEL		UNKNOWN N	2

System	Pipe Material / Condition	Type Insulation / Condition	Miscellaneous
Domestic Cold Water:			HVAC Backflow Preventer -
Domestic Hot Water:			Temperature – Recirculation-
Sanitary Waste & Vent:		N/A	
Storm Drainage:			Interior – Exterior -
Gas:		N/A	Emergency Shut-Off for Labs – Mech Shut-Off at Hood -
Non-Potable (Lab) CW:			Backflow Preventer -
Non-Potable (Lab) HW:			Backflow Preventer -
Acid (Lab) Waste & Vent:		N/A	Limestone or pH Adjust – Town Sewage-
Kitchen Waste:		N/A	Exterior Grease Trap-
Tempered Water:			Fail-Safe Mixing Valve -

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Water Heater:	Gas fired Water heater	Unknown	1	Gal – 50 Recovery – Unknown CFH or KW - Unknown
Sanitary Ejector Pump:				Simplex or Duplex – Airtight Cover -
Storm Ejector Pump:				Simplex or Duplex -
Domestic Water Booster Pump:				No. of Pumps – Pressure – HP -
Interior Kitchen Grease Trap:				

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Plumbing Fixtures	Type/ Installation	Low Consump/ Metering	Accessible	Condition	Miscellaneous
Water Closet:					
Urinal:					
Lavatory:					
Drinking Fountain/Water Cooler:		N/A			
Classroom Sink					Faucet Type -
Classroom Bubbler / Drinking Fountain		N/A			
Mop Sink:		N/A	N/A		Vacuum Breaker –
Showers:					Single Handle – Master Mixer -

Miscellaneous Fixtures	Miscellaneous		
Hose Bibb:	NA		
Wall Hydrant:	2		
Floor Drain:	2		
Emergency Shower / Eyewash:	none	Stay Open -	Floor Drain -
Emergency Eyewash:	none	Stay Open -	Piped Drain -
Lab Faucets:	NA Accessible -		
Lab Gas Cocks:	NA		

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**AUTOMATIC FIRE SUPPRESSION SYSTEM:**

	Size	Material	Location	Flow/Pressure	Date of Installation	Conditions
Water Service Entrance #1:	None					
Water Service Entrance #2:						
Backflow Prevention:						

	Size/Pressure	Manufacturer	Energy Source	Date of Installation	Conditions
Fire Pump:	None				

	Type	Type of Head	Zone	Date of Installation	Conditions
Suppression System	None				
Typical Classrooms					
Large Spaces					
Kitchen:					
Stairs:					
Fire Department Connections:					
Exterior:					
Interior:					
Shut-Off Valves:					
Pre-Action Controls:					

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**HEATING & VENTILATING SYSTEMS:**

Centralized Systems	Energy Source	Type	Manufacturer	Date of Installation	Conditions
Heating Equipment #1:	Natural Gas	Hot Water Boiler	HB Smith	1954; 1985	Poor; Fair
Cooling Equipment #1:	NA				
Exhaust Equipment #1:		Roof Mtd	Unknown	Unknown	Poor/ Inadequate

Distribution Systems	Size	Type	Manufacturer	Energy Source	Date of Installation	Conditions
Heating Distribution Equipment:	Unknown	Pumps	B&G	Electric	Unknown	Fair
Cooling Distribution Equipment:	NA					
Air Distribution Equipment:	NA					

Terminal Equipment	Type	Manufacturer	Controls	Date of Installation	Conditions
Typical Classrooms:	Unit Vents and FTR	Unknown	Pneumatic	Unknown	Poor
Offices:	FTR	Unknown	Pneumatic	Unknown	Poor
Library:					
Café/Platform:	Unit Vent and FTR	Unknown	Pneumatic	Unknown	Poor
Cafeteria/Gym:	H&V Units	Unknown	Pneumatic	Original	Poor
Gym:					
Kitchen:					
Corridors:					
Toilets:					

Ventilating Equipment	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Ventilating Equipment – Typical Classrooms:						
Offices:	None					
Library:						
Auditorium:						
Cafeteria:						
Gym:						
Kitchen:						
Corridors:						
Toilets:						

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Ventilating Equipment	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Exhaust System :						
Offices						
Library:						
Auditorium:						
Ventilating Equipment (Continued)	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Cafeteria:						
Gym:						
Kitchen:						
Corridors:						
Toilets:						
Combustion Air:	Insufficient					
Ventilating of Combustion						
Base:						
Heat Exchange:						
Energy Recovery:						

HVAC Controls	Type	Manufacturer Controls	Date of Installation	Conditions
Energy Management – Controls:	None – Pneumatic Controls			Poor
General:				
Local:				

**HVAC NOTES:**

1. Classroom unit ventilators noted as off, due to fan noise.
2. Combustion air does not meet current code.
3. There is no ventilation air in the office, lounge or work rooms / spaces.
4. Toilet exhaust noted as insufficient to adequately remove odors.
5. The 1954 boiler may be insulated with asbestos.
6. Due to the ages of all HVAC system components, they should be replaced, under a renovation project.

**HVAC ABBREVIATIONS:**

FTR – Fin tube radiation

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**ELECTRICAL:**

	Rating	Voltage	Metering	Date of Installation	Conditions
Service:	600A	208/120V	Utility	2004	4

	Type		Location		Conditions
Transformer:	Pole Mounted	208/120V	North Side – On site	NA	NA

	Rating	Energy Source	Manufacturer	Date of Installation	Conditions
Emergency Generator:	37.5 KVA	Diesel	NA	2004	4

	Type			Date of Installation	Conditions
Distribution System:	NA	208/120V	NA	1954/2004	1/4, Note 9

Devices	Grounded/Non Grounded			Date of Installation	Conditions
Typical Classrooms:	Grounded			1954-2004	2/4, Note 10
Offices:	Grounded			1954-2004	2/4
Gym/Cafeteria/Stage:	Grounded			1954-2004	2/4
Lobby/Corridor:	Grounded			1954-2004	2/4
Toilets:	NA				

Lighting	Lamp Type	Mounting	Date of Installation	Conditions
Typical Classrooms:	Fluorescent – T12	Surface	NA	1, Note1
Offices:	Fluorescent – T12	Surface	NA	1, Note1
Library:	Fluorescent – T12	Surface	NA	1, Note1
Gym/Cafeteria/Stage:	Fluorescent – T12	Surface	NA	1, Note1
Lobby/Corridor:	Fluorescent – T12	Surface	NA	1, Note1
Toilets:	Fluorescent – T12	Surface	NA	1, Note1
Lighting Controls:	NA			

Site Lighting	Lamp Type	Mounting	Date of Installation	Conditions
Sports Fields:	NA			
Parking:	H.I.D.	Pole	NA	2, Note 2
Walkways:	H.I.D.	Building - Surface	NA	2, Note 2
Building Entrances:	H.I.D.	Building - Surface	NA	2, Note 2

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Security System	Type	Manufacturer		Date of Installation	Conditions
CCTV:	NA			NA	Note 3
Door Access Controls:	NA			NA	
Detection Devices:	NA			NA	

Communications System	Type	Manufacturer		Date of Installation	Conditions
Master Clock / Program:	NA		None Installed		
Typical Classrooms:	Battery Type			NA	2
Offices:	Battery Type			NA	2
Public Areas:	Battery Type			NA	2

Tele/Data/Video System	Type	Manufacturer	CCTV	Date of Installation	Conditions
Typical Classrooms:	1T/1D			NA	2, Note 5
Offices:	1T/1D			NA	3
Library:	NA			NA	2
Computer:	NA			NA	2
Gym/Cafeteria/Stage:	NA			NA	2

Local Sound Systems	Type	Manufacturer	Controls	Date of Installation	Conditions
Gym/Cafeteria/Stage:	NA				Note 4

	Type	Manufacturer	Controls	Date of Installation	Conditions
Emergency Lighting:	Inc/Fluor.	NA	Battery Units	2000 – Est.	2, Note 6
Exit Lighting:	LED or Fluor.	NA	Battery Type	2000 – Est.	2

	Type	Manufacturer	Notifications	Date of Installation	Conditions
Fire Alarm System:	Zoned –Hard Wired	NA	General – to F.D.	1994	3, Note 7

**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed  
 1 – Poor/Fair – Failure Expected  
 2 – Fair – serviceable, maintenance required  
 3 – Fair/Good – functioning, maintained  
 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

Fire Alarm Devices	Detector Type	Alarm Signal Type	Pull Station	Date of Installation	Conditions
Typical Classrooms:	HD	General		1954 – Est.	3, Note 8
Offices:	HD	General		1954 – Est.	3
Library:	HD	General		1954 – Est.	3
Auditorium/Stage:	NA			1954 – Est.	3
Gym/Cafeteria/Stage:	HD	General		1954 – Est.	3
Lobby/Corridor:	HD	General	At all exit doors	1954 – Est.	3
Kitchen:	HD	General		1954 – Est.	3
Storage/Service:	NA			1954 – Est.	3
Toilets:	NA			1954 – Est.	3

*HS – Horn/Strobe, SD – Smoke Detector, HD – Heat Detector, HID – High Intensity Discharge*

**ELECTRICAL NOTES:**

1. It is reported that the general light fixtures are quite old and many have cracked and/or yellowed lenses and light levels are inadequate. The fixtures utilize T12 lamps with magnetic ballasts, which are inefficient, based on current standards, and should be replaced.
2. It is reported that there is minimal site lighting at the school. All of which is fairly old and most likely original. There is one pole mounted flood light across from the entry drive, and another near the play structure. All other site lighting is building mounted, and is, most likely, H.I.D. wall packs.
3. There is no reported security system(s).
4. There is no reported local sound system.
5. There are reported deficiencies in quantities of data outlets/computer stations or cable type for all areas. Staff has requested more data and telephone outlets, and intercom systems for most areas. More power outlets were added in 2004, which would suggest more data outlets were added, but this is not documented. There are no telephones in classrooms; however the intercom system is used. There is also no mentioned video/CATV system.
6. The emergency lights are incandescent, battery type units, which energize upon loss of power, and are relatively new. Exit signs have been installed at the same time and are believed to be LED, battery type. They are estimated to have been installed circa 2000. The new generator, installed under the 2004 Improvements project, is also believed to be connected to general fluorescent night lights. These would also be considered emergency lights.
7. The fire alarm system control panel and annunciator were replaced around 1994, is of the zoned hard-wired type, and barely adequate for the building. Existing wiring and initiating devices were reused, and are original to the building. Audio/visual devices were not replaced, are not ADA compliant,

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**EVALUATION REPORT****Condition Key Criteria:**

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1 – Poor/Fair – Failure Expected  
2 – Fair – serviceable, maintenance required  
3 – Fair/Good – functioning, maintained  
4 – Good – Fully functional, new  
N/A – Not applicable/Not available  
M - Missing

and do not meet current codes for coverage. An entire new addressable system with all new wiring and devices should be installed.

8. The building has no sprinkler system. Per the current code, the building is required to have a fire alarm system with full coverage by either smoke and/or heat detectors. The building, most likely, does not have full coverage for all areas. A detailed field investigation would be required for verification.
9. Other than panel SP1, all panels and feeders are original to the building or additions. The panels and feeders are well past their life expectancy and should be replaced.
10. There has been no reported project for replacement of ungrounded receptacles, it is assumed that most or all have been replaced at some point. Grounded receptacles are required by code, and most of today's school equipment requires grounded type, 3-prong receptacles. Any non-grounded type receptacles should be replaced, along with any over 20 years old.

**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed

1 – Poor/Fair – Failure Expected

2 – Fair – serviceable, maintenance required

3 – Fair/Good – functioning, maintained

4 – Good – Fully functional, new

N/A – Not applicable/Not available

M - Missing

**PROVISIONS FOR ACCESSIBILITY:**

Exterior Accessible Route	
Accessible Route:	See Site Data for info.

	Width	Material	Hardware	Conditions
Primary Entrance:				
Exterior/Egress Doors:				
Signage:				

Interior Accessible Route	Width	Material	Hardware	Conditions
Accessible Route:				
Entrance Vestibules:				
Interior Doorways –				
Classrooms:				
Offices:				
Library:				
Auditorium / Stage:				
Gym/Cafeteria/Kitchen:				
Cross – Corridor:				
Stairs:				
Toilets:				

	Width	Floor Surface	Handrail/Guard Heights	Conditions
Stairways:				
Ramps:				

	Clear Floor Space/Turning Radius	Toilet Partitions	Conditions
Toilet Rooms:			
Tables & Seating –			
Cafeteria:			
Drinking Fountains:			
Public Tele:			
Controls:			
Signage:			
Emergency Alarms:			

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## **SECTION 5.2A POMPOSITTICUT SCHOOL EVALUATION REPORT**

### **GENERAL INFORMATION**

Name of School: **POMPOSITTICUT SCHOOL**

Address: 511 Great Road,  
Stow Massachusetts 01775

Name of Owner: Gregory J. Irvine (Principal)

Grade Levels Served: K-2

Student Population: 322

Years in Service: 35

Year Constructed: 1971

Designer:

Additions: None

Designer:

Existing Drawings: Drummey Rosane Anderson

E-1 – Site Plan and Details

Dated July 1967

The Design Partnership of Cambridge (MEP – Fitzmeyer and Tocci)  
M2.0 Through E3.0 - HVAC, Plumbing and Electrical Modifications  
Dated March 2004

**INFORMATION CONTAINED WITHIN THIS REPORT IS DERIVED  
FROM THE 2002 STOW ELEMENTARY SCHOOLS FEASIBILITY STUDY,  
BY THE DESIGN PARTNERSHIP OF CAMBRIDGE (TDPC) AND THE  
2004 SCHOOL BUILDING COMMITTEE IMPROVEMENTS DESIGNED  
BY TDPC.**

**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed  
 1 – Poor/Fair – Failure Expected  
 2 – Fair – serviceable, maintenance required  
 3 – Fair/Good – functioning, maintained  
 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**CONSTRUCTION CLASSIFICATION DATA:**

Construction Type: (from State Building Code)	
Original Building:	1971 Type unknown
Addition 1:	NA
Addition 2:	NA
Occupancy Group:	E – Educational
Area Sub-Basement:	NA
Basement:	NA
Ground Floor:	36,415 SF + (4) 925 SF Modulars = 3,700 sf
Upper Floors – 2 <sup>nd</sup> :	NA
Upper Floors – 3 <sup>rd</sup> :	NA
Total:	40,115 SF

	Height	# of Stories
Main Building:	13'-0"	1
Gymnasium:	18'-0"	1
Addition 1:	NA	
Addition 2:	NA	

**EVALUATION REPORT****Condition Key Criteria:**

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 1 – Poor/Fair – Failure Expected  
 2 – Fair – serviceable, maintenance required  
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 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**SITE DATA:**

	Description
Land Used:	School Building/Pavement- 20%, Play Area/Ballfields- 25%, Wooded- 5%, Wetlands- 50% (Areas are Approximate)
Lot Area:	19.2 acres
Topography:	Flat building area with wetlands to the north and east.
Wetlands:	Wet meadows surrounding both ball fields to the north and east. Note 1

	Size: (If septic system – verify if aggregate systems applies)	Material:	Source of info:	Date Installed	Conditions
Utilities –Sanitary:	Septic System. 10,000 gal. tank	M	2002 Report	1970	M
Water:	3 HP Well	M	1970 Elect. Plans	1970	M
Electricity:	Underground	M	2006 Site Walk	1970	M
Gas:	NStar	M	2002 Report	1970	M
Oil Tank:	Yes, underground, size unknown	M	2002 Report	1997	M
Storm Water Management:	15” Outlet	Corrugated Metal Pipe	2002 Report, 2006 Site Walk	1970	Note 4 3
Athletic Fields – Field 1:	200’ x 120’	Lawn	2002 Report, 2006 Site Walk	M	Note 5 3
Field 2:	300’ x 160’	Lawn	2002 Report, 2006 Site Walk	M	3
Field 3:	None	N/A	N/A	N/A	N/A
Track:	None	N/A	N/A	N/A	N/A
Tennis Courts:	None	N/A	N/A	N/A	N/A
Play Courts:	100’ x 250’ approximate triangular shape	Bituminous	2006 Site Walk	M	2
Playground/Total Lot:	75’ x 50’	Wood & Steel with wood chip ground	2006 Site Walk	M	3

	Type:	Source	Date Installed	Conditions
Site Lighting:	1 cobra head light	2006 Site Walk, 2002 Report	Post 1957 (not shown on 1970 Plans)	2
Fire Hydrant:	None	N/A	N/A	N/A

**EVALUATION REPORT****Condition Key Criteria:**

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 1 – Poor/Fair – Failure Expected  
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 N/A – Not applicable/Not available  
 M - Missing

	# Spaces	Material	Date Installed	Conditions
Parking – Lot 1/2/3:	49	Bituminous	1970	2
Bus Drop/Pick-Up Area:	5 buses	Bituminous	1970	2
Parent Drop/Pick-Up Area:	Same area as Parking 4 cars, queue in parking aisle	Bituminous	1970	2
Loading & Service	1 raised bay	Bituminous	1970	1
Signage:	N/A	Metal Post	M	3
Trash Management Area:	2 Dumpsters (1 recycling, 1 trash)	Steel	M	3

**PROVISIONS FOR ACCESSIBILITY:**

Exterior – Accessible Route:	Width	Material
Curb Cuts:	3'	Concrete; Note 6
Walkways:	8'	Concrete; Note 6
Ramps:	None	N/A
Parking:	None	N/A

**SITE NOTES:**

1. Portions of the site are within a Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife area as designated by the Natural Heritage and Endangered Species Program. It appears that a portion of the site immediately surrounding the school and parking area (approximately 3 acres) is not within the Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife area (Massachusetts Natural Heritage Atlas, 12th Edition, 2006). No certified vernal pools are identified.
2. Per DEP there are no Areas of Critical Environmental Concern (ACEC) within the Town of Stow.
3. Per FEMA Flood Maps, this property is located within Zone C “Area of Minimal flooding” (outside the 100yr flood).
4. The stormwater management system is composed of catchbasins and piping network that discharges into the wetlands to the west. No curbing system directs runoff to the basins, thus some erosion exists along pavement edges, especially near the basins.
5. The lower field, nearest the school, is very close to the surrounding wetlands in elevation and is typically too wet to use between November and May (according to Gregory Irvine, Principal, 2006).

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N/A – Not applicable/Not available  
M - Missing

6. The main entrance is the only accessible entrance; most secondary entrances have a step. There is neither handicap parking, signage, nor an accessible route from the parking area. There is an accessible/crosswalk route striped, but it is not located at a curb cut.

**EVALUATION REPORT****Condition Key Criteria:**

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 N/A – Not applicable/Not available  
 M - Missing

**BUILDING SYSTEMS & ASSEMBLIES OF ORIGINAL BUILDINGS:**

Structure	Material	Remarks	Conditions
Foundation System:	Interior Spread footings. Exterior continuous concrete walls and footings.	Minor settlement and shrinkage cracks exist in the foundations walls; however these have no impact on the performance of the foundations.	3
Vertical Support Systems:	Steel columns at high roof areas, load bearing cmu walls at the low roof areas.		3
Floor Framing System:	N/A		
Ground:	Slab-on-Grade		3
Upper Floors:	N/A		
Roof Framing System:	Steel bar joists supported on steel beams at the high roof areas, and bar joist supported on predominantly cmu bearing walls elsewhere. Roof decking material is a "Tectum" plank product at the high roof areas, and a lightgage metal deck elsewhere.		3
Lateral Force Resisting System:	None Observed: Limited lateral load resistance provided by interior and exterior un-reinforced cmu walls.		3

**STRUCTURE NOTES:**

1. All repair, alterations, and additions to the school will need to meet the requirements of CMR Chapter 34. A second story addition to the school in part or in-total may not be economically feasible and will require substantial upgrade to the existing gravity and lateral load resisting system of the building.

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 M - Missing

Exterior Envelope	Material	Remarks	Conditions
Exterior Wall Assembly:	Brick Veneer/ CMU backup		2
Exterior Trim/Fascia:	Metal		2
Sloped Roof Assembly:			
Flat Roof Assembly:	15-20 year old Insulated EPDM system	Metal gravel stops and flashing are in good condition	2
Windows:	*Steel, single pane glass –not insulated	Brick sills	No thermal breaks
Clerestory Windows:	Steel		2
Glazed C- Wall:	N/A		
Doors – Exterior:	Metal		1
Interior:	Solid core wood		1
Cross-Corridor:			
Hardware:			Non-accessible

**EXTERIOR ENVELOPE NOTES:**

1. Caulking sealants, control joints are in poor condition throughout and should be replaced.

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 N/A – Not applicable/Not available  
 M - Missing

Interior	Materials – Walls, Floor & Ceiling Original Building			Materials – Walls, Floor & Ceiling Addition			Conditions
	Walls	Floor	Ceiling	Walls	Floor	Ceiling	
Typical Classrooms:	CMU/ OP	CPT/ VAT		N/A	N/A	N/A	
Offices:	CMU	CPT/ VAT					
Gym:	CMU		ACT				
Cafeteria:	CMU		ACT				
Library:	CMU	CPT/ VAT					
Auditorium:							
Corridors:	CMU	VAT					
Stairs:	N/A						
Toilets:	CMU/ CT	CT					
Kitchen:	CMU	VAT					
Service/Mechanical:	CMU	VAT					

**INTERIOR FINISHES NOTES:**

1. Carpet flooring is in fair to poor condition.
2. Vinyl floor tiles contain asbestos.
3. Existing casework in art and science rooms is worn and non-compliant with barrier-free requirements.
4. Wood storage closets along the south wall in the gym/cafeateria are worn and in poor condition.
5. Chalk and Tack boards are in fair condition.

**ABBREVIATIONS:**

BRK – Brick Masonry  
 CMU – Concrete Masonry Unit, or Concrete Block  
 WD – Wood  
 CONC - Concrete  
 ACT – Suspended Acoustic Tile Ceiling  
 CSAT – Suspended Concealed Spline Acoustic Tile  
 PLAS – Plaster  
 GWB – Gypsum Wallboard  
 VCT – Vinyl Composition Tile  
 VAT – Vinyl Asbestos Tile  
 CPT – Carpet  
 VB – Vinyl Base

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N/A – Not applicable/Not available  
M - Missing

RBR – Rubber Treads & Risers/Tile

CT – Ceramic Tile

QT – Quarry Tile

\* – Suspected Asbestos Containing Material.

**EVALUATION REPORT****Condition Key Criteria:**

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 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**PLUMBING SYSTEM:**

Service	Pipe Size	Meter Size	Pressure Regulator	Oper. Pressure	Pipe Material	Source	Age	Miscellaneous
Water:	4"	Unknown	Unknown	Unknown		Well	1971	1
Gas:	Unknown	Unknown	Unknown	Unknown	Steel		Unknown	3

System	Pipe Material / Condition	Type Insulation / Condition	Miscellaneous
Domestic Cold Water:			HVAC Backflow Preventer –
Domestic Hot Water:			Temperature – Recirculation –
Sanitary Waste & Vent:		N/A	
Storm Drainage:			Interior – Exterior –
Gas:		N/A	Emergency Shut-Off for Labs – Mech Shut-Off at Hood –
Non-Potable (Lab) CW:			Backflow Preventer –
Non-Potable (Lab) HW:			Backflow Preventer –
Acid (Lab) Waste & Vent:		N/A	Limestone or pH Adjust – Town Sewage-
Kitchen Waste:		N/A	Exterior Grease Trap –
Tempered Water:			Fail-Safe Mixing Valve –

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Water Heater:	Gas fired water heater			Gal – 50 Recovery – Unknown CFH or KW - Unknown
Sanitary Ejector Pump:				Simplex or Duplex – Airtight Cover -
Storm Ejector Pump:				Simplex or Duplex -
Domestic Water Booster Pump:				No. of Pumps – Pressure – HP –
Interior Kitchen Grease Trap:				

**EVALUATION REPORT****Condition Key Criteria:**

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 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

Plumbing Fixtures	Type/ Installation	Low Consump/ Metering	Accessible	Condition	Miscellaneous
Water Closet:					Kindergarten -
Urinal:					
Lavatory:					Kindergarten -
Drinking Fountain/Water Cooler:		N/A			
Classroom Sink					Faucet Type -
Classroom Bubbler / Drinking Fountain		N/A			
Mop Sink:		N/A	N/A		Vacuum Breaker –
Showers:					Single Handle – Master Mixer –

Miscellaneous Fixtures	Miscellaneous
Hose Bibb:	Vacuum Breaker - Unknown
Wall Hydrant:	Vacuum Breaker - Unknown
Floor Drain:	Trap Primer - Unknown
Emergency Shower / Eyewash:	Unknown Stay Open – Floor Drain –
Emergency Eyewash:	Unknown Stay Open – Piped Drain –
Lab Faucets:	Vacuum Breaker - Unknown Accessible –
Lab Gas Cocks:	Accessible - Unknown

**EVALUATION REPORT****Condition Key Criteria:**

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 1 – Poor/Fair – Failure Expected  
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 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**AUTOMATIC FIRE SUPPRESSION SYSTEM:**

	Size	Material	Location	Flow/Pressure	Date of Installation	Conditions
Water Service Entrance #1:	None					
Water Service Entrance #2:						
Backflow Prevention:						

	Size/Pressure	Manufacturer	Energy Source	Date of Installation	Conditions
Fire Pump:	None				

	Type	Type of Head	Zone	Date of Installation	Conditions
Suppression System	None				
Typical Classrooms					
Large Spaces					
Kitchen:					
Stairs:					
Fire Department Connections:					
Exterior:					
Interior:					
Shut-Off Valves:					
Pre-Action Controls:					

**EVALUATION REPORT****Condition Key Criteria:**

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 2 – Fair – serviceable, maintenance required  
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 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**HEATING & VENTILATING SYSTEMS:**

Centralized Systems	Energy Source	Type	Manufacturer	Date of Installation	Conditions
Heating Equipment #1:	Oil	Modular Boilers	Hydrotherm	1997	Fair
Cooling Equipment #1:	NA				
Exhaust Equipment #1:	NA				

Distribution Systems	Size	Type	Manufacturer	Energy Source	Date of Installation	Conditions
Heating Distribution Equipment:	Unk.	Pumps	Armstrong	Electric	1971	Poor
Cooling Distribution Equipment:	NA					
Air Distribution Equipment:	NA					

Terminal Equipment	Type	Manufacturer	Controls	Date of Installation	Conditions
Typical Classrooms:	Unit Vents	Unknown	Pneumatic	1971	Poor
Offices:	Multizone H&V	Unknown	Pneumatic	1971	Poor
Library:	“	Unknown	Pneumatic	1971	Poor
Auditorium:					
Cafeteria:	“	Unknown	Pneumatic	1971	Poor
Gym:					
Kitchen:					
Corridors:	“	Unknown	Pneumatic	1971	Poor
Toilets:					

Ventilating Equipment	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Ventilating Equipment – Typical Classrooms:		See Above				
Offices						
Library:						
Auditorium:						
Cafeteria:						
Gym:						
Kitchen:						
Corridors:						
Toilets:						
Exhaust System :						
Offices						

**EVALUATION REPORT****Condition Key Criteria:**

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1 – Poor/Fair – Failure Expected

2 – Fair – serviceable, maintenance required

3 – Fair/Good – functioning, maintained

4 – Good – Fully functional, new

N/A – Not applicable/Not available

M - Missing

Library:						
Auditorium:						
Ventilating Equipment (Continued)	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Cafeteria:						
Gym:						
Kitchen:						
Corridors:						
Toilets:						
Combustion Air:						
Ventilating of Combustion Base:						
Heat Exchange:						
Energy Recovery:						

HVAC Controls	Type	Manufacturer Controls	Date of Installation	Conditions
Energy Management – Controls:	Pneumatic	Robert Shaw	1971	Poor
General:				
Local:				

**HVAC NOTES:**

Classrooms and other occupied spaces heating is supplemented by fin tub radiation.

Boiler plant is in good condition

The balance of the systems and equipment have passed their useful life expectancy.

**EVALUATION REPORT****Condition Key Criteria:**

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 1 – Poor/Fair – Failure Expected  
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 M - Missing

**ELECTRICAL:**

	Rating	Voltage	Metering	Date of Installation	Conditions
Service:	800A	208/120V	Utility	1971	3

	Type		Location		Conditions
Transformer:	Pad Mounted	208/120V	South Corner – Outside of Building	1971 – Est.	NA

	Rating	Energy Source	Manufacturer	Date of Installation	Conditions
Emergency Generator:	30 KVA	Natural Gas	Onan	1971	3

	Type			Date of Installation	Conditions
Distribution System:	NA	208/120V	NA	1971/2004	2/4 Note 9

Devices	Grounded/Non Grounded			Date of Installation	Conditions
Typical Classrooms:	Grounded			1971/2004	3/4
Offices:	Grounded			1971/2004	3/4
Gym/Cafeteria:	Grounded			1971/2004	3/4
Lobby/Corridor:	Grounded			1971/2004	3/4
Toilets:	NA				

Lighting	Lamp Type	Mounting	Date of Installation	Conditions
Typical Classrooms:	Fluorescent	Surface	1971	2, Note1
Offices:	Fluorescent	Surface/Recessed	1971	2, Note1
Library:	Fluorescent	Surface	1971	2, Note1
Gym/Cafeteria:	Fluorescent	Surface	1971	2, Note1
Lobby/Corridor:	Fluorescent	Surface/Recessed	1971	2, Note1
Toilets:	Fluorescent	Surface/Recessed	1971	2, Note1
Lighting Controls:	NA			
Theatre Lighting System:	NA			

Site Lighting	Lamp Type	Mounting	Date of Installation	Conditions
Sports Fields:	NA			
Parking:	H.I.D.	Pole	1971	2, Note 2
Walkways:	H.I.D.	Building - Surface	1971	2, Note 2
Building Entrances:	H.I.D.	Building - Surface	1971	2, Note 2

**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed

1 – Poor/Fair – Failure Expected

2 – Fair – serviceable, maintenance required

3 – Fair/Good – functioning, maintained

4 – Good – Fully functional, new

N/A – Not applicable/Not available

M - Missing

Security System	Type	Manufacturer		Date of Installation	Conditions
CCTV:	NA			NA	Note 3
Door Access Controls:	NA			NA	
Detection Devices:	NA			NA	

Communications System	Type	Manufacturer		Date of Installation	Conditions
Master Clock / Program:	Model 2351	Simplex		1971 – Est.	3
Typical Classrooms:	PA				3, Note 10
Offices:	PA				3
Public Areas:	PA				3

Tele/Data/Video System	Type	Manufacturer	CCTV	Date of Installation	Conditions
Typical Classrooms:	1T/1D			NA	2, Note 5
Offices:	1T/1D			NA	3
Library:	NA			NA	2
Computer:	NA			NA	2
Gym/Cafeteria:	NA			NA	2

Local Sound Systems	Type	Manufacturer	Controls	Date of Installation	Conditions
Gym/Cafeteria:	Portable			NA	2, Note 4

	Type	Manufacturer	Controls	Date of Installation	Conditions
Emergency Lighting:	Incandescent	NA			2, Note 6
Exit Lighting:	LED	NA			4

	Type	Manufacturer	Notifications	Date of Installation	Conditions
Fire Alarm System:	Addressable	NA		2000	3, Note 7

**EVALUATION REPORT****Condition Key Criteria:**

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Fire Alarm Devices	Detector Type	Alarm Signal Type	Pull Station	Date of Installation	Conditions
Typical Classrooms:	HD	General		1971	3, Note 8
Offices:	HD	General		1971	3
Library:	HD	General		1971	3
Auditorium/Stage:	NA			1971	3
Gym/Cafeteria:	HD	General		1971	3
Lobby/Corridor:	HD	General	At all exit doors	1971	3
Kitchen:	HD	General		1971	3
Storage/Service:	NA			1971	3
Toilets:	NA			1971	3

*HS – Horn/Strobe, SD – Smoke Detector, HD – Heat Detector, HID – High Intensity Discharge*

**ELECTRICAL NOTES:**

1. It is reported that the general light fixtures are quite old and many have cracked and/or yellowed lenses. The fixtures may utilize T12 lamps with magnetic ballasts, which are inefficient based on current standards.
2. It is reported that there is minimal site lighting at the school. All of which is fairly old and most likely original. There is only one pole mounted flood light near the handicapped parking area. All other site lighting is building mounted, and is, most likely, H.I.D. wall packs.
3. There is a security system that reportedly works, but does not have an intercom/buzzer or camera control.
4. The local sound system is reportedly a mobile type system with a headset and amplifier cabinet.
5. There are no reported quantities of data outlets/computer stations or cable type. Staff has requested more data and telephone outlets, and intercom systems for most areas. More power outlets were added in 2004, which would suggest more data outlets were added, but are not documented. Also noted was that the data cabling was not installed in a neat and orderly fashion. There is also no mentioned video/CATV system.
6. The emergency lights are incandescent type, and energize upon loss of power. Lights are reportedly sporadically located, and may not light the paths of egress adequately. The fixtures are old and reportedly very bright, functionality is not known, therefore may be beneficial for them to be replaced.
7. The fire alarm system control panel and annunciator were replaced in 2000, it is an addressable system, and adequate for the building. Existing wiring

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**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed  
1 – Poor/Fair – Failure Expected  
2 – Fair – serviceable, maintenance required  
3 – Fair/Good – functioning, maintained  
4 – Good – Fully functional, new  
N/A – Not applicable/Not available  
M - Missing

and initiating devices were reused, and are original to the building. Strobes were replaced and are ADA compliant, but complete coverage, per code, is not verified.

8. The building has no sprinkler system. Per the current code, the building is required to have a fire alarm system with full coverage by either smoke and/or heat detectors. It has been reported that there is not full coverage.
9. Receptacle panels were added under a 2004 renovation, and are in new condition. All other panels are original and past their life expectancy, and should be replaced.
10. The PA system does not have complete coverage, specifically noted in central class locations. There are most likely other spaces that do not have adequate coverage.

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 N/A – Not applicable/Not available  
 M - Missing

**PROVISIONS FOR ACCESSIBILITY:**

Exterior Accessible Route	
Accessible Route:	See Site Data for info.

	Width	Material	Hardware	Conditions
Primary Entrance:				
Exterior/Egress Doors:				
Signage:				

Interior Accessible Route	Width	Material	Hardware	Conditions
Accessible Route:				
Entrance Vestibules:				
Interior Doorways –				
Classrooms:				
Offices:				
Library:				
Gym/Cafeteria/Kitchen:				
Cross – Corridor:				
Stairs:				
Toilets:				

	Size			Conditions
Vertical Access: (Elevators/Lifts)				

	Width	Floor Surface	Handrail/Guard Heights	Conditions
Stairways:				
Ramps:				

	Clear Floor Space/Turning Radius	Toilet Partitions	Conditions
Toilet Rooms:			
Tables & Seating –			
Cafeteria:			
Drinking Fountains:			
Public Tele:			
Controls:			
Signage:			
Emergency Alarms:			

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## **SECTION 5.3A    HALE MIDDLE SCHOOL EVALUATION REPORT**

### **GENERAL INFORMATION**

Name of School: **HALE SCHOOL**

Address: 55 Hartley Road  
Stow, Massachusetts

Name of Owner: Town of Stow, Massachusetts

Grade Levels Served: 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup>

Student Population: Current Enrollment 257

Years in Service: 1964 - present

Year Constructed: 1964

Designer: Stoner Associates, Architects

Additions: 1996

Designer: The Design Partnership of Cambridge

Existing Drawings: Site Engineering - Hamwey Engineering Inc.

U1.2 – U1.7

Landscape - Larson Associates

L1 – L5

Architecture - The Design Partnership of Cambridge

PH 1 – PH 2, D1.1 – D1.3, X1.1 – X2.1, A1 – A11.2

Kitchen – Crabtree McGrath Associates, Inc.

K-1

Structural – Stamped by Stephen Crockett

S1.1 – S8.2

MEP – AHA Consulting Engineers

H 1.1 – H4.1, E1.1 – E6.4, DP1.1-DP1.2, P0.1 – P1.4

**EVALUATION REPORT****Condition Key Criteria:**

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N/A – Not applicable/Not available  
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**CONSTRUCTION CLASSIFICATION DATA:**

Construction Type: (from State Building Code)	
Original Building:	Not available
Addition 1:	
Occupancy Group:	E – Educational
Basement:	5,845 sq. ft.
Ground Floor:	47, 665 sq. ft.
Upper Floors – 2 <sup>nd</sup> :	11,140 sq. ft.
Total:	64,650 sq. ft.

	Height	# of Stories
Height/Stories:	Varies	1, 1-1/2 and 2
Original Building:	23'-0"	2
Addition 1:	32'-0"	1-1/2

**EVALUATION REPORT****Condition Key Criteria:**

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 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

**SITE DATA:**

	Description
Land Used:	School Building/Pavement- 15%, Play Area/Ball Fields- 25%, Wooded- 45%, Wetlands- 15% (Areas of School Parcel; Areas are Approximate)
Lot Area:	16.7 acres (School Parcel) + 4.1 acres (Entrance Road & Fire Department Parcel)
Topography:	Flat, level area for buildings, parking and ball fields; rise to woodlands to the East; drop to wooded wetlands to the South and West; drop to woodlands to the North <span style="float: right;">Note 1</span>
Wetlands:	Wooded wetlands to the West & South of school building and to the West of ball fields <span style="float: right;">Note 2</span>

	Size:	Material:	Source of info:	Date Installed	Conditions
<i>(If septic system – verify if aggregate systems applies)</i>					
Utilities –Sanitary:	Two 20,000 gallon Septic Tanks pumped to Leach Field by Two 4” Force Mains One Tight Tank	Reinforced Concrete Tanks & Pump Chamber PVC piping	1964 Plans, 1996 Plans	1964 (1 <sup>st</sup> septic tank), 1996 (remainder)	Note 3 M
Water:	On-site Well	M	2006 Site Walk	Between 1964 & 1996	Note 4 M
Electricity:	Overhead Wire, Generator	N/A	2006 Site Walk, 1964 Plans, 1996 Plans	1964, upgraded 1996	Note 5 M
Gas:	NStar	M	2006 Site Walk	M	M
Oil Tank:	10,000 gallon tank	Fiberglass	2006 Site Walk, 1996 Plans	1996	M
Storm Water Management:	Four 12" Diffuser Outlets and One 24" Outlet	RCP	2006 Site Walk, 1996 Plans	1996	Note 6 3
Athletic Fields – Field 1:	Softball	Lawn, dirt baselines	2006 Site Walk, 1996 Plans	1996	Note 7 2
Field 2:	Soccer	Lawn	2006 Site Walk, 1996 Plans	M	Note 7 3
Field 3:	None	N/A	N/A	N/A	N/A
Track:	None	N/A	N/A	N/A	N/A
Tennis Courts:	None	N/A	N/A	N/A	N/A

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 M - Missing

	Size:	Material:	Source of info:	Date Installed	Conditions
<i>(If septic system – verify if aggregate systems applies)</i>					
Play Courts:	Basketball Court	Bit Conc	2006 Site Walk, 1996 Plans	1996	3
Playground/Total Lot:	None	N/A	N/A	N/A	N/A

	Type:	Source	Date Installed	Conditions
Site Lighting:	2 pole mounted street Lights (front lot) / 2 flood lights mounted on single pole (side lot)	2006 Site Walk, 1996 Plans	1996	3
Fire Hydrant:	None	2006 Site Walk, 1996 Plans	N/A	Note 8 N/A

	# Spaces	Material	Date Installed	Conditions
Parking – Lot 1/2/3:	36 front lot / 46 side lot	Bit Conc	1996	Note 9 3
Bus Drop/Pick-Up Area:	340' (approx. 7 busses)	Bit Conc	1996	Note 9 3
Parent Drop/Pick-Up Area:	180' (approx. 9 cars)	Bit Conc	1996	Note 9 3
Loading & Service	None	N/A	N/A	Note 10
Signage:	N/A	Metal Post	1996	3
Trash Management Area:	1 recycling dumpster (front lot) / 1 garbage dumpster (side lot)	Steel	M	Note 11 3

**PROVISIONS FOR ACCESSIBILITY:**

Exterior – Accessible Route:	Width	Material	
Curb Cuts:	4'	Cem Conc	Note 12
Walkways:	8.5' at entrance, 5' elsewhere	Cem Conc	Note 12 & 13
Ramps:	None	N/A	
Parking:	4 front lot / 2 side lot	Bit Conc	Note 12

**SITE NOTES:**

1. Per FEMA Flood Maps, this property is located within Zone C “Area of Minimal Flooding” (outside the 100yr flood).
2. This site is not within a Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife area as designated by the Natural Heritage and

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Endangered Species Program. No certified vernal pools are identified.

There are no Areas of Critical Environmental Concern (ACEC) within the Town of Stow. (Massachusetts Natural Heritage Atlas, 12th Edition, 2006).

3. The septic system for the original school included a single 20,000 gallon septic tank with integrated pump station, transite piping and two leaching fields. During the 1996 renovations a second 20,000 gallon septic tank was added in series to the first, all transite piping removed and replaced with PVC, and the existing leaching field was removed and replaced with a new leaching field. To provide for lab acid wastes a 5,000 gallon tight tank was added during the 1996 renovations.
4. The well, pump, water treatment system and water tank are housed in a garage on the west side of the school. The 1964 design showed the well and pump building at the southeast corner of the school. During the following three decades the well was relocated. Design plans for the present well and pump system are unavailable.
5. Overhead wires (1964) along the access road provide power to the school site. The 1996 renovation provided a new transformer and backup generator and all underground site electric services from the location of the new transformer.
6. The stormwater management system is composed of catchbasins and piping network that discharges into the wetlands to the south and west. Catch basins include 4 feet deep sumps. Each outlet contains a diffuser tank that also acts as an oil/sediment trap. The diffuser outlets are placed in stone and appear to be functioning. The pavement curbing is in good condition and adequately directs runoff to catch basins.
7. Softball field is in fair condition. The baselines have grown over with weeds. The soccer field is only partially within the softball outfield and is in good condition. The septic leaching fields are located beneath the soccer field.
8. No municipal owned water mains with fire hydrants are installed near the project site. During a fire, the firefighting water supply will come from either fire apparatus or nearby ponds. One pond with available water is located to the west of Center School (approx. 0.6 miles away) with a second pond located near the intersection of Crescent Street and West Acton Road, also approximately 0.6 miles away. A dry hydrant installed at this location. The ponds have a capacity of approximately 100,000 gallons each. (Information provided by the Stow Fire Chief, David Soar, February 7, 2007.)
9. Pavement is in fair to good condition with minimal longitudinal cracking. The front parking lot is used by staff and as a parent drop off/pick up zone. Some parking overflows to the side of the access road. The side parking lot is used as a bus drop-off/pick-up and play area during school days. The side parking lot is only used for parking during school events. The fire access

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road around the building is incomplete at the northwest corner of the building, between the well pump house and the side parking lot.

10. No loading zone or loading dock is available onsite. Everyday the kitchen prepares food for the two elementary schools (Center and Pompositticut). The delivery van backs onto the sidewalk near the kitchen door for loading.
11. The garbage dumpster is located on the sidewalk at a wide curb cut, adjacent to the side lot near the kitchen entrance. The designed waste management area at the northeast corner of the side lot (1996 plans) was not completed; only the concrete pad was constructed without the 6-foot high wood fence. The recycle dumpster is located near the front entrance to the school.
12. Both main entrances and all secondary entrances are ADA/MAAB accessible. All site walks appear to be accessible. Crosswalk striping is absent from the handicap parking to the sidewalk and pedestrian roadway crossing.
13. The trail to the environmental science cabin to the south of the school is not ADA/MAAB accessible and neither is the boardwalk that continues from there across the southern wetlands to the Stow Outdoor Classroom.

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**BUILDING SYSTEMS & ASSEMBLIES OF ORIGINAL BUILDINGS:**

Structure	Material	Remarks	Conditions
Foundation System:	concrete spread footings; 12" thick concrete foundation walls		3
Vertical Support Systems:	Steel columns and 8"-12" CMU bearing walls		3
Floor Framing System:			
Ground:	Lower Level/1st floor: concrete slab on grade	Floor tiles warped and damaged from below	2
Upper Floors:	Main Level/2 <sup>nd</sup> Floor: 4" concrete slab on grade (original building)	Observed cracks and spalling concrete on underside of slab in Consumer Science Room	3
	Main Level/2 <sup>nd</sup> Floor (original building): concrete slab formed with concrete beams	Stepped floors	2
	Main level/2 <sup>nd</sup> Floor (renovation): 2½" concrete slab on 1½" composite metal deck supported by wide flange steel beams		3
	3 <sup>rd</sup> Floor (original): concrete slab on metal deck on bar joists		3
	3 <sup>rd</sup> Floor (renovation): 2½" concrete slab on 1½" composite metal deck supported by wide flange steel beams		3
Roof Framing System:	1 ½" metal deck on bar joists		3
Lateral Force Resisting System:	CMU masonry walls; steel braced frames		3

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Exterior Envelope	Material	Remarks	Conditions
Exterior Wall Assembly:	Brick, EIFS, Precast		4
Exterior Trim/Fascia:	Alum		4
Sloped Roof Assembly:	EPDM Membrane, Standing Seam Metal	Under warranty	4
Flat Roof Assembly:	EPDM Membrane	Under warranty	4
Windows:	Alum		4
Clerestory Windows:	Kalwall	At Gym	4
Glazed C- Wall:	Alum	See Note 3	4
Doors – Exterior:	Alum		4
Interior:	Wood doors with HM frame		4
Cross-Corridor:	Wood doors with HM frame		4
Hardware:	Chrome	All accessible lever handle	4

**EXTERIOR ENVELOPE NOTES:**

1. Brick veneer with CMU backup wall or light gauge metal framed backup wall. Exterior insulated finish system (EIFS) at some locations of new addition. Double glazed windows and curtain walls. EPDM membrane roof with skylights. Aluminum fascia with soffit vents.
2. Brick, precast, EIFS, windows, curtain wall in good condition, including original building. Some staining of brick outside of Art Room (paint) and EIFS at backside of classroom wing.
3. Indication of some deterioration of the concrete sill at the curtain walls of the original building at grade. See photo.
4. School is serviced by onsite well water (containing high iron levels as reported from Principal and custodial staff). Samples are taken daily by outside consultant. Septic system is original to building with no reported problems.
5. Exterior metal storage container located adjacent to gym contains gym equipment, desks, chairs, etc.

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Interior	Materials – Walls, Floor & Ceiling			Materials – Walls, Floor & Ceiling			Conditions
	Original Building			Addition			
	Walls	Floor	Ceiling	Walls	Floor	Ceiling	
Typical Classrooms:	CMU	VCT	ACP	GWB	VCT	ACP	4
Offices:	GWB	CPT	ACP				4
Gym:				CMU	WOOD	TECT	4
Cafeteria:	CMU	VCT	ACP/ GWB				4
Library:	GWB	CPT	TECT				
Auditorium:				GWB	CONC	ACOUS	4
Corridors:	CMU	VCT	ACP	CMU	VCT	ACP	4
Stairs:	CMU	VINYL					4
Toilets:	CMU	CT	GWB				4
Kitchen:	GWB	CT	GWB				4
Service/Mechanical:	CMU	CONC	ETS				4

**INTERIOR FINISHES NOTES:**

1. Typical classroom size of 32' x 26' (approx 832 sq. ft). Classroom size is comfortable with natural light and clerestory light from corridor.
2. Corridors at Classroom wing have glazed CMU and clerestory transoms with wired glass above lockers. Lockers are in good condition.
3. Science rooms have epoxy resin bench tops with integrated epoxy sinks and emergency showers. No services (gas, vacuum, compressed air) and no fume hoods.
4. Toilet room partitions are plastic laminate and are racking.
5. Lower level home economics rooms show signs of settlement, causing VCT floor to crack. See structural comments. Humidity is high in the lower level. Dehumidifiers are used during spring/summer months. Principal stated there were previous mold problems. Currently, no visible sign of mold or mildew. No toilet rooms at lower level.
6. Elevator does not meet current code due to cab size, door size and operation and not accessible for a stretcher.
7. Communicating stair to lower level is not classified at egress stair. Lower level has 2 means of egress directly outside. Stair 5 is also not classified as egress stair. There is no rated enclosure. Stair 6 is the only enclosed rated stair at classroom wing.
8. Principal and custodial staff mentioned that upper level classrooms get extremely hot and uncomfortable on hot days. Small operable windows with screens, are present, but not sufficient. Large fans are located in the corridors and run during winter months, to keep air circulating.

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9. Cafeteria appears undersized for current population. During renovation, space was taken away to provide for guidance offices. Currently serves 3 lunch periods, (96 students). Will have to convert to 4 lunch periods with increased upcoming enrollments.
10. Icy conditions occur at the exit of the wood shop due to a rain leader at this location.
11. The kitchen supplies lunch to nearby elementary schools, Center and Pompositticut. There is no loading area/receiving area and the kitchen is currently serviced through corridor and single leaf exterior door. Flashing above this door has deteriorated. The dishwasher is currently not working.
12. Roof of new addition had several leaks and was surveyed with infrared device and leaks were fixed. Roof appears to be in very good condition.
13. Public address system was updated during the renovation project. Phones and televisions are in every classroom, every teacher has a lap top computer and Smartboards are in use in some classrooms.
14. Storage space is minimal.
15. Overall building was very clean and in very good condition and well maintained.

**ABBREVIATIONS:**

BRK – Brick Masonry  
CMU – Concrete Masonry Unit, or Concrete Block  
WD – Wood  
CONC - Concrete  
ACP – Suspended Acoustic Tile Panel  
ACOUST – Acoustical Ceiling System  
PLAS – Plaster  
GWB – Gypsum Wallboard  
VCT – Vinyl Composition Tile  
VAT – Vinyl Asbestos Tile  
CPT – Carpet  
VB – Vinyl Base  
RBR – Rubber Treads & Risers/Tile  
TECT - Tectum  
CT – Ceramic Tile  
QT – Quarry Tile  
ETS – Exposed to Structure

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**PLUMBING SYSTEM:**

Service	Pipe Size	Meter Size	Pressure Regulator	Oper. Pressure	Pipe Material	Source	Age	Miscellaneous
Water:	4"	1 ¼"	NONE	80 PSI FROM TANK	COPPER(2 )	WELL	UNKNOW N	SEE NOTE 5
Gas:	3"	2225 CFH	YES	12"W.C.	STEEL (3)	LOCAL GAS COMPAN Y	1996	THERMOPLASTI C PIPING TO EMERGENCY GENERATOR

System	Pipe Material / Condition	Type Insulation / Condition	Miscellaneous
Domestic Cold Water:	Copper (3)	Fiberglass (3)	HVAC Backflow Preventer - Yes
Domestic Hot Water:	Copper (3)	Fiberglass (3)	Temperature – 120 Recirculation- yes
Sanitary Waste & Vent:	CI, copper, steel (3)	N/A	
Storm Drainage:	CI (3), aluminum		Interior – yes Exterior – roof drains (3), gutters (1,2) (see note 3), downspouts (2)
Gas:	Steel (3)	N/A	Emergency Shut-Off for Labs – N/A Mech Shut-Off at Hood – Unknown
Non-Potable (Lab) CW:	Copper (3)	Fiberglass (3)	Backflow Preventer – yes
Non-Potable (Lab) HW:	Copper (3)	Fiberglass (3)	Backflow Preventer – yes, (see note 1)
Acid (Lab) Waste & Vent:	PVC, Polypropylene (3)	N/A	Limestone or pH Adjust – none Piped to exterior holding tank (unknown condition)
Kitchen Waste:	Copper (3) CI (3)	N/A	Exterior Grease Trap- yes (unknown condition)
Tempered Water:	(See note 6)		Fail-Safe Mixing Valve – no, fed with domestic cold water

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Water Heater:	Gas-fired PVI water heater	1996	(3)	Gal – 400 Recovery – 750 gph CFH – 600,000 BTUH
Sanitary Ejector Pump:	Weil Submersible duplex pump	1996	(2)	Duplex Airtight Cover - yes

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Equipment	Type/Fuel	Age	Condition	Miscellaneous
Storm Ejector Pump:	none			Simplex or Duplex -
Domestic Water Booster Pump:	none			No. of Pumps – Pressure – HP -
Interior Kitchen Grease Trap:	Recessed	unknown	(2)	1 at three pot sink

Plumbing Fixtures	Type/Installation	Low Consump/ Metering	Accessible	Condition	Miscellaneous
Water Closet:	Wall hung	Yes	Yes	(3)	
Urinal:	Wall hung	Yes	Yes	(3)	
Lavatory:	Wall Hung	Yes	Yes	(3)	
Drinking Fountain/Water Cooler:	Wall Hung	N/A	Yes	(2)	
Classroom Sink	Surface mounted-SS	No	varies	(3)	Faucet Type - varies
Classroom Bubbler / Drinking Fountain	N/A	N/A			
Mop Sink:	MR	N/A	N/A	(3)	Vacuum Breaker –yes
Showers:	Tiled	No	Yes	(1) (3) See note 2	Single Handle – yes Master Mixer - yes

Miscellaneous Fixtures	Miscellaneous
Hose Bibb:	Vacuum Breaker - yes
Wall Hydrant:	Vacuum Breaker - yes
Floor Drain:	Trap Primer - yes
Emergency Shower / Eyewash:	Location – Science Rooms (3) Stay Open - yes Floor Drain - No
Emergency Eyewash:	Location – Water Service building Stay Open - unknown Piped Drain - No
Lab Faucets:	Vacuum Breaker – yes Accessible - No
Lab Gas Cocks:	N/A

**PLUMBING NOTES:**

1. Delivery of hot water to sinks at second floor science lab 179 takes an unusual amount of time.
2. Accessible shower in boys' locker room is broken/damaged.

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3. Gutters on west side of the building need replacement and or fixing and need to be cleaned thoroughly to allow for adequate drainage.
4. Kitchen Dishwasher is reported to be in non-working order.
5. Control panel for well has been replaced within the past year.
6. Emergency Shower/eyewash units are currently supplied by cold water. This does not meet current code.
7. There are no bathrooms in basement level.

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**AUTOMATIC FIRE SUPPRESSION SYSTEM:**

	Size	Material	Location	Flow/Pressure	Date of Installation	Conditions
Water Service Entrance	N/A					
Water Service Entrance	N/A					
Backflow Prevention:	N/A					

	Size/Pressure	Manufacturer	Energy Source	Date of Installation	Conditions
Fire Pump:	N/A				

	Type	Type of Head	Zone	Date of Installation	Conditions
Suppression System	N/A				
Typical Classrooms					
Large Spaces					
Kitchen:					
Stairs:					
Fire Department					
Connections:					
Exterior:					
Interior:					
Shut-Off Valves:					
Pre-Action Controls:					

**FIRE PROTECTION NOTES:**

There is no fire protection system in this building.

*See Note #8 of the Site Notes on page 5 for procedures.*

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**HEATING & VENTILATING SYSTEMS:**

Centralized Systems	Energy Source	Type	Manufacturer	Date of Installation	Conditions
Heating Equipment #1:	#2 Fuel Oil	Cast Iron	HB Smith	1996	Note 3
Cooling Equipment #1:	Electric	Direct Exp.	McQuay	1996	Note 4
Exhaust Equipment #1:	NA	Various	Unknown	1996	

Distribution Systems	Size	Type	Manufacturer	Energy Source	Date of Installation	Conditions
Heating Distribution Equipment:	7.5 HP	End Suction Pumps	Taco	Electric	1996	3
Cooling Distribution Equipment:	N/A	N/A	N/A	N/A	N/A	N/A
Air Distribution Equipment:	See Below	See Below	See Below	See Below	See Below	See Below

Terminal Equipment	Type	Manufacturer	Controls	Date of Installation	Conditions
Typical Classrooms:	Unit Vents	McQuay	DDC	1996	3
Offices:	Single Zone Packaged RTU	McQuay	DDC	1996	3
Library:	Packaged RTU	McQuay	DDC	1996	3
Auditorium:	Packaged RTU	McQuay	DDC	1996	3
Cafeteria:	Packaged RTU	McQuay	DDC	1996	3
Gym:	Constant Volume RTU (x2)	McQuay	DDC	1996	3
Kitchen:	H&V Unit	McQuay	DDC	1996	3
Corridors:	CUH	Unknown	DDC	1996	3
Toilets:	CUH	Unknown	DDC	1996	3

Ventilating Equipment	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Ventilating Equipment – Typical Classrooms:	1250/1500	Unit Vents	McQuay	DDC	1996	3
Offices:	Various	RTU	McQuay	DDC	1996	3
Library:			McQuay	DDC	1996	3
Auditorium:	15000	Package RTU	McQuay	DDC	ACC-2006	3

**EVALUATION REPORT****Condition Key Criteria:**

0 – Poor-Not serviceable or failed  
 1 – Poor/Fair – Failure Expected  
 2 – Fair – serviceable, maintenance required  
 3 – Fair/Good – functioning, maintained  
 4 – Good – Fully functional, new  
 N/A – Not applicable/Not available  
 M - Missing

Ventilating Equipment	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Ventilating Equipment (Continued)	CFM	Type	Manufacturer	Controls	Date of Installation	Conditions
Cafeteria:				DDC	1996	3
Gym:	2 @ 6000	RTU	McQuay	DDC	1996	3
Kitchen:				DDC	1996	3
Corridors:	—	—	—	DDC	1996	3
Toilets:	—	—	—	DDC	1996	3
Combustion Air:	2500	H&V Unit	Unknown	DDC	1996	3
Exhaust System :				DDC	1996	3/1, Note 2
Offices	Various	—	—	DDC	1996	3
Library:	N/A	—	—	DDC	1996	3
Auditorium:	N/A	—	—	DDC	1996	3
Kitchen:	4000	H&V Unit	McQuay	DDC	1996	3
Gym:				DDC	1996	3
Kitchen:	3000	Up Blast Fan	Unknown	DDC	1996	3
Corridors:				DDC	1996	3
Toilets:	Various	—	—	DDC	1996	3
Heat Exchange:	N/A					
Energy Recovery:	N/A					

HVAC Controls	Type	Manufacturer Controls	Date of Installation	Conditions
Energy Management – Controls:	Direct Digital	Yankee Technology	1996	(see Note #1), 1

**HVAC NOTES:**

1. System has no head end located within the school, it is controlled centrally from the School District's Administration Building in Bolton. Alarms are not annunciated/addressed at school. Controls appear to not be functioning as intended, or desired. Some spaces are found to be 50°F on cold mornings. The system functionality as a whole should be reviewed in depth.
2. Top floor classrooms experience elevated space temperatures during early Fall/late Spring. Insufficient ventilation is suspected, no air conditioning.
3. Boilers (2) both should fire on a design winter day. Janitorial staff stated only one operates. Pumping scheme is constant volume (1 boiler, 1 pump). There is a redundant hot water pump.
4. The condensing unit associated with the auditorium air conditioning unit was replaced within the last year (approximately).
5. Dehumidifiers are located throughout the lower level.

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N/A – Not applicable/Not available  
M - Missing

**ABBREVIATIONS:**

CUH – Cabinet Unit Heater  
DDC – Direct Digital Control  
RTU – Roof Top Unit  
ACC – Air Cooled Compressor  
H&V – Heating & Ventilating

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 N/A – Not applicable/Not available  
 M - Missing

**ELECTRICAL:**

	Rating	Voltage	Metering	Date of Installation	Conditions
Service:	300KVA (Est.)	Medium	Secondary	1996	4

	Type	Location	Conditions
Transformer:	Pad Mounted	208/120V South-East Corner	1996 4

	Rating	Energy Source	Manufacturer	Date of Installation	Conditions
Emergency Generator:	80 KVA	Natural Gas	Kohler	1996	3, Note 5

	Type	Date of Installation	Conditions
Distribution System:	1200A 208/120V NA	1996	4

Devices	Grounded/Non Grounded	Date of Installation	Conditions
Typical Classrooms:	Grounded	1996	4
Offices:	Grounded	1996	4
Gym/Cafeteria:	Grounded	1996	4
Lobby/Corridor:	Grounded	1996	4
Toilets:	Grounded/ GFI	1996	4

Lighting	Lamp Type	Mounting	Date of Installation	Conditions
Typical Classrooms:	Fluorescent – T8	Surface	1996	4
Offices:	Fluorescent – T8/Compact	Surface/Recessed	1996	4
Library:	Fluorescent – T8	Pendant	1996	4
Gym:	H.I.D.	Pendant	1996	4
Kitchen:	Fluorescent – T8	Recessed	1996	4
Cafeteria:	H.I.D.	Pendant	1996	4
Lobby/Corridor:	Fluorescent – T8/Compact	Surface/Recessed	1996	4
Toilets:	Fluorescent – T8	Surface	1996	4
Lighting Controls:	NA			
Auditorium Lighting System:	Incandescent – ETC	Pendant/Recessed	1996	4

Site Lighting	Lamp Type	Mounting	Date of Installation	Conditions
Sports Fields:	NA			
Parking:	H.I.D.	Pole	1996	4
Walkways:	H.I.D.	Building - Surface	1996	4

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 N/A – Not applicable/Not available  
 M - Missing

Site Lighting	Lamp Type	Mounting	Date of Installation	Conditions	
Building Entrances:	H.I.D.	Building - Surface	1996	4	
Security System	Type	Manufacturer	Date of Installation	Conditions	
CCTV:	NA		NA		
Door Access Controls:	Intercom with door release	NA	Located at main entrance	1996	4
Detection Devices:	NA		NA		

Communications System	Type	Manufacturer	Date of Installation	Conditions
Master Clock:	Hard-wired	National Time	1996	4, Note 3
Typical Classrooms:	PA	Bogen	1996	4
Offices:	PA		1996	4
Public Areas:	PA		1996	4

Tele/Data/Video System	Type	Manufacturer	CATV	Date of Installation	Conditions
Typical Classrooms:	1T/3D		1 Video	1996	4, Note 1
Offices:	1T/1D		-	1996	4
Library:	3T/16D		1 Video	1996	4
Gym:	1D		5 Video	1996	4
Computer:	1T/28-30D		1 Video	1996	4
Cafeteria:	2D		2 Video	1996	4

Local Sound Systems	Type	Manufacturer	Controls	Date of Installation	Conditions
Gymnasium:	Amp with speakers	Peavey	Recessed Speakers	1996	4
Auditorium:	Console	Shure	Console with remote rack.	1996	4
Cafeteria:	Amp with speakers	Peavey	Sound Sphere type Speakers	1996	4

	Type	Manufacturer	Controls	Date of Installation	Conditions
Emergency Lighting:	Fluorescent/Incandescent	NA		1996	4, Note 4
Exit Lighting:	LED	NA		1996	4

	Type	Manufacturer	Notifications	Date of Installation	Conditions
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M - Missing

Site Lighting	Lamp Type		Mounting	Date of Installation	Conditions
Fire Alarm System:	Addressable	Harrington	General/Trouble	1996	4

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 N/A – Not applicable/Not available  
 M - Missing

Fire Alarm Devices	Detector Type	Alarm Signal Type	Pull Station	Date of Installation	Conditions
Typical Classrooms:	HD	General		1996	3, Note 2
Offices:	HD	General		1996	3
Library:	SD	General		1996	3
Auditorium/Stage:	Beam/SD	General		1996	4/3
Gym:	Beam	General		1996	4
Cafeteria:	SD	General		1996	3
Lobby/Corridor:	HD	General	At all exit doors	1996	3
Kitchen:	HD	General		1996	3
Storage/Service:	NA	General		1996	3
Toilets:	NA	General		1996	3

**ELECTRICAL NOTES:**

1. The average class has one teacher computer and one student computer. Several classrooms were noted with 2 or 3 computers. Voice cabling is CAT 3, and data cabling is CAT 5.
2. It was reported that smoke detectors periodically malfunction and are replaced upon failure, typical for all areas.
3. Classrooms and student common areas have system type clocks. Offices, in general, have individual battery or plug in type clocks.
4. Most emergency lighting is achieved by night light on the generator, but emergency battery packs have been installed in many areas of the school.
5. 1964 Drawings indicate there is a 15KW generator in the mechanical room. It was not found during the walk-through. The newer 80KW generator is used for stand-by loads, and lighting per the panel schedule. There is no separation between the two loads. Separation is required by current code, but the lights on the schedule may be the emergency battery units (see note 4). Further investigation would be required to verify the exact functions of the generator system.

**ABBREVIATIONS:**

HS – Horn/Strobe  
 SD – Smoke Detector  
 HD – Heat Detector  
 HID – High Intensity Discharge

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 N/A – Not applicable/Not available  
 M - Missing

**PROVISIONS FOR ACCESSIBILITY:**

Exterior Accessible Route	
Accessible Route:	See Site Note #13

	Width	Material	Hardware	Conditions
Primary Entrance:	Pair of 3'-0" x 7'-0"	VCT	Lever	4
Exterior/Egress Doors:	3'-0" x 7'-0"	VCT	Lever	4
Signage:	None at Exterior			0

	Width	Material	Hardware	Conditions
Interior Accessible Route				
Accessible Route:	7'-0" to 9'-0"	VCT	Lever	4
Entrance Vestibules:	3'-0" x 7'-0"	VCT	Lever	4
Interior Doorways –	3'-0" x 7'-0"	VCT	Lever	4
Classrooms:				
Offices:	3'-0" x 7'-0"	Carpet/VCT	Lever	4
Library:	3'-0" x 7'-0"	Carpet	Lever	4
Gym/Cafeteria/Kitchen:	Pair 3'-0" x 7'-0"	Wood/VCT/CT	Lever	4
Cross – Corridor:	Pair 3'-0" x 7'-0"	VCT	Lever	4
Stairs:	Pair 3'-0" x 7'-0"	VCT	Lever	4
Toilets:	3'-0" x 7'-0"	Ceramic Tile	Lever	4

	Size			Conditions
Vertical Access:	3'-6" x 5'-0" Elev. Cab	Rubber	Metal door	0
(Elevators/Lifts)	Accessible Lift at Stage		and Gate	4

	Width	Floor Surface	Handrail/ Guard Heights	Conditions
Stairways:	Varies 4'-0" to 8'-0"	VCT	Painted Metal	4
Ramps:	N/A	N/A	N/A	N/A

	Clear Floor Space/Turning Radius	Toilet Partitions	Conditions
Toilet Rooms:	None on lower level. All others have at least one.	PLAM	3
Tables & Seating –	No specific Accessible seating		0
Cafeteria:			
Drinking Fountains:	Recessed in Wall but not compliant		0
Public Tele:	Located outside of Auditorium		4
Controls:			
Signage:	Compliant		0
Emergency Alarms:	Compliant		4

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**ACCESSIBILITY NOTES:**

1. Control Booth at Auditorium is not accessible.

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## **SECTION 5.3B SUMMARY OF EXISTING CONDITIONS HALE MIDDLE SCHOOL**

### **SITE / CIVIL**

In general the site drainage system is in fair to good condition and adequately drains, via diffuser chambers and stone diffusers, to the wetlands at the south and west sides of the site. No ponding on site is evident. Water quality structures are not in full compliance with current Massachusetts Stormwater Management Policy. The 1996 additions and renovations to the Hale school included a new septic system with two new leaching fields, a new pump station, a kitchen waste grease trap and an additional 20,000 gallon septic tank. The sanitary system also includes a separate acid waste system that is collected by a tight tank.

Based on discussions with the Stow Health Agent and the Hale School custodial staff, the potable well water treatment system was upgraded in the past few years. During the 1996 addition, a new water line was installed to and capped near the location of the wells for the Pilot Grove Hill residential development to the south of the school. This water line appears to have been installed for the purpose of a future, emergency water connection for the school. The water line could be cross connected with the Pilot Grove Hill water system or to a new well constructed in the vicinity. The existing water supply for the school does not include provisions for fire prevention. The nearest water supplies for fire protection are two 100,000 gallon ponds, both approximately 0.6 miles from the school.

In general the driveway, walkway and parking lot surfaces appear to be in fair to good condition. There is no continuous fire lane around the building. The MAAB/ADA handicap accessibility to the building entrances is good. Notable MAAB/ADA access deficiencies include a lack of striped cross walks to handicap parking and at roadway pedestrian crossing. There is also a non-accessible trail to the environmental science cabin and across the southern wetland to the Stow Outdoor Classroom.

The ball fields are located atop the leaching fields. The fields are well constructed for positive drainage and appear in fair to good condition.

Site traffic during school opening and closing directs the busses to the side parking lot and parents to the front lot near the main entrance. Due to the length of the driveway along Hartley Street, the queuing of parent drop-off and pick-up does not appear problematic. Any traffic congestion during pick-up likely involves conflicts between departing busses trying to cross the queue of cars waiting for pick-up. Parking during the school day uses the front lot, since

the side lot is used for student recreation. The front lot appears to be short a few parking spaces, since an informal dirt parking area on Hartley road nearest the school is often in use.

### **Recommendations**

Future renovations to the site should include the addition of parking in the front lot or provision of paved parking off of Hartley Road nearest the school. The service/fire lane should be connected to surround the building. Any site work should improve handicap access, especially the addition of crosswalks.

Regular maintenance of the pavement with crack filling and seal coating should continue. This method of pavement maintenance has a limited life expectancy of approximately ten years, thus a pavement overlay should be conducted within this time frame. Since the site drains to wetland areas, any expansion of the school would require new drainage structures to improve runoff quality.

Any additions to the site must consider the impacts upon the septic system and water supply. Additional water supply and sewer disposal capacity will likely be required.

### **ARCHITECTURE**

The original 1964 Hale Middle School is a multi-story building. The 1996 addition included two classrooms, gymnasium, administration and auditorium. The majority of the original building floor is a concrete slab on grade. The buildings are steel framed with steel roof deck, but also have masonry bearing walls at some locations. The exterior walls are brick with either CMU or stud backup. The 1996 addition has similar construction with locations of EIFS with either CMU or stud backup. The building has double glazed, aluminum framed windows and curtain wall.

The exterior brick appears to be in good condition with minor paint stain outside of the art room. A new insulating Kalwall clerestory is part of the gym. The existing EIFS system has minor staining at the back of the classroom wing. There is some concrete sill deterioration at the original curtain wall system at grade. The aluminum window walls and ceilings in the addition appear to be in good condition. The roof, skylights and aluminum fascia appear to be in very good condition.

The interior architectural components of the original building are in good condition, with few exceptions. The elevator, which is used daily, is not compliant for accessibility, due to cab size and door/gate operation. It does not comply with stretcher access. The elevator is in a remote locations and the corridor to the elevator is narrow and winding. None of the numerous drinking fountains are accessible. The cafeteria appears undersized with access to the freezer from the main seating area. The auditorium and gym are sufficient size

and appear to be in very good condition. Classrooms and corridors are sufficient size with natural light. Lockers appear to be in very good condition.

Stairwells appear to be non-compliant as means of egress. There is only one rated enclosed stair (Stair #6) at the end of the classroom wing. Stairs 2 and 5 are communicating, open well stairs with no enclosed rating.

Overall the facility seems to be in very good condition. This facility appears to be well maintained by the Town and custodial staff.



*Concrete sill deterioration at existing curtain wall at grade.*

### Recommendations

Future renovations to the building should include enlarging the cafeteria by giving the space for Guidance Offices back to the cafeteria seating area. Expansion would include relocated Guidance Suite. Classroom expansions can easily be added to the end of the classroom wing. Additional rated stairwells would be required. Code compliance for new centrally located elevator and rated enclosures for the stairwells would be mandatory. Receiving and loading area should be incorporated close to the kitchen area. Toilet rooms at the lower level should be added in a renovation/addition project.

## STRUCTURAL

The school overall is generally in good structural condition and serviceable for many years to come. However, a few areas of minor damage were observed, and minor repairs should be considered to prolong the serviceable life of the structure.

There are floor tiles that are broken and/or warped in the 'consumer science' room of the lower level of the original building. The facilities staff mentioned that tiles are frequently replaced. This is likely due to moisture from the ground penetrating through the slab. The original portion of the building was constructed before it was common practice to install a vapor barrier below the concrete slab, which is commonly done today to keep basements dry.

There are also cracks in the underside of the concrete slab directly above this room, which were observed above the suspended ceiling. There are pieces of plywood installed to the slab that do little more than cover up spalling concrete. It appears that at some point water has penetrated the top of the concrete slab, and eventually caused the steel reinforcing bars to rust. The rusting bars in turn, expanded and cracked the concrete.

Minor cracks in the floor tiles were noted in the classroom wing that was expanded during the renovation. It appears that the new floor was placed level to the original floor slab, but has since settled slightly, cracking the tiles along this joint.



*Moisture penetrates the slab on grade eventually leading to cracking and uplifting of the floor tiles. The powder-like substance below the tile is most likely salts that were dissolved in the water and are left behind when the water evaporates.*



*Longitudinal cracks are visible on the underside of the concrete slab. Water permeating through the cracks has left rust stains on the concrete slab and beams. The plywood at the top of the photo covers what appears to be spalling concrete.*

### Recommendations

It appears that moisture is entering a portion of the existing slab on grade on the lower level. The floor tiles will continue to crack or release from the floor as long as moisture continues to penetrate the slab. This situation isn't really a structural problem, as it is more of a serviceability issue. That is, if this was a storage room, it would be reasonable to leave the floor as is. However, if the occupancy of the room requires this problem to be fixed, then there are a few possibilities.

There are basically two groups of options: ones that try to prevent the moisture from penetrating the slab, and options that allow moisture to pass through the floor but not crack the floor tiles. Methods to prevent the moisture from penetrating the slab would most likely be very expensive, and may not necessarily guarantee to keep all of the moisture out. A more affordable way to prevent the floor tiles from cracking could be to install a flooring system or membrane over that slab that allows moisture to enter through the slab, but does not affect the integrity of the flooring system. There are several products and systems that may work well in the area of concern.

The cracks on the underside of the slab, that are visible above the suspended ceiling of this room, should be investigated more thoroughly. Depending on the extent of damage there are a couple of repair options. Areas of minor cracks could be filled with a pressure-injected grout, to prevent further cracking and spalling of the concrete. Larger areas of damage may require cutting out a small portion of the slab between the concrete joists and placing new concrete and steel rebar. These repairs could be performed during the summer months when school is not in session.

### PLUMBING

Piping that was visible appeared to be in serviceable condition and of adequate capacity. It is reported that the well water is monitored and tested as required by Massachusetts Department of Environmental Protection for lead. The system is reported to have an excess of iron and is being treated for such. These testing practices should continue.

There is one water heater servicing this building. A gas-fired 400 gallon, PVI water heater with a 750 gph recovery provides hot water to the building including the kitchen. It appears to be in good working condition.

Most of the plumbing fixtures are in good working order. Most of the toilet rooms have accessible fixtures. There are currently no toilet rooms in the basement level. The science rooms have protected cold and hot water systems. The faucets for the science areas have vacuum breakers installed. It was noted that the time it takes for the sink at the science room on the second floor to receive hot water is of an unacceptable time.

The emergency shower/eyewash units are currently supplied by cold water and do not meet current code requirements.

Roof drains are in good working condition. Gutters for building A are clogged, sagging, bent and failing. Icing is reported on the ground near an exit door where the gutter system is failing.

A duplex ejector pump exists in the basement level. This unit handles waste from the basement fixtures. It appears to be in good working order.

Showers are provided in the locker room area. They are built in place ceramic tile enclosures. An accessible shower stall in the boy's locker room is currently damaged.

Kitchen (grease) waste is separated from the sanitary system. An interior grease interceptor is installed at the (3) bowl sink. The condition is unknown and should be thoroughly cleaned and serviced to determine its remaining useful life. All Kitchen waste is piped to an existing exterior grease interceptor. Various equipment like the dishwasher, kettle and produce sinks are not piped to a grease interceptor and thus does not meet existing code requirements.

Overall the plumbing systems are considered to be in good to fair condition.

### **Recommendations**

The protected hot water system feeding the science room on the second floor should be looked at. Recirculating pumps or a new recirculating system should be installed to increase the time it takes to receive hot water at the science lab sinks on the second floor.

All emergency shower/eyewash units should be supplied with tempered water to meet existing code requirements. A separate tempered water system should be designed to supply these emergency fixtures to meet current code requirements.

Repair of the accessible shower in the boy's locker room should be performed.

Grease interceptors should be provided in the kitchen area for equipment and fixtures that need to be intercepted to meet current code requirements.

Gutters and downspouts for building A should be cleaned and fixed and/or replaced to provide proper storm drainage.

### **FIRE PROTECTION**

There is no automatic fire suppression system.

**Recommendations**

During any major building renovation an automatic sprinkler system should be installed to meet the requirements of the Massachusetts State Building Code and NFPA 13, "Standard for the Installation of Sprinkler Systems."

**MECHANICAL**

The majority of the HVAC equipment, installed in 1996 is in serviceable condition. The auditorium air conditioning was installed two years ago. Generally, the source equipment, distribution systems and terminal equipment do not require any maintenance outside of normal preventative maintenance work (i.e. filter replacement, belt adjustment, lubrication).

**Recommendations**

The operation of the systems in general appears to be an issue. For instance, during the heating season, only one boiler operates. The boilers appear to have been designed at 66% of the total heating load, requiring both boilers (and associated pumps) to operate on a design day. A total re-commissioning of the control system should occur. SMMA also recommends that spot testing of outdoor air quantities at air handling units and unit ventilators occur.

The top floor of the classroom wing is said to experience elevated temperatures during warm days in early fall and late spring. This is not an uncommon occurrence. SMMA suggests installing one of the two following options: Add split system air conditioning systems to these rooms, or add roof mounted exhaust fans, locally controlled by the teacher, which would increase the effective room ventilation rate. (Air would be brought into the classrooms via operable windows.)

**ELECTRICAL**

The electrical service originates from overhead lines along the entrance driveway, underground to a utility owned pad-mounted transformer, then underground to the main switchboard. The service was installed in the 1996 renovation project.

Power distribution system is 120/208 VAC, 3 phase 4 wire, with panels located through the school. The main service switchboard is rated at 1,200 Amps. It appears that the entire power system was replaced in the 1996 renovation project and appears to be in fine working condition. There is plenty of spare capacity within the panels for future loads, and there were no reported overloaded circuits or wiring issues.

The older 15KW emergency generator was not found during inspection; if still installed is indoor type, and gas fired. There is no apparent 2-hour separation based on the current drawings, which does not comply with the latest code requirements. This generator, if installed in 1964, would also be quite old, and would be considered past its useful life.

The 80KW stand-by generator was installed in the 1996 renovation project. The generator reportedly works fine, and appears to be in good condition.

Lighting fixtures in classrooms, corridors, and offices are fluorescent type with fairly high energy efficiency. Lighting fixtures were replaced in the 1996 renovation project, and are in generally good condition.

Site lighting is done utilizing 30' pole lights with 400W metal halide lamps in the front two parking lots. The rear parking lot utilizes a 30' pole with two 1000W metal halide flood lights. Walkways and exits are primarily lighted with building mounted 250W metal halide wall packs.

The fire alarm system was replaced in the 1996 renovation project. The system is an addressable system. Upon power loss, the panel reportedly must be reset, and other than the smoke detector issues, has no other reported problems.

The master clock and public address system are in fine condition, installed in the 1996 renovation project. The classroom clocks and speakers are generally installed recessed in panels. Other than the main entrance door lock system, there is no security system.

The data backbone is believed to be optical fiber, with distribution cabling utilizing Category 5 copper cable. The voice cabling utilizes Category 3 copper cable. The IDFs connect to the MDF using optical fiber cable. The age of the network cable is approximately 10 years. Data cables are distributed in classrooms in surface raceway with surface mounted boxes, containing an average of 2 data jacks with some recessed outlets.

### **Recommendations**

Existing electrical service and distribution system is in fine condition, is adequately sized for the current building size, and can remain intact.

Verify separation of life safety and stand-by generator loads. Upon review, it appears fine, but if any night lights or the auditorium transfer system are connected to the newer 80KW generator, some rework would be required to meet the current code. Replace the 15KW life safety generator, if it still installed.

The lighting system is somewhat new, and primarily utilizes efficient fluorescent technology. There has been no excessive ballast failure reported, but could increase over the next several years, since they are about 9-10 years old. There

are some corridors with only recessed downlights that are somewhat dim, and could use supplemental lighting.

Site lighting appears in good condition and reportedly lights the site properly. The door exit fixtures are metal halide, and are not on the generator, which would not meet code for proper egress. In general, wall packs and flood lights produce glare and uplight, which is not desirable for current dark sky standards. Replacement for these fixtures may be desirable to the Town and/or abutting residents.

The fire alarm system is in good condition. As reported, smoke detectors fail intermittently and have been replaced as required. Replacement of all original 1996 smoke detectors is recommended to avoid false and nuisance alarms. The main panel should be reprogrammed, repaired, and/or wired so that it does not have to be reset upon power loss. This is not typical for fire alarm systems.

Expand the current master clock system to include all offices and the balance of spaces not on the system.

Install a complete CCTV and intrusion type security system. The CCTV system should consist of coverage at all entrances, corridors, and places of student assembly (i.e. Café, Gym, Auditorium, and Library). The intrusion detection should consist of full perimeter coverage with door contacts and glass break sensors. Some additional motion sensors could be installed in some areas for added protection. Recommend providing an integrated system that includes security, access control and surveillance.