FACILITIES NEEDS ASSESSMENT

STAMFORD PUBLIC SCHOOLS
888 Washington Boulevard
Stamford, Connecticut 06901
Domenick Tramontozzi

FACILITIES NEEDS ASSESSMENT
OF
ROXBURY ELEMENTARY SCHOOL

751 West Hill Road
Stamford, Connecticut 06902

PREPARED BY:

EMG
222 Schilling Circle, Suite 275
Hunt Valley, Maryland 21031
800.733.0660
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EMG Project #: 88166.09R-006.017
Date of Report: August 28, 2009
On site Date: March 25, 2009

Replacement Reserves Report
Elementary Schools / Roxbury Elementary School, Elementary Schools / Roxbury Elementary School / Roxbury Storage Building
8/29/2009

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Inflation	3.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

Elementary Schools / Roxbury Elementary School

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
1.2	3131	HVAC system study	0	0	0	1	EA	$9,135.00	$9,135	$9,135										**$9,135**
1.2	2633	Termite Damage Inspection	0	0	0	6	1000 SF	$315.00	$1,890	$1,890										**$1,890**
1.2	2632	Measured ADA Study of Property	0	0	0	1	EA	$6,930.00	$6,930	$6,930										**$6,930**
1.2	2752	Lead Paint Review and Testing	0	0	0	1	EA	$4,126.50	$4,127	$4,127										**$4,127**
1.2	2634	Termidor Termite Treatment at building perimeter	0	0	0	2500	LF	$10.71	$26,775	$26,775										**$26,775**
3.1	2635	ADA cane detection barrier rails	30	30	0	2	PR	$144.90	$290	$290										**$290**
3.1	2636	ADA, Install lever handle hardware at accessible locations	0	0	0	1	EA	$246.96	$247	$247										**$247**
3.1	2637	ADA, lower existing toilet room accessories and mirrors	0	0	0	4	EA	$115.11	$460	$460										**$460**
3.1	2638	ADA, Renovate restroom for full compliance	20	19	1	1	EA	$15,120.00	$15,120		$15,120									**$15,120**
3.1	2640	ADA Drinking Fountain Cup Dispenser	15	14	1	2	EA	$69.30	$139		$139									**$139**
3.1	2639	ADA Strobe Fire Alarm	15	15	0	10	EA	$630.00	$6,300	$6,300										**$6,300**
3.1	2697	ADA - Install signage indicating Accessible Parking, pole mounted	20	19	1	3	EA	$134.01	$402		$402									**$402**
3.1	2645	ADA, install/replace signage giving direction to accessible entrance	0	0	0	6	Sign	$134.01	$804	$804										**$804**
3.1	2641	ADA, paint accessible parking space	5	4	1	1	EA	$207.90	$208		$208					$208				**$416**
3.1	2643	ADA, paint van-accessible space with signage	5	4	1	1	EA	$277.20	$277		$277					$277				**$554**
3.1	2644	ADA, install new H/C access ramp, 3' wide, railings both sides	25	24	1	186	LF	$604.88	$112,507		$112,507									**$112,507**
3.1	2646	ADA, Wrap drain pipes below accessible lavatory	0	0	0	4	EA	$81.90	$328	$328										**$328**
5.2	2713	Exterior concrete stair repairs - Major	0	0	0	104	SF	$94.50	$9,828	$9,828										**$9,828**
5.2	3199	Remove and replace steel pipe railings, 3 rail galvanized,inc paint	0	0	0	16.5	LF	$114.51	$1,889	$1,889										**$1,889**
5.2	3171	In place cold reused asphalt paving	15	10	5	5000	SY	$4.80	$24,003						$24,003					**$24,003**
5.2	3167	Repair and Seal Coat asphalt	5	5	0	4	10000 SF	$5,848.92	$23,396	$23,396					$23,396					**$46,791**
5.2	3165	Cut & Patch asphalt	10	10	0	2500	SF	$3.01	$7,529	$7,529										**$7,529**
5.2	3181	Replace concrete curbs	25	25	0	50	LF	$38.12	$1,906	$1,906										**$1,906**
5.2	3182	Replace concrete curbs	25	20	5	1500	LF	$38.12	$57,173						$57,173					**$57,173**
5.2	3173	Replace asphalt curbs	10	8	2	2500	LF	$14.63	$36,572			$36,572								**$36,572**
5.2	3200	Remove & replace 4' wide concrete sidewalk	25	25	0	31	LF	$40.65	$1,260	$1,260										**$1,260**
5.4	6628	Shrub/tree planting beds	20	19	1	350	EA	$74.34	$26,019		$26,019									**$26,019**
5.5	6665	Replace 2-inch copper pipe	25	24	1	150	LF	$62.31	$9,346		$9,346									**$9,346**
5.5	3604	Repair damaged chain link fence	10	10	0	5	10 FT	$232.91	$1,165	$1,165										**$1,165**
5.5	3191	Replace chain link fence, 6-foot high	20	15	5	2500	LF	$37.31	$93,272						$93,272					**$93,272**
5.5	3193	Replace Play Structure, Large	20	12	8	2	EA	$52,920.00	$105,840								$105,840			**$105,840**
5.5	3194	Replace basketball backstop, 3' wide 12' high	25	23	2	6	EA	$6,122.09	$36,733			$36,733								**$36,733**
5.5	6667	Install underground irrigation system	0	0	0	30000	SF	$1.26	$37,800	$37,800										**$37,800**
5.5	6643	New Aluminum pole-mounted double light 400 W HPS fixture and pole	0	0	0	4	EA	$8,651.16	$34,605	$34,605										**$34,605**
6.2	2699	Add protective base to columns	30	30	0	13	EA	$409.50	$5,324	$5,324										**$5,324**
6.2	2698	Replace roof canopy column	50	50	0	13	EA	$6,804.00	$88,452	$88,452										**$88,452**
6.2	3618	Minor structural wood stud repairs	0	0	0	500	SF	$4.41	$2,205	$2,205										**$2,205**
6.3	12094	Stamford Roof Assessment - BUR Roof Replacement	20	20	0	229	SQ	$1,666.66	$381,665	$381,665										**$381,665**
6.3	12099	Stamford Roof Assessment - EPDM Replacement	20	11	9	67	SQ	$1,595.75	$106,915										$106,915	**$106,915**

Replacement Reserves Report
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8/29/2009

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
6.3	12093	Stamford Roof Assessment Roof Repair Recommendations	0	0	0	1	EA	$1,773.05	$1,773	$1,773										**$1,773**
6.3	2706	Roof to wall flashing	30	28	2	75	LF	$19.05	$1,429			$1,429								**$1,429**
6.3	2700	Replace Glass Skylight	30	22	8	1160	SF	$57.00	$66,123									$66,123		**$66,123**
6.3	2701	Replace Glass Skylight	30	29	1	25	SF	$57.00	$1,425		$1,425									**$1,425**
6.3	3613	Epoxy Mortar Repair for Concrete Structure	0	0	0	8	SF	$472.50	$3,780	$3,780										**$3,780**
6.4	2704	Remove and replace plywood siding	0	0	0	6300	SF	$4.94	$31,117	$31,117										**$31,117**
6.4	3344	Replace brick veneer - upper floor	40	38	2	6	CSF	$3,428.46	$20,571			$20,571								**$20,571**
6.4	2709	Caulking, polyurethane,1/4"x1/4", remove and replace	15	6	9	2000	LF	$4.84	$9,677										$9,677	**$9,677**
6.5	2711	Replace metal handrail	0	0	0	200	LF	$54.05	$10,811	$10,811										**$10,811**
6.5	2710	Replace pressure treated wood stairs	20	15	5	450	SF	$141.75	$63,788						$63,788					**$63,788**
6.5	2712	Replace pressure treated ramp	20	15	5	450	SF	$112.90	$50,803						$50,803					**$50,803**
6.6	2723	Minor repairs to concrete loading dock	0	0	0	30	SF	$50.84	$1,525	$1,525										**$1,525**
6.6	2717	Replace corrugated fiberglass with insulated glazing and new frames	25	24	1	900	SF	$45.36	$40,824		$40,824									**$40,824**
6.6	2719	Replace 3' x 4' aluminum window operable	25	23	2	26	EA	$1,147.86	$29,844			$29,844								**$29,844**
6.6	6629	Replace 3'-0" x 4'-0"aluminum window screen - 2nd floor	50	50	0	50	EA	$307.76	$15,388	$15,388										**$15,388**
6.6	2716	Replace aluminum storefront 10' tall w/o door	25	24	1	10800	SF	$42.34	$457,229		$457,229									**$457,229**
6.6	2720	Replace 3'-0" x 7'-0" aluminum storefront doors	50	50	0	4	EA	$2,588.67	$10,355	$10,355										**$10,355**
6.6	2721	Replace 3'-0" x 7'-0" solid core, w/safety glass, ptd. door	40	35	5	44	EA	$1,869.84	$82,273						$82,273					**$82,273**
6.6	2722	Replace 12' x 12' steel roll-up door	35	32	3	1	EA	$4,888.80	$4,889				$4,889							**$4,889**
6.6	2724	Replace steel gate	40	39	1	3	EA	$507.84	$1,524		$1,524									**$1,524**
6.6	2747	Replace glazed wood door	25	16	9	60	EA	$1,421.91	$85,315										$85,315	**$85,315**
6.6	6630	Horizontal Blinds aluminum 1" slats	7	7	0	8500	SF	$6.49	$55,157	$55,157							$55,157			**$110,313**
6.6	3345	Disposal of suspect lead paint containing windows	0	0	0	60	EA	$441.00	$26,460	$26,460										**$26,460**
6.8	2730	Paint interior walls, drywall	5	2	3	7000	SF	$1.06	$7,409				$7,409					$7,409		**$14,818**
6.8	2729	Paint interior walls, CMU,including surface prep	7	5	2	19200	SF	$1.12	$21,531			$21,531							$21,531	**$43,062**
6.8	2744	Stained wood paneling replacement	25	23	2	3000	SF	$18.26	$54,772			$54,772								**$54,772**
6.8	6632	Capital Plan - Install Sound Attenuation at walls/ceilings	0	0	0	25	CSF	$882.00	$22,050	$22,050										**$22,050**
6.8	6631	Replace 4x4 ceramic tile	30	29	1	25	CSF	$1,862.28	$46,557		$46,557									**$46,557**
6.8	2737	Replace Vinyl tile	18	13	5	1300	SY	$81.90	$106,470						$106,470					**$106,470**
6.8	2739	Sand and refinish hardwood floor	10	7	3	5000	SF	$6.93	$34,650				$34,650							**$34,650**
6.8	2735	Replace carpet - standard commercial	8	7	1	75	SY	$63.23	$4,742		$4,742								$4,742	**$9,484**
6.8	2736	Replace carpet - standard commercial	8	4	4	1000	SY	$63.23	$63,227					$63,227						**$63,227**
6.8	2734	Replace acoustical ceiling tile system, fire rated,including demo	20	14	6	504	CSF	$627.48	$316,250							$316,250				**$316,250**
6.8	2732	Replace acoustical ceiling tile system, fire rated,including demo	20	15	5	96	CSF	$627.48	$60,238						$60,238					**$60,238**
6.8	3619	Replace stage lighting equipment	15	8	7	1	EA	$19,026.00	$19,026								$19,026			**$19,026**
6.8	6670	Asbestos floor tile and mastic removal	0	0	0	5000	SF	$4.10	$20,475	$20,475										**$20,475**
7.1	6638	Install Air-Conditioning at entire building	30	30	0	89000	SF	$16.22	$1,443,242	$1,443,242										**$1,443,242**
7.1	3615	Make up air unit 5000 CFM	20	15	5	1	EA	$20,248.20	$20,248						$20,248					**$20,248**
7.1	3133	Exhaust Fan 375 CFM	10	8	2	9	EA	$882.63	$7,944			$7,944								**$7,944**
7.1	6641	Exhaust Fan 8500 CFM	10	10	0	1	EA	$3,825.36	$3,825	$3,825										**$3,825**
7.1	3134	Exhaust Fan 375 CFM	10	8	2	10	EA	$882.63	$8,826			$8,826								**$8,826**
7.1	3135	Replace Circulation pump 1 hp	15	12	3	3	EA	$5,443.20	$16,330				$16,330							**$16,330**
7.1	3137	Package Units, gas heat, 5-ton cooling	15	14	1	2	EA	$11,379.02	$22,758		$22,758									**$22,758**

Replacement Reserves Report
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8/29/2009

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
7.1	3138	Package Units, gas heat, 5-ton cooling	15	12	3	3	EA	$11,379.02	$34,137				$34,137							**$34,137**
7.1	3201	Package units, gas heat, 20 ton cooling	15	14	1	1	EA	$36,067.50	$36,068		$36,068									**$36,068**
7.1	6675	Asbestos containing transite board removal	0	0	0	1000	SF	$4.91	$4,914	$4,914										**$4,914**
7.2	6650	Capital Plan - Install outdoor drinking fountain, pedestal type	0	0	0	2	EA	$2,451.56	$4,903	$4,903										**$4,903**
7.2	6633	Replace drinking fountain	10	8	2	12	EA	$1,505.70	$18,068			$18,068								**$18,068**
7.2	6648	Capital Plan - Install one inch copper pipe for drinking fountain	0	0	0	150	LF	$31.63	$4,744	$4,744										**$4,744**
7.2	6634	Roxbury - RPZ valve and hot water supply installation allowance	0	0	0	1	EA	$25,200.00	$25,200	$25,200										**$25,200**
7.2	3620	Replace electric water heater, commercial 120 to 150 gal	15	8	7	2	EA	$13,122.90	$26,246								$26,246			**$26,246**
7.4	6644	Upgrade lighting for energy conservation	0	0	0	104000	SF	$5.92	$615,888	$615,888										**$615,888**
7.4	6646	Capital Plan - Clock and Bell System	15	14	1	85	EA	$1,244.07	$105,746		$105,746									**$105,746**
7.4	6645	Capital Plan - Communications & Security including alarms,internet wiring, communication systems and emergency lighting	15	14	1	104000	SF	$3.15	$327,600		$327,600									**$327,600**
7.4	3158	Sound system including amplifier	15	12	3	1	EA	$5,677.56	$5,678				$5,678							**$5,678**
7.4	3155	School Stage Audio Equipment	15	12	3	1	EA	$5,386.50	$5,387				$5,387							**$5,387**
7.4	6673	Asbestos electrical insulation, removal 300 LF	0	0	0	1	EA	$5,733.00	$5,733	$5,733										**$5,733**
7.5	3195	Replace wheelchair lift 3 'to 8'	20	20	0	2	EA	$20,209.42	$40,419	$40,419										**$40,419**
7.6	6642	Install Fire Sprinklers	30	30	0	10000	SF	$4.98	$49,770	$49,770										**$49,770**
7.6	3139	Install Ansul System at kitchen hood	20	20	0	1	EA	$6,142.50	$6,143	$6,143										**$6,143**
7.6	3154	Fire alarm panel addressable, with voice	15	12	3	1	EA	$15,264.77	$15,265				$15,265							**$15,265**
8.1	2745	Replace vinyl wall covering	15	13	2	325	CSF	$477.54	$155,201			$155,201								**$155,201**
8.1	2738	Replace Vinyl tile	18	14	4	4700	SY	$81.90	$384,930					$384,930						**$384,930**
8.2	12091	Stamford Kitchen Equipment Replacement Allowance	10	5	5	1	EA	$63,000.00	$63,000						$63,000					**$63,000**
Totals, Unescalated										**$3,057,978**	**$1,208,490**	**$391,490**	**$123,743**	**$448,157**	**$644,663**	**$316,735**	**$100,428**	**$179,372**	**$228,179**	**$6,699,235**
Soft Costs:																				
Architectural/Consultant Fees (10.0%)										**$305,798**	**$120,849**	**$39,149**	**$12,374**	**$44,816**	**$64,466**	**$31,674**	**$10,043**	**$17,937**	**$22,818**	**$669,923**
General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)										**$305,798**	**$120,849**	**$39,149**	**$12,374**	**$44,816**	**$64,466**	**$31,674**	**$10,043**	**$17,937**	**$22,818**	**$669,923**
Prevailing Wage/Labor Compliance (5.0%)										**$152,899**	**$60,424**	**$19,574**	**$6,187**	**$22,408**	**$32,233**	**$15,837**	**$5,021**	**$8,969**	**$11,409**	**$334,962**
Contingency (5.0%)										**$152,899**	**$60,424**	**$19,574**	**$6,187**	**$22,408**	**$32,233**	**$15,837**	**$5,021**	**$8,969**	**$11,409**	**$334,962**
Location Factor (1.11)										**$327,204**	**$129,308**	**$41,889**	**$13,241**	**$47,953**	**$68,979**	**$33,891**	**$10,746**	**$19,193**	**$24,415**	**$716,818**
Totals, Escalated (see inflation table above)										**$4,302,576**	**$1,751,356**	**$590,045**	**$193,963**	**$737,594**	**$1,114,061**	**$574,728**	**$191,342**	**$358,838**	**$479,303**	**$10,293,805**

* Markup has been included in unit costs.

Elementary Schools / Roxbury Elementary School / Roxbury Storage Building

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
9	2751	General painting cost per SF, minor prep work, single story bldg. (up to 15 feet)	10	9	1	1200	SF	$3.15	$3,780		$3,780									**$3,780**
9	2748	Replace metal soffit material	25	24	1	100	SF	$13.73	$1,373		$1,373									**$1,373**
9	2662	Built-up roofing, total roof replacement	28	27	1	8.25	SQ	$927.20	$7,649		$7,649									**$7,649**
Totals, Unescalated										**$0**	**$12,803**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$12,803**
Soft Costs:																				
Architectural/Consultant Fees (10.0%)										**$0**	**$1,280**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,280**
General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)										**$0**	**$1,280**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,280**
Prevailing Wage/Labor Compliance (5.0%)										**$0**	**$640**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$640**
Contingency (5.0%)										**$0**	**$640**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$640**
Location Factor (1.11)										**$0**	**$1,370**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,370**
Totals, Escalated (see inflation table above)										**$0**	**$18,554**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$18,554**

Replacement Reserves Report
Elementary Schools / Roxbury Elementary School, Elementary Schools / Roxbury Elementary School / Roxbury Storage Building
8/29/2009

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TABLE OF CONTENTS

CERTIFICATION

EMG has completed a Comprehensive Facilities Needs Assessment of the subject property, Roxbury Elementary School, located at 751 West Hill Road, in Stamford, Connecticut.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available Physical Plant personnel familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in depth studies were performed unless specifically required under Section 2 of this report. This evaluation did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas were observed (See Section 4.2 for areas observed). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by the Physical Plant personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

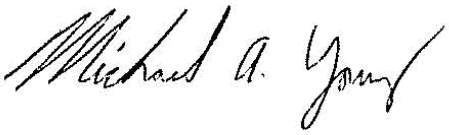
This report has been prepared on behalf of and exclusively for the use of City of Stamford, Connecticut Public Schools for the purpose stated within Section 2.0 of this report. The report, or any excerpt thereof, shall not be used by any party other than City of Stamford, Connecticut Public Schools or for any other purpose than that specifically stated in our agreement or within Section 2.0 of this report without the express written consent of EMG.

Any reuse or distribution of this report without such consent shall be at City of Stamford Public Schools and the recipient's sole risk, without liability to EMG.

Any questions regarding this report should be directed to Bill Champion at bchampion@emgcorp.com or at (800) 733-0660, Extension 6234.

Prepared by: Jill Orlov and Peter Millar, Field Observers

Reviewed by:



Michael A. Young
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1. EXECUTIVE SUMMARY

1.1. SUMMARY OF FINDINGS

The property information is summarized in the table below. More detailed descriptions may be found in the various sections of the report and in the Appendices.

Property Information	
Address:	751 West Hill Road, Stamford, Fairfield County, Connecticut, 06902
Year constructed:	Original construction in 1955 500 wing addition (not including the modular classrooms) – 1964 4 classroom addition at end of 200 wing – 1980's Two modular additions relocated in the 1990's from other sites Gymnasium addition within prior existing courtyard with clerestory section to allow for natural light. Approximately constructed in the 1980's.
Current owner of property:	City of Stamford
School occupying building:	Roxbury Elementary School
Current usage of property:	Elementary School
Management Point of Contact:	City of Stamford Engineering, Domenic Tramontozzi and Robert Gerbert, Jr. 203.977.5534 phone 203.977.4137 fax
Site acreage:	13.73 acres
Gross floor area:	104,000 Square Feet
Number of buildings:	One
Number of stories:	One with partial basement
Parking type and number of spaces:	117 spaces in open lots
Building construction:	Masonry bearing walls and metal-framed roofs. Wings are steel post construction with metal-framed roofs. Modular additions are wood frame structures on raised floors set on concrete piers.
Bay Column Spacing:	Approximately 18 Feet
Interior vertical clearance:	Approximately ten to 12 feet
Roof construction:	Flat roofs with built-up and single ply membranes.
Exterior Finishes:	Brick veneer and curtain wall, painted T-1-11 on modular additions, factory finished ceramic glazed metal panels on Media Center and Exterior Insulation Finish System in isolated areas.

Property Information	
Heating and/or Air-conditioning:	Heating is provided in the classrooms by perimeter, wall-mounted, finned-tube, radiant heat units. The radiant units are supplied with either low pressure steam or hot water by the central system. Heating is provided in the restrooms by wall-mounted finned-tube radiant heat units. Heating is provided in the corridor by wall-mounted finned-tube radiant heat units. Heating is provided in the cafeteria and the auditorium by a make-up air unit that is supplied with low pressure steam by the central system. Heating provided in the gymnasium via two (2) make-up air units that are supplied with low pressure steam by the central system. Heating and cooling are provided in the media center by a single 37.5 ton, direct-expansion, constant-volume, gas-fired, packaged, rooftop-mounted, HVAC unit. The cooling equipment uses R-22 as a refrigerant. Heating and cooling are provided in the portable classrooms by individual, direct-expansion, constant-volume, electric, packaged, rooftop-mounted, HVAC units. There are a total of 10 units, with an average capacity of 5 tons. The cooling equipment uses R-22 as a refrigerant.
Fire and Life/Safety:	Fire sprinklers, hydrants, smoke detectors, alarms, and self contained extinguishers.
Dates of visit:	March 25, 2009
Point of Contact (POC):	Gloria Manna and Paul Franco

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

According to City of Stamford Public Schools personnel, the property has had a limited capital improvement expenditure program over the past three or more years, primarily consisting of new roofs over the 400 wing and part of the 300 wing and five new HVAC package units. Supporting documentation was not provided in support of these claims but some of the work is evident.

1.2. FOLLOW-UP RECOMMENDATIONS

The following studies are recommended:

- The rear playground and softball field are located down moderate to steep slopes with only stair access or a moderate slope route through the grass. Some of the public restrooms are not fully handicapped accessible. They may be able to be modified by demolishing one stall and turning it into an accessible stall, but due to local codes, it may not be permissible to lose a stall. An accessibility specialist must be retained to analyze the existing conditions, provide recommendations and, if necessary, estimate the scope and cost of any required repairs. The estimated cost to retain a specialist is included in the Replacement Reserves Report. Separate itemized costs for various interim accessibility items are included in the Replacement Reserves Report.

- Suspect termite damage was observed at the 4th grade modular addition. Wet and deteriorated engineered wood was observed at the north side of the addition. A local, licensed exterminator must be retained to treat the property as required to eliminate the pest and associated threat. The estimated cost of this work is included in the Replacement Reserves Report. In addition to this work, an annual termite inspection program must be instituted. A cost allowance for minor structural repairs is discussed in Section 6.2.
- The exterior of the single paned window system has severely deteriorated paint and window mastic. The debris is on the window frames and sills and on the ground where children play. A lead abatement specialist should be retained to analyze the situation, determine the possibility of lead content and provide recommendations. The estimated cost to retain a lead abatement professional is included in the Replacement Reserves Report.
- The HVAC system is reportedly highly inconsistent. Maintenance and administrative staff reported that temperature control is inadequate in the building and that heating and cooling are at times required simultaneously maintaining a comfortable environment. It is recommended that an HVAC contractor evaluate the building for the potential reconfiguration of the existing control system or to add increased zoning for better temperature control in the classrooms. The cost of the follow-up evaluation is included in the Replacement Reserves Report. A budgetary allowance to upgrade or repair the existing controls is included in Section 7.1.
- Asbestos-containing materials have been identified and reported in the cafeteria flooring and the rear walls of the auditorium. A full asbestos abatement of these areas is recommended. An abatement was performed in 2002-2003 for the school and the cafeteria flooring and auditorium were not abated at that time. A cost allowance to begin work is included in the Replacement Reserves Report. Due to concealed conditions, this is only an initial cost allowance.
- There may be a number of unresolved Fire Code violations. See Section 3.2 of the Facilities Needs Assessment for descriptions and comments.

The following issues should be considered.

- Verify that any alterations, installations, or other improvements since the project was first constructed and occupied have been properly permitted and approved by municipal agencies.
- Verify that no defective materials or equipment are used at the property.

1.3. OPINIONS OF PROBABLE COST

The estimates for the repair and capital reserves items noted within this PCR are attached to the front of this report, following the cover page.

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

1.3.1. Methodology

Based upon our observations, research and judgment, along with consulting commonly accepted empirical Expected Useful Life (EUL) tables; EMG will render our opinion as to when a system or component will most probably necessitate replacement. Accurate historical replacement records provided by the facility manager are typically the best source for this data. Exposure to the weather elements, initial system quality and installation, extent of use, the quality and amount of preventive maintenance exercised are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its effective age.

In addition to determining the EUL and the RUL for each major prime system and building component, EMG will categorize each cited deficiency within one of the following four Priorities:

Priority 1: Currently Critical (Immediate)

Items in this category require immediate action and include corrective measures to:

- Return a building component to normal operation
- Stop accelerated deterioration
- Replace items that have reached or exceeded their useful service life
- Correct a cited safety hazard

Priority 2: Potentially Critical (Years 1-2)

Items in this category require action in the next 1-2 years and include corrective measures to:

- Return a building component to normal operation
- Stop rapid deterioration
- Correct potential life safety issues and/or code hazards
- Correct building components that are experiencing Intermittent operations

Priority 3: Necessary – Not Yet Critical (Years 3-5)

Items in this category require appropriate attention to preclude predictable deterioration, potential downtime, additional damage and higher costs to remediation if deferred further.

Priority 4: Recommended (Years 6-10)

Items in this category represent a sensible improvement to the existing conditions. These are not required for the most basic function of the facility; however, Priority 4 projects will improve overall usability and/or reduce long-term maintenance costs.

Priority 5: Recommended (Years 11+)

Items in this category represent anticipated required capital expenditures due to Estimated Useful Life (EUL) only. These systems are generally in good operational condition, but will require replacement due to the system(s) finite life expectancy.

In addition to identifying and prioritizing all of the observed deficiencies, EMG will also provide the physical conditions of building components. The physical condition is typically defined as being in one of four categories: Good, Fair, Poor and Not Applicable. For the purposes of our assessments, the following definitions are used:

Good (G) = Component or system is sound and performing its function. However, it may show signs of normal wear and tear, commensurate with its age, some minor remedial work may be required.

Fair (F) =	Component or system is performing adequately at this time but exhibits deferred maintenance, evidence of previous repairs, workmanship not in compliance with commonly accepted standards, is obsolete, or is approaching the end of its typical Expected Useful Life. Repair or replacement is required to prevent further deterioration, restore it to good condition, prevent premature failure, or to prolong its Expected Useful Life. Component or system exhibits an inherent deficiency of which the cost to remedy is not commensurate with the deficiency but is best remedied by a program of increased preventative maintenance or periodic repairs.
Poor (P) =	Component or system has either failed or cannot be relied upon to continue performing its original function as a result of: having realized or exceeded its typical expected useful life, excessive deferred maintenance, state of disrepair, an inherent design deficiency or workmanship. Present condition could contribute or cause the deterioration of contiguous elements or systems. Repair or replacement is required.
N/A =	Not Applicable

2. PURPOSE AND SCOPE

2.1. PURPOSE

The purpose of this report is to assist the Client in evaluating the physical aspects of this property and how its condition may affect the Client's financial decisions over time. For this Comprehensive Facilities Needs Assessment, the major independent building components were observed and their physical conditions were evaluated in accordance with ASTM E2018-01. These components include the site and building exteriors and representative interior areas. The estimated costs for repairs and/or capital reserve items are included in the enclosed cost tables. All findings relating to these opinions of probable costs are included in the relevant narrative sections of this Report.

The Physical Plant staff and code enforcement agencies were interviewed for specific information relating to the physical property, code compliance, available maintenance procedures, available drawings, and other documentation.

2.2. SCOPE

ASTM E2018-01 requires that any deviations from the Guide be so stated within the report. EMG's probable cost threshold limitation is reduced from the Guide's $3,000 to $1,000, thus allowing for a more comprehensive assessment on smaller scale properties. Therefore, EMG's opinions of probable costs that are individually less than a threshold amount of $1,000 are typically omitted from this PCR. However, comments and estimated costs regarding identified deficiencies relating to life, safety or accessibility items are included regardless of this cost threshold.

In lieu of providing written record of communication forms, personnel interviewed from the facility and government agencies are identified in Section 2.3. Relevant information based on these interviews is included in Sections 2.3, 3.1, and other applicable report sections.

The assessment team will visit each identified property to evaluate the general condition of the building(s) and site improvements, review available construction documents in order to familiarize themselves with and be able to comment on the in-place construction systems, life safety, mechanical, electrical and plumbing systems, and the general built environment. The assessment team will conduct a walk-through survey of the building(s) in order to observe building systems and components, identify physical deficiencies and formulate recommendations to remedy the physical deficiencies.

- As a part of the walk-through survey, the assessment team will survey 100% of the facility's interior. In addition, EMG will survey the exterior of the properties including the building exterior, roofs, and sidewalk/pavement.
- The assessment team will interview the building maintenance staff so as to inquire about the subject property's historical repairs and replacements and their costs, level of preventive maintenance exercised, pending repairs and improvements, and frequency of repairs and replacements.
- The assessment team will develop opinions based on their site assessment, interviews with City of Stamford, Connecticut Public Schools building maintenance staff and experience gained on similar properties previously evaluated. The assessment team may also question others who are knowledgeable of the subject property's physical condition and operation or knowledgeable of similar systems to gain comparative information to use in evaluation of the subject property.

- The assessment team may review documents and information provided by City of Stamford, Connecticut Public Schools building maintenance staff that could also aid the knowledge of the subject property's physical improvements, extent and type of use, and/or assist in identifying material discrepancies between reported information and observed conditions.
- EMG will provide City of Stamford, Connecticut Public Schools with Sustainable Alternative Recommendations that will concentrate on Utility Savings Potential, Health and Environmental Benefits.
- EMG will provide an Energy Benchmarking Analysis to establish energy performance with relation to similar types of buildings.

2.3. PERSONNEL INTERVIEWED

The following personnel from the facility and government agencies were interviewed in the process of conducting the Comprehensive Facilities Needs Assessment:

Name and Title	Organization	Phone Number
Gloria Manna Principal	Roxbury Elementary School	203.977.4287
Paul Franco Head Custodian	Roxbury Elementary School	203.977.4287
Mr. Gus Burreisci Project Manager	City of Stamford Public Schools	203.223.8118
Tony Olive Fire Marshal	Turn of River Fire Department	203.322.2555

The Comprehensive Facilities Needs Assessment was performed with the assistance of Gloria Manna, Principal and Paul Franco, Head Custodian, Roxbury Elementary School, the on site Points of Contact (POC), who were cooperative and provided information that appeared to be accurate based upon subsequent site observations. The on site contacts are very knowledgeable about the subject property and answered most questions posed during the interview process. The POC's management involvement at the property has been for the past one and eleven years, respectively.

2.4. DOCUMENTATION REVIEWED

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

- Site plan
- Floor plans
- Original construction documents – Sherwood Mills & Smith Architects dated July 31, 1952
- Addition and renovation documents – Maitland/Strauss P.C. dated February 10, 1992
- AHERA 3 Year Re-Inspection Report dated 2006

A prior Elementary School Capacity Study was reviewed while performing the FNA and Space Utilization Analysis. The report, dated October 12, 2001, was prepared by JMOA Engineering, P.C. Property condition and/or factual information discrepancies between the prior report and actual conditions are not readily apparent other than changes in classroom usage and population.

No other documents were reviewed. The Documentation Request Form is provided in Appendix E.

2.5. PRE-SURVEY QUESTIONNAIRE

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

3. ACCESSIBILITY, CODE & MOLD

3.1. ADA ACCESSIBILITY

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" and "commercial facilities" on the basis of disability. Regardless of its age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Buildings completed and occupied after January 26, 1992 are required to comply fully with the ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of compliance to the extent allowed by structural feasibility and the financial resources available. As an alternative, a reasonable accommodation pertaining to the deficiency must be made.

During the Comprehensive Building Condition Assessment, a limited visual observation for ADA accessibility compliance was conducted. The scope of the visual observation was limited to those areas set forth in EMG's *Abbreviated Accessibility Checklist* provided in Appendix D of this report. It is understood by the Client that the limited observations described herein does not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of EMG's undertaking. Only a representative sample of areas was observed and, other than as shown on the Abbreviated Accessibility Checklist, actual measurements were not taken to verify compliance. ADA compliance issues inside spaces are not within the scope of the survey.

The facility does not appear to be accessible with Title III of the Americans with Disabilities Act. Elements as defined by the ADAAG that are not accessible as stated within the priorities of Title III, are as follows:

Parking

- Adequate number of designated parking stalls and signage for cars are not provided. One additional ADA stall required.
- Adequate number of designated parking stalls and signage for vans are not provided. One additional ADA stall required.
- Signage indicating accessible parking spaces for cars is not provided. Three additional ADA signs required.

Ramps

- The building requires the construction of a straight entrance ramp with handrails to allow wheelchair access. The softball field and rear playgrounds do not have handicapped access. The change in elevation is approximately 15 feet. The kindergarten playground needs a smooth transitional ramp to provide access between the asphalt and the soft surface playground where there is a change in elevation of approximately six inches.

Paths of Travel

- Obstacle or protrusion from wall impeding access. The drinking fountains protrude into the paths of travel. Wing walls or cane detection should be installed at each protruding water fountain.
- Add visual alarm and audible fire alarm in restrooms.
- Install cup dispenser at an existing non-conforming water fountain. Current fountains require twisting to operate and will require replacement – costs are in Section 7.2.
- Compliant signage indicating accessible entrances and general information is not provided.

Entrances/Exits

- Lever action hardware is not provided at all accessible locations. The door to south end modular addition.

Restrooms

- Existing boys' restroom across from cafeteria does not have a handicapped accessible stall. EMG recommends combining two stalls into one accessible stall or removing the partitions and making this restroom into a single user room. Due to unknown individual occupancy and/or uses and possible local code requirements it is recommended that the local building department be consulted prior to removal of any permanent plumbing fixtures (ie: toilets, urinals and/or lavatories). The provided resolution is for achieving accessibility only and does not take into consideration any required fixture counts which could vary with each structure. The cost estimate includes but is not limited to adding grab bars, paddle faucet handles, drain pipe insulation, lowering accessories and replacing finishes as required. The two accessible restrooms near the gymnasium should be shared with students. Currently, they are both labeled for adult use only.
- Modify existing toilet room accessories and mirrors.
- Wrap drain pipes below lavatory with insulation; protect against contact with hot, sharp, or abrasive surfaces.

A full ADA Compliance Survey may reveal additional aspects of the property that are not in compliance.

Corrections of these conditions should be addressed from a liability standpoint, but are not necessarily code violations. The Americans with Disabilities Act concerns civil rights issues as they pertain to the disabled and its Accessibility Guidelines are not a construction code, although many local jurisdictions have adopted them as such. The estimated costs to address the achievable items noted above are included in the Replacement Reserves Report.

3.2. CODE INFORMATION AND FLOOD ZONE

According to Tony Olive of the Turn of River Fire Department, there are no records on file relating to this school. The previous Fire Marshal left no records when Fire Marshal Olive took over on July 1, 2008. EMG recommends that the school contact the fire department immediately to commence annual inspections.

According to the Flood Insurance Rate Map, published by the Federal Emergency Management Agency (FEMA) and dated November 17, 1993, the property is located in Zone X, defined as areas outside the one percent annual chance floodplain, areas of one percent annual chance sheet flow flooding where average depths are less than one foot, areas of one percent annual chance stream flooding where the contributing drainage area is less than one square mile, or areas protected from the one percent annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones. In communities that participate in the NFIP, flood insurance is available to all property owners and renters in this zone.

3.3. MOLD

EMG performed a limited visual assessment for the presence of mold, conditions conducive to mold, and evidence of moisture in readily accessible interior areas of the property.

No suspect mold was observed, but moisture was observed in the following areas:

- Classroom 217. The area affected by the moisture was approximately one square foot in size.
- Gymnasium. The area affected by the moisture was approximately four square feet in size and is reportedly an inactive roof leak.

- Restroom in north modular addition. The area affected by the moisture was approximately four square feet in size.

Additional discussion and description of the correction efforts required with regard to the moisture infiltration issues are discussed in Sections 6.3 and 6.8 of this report.

Remediation can be conducted by properly trained building maintenance staff. In addition, the source of this moisture should be addressed in order to prevent future mold problems. The estimated costs of corrective action are of a minimal quantity, and consequently, are considered to be part of routine maintenance operations. No other costs are included in the tables.

4. EXISTING BUILDING EVALUATION

4.1. ROOM TYPES

The following table identifies the reported room types and mix at the subject property.

Room Types and Mix			
Quantity	**Type**	**Vacant Rooms**	**Down Rooms**
33	Classroom (K-5)	0	0
2	Reading Room	0	0
2	ASD	0	0
6	Resource/SPED	0	0
4	Bi-lingual/ELL classroom	0	0
2	Art	0	0
1 (2 rooms combined)	Music	0	0
1	Speech	0	0
1	OT/PT	0	0
8	Office	0	0
2	Mechanical	0	0
5	Storage	0	0
1	Gymnasium	0	0
1	Cafeteria	0	0
1	Auditorium	0	0
1	Media Center	0	0
21	**TOTAL**	**0**	**0**

4.2. ROOMS OBSERVED

EMG observed 100 percent of the building in order to gain a clear understanding of the property's overall condition. Other areas accessed included the exterior of the property, a representative sample of the roofs, and the interior common areas.

All areas of the property were available for observation during the site visit.

A "down room" or area is a term used to describe a non-usable room or area due to poor conditions such as fire damage, water damage, missing equipment, damaged floor, wall or ceiling surfaces, or other significant deficiencies. According to the POC, there are no down rooms or areas. No down rooms or areas were observed during the site visit.

5. SITE IMPROVEMENTS

5.1. UTILITIES

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

Site Utilities		
Utility	**Supplier**	**Condition & Adequacy**
Sanitary sewer	City of Stamford	Good
Storm sewer	City of Stamford	Good
Domestic water	Aquarian	Good
Electric service	CLMP	Good
Natural gas service	Yankee Gas	Good

Observations/Comments:

- The utilities provided appear to be adequate for the property. There are no unique, on site utility systems such as emergency generators, septic systems, water or waste water treatment plants, or propane gas tanks.
- See Section 7.1 for descriptions and comments regarding the underground fuel storage tank.

5.2. PARKING, PAVING, AND SIDEWALKS

The main entrance drive is located along West Hill Road on the west side of the property. Two (2) additional entrance drives, which provide direct access to parking lots, are located along Roxbury Road along the north side of the property. The parking areas, drive aisles, service drives, and entrance driveway aprons are paved with asphalt.

According to the site plan, parking is provided for approximately 117 cars. The parking ratio is approximately 1.31 spaces per thousand square feet of floor area. All of the parking stalls are located in open lots. There are a total of three (3) handicapped–accessible parking stalls, all of which are van-accessible and are located adjacent to the main entrance.

The sidewalks throughout the property are constructed of a combination of asphalt and cast-in-place concrete. Cast-in-place concrete steps with metal handrails are located at grade changes.

The curbs and gutters are constructed of a combination of extruded asphalt and cast-in-place concrete.

An asphalt paved basketball play area is located to the south of the building.

Observations/Comments:

- The asphalt pavement and sidewalks are in good to fair condition. There are isolated areas of significant cracks and/or surface deterioration. In order to maximize the pavement life, isolated saw cutting and replacing, crack sealing, seal coating, and restriping of the asphalt paving will be required during the evaluation period. The estimated costs of these items are included in the Replacement Reserves Report.

- The asphalt pedestrian walkways are in good to fair condition. Isolated areas of cracks and/or surface deterioration were observed. Repair or replacement of the asphalt paving at the walking paths will be required during the evaluation period. The estimated costs of these items are included in the Replacement Reserves Report.
- The concrete gutters, and sidewalks throughout the property are in overall good condition. Routine cleaning and maintenance will be required during the evaluation period.
- Areas of damaged and displaced concrete curbing were noted along the entry driveway and will require replacement at this time. Additional asphalt and concrete curbing replacement is anticipated during the evaluation period. The estimated costs of these items are included in the Replacement Reserves Report.
- The heaved areas of concrete sidewalk at the base of the steps leading to the asphalt paved parking lot, which is located near southwest corner of the property along West Hill Road, create a vertical displacement in the walking surface, which pose tripping hazards. It is recommended that the heaved areas of concrete sidewalk be replaced. The estimated cost of this work is included in the Replacement Reserves Report.
- The concrete steps which are located at the end of the 200 corridor connect the building to the play fields were observed to have loose metal tread noses. In addition, the handrail was noted to be damaged. EMG recommends repairs at this time. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for asphalt is to use recycled asphalt pavement (RAP) from a local source. This will reduce carbon emissions from production and transportation of new asphalt material.
- A sustainable recommendation for concrete is to use recycled concrete aggregate (RCA) from a local source. This will reduce carbon emissions from production and transportation of new concrete material.

5.3. DRAINAGE SYSTEMS AND EROSION CONTROL

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

Observations/Comments:

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

Sustainable Recommendations:

- There are no sustainable recommendations for the drainage systems.

5.4. TOPOGRAPHY AND LANDSCAPING

The property slopes gently downward from the west side of the property toward the east property line.

The landscaping consists of trees, shrubs, and grasses.

Surrounding properties include single-family residential developments to the south and east. A small fire station is located along the eastern property line. Westhill High School is located on the opposite side of Roxbury Road to the north.

Observations/Comments:

- The topography and adjacent uses do not appear to present conditions detrimental to the property.
- The landscape materials are in good to fair condition. According to the client provided JMOA five year capital plan, tree and shrub planting replacements are planned at the modular classrooms and around the building. A budgetary cost allowance for this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- None.

5.5. GENERAL SITE IMPROVEMENTS

Property identification is provided by wooden monument signage that faces West Hill Road and a similarly designed and constructed wall-mounted sign, which is located at the end of the 200 corridor.

Site lighting is provided by surface-mounted light fixtures on the exterior walls and pole-mounted fixtures. Recessed light fixtures are located in the exterior soffits.

A perimeter fence is located along the entire perimeter of the property. The fence is constructed of chain link with metal posts.

Dumpsters are located adjacent to the receiving dock area and are placed on the asphalt paving. The dumpsters are not enclosed.

Two (2) playground areas are located to the south of the building. Each playground contains various pieces of play equipment, which includes slides, climbing apparatus, and swings. The playground surface consists of wood chips play surface. The paved sections of the playgrounds and athletic areas are described in Section 5.2.

Basketball goals are located to the south of the building.

A soccer field and a baseball diamond are located to the south and east of the building.

Observations/Comments:

- The property identification signs are in good condition. Routine maintenance will be required during the evaluation period.
- The exterior site and building light fixtures are in good condition. According to the client provided JMOA five year capital plan, the installation of additional site lighting around the building is planned for security. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- The site fencing is in good to fair condition. Damage to the metal fencing was observed near the asphalt paved basketball courts. The damaged sections of fencing will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The remaining sections of chain link fencing will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The dumpsters are owned and maintained by the refuse contractor.
- The playground equipment is in good condition and will require routine maintenance during the evaluation period. Based on its estimated Remaining Useful Life (RUL), some of the playground equipment will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Based on its estimated Remaining Useful Life (RUL), the basketball goals and stops will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

- The fields are in good condition. The fields are not currently irrigated. EMG recommends installing an underground irrigation system at the fields and adjacent areas. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for site lighting is to install photo sensors on exterior lighting. This will reduce energy consumption by reducing the time the exterior lights are used.

A sustainable recommendation for fencing is to install recycled PVC fence sections during fencing replacement.

6. BUILDING ARCHITECTURAL AND STRUCTURAL SYSTEMS

6.1. FOUNDATIONS

According to the structural drawings, the foundations consist of cast-in-place, concrete, perimeter, wall footings with concrete foundation walls. The foundation systems include reinforced, concrete, column pads.

Portions of the building have reinforced, concrete slabs-on-grade with integral, perimeter footings, interior footings, and column pad footings, all bearing directly on the soil.

The modular additions have raised floors supported by concrete piers.

The subterranean basement has load-bearing, concrete perimeter, retaining walls.

Observations/Comments:

- The foundations and footings could not be directly observed during the site visit. There is no evidence of movement that would indicate excessive settlement.
- The subterranean basement walls are in good condition. There is no evidence of movement or water infiltration.

Sustainable Recommendations:

- There are no sustainable recommendations for foundations.

6.2. SUPERSTRUCTURE

The main portions of the building have load-bearing, concrete masonry unit (CMU), exterior walls supporting the roof. The roofs are constructed of metal decks supported by steel beams and open-web, steel joists. Portions of the roofs are constructed of lightweight cementitious, tectum panels supported by open-web, steel joists.

The classroom wings have structural steel columns supporting the roofs. The roofs are constructed of metal decks supported by steel beams and open-web, steel joists.

The modular additions are conventional, wood-framed structures and have load-bearing, wood-framed exterior and interior walls supporting the roofs. The floors are raised wood construction supported by concrete piers. The roofs are constructed of wood rafters and are sheathed with plywood.

Observations/Comments:

- The superstructure is exposed in some locations, allowing for limited observation. Walls and floors appear to be plumb, level, and stable. There are no significant signs of deflection or movement.
- The modular units showed signs of termite damage. Based on this evidence, minor repairs are anticipated. A cost allowance for minor structural repairs is included in the Replacement Reserves Report.

- The steel columns at the front entrance canopy and the loading dock are in fair to poor condition. The bases are rusted and deteriorated. Some are severely damaged with bulging. Replacement or repair is required immediately. It is recommended that protective bases such as sloped top concrete are provided to help prevent future degradation of the new columns. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- There are no sustainable recommendations for superstructure.

6.3. ROOFING

The primary roofs are classified as flat roofs. The roofs are finished with a single ply membrane or by multi-ply, bituminous, built-up membranes topped with ballast. The roofs are insulated with rigid insulation boards.

The exterior perimeter walls extend to the surface of the roofs, creating nearly flush curbs. The cafeteria section has perimeter walls that extend just beyond the surface of the roofs, creating low curb parapets. The roof membrane at the parapets wraps up the parapet wall and the wall is topped with a sheet metal coping. The roof membrane wraps over the curbs and is terminated by a metal drip edge. The roofs have sheet metal and membrane base and edge flashing.

Portions of the roofs extend beyond the exterior walls. A perimeter of exposed concrete soffit extends along portions of the building. The concrete extends horizontally towards the interior of the building and is tied into the structure.

A large area at the front elevation is covered by a thin steel reinforced concrete canopy. The canopy is finished with the same single ply membrane. The underside is painted with an epoxy coating.

Storm water is drained from the roofs by internal drains. Portions of the roof are drained by sheet metal gutters and downspouts which empty to grade.

Curb-mounted skylights provide natural illumination in some of the upper floor common areas and in the covered walkway.

There are no attics. The roof structures are exposed or are concealed by drop acoustic tile ceilings.

Roof access is through a curb mounted metal roof hatch.

Observations/Comments:

- The roof finishes vary in age. The white TPO membrane at the 400 wing is two years old. The built up roofing is approximately 20 years old. The black single ply membranes range from two to eight years old. Portions of the roofs are covered by a 20 year warranty. A copy of the warranty was requested, but was not available.
- The fields of the roofs are in good to fair condition. Based on their estimated Remaining Useful Life (RUL), the built-up roof membranes will require replacement during the evaluation period.
- EMG also conducted a separate roof assessment for this project. Wet areas of insulation requiring repair were found during infrared scans of the roof. Additionally recommendations for anticipated roof replacement work are also provided in this report. Estimated costs from this report recommended during the evaluation period are included in the Replacement Reserves Report. See EMG project number 88166.09R-002.244 for more detailed discussion and findings.

- The exposed soffit at the perimeter of the building is in good to poor condition. Spalling and damaged areas were observed in isolated areas throughout the building. Epoxy injection patching will be required. The larger areas of damage will require steel reinforcing tied into the existing sections. A cost allowance for this work is included in the Replacement Reserves Report.
- According to the POC, there are a few active roof leaks. There is isolated evidence of active roof leaks. These roof leaks will require immediate repair. The estimated cost of this work is included in the Replacement Reserves Report.
- There is no evidence of roof deck or insulation deterioration. The roof substrate and insulation should be inspected during any future roof repair or replacement work.
- There is no evidence of fire retardant treated plywood (FRT) and, according to the POC, FRT plywood is not used.
- The roof flashings are in fair condition and will require routine maintenance during the evaluation period. The flashings should be replaced during the next roof membrane replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The parapet walls and copings are in good condition and will require routine maintenance during the evaluation period.
- Roof drainage appears to be adequate. Clearing and minor repair of drain system components should be performed regularly as part of the school's routine maintenance program.
- The skylights are in good to fair condition. During the recent roof membrane replacement, it was reported that the skylights were not replaced; only reinstalled. Some damage was sustained during the reinstallation. Metal trim was observed to be loose and damaged interior finishes was also observed on some. The cafeteria skylights were raised on higher curbs. Some of the repairs can be performed through routine maintenance. One skylight was observed to have a broken seal. Based on the Remaining Useful Life (RUL) and condition, the skylights will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for roofing is replace the black single ply roofing and the built up roofing with light colored single ply membranes.

6.4. EXTERIOR WALLS

The exterior walls are finished with brick masonry veneer and curtain wall. The soffits are exposed. Portions of the exterior walls at the Media Center are accented with factory finished glazed ceramic panels and ceramic tile.

Isolated areas are clad with an exterior insulation and finish system (EIFS) on metal stud-framed walls. These areas include the entrance fascia and soffit at the ends of the classroom wings.

The elevations of the classroom wings are clad with a metal-framed, curtain wall system. The curtain wall system is anchored to the superstructure. The curtain wall has horizontal bands of tinted, glazed, vision panels. The spandrels are finished with factory finished metal panels. The curtain wall at the Media Center has an interior metal-frame system with butted joint exterior glazed panels.

Horizontal and vertical bands of sealant are installed at glazing joints, spandrel panel joints, and at joints between finish transitions.

The modular additions are finished with painted T1-11 engineered wood panels.

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

Observations/Comments:

- The brick veneer is in good to poor condition. Some isolated areas of settlement and cracked mortar joints and bricks were observed. Soft brick was observed on the 500 wing with evidence of spalling and chipping. The corner near the north end modular addition has spalled concrete parging over the brick veneer creating holes in the exterior. Repairs and replacements will be required. The estimated cost of this work is included in the Replacement Reserves Report.
- The isolated EIFS is in good condition and will require painting and patching during the evaluation period. The cost of this work is relatively insignificant and can be performed by school staff.
- The engineered wood on the modular additions is in poor condition. Isolated evidence of active termite and moisture damaged conditions were observed on the north side of the 4th grade wing. Other areas were damaged from vandalism and age. Replacement of the exterior finish and some structural replacements will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report. See Section 1.2 for more information regarding a follow up study for the hidden termite damage.
- In addition to the termite damage, animal burrowing was observed going under the north end modular wing. These areas will require sealing off to prevent animal intrusions under the structures. Based on the reported age and observed conditions of the modular wings, full removal and replacement with permanent structures is recommended. No costs for this work are included in the tables.
- The curtain wall system is in good to poor condition. The south side of the 200 wing, two classrooms on the north side of the 200 wing and the Media Center all have newer double paned glazing. The remainder has single paned glazing. The costs are under Section 6.6 for windows since they are classified as storefront based on height.
- The sealant is flexible, smooth, and in good condition at the newer units and will require routine maintenance during the evaluation period. The sealant is in poor condition and is dry rotted at the single paned sections. In some of the junctions of where the wings meet other walls of the building are deep recessed joints with mastic or metal flashing. Birds are nesting in some of these joints and it is difficult to provide a good seal in these narrow recesses. These areas should be provided with flashing and sealant closer to the surface of the walls to prevent future nesting and to maintain a tight seal at the exterior. Replacement is required and should be done in conjunction with the window replacements. The estimated cost of this work is included in the Replacement Reserves Report.
- The metal fascia is in good to poor condition. Isolated sections are missing and require replacement. The cost of this work is relatively insignificant and can be performed through routine maintenance.

Sustainable Recommendations:

- A sustainable recommendation for the use of low VOC paints of the exterior finishes and sealant/caulking around windows, doors, control joints and change of finish.

6.5. EXTERIOR AND INTERIOR STAIRS

The interior basement stairs are constructed of steel and have closed risers and steel treads. The handrail and baluster are constructed of metal.

The main building exterior stairs are constructed of reinforced concrete. The handrails and balusters are constructed of metal.

The exterior stairs at the modular additions are constructed of wood and have open risers and wood treads. The handrails and balusters are constructed of wood. The ramps at the modular additions are also wood. Balusters are constructed of wood with metal handrails attached.

Observations/Comments:

- The exterior and interior stairs, balusters, and handrails are in good to poor condition.
- Portions of the pressure treated wood ramps and stairs have been replaced as needed due to vandalism. Based on their estimated Remaining Useful Life (RUL) and conditions, the pressure treated ramps and stairs will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Some of the railings have been vandalized or damaged including one that has a sharp edged cut at the end of the 200 wing, and others that have been removed completely by vandals. Replacements or repairs are required immediately. The estimated cost of this work is included in the Replacement Reserves Report.
- The nosings on the concrete stairs at the end of the 200 wing are loose, broken or missing creating potential tripping hazards and will require immediate replacement or repairs. The estimated cost of this work is included with the Section 5.2 stair repairs in the Replacement Reserves Report.

Sustainable Recommendations:

- There are no sustainable recommendations for the interior stairs.
- A sustainable recommendation for exterior stairs and ramps is to replace the pressure treated wood with alternative sources such as composite material, sustainably managed and grown hardwood or high-density polyethylene. Disposal of pressure treated wood should be in lined landfills to avoid leaching of harmful chemicals into the ground.

6.6. WINDOWS AND DOORS

The windows are part of an aluminum-framed, storefront system incorporating the entry doors. The windows at the 200, 400 and part of the 500 wing are part of a curtain wall system described in Section 6.4 and are tied into the building structure. Based on height, they are classified as storefront. The windows are glazed with insulated or single panes set in metal frames. The newer units have some operable awning style windows with screens; while the older units have hopper style operable units within the system. The original windows have wood framed screens attached to the exterior of the system. Some doors, such as the main entrance, are fully-glazed, aluminum-framed doors set in the metal framing system.

The clerestory portion of the gymnasium addition has corrugated, fiberglass panels to allow for natural light.

The classroom doors are painted metal doors set in metal frames. These doors have knob and lever handle hardware.

The service doors are painted, metal doors set in metal frames. The doors have cylindrical locksets with lever, knob or push/pull handle hardware.

A total of three overhead doors are located at the partial basement and at the ancillary storage building. The overhead doors are coiling and flush panel metal doors and are equipped with mechanical openers.

The loading dock is equipped with bumpers. A metal gate is provided at the loading dock and is attached to the steel columns.

Observations/Comments:

- The newer storefront window system is in good condition and will require routine maintenance during the evaluation period. The older single paned system is in poor condition. The spandrel panels are peeling throughout and rusting in isolated areas. Refer to Section 6.4 for further details about the conditions of the storefront/curtain wall system. The original glazed areas also have peeling paint and severely deteriorated window mastic. Based on its estimated Remaining Useful Life (RUL) and conditions, the single paned sections of the storefront system will require replacement with a double paned system early in the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report. Based on the age of the windows a cost allowance for proper disposal of asbestos or lead paint containing windows is also included in the Replacement Reserves Report.
- One kindergarten classroom window has a BB hole in the glass. This pane will be replaced during the switch to double paned units.
- The clerestory panels at the gymnasium addition are single paned and the sealant is deteriorated allowing air infiltration and there are also complaints of bees and other insects. These panels should be replaced with a double paned system including new frame and new sealant. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the POC, the property does not experience a significant number of complaints regarding window leaks or window condensation. There is no evidence of window leaks or condensation.
- The windows at the modular sections have broken seals and damaged screens. Based on their estimated Remaining Useful Life (RUL) and conditions, the windows in the modular units will require replacement early in the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- All damaged or missing window screens should be replaced as well. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided JMOA five year capital plan, window treatment replacements are planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- The exterior doors and door hardware are in fair condition. The two pairs of front entrance doors are difficult to open and require immediate replacement or repairs. Based on their estimated Remaining Useful Life (RUL) and conditions, some of the remaining doors will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The overhead door at the lower level storage area is in fair condition. Based on it's estimated Remaining Useful Life (RUL) and conditions, the overhead door will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The dock equipment is in fair to poor condition. The bumpers are deteriorated and the metal gate is severely rusted and deteriorated. Rust was also observed at the bottom of the columns and the stair balusters. Scraping and painting will be required and should be performed routinely. The bumpers and metal gate will require replacement. The raised concrete slab floor over the basement access is cracked and allowing moisture to penetrate. Rebar is also exposed at the underside and along the concrete stairs. The concrete will require some epoxy injection repairs. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for windows is to replace all single paned windows with insulated paned units with thermal breaks.
- A sustainable recommendation for doors is to replace with insulated, energy efficient doors.

6.7. PATIO, TERRACE, AND BALCONY

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

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

The lobby contains bulletin boards, sculptures and display cases. Corridors are accessed directly from the lobby.

Classrooms and offices are accessed from corridors beyond the lobby.

Restrooms are located across from the gymnasium, cafeteria, in the nurse's office and adjacent to the main offices. There are approximately five staff or public restrooms and six sets of student restrooms off corridors plus approximately three additional restrooms shared in classrooms with corridor access.

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

Common Area	Floors	Walls	Ceilings
Lobby	Polished stone	Painted drywall and exposed brick	Painted drywall and suspended acoustic tiles
Corridor	Vinyl tile	Stained wood panels and painted CMU or exposed brick	Painted drywall and suspended acoustic tiles
Restrooms	Ceramic tile	Ceramic tile wainscot and painted drywall	Suspended acoustic tiles
Office	Carpet	Painted drywall	Suspended acoustic tiles
Media Center	Carpet	Painted drywall or curtain wall	Painted drywall and suspended acoustic tiles
Auditorium	Painted concrete and carpet and vinyl tile	Stained wood veneer panels	Painted plaster
Cafeteria	Wood	Painted concrete masonry units	Exposed structure
Gymnasium	Wood	Painted concrete masonry units	Exposed structure

Observations/Comments:

- It appears that the interior finishes in the common areas have not been renovated within the last five years.
- The interior finishes in the common areas are in good to fair condition. Based on its estimated Remaining Useful Life (RUL), the common area carpet and vinyl tile will require replacement during the evaluation period. Ceramic tile replacement in the restrooms is also required. The estimated cost of this work is included in the Replacement Reserves Report.

- The wood flooring in the gymnasium, auditorium stage and cafeteria are in good to fair condition. Refinishing will be required during the evaluation period. It is recommended that the cafeteria flooring be covered with another material suited for current programmed space. The estimated cost of this work is included in the Replacement Reserves Report.
- The stained wood panels in the auditorium and corridors are in fair to poor condition. The veneer was also observed to be delaminated or damaged throughout. Replacement will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Interior painting will also be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Suspended ceiling tile replacement will also be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided JMOA five year capital plan, acoustical treatment installation is planned for the auditorium. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- According to the client provided AHERA document flooring with asbestos-containing material is located in some of the classrooms, storage rooms, main office and corridor. A cost allowance for proper removal and disposal of the asbestos-containing vinyl tile is included in the Replacement Reserves Report as part of the recommended vinyl tile replacement work. This allowance is based solely on the information presented in the client provided AHERA document. An excerpt of this AHERA document is included in the appendices. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

- Sustainable recommendations for the interior finishes are to use low VOC paints, linoleum or cork flooring, and recycled material carpeting. Disposal of the carpeting should be sent to carpet manufacturers that recycle carpeting.

7. BUILDING (CENTRAL) MECHANICAL AND ELECTRICAL SYSTEMS

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

Heating is provided in the classrooms by perimeter, wall-mounted, finned-tube, radiant heat units. The radiant units are supplied with either low pressure steam or hot water by the central system. Heating is provided in the restrooms by wall-mounted finned-tube radiant heat units. Heating is provided in the corridor by wall-mounted finned-tube radiant heat units. Heating is provided in the cafeteria and the auditorium by a make-up air unit that is supplied with low pressure steam by the central system. Heating provided in the gymnasium via two (2) make-up air units that are supplied with low pressure steam by the central system.

Heating and cooling are provided in the media center by a single 37.5 ton, direct-expansion, constant-volume, gas-fired, packaged, rooftop-mounted, HVAC unit. The cooling equipment uses R-22 as a refrigerant.

Heating and cooling are provided in the portable classrooms by individual, direct-expansion, constant-volume, electric, packaged, rooftop-mounted, HVAC units. There are a total of 10 units, with an average capacity of 5 tons. The cooling equipment uses R-22 as a refrigerant.

The following table describes the rooftop units:

Packaged Rooftop Units				
Quantity	**Manufacturer**	**Cooling Capacity**	**Heating Type**	**Manufacture Year**
3	Trane	5 tons	Electric Resistance	1997
5	Trane	5 tons	Electric Resistance	2005
2	Trane	5 tons	Electric Resistance	x
1	MacQuay	37.5 tons	Gas-fired	1995

Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are located in each space. The heating and cooling system are controlled by local thermostats.

Additional cooling within the isolated classrooms and administrative offices is provided via window mounted, self contained air-conditioning units.

Low pressure steam and hot water for the central heating system is supplied by three dual fuel boilers. Boilers No. 1 and 2 are manufactured by HB Smith and have a rated input capacity of 2,766 MBH and are located within the original boiler room. These units supply low pressure steam and hot water to a majority of the building. Boiler No. 3 is manufactured by HB Smith has a rated input capacity of 657 MBH and is located within the 300 corridor boiler room. This unit supplies hot water to the 300 corridor section of the building only.

Fuel oil is supplied to the boilers by a fuel oil pump set and a 5,000-gallon underground storage tank (UST). The UST is located beneath the main entry drive near the receiving dock.

Circulating pumps provide distribute the low pressure steam and/or hot water to each temperature-controlled space via a two-pipe distribution system. The low pressure steam supplies the make-up air units and the hot water supplies the radiators and baseboard heaters.

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

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

The heating and cooling system is controlled by a building energy management system (EMS), located in the custodial office. The EMS provides individual control and performance data for the boilers, circulating pumps, rooftop units, air handling units, ventilation units, and domestic water heating system. The system is actuated by pneumatic controls. The air compressor is located in the mechanical room.

Observations/Comments:

- The HVAC systems are maintained by the in-house maintenance staff.
- The HVAC equipment varies in age. The boilers were reportedly replaced in 2001. Five (5) of the seven (7) RTUs on the 100 corridor portable classrooms were replaced in 2005. The three (3) RTUs on the 500 corridor portable classrooms were replaced in 1997.
- The HVAC system is reportedly highly inconsistent. Maintenance and administrative staff reported that temperature control is inadequate. It is recommended that an HVAC contractor evaluate the building for the potential reconfigure the existing control system or to add increased zoning for better temperature control in the classrooms. It is also recommended that ventilation in the corridors be included in the HVAC evaluation. The cost of the follow-up evaluation is included in section 1.2. A budgetary allowance to upgrade or repair the existing controls is included in the Replacement Reserves Report. A budgetary allowance to improve ventilation and cool the areas of the building that are currently only heated is also included in the Replacement Reserves Report.
- The boilers appear to be in good condition and will require routine maintenance during the evaluation period.
- The underground storage tank could not be directly observed.
- The fuel oil pump set appears to be in good condition and will require routine maintenance during the evaluation period.
- The circulating pumps appear to be in good condition. Based on their estimated Remaining Useful Life (RUL), the pumps will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The finned-tube radiant heat units appear to be in good condition and will require routine maintenance during the evaluation period.
- The rooftop units appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL), several rooftop units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The make-up air unit in the gymnasium is in fair condition. Based on their estimated Remaining Useful Life (RUL), the unit will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The exhaust ventilation system and equipment appear to be in fair condition. Several units appear to be non-operational. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided JMOA five year capital plan, the installation of an exhaust fan for the art room kiln is planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report.

- According to the client provided AHERA document flooring with asbestos-containing material is located behind radiators in rooms 501-509 and the rear wall of the auditorium. A cost allowance for proper removal and disposal of the asbestos-containing transite board is included in the Replacement Reserves Report. This allowance is based solely on the information presented in the client provided AHERA document. An excerpt of this AHERA document is included in the appendices. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

- A sustainable recommendation for HVAC is to replace all unitary air-conditioning equipment with high-efficiency, energy-star rated cooling equipment.
- An additional sustainable recommendation for HVAC is to replace remaining original handling units with modern air handlers, which include economizer modes and a centralized exhaust air system with an enthalpy wheel. This would reduce energy consumption by managing the amount of energy used in ventilating the areas supplied by the air handling units.

7.2. BUILDING PLUMBING

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

The water meter is located within a mechanical equipment room adjacent to the auditorium and is reportedly fed from a main water line running beneath West Hill Road.

Domestic hot water is supplied by two, gas-fired commercial domestic water heaters. Each water heater has a rated input capacity of 160,000 Btu/Hr. The water heaters are located in the boiler room.

The student and staff restrooms have commercial-grade fixtures and accessories, including water closets and lavatories.

Observations/Comments:

- The plumbing system appears to be well maintained and in good condition. The water pressure appears to be adequate. The plumbing system will require routine maintenance during the evaluation period.
- There is no evidence that the property uses polybutylene piping for the domestic water distribution system. According to the POC, polybutylene piping is not used at the property.
- The pressure and quantity of hot water appear to be adequate.
- There are no drinking fountains near the playgrounds. It is recommended that drinking fountains be installed at each playground. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided JMOA five year capital plan, the installation of RPZ valves and plumbing hot water supplies to the cold water only sinks is planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- The water heaters were reportedly replaced approximately 8 years ago. Based on the estimated Remaining Useful Life (RUL), the water heaters will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The accessories and fixtures in the common area restrooms are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the accessories and fixtures will require routine maintenance during the evaluation period.

- The drinking fountains are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the drinking fountains will require routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for plumbing is to replace the restroom fixtures with water-saving devices, such as low-flow faucet aerators and low-flush volume toilets and urinals.
- An additional sustainable recommendation for plumbing is to replace the domestic water heaters with high-efficiency, energy star rated commercial water heaters.

7.3. BUILDING GAS DISTRIBUTION

Gas service is supplied from the gas main on the adjacent public street, West Hill Road. The gas meter and regulator are located within a fenced enclosure adjacent to the receiving dock area. The gas distribution piping within the buildings is malleable steel (black iron).

Observations/Comments:

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

Sustainable Recommendations:

- There are no sustainable recommendations for gas distribution.

7.4. BUILDING ELECTRICAL

The electrical supply lines run underground to a pad-mounted transformer that feeds the interior-mounted electrical meter.

The main electrical service size is 1,600-Amps, 277/480-Volt, three-phase, four-wire alternating current (AC). The electrical wiring is reportedly copper, installed in metallic conduit and non-metallic, sheathed cable. Circuit breaker panels are located throughout the building.

The building is equipped with a public address and intercom system, which allows communication between the main office and each classroom. The public address control unit is located in the main office. The auditorium is equipped with a stage lighting system and a portable sound system.

Observations/Comments:

- The on site electrical systems are owned and maintained by the utility company. This includes transformers, meters, and all elements of the on site systems.
- The electrical power appears to be adequate for the property's demands.
- The switchgear, circuit breaker panels, and electrical meters appear to be in good condition and will require routine maintenance during the evaluation period.

- The interior lighting is in fair condition. Upgrades and replacements to the interior lighting have not been performed in recent years. Based on energy conservation and current condition, EMG recommends replacing all lighting fixtures with high-efficiency fluorescent light fixtures or LED fixtures. The estimated cost of this work is included in the Replacement Reserves Report.
- The public address system is reportedly in fair condition. It is recommended that the public address system be upgraded to allow proper communication with all classrooms. According to the client provided JMOA five year capital plan, the PA system and other communication upgrades are planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report. This allowance also includes upgrades for phone, internet, alarm and emergency lighting improvements.
- According to the client provided JMOA five year capital plan, clock and bell upgrades are planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- Based on its estimated Remaining Useful Life (RUL), the auditorium sound system will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Based on its estimated Remaining Useful Life (RUL), the stage lighting system will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided AHERA document flooring with asbestos-containing material is located at stage wiring. A cost allowance for proper removal and disposal of the asbestos-containing insulation is included in the Replacement Reserves Report as part of the recommended stage lighting replacement work. This allowance is based solely on the information presented in the client provided AHERA document. An excerpt of this AHERA document is included in the appendices. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

- A sustainable recommendation for building electrical is to install occupancy sensors in place of light switches.

7.5. ELEVATORS AND CONVEYING SYSTEMS

A wheelchair lift is provided at the right side of the stage in the auditorium and at the entrance to the 300 corridor portion of the building.

Observations/Comments:

- The wheelchair lift, although not tested, was reported to be in poor condition. Repairs are required at this time. Furthermore, based on the estimated Remaining Useful Life (RUL), the wheelchair lift will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for the wheelchair lifts to be equipped with high efficiency motors to reduce energy consumption.

7.6. FIRE PROTECTION SYSTEMS

The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations, and alarm horns. Siamese connections are located on the exterior of the building along the front elevation near the auxiliary entrance, which is located at the rear of the auditorium. Hardwired smoke detectors are located throughout the common areas. The nearest fire hydrants are located along the public streets bordering the property and are approximately 100 feet from the building.

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

Fire sprinkler risers are located in a fire protection equipment room. The system is not equipped with a fire pump as street pressure is adequate. The system is equipped with a backflow preventer.

A central fire alarm panel is located in the maintenance office, which is located within the 400 corridor portion of the building, and monitors the pull stations, smoke detectors, and flow switches. An annunciator panel is located near the West Hill Road entrance. The alarm panel also sounds the alarm and automatically notifies the monitoring service and the fire department in the event of trouble.

The commercial kitchen is not equipped with a dry-chemical, fire suppression system.

The single-story structure is note equipped with any fire rated stairwells.

Observations/Comments:

- Information regarding fire department inspection information is included in Section **3.2.**
- The fire sprinklers appear to be in good condition and are inspected by a qualified contractor on a routine basis. The fire sprinklers will require routine maintenance during the evaluation period.
- The fire extinguishers are tested annually and appear to be in good condition. The fire extinguishers were tested and inspected within the last year.
- The pull stations and alarm horns appear to be in good condition and will require routine maintenance during the evaluation period.
- Smoke detector replacement is considered to be routine maintenance.
- Exit sign and emergency light replacement is considered to be routine maintenance.
- The central alarm panel appears to be in good condition and is tested regularly by a qualified fire equipment contractor. Equipment testing is not within the scope of a Facilities Needs Assessment. Parts may become obsolete or difficult to find. Based on the Remaining Useful Life (RUL), the panel will require replacement during the evaluation period. The cost of this work is included in the Replacement Reserves Report.
- Fire sprinkler protection is not provided in the modular classrooms. According to the client provided JMOA five year capital plan, this work is planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- The security panel appears to be in good condition. Equipment testing is not within the scope of a Facilities Needs Assessment.
- The installation of a dry-chemical, fire suppression system in the kitchen is recommended. The cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

There are no sustainable recommendations for fire protection.

8. INTERIOR SPACES

8.1. INTERIOR FINISHES

The following table generally describes the interior finishes in units:

Typical Space Finishes			
Room	**Floor**	**Walls**	**Ceiling**
Classrooms	Vinyl tile	Painted drywall and vinyl wall covering and curtain wall system	Suspended acoustic tiles
Maintenance Shop & Storage	Concrete	Painted drywall and exposed masonry	Exposed structure or painted concrete
Kitchens	Quarry tile	Glazed concrete masonry units and painted drywall	Suspended tiles
Restrooms	Ceramic tile	Painted concrete masonry units	Suspended acoustic tiles

The interior doors are painted metal or stained, solid wood doors set in metal frames. The interior doors have cylindrical locksets with lever handle hardware.

Observations/Comments:

- The interior finishes are in fair to poor condition. Based on the Estimated Useful Life and the observed conditions, replacement of the vinyl wall covering. The costs are included in the Replacement Reserves Report. Painting and ceiling tile replacement costs are provided in Section 6.8 of the Replacement Reserves Report.
- The interior doors and door hardware are in good condition and will require routine maintenance during the evaluation period. Some door frames were observed to be rusted due to mopping and will need to be repaired or replaced which can be performed through routine maintenance.

Sustainable Recommendations:

- Sustainable recommendations for the interior finishes are to use low VOC paints, linoleum or cork flooring, and recycled material carpeting.

8.2. COMMERCIAL KITCHEN EQUIPMENT

The kitchen area has a variety of commercial kitchen appliances, fixtures, and equipment. The kitchen includes the following major appliances, fixtures, and equipment:

Appliance	Comment
Refrigerators	Reach-In

Appliance	Comment
Freezers	Reach-In
Ranges	Gas
Ovens	Gas
Griddles / Grills	Gas
Fryers	Yes
Hood	Exhaust ducted to exterior
Dishwasher	Leased
Microwave	Yes
Ice Machines	Yes
Steam tables	Yes
Work tables	Stainless steel
Shelving	Stainless steel

Observations/Comments:

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

Sustainable Recommendations:

A sustainable recommendation for the cooking equipment is to replace the appliances and refrigeration units with Energy Star rated or equivalent equipment.

8.3. HVAC

See Section 7.1 for building mechanical systems.

8.4. PLUMBING

Domestic water is supplied by the central system described in Section 7.2.

9. OTHER STRUCTURES

A maintenance and storage building is located on the south side of the property. The maintenance building is a concrete masonry unit bearing wall structure with a concrete slab on grade. The building has two roll up overhead doors that are discussed in further detail in Section 6.6. The roof is a flat construction comprised of wood joists and wood substrate. It is finished with a multi-layer built up roofing membrane. The exterior walls are painted.

Observations/Comments:

- The exterior finishes are in fair to poor condition. Peeling paint was observed near the bottom of one wall. Dirt is piled against this wall on the interior. The moisture is leaching through and deteriorating the paint finish. Based on the Estimated Useful Life and the observed conditions, waterproofing and painting the exterior walls are recommended during the term. The costs are included in the Replacement Reserves Report.
- The roofing is in poor condition and is leaking. A full roof replacement is recommended. The costs are included in the Replacement Reserves Report.
- Bird nests were observed on the interior in the structure. The soffit and fascia are in fair condition allowing for animals to get inside. Repairs and replacement finishes are recommended. The costs are included in the Replacement Reserves Report.
- The exterior doors and door hardware are in fair condition. See Section 6.6 for recommendations and costs.
- The overhead doors are in fair condition. Based on their estimated Remaining Useful Life (RUL) and conditions, the overhead doors will require replacement during the evaluation period. The cost of this work is relatively insignificant and can be performed through routine maintenance.

Sustainable Recommendations:

- Sustainable recommendations for the exterior finishes are to use low VOC paints.

10. ENERGY BENCHMARKING

This section is pending utility invoice data from the client.

11. APPENDICES

APPENDIX A: Photographic Record

APPENDIX B: Site Plan

APPENDIX C: Supporting Documentation

APPENDIX D: EMG Abbreviated Accessibility Checklist

APPENDIX E: Pre-Survey Questionnaire and Documentation Request Checklist

APPENDIX F: Acronyms and Out of Scope Items

APPENDIX G: Resumes for Report Reviewer and Field Observer

APPENDIX A:
PHOTOGRAPHIC RECORD

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

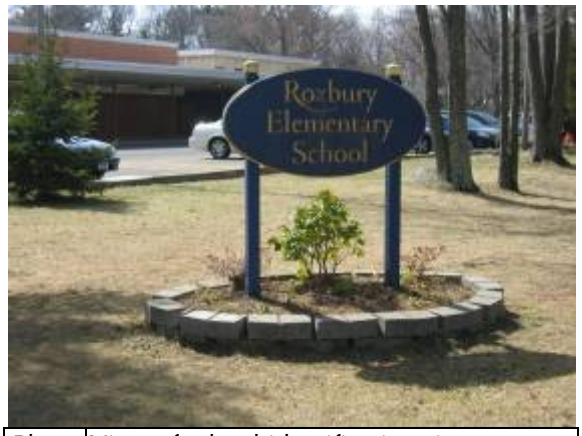


Photo #1:	View of school identification signage.

Photo #2:	View of asphalt paved entry driveway.

Photo #3:	View of building mounted site lighting fixtures.

Photo #4:	View of pole mounted site lighting fixtures.

Photo #5:	View of asphalt paved sidewalks.

Photo #6:	View of wood framed ramp, which is located at the end of the 100 corridor.

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #7:	View of wood framed steps, which are provided at a majority of the modular classrooms.

Photo #8:	View of cast in place concrete steps, which are located at the end of the 400 corridor.

Photo #9:	View of cast in place concrete steps, which are located at the receiving dock.

Photo #10:	View of cast in place concrete steps at the end of the 200 corridor, whose metal tread noses are becoming dislodged.

Photo #11:	View of damaged handrail connection on stairs at the end of the 400 corridor.

Photo #12:	View of damaged handrails on stairs at the end of the 200 corridor.

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #13:	View of asphalt paved sidewalks.

Photo #14:	View of concrete paved sidewalks, which are located at the main entrance.

Photo #15:	View of deteriorated concrete curbing along the main entry drive.

Photo #16:	View of rear parking lot.

Photo #17:	View of deteriorated asphalt pavement.

Photo #18:	View of deteriorated chain link fencing.

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #19:	View of asphalt paved basketball court.

Photo #20:	View of playground equipment.

Photo #21:	View of soccer field.

Photo #22:	View of baseball field.

Photo #23:	View of Boiler No.1.

Photo #24:	View of Boiler No.2.

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #25:	View of Boiler No.3.

Photo #26:	View of hot steam distribution pumps.

Photo #27:	View of auxiliary heaters.

Photo #28:	View of make-up air unit, which is located in small gymnasium.

Photo #29:	View of make-up air unit, which is located in small gymnasium.

Photo #30:	View of make-up air unit, which serves the cafeteria.

Photo #31:	View of ACC-1, which serves the media center.

Photo #32:	View of RTU 500-1.

Photo #33:	View of RTU 500-2.

Photo #34:	View of RTU 500-3.

Photo #35:	View of RTU 100-7.

Photo #36:	View of RTU 100-6.

Photo #37:	View of RTU 100-5.

Photo #38:	View of RTU 100-4.

Photo #39:	View of RTU 100-3.

Photo #40:	View of RTU 100-2.

Photo #41:	View of RTU 100-1.

Photo #42:	View of window mounted air conditioning unit.

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #43:	View of window mounted air conditioning unit.

Photo #44:	View of window mounted air conditioning unit.

Photo #45:	View of fin tube radiators.

Photo #46:	View of pad mounted electrical transformer.

Photo #47:	View of main electrical switchgear.

Photo #48:	View of domestic hot water heaters.

Photo #49:	View of sump pump.

Photo #50:	View of water metering equipment.

Photo #51:	View of natural gas metering equipment.

Photo #52:	View of wheel chair lift, which is located within the 300/500 corridors.

Photo #53:	View of wheel chair lift, which is located within auditorium.

Photo #54:	View of dishwashing station.

EMG

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #55:	View of commercial kitchen equipment.

Photo #56:	View of commercial kitchen equipment.

Photo #57:	View of commercial kitchen equipment.

Photo #58:	View of commercial kitchen equipment.

Photo #59:	View of main sprinkler valves.

Photo #60:	View of spare sprinkler heads.

Photo #61:	View of fire control panel.

Photo #62:	View of fire annunciator panel.

Photo #63:	View of fire extinguisher.

Photo #64:	View of sound and lighting control equipment.

Photo #65:	Front elevation

Photo #66:	Right side – kindergarten classrooms

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #67:	South end elevations of kindergarten and modular addition

Photo #68:	Modular addition

Photo #69:	Kindergarten elevations of 200 wing

Photo #70:	End of 200 wing

Photo #71:	North side of 200 wing

Photo #72:	Media Center elevations

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #73:	South side of 400 wing

Photo #74:	End of 400 wing

Photo #75:	Elevation between 400 wing and 500 wing addition

Photo #76:	South elevation of 500 wing addition

Photo #77:	Link between 500 wing and north end modular addition note damaged corner

Photo #78:	North end modular addition

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #79:	Loading dock and gym

Photo #80:	Roof hatch

Photo #81:	Covered walkway over main entrance with skylights

Photo #82:	Clerestory section of gym

Photo #83:	Roof over main office area and view of Media Center skylight

Photo #84:	Roof overview over 200 wing

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #85:	South end modular addition

Photo #86:	South side of Media Center

Photo #87:	Roof over Media Center

Photo #88:	Roof overview looking towards 500 wing and north end modular wing

Photo #89:	Roof over cafeteria

Photo #90:	Close up detail of skylight

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #91:	Common condition at gym clerestory – broken seals

Photo #92:	ADA parking

Photo #93:	Dislodged brick veneer near from entrance

Photo #94:	Typical condition of column base at main entrance

Photo #95:	Storage building at south end of property

Photo #96:	Broken seals at windows on south modular addition

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #97:	Missing fascia panels

Photo #98:	Spalled concrete soffit panel

Photo #99:	Gap at junction between 200 wing and main office section – evidence of birds

Photo #100:	Condition of original windows

Photo #101:	Settlement cracking at brick veneer

Photo #102:	Damaged security light

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #103:	Evidence of burrowing animals under north modular addition

Photo #104:	Suspect termite damage at north modular addition

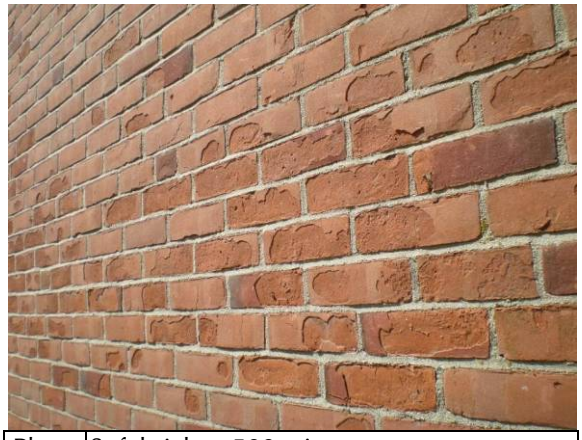


Photo #105:	Soft brick at 500 wing

Photo #106:	Crack and water infiltration of raised concrete landing at basement access

Photo #107:	Loading dock gate and bumper condition

Photo #108:	Railing and stair condition at loading dock

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #109:	Main lobby looking towards Media Center

Photo #110:	Auditorium

Photo #111:	Condition of thin veneer wood panels in Auditorium

Photo #112:	Condition of thin veneer wood panels in Auditorium stage

Photo #113:	Condition of carpet at auditorium

Photo #114:	Computer lab off Media Center

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #115:	Dentist chair in Media Center server room

Photo #116:	Tight conditions at Nurse's office

Photo #117:	Restroom off of Nurse's office

Photo #118:	Gymnasium

Photo #119:	Restrooms across from gym

Photo #120:	Restroom across from gym

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #121:	Corridor to Kindergarten room at far southwest corner

Photo #122:	Kindergarten

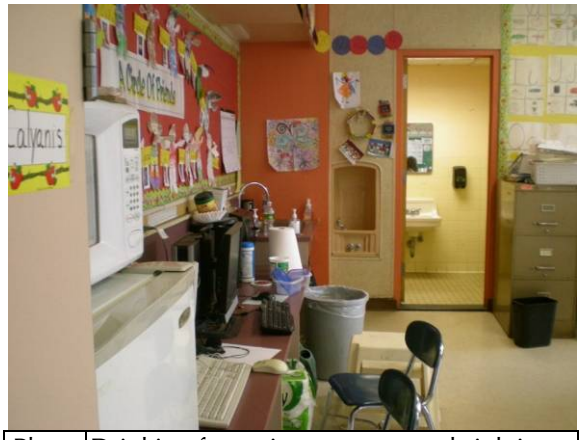


Photo #123:	Drinking fountain, restroom and sink in Kindergarten classroom

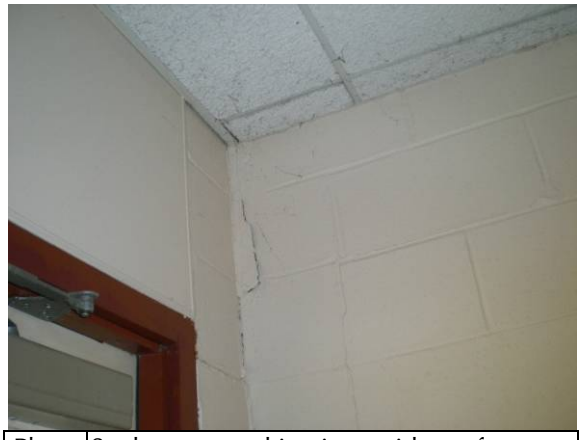


Photo #124:	Settlement cracking in corridor at far northwest corner

Photo #125:	ADA restroom at junction between K classroom and south modular wing

Photo #126:	Vinyl wall covering in south modular wing

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #127:	Classroom in south modular wing

Photo #128:	Typical storage in regular classrooms

Photo #129:	Rusted condition of door frame at restroom within classroom

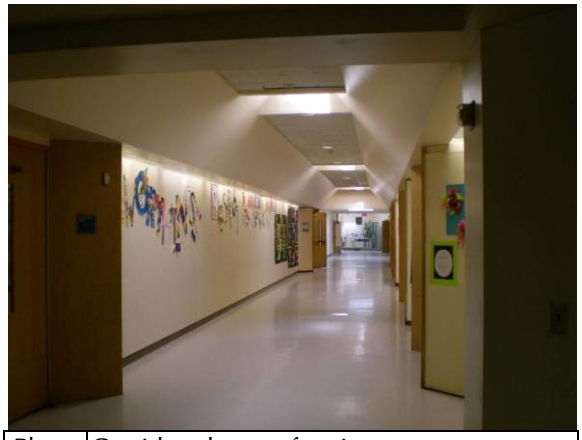


Photo #130:	Corridor along cafeteria

Photo #131:	Cafeteria – no longer used as gym

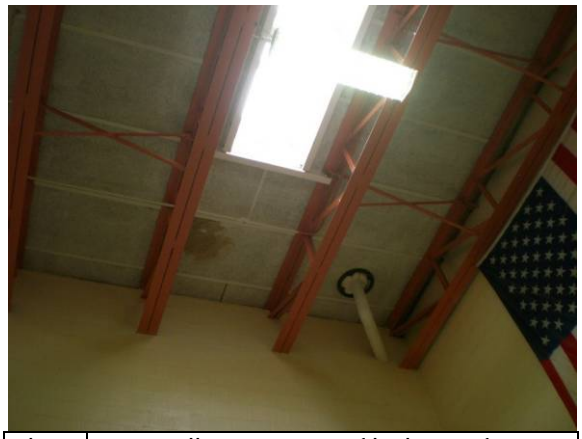


Photo #132:	Reportedly inactive roof leak in cafeteria

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-006.017 **Project Name: Roxbury Elementary School**

Photo #133:	Settlement crack in cafeteria

Photo #134:	Teachers' lounge

Photo #135:	Protruding drinking fountain

Photo #136:	Kiln in art room – non-functional

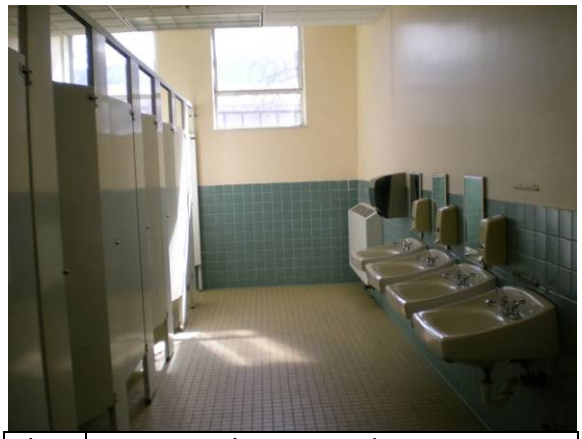
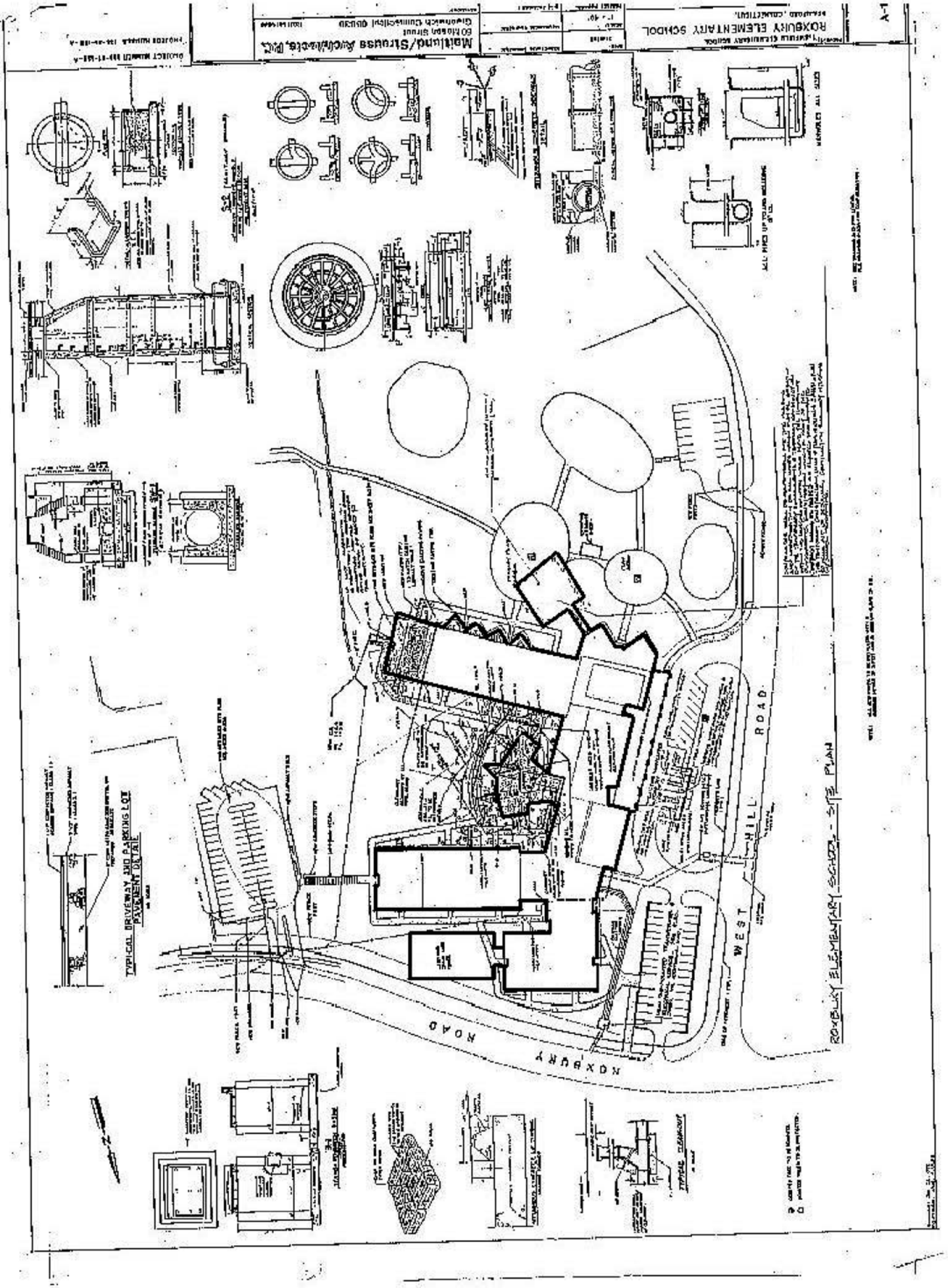


Photo #137:	Restroom at beginning of 400 wing

Photo #138:	Stair lift to access 500 wing

APPENDIX B:
SITE PLAN


ROXBURY ELEMENTARY SCHOOL
Maitland/Strauss Architects, P.C.
WEST HILL ROAD
ROXBURY ROAD
ROXBURY ELEMENTARY SCHOOL - SITE PLAN
TYPICAL DRIVEWAY AND PARKING LOT PAVEMENT DETAIL

APPENDIX C:
SUPPORTING DOCUMENTATION

Cost Comparison Between JMOA Capital Plan and EMG Replacement Reserves						
Roxbury Elementary						
Client - Project Name	Client Cost	EMG Cost	EMG Shortage	Out of Scope?	Is work completed?	EMG Cost Comments
Replace plantings and trees by modular classrooms and around building	$29,281	$26,019	$3,262	No	No	Added
Reseal all parking areas, Repave student pick-up area	$213,556	$91,500	$122,056	No	No	Cost seems high
Replace fending and backstops	$29,175	$36,733	-$7,558	No	No	
Repair selected roofs	$62,669	$691,400	-$628,731	No	No	Roof repair and replacement
Replace storage shed roof and soffits	$20,475	$9,022	$11,453	No	No	
Repair modular stairs and ramps	$27,371	$114,591	-$87,220	No	No	
Repair misc brickwork, caulk, seal joints	$49,511	$30,248	$19,263	No	No	
Replace existing windows	$2,905,884	$527,557	$2,378,327	No	No	EMG cost for older windows only
Install solar film on southern windows	$17,250	$0	$17,250	Yes	No	Out of Scope
Replace missing screens	$66,744	$15,389	$51,355	No	No	Cost seems high
Replace existing skylights in gym	$430,331	$40,824	$389,507	No	No	Clerestory only. Curb-mounted lights appeared to be in good condition.
Install new blinds	$49,511	$55,156	-$5,645	No	No	
Paint auditorium/cafeteria and large gym	$28,016	$21,531	$6,485	No	No	
Replace ceramic tiles in bathrooms	$41,097	$46,557	-$5,460	No	No	Added
Repair selected walls	$21,012	$0	$21,012	No	No	JMOA Scope not defined. Minor wall patching can be performed during painting or as RM
Replace carpeting with VCT flooring	$350,921	$559,369	-$208,448	No	No	JMOA Scope/Need not defined. EMG cost includes carpet and VCT replacement
Replace food serving counter	$1,648		$1,648	No	No	Routine Maintenance

Paint walls & door frames	$47,483	$0	$47,483	No	No	Included with interior paint
Replace damaged ceiling tiles	$17,080	$376,488	-$359,408	No	No	Replaced based on age
Replace damaged insulated ceiling mesh	$2,781	$0	$2,781	No	No	No deficiency observed or reported
Replace chalk, tack, marker boards in classrooms	$70,019	$0	$70,019	Yes	No	Out of Scope
Add skylights to improve lighting in teacher spaces	$39,182	$0	$39,182	Yes	No	Out of Scope
Repaint bus platform, upgrade area	$19,521	$0	$19,521	No	No	JMOA Scope not defined
Add acoustical treatment in auditorium	$19,261	$22,050	-$2,789	No	No	Added
Add toilet facilities	$204,253	$0	$204,253	No	No	JMOA Scope not defined
Replace old drinking fountains	$7,416	$18,068	-$10,652	No	No	Added
Add RPZ valves	$13,473	$25,200	-$11,727	No	No	Added
Add hot water to cold water only sinks	$11,882	$0	$11,882	No	No	Included in RPZ allowance above
Add paper towel and soap dispensers to bathrooms	$15,965	$0	$15,965	Yes	No	Routine Maintenance
Add exhaust for kiln	$8,593	$3,825	$4,768	No	No	
Replace selected unit ventilators	$335,457	$0	$335,457	No	No	Addressed under AC upgrade allowance
Repair/Replace piping to units	$89,116		$89,116	No	No	No deficiency observed or reported
Replace/Install exhaust fans in bathrooms	$32,676	$16,770	$15,906	No	No	Cost seems high
Add A/C to auditorium	$337,808	$1,443,242	-$1,105,434	No	No	EMG cost is overall AC upgrade allowance
Upgrade clock system	$50,923	$105,746	-$54,823	No	No	
Improve lighting in general seating area of auditorium	$33,418	$0	$33,418	No	No	Included in Lighting Upgrade allowance
Upgrade PA system	$106,302	$0	$106,302	No	No	Included in Technology/Communication upgrade allowance
Add fixtures to small gym	$15,065	$0	$15,065	No	No	JMOA Scope not defined
Add lighting on stage	$48,479	$19,026	$29,453	No	No	

Install power and CAT 5 for classrooms	$160,620	$327,600	-$166,980	No	No	Technology/Communication upgrade allowance
Increase lighting in custodial service area	$1,273	$0	$1,273	No	No	Included in Lighting Upgrade allowance
Replace light fixtures or lenses	$1,061	$0	$1,061	No	No	Routine Maintenance
Add lighting around building	$29,599	$34,605	-$5,006	No	No	
Add sprinklers to modular classrooms	$44,240	$49,770	-$5,530	No	No	
	JMOA Cost	**EMG Cost**	**Shortage**			
	$6,107,398	$6,712,038	-$604,640			
less completed items	$6,107,398					
Soft Costs (30%)		$2,013,611				
Location factor(11%)		$738,324				
Totals(Unescalated)		$9,463,974	-$3,356,576			

2006
AHERA 3 Year
Re-Inspection Report
For

Roxbury Elementary School
751 West Hill Road
Stamford, CT

Performed by

AMC Technology, Inc.
P.O. Box 413
Stratford, CT 06615

Roxbury Elementary School
751 West Hill Road
Stamford, CT

I. EXECUTIVE SUMMARY

The building was inspected for asbestos containing materials in February 1990 by accredited inspectors in compliance with the Asbestos Hazard Emergency Response Act (AHERA).

This report has been prepared to comply with the AHERA regulations requiring reinspection every three years after the implementation of a management plan for the asbestos materials discovered in the original and subsequent inspections.

The AHERA inspection and all subsequent re-inspections, including this re-inspection, do not meet the requirements of a pre-renovation/pre-demolition survey. A pre-renovation/demolition asbestos inspection must be performed before any renovation or demolition activities take place.

II. ASBESTOS CONTAINING MATERIALS REMAINING AND CONDITION

As of the time of this reinspection (December 18, 2006), the friable asbestos containing materials remaining in the building are electrical insulation and pipe and pipe fitting insulation.

The **assumed asbestos containing electrical insulation** on the **stage** is friable and intact.

The **asbestos containing pipe and pipe fitting insulation** in the **wall cavity in Classroom 408, the corridor outside the Principal's Office (MO 2), Storage Rooms 2 and 6** is friable and intact.

The **non-friable asbestos containing materials remaining** in the building are **12x12 and 9x9 floor tile and mastic, transite panels, lab counter tops and sheetrock/joint compound.**

The 1990 inspection documented that the floor tiles were assumed to contain asbestos. This material is nonfriable and therefore the asbestos fibers are not transmitted into the air. Certain precautions have been implemented to make certain that the asbestos containing floor tiles are not sanded or abraded and are sealed with a floor finish.

The **assumed asbestos containing 12x12 floor tiles and mastic** located in **Classrooms 103-108, Main Office 3, Storage Room 6, Classrooms T1-T3 and**

hall outside T Wing are non friable and intact.

The **assumed asbestos containing 9x9 floor tiles and mastic** located in **Storage Rooms 3 and 5** are non friable and intact.

The **assumed asbestos containing transite board** located **behind the radiators in Classrooms 501-509 and on the rear auditorium wall** is non friable and intact.

The **assumed asbestos containing lab counter tops** located in **Classrooms 501-509** are nonfriable and intact.

The **assumed asbestos containing sheetrock walls and/or ceilings and taping compound** located **in Classrooms 201-217, 200 Wing Hall, Classrooms 101-108, 100 Wing Hall, Men's Room 1, Women's Room 1, Storage 1, 2, Boys' Rooms 1 and 3, Girls' Rooms 1 and 3, Reading Office, Main Office, MO 1, MO 2, MO 3, Auditorium, Stage, Media Center, Media Rooms 601-604, Classrooms 301-305, 300 Wing Hall, Teachers' Lounge, Atrium, Classrooms 400-414, 400 Wing Hall, Classrooms 501-509, 500 Wing Hall, Classrooms T1-T3 and T Wing Hall** is non friable and intact.

Precautions have been implemented to prevent any damage prior to renovation/removal of the above-mentioned material. This material could be damaged by contact. All maintenance staff and outside contractors should be informed of this material and precautions should be taken to prevent activities that would disturb it.

III. ASBESTOS CONTAINING MATERIALS REMOVED AFTER THE 2003 RE INSPECTION

There are no records indicating that renovation activities took place after the 2003 re-inspection requiring the removal of asbestos containing materials.

IV. NON-ASBESTOS CONTAINING MATERIALS

The following materials were sampled after 2003 and found not to contain asbestos: sheetrock and joint compound from Rooms 408, 206 and 303. Further sampling should be done to document that all the sheetrock/joint compound in the building is negative and can then be removed from the Asbestos Management Plan.

Several building materials have been sampled in previous years and analyzed for asbestos content. The following building materials were found not to contain asbestos: Ceiling tiles, glue daubs above ceiling, cove base molding and mastic, boiler packing, carpet adhesive, and floor leveler.

V. DISCLAIMERS

Some building materials in the structure are typically not suspect or were inaccessible at the time of inspection. . Blackboards, window sills, lighting insulation, counter tops, doors, wood floor mastic barriers, mastics, window caulking, roofing, kilns, paint, etc., should be tested for the presence of asbestos prior to disturbance such as routine maintenance activities, renovation or demolition. Any suspect material found behind walls or above ceilings should be tested for the presence of asbestos.

Portable classrooms are attached to the building. The classrooms were reported to have been installed after 1980. Materials such as sheetrock and taping compound, carpet glue, ceiling tiles, newer floor tiles, etc. must be sampled for the presence of asbestos prior to disturbance (if no MSD sheets are available from the installation).

The Town of Stamford has stated that the ceiling tiles throughout the school were installed after 1980. Copies of the MSD sheets should be included with the management plan or bulk samples should be taken and analyzed for the presence of asbestos. AMC Technology Inc. suggests collecting bulk samples of several materials listed on the management plan. Some of these materials may not contain asbestos and could be omitted from the management plan. The building was renovated in 1995. MSD sheets should be collected for all the building materials (sheetrock, floor tiles, plaster skylights, gym roof drains, boiler duct etc.) installed. Bulk samples should be taken from these building materials if documentation is not available stating these building materials are asbestos free.

VI. INSPECTOR INFORMATION

The 1990 inspection was conducted in compliance with Section 763.85 of Title 40, the Code of Federal Regulations. The inspector was:

Pramod Patel - Accreditation # 128908001

The 1993, 1996, and 1998 reinspections were performed in accordance with the same regulations, and the guidance document published by the EPA, by:

Matthew A. Myers - Accreditation # 000041

The 2000 reinspection was performed by:

David Goldstein - Accreditation # 000014
David Wiseman - Accreditation # 000073

The 2003 reinspection was performed in accordance with the same regulations, and the guidance document published by the EPA, by:

James Raffin - Accreditation # 000373

The 2006 reinspection was performed in accordance with the same regulations, and the guidance document published by the EPA, by:

Stanley Szelag - Accreditation # 000493

Please see copies of the State of Connecticut Accreditations and current refresher training certificates.

VII. SUMMARY OF EXISTING ASBESTOS CONTAINING MATERIALS

Following is a listing of the locations and type of asbestos containing materials that were found during the original and subsequent inspections and remain as of the date of this reinspection.

Location	Asbestos Containing Material
Stage	Electrical Insulation
Wall cavity in Classroom 408, the corridor outside the Principal's Office (MO 2), Storage Rooms 2 and 6	Pipe Fitting Insulation
Classrooms 103-108, Main Office 3, Storage Room 6, Classrooms T1-T3 and hall outside T Wing	12x12 Floor Tile and Mastic
Storage Rooms 3 and 5	9x9 Floor Tile and Mastic
Behind the radiators in Classrooms 501-509 and on the rear auditorium wall	Transite Board
Classrooms 501-509	Lab Countertops
Classrooms 201-217, 200 Wing Hall, Classrooms 101-108, 100 Wing Hall, Men's Room 1, Women's Room 1, Storage 1, 2, Boys' Rooms 1 and 3, Girls' Rooms 1 and 3, Reading Office, Main Office, MO 1, MO 2, MO 3, Auditorium, Stage, Media Center, Media Rooms 601-604, Classrooms 301-305, 300 Wing Hall, Teachers' Lounge, Atrium, Classrooms 400-414, 400 Wing Hall, Classrooms 501-509, 500 Wing Hall, Classrooms T1-T3 and T Wing Hall	Sheetrock walls and/or ceilings/joint compound

VIII. AHERA REGULATORY CITATIONS FOR REINSPECTIONS

The regulatory requirement for reinspection is Section 763.85 Inspection and Reinspections, 40 CFR, and it states:

(b) Reinspections

(1) At least once every 3 years after a management plan is in effect, each local education agency shall conduct a reinspection of all friable and nonfriable known or assumed ACBM in each school building that they lease, own, or otherwise use as a school building.

(2) Each inspection shall be made by an accredited inspector.

(3) For each area of a school building, each person performing a reinspection shall:

(i) Visually reinspect, and reassess, under Sec. 763.88, the condition of all friable known or assumed ACBM.

(ii) Visually inspect material that was previously considered nonfriable ACBM and touch the material to determine whether it has become friable since the last inspection or reinspection.

(iii) Identify any homogeneous areas with material that has become friable since the last inspection or reinspection.

(iv) For each homogeneous area of newly friable material that is already assumed to be ACBM, bulk samples may be collected and submitted for analysis in accordance with Sec. 763.86 and Sec. 763.87.

(v) Assess, under Sec. 763.88, the condition of the newly friable material in areas where samples are collected, and newly friable materials in areas that are assumed be ACBM.

(vi) Reassess, under Sec. 763.88, the condition of friable known or assumed ACBM previously identified.

(vii) Record the following and submit to the person designated under Sec. 763.84 a copy of such record for inclusion in the management plan within 30 days of the reinspection:

(A) The date of the reinspection, the name and signature of the person making the reinspection, State of accreditation, and if applicable, his or her accreditation number, and any changes in the condition of known or assumed ACBM.

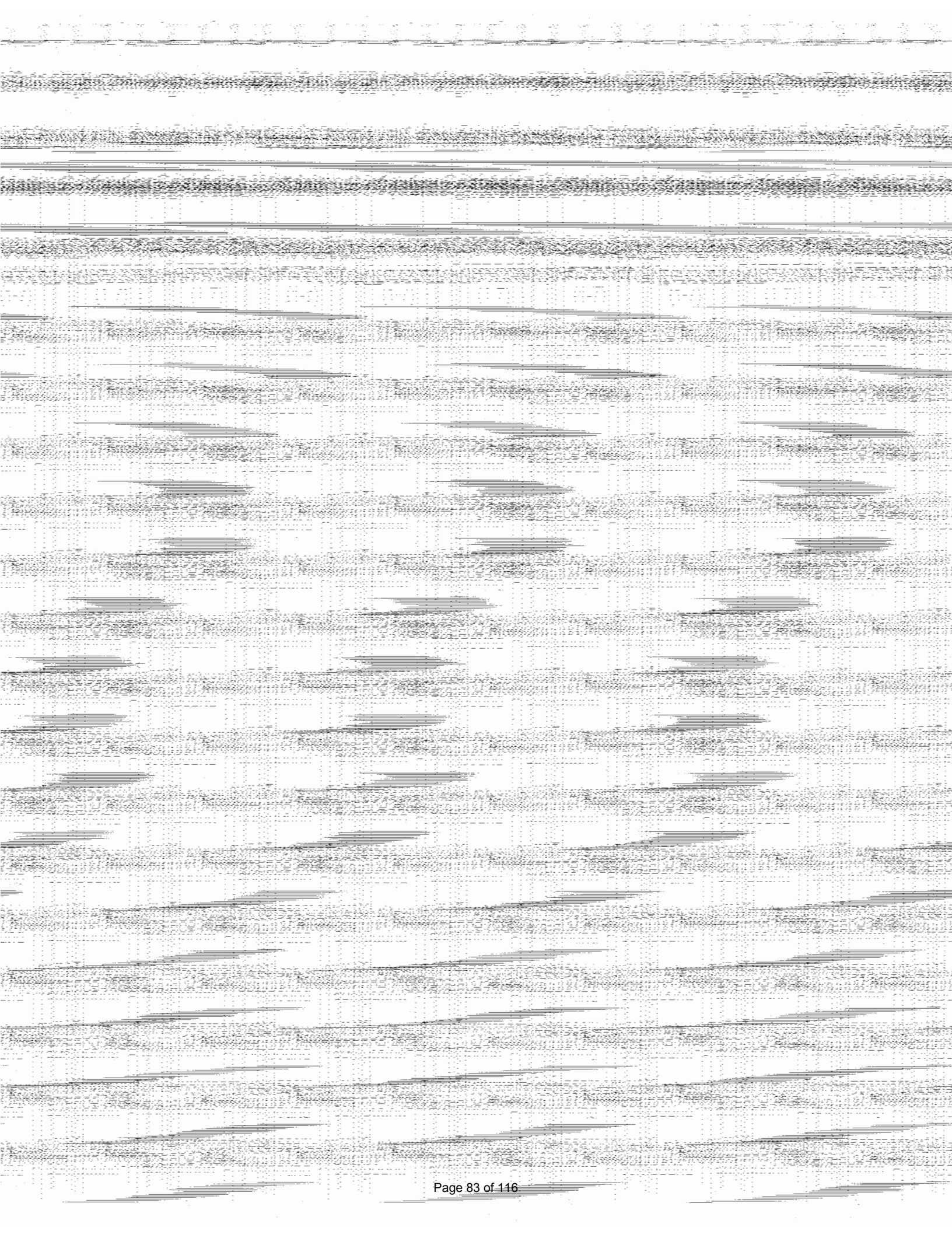
(B) The exact locations where samples are collected during the reinspection, a description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, State of accreditation, and, if applicable, his or her accreditation number.

(C) Any assessments or reassessments made of friable material, the name and signature of the accredited inspector making the assessments, State of accreditation, and if applicable, his or her accreditation number.

As an Inspector, accredited by the State of Connecticut, I hereby certify that the AHERA Reinspection of Roxbury Elementary School, 751 West Hill Road, Stamford, CT has been completed in accordance with the above.

Stanley Szelag
Inspector #000493
Expiration Date – January 31, 2007

INSPECTION AND MANAGEMENT PLANNER RECOMMENDATIONS



School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
Classroom 215	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 216	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 217	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
200 Wing Hall	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 101	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 102	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 103	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 104	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 105	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 106	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 107	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program

School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
Classroom 108	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
100 Wing Hall	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Men's Room 1	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Women's Room 1	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Storage 1	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Storage 2	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Pipe fitting insulation	F	5	TSI	Intact	Operations and Maintenance Program
Boys Room 1	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Girls Room 1	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Reading Office	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Storage Room 3	9x9 brown floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Storage Room 5	9x9 brown floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Main Office	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Main Office 1	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Principal's Office (MO 2)	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program

School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
Hall outside MO 2	Pipe fitting insulation	F	5	TSI	Intact	Operations and Maintenance Program
Main Office 3	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Auditorium	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite	NF	5	Misc	Intact	Operations and Maintenance Program
Stage	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Electrical Insulation	F	5	Misc	Intact	Operations and Maintenance Program
Media Center	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Media Room 601	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Media Room 602	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Media Room 603	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Media Room 604	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 301	Sheetrock walls & ceiling/ joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 302	Sheetrock walls & ceiling/ joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 303	Sheetrock walls & ceiling/ joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 304	Sheetrock walls & ceiling/ joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 305	Sheetrock walls & ceiling/ joint compound	NF	5	Misc	Intact	Operations and Maintenance Program

School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
300 Wing Hall	Sheetrock walls & ceiling/ joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Storage 6	12x12 light blue floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
	Pipe fitting insulation	F	5	TSI	Intact	Operations and Maintenance Program
Teachers' Lounge	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Atrium	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 400	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 400A	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 401	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 402	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 403	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 404	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 405	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 406	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 407	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 408	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Pipe fitting insulation in walls	F	5	TSI	Intact	Operations and Maintenance Program

School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
Classroom 409	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 410	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 411	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 412	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 414	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
400 Wing Hall	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Boys Room 3	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Girls Room 3	Sheetrock wall/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 501	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 502	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 503	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 504	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program

School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
Classroom 505	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 506	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 507	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 508	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom 509	Sheetrock walls/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	Lab counter tops	NF	5	Misc	Intact	Operations and Maintenance Program
	Transite behind radiators	NF	5	Misc	Intact	Operations and Maintenance Program
500 Wing Hall	Sheetrock ceiling/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom T1	Sheetrock/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom T2	Sheetrock/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program
Classroom T3	Sheetrock/joint compound	NF	5	Misc	Intact	Operations and Maintenance Program
	12x12 white floor tile & mastic	NF	5	Misc	Intact	Operations and Maintenance Program

School System Stamford Public Schools School Name Roxbury Elementary School Date of Reinspection December 18, 2006

Asbestos Containing Materials Remaining		Condition of Asbestos Containing Materials as of this Reinspection				
LOCATION	**MATERIALS**	FRIABILITY	ASSESSMENT CATEGORY (1-7)	CATEGORY	CONDITION	MANAGEMENT PLANNER RECOMMENDATIONS AND SCHEDULE
T Wing Hall	Sheetrock/joint compound 12x12 white floor tile & mastic	NF NF	5 5	Misc Misc	Intact Intact	Operations and Maintenance Program Operations and Maintenance Program

Comments: The inspector and management planner have attempted to list all identifiable rooms and asbestos materials within those rooms. Some rooms may have been inadvertently mislabeled or not listed. All areas in the school with floor tile or carpet should be considered asbestos or have asbestos floor tile and (or) mastic underneath, except where known asbestos abatement has taken place. Areas with new flooring materials were check at random to determine if multiple layer existed and generalizations made from these findings. If suspect materials are uncovered during routine work activities work must stop and ma-

AHERA Assessment Category - **Friability:** F = Friability NF = Nonfriable

1 - Damaged or significantly damaged TSI ACBM; **2** - Damaged friable surfacing ACBM; **3** - Significantly damaged friable surfacing ACBM; **4** - Damaged or significantly damaged friable miscellaneous ACBM; **5** - ACBM with potential for damage; **6** - ACBM with potential for significant damage; **7** - Any remaining friable ACBM or friable suspected ACBM

Inspector name: Stanley Szelag

Inspector signature: Stanley Szelag

Accreditation #/State: 000493-CT

Expiration date: January 31, 2007

Date of management planner review : December 20, 2006

Management planner name: Anthony Vuozzo

Management planner signature: A Vuozzo

Accreditation #/State: 000011-CT

Expiration date: January 31, 2007

I, the LEA's Designated Person, have read and understood the recommendations made above:

EJ Barbagallo Date: 2/22/2007

BUILDING DIAGRAM AND BULK SAMPLE RESULTS

This Report Contains 2 Pages

Samples Obtained By:

David Kohl
Inspector, CT License #000637

AMC TECHNOLOGY, INC.
Stratford, CT

Polarized Light Microscopy (PLM)
Sample Summary

Roxbury Elementary School
Stamford, CT

ASB030617
AMC Job #0631

Laboratory: EMSL
Lab Number: 030607701

Sample Date: March 13, 2006
Report Date: March 14, 2006

Sample No.	Location	Type	Description	Asbestos %	Asbestos Type	ACM Code	Friability	Exposure
B031301	Room 408 Wall	Wallboard	White	NAD				
B031302	Room 408 Wall	Joint Compound	White	NAD				
B031303	Room 206 Wall	Wallboard	White	NAD				
B031304	Room 206 Wall	Joint Compound	White	NAD				
B031305	Room 303 Wall	Wallboard	White	NAD				
B031306	Room 303 Wall	Joint Compound	White	NAD				
B031307	Room 408 Wall	Wallboard & Joint Compound Composite	White	<1%				

Samples Analyzed By EPA Method 600/R-93/116 (PLM)
IN ACCORDANCE WITH STATE OF CONNECTICUT REGULATIONS Section 19a333-5

NOTE "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar nonfriable organically bound (NOB) materials (such as roofing, floor tile mastic, etc.) Detection of asbestos used in these types of samples is often extremely difficult because of the small fibers used during manufacture, the organic matrix used as a coating, and possible pulverization during sample preparation. The EPA strongly recommends that gravimetric reduction be used for NOBs, but is not a requirement.

Friability
Refers to the ability to crush or pulverize the material. A numerical scale indicates friability as follows:

5	=	Non-Friable.
4	=	Non-Friable - Subject to abrasion or mechanical pressure.
3	=	Friable by extreme hand pressure (requires effort to pulverized).
2	=	Friable by hand pressure (easily pulverized).
1	=	Friable and subject to being airborne (lacks integrity).

Exposure

Refers to accessibility of ACM within an area. Exposure is important in determining potential for material to be disturbed. A numerical scale indicates exposure as follows:

5	-	Contained (in pipe chase, under carpet, behind bolted access panel, etc.).
4	-	Disturbed only by deliberate action.
3	-	Avoidable by awareness.
2	-	Avoidable by exercising caution.
1	-	Unavoidable.

ACM Codes

MM	-	Miscellaneous Material
NAD	-	No Asbestos Detected
TSI	-	Thermal System Insulation
SM	-	Surfacing Material
PC	-	Point Count

The definition of Asbestos-Containing Material (ACM) as stated in the State of Connecticut Standards for Asbestos Abatement is material composed of asbestos of any type and in an amount greater than one percent (>1%) by weight, either alone or mixed with other fibrous or nonfibrous material.

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Email: manhattanlab@emsl.com

Attn: **AMC Technology, Inc.**
Stationhouse Square
2505 Main St. (Suite 207)
Stratford, CT 06615

Fax: Phone: (203) 378-5020
Project: **ASB030617/ ROXBURY SCHWI**

Customer ID: AMCT50
Customer PO:
Received: 03/14/06 9:00 AM
EMSL Order: 030607701

EMSL Proj:
Analysis Date: 3/14/2006
Report Date: 3/14/2006

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
B0313-01 *030607701-0001*	RM 408 WALL/ WALL BOARD/ WHITE	Brown/White Non-Fibrous Heterogeneous	5%	Cellulose	60% Gypsum 35% Non-fibrous (other)	None Detected
B0313-02 *030607701-0002*	RM 408 WALL JOINT COMPOUND/ WHITE	Gray/Violet Non-Fibrous Heterogeneous	<1%	Cellulose	80% Ca Carbonate 20% Non-fibrous (other)	None Detected
B0313-03 *030607701-0003*	RM 206 WALL/ WALL BOARD/ WHITE	Brown/Gray Fibrous Heterogeneous	20%	Cellulose	60% Gypsum 20% Non-fibrous (other)	None Detected
B0313-04 *030607701-0004*	RM 206 WALL JOINT COMPOUND/ WHITE	White/Gray Non-Fibrous Heterogeneous	5%	Cellulose	40% Ca Carbonate 30% Gypsum 25% Non-fibrous (other)	None Detected
B0313-05 *030607701-0005*	RM 303 WALL/ WALL BOARD/ WHITE	White/Brown Non-Fibrous Heterogeneous	10%	Cellulose	50% Gypsum 40% Non-fibrous (other)	None Detected
B0313-06 *030607701-0006*	RM 303 WALL JOINT COMPOUND	White Non-Fibrous Heterogeneous			80% Ca Carbonate 20% Non-fibrous (other)	None Detected
B0313-07 *030607701-0007*	RM 408 WALL/ WALLBOARD COMPOSITE WHITE	White/Cream Non-Fibrous Heterogeneous			65% Ca Carbonate 35% Non-fibrous (other)	<1% Chrysotile

Analyst(s)

Marlar Myint (7)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.

Analysis performed by EMSL Manhattan (NVLAP #101048-9), NY ELAP 11506

THIS IS THE LAST PAGE OF THE REPORT.

INSPECTOR AND MANAGEMENT PLANNER ACCREDITATIONS

CERT# A-509 - 271

CHEMSCOPE TRAINING DIVISION

ASBESTOS INSPECTOR REFRESHER

4 HOUR TRAINING CERTIFICATE

Stanley Szelag Jr.

P.O. Box 413 , Stratford CT

038-30-7279

Has attended an 4 hour annual refresher course on the subject discipline on

04/06/06 and has passed a written examination.

"The person receiving this certificate has completed the requisite training required for asbestos accreditation as an inspector under TSCA Title II"

Course topics include a review and update on asbestos health hazards, functions of inspectors and management planners, building systems, planning, inspecting for asbestos, sampling and analysis, respiratory protection, government regulations and preparing the inspection report.

Examination Date: 04/06/06

Expiration Date: 04/06/07

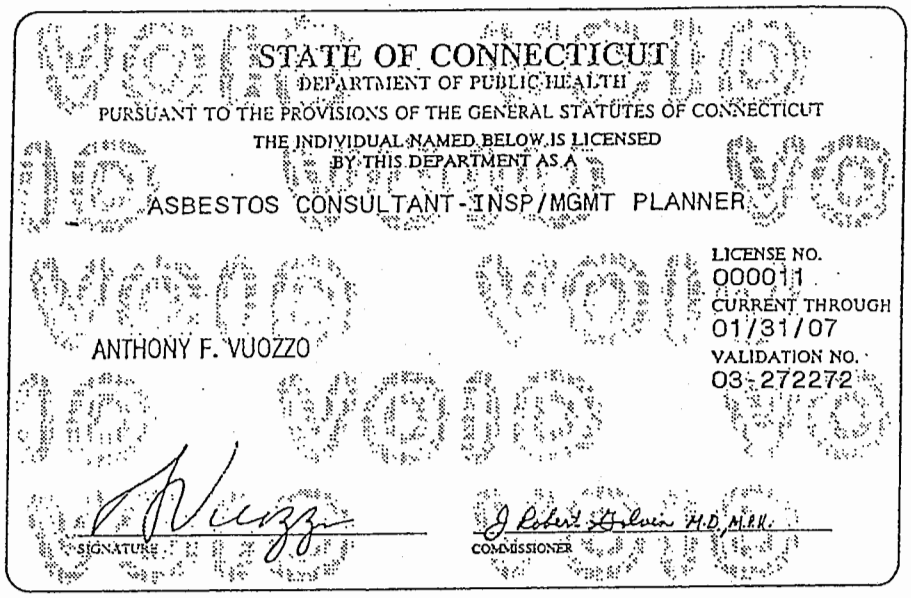
This training course has been accredited by the State of Connecticut.

Ronald D. Arena
Training Director

or

John Rowinski
Training Manager

Chem Scope, Inc.
15 Moulthrop Street
North Haven CT 06473
(203) 865-5605



STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS LICENSED
BY THIS DEPARTMENT AS A
ASBESTOS CONSULTANT-INSP/MGMT PLANNER

ANTHONY F. VUOZZO

LICENSE NO.
000011
CURRENT THROUGH
01/31/07
VALIDATION NO.
03-272272

SIGNATURE

J. Robert Galvin M.D., M.P.H.
COMMISSIONER

CERT# A-508 - 392

CHEMSCOPE TRAINING DIVISION

ASBESTOS INSPECTOR/MANAGEMENT PLANNER REFRESHER

8 HOUR TRAINING CERTIFICATE

Anthony Vuozzo

P.O. Box 413 , Stratford CT

073-36-4866

Has attended an 8 hour annual refresher training course on the subject discipline on

03/02/06 and has passed a written examination.

"The person receiving this certificate has completed the requisite training for asbestos accreditation as an inspector/management planner under TSCA Title II"

Course topics include a review and update on asbestos health hazards, functions of inspectors and management planners, building systems, planning, inspecting for asbestos, sampling and analysis, respiratory protection, government regulations and preparing the inspection report.

Examination Date: 03/02/06

Expiration Date: 03/02/07

This training course has been accredited by the State of Connecticut.

Ronald D. Arena
Training Director

or

Jesse Whittemore
Assistant Training Manager

CHEMSCOPE, INC.
15 Moulthrop Street
North Haven Ct 06473
(203) 865-5605

APPENDIX D:
EMG ABBREVIATED ACCESSIBILITY CHECKLIST

Property Name: Roxbury Elementary School
Date: March 25, 2009
Project Number: 88166.09R-006.017

EMG Abbreviated Accessibility Checklist					
	Building History	**Yes**	**No**	**N/A**	**Comments**
1.	Has the management previously completed an ADA review?		✓		
2.	Have any ADA improvements been made to the property?	✓			Stair lift
3.	Does a Barrier Removal Plan exist for the property?		✓		
4.	Has the Barrier Removal Plan been reviewed/approved by an arms-length third party such as an engineering firm, architectural firm, building department, other agencies, etc.?			✓	
5.	Has building ownership or management received any ADA related complaints that have not been resolved?		✓		
6.	Is any litigation pending related to ADA issues?		✓		
	Parking	**Yes**	**No**	**N/A**	**Comments**
1.	Are there sufficient parking spaces with respect to the total number of reported spaces?		✓		
2.	Are there sufficient van-accessible parking spaces available (96" wide/ 96" aisle for van)?		✓		
3.	Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?			✓	
4.	Is there at least one accessible route provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, if provided, and public streets and sidewalks?	✓			

EMG Abbreviated Accessibility Checklist					
5.	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths, and drop-offs?	✓			
6.	Does signage exist directing you to accessible parking and an accessible building entrance?		✓		Front entrance is accessible
	Ramps	**Yes**	**No**	**N/A**	**Comments**
1.	If there is a ramp from parking to an accessible building entrance, does it meet slope requirements? (1:12)	✓			
2.	Are ramps longer than 6 ft complete with railings on both sides?		✓		
3.	Is the width between railings at least 36 inches?	✓			
4.	Is there a level landing for every 30 ft horizontal length of ramp, at the top and at a the bottom of ramps and switchbacks?	✓			
	Entrances/Exits	**Yes**	**No**	**N/A**	**Comments**
1.	Is the main accessible entrance doorway at least 32 inches wide?	✓			
2.	If the main entrance is inaccessible, are there alternate accessible entrances?	✓			
3.	Can the alternate accessible entrance be used independently?	✓			
4.	Is the door hardware easy to operate (lever/push type hardware, no twisting required, and not higher than 48 inches above the floor)?	✓	✓		
5.	Are main entry doors other than revolving door available?	✓			
6.	If there are two main doors in series, is the minimum space between the doors 48 inches plus the width of any door swinging into the space?	✓			
	Paths of Travel	**Yes**	**No**	**N/A**	**Comments**
1.	Is the main path of travel free of obstruction and wide enough for a wheelchair (at least 36 inches wide)?	✓			
2.	Does a visual scan of the main path reveal any obstacles (phones, fountains, etc.) that protrude more than 4 inches into walkways or corridors?	✓			

EMG Abbreviated Accessibility Checklist					
3.	Are floor surfaces firm, stable, and slip resistant (carpets wheelchair friendly)?	✓			
4.	Is at least one wheelchair-accessible public telephone available?				
5.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?		✓		
6.	Is there a path of travel that does not require the use of stairs?	✓			
7.	If audible fire alarms are present, are visual alarms (strobe light alarms) also installed in all common areas?		✓		
	Elevators	**Yes**	**No**	**N/A**	**Comments**
1.	Do the call buttons have visual signals to indicate when a call is registered and answered?			✓	
2.	Is the "UP" button above the "DOWN" button?			✓	
3.	Are there visual and audible signals inside cars indicating floor change?			✓	
4.	Are there standard raised and Braille marking on both jambs of each host way entrance?			✓	
5.	Do elevator doors have a reopening device that will stop and reopen a car door if an object or a person obstructs the door?			✓	
6.	Do elevator lobbies have visual and audible indicators of car arrival?			✓	
7	Does the elevator interior provide sufficient wheelchair turning area (51″ x 68″)?			✓	
8.	Are elevator controls low enough to be reached from a wheelchair (48 inches front approach/54 inches side approach)?			✓	
9.	Are elevator control buttons designated by Braille and by raised standard alphabet characters (mounted to the left of the button)?			✓	
10.	If a two-way emergency communication system is provided within the elevator cab, is it usable without voice communication?			✓	
	Restrooms	**Yes**	**No**	**N/A**	**Comments**
1.	Are common area public restrooms located on an accessible route?	✓			
2.	Are pull handles push/pull or lever type?	✓			

EMG Abbreviated Accessibility Checklist					
3.	Are there audible and visual fire alarm devices in the toilet rooms?		✓		
4.	Are corridor access doors wheelchair-accessible (at least 32 inches wide)?	✓			
5.	Are public restrooms large enough to accommodate a wheelchair turnaround (60″ turning diameter)?	✓			
6.	In unisex toilet rooms, are there safety alarms with pull cords?	✓			
7.	Are stall doors wheelchair accessible (at least 32″ wide)?		✓		
8.	Are grab bars provided in toilet stalls?	✓	✓		
9.	Are sinks provided with clearance for a wheelchair to roll under (29″ clearance)?	✓			
10.	Are sink handles operable with one hand without grasping, pinching or twisting?	✓	✓		
11.	Are exposed pipes under sink sufficiently insulated against contact?		✓		
12.	Are soap dispensers, towel, etc. reachable (48″ from floor for frontal approach, 54″ for side approach)?	✓	✓		
13.	Is the base of the mirror no more than 40″ from the floor?	✓	✓		

APPENDIX E:
PRE-SURVEY QUESTIONNAIRE AND DOCUMENTATION REQUEST CHECKLIST

PRE-SURVEY QUESTIONNAIRE

This questionnaire was completed by the property owner, the owner's designated representative, or someone knowledgeable about the subject property. ***This completed form*** was ***presented to EMG's Field Observer on the day of the site visit***.

Project Name:	**Roxbury Elementary School**	**Project Number:**	**88166.09R-006.017**
Person completing form:	**Gloria Manna and Paul Franco**	**Date:**	**March 25, 2009**
Association with Project:	**Principal and Head Custodian**	**Phone Number:**	**203.977.4287**
Years associated w/Proj.:	**One and eleven years, respectively**	**Fax Number:**	
Current Owner:		**Estimated Value:**	

Unk = Unknown, NA = Not Applicable

	Yes	No	Unk	NA	Comments
1. Does the property have full-time maintenance personnel on site?	✓				
2. Have there been any capital improvements in the last five years?	✓				Partial roof and some package units
If so, are details available?					
3. Are there any unresolved building, fire, or zoning code issues?		✓			
If so, what additional info is available?					
4. Are there any "down", unusable units?		✓			
5. Are there any problems or hazards at the property?	✓				Tree branches overhanging play areas and dead trees
6. Has the property ever had an ADA accessibility review?		✓			
If so, is a copy available?					
7. Does a Barrier removal plan exist for the property?		✓			
8. Are there any unresolved accessibility issues at the property?	✓				Not enough parking, auditorium and stair lifts are not working
9. Is there any pending litigation concerning the property?	✓				Potential lawsuit concerning tree branch falling on student
10. Is site drainage adequate?		✓			
11. Has a termite inspection occurred within the last year?		✓			
Is a copy of an inspection report available?					
12. Are there any problems with foundations or structures?		✓			
If so, are there plans to address?					
13. Is there any water infiltration in basements or crawl spaces?		✓			
14. Are there any wall or window leaks?	✓				
15. Are there any poorly insulated areas?	✓				
16. Are there any current roof leaks at the property?	✓	✓			
17. Are any roof finishes more than ten years old?	✓				
18. Is the roofing covered by a warranty or bond?	✓				
19. Is Fire Retardant Treated (FRT) plywood used at the property?		✓			

	Yes	No	Unk	NA	Comments
20. Does the property have an exterior insulation and finish system (EIFS) with a synthetic stucco finish		✓			There is isolated EIFS on the building
21. Do the utilities (electric, gas, sewer, water) provide adequate service?		✓			AC goes out frequently due to inadequate electrical capacity, corridor vents not adequate and blower cycles off
22. Is the property served by an on site water system?		✓			
23. Is the property served by an on site septic system?		✓			
24. If present, do irrigation systems function properly?				✓	
25. Are HVAC systems at the property inspected and maintained, at a minimum, annually?	✓				
26. Is the HVAC equipment more than ten years old?	✓				
27. Do any of the HVAC systems use R-11, 12, or 22 refrigerants?	✓				
28. Do tenants contract for their own HVAC work?		✓			
29. Has any HVAC system, or any other part of the property, ever contained visible suspect mold growth?	✓				500 wing had suspect mold in the ductwork. Cleaned all ducts 5 years ago
If so, where and when?					
30. Has the property ever been tested for indoor air quality or suspect mold?	✓				Tested last year - ok
If so, where and when? Results?					
31. Is there a response action in place to prevent mold growth or respond to its presence?		✓			
If so, describe. Is a copy available?					
32. Are the water heaters/boilers more than ten years old?		✓			
33. Is polybutylene piping used at the property?		✓			
34. Are there any plumbing leaks or water pressure problems?		✓			
35. Are the any leaks or pressure problems with natural gas service?		✓			
36. Does any part of the electrical system use aluminum wiring?		✓			
37. Do Residential units have a min. of 60-Amp service or Commercial units have a min. 200-Amp service?				✓	
38. Has elevator equipment been replaced in the last ten years?				✓	
39. Are the elevators maintained by a contractor on a regular basis?				✓	
40. Is the elevator emergency communication equipment functional?				✓	
41. Is the elevator emergency communication equipment ADA compliant?				✓	
42. Have the fire/life safety systems been inspected within the last year?	✓				
43. Are there any smoke evacuation or pressurization systems?		✓			
44. Are there any recalled Omega or Central brand fire sprinkler heads that have not yet been replaced?		✓			

	Yes	No	Unk	NA	Comments
45. Are there any emergency electrical generators?		✓			
46. Are the generators maintained on a regular basis?				✓	
47. Do tenants contract for their own improvement work?		✓			
48. Are tenants responsible for any roof, HVAC, or exterior wall maintenance, repair, or replacement?		✓			
If so, what, where and how?					
49. Have there been previous due diligence, engineering, environmental, or geological studies done?		✓			
If so, are copies available?					
50. Is there anything else that EMG should know about when assessing this property? If so, what?		✓			

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

INFORMATION REQUIRED

1. All available construction documents (blueprints) for the original construction of the building or for any tenant improvement work or other recent construction work.

2. A site plan, preferably 8 1/2" X 11", which depicts the arrangement of buildings, roads, parking stalls, and other site features.

3. For commercial properties, provide a tenant list which identifies the names of each tenant, vacant tenant units, the floor area of each tenant space, and the gross and net leasable area of the building(s).

4. For apartment properties, provide a summary of the apartment unit types and apartment unit type quantities, including the floor area of each apartment unit as measured in square feet.

5. For hotel or nursing home properties, provide a summary of the room types and room type quantities.

6. Copies of Certificates of Occupancy, building permits, fire or health department inspection reports, elevator inspection certificates, roof or HVAC warranties, or any other similar, relevant documents.

7. The names of the local utility companies which serve the property, including the water, sewer, electric, gas, and phone companies.

8. The company name, phone number, and contact person of all outside vendors who serve the property, such as mechanical contractors, roof contractors, fire sprinkler or fire extinguisher testing contractors, and elevator contractors.

9. A summary of recent (over the last 5 years) capital improvement work which describes the scope of the work and the estimated cost of the improvements. Executed contracts or proposals for improvements. Historical costs for repairs, improvements, and replacements.

10. Records of system & material ages (roof, MEP, paving, finishes, furnishings).

11. Any brochures or marketing information.

12. Appraisal, either current or previously prepared.

13. Current occupancy percentage and typical turnover rate records (for commercial and apartment properties).

14. Previous reports pertaining to the physical condition of property.

15. ADA survey and status of improvements implemented.

16. Current / pending litigation related to property condition.

Your timely compliance with this request is greatly appreciated.

APPENDIX F:
ACRONYMS AND OUT OF SCOPE ITEMS

ASTM E2018-01 ACRONYMS

ADA - The Americans with Disabilities Act
ASTM - American Society for Testing and Materials
BOMA - Building Owners & Managers Association
BUR - Built-up Roofing
DWV – Drainage, Waste, Ventilation
EIFS - Exterior Insulation and Finish System
EMF – Electro Magnetic Fields
EMS - Energy Management System
EUL - Expected Useful Life
FEMA - Federal Emergency Management Agency
FFHA - Federal Fair Housing Act
FIRMS - Flood Insurance Rate Maps
FNA – Facilities Needs Assessment
FRT- Fire Retardant Treated
FOIA - U.S. Freedom of Information Act (5 USC 552 et seq.) and similar state statutes.
FOIL - Freedom of Information Letter
FM - Factory Mutual
HVAC - Heating, Ventilating and Air-conditioning
IAQ - Indoor Air Quality
MEP – Mechanical, Electrical & Plumbing
NFPA - National Fire Protection Association
PCR - Property Condition Report
PML - Probable Maximum Loss
RTU - Rooftop Unit
RUL - Remaining Useful Life
STC – Sound Transmission Class
UBC – Uniform Building Code

Ref #	Section 8: ASTM E 2018-01 Out of Scope Items
8.4.1.8	***Utilities:*** Operating conditions of any systems or accessing manholes or utility pits.
8.4.2.2	***Structural Frame and Building Envelope:*** Entering of crawl or confined space areas (however, field observer should observe conditions to the extent easily visible from the point of access to the crawl or confined space areas), determination of previous substructure flooding or water penetration unless easily visible or if such information is provided.
8.4.3.2	***Roofs:*** Walking on pitched roofs, or any roof areas that appear to be unsafe, or roofs with no built-in access, or determining any roofing design criteria.
8.4.4.2	***Plumbing:*** Determining adequate pressure and flow rate, fixture-unit values and counts, or verifying pipe sizes and verifying the point of discharge for underground systems.
8.4.5.2	***Heating:*** Observation of flue connections, interiors of chimneys, flues or boiler stacks, or -owned or maintained equipment.
8.4.6.2	***Air-conditioning and Ventilation:*** Evaluation of process related equipment or condition of owned/maintained equipment.
8.4.7.2	***Electrical:*** Removing of electrical panel covers, except if removed by building staff, EMF issues, electrical testing, or operating of any electrical devices. Process related equipment or owned equipment.
8.4.8.2	***Vertical Transportation:*** Examining of cables, sheaves, controllers, motors, inspection tags, or entering elevator/escalator pits or shafts
8.4.9.1	***Life Safety / Fire Protection***: Determining NFPA hazard classifications, classifying, or testing fire rating of assemblies.
8.4.10.2	***Interior Elements:*** Operating appliances or fixtures, determining or reporting STC (Sound Transmission Class) ratings, and flammability issues/regulations.

Ref #	Section 11: ASTM E 2018-01 Out of Scope Items
11.1	*Activity Exclusions* - The activities listed below are generally excluded from or otherwise represent limitations to the scope of a Comprehensive Building Condition Assessment prepared in accordance with this *guide*. These should not be construed as all-inclusive or implying that any exclusion not specifically identified is a Comprehensive Building Condition Assessment requirement under this *guide*.
11.1.1	Removing or relocating materials, furniture, storage containers, personal effects, debris material or finishes; conducting exploratory probing or testing; *dismantling* or operating of equipment or appliances; or disturbing personal items or *property* which obstructs access or visibility.
11.1.2	Preparing *engineering* calculations (civil, structural, mechanical, electrical, etc.) to determine any *system's*, *component's*, or equipment's adequacy or compliance with any specific or commonly accepted design requirements or *building codes*, or preparing designs or specifications to remedy any *physical deficiency*.
11.1.3	Taking measurements or quantities to establish or confirm any information or representations provided by the *owner* or *user* such as: size and dimensions of the *subject property* or *subject building*, any legal encumbrances such as easements, dwelling unit count and mix, building *property* line setbacks or elevations, number and size of parking spaces, etc.
11.1.4	Reporting on the presence or absence of pests such as wood damaging organisms, rodents, or insects unless evidence of such presence is readily apparent during the course of the *field observer's walk-through survey* or such information is provided to the *consultant* by the *owner*, *user*, property manager, etc. The *consultant* is not required to provide a *suggested remedy* for treatment or remediation, determine the extent of infestation, nor provide *opinions of probable costs* for treatment or remediation of any deterioration that may have resulted.
11.1.5	Reporting on the condition of subterranean conditions such as underground utilities, separate sewage disposal *systems*, wells; *systems* that are either considered process-related or peculiar to a specific tenancy or use; waste water treatment plants; or items or *systems* that are not permanently installed.

Ref #	Section 11: ASTM E 2018-01 Out of Scope Items
11.1.6	Entering or accessing any area of the premises deemed to pose a threat of *dangerous or adverse conditions* with respect to the *field observer* or to perform any procedure, which may damage or impair the physical integrity of the *property*, any *system*, or *component*.
11.1.7	Providing an opinion on the condition of any *system* or *component,* which is *shutdown,* or whose operation by the *field observer* may significantly increase the registered electrical demand-load. However, *consultant* is to provide an opinion of its physical condition to the extent reasonably possible considering its age, obvious condition, manufacturer, etc.
11.1.8	Evaluating acoustical or insulating characteristics of *systems* or *components*.
11.1.9	Providing an opinion on matters regarding security of the *subject property* and protection of its occupants or *users* from unauthorized access.
11.1.10	Operating or witnessing the operation of lighting or other *systems* typically controlled by time clocks or that are normally operated by the building's operation staff or service companies.
11.1.11	Providing an environmental assessment or opinion on the presence of any environmental issues such as asbestos, hazardous wastes, toxic materials, the location and presence of designated wetlands, IAQ, etc.
11.2	*Warranty, Guarantee and Code Compliance Exclusions* - By conducting a Comprehensive Building Condition Assessment and preparing a PCR, the *consultant* is merely providing an opinion and does not warrant or guarantee the present or future condition of the *subject property,* nor may the Comprehensive Building Condition Assessment be construed as either a warranty or guarantee of any of the following:
11.2.1	any *system's* or *component's* physical condition or use, nor is a Comprehensive Building Condition Assessment to be construed as substituting for any *system*'s or equipment's warranty transfer inspection;
11.2.2	compliance with any federal, state, or local statute, ordinance, rule or regulation including, but not limited to, *building codes*, safety codes, environmental regulations, health codes or zoning ordinances or compliance with trade/design standards or the standards developed by the insurance industry. However, should there be any conspicuous *material* present violations *observed* or reported based upon *actual knowledge* of the *field observer* or the *PCR reviewer*, they should be identified in the PCR;
11.2.3	compliance of any material, equipment, or *system* with any certification or actuation rate program, vendor's or manufacturer's warranty provisions, or provisions established by any standards that are related to insurance industry acceptance/approval such as FM, State Board of Fire Underwriters, etc.
11.3	Additional/General Considerations:
11.3.1	Further Inquiry - There may be physical condition issues or certain physical improvements at the *subject property* that the parties may wish to assess in connection with a *commercial real estate transaction* that are outside the scope of this *guide*. Such issues are referred to as non-scope considerations and if included in the PCR, should be identified under Section 10.9.
11.3.2	*Non-Scope Considerations* - Whether or not a *user* elects to inquire into non-scope considerations in connection with this *guide* is a decision to be made by the *user*. No assessment of such non-scope considerations is required for a Comprehensive Building Condition Assessment to be conducted in compliance with this *guide*.

APPENDIX G:
RESUMES FOR REPORT REVIEWER AND FIELD OBSERVER

MICHAEL A. YOUNG

Senior Engineering Consultant

Education

- BS, Agricultural Engineering, The University of Georgia, Athens, Georgia

Project Experience

- ***Hospitality, Nationwide –*** Mr. Young served as the technical lead on a Property Condition Evaluation portfolio. A number of additional studies were required during the completion of this portfolio that were critical to the client in determining property needs.
- ***Healthcare - Skilled Nursing and Assisted Living, Nationwide -*** Mr. Young was the technical lead for a 183 site portfolio of SNF/ALF properties. He reviewed reports, participated in kick-off and progress meetings and provided summaries and follow-on studies/issues matrices to the client. All projects were completed on schedule and delivered on time to the client.
- ***Retail/Office – Bank, Nationwide –*** Mr. Young served as the technical lead for a 75 property portfolio of bank properties. The objective of the portfolio was to provide Property Condition Assessment reports addressing any property needs required and anticipated during the evaluation period.
- ***Multi-Family, Nationwide -*** Mr. Young was the technical lead for a Property Condition Assessment portfolio of approximately 43 Multi-Family Residential properties. Many of the properties in this portfolio required or were currently experiencing major renovation work. Other properties were under construction. Accurate state of renovation/construction and costs for any remaining work were significant to the client to make an effective business decision.
- ***Industrial - Packaging, Southern U.S. –*** Mr. Young was the technical lead for a Property Condition Assessment portfolio of approximately 34 industrial properties. The objective of the portfolio was to provide initial preliminary field reports and cost tables for each property and ultimately a full Property Condition Assessment report, including immediate repairs and reserve replacements.
- Michael has completed in excess of 150 Property Condition Assessments (debt reports) and Property Condition Evaluations (equity reports) while at EMG.
- Michael has reviewed or been technically involved in excess of 1,000 Property Condition Assessments (debt reports), Property Condition Evaluations (equity reports), and other due diligence related reports while at EMG.

Industry Tenure

- A/E: 1996
- EMG: 2004

Related Experience

- Healthcare/Senior Housing Portfolios
- Industrial/Warehouse Portfolios
- National Hotel Chain Portfolios
- Multifamily Housing Portfolios
- Manufactured Home Community Portfolios
- Retail Portfolios

Industry Experience

- Healthcare/Senior Living Housing
- Hospitality
- Retail
- Multifamily Housing
- Affordable Housing/HUD
- Office
- Industrial/Warehouse Facilities
- Manufactured Home Communities

Regional Location

- Atlanta, GA

JILL E. ORLOV

Technical Report Reviewer

Education

- Masters of Architecture, University of Pennsylvania, Philadelphia, PA
- BS, Architecture, University of Virginia, Charlottesville, VA

Project Experience

- ***Hotel Property, Pittsburgh, PA –*** As Project Manager, Ms. Orlov performed a property condition assessment of this 132 unit, six-story hotel property. She reviewed the condition of the building structure and systems and developed a thorough report. Her work helped EMG complete this project on time and on budget.
- ***Nursing Home, Charleston, SC –*** Ms. Orlov completed a property condition assessment of this 89,900 square feet building consisting of 148 units. During her evaluation of the facility, she conducted interviews with the property manager and maintenance staff. Her findings included information on existing building conditions, site improvements, mechanical and electrical systems and code accessibility information.
- ***Office Building, Richmond, VA –*** Ms. Orlov completed a property condition assessment on this 31,000 square feet, two and three story office building located in Richmond. She conducted interviews with the property manager and maintenance staff. Findings included information on existing building conditions, site improvements, mechanical and electrical systems and code and accessibility information.
- ***Higher Education Stadium, Fairfax, VA –*** Ms. Orlov completed a property condition assessment on this 162,221 square feet, three story sports arena building located in Fairfax. She conducted interviews with the property manager and maintenance staff. Findings included information on existing building conditions, site improvements, mechanical and electrical systems and code and accessibility information. The client found her structural and roof observations critical to their final business decision. This project was a part of a large portfolio of projects EMG completed for our client.

Industry Tenure

- A/E: 1991 - 2004
- EMG: July, 2004 to present

Industry Experience

- Government Facilities
- Office
- Industrial
- Housing/Multi-family
- K-12
- Higher Education
- Hospitality
- Healthcare
- Retail

Active Licenses/Registration

- Architectural, MD

Special Skills & Training

- AUTOCAD, 2000

Regional Location

- Baltimore, MD