FACILITIES NEEDS ASSESSMENT

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

Facilities Needs Assessment
of
CLOONAN MIDDLE SCHOOL
11 West North Street
Stamford, Connecticut 06902

PREPARED BY:

EMG
222 Schilling Circle, Suite 275
Hunt Valley, Maryland 21031
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG CONTACT:

Bill Champion
Director - Asset Management Consulting
800.733.0660, x6234
bchampion@emgcorp.com

EMG Project #: 88166.09R-009.017
Date of Report: August 27, 2009
On-site Date: April 1, 2009

Replacement Reserves Report
Middle Schools / Cloonan Middle School
8/27/2009

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%

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	3646	HVAC system study	0	0	0	1	EA	$9,135.00	$9,135	$9,135										**$9,135**
1.2	3565	Mold Study at Buildings	0	0	0	1	EA	$3,339.00	$3,339	$3,339										**$3,339**
1.2	3566	Asbestos floor tile and mastic removal	0	0	0	20000	SF	$3.15	$63,000	$63,000										**$63,000**
3.1	3581	Revise restroom door swing to allow for ADA access	0	0	0	3	EA	$4,101.30	$12,304	$12,304										**$12,304**
3.1	3576	Replace school door knobs with ADA lever	20	20	0	53	EA	$682.92	$36,195	$36,195										**$36,195**
3.1	3585	ADA, lower existing toilet room accessories and mirrors	0	0	0	4	EA	$115.11	$460	$460										**$460**
3.1	3577	Add ADA handrail extensions to existing metal handrails	30	30	0	40	EA	$441.00	$17,640	$17,640										**$17,640**
3.1	3582	Add ADA Grab Bar and blocking	20	19	1	1	EA	$1,575.00	$1,575		$1,575									**$1,575**
3.1	3580	ADA, Renovate restroom for full compliance	20	19	1	8	EA	$15,120.00	$120,960		$120,960									**$120,960**
3.1	3628	Install new wheelchair lift 3 'to 8'	20	20	0	1	EA	$18,078.30	$18,078	$18,078										**$18,078**
3.1	3586	Replace lavatory with ADA lever handles	20	19	1	5	EA	$699.30	$3,497		$3,497									**$3,497**
3.1	3579	ADA Drinking Fountain Cup Dispenser	15	14	1	4	EA	$69.30	$277		$277									**$277**
3.1	3569	Regrade and level ADA parking stall	0	0	0	2	EA	$4,857.30	$9,715	$9,715										**$9,715**
3.1	3573	ADA, Install curb cut, concrete, 6" rise	25	24	1	1	EA	$1,164.34	$1,164		$1,164									**$1,164**
3.1	3572	ADA, Parking lot access aisle striping	0	0	0	70	LF	$8.19	$573	$573										**$573**
3.1	3574	ADA, install/replace signage giving direction to accessible entrance	0	0	0	3	Sign	$134.01	$402	$402										**$402**
3.1	3571	ADA - Install signage indicating Accessible Parking, pole mounted	20	19	1	2	EA	$134.01	$268		$268									**$268**
3.1	3578	ADA, install/replace signage giving direction to accessible entrance	0	0	0	14	Sign	$134.01	$1,876	$1,876										**$1,876**
3.1	3568	ADA, paint accessible parking space	5	4	1	2	EA	$207.90	$416		$416					$416				**$832**
3.1	3570	ADA, paint van-accessible space with signage	5	4	1	1	EA	$277.20	$277		$277					$277				**$554**
3.1	3575	ADA, install 2 - rail, 1-1/2" handrail on exterior ramp, wall mounted, one side	20	19	1	48	LF	$106.39	$5,107		$5,107									**$5,107**
3.1	3587	ADA, Wrap drain pipes below accessible lavatory	0	0	0	5	EA	$81.90	$410	$410										**$410**
5.2	3684	Seal Coat and stripe asphalt, no repairs	5	1	4	4	10000 SF	$4,315.53	$17,262					$17,262					$17,262	**$34,524**
5.2	3687	Replace asphalt curbs	10	9	1	300	LF	$14.63	$4,389		$4,389									**$4,389**
5.2	3688	Replace concrete curbs	25	24	1	400	LF	$38.12	$15,246		$15,246									**$15,246**
5.2	3683	Cut & Patch asphalt	10	9	1	64970	SF	$3.86	$250,498		$250,498									**$250,498**
5.2	3707	Remove & replace 4' wide concrete sidewalk	25	25	0	98	LF	$40.65	$3,983	$3,983										**$3,983**
5.2	3685	Remove and replace asphalt path 4' wide	15	14	1	100	LF	$19.15	$1,915		$1,915									**$1,915**
5.2	3708	Remove & replace 4' wide concrete sidewalk	25	17	8	1880	LF	$40.65	$76,417									$76,417		**$76,417**
5.2	3690	Replace cast-in-place concrete stairs, no rails,including demo	25	24	1	60	LF Nosing	$38.28	$2,297		$2,297									**$2,297**
5.2	3689	Install handrail at exterior steps	20	20	0	24	LF	$65.65	$1,576	$1,576										**$1,576**
5.3	3648	Install stone riprap at storm water culvert piping, grouted	0	0	0	24	SY	$149.26	$3,582	$3,582										**$3,582**
5.4	3651	Remove and replace retaining wall, cast in place concrete, reinforced, up to 6' high, no shoring or protection	50	49	1	10	LF	$708.02	$7,080		$7,080									**$7,080**
5.4	3650	Re-grading landscape and establishment of ground cover	25	24	1	700	SY	$11.48	$8,035		$8,035									**$8,035**
5.4	3649	Mature Tree Removal or major trimming	0	0	0	25	EA	$1,108.80	$27,720	$27,720										**$27,720**
5.5	3654	Replace wall pack 150 watt high pressure sodium	0	0	0	25	EA	$686.56	$17,164	$17,164										**$17,164**
5.5	6760	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**
5.5	3655	Replace Aluminum light pole, pole and base only	20	20	0	1	EA	$3,640.85	$3,641	$3,641										**$3,641**

Replacement Reserves Report
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6.3	12143	Stamford Roof Assessment - PVC Roof Replacement	20	11	9	624	SQ	$1,702.13	$1,062,127										$1,062,127	**$1,062,127**
6.3	12142	Stamford Roof Assessment Roof Repair Recommendations	0	0	0	1	EA	$1,773.22	$1,773	$1,773										**$1,773**
6.3	7584	Single-Ply fully adhered complete removal and re-slope for positive drainage	0	0	0	12	SQ	$1,134.00	$13,608	$13,608										**$13,608**
6.3	3592	Metal steep roofing, total metal panel replacement	30	22	8	33	SQ	$1,060.10	$34,983									$34,983		**$34,983**
6.3	3591	Replace round plexi-glass skylights	15	15	0	1	EA	$360.36	$360	$360										**$360**
6.3	3590	Replace skylights, 12' x 2.5'	20	17	3	18	EA	$1,186.92	$21,365				$21,365							**$21,365**
6.4	3593	Epoxy Mortar Repair for Isolated Spalling of Concrete Structure	20	20	0	500	SF	$504.00	$252,000	$252,000										**$252,000**
6.4	3595	Waterproof concrete wall	10	9	1	71	CSF	$282.87	$20,084		$20,084									**$20,084**
6.4	3597	Recaulk expansion and control joints up to 1/2" wide	10	8	2	2000	LF	$16.58	$33,163			$33,163								**$33,163**
6.5	3598	Exterior concrete stair repairs - Major	0	0	0	6833	SF	$76.86	$525,184	$525,184										**$525,184**
6.6	3608	Minor repairs to concrete loading dock	0	0	0	300	SF	$50.84	$15,252	$15,252										**$15,252**
6.6	3603	Replace 6' x 3' aluminum window upper floor	25	23	2	350	EA	$2,232.72	$781,452			$781,452								**$781,452**
6.6	3601	Replace aluminum storefront 10' tall w/o door	25	23	2	2577	SF	$42.34	$109,100			$109,100								**$109,100**
6.6	3602	Replace 3'-0" x 7'-0" aluminum storefront doors	50	48	2	21	EA	$2,588.67	$54,362			$54,362								**$54,362**
6.6	3606	Replace 12' x 12' steel roll-up door	35	32	3	1	EA	$4,888.80	$4,889				$4,889							**$4,889**
6.6	7389	Fire door, steel, flush, 90 minute, vision lite, incl. demo, with hardware	35	34	1	72	EA	$1,512.00	$108,864		$108,864									**$108,864**
6.6	3605	Replace flush steel painted door	30	28	2	31	EA	$1,348.83	$41,814			$41,814								**$41,814**
6.6	3609	Replace loading dock bumpers 6"thick 10" high 36"long	10	9	1	50	EA	$242.30	$12,115		$12,115									**$12,115**
6.7	3610	Replace damaged concrete	30	30	0	200	SY	$450.99	$90,198	$90,198										**$90,198**
6.8	3616	Paint interior walls, CMU,including surface prep	7	4	3	104210	SF	$1.12	$116,861				$116,861							**$116,861**
6.8	6762	Capital Plan - Install Sound Attenuation at walls/ceilings	0	0	0	50	CSF	$882.00	$44,100	$44,100										**$44,100**
6.8	3800	Remove and replace spray on fireproofing	20	19	1	10000	SF	$5.20	$52,038		$52,038									**$52,038**
6.8	3614	Sand and refinish hardwood floor	10	8	2	15115	SF	$6.93	$104,747			$104,747								**$104,747**
6.8	3612	Replace Vinyl tile	18	15	3	6540	SY	$81.90	$535,626				$535,626							**$535,626**
6.8	3611	Replace carpet - standard commercial	8	6	2	730	SY	$63.23	$46,156			$46,156								**$46,156**
6.8	3617	Replace acoustical ceiling tile system, fire rated,including demo	20	14	6	750	CSF	$627.48	$470,610							$470,610				**$470,610**
7.1	3647	Install Air-Conditioning at entire building	30	29	1	130000	SF	$16.22	$2,108,106		$2,108,106									**$2,108,106**
7.1	3667	Replace air cooled condenser, 20 ton	15	14	1	2	EA	$9,525.60	$19,051		$19,051									**$19,051**
7.1	3666	Replace air cooled condenser, 5 ton	15	7	8	3	EA	$4,050.90	$12,153									$12,153		**$12,153**
7.1	3680	Replace air handler 8,000 to 12,000 CFM	20	19	1	9300	CFM	$1.68	$15,585		$15,585									**$15,585**
7.1	3676	Replace air handler 8,000 to 12,000 CFM	20	19	1	6200	CFM	$1.68	$10,390		$10,390									**$10,390**
7.1	3966	Replace air handler 1,500 to 2,500 CFM	20	19	1	1700	CFM	$2.23	$3,791		$3,791									**$3,791**
7.1	3682	Replace air handler 8,000 to 12,000 CFM	20	19	1	11200	CFM	$1.68	$18,769		$18,769									**$18,769**
7.1	3960	Replace air handler 1,500 to 2,500 CFM	20	19	1	1600	CFM	$2.23	$3,568		$3,568									**$3,568**
7.1	3965	Replace air handler 1,500 to 2,500 CFM	20	19	1	2160	CFM	$2.23	$4,817		$4,817									**$4,817**
7.1	3964	Replace air handler 1,500 to 2,500 CFM	20	19	1	1850	CFM	$2.23	$4,126		$4,126									**$4,126**
7.1	3959	Replace air handler 1,500 to 2,500 CFM	20	19	1	1600	CFM	$2.23	$3,568		$3,568									**$3,568**
7.1	3681	Replace air handler 8,000 to 12,000 CFM	20	19	1	11200	CFM	$1.68	$18,769		$18,769									**$18,769**
7.1	3668	Replace Unit Ventilator 1250 CFM	15	14	1	1	EA	$9,683.10	$9,683		$9,683									**$9,683**
7.1	3679	Replace air handler 8,000 to 12,000 CFM	20	19	1	9300	CFM	$1.68	$15,585		$15,585									**$15,585**
7.1	3963	Replace air handler 1,500 to 2,500 CFM	20	19	1	1500	CFM	$2.23	$3,345		$3,345									**$3,345**

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7.1	3677	Replace air handler 8,000 to 12,000 CFM	20	19	1	6200	CFM	$1.68	$10,390		$10,390									**$10,390**
7.1	3962	Replace air handler 1,500 to 2,500 CFM	20	19	1	1600	CFM	$2.23	$3,568		$3,568									**$3,568**
7.1	3967	Replace air handler 1,500 to 2,500 CFM	20	19	1	1700	CFM	$2.23	$3,791		$3,791									**$3,791**
7.1	3961	Replace air handler 1,500 to 2,500 CFM	20	19	1	1600	CFM	$2.23	$3,568		$3,568									**$3,568**
7.1	3678	Replace air handler 2500-3000 CFM	15	14	1	1	EA	$4,037.04	$4,037		$4,037									**$4,037**
7.1	3665	Computer room 2-ton split ductless system, cooling only	15	14	1	1	EA	$4,645.62	$4,646		$4,646									**$4,646**
7.1	3669	Replace UST, Steel, Fuel oil storage, 10,000 gallon	25	20	5	1	EA	$134,929.62	$134,930						$134,930					**$134,930**
7.2	3661	Replace flush valve & water closet	25	22	3	54	EA	$1,123.59	$60,674				$60,674							**$60,674**
7.2	3660	Replace urinal	35	30	5	25	EA	$1,277.51	$31,938						$31,938					**$31,938**
7.2	3662	Replace china wall hung lavatory and faucet	35	34	1	90	EA	$807.16	$72,644		$72,644									**$72,644**
7.2	3658	Replace drinking fountain	10	5	5	2	EA	$1,505.70	$3,011						$3,011					**$3,011**
7.2	3659	Replace drinking fountain	10	8	2	13	EA	$1,505.70	$19,574			$19,574								**$19,574**
7.2	7392	Replace 1-inch copper pipe	25	23	2	2200	LF	$31.63	$69,577			$69,577								**$69,577**
7.2	7393	Replace 2-inch copper pipe	25	23	2	1800	LF	$62.31	$112,153			$112,153								**$112,153**
7.2	4661	Replace 4" galvanized waste lines with cast iron	50	43	7	800	LF	$67.85	$54,281								$54,281			**$54,281**
7.4	3656	Breaker panel 100 amps, comm. 14 circuits	40	39	1	19	EA	$1,798.27	$34,167		$34,167									**$34,167**
7.4	3657	Breaker panel 225 amps, 32 circuits	40	39	1	8	EA	$3,445.85	$27,567		$27,567									**$27,567**
7.4	7384	Upgrade lighting for energy conservation	0	0	0	109300	SF	$5.92	$647,275	$647,275										**$647,275**
7.4	7379	Capital Plan - Clock and Bell System	15	14	1	105	EA	$1,244.07	$130,628		$130,628									**$130,628**
7.4	7380	Capital Plan - Public Address System Upgrade	0	0	0	164000	SF	$0.95	$154,980	$154,980										**$154,980**
7.4	3630	Replace stage audio equipment	15	13	2	1	EA	$19,026.00	$19,026			$19,026								**$19,026**
7.4	3631	Replace stage lighting equipment	15	13	2	1	EA	$19,026.00	$19,026			$19,026								**$19,026**
8.1	6761	Horizontal Blinds aluminum 1" slats	7	6	1	10000	SF	$6.49	$64,890		$64,890							$64,890		**$129,780**
8.2	3621	Range 6-burner 36" wide	20	19	1	1	EA	$2,916.95	$2,917		$2,917									**$2,917**
8.2	3624	Replace cooler 6' long	15	6	9	2	EA	$5,898.46	$11,797										$11,797	**$11,797**
8.2	3622	Replace gas Bake oven one section	20	11	9	3	EA	$6,783.99	$20,352										$20,352	**$20,352**
Totals, Unescalated										**$2,010,129**	**$3,218,069**	**$1,410,149**	**$739,414**	**$17,262**	**$169,879**	**$471,303**	**$54,281**	**$188,444**	**$1,111,538**	**$9,390,468**
Soft Costs:																				
Architectural/Consultant Fees (10.0%)										**$201,013**	**$321,807**	**$141,015**	**$73,941**	**$1,726**	**$16,988**	**$47,130**	**$5,428**	**$18,844**	**$111,154**	**$939,047**
General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)										**$201,013**	**$321,807**	**$141,015**	**$73,941**	**$1,726**	**$16,988**	**$47,130**	**$5,428**	**$18,844**	**$111,154**	**$939,047**
Prevailing Wage/Labor Compliance (5.0%)										**$100,506**	**$160,903**	**$70,507**	**$36,971**	**$863**	**$8,494**	**$23,565**	**$2,714**	**$9,422**	**$55,577**	**$469,523**
Contingency (5.0%)										**$100,506**	**$160,903**	**$70,507**	**$36,971**	**$863**	**$8,494**	**$23,565**	**$2,714**	**$9,422**	**$55,577**	**$469,523**
Location Factor (1.11)										**$215,084**	**$344,333**	**$150,886**	**$79,117**	**$1,847**	**$18,177**	**$50,429**	**$5,808**	**$20,163**	**$118,935**	**$1,004,780**
Totals, Escalated (see inflation table above)										**$2,828,251**	**$4,663,658**	**$2,125,347**	**$1,159,007**	**$28,411**	**$293,573**	**$855,197**	**$103,419**	**$376,986**	**$2,334,844**	**$14,768,694**

* Markup has been included in unit costs.

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CERTIFICATION

EMG has completed a Comprehensive Facilities Needs Assessment of the subject property, Cloonan Middle School, located at 11 West North Street, 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.

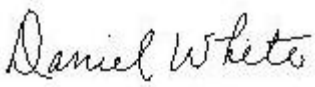
No testing, exploratory probing, dismantling or operating of equipment or in depth studies were performed unless specifically required under Section 2 of this report. This evaluation did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. 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 Mark Chamberlain, Field Observers

Reviewed by: 

Daniel White
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Bill Champion
Director - Asset Management Consulting
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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:	11 West North Street, Stamford, Fairfield County, Connecticut, 06902
Year constructed:	1967
Current owner of property:	City of Stamford
School occupying building:	Cloonan Middle School
Current usage of property:	Middle 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:	6.08 acres
Gross floor area:	164,000 Square Feet
Number of buildings:	One
Number of stories:	Three
Parking type and number of spaces:	103 spaces in open lots
Building construction:	Concrete encased steel column frame with concrete-topped metal decks. Steel beams provide support at the second floor and reinforced concrete beams provide support at the first floor
Bay Column Spacing:	Approximately 14′-0″
Interior vertical clearance:	Approximately 9′-0″ to 9′-4″
Roof construction:	Flat roofs with single ply membrane
Exterior Finishes:	Brick veneer and pre-cast and cast in place concrete panels
Heating and/or Air-conditioning:	Central heating system with three boilers. Heated water supplies air handling units, cabinet radiant units, baseboard radiant heat units and unit ventilators. Rooftop condensing units for cooling of the Auditorium, offices and teacher lounge areas. Air-cooled Chiller for cooling the Computer Labs #111, #112 and #113. Through-wall AC units for cooling Classroom #110
Fire and Life/Safety:	Fire sprinklers, fire alarm system, security system, hydrants, smoke detectors, alarms, fire extinguishers

Property Information	
Dates of visit:	April 1, 2009
Point of Contact (POC):	David Rudolph and Al Hoyt

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 fair overall condition.

According to City of Stamford Public Schools personnel, the property has had an active capital improvement expenditure program over the past three to six years, primarily consisting of the following:

Summer 2008 - Replacement of elevator controls and cab, domestic water main, fire alarm and sprinkler, all new lighting on ground floor (except 114), new generator

2007 – 2 new air handlers and 1 chiller for computer labs
2006 – 70 new univents (all but main lobby)
2004 – 3 new domestic boilers, 53 new roof-mounted exhaust fans – 18 exhaust fans have already stopped functioning

2002-3 - partial abatement (reported 85%, including insulation and reachable areas of ceiling, removal of some blackboards including mastic – did not include behind lockers or wall chases), all new lighting on upper two floors

Supporting documentation was not provided in support of these claims but some of the work is evident.

1.2. FOLLOW-UP RECOMMENDATIONS

The following issues require additional study:

- Asbestos-containing materials have been identified in several materials throughout the school. A partial abatement was reported to remove 85% of the identified asbestos. An asbestos manifest is included in the appendices concerning a small partial abatement. The remainder of the asbestos should be abated based on the conditions of the materials. Several floors were cracked and worn. Some of these areas are heavily traveled, including corridors. A cost allowance to begin work is included in the Replacement Reserves Report. Due to some concealed conditions, this is only an initial cost allowance. Costs include removal of exposed materials and some concealed materials due to their need to have the non-asbestos-containing finish materials replaced due to its Remaining Useful Life.
- Based on the locations of moisture and water infiltration and reported health concerns in regards to air quality, a mold assessment should be conducted by a health and safety professional with experience performing microbial investigations. In addition, the source of this moisture should be addressed in order to prevent future mold problems. Moisture is penetrating the concrete wall at the courtyard and causing delamination of the particle board on the interior. The estimated costs of corrective action shall be determined as part of the mold assessment recommended. See Section 3.3 for further information. The estimated costs are included in the Replacement Reserves Report.
- The building is not equipped with central cooling. The areas supplied with cooling are as follows: auditorium, offices, teachers lounge and classrooms #110, # 111, #112, and #113. It is recommended that an HVAC contractor evaluate the building for the potential reconfigure and design of installing a central cooling system for the entire building. This would allow for a more comfortable indoor environment throughout the year. The HVAC study would also require evaluating the energy management system (EMS) to ensure proper temperature control throughout the building. The cost of the follow-up evaluation is included in the Replacement Reserves Report. In addition, costs are included in Section 7.1 for installing central cooling throughout the building.

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 and 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 five 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
David Rudolph Principal	Cloonan Middle School	203.977.4544
Al Hoyt Head Custodian	Cloonan Middle School	203.977.4544
Mr. Gus Burreisci Project Manager	City of Stamford Public Schools	203.223.8118
David Walker and Terrance Shay Deputy Fire Marshals	City of Stamford Fire and Rescue	203.977.4651

The Comprehensive Facilities Needs Assessment was performed with the assistance of David Rudolph, Principal and Al Hoyt, Head Custodian, 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 six and eight 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:

- Construction documents by Fletcher-Thompson dated June 7, 1965
- Roof finish replacement drawings by Arthur L. Spaet dated June 25, 1986
- Roof finish replacement drawings by Salamone and Associates dated April, 2001
- Roof Warranty information – Northeast Panel Company April 22, 1999.
- Asbestos Manifest dated 09/06/06

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 AND 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. Existing designated stalls are severely faded and have no access aisles. Some of the stalls will require cutting into existing curb and grass to accommodate additional stalls and access aisles. Two are required.
- Adequate number of designated parking stalls and signage for vans are not provided. One is required.
- Signage indicating accessible parking spaces for cars and vans are not provided for existing stalls. Two are required.
- Access aisles adjacent to parking spaces, crossing hazardous vehicle areas, from main roadways or public transportation stops to the building sidewalks and entrances are not provided at existing stalls and crossing driving land. A total of 70 linear feet is required.
- Curb ramp is required from the parking area to the sidewalk providing access to the building closest to the existing stalls. One is required.
- Signage directing to accessible parking or accessible building entrances to the facility are not provided. Three are required.

Ramps

- Existing interior ramps and stairs are not equipped with the required handrails. A total of 48 linear feet is required.

Entrances/Exits

- Lever action hardware is not provided at all accessible locations. Ensure locking mechanism allows for classrooms to be locked from within room. A total of 53 are required.

Paths of Travel

- Stair handrails do not extend beyond the top and bottom risers. A total of 53 are required.
- Compliant signage indicating accessible entrances and general information is not provided for restrooms when upgraded. A total of 14 are required.
- Install cup dispenser at an existing non-conforming water fountain. Four are required.

Elevators

- There is no wheelchair lift in the building. In order to provide a wheelchair-accessible route to the auditorium stage, installation of a wheelchair lift is recommended.

Restrooms

- Existing adult restrooms nearest the main office do not have handicapped accessible stalls. EMG recommends combining two stalls into one accessible stall in each. 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 (i.e.: 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, replacing thresholds as required, lowering accessories and replacing finishes as required. Currently, they are both labeled for adult use only. EMG recommends combining two stalls into one accessible stall in each of the student restrooms and locker rooms, some of the pairs already have an enlarged stall. The Boys' restroom on the east side of the first floor requires a pull handle on the inside of the entrance door. A total of eight are required.
- Existing restroom doors are not wide enough to accommodate wheelchair access, and clear floor space beside the door swing is lacking at the restroom for 110. Three are required.
- Install grab bars in accessible stalls at 36" above the floor. Restroom adjacent to 110 has non-compliant grab bars due to height and length. One compliant set is required
- Modify existing toilet room accessories and mirrors. Four are required.
- Modify existing lavatory faucets to paddle type faucets. Five are required.
- Wrap drain pipes below lavatory with insulation; protect against contact with hot, sharp, or abrasive surfaces. Five are required.

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 David Walker of the Stamford Fire and Rescue, there are no outstanding fire code violations on file. The most recent inspection was conducted by the fire department on August 4, 2008. The fire department inspects the property on an annual basis.

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:

- South corridor on ground floor, wall towards courtyard. No moisture was observed other than moisture damaged particle board. Moisture is reported to be seeping through the concrete wall.
- Service door at music classrooms. Evidence of water infiltration was observed at the floor where the doors and frame have rusted through.

Additional discussion and description of the correction efforts required with regard to the moisture infiltration issues are discussed in Section 1.2 and 6.6 of this report, and associated costs are included within those sections.

Prior to remediation by personnel specifically trained in the handling of hazardous materials, a mold assessment should be conducted by a health and safety professional with experience performing microbial investigations. In addition, the source of this moisture should be addressed in order to prevent future mold problems. The estimated costs of corrective action shall be determined as part of the mold assessment recommended.

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**
30	Homerooms	0	0
14	Non-homeroom classrooms not including Labs, Art and Music	3 (106, 113, 114)	0
44	**Total classrooms**		
½ - shared teacher with Dolan	ESL	0	0
0	Bi-Lingual	0	0
10	Language Arts – Core, including 3 LA Enrichments	0	0
1	Academic Enrichment	0	0
6	Social Studies - Core	0	0
7	Math Core, including 1 Math Coach	0	0
6	Science - Core	0	0
2	Foreign Language	0	0
3	Art	1	0
4	Music (plus auditorium stage)	1	0
15	Office	0	0
2	Conference Room	0	0
1	OT/PT	0	0
1	Speech	0	0
1	Mechanical	0	0
17	Storage	0	0
1	Gymnasium - dividable	0	0
2	Auxiliary Gym/Exercise	0	0
2	Cafeteria including teachers' cafe	0	0
1	Auditorium	0	0
1	Media Center	0	0

Room Types and Mix			
Quantity	**Type**	**Vacant Rooms**	**Down Rooms**
2	Computer Lab	0	0
85.5	**TOTAL**	**2**	**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 and Adequacy**
Sanitary sewer	City of Stamford	Good
Storm sewer	City of Stamford	Good
Domestic water	Aquarian	Good
Electric service	CL&P	Good
Natural gas service	Yankee Gas	Good

Observations/Comments:

- The utilities provided appear to be adequate for the property.
- See Section 7.1 for descriptions and comments regarding the underground fuel storage tank.
- See Section 7.4 for descriptions and comments regarding the emergency generator.

5.2. PARKING, PAVING, AND SIDEWALKS

The main entrance drive is located along West North Street on the south side of the property. Additional entrance drives are located along Powell Place and Ivy Street. The parking areas and drive aisles are paved with asphalt. The entrance driveway aprons are paved with concrete.

Based on a physical count, parking is provided for approximately 103 cars. The parking ratio is 0.63 spaces per thousand square feet of floor area. All of the parking stalls are located in open lots. The main parking lot is located at the north side (rear) of the building and contains 83 parking spaces. The parking area located at the south side (front) of the building contains 9 parking spaces, of which two are handicapped-accessible stalls. The parking area located at the northwest corner of the property contains 11 parking spaces. There are no van-accessible stalls.

The vast majority of the sidewalks throughout the property are constructed of cast-in-place concrete. There is an asphalt sidewalk, located at the front of the school, which leads from the sidewalk along West North Street to the front parking lot. Cast-in-place concrete steps with metal handrails are located at the left side of the school. Cast-in-place concrete steps are located at the front of the school.

An off-site asphalt sidewalk, at the northeast elevation, leads to the adjacent property playfields.

The curbs are constructed of a combination of cast-in-place concrete curbing and extruded asphalt curbing placed at the edge of the pavement.

Observations/Comments:

- The asphalt pavement is in poor overall condition. There are significant areas of failure and deterioration, such as alligator cracking, localized depressions and pot holes throughout the site pavement. In addition, there is ponding at the pavement area adjacent to the loading dock at the rear of the building. The damaged areas of paving must be cut and patched with new asphalt and the paving at the ponding area must be replaced and re-graded in order to maintain the integrity of the overall pavement system. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition to the aforementioned pavement replacement program; pothole patching, crack sealing, seal coating, and restriping of the asphalt pavement will be required during the evaluation period to maximize the pavement life. The estimated cost of this work is included in the Replacement Reserves Report.
- As stated in Section 5.3, the asphalt drainage swale at the rear of the east drive lane will require replacement. The costs for this work are included above with the asphalt replacement program above.
- The concrete sidewalks are in good to poor condition. There are isolated areas of settlement, deterioration and cracking, as noted at the front, left and rear elevations of the building. In addition, tripping hazards occur at various locations, due to vertical displacement of the sidewalks. It is recommended that all damaged concrete sidewalks are replaced, including all trip hazard locations, within the year. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition to the aforementioned concrete sidewalk replacements; based on the estimated Remaining Useful Life (RUL) and current condition, a concrete sidewalk replacement program will be required during the evaluation. The estimated cost of this work is included in the Replacement Reserves Report.
- The asphalt sidewalk is in poor condition. There are significant areas of settlement, cracking, and deterioration at the front sidewalk that leads from the sidewalk along West North Street to the front parking lot. The asphalt sidewalk will require early replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The site concrete steps are in good to fair condition. Isolated damage and cracking was observed on the steps leading from the sidewalk along West North Street to the front of the school. The concrete damaged areas will require repair or replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- Handrails were noted missing at the site steps leading from the sidewalk along West North Street to the front of the school. Installation of handrails at steps with three or more risers will be required as a life safety and code compliance issue. The estimated cost of this work is included in the Replacement Reserves Report.
- The concrete and asphalt curbs throughout the property are in good to poor condition. There are isolated areas of deteriorated, shifting, missing and displacement of curbing, as noted at various locations throughout the site. Replacement of all damaged concrete and asphalt curbing will be required within the year. 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. Storm water along the east drive lane flows into the adjacent river.

The basement mechanical room is equipped with a concrete sump and dual sump pumps.

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 evidence of ponding at the asphalt pavement at the rear loading dock. See Section 5.2 for more details and costs for repair.
- There are two drainage areas that drain storm water into the adjacent river, along the east drive lane, that are recommended for installation of stone riprap, where required, to prevent washout of the hill and ensure proper storm water site drainage. The estimated cost of this work is included in the Replacement Reserves Report.
- The asphalt drainage swale (drains to river) at the rear of the east drive lane is in poor condition. There are significant areas of deterioration and cracking throughout. The damaged asphalt drainage swale will require replacement in order to restore the proper drainage profile. Replacement of the asphalt swale is recommended concurrent with the asphalt pavement replacement program. The costs for this work are included in Section 5.2.
- The sump pumps are reported to be in good condition. The testing of equipment is not within the scope of a Facilities Needs Assessment. The storm water system will require routine maintenance during the evaluation period.

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. Flowerbeds are concentrated around the property sign and some trees.

Surrounding properties include a school, park and single-family residential developments.

Reinforced concrete retaining walls are located at grade changes at the front, rear and west elevations of the building.

Stone masonry has been placed on a portion of the landscape hill, adjacent to the concrete retaining wall at the west elevation of the property.

Asphalt and stone masonry has been placed on a portion of the landscape hill, at the rear of the parking lot along the north property line.

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. There are some landscape trees growing close to, and/or slightly over-hanging the roof surfaces, as noted at the right and rear elevations of the building. In addition, the trees along the entire north property line are in need of pruning and removal of overgrowth vegetation. To prevent damage to the building exterior walls and roof, as well as to ensure healthy vegetation, tree trimming/pruning is recommended within the year. The estimated cost of the repair work is included in the Replacement Reserves Report.

- In addition to the aforementioned; the landscaping material at the rear of the building and at various locations along the east elevation of the property (along the river) are partially barren. In addition, there is asphalt covering a portion of the hill along the north property line that has areas of deterioration, cracking and tree roots/ vegetation growth coming through. It is recommended that all affected areas of landscaping are re-graded and reestablishment of ground cover. The estimated cost of this work is included in the Replacement Reserves Report.
- The landscape stone masonry is in good to fair condition. There are some vegetation growth and barren areas in-between the stones. Routine maintenance will be required during the evaluation period.
- The retaining walls are in good overall condition, requiring routine maintenance during the evaluation period. However, cracking at the concrete retaining wall at the front of the building was noted, due to shifting of the wall. The damaged section of concrete wall will require replacement to maintain the integrity of the overall retaining wall system. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- There are no sustainable recommendations for landscaping.

5.5. GENERAL SITE IMPROVEMENTS

Property identification is provided by a monument sign along West North Street. The school name is displayed on the front exterior elevation.

Site lighting is provided by property-owned, wood, streetlight standards. The light standards are spaced along the drive aisles throughout the parking areas. Light fixtures mounted on wood poles are located along walkways and drive aisles throughout the property.

Exterior building illumination is provided by surface-mounted light fixtures on the exterior walls. Surface-mounted light fixtures are located in the exterior soffits.

Metal guardrails are located along the east drive lane.

A chain link fence encloses the generator cooling system at the rear of the building.

The school property does not have play fields. The adjacent property, J.M. Wright Technical School and Scalzi Park, have playfields which the school has access to.

A metal bike rack is located at the rear of the building.

Dumpsters are located adjacent to the rear loading dock and two are placed on the asphalt pavement and one is placed on a concrete pad. The dumpsters are not enclosed.

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 to poor condition. According to the POC, approximately 50 percent of the building light fixtures do not operate, resulting in poor illumination at night. The lack of adequate illumination is a safety hazard. Based on these observations, replacement of some light fixtures will be required within the year, to provide for necessary levels of night lighting for security measures. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition to the aforementioned light fixture replacements; there is what appears to be an old abandoned pole light concrete base adjacent to the front sidewalk. Installation of a new pole light at the abandoned concrete base is recommended. Additionally new pole-mounted lighting is recommended. The estimated cost of this work is included in the Replacement Reserves Report.

- There is a chain link fence located along the north property line that is in poor condition. The fencing is owned and maintained by J.M. Wright Technical school.
- The metal guardrail is in good condition and will require routine maintenance during the evaluation period.
- The chain link fence enclosure is in good condition and will require routine maintenance during the evaluation period.
- The metal bike rack is in poor condition. Based on the estimated Remaining Useful Life (RUL) and condition, replacement of the metal bike rack will be required. The cost of replacement is relatively insignificant and the work can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- The dumpsters are owned by the City of Stamford. The dumpsters are in good condition, requiring routine maintenance during the evaluation period.

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.

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.

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 building has structural steel columns supporting the upper floors and roof. The first floor is supported by cast in place concrete beams. The upper floors have concrete-topped metal decks and are supported by steel beams and open-web, steel joists. The roofs are constructed of metal decks supported by steel beams and open-web, steel joists. The roof decks are topped with concrete.

The steel structure is encased in concrete.

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.

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. The roofs are insulated with rigid insulation boards.

The exterior perimeter walls extend above the surface of the roofs, creating low curb walls. The roof membrane turns up and over the sides of the curb walls and terminates at sheet metal drip edges. The roofs have sheet metal flashing elements of base and edge flashing.

Storm water is drained from the roofs by internal drains.

Curb-mounted skylights provide natural illumination in some of the upper floor areas.

There are no attics. The roof structures are exposed.

A metal-framed mansard roof occurs along the front elevation surrounding the raised roof of the auditorium. The side of the mansard is finished with standing seam metal panels while the flat upper roof is finished with the same type of membrane as the primary roof.

Observations/Comments:

- The roof finishes were installed in 2001. The roofs are covered by a 20 year warranty. A copy of the warranty is attached in Appendix C. The roofs are maintained by the in-house maintenance staff and a contractor is retained as needed.
- EMG also conducted a separate roof assessment for this project. Three small 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.
- According to the POC, there are no active roof leaks. There is no evidence of active roof leaks.
- There is no evidence of roof deck or insulation deterioration. The roof substrate and insulation should be inspected during any future roof repair or replacement work.
- There is no evidence of fire retardant treated plywood (FRT) and, according to the POC, FRT plywood is not used.
- The roof flashings are in good condition and will require routine maintenance during the evaluation period.
- The curb walls and drip edges are in good condition and will require routine maintenance during the evaluation period.
- Roof drainage appears to be inadequate. Clearing and minor repair of drain system components should be performed regularly as part of the school's routine maintenance program. Isolated areas of ponding were observed and will deteriorate the roof membrane prematurely unless sections of the tapered insulation are replaced to promote drainage to the existing drains. The estimated cost of this work is included in the Replacement Reserves Report.
- The skylights are in fair to poor condition. Most of the large units have broken seals and one of the smaller units has a broken dome. Based on their estimated Remaining Useful Life (RUL) and condition, the skylights will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The fields of the roofs are in good condition. Based on their estimated Remaining Useful Life (RUL), the mansard metal panels 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 to keep the light colored type of membrane during the next replacement.

6.4. EXTERIOR WALLS

The exterior walls are finished with brick masonry veneer. The building has unfinished, precast, concrete panel bands, panels and soffits.

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

Observations/Comments:

- The exterior finishes are in fair to poor condition. Cracks were observed in the precast concrete soffits and bands. Numerous areas have exposed rebar where the steel was too close to the surface of the concrete and the concrete has worn away or spalled to expose the steel. The areas will worsen during freezing and thawing cycles unless repaired soon. Epoxy injections should be performed on the minor cracks and exposed rebar. Some replacements and repairs will be required on the larger areas of damage. The estimated cost of this work is included in the Replacement Reserves Report.
- Due to reported water infiltration at the south end of the courtyard facing wall, waterproofing of the unfinished concrete panels is suggested to help prevent further water infiltration. Due to the worn surfaces of the concrete and observed moisture infiltration, EMG suggests waterproofing all of the concrete panels. The isolated area with moisture damage will require replacement of the interior finishes which can be done through routine maintenance. The estimated cost of this work is included in the Replacement Reserves Report.
- The sealant, control joints and expansion joints are dry-rotted and separated allowing for water infiltration. Based on their estimated Remaining Useful Life (RUL) and condition, the sealant and expansion joints will require replacement early in the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- Sustainable recommendations for the use of low VOC sealant/caulking around windows, doors, control joints and change of finish and low VOC paints.

6.5. EXTERIOR AND INTERIOR STAIRS

The exterior and interior stairs are constructed of reinforced concrete. The handrails and balusters are constructed of metal. The guard wall at the main exterior stair is cast in place concrete and has no baluster.

Observations/Comments:

- The interior stairs, balusters, and handrails are in good condition and will require routine maintenance during the evaluation period.
- The exterior stairs and handrails are in fair to poor condition. Cracks were noted on treads, structural surfaces on the vertical planes, and underneath the walkway to the main entrance in several locations. Evidence of water infiltration was observed throughout. Large areas of concrete are spalling. The handrail is loose and not connected at the bottom riser on the right. Early replacement of the stair structure is recommended due to its estimated Remaining Useful Life (RUL) and condition. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for the interior stairs is to use low VOC paints on the railings.
- There are no sustainable recommendations for the exterior stairs.

6.6. WINDOWS AND DOORS

Some of the windows such as at the main entrance and around the courtyard are part of an aluminum-framed, storefront system incorporating the entry doors. The windows are glazed with single panes set in metal frames. The doors are fully-glazed, aluminum-framed doors set in the metal framing system.

The remaining windows are metal-framed units with fixed and operable panes of tinted glazing.

The operable windows are hopper and casement style units.

The service doors are painted, metal doors set in metal frames. The doors have cylindrical locksets with knob handle hardware.

One overhead door is located off the boiler room on the east side. The overhead door is a flush-paneled metal door and is equipped with mechanical openers.

The loading dock is equipped with bumpers.

Observations/Comments:

- The storefront window system is in fair to poor condition. The metal is worn and the windows are single paned. Based on their estimated Remaining Useful Life (RUL) and condition, the storefront systems will require replacement with an insulated system during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the POC, the property does experience a significant number of complaints regarding window leaks. The windows are in fair to poor condition. The window gaskets have deteriorated. Based on its estimated Remaining Useful Life (RUL), the windows will require replacement with an insulated system during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The exterior doors and door hardware are in fair to poor condition. The paint has chipped away in isolated areas and the exposed metal is rusted. Some service doors have rusted through at the base of the doors and frames to the inside and water is infiltrating the building. One service door on the west was missing a door knob. Based on their estimated Remaining Useful Life (RUL) and condition, the service doors will require replacement with an insulated system 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, stairwell door replacement is required. A budgetary cost allowance for replacing all interior and exterior stairwell doors and hardware is included in the Replacement Reserves Report.
- The overhead door is in fair to poor condition. Based on its estimated Remaining Useful Life (RUL, the storefront systems will require replacement with an insulated system 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. Cracked concrete, rusted steel angles, and deteriorated bumpers were observed. No bumpers were observed at the dumpsters which may be contributing to some impact damage. Additional bumpers and replacement of the existing bumpers are recommended. Epoxy injection repairs, crack sealing and partial replacements of damaged concrete and steel are also recommended. A cost allowance for this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for windows is to replace with double paned windows with a thermal break.
- A sustainable recommendation for doors is to replace with double paned units and insulated metal doors. Weather-stripping is also recommended.

6.7. PATIO, TERRACE, AND BALCONY

A concrete-paved terrace is located in the courtyard. The terrace serves as an outdoor dining and gathering area. The center is sunken and accessible by circular steps.

Observations/Comments:

- The terrace slabs are in fair to poor condition. Sections of the courtyard are filled with large stones that are not river bed type and present a life safety hazard due to the sharp edges. There are significant signs of movement, settlement, and cracking of the concrete slabs. The vertical displacement presents a life safety hazard. EMG recommends significant replacements of the damaged and heaving slabs and replacement of the sharp stone with river bed gravel of a smaller size. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- There are no sustainable recommendations for the terraced courtyard.

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

The lobby contains bulletin boards, directories, and display cases. Corridors and stairways are accessed directly from the lobby. The elevator is accessed from a corridor off the main lobby and is located at the northeast corner of the building.

Classrooms and offices are accessed from corridors beyond the lobby and from corridors on each floor.

A pair of adult restrooms is located off the corridor near the main office. There are a total of six adult restrooms and a total of nine student restrooms plus the restrooms in the locker rooms.

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	Exposed brick	Suspended acoustic tiles
Corridor	Suspect asbestos tile, vinyl tile, ceramic tile	Painted concrete block, exposed brick, ceramic tile	Suspended acoustic tiles
Restrooms	Ceramic tile	Ceramic tile and painted concrete block	Suspended acoustic tiles
Office	Carpet, vinyl tile	Painted drywall, exposed brick, painted concrete masonry units	Suspended acoustic tiles
Media Center	Carpet	Painted drywall, painted concrete masonry units	Suspended acoustic tiles

Common Area	Floors	Walls	Ceilings
Auditorium	Carpet, painted concrete, wood stage	Exposed brick	Exposed structure with fireproofing
Cafeteria	Vinyl tile	Painted concrete masonry units	Suspended acoustic tiles
Gymnasium	Wood	Painted concrete masonry units	Exposed structure
Locker rooms	Painted concrete, ceramic tile	Painted concrete masonry units, painted drywall, ceramic tile	Painted concrete
Auxiliary Gyms	Wood	Painted concrete masonry units, painted drywall	Painted concrete masonry units, painted drywall

Observations/Comments:

- It appears that the interior finishes in the common areas are original or have not been renovated within the last ten years.
- The interior finishes in the common areas are in fair condition. Based on its estimated Remaining Useful Life (RUL), the common area carpet and vinyl tile will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The wood flooring in the gymnasium is in good to fair condition and the auditorium stage is in fair to poor condition. Refinishing 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 asbestos abatement recommendations.
- Interior painting will also be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The fireproofing on the exposed structure of the auditorium is in fair to poor condition. It does not cover the entire structure, exposed areas were observed. It does not appear to be applied in a way that is stable; it was reported that large and small chunks of the material fall off and have fallen on audience members during performances. A full removal and replacement with a more stable and stronger material is recommended immediately. The estimated cost of this work is included in the Replacement Reserves Report.
- The sliding curtain in the gymnasium is in good condition and will require routine maintenance during the evaluation period.
- According to the client provided JMOA five year capital plan, sound control is required at the cafeteria. A budgetary cost allowance for installing sound absorbing and sound attenuation blankets 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.
- EMG observed classroom cabinetry with cable, U-bolt bicycle locks or without locking mechanisms. According to the client provided JMOA five year capital plan, cabinet repair and lock installation due to vandalism is planned. A budgetary cost allowance for installing cabinet door locks and hardware is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for the interior finishes is to use low VOC paints, linoleum or cork flooring, and recycled material carpeting.

7. BUILDING (CENTRAL) MECHANICAL AND ELECTRICAL SYSTEMS

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

Hot water for the central heating system is supplied by three cast iron boilers. The boilers have dual-fuel capability, utilizing natural gas or fuel oil. The boilers each have a rated input capacity of 3,098 MBH and are located in the basement mechanical room. The hot water loop contains two expansion tanks.

Fuel oil is supplied to the boilers by a fuel oil pump set and a 10,000-gallon underground storage tank (UST). The UST is located adjacent to the loading dock beneath the parking paving area at the rear elevation of the building.

Circulating pumps provide heated water to each temperature-controlled space via a two-pipe distribution system. The heated water is supplied to the air handling units, cabinet radiant units, baseboard radiant heat units, and the unit ventilators.

Heating is provided in the classrooms by unit ventilators mounted along the exterior walls. One unit ventilator supplies the lobby. The unit ventilators are supplied with heated water by the central system and supply fresh air to each conditioned space through an exterior wall louver. The units have an airflow capacity of 500 to 1,500 CFM each. The unit ventilators have limited control provided by local thermostats. Hot water supply is controlled by the computerized building energy management system (EMS).

Heating is provided in the restrooms, stairwells and corridors by recessed or wall-mounted cabinet, finned-tube radiant heat units. Baseboard-mounted, finned-tube radiant heat units are located at various areas in the building. The radiant units are supplied with heated water by the central system. Supplemental heating is provided in the kitchen by two ceiling-mounted unit heaters. The heating units are supplied with hot water by the central system.

Heating is provided in the auditorium, cafeteria, gymnasium, media center, offices, and classrooms #111, #112 and #113 by high-capacity, air handling units equipped with heating coils. The air handling units are supplied with heated water by the central system. Seven units are supplied with cooling. Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are located in each space. The air handling units are controlled by the building EMS. The following table describes the air handling units:

Air Handling Units					
Designation	**Location**	**Area Served**	**Air Flow**	**Cooling**	**Heating**
AHU-1 (New Unit)	Classroom #111	Classrooms #111A, #111C, and 112A	5,490 CFM	Chilled water coil	Hot water coil
AHU-2 (New Unit)	Classroom #113	Classrooms #112B and #113	5,455 CFM	Chilled water coil	Hot water coil
AHU-4	Corridor Ceiling outside Media Center	Media Center	1,600 CFM	None	Hot water coil

Air Handling Units					
Designation	**Location**	**Area Served**	**Air Flow**	**Cooling**	**Heating**
AHU-5	Corridor Ceiling outside Media Center	Media Center	1,600 CFM	None	Hot water coil
AHU-6	Corridor Ceiling outside Media Center	Media Center	1,600 CFM	None	Hot water coil
AHU-7	General Supply Room	Girls Locker Room	1,600 CFM	None	Hot water coil
AHU-8	Outside Storage (near Auditorium, rear entrance)	Girls Aux Gym	1,700 CFM	None	Hot water coil
AHU-9	Boys Locker room/Custodial Port	Boys Aux Gym	1,700 CFM	None	Hot water coil
AHU-10	Custodial Area (break room)	Boys Locker Room	1,400 CFM	None	Hot water coil
AHU-11	Kitchen	Cafeteria #1	6,200 CFM	None	Hot water coil
AHU-12	Kitchen	Cafeteria #2	6,200 CFM	None	Hot water coil
AHU-13	Corridor Ceiling outside Main Office	Teachers Lounge	1,850 CFM	Air-cooled condensing unit	Hot water coil
AHU-14	Corridor Ceiling outside Main Office	Main Office #1 (Front)	2,160 CFM	Air-cooled condensing unit	Hot water coil
AHU-15	Corridor Ceiling outside Main Office	Main Office #2 (Rear, Principal)	2,620 CFM	Air-cooled condensing unit	Hot water coil
AHU-16	Gym Storage Loft, Mechanical Room	Gym – Boys side	9,300 CFM	None	Hot water coil
AHU-17	Gym Storage Loft, Mechanical Room	Gym – Girls Side	9,300 CFM	None	Hot water coil
AHU-18	Gym Storage Loft, Mechanical Room	Auditorium North	11,200 CFM	Air-cooled condensing unit	Hot water coil
AHU-19	Auditorium Mechanical Room	Auditorium South	11,200 CFM	Air-cooled condensing unit	Hot water coil

Chilled water for the cooling system for classrooms #111, #112 and #113 are supplied by one rooftop air-cooled liquid chiller. The chiller has a nominal rating of 30 tons and uses R-22 as a refrigerant. Circulating pumps provide chilled water to the temperature-controlled space via a two-pipe distribution system. The chilled water supplies #AHU-1 and #AHU-2.

Cooling is provided in the auditorium by two air-cooled condensing units, which supplies AHU-18 and AHU-19. The condensing units are mounted on the roof and have a nominal rating of 20 tons each. The condensing units use R-22 as a refrigerant.

Cooling is provided in the offices and teachers lounge by three air-cooled condensing units, which supplies AHU-13, AGU-14 and AHU-15. The condensing units are mounted on the roof and have a nominal rating of 5 tons each. The condensing units use R-22 as a refrigerant.

Cooling is provided in classroom #110 individual through-wall air-conditioning units. There are a total of three AC units.

The kitchen, auditorium, gym, bathrooms, and other areas are ventilated by mechanical exhaust fans. High-capacity ventilation fans are mounted on the roof 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 at the custodial office. The EMS provides individual control and performance data for the boilers, chiller, circulating pumps, air handling units, unit ventilators and the domestic water heating system. The system is actuated by pneumatic controls. The air compressors are located in the basement mechanical room.

Observations/Comments:

- The HVAC systems are maintained by the in-house maintenance staff.
- The HVAC equipment varies in age. The boilers were replaced in 2003. The chiller was replaced in 2007. The condensing units range in age from 7 to 14 years old. The unit ventilators in the classrooms were replaced in 2006. The air handing units are original, with the exception of five replacement units. HVAC equipment is reportedly replaced on an "as needed" basis.
- The building is not equipped with central cooling. The areas supplied cooling are as follows; auditorium, offices, teachers lounge and classrooms #110, # 111, #112, and #113. It is recommended that an HVAC contractor evaluate the building for the potential reconfigure and design of installing a central cooling system for the entire building. This would allow for a more comfortable indoor environment in the building throughout the year. The HVAC study would also require evaluating the energy management system (EMS) to ensure proper temperature control throughout the building. The estimated cost of this work is included in the Replacement Reserves Report. The cost of the follow-up evaluation is included in section 1.2.
- The boilers appear to be in good condition and will require routine maintenance during the evaluation period.
- The expansion tanks appear to be in good condition and will require routine maintenance during the evaluation period.
- 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 circulating pumps will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The underground 10,000-gallon storage tank could not be directly observed and is reported to be in good condition. Based on its estimated Remaining Useful Life (RUL), the UST will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

- The unit ventilators appear to be in good condition. The unit ventilators were replaced in the classrooms in 2006; however, there is still one original unit that serves the lobby. Based on its estimated Remaining Useful Life (RUL) and condition, the unit ventilator for the lobby 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 ceiling-mounted unit heaters appear to be in good condition. Routine maintenance will be required during the evaluation period.
- The air handling units appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL) and condition, the air handling units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The air-cooled liquid chiller appears to be in good. Routine maintenance will be required during the evaluation period.
- The condensing units appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL) and condition, the two condensing units that serve the auditorium and the three condensing units that serve the offices/teachers lounge will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The through-wall air-conditioning units appear to be in good condition. Based on the estimated Remaining Useful Life (RUL), the three AC units in classroom #110 will require replacement during the evaluation period. The cost of replacement is relatively insignificant and the work can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- The main computer server room labeled "MD" on the door requires a dedicated cooling system due to elevated temperatures in this room. Installation of a split system ductless ceiling mount 2-ton unit is recommended in order to maintain lower temperatures, due to the computer equipment located in this room. The estimated cost of this work is included in the Replacement Reserves Report.
- Some minor open or damaged areas of refrigerant line insulation covering were noted at the roof, requiring repair. The cost of this work is relatively insignificant and can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- Some electrical conduit and junction boxes were noted rusting at the roof. It is recommended that all electrical components be replaced concurrent with repair or replacement of rooftop HVAC units.
- The mechanical ventilation system and equipment appear to be in good condition and will require routine maintenance during the evaluation period. Equipment or component replacements can be performed as part of the Physical Plant's routine maintenance program. According to the custodial staff, the exhaust fans are replacement units, installed in 2004; however, 18 of the 53 exhaust fans are non-operable. It is recommended that the school property management contact the installing contractor to have all exhaust fans put back in operation as designed. The cost of this work is relatively insignificant and can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.

Sustainable Recommendations:

- A sustainable recommendation for HVAC is to pursue the installation of a central air-conditioning system. This would reduce energy consumption by eliminating the use of small, less efficient split-system units.
- An additional sustainable recommendation for HVAC is to replace the air 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.

- An additional sustainable recommendation for HVAC is to equip the circulating pumps with high efficiency motors to reduce energy consumption.

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 to be galvanized steel.

The water meter is located in a vault adjacent to the street.

Domestic hot water is supplied by two, gas-fired boilers. Each boiler has a rated input capacity of 315 MBH and is located in the basement mechanical room. The domestic hot water system consists of circulating pumps, expansion tank and a nominal 500-gallon, insulated storage tank.

The common area restrooms have commercial-grade fixtures and accessories, including water closets, urinals, and lavatories. Drinking fountains are located in the corridors and locker rooms.

Observations/Comments:

- The plumbing system appears to be well maintained and in good condition. The water pressure appears to be adequate. Based on their estimated Remaining Useful Life (RUL) and current condition, partial replacement of the plumbing system piping will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- 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.
- The boilers and storage tank appear to be in good condition. The boilers and storage tank were installed in 2003 and will require routine maintenance during the evaluation period.
- The accessories and fixtures in the restrooms are in good to fair condition. There were some missing lavatory sinks and the locations are as follows; ground floor boy's locker room, 2nd floor boy's rest room and 2nd floor girl's restroom. Some restrooms had one toilet removed to allow for an ADA stall. Based on the estimated Remaining Useful Life (RUL) and condition, the restroom fixtures will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The drinking fountains are in good to fair condition. Based on the estimated Remaining Useful Life (RUL) and condition, the drinking fountains will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.

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.

7.3. BUILDING GAS DISTRIBUTION

Gas service is supplied from the gas main on the adjacent public street. The gas meter and regulator are located inside a locked room, accessed from the rear loading dock. The gas distribution piping within the building 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 an enclosed transformer vault that feeds the interior-mounted and exterior-mounted electrical meters.

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

The building is equipped with a public address and intercom system, which allows commutation 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 sound system.

A natural gas-powered, 100-kW, emergency generator is located in a locked room, accessed from the rear loading dock. The generator provides back-up power for elements of the fire and life safety systems. The generator is equipped with a "Young Touchstone" cooling system, pad-mounted at the rear of the building.

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 to fair condition, requiring routine maintenance during the evaluation period. Several circuit breaker panels were observed aged and worn, as noted at the kitchen and electrical closets. Based on their estimated Remaining Useful Life (RUL) and condition, some of the circuit breaker panels will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior lighting is in fair condition. Lighting upgrades have been completed on the first floors only. Based on energy conservation and current condition, EMG recommends replacing all remaining lighting fixtures with high-efficiency fluorescent light fixtures or LED fixtures. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided JMOA five year capital plan, clock and bell and public address upgrades are planned. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- The auditorium lighting system appears to be in fair condition. Based on its estimated Remaining Useful Life (RUL), the auditorium lighting system will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The auditorium sound system appears to be fair condition. 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.

- There are electrical wires exposed inside an opening in the wall, adjacent to the vending machine in the cafeteria. To prevent injury or unauthorized personnel to this area, installation of a cover will be required immediately. The cost of this work is relatively insignificant and can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- The generator is in good condition and is reportedly tested on a weekly basis. The generator was installed in 2008 and will require routine maintenance during the evaluation period.

Sustainable Recommendations:

- An additional sustainable recommendation for building electrical is to install high-efficiency fluorescent light fixtures or LED fixtures in place of older, less efficient fluorescent fixtures and incandescent.

7.5. ELEVATORS AND CONVEYING SYSTEMS

There is one hydraulic, passenger elevator. The elevator was manufactured by Kone Elevator. The elevator has a rated capacity of 2,500 pounds and a speed of 100 feet per minute. The elevator machinery is located in a room adjacent to the base of the shaft.

The elevator cab has carpeted floors, plastic-laminated wood wall panels, and recessed, ceiling light fixtures. The doors are fitted with electronic safety stops. Emergency communication equipment is provided in the cab.

Observations/Comments:

- The elevator, and its responsiveness, appears to be adequate. The elevator is serviced by Northeast Elevator on a routine basis. The elevator machinery and controls were upgraded in 2008. The elevator will require routine maintenance during the evaluation period.
- The elevator is inspected on an annual basis by the municipality, and a certificate of inspection is on displayed in the elevator cab.
- The emergency communication equipment in the elevator appears to be functional. Equipment testing is not within the scope of a Facilities Needs Assessment.
- The finishes in the elevator cab appears to be in good condition. Based on their estimated Remaining Useful Life (RUL), some of the cab finishes will require replacement during the evaluation period. The cost to replace the finishes is relatively insignificant and the work can be performed as part of the Physical Plant's routine maintenance program. The estimated cost of this work is not included in the cost tables.
- There is no wheelchair lift in the building. In order to provide a wheelchair-accessible route to the auditorium stage, installation of a wheelchair lift is recommended. See Section 3.1 for cost discussion.

Sustainable Recommendations:

- A sustainable recommendation for the elevator is to equip the hydraulic pumps 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. 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 75 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 equipped with a fire pump rated at 1,000 gallons per minute and fire pump controller. The system is also equipped with a backflow preventer.

A central fire alarm panel is located adjacent to the custodian office and monitors the pull stations, smoke detectors, and flow switches. An annunciator panel is located in the lobby. The alarm panel also sounds the alarm and automatically notifies the monitoring service or the fire department in the event of trouble.

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

The building is equipped with a security system, including motion sensors, door alarms and security cameras. The security panels are located at various locations throughout the building and are monitored by Sonitrol.

The walls of the fire stairwells are exposed masonry. The stairs discharge at the ground floor, directly to the exterior and to the interior space. Smoke evacuation in the auditorium is provided by a rooftop-mounted, mechanical system.

Observations/Comments:

- Information regarding fire department inspection information is included in Section **3.2.**
- The fire sprinklers were installed in 2008 and 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.
- According to the POC, the fire suppression system is undergoing a punch list to ensure all work, deficiencies, etc., are completed. During our on-site facility assessment, seven illuminated exit signs were found non-operational or damaged at the ground floor and upper floor levels. Replacement of the exit signs will be included in the punch list. The cost of this work is not included in the cost tables.
- 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 is new and 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.
- The security panel appears to be in good condition. Equipment testing is not within the scope of a Facilities Needs Assessment.
- The dry-chemical, fire suppression system appears to be in good condition and is tested regularly by a qualified fire equipment contractor.
- The exit stairwells appear to have been constructed in accordance with applicable codes in force at the time of construction. The stairwells appear to be in general compliance.
- The stairwell doors and door hardware are fire-rated. Components bearing certification labels are displayed on the doors.

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	Suspect asbestos tile, vinyl tile, ceramic tile	Painted drywall, painted concrete masonry units, painted concrete	Suspended acoustic tiles
Maintenance Shop and Storage	Concrete	Painted concrete masonry units	Exposed structure
Kitchens	Quarry tile	Painted concrete masonry units	Suspended acoustic tiles
Restrooms	Ceramic tile	Ceramic tile	Suspended acoustic tiles

The interior doors are stained, solid-core, wood doors set in metal frames. The interior doors have cylindrical locksets with lever and knob handle hardware.

Observations/Comments:

- The interior finishes are in fair condition. Based on the Estimated Useful Life and the observed conditions, replacement of the vinyl tile and painting is recommended during the term. The costs are included in the Replacement Reserves Report.
- The interior doors are in good condition and will require routine maintenance during the evaluation period. The classroom door knobs are recommended for replacement due to ADA requirements for lever handles and also for interior locking security. Refer to section 3.1.
- The blinds and shades in the classrooms and offices are in good to fair condition. Based on the Estimated Useful Life and the observed conditions, replacement of the blinds and shades is recommended during the term. The costs are included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for the interior finishes is to use low VOC paints, linoleum or cork flooring.

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	Walk-in (1), Chest (2), Upright (2), Roll-in (1)
Freezers	Walk-in (1), Chest (1), Upright (1)
Ranges	Gas
Ovens	Gas
Griddles / Grills	None
Fryers	None
Hood	Exhaust ducted to exterior
Dishwasher	None
Microwave	No
Ice Machines	No
Steam tables	Yes
Work tables	Stainless steel
Shelving	Stainless steel

Observations/Comments:

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

Not applicable. There are no major accessory structures.

10. ENERGY BENCHMARKING

This Section is pending utility invoices from the client.

11. APPENDICES

APPENDIX A: Photographic Record

APPENDIX B: Site and Floor Plans

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-009.017 **Project Name: Cloonan Middle School**

Photo #1:	Front elevation - south

Photo #2:	Right side elevation - west

Photo #3:	Rear elevation - north

Photo #4:	Left elevation - east

Photo #5:	Front entrance – main stair showing water evidence penetrating concrete

Photo #6:	Front entrance – main stair with damaged/loose stair rail and spalled concrete at base of stair

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #7:	Cracked stair treads at front entrance main stair

Photo #8:	Exposed rebar, spalling and water infiltration evidence under main stair connection to main entrance

Photo #9:	Condition of service doors

Photo #10:	Exposed rebar at soffit and horizontally shifted precast concrete panel at front

Photo #11:	Condition of control joints under windows

Photo #12:	Severely faded ADA designated parking at front with no curb cut near stalls

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

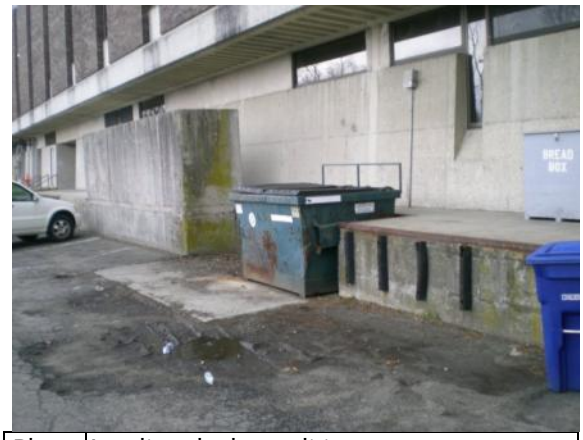


Photo #13:	Loading dock conditions

Photo #14:	Cracks at fascia and soffit

Photo #15:	Cracks at soffit

Photo #16:	Condition of window sealant and glazing compound

Photo #17:	Roof overview

Photo #18:	Broken seals on barrel type skylights

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #19:	Ponding on roof - tapered insulation does not promote proper drainage

Photo #20:	Broken skylight

Photo #21:	Main entrance lobby

Photo #22:	Main office

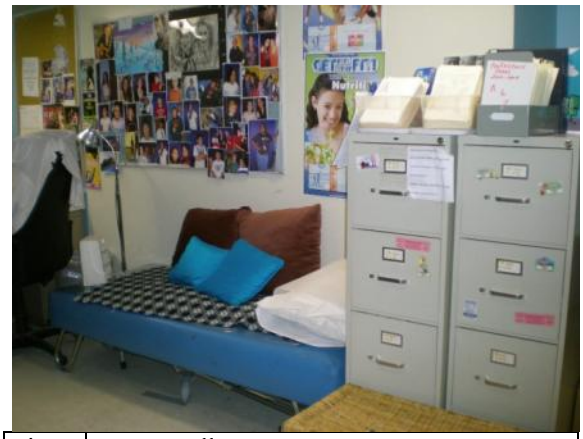


Photo #23:	Nurse's office

Photo #24:	Rear of auditorium at entrance

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #25:	Fire proofing at auditorium ceiling

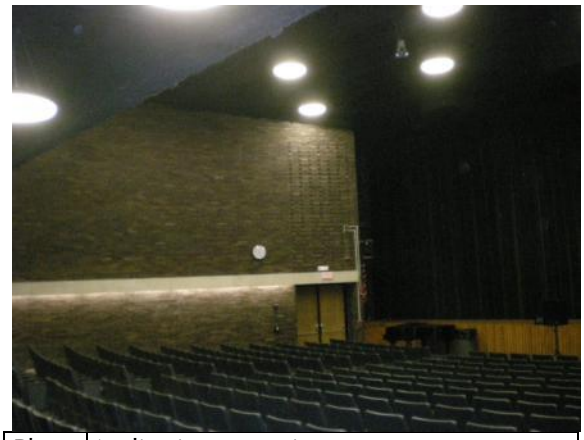


Photo #26:	Auditorium overview

Photo #27:	Broken chair backs in auditorium

Photo #28:	Worn stage in auditorium

Photo #29:	Common area restrooms with high thresholds

Photo #30:	Common area restrooms

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #31:	Stair with no railing extensions

Photo #32:	Media Center

Photo #33:	ADA designated restroom for self-contained SPED class 110

Photo #34:	High threshold at restroom for 110

Photo #35:	Non-insulated drain lines in restroom for 110

Photo #36:	Grab bars mounted too high and not compliant in length at restroom for 110

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #37:	Courtyard

Photo #38:	Lower level (ground) corridor with ceramic tile at former sink area

Photo #39:	Cracks in flooring finished with suspect asbestos tile

Photo #40:	Un-used classroom on ground level

Photo #41:	Cafeteria

Photo #42:	Computer lab

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #43:	Crack at wall under window

Photo #44:	Condition of control joint

Photo #45:	Vertical displacement at courtyard creating tripping hazards

Photo #46:	Moisture reported to penetrate wall and damaging wall finishes

Photo #47:	Moisture reported to penetrate wall and damaging wall finishes

Photo #48:	Typical corridor

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #49:	Student restroom

Photo #50:	Loading dock conditions

Photo #51:	Typical classroom with pad-locked cabinetry

Photo #52:	Typical classroom door lockable from outside room only

Photo #53:	Fire-proofing in auditorium condition

Photo #54:	Gymnasium

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #55:	No pull side hardware in restroom

Photo #56:	Art room with two kilns - one small one is unused

Photo #57:	Boys' locker room

Photo #58:	Auxiliary gymnasium/exercise room

Photo #59:	Interior ramp with no handrails

Photo #60:	Music room

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #61:	Rusted service doors and frame with evidence of water infiltration near music rooms

Photo #62:	Music room used for storage of music equipment

Photo #63:	Project site and signage at front elevation

Photo #64:	Front elevation of building and building identification signage (south elevation)

Photo #65:	Main property entrance drive off West North Street

Photo #66:	Drive lane at right side of building (east elevation)

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #67:	Drive lane at left side of building (west elevation)

Photo #68:	Parking area at front of building, with two accessible parking stalls

Photo #69:	Main parking lot at rear of building

Photo #70:	Parking area at the northwest corner of property

Photo #71:	Ponding at asphalt pavement – adjacent to rear loading dock

Photo #72:	Asphalt deterioration entering east drive lane

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #73:	Asphalt deterioration entering east drive lane

Photo #74:	Asphalt condition along right side of east drive lane

Photo #75:	Asphalt deterioration at the rear of the east drive lane

Photo #76:	Asphalt deterioration at rear parking lot

Photo #77:	Asphalt deterioration at rear parking lot

Photo #78:	Asphalt deterioration adjacent to rear dumpster

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #79:	Asphalt deterioration and condition at northwest corner parking area

Photo #80:	Asphalt condition at rear of west drive lane

Photo #81:	Asphalt deterioration at west drive lane

Photo #82:	Asphalt deterioration at west drive lane

Photo #83:	Asphalt deterioration entering from Powell Place

Photo #84:	Asphalt condition at front parking area and drive lane

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

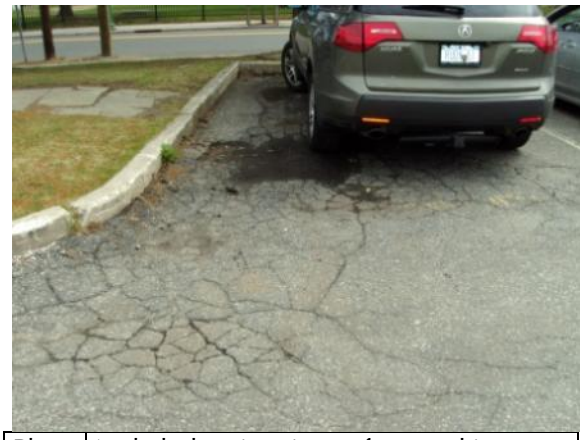


Photo #85:	Asphalt deterioration at front parking area

Photo #86:	Concrete sidewalk and curbing along right side of building

Photo #87:	Concrete sidewalk and curbing along left side of building

Photo #88:	Concrete sidewalk, curbing and retaining wall at west elevation

Photo #89:	Concrete sidewalk along front of building

Photo #90:	Concrete sidewalk at front of building (note cracking)

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #91:	Concrete sidewalk front elevation with repair area that is cracking and deteriorating

Photo #92:	Cracking at concrete sidewalks at front elevation

Photo #93:	Deterioration at concrete sidewalk and curbing at west elevation

Photo #94:	Tripping hazard and deterioration at concrete sidewalk and curbing at rear of building

Photo #95:	Settlement of concrete sidewalk and deteriorating curbing at rear of building

Photo #96:	Asphalt sidewalk condition at front elevation

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #97:	Concrete steps at front elevation (note missing handrails)

Photo #98:	Concrete steps and retaining walls at west elevation

Photo #99:	Cracking at front concrete steps/sidewalk

Photo #100:	Deteriorating/missing section of concrete curbing along east drive lane

Photo #101:	Deteriorating concrete curbing along east drive lane

Photo #102:	Deteriorating concrete curbing at rear of building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #103:	Deteriorating, missing and displaced asphalt curbing at east elevation

Photo #104:	Deteriorating, missing and displaced asphalt curbing at rear parking lot

Photo #105:	Drainage inlet

Photo #106:	Asphalt swale draining to river at east elevation

Photo #107:	Drainage swale requiring stone riprap at east elevation

Photo #108:	Drainage area requiring stone riprap at east elevation

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #109:	Landscaping at front elevation

Photo #110:	Concrete sidewalks and retaining walls at front elevation

Photo #111:	Cracking/shifting of concrete retaining wall at front elevation

Photo #112:	Wood pole light and overgrown trees along east elevation

Photo #113:	Overgrown trees at rear of building

Photo #114:	Asphalt overlay on landscape hill and excessive vegetation at north property line

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #115:	Landscaping and hard surface at front elevation

Photo #116:	Asphalt overlay on landscape hill at north property line

Photo #117:	Stone masonry on landscape hill at north property line

Photo #118:	Stone masonry on landscape hill at west elevation

Photo #119:	Landscape condition at rear of building (note metal bike rack condition)

Photo #120:	Landscape condition along east elevation (adjacent to river)

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #121:	Building-mounted light fixture

Photo #122:	Building-mounted light fixture

Photo #123:	Abandoned concrete base adjacent to front sidewalk

Photo #124:	Dumpsters set on asphalt pavement adjacent to rear loading dock

Photo #125:	Three hot water heating boilers

Photo #126:	Underground 10,000-gallon fuel oil storage tank at rear of building

Photo #127:	Boiler expansion tanks

Photo #128:	Oil pump set for boilers

Photo #129:	Hot water circulating pumps

Photo #130:	Original unit ventilator serving lobby

Photo #131:	Replacement unit ventilator at classroom

Photo #132:	Recessed cabinet radiant unit

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #133:	Wall-mounted cabinet radiant unit at restroom

Photo #134:	Baseboard-mounted cabinet radiant unit at restroom

Photo #135:	Air handling unit (AHU-16)

Photo #136:	Air handling unit (AHU-17)

Photo #137:	Air handling unit (AHU-18)

Photo #138:	Air handling unit (AHU-19)

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #139:	Rooftop air-cooled liquid chiller

Photo #140:	Chiller circulating pumps

Photo #141:	Air handling unit (AHU-1)

Photo #142:	Air handling unit (AHU-2)

Photo #143:	Rooftop condensers for auditorium

Photo #144:	Rooftop condensers for offices/teachers lounge areas

Photo #145:	Gym with ceiling-mounted HVAC ducts and diffusers

Photo #146:	Ceiling-mounted unit heater at kitchen

Photo #147:	Through-wall air conditioning units for classroom 110

Photo #148:	Rooftop exhaust fans, with larger fan for kitchen

Photo #149:	Damaged refrigerant line insulation and rusting electrical conduit at roof

Photo #150:	Domestic hot water boilers

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #151:	Domestic hot water storage tank

Photo #152:	4-inch galvanized steel piping

Photo #153:	Common area drinking fountain

Photo #154:	Original common area drinking fountain

Photo #155:	Overview of common area restroom

Photo #156:	Common area restroom lavatory sinks

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #157:	Common area restroom lavatory sink with single hot and cold faucet

Photo #158:	Boys locker room missing a lavatory sink

Photo #159:	Boys common area restroom urinals

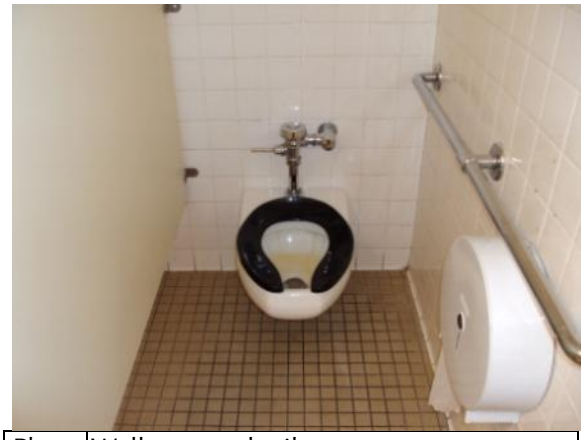


Photo #160:	Wall-mounted toilet at restroom

Photo #161:	Toilet removed to make ADA stall at common area restroom

Photo #162:	Gas metering

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #163:	Main electrical switchgear (adjacent to the custodial break room)

Photo #164:	Electric meter at main electrical room

Photo #165:	Fire pump meter at rear of building

Photo #166:	Original circuit breaker panels in electrical closet

Photo #167:	Step-down transformer at electrical closet

Photo #168:	Emergency generator in locked room at rear loading dock area

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #169:	Chain link fence enclosures the generator cooling system at the rear of the building

Photo #170:	School PA system equipment at office

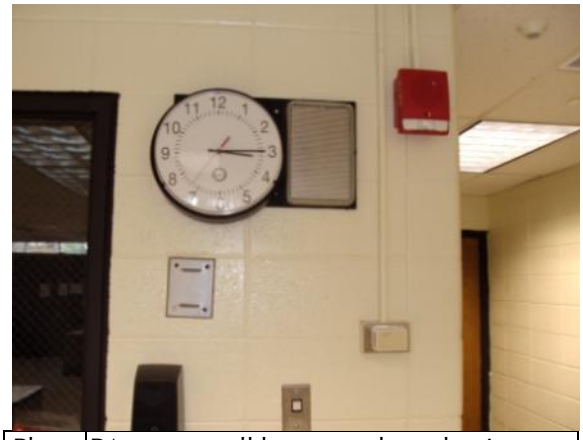


Photo #171:	PA system call button and speaker in classroom, with adjacent clock, thermostat and strobe alarm

Photo #172:	Auditorium lighting controls in auditorium mechanical room

Photo #173:	Auditorium audio and light controls at stage

Photo #174:	Open and exposed wiring adjacent to the vending machine in the cafeteria

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #175:	Elevator

Photo #176:	Elevator controls

Photo #177:	Elevator hydraulic machinery

Photo #178:	Auditorium stage requiring a wheelchair lift for accessibility

Photo #179:	Fire hydrant along Powell Place

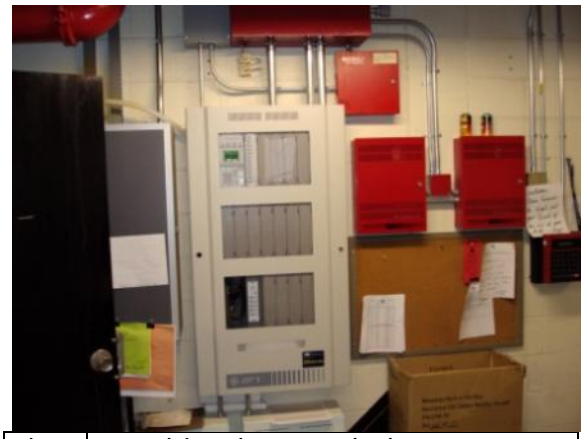


Photo #180:	Central fire alarm panel adjacent to custodian office

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #181:	Main fire suppression system at basement mechanical room with fire pump

Photo #182:	Fire pump controller

Photo #183:	Exhaust hood with fire suppression

Photo #184:	Ansul system for kitchen hood

Photo #185:	Cabinet-mounted fire extinguisher

Photo #186:	Illuminated exit sign and ADA sign at corridor

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

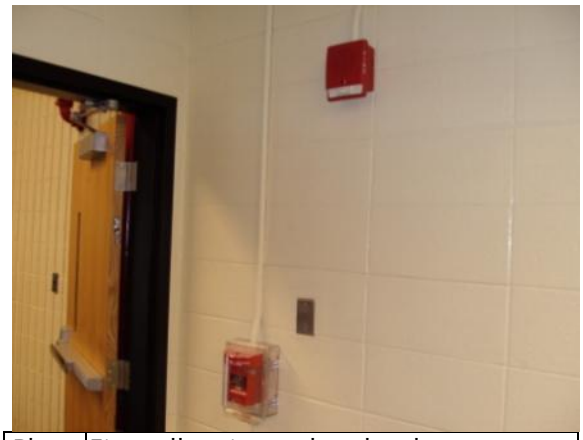


Photo #187:	Fire pull station and strobe alarm

Photo #188:	Illuminated exit sign and emergency lights at auditorium

Photo #189:	Fire standpipe at stairwell

Photo #190:	Smoke detector and recess sprinkler head at corridor

Photo #191:	Annunciator panel at lobby

Photo #192:	Fire house connection at building exterior wall

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #193:	Security alarm panel in electrical closet by main office

Photo #194:	Damaged exit sign at ground floor corridor

Photo #195:	Kitchen gas range

Photo #196:	Kitchen steamers

Photo #197:	Kitchen gas ovens

Photo #198:	Chest cooler in kitchen

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-009.017 **Project Name: Cloonan Middle School**

Photo #199:	Refrigeration unit in kitchen

Photo #200:	Kitchen shelving

Photo #201:	Walk in freezer and refrigerator at kitchen

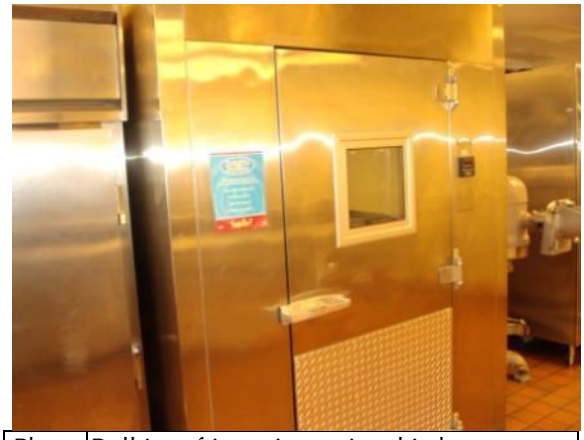
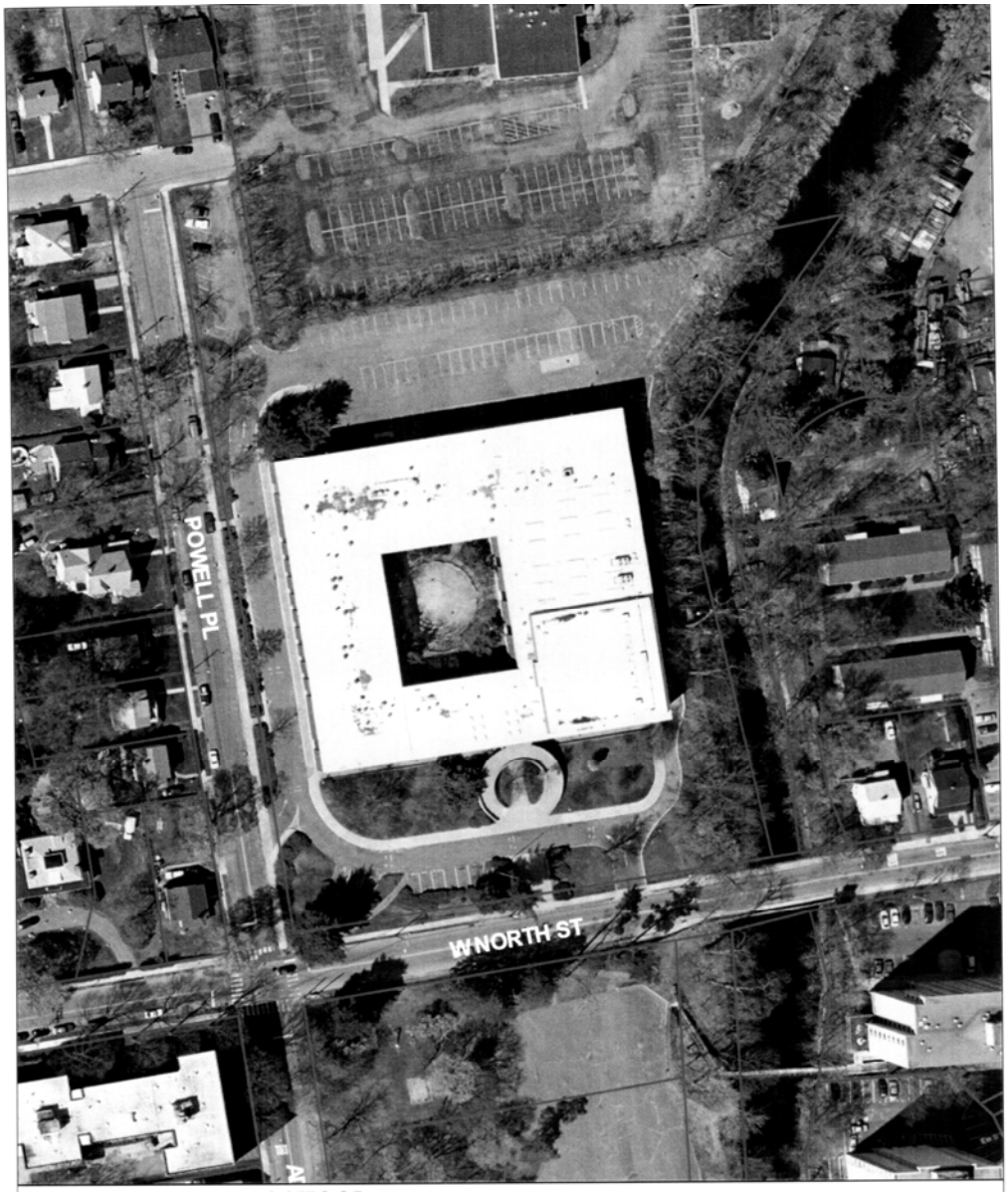


Photo #202:	Roll-in refrigeration unit at kitchen

APPENDIX B:
SITE AND FLOOR PLANS



CLOONAN MIDDLE SCHOOL

City of Stamford

digital orthophotography - flight date April 1998
parcel lines under revision

50 0 50 100 Feet

1:1200

Map printed 2/15/2002

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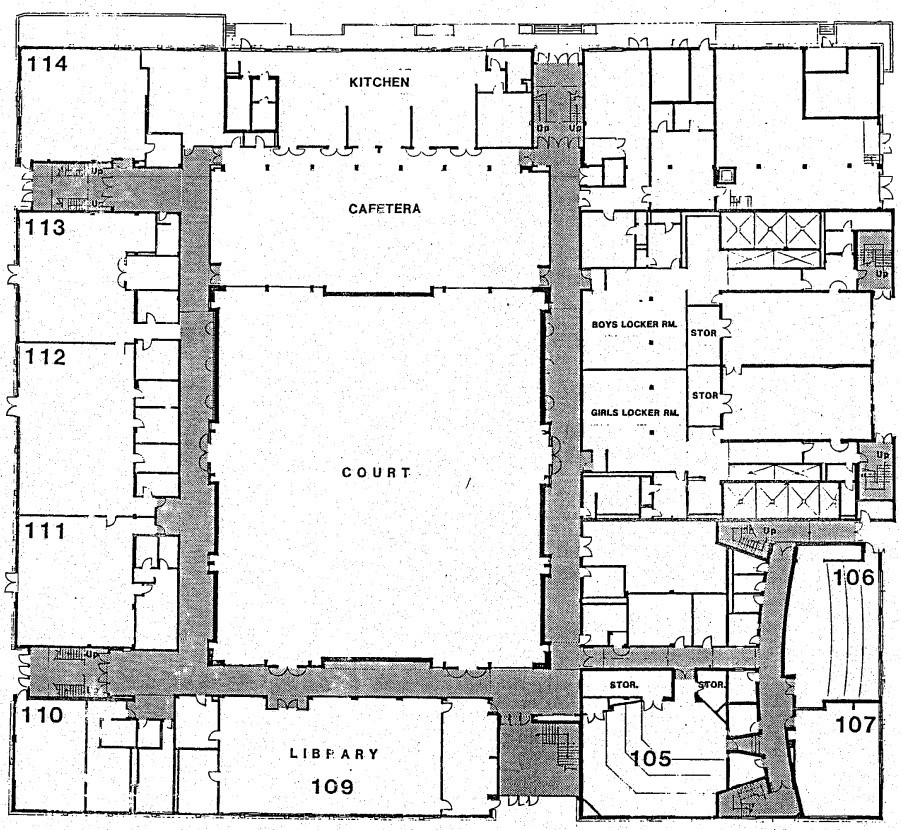
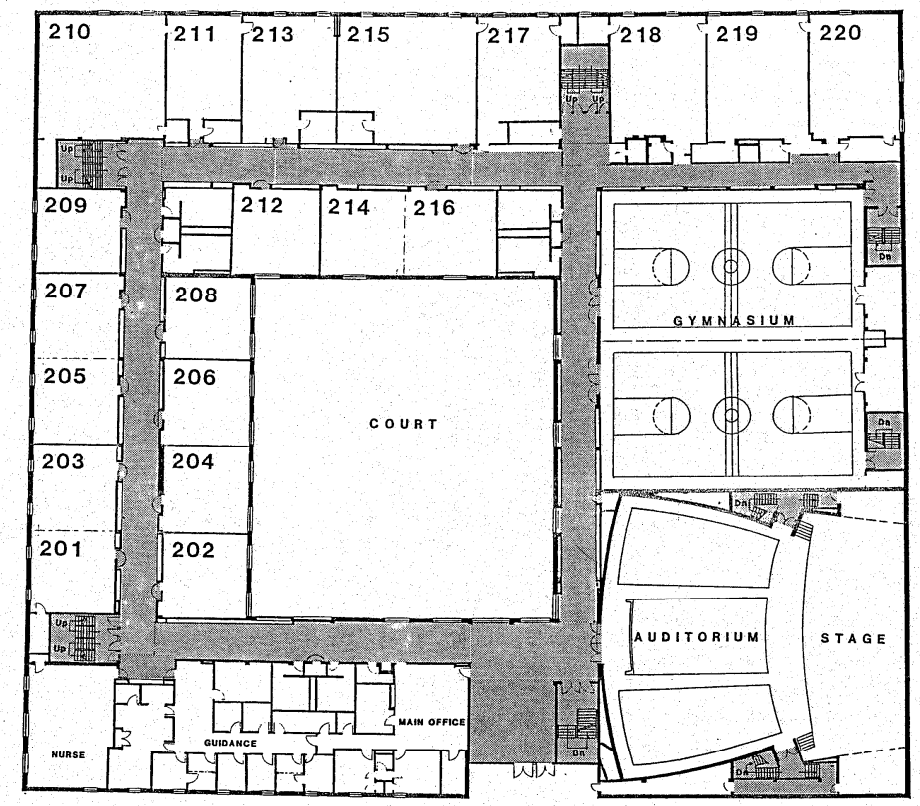


GROUND FLOOR PLAN

R&D 1/13/39

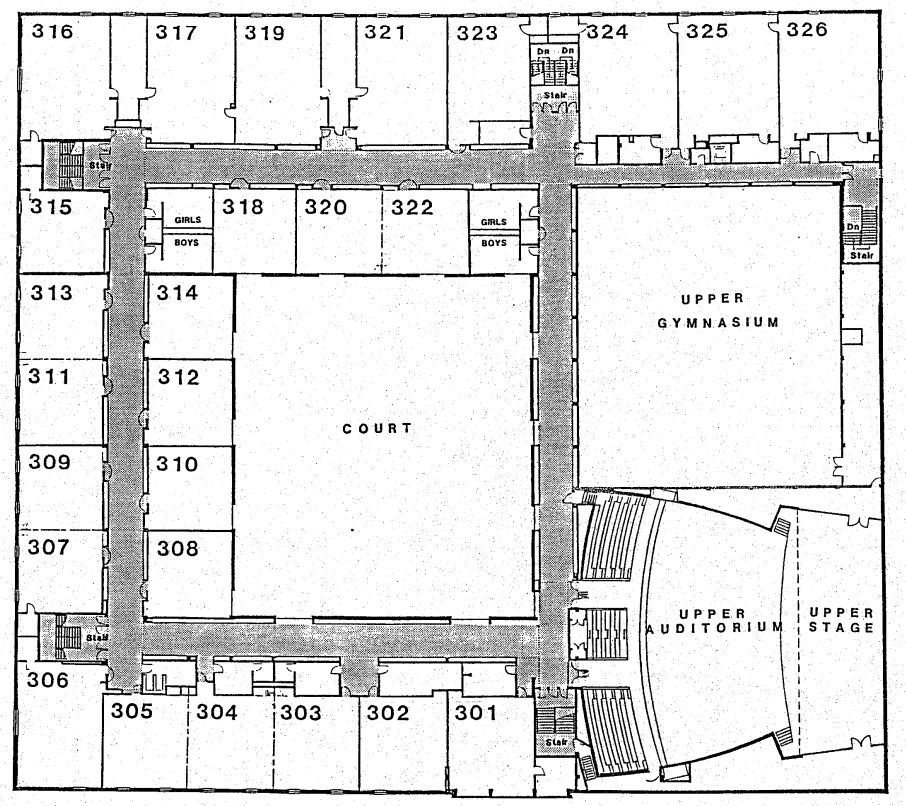
CLOONAN



FIRST FLOOR PLAN

R&D 1/13/89

CLOONAN



SECOND FLOOR PLAN

R&D 1/13/89

CLOONAN

APPENDIX C:
SUPPORTING DOCUMENTATION

AMC Technology, Inc.

P.O. Box 413
Stratford
Connecticut
06615

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Facsimile:
203.375.7344

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October 5, 2006

Mr. Alphonse Barbarotta
Stamford Public Schools
Facilities Management
P.O. Box 9310
888 Washington Blvd.
Stamford, CT 06904

RE: Completed Waste Manifest for Cloonan Middle School

Dear Mr. Barbarotta:

Enclosed please find the original completed waste manifest documenting the proper disposal of asbestos from the above referenced project.

This completed waste manifest should be kept on file in your office. A copy of the waste manifest is included in the Response Action Completion Report for this project.

Very truly yours,

Anthony F. Vuozzo
President

ENC.

AFV:se

60606 J-2

TransWaste, Inc.

2036

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

40 yd/201-2583

Section I — **GENERATOR**

a. Generator Name: Stamford Board of Education
b. Generating Location: Cloonan Middle School, Home Ec. Rm
c. Address: 888 Washington Blvd, Stamford, CT 06901
d. Address: 11 West North St. Stamford, CT
e. Phone No.:
f. Phone No.:
If owner of the generating facility differs from the generator provide:
i. County Service Code:

j.	Description of Waste	Waste Code	Qty (%/#)
1.	ACM		3.04 cu yds
2.			
3.	RQ NA 2212 Class 9 Group III		
4.			
5.			

Shipped In:
_____ Rolloff
_____ Fiber Drum
✓ Truck
_____ Other

Truck Weight (Tons) _____

Generator's certification; I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations: AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

D. Pellegrino — Generator Authorized Agent Name
Signature
09 06 06 — Shipment Date

Section II — **TRANSPORTER**

TRANSPORTER I	TRANSPORTER II
a. Name: TransWaste, Inc.	h. Name:
b. Address: 3 Barker Dr. Wallingford, CT 06492	i. Address:
c. Driver Name /Title: (Print / Type) Mike Gauthier	j. Driver Name /Title: (Print / Type)
d. Phone No.: 203-284-0009 e. Truck No.: 20	k. Phone No.: l. Truck No.:
f. Vehicle License No./State: CT 27240-A	m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.	Acknowledgement of Receipt of Materials.
g. Mike Gauthier — Driver Signature	n. Driver Signature
09 06 06 — Shipment Date	Shipment Date

Section III — **DESTINATION**

a. Site ☐: Minerva Enterprises	c. Site ☐: A & L Salvage	e. Site ☒: Modern Landfill
b. Mailing Address: 9000 Minerva South East, Waynesburg, OH 44688	d. Mailing Address: 11225 State RT45 & US30, Lisbon, OH 44432	f. Mailing Address: 4300 Pisgah Rd, York, PA 17402
Phone: 330-866-3435	Phone: 330-424-3739	Phone: 717-246-4615

g. Discrepancy Indication Space:
I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

h. Jodi Williams — Name of Authorized Agent
Jodi Williams — Signature
09 07 06 — Receipt Date

Section IV — **ASBESTOS**

a. Contractor's Name: Petco Insulation Co., Inc.
b. Contractor's Phone No.: 203-934-3926
c. Contractor's Address: 88 Farwell St., West Haven, CT 06516
d. Special Handling Instructions and additional information:

CONTRACTOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Contractor's Name & Title: D. Pellegrino, Admin. Asst. — Print / Type
D. Pellegrino — Contractor's Signature
09 06 06 — Date

f. Name and Address of Responsible Agency: U.S. - E.P.A., Region 1, JFK Bldg: Boston, MA 02203

g. ☒ Friable ☐ Non-friable ☐ Both 100 % friable 87 of 110 % non-friable

AMC Technology, Inc.

P.O. Box 413
Stratford
Connecticut
06615

Telephone:
203.378.5020
Facsimile:
203.375.7344

Email:
amc@amctech.com
Website:
www.amctech.com

October 5, 2006

Mr. Alphonse Barbarotta
Stamford Public Schools
Facilities Management
P.O. Box 9310
888 Washington Blvd.
Stamford, CT 06904

RE: Response Action Completion Report for Cloonan Middle School

Dear Mr. Barbarotta:

Enclosed please find three copies of the Response Action Completion Report for the asbestos removal work done at Cloonan Middle School in August 2006.

One copy is for your file. Please distribute one copy to the school office and one copy to the school custodian.

If you have any questions regarding this report, please feel free to contact me.

Very truly yours,

Anthony F. Vuozzo
President

ENC.

AFV:se

PROJECT SUMMARY

Facility

Cloonan Middle School
11 West North Street
Stamford, CT

Project Parameter

Miscellaneous Materials

Method of Abatement

Removal

Reason for Abatement

Renovation

Materials, Locations and Amounts of Asbestos Containing Materials

Approximately 1,100 square feet floor tile and mastic from Room 213

Commencement Date of Project

August 21, 2006

Completion Date of Project

August 25, 2006

Contractor:

Petco Insulation Company, Inc.
88 Farwell Street
West Haven, CT 06516

Consultant:

AMC Technology, Inc.
2505 Main Street, Suite 207
Stratford, CT 06615

APPENDIX D:
EMG ABBREVIATED ACCESSIBILITY CHECKLIST

Property Name: Cloonan Middle School
Date: April 1, 2009
Project Number: 88166.09R-009.017

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?	✓			Some toilets removed and stalls enlarged
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?		✓		
5.	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths, and drop-offs?	✓			Curb cut at end of sidewalk on ground level, but not close to designated stalls
6.	Does signage exist directing you to accessible parking and an accessible building entrance?		✓		

EMG Abbreviated Accessibility Checklist					
	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?			✓	Interior ramp does not have railings
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?		✓		
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?		✓		

EMG Abbreviated Accessibility Checklist					
	Paths of Travel	**Yes**	**No**	**N/A**	**Comments**
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?	✓			
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)?	✓	✓		Some appear to be too narrow

EMG Abbreviated Accessibility Checklist					
	Restrooms	**Yes**	**No**	**N/A**	**Comments**
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:	**Cloonan Middle School**	**Project Number:**	**88166.09R-009.017**
Person completing form:	**David Rudolph and Al Hoyt**	**Date:**	**April 1, 2009**
Association with Project:	**Principal and Head Custodian**	**Phone Number:**	**203.977.4544**
Years associated w/Proj.:	**6 and 8**	**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?	✓				
If so, are details available?	**Summer 2008 - Elevator controls and cab replaced, domestic water main, fire alarm and sprinkler, all new lighting on ground floor (except 114), new generator 2007 – 2 air handlers, 1 chiller for computer labs 2006 - 70 univents (all but main lobby) 2004 – all 3 domestic boilers, all new roof, all (53) exhaust fans 2002-3 - partial abatement (reported 85%, including insulation and reachable areas of ceiling, removal of some blackboards including mastic – did not include behind lockers or wall chases), all new lighting on upper two floors Proposed new AC for Media Center this summer 2009**				
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?	✓				Parking lot
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?	✓				Thresholds into restrooms and widths of doors, and only few rooms with lever handle hardware
9. Is there any pending litigation concerning the property?		✓			
10. Is site drainage adequate?	✓	✓			Near dumpsters is an issue
11. Has a termite inspection occurred within the last year?		✓			
Is a copy of an inspection report available?	No issues reported; although, bed bug infestation reported in SPED classroom – resolved, affected computers				
12. Are there any problems with foundations or structures?	✓				Front stair rusting
If so, are there plans to address?					

	Yes	No	Unk	NA	Comments
13. Is there any water infiltration in basements or crawl spaces?		✓			
14. Are there any wall or window leaks?	✓				Wall outside of Media Center and windows
15. Are there any poorly insulated areas?	✓				Windows and doors
16. Are there any current roof leaks at the property?		✓			
17. Are any roof finishes more than ten years old?		✓			
18. Is the roofing covered by a warranty or bond?	✓				
19. Is Fire Retardant Treated (FRT) plywood used at the property?		✓			
20. Does the property have an exterior insulation and finish system (EIFS) with a synthetic stucco finish		✓			
21. Do the utilities (electric, gas, sewer, water) provide adequate service?		✓			Breakers trip periodically
22. Is the property served by an on-site water system?		✓			
	Yes	**No**	**Unk**	**NA**	**Comments**
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?		✓			
If so, where and when?					
30. Has the property ever been tested for indoor air quality or suspect mold?		✓			
If so, where and when? Results?	Property has requested air quality testing and plans to request again. Respiratory complaints were made during the summer including sinus infections.				
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?	✓	✓			One old domestic water heater in custodial office, boilers are newer
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?	✓				

	Yes	No	Unk	NA	Comments
40. Is the elevator emergency communication equipment functional?	✓				
41. Is the elevator emergency communication equipment ADA compliant?	✓				
42. Have the fire/life safety systems been inspected within the last year?	✓				
43. Are there any smoke evacuation or pressurization systems?	✓				
44. Are there any recalled Omega or Central brand fire sprinkler heads that have not yet been replaced?		✓			
45. Are there any emergency electrical generators?	✓				
46. Are the generators maintained on a regular basis?	✓				
47. Do tenants contract for their own improvement work?				✓	
48. Are tenants responsible for any roof, HVAC, or exterior wall maintenance, repair, or replacement?				✓	
If so, what, where and how?					
49. Have there been previous due diligence, engineering, environmental, or geological studies done?		✓			
If so, are copies available?					
50. Is there anything else that EMG should know about when assessing this property? If so, what?		✓			

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

INFORMATION REQUIRED

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

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

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

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

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

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

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

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

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

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

11. Any brochures or marketing information.

12. Appraisal, either current or previously prepared.

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

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

15. ADA survey and status of improvements implemented.

16. Current / pending litigation related to property condition.

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 and Managers Association
BUR - Built-up Roofing
DWV – Drainage, Waste, Ventilation
EIFS - Exterior Insulation and Finish System
EMF – Electro Magnetic Fields
EMS - Energy Management System
EUL - Expected Useful Life
FEMA - Federal Emergency Management Agency
FFHA - Federal Fair Housing Act
FIRMS - Flood Insurance Rate Maps
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 and 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

BILL CHAMPION, PMP

Program Manager

Cost Segregation Manager

Education

- MBA from the University of Rochester (Simon)
- MS in Mechanical Engineering from the State University of New York at Buffalo
- BS in Mechanical Engineering from the State University of New York at Buffalo

Project Experience

- ***Housing Authority of the City of Pittsburgh, Pittsburgh, PA*** – Mr. Champion was a member of the Quality Assurance Review Team for this Physical Needs Assessment portfolio that encompassed over 6,114 housing units within 20 separate communities in City of Pittsburgh, Pennsylvania. The objective of the PNA was to provide a general description of all physical improvements that the Client would need to undertake to bring its properties, including dwellings and non-dwellings structures, to a level that will provide safe, decent and sanitary living conditions for the residents. Mr. Champion utilized his engineering expertise to ensure that the methodology and protocol were not compromised during the execution of the assessment.
- ***George Mason University, Fairfax, VA***- As Program Manager, Mr. Champion was responsible for meeting with the Client and developing a specific program that exceeded the Client's expectations. The program was designed to provide facility condition assessments and prepare a database for tracking, systems, building components, deficiencies and replacements. This database was customized further to include a detailed equipment inventory. This database was designed based on Client input and the end user in mind. Mr. Champion's ability to troubleshoot issues allowed EMG to conduct this program effectively and maintain the schedule and budget.
- ***University of Virginia, Charlottesville, VA*** – Mr. Champion performed Facilities Condition Audits on academic buildings on the campus of The University of Virginia. He evaluated building condition and systems, outlined physical deficiencies and gave recommendations for prioritizing them to maximize safety and minimize long-term costs.

Industry Tenure

- A/E: 1994
- EMG: 2002

Related Experience

- Multifamily Housing Portfolios
- Government Agency Portfolios
- K-12 Education Portfolios
- Higher Education Portfolios
- Retail Portfolios
- Industrial Portfolios

Industry Experience

- Multi-family Housing
- Cost Segregation
- Government
- Retail
- Industrial
- K-12 Education
- Higher Education

Active Licenses / Registrations

- Certified Project Management Professional (PMP) by the Project Management Institute, # 50241
- Engineer in Training in the State of New York, # 046094
- Member- American Society of Mechanical Engineers

Regional Location

- Baltimore, Maryland

DANNY WHITE

Project Manager

Project Experience

- ***Hendrick Auto Group (HAG), Charlotte, NC –*** Mr. White served as a Project Manager on the property needs assessment (PNA) of 20 HAG automotive dealerships, primarily located throughout the state of North Carolina. The assessments included major structural, mechanical and electrical components of buildings and infrastructures. Dealerships ranged in size from approximately 20,000 to 80,000 SF and occupying sites ranging from two to 25 acres. The client found his observations critical to their final business decisions.
- ***Alexandria City Public Schools (ACPS), Alexandria, VA –*** As a Project Manager, Mr. White performed a Facility Condition Assessment of five public schools in the ACPS system ranging in size from a 62,760 SF elementary school to a 237,332 SF middle school. The assessments included multi-acre site infrastructures including landscapes, pavements and playground equipment. He reviewed the condition of the building structure and systems and developed a thorough report. His work helped EMG complete this project on schedule and within the budget.
- ***City of San Buenaventura Assessments, Ventura, CA –*** Mr. White served as a Project Manager on the San Buenaventura Public Housing physical needs assessments (PNA) project. Structures assessed included multi-family housing apartments, senior citizen multi-level towers, rental offices, community centers, and maintenance buildings. Structural, mechanical, electrical, and site systems and finishes were assessed for current condition and cost recommendations for a 20-year term. Interviews were conducted with maintenance and administrative personnel to discuss known deficiencies. Findings were used to establish Expected Useful Life (EUL), and Remaining Useful Life (RUL) of the systems and components.

Industry Tenure

- A/E: 1988
- EMG: 2007

Related Experience

- Educational Facility Condition Assessment reports
- Assisted Living Portfolios
- Retail Portfolios
- Hospitality Portfolios

Industry Experience

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

Special Skills & Training

- Roof Inspection & Management - Diagnosis & Repair – RIEI
- Pavement Management University of Illinois

Regional Location

- Norfolk - Virginia Beach, VA

- ***City of Dallas Assessments (Dallas Zoo), Dallas, TX –*** As a Project Manager, Mr. White performed facility condition assessments of approximately 100 buildings comprising over 320,000 SF, and 95 acres of infrastructure at the Dallas Zoo. Buildings included offices, auditoriums, garages, maintenance facilities, warehouses, restrooms, animal hospital, schools, and various exhibit and animal holding structures. Additional Dallas assessments included the Arlington Hall Conservatory and the Royal Preston Library. Mr. White also served as a Technical Report Reviewer (TRR) for final review of various other assessment reports.
- ***County of San Diego Assessments, San Diego, CA –*** Mr. White served as a Project Manager and provided facility condition assessments (FCA) of County of San Diego properties. The scope of work included the assessment of numerous buildings and infrastructures including the Kearney Mesa Juvenile Detention Facility, Juvenile Hall, San Diego Courthouse Plant, Law Library, Palomar Mountain Park and others. Reports were generated giving broad details of structural, mechanical, electrical, and site elements and event recommendations for a 20-year evaluation term.
- ***GE Healthcare Financial Services, Multiple Cities –*** As a Project Manager, Mr. White performed eight property condition assessments (PCA) of this portfolio of Genesis Health Care Nursing Homes. The average property size was 48,000 square feet and an average of 140 units. He reviewed the condition of the building structural, mechanical, and electrical systems, and the site infrastructure and developed a thorough report. Repair and replacement costs were provided for a 12 year reserve term. His work helped EMG complete this project on schedule and within the budget.
- ***Barclays Capital Real Estate Inc, Multiple Cities –*** As a Project Manager, Mr. White performed three property condition assessments (PCA) of this portfolio of hospitality properties, including Potomac Mills Courtyard, Potomac Mills Residence Inn, and Springfield TownePlace Suites located in Northern Virginia. The average property size was 80,000 square feet and an average of 124 units. He reviewed the condition of the building structural, mechanical, and electrical systems, and the site infrastructure and developed a thorough report. Repair and replacement costs were provided for a 7 year reserve term. His work helped EMG complete this project on schedule and within the budget.
- ***Lord and Taylor – Fair Oaks Mall, Fairfax, VA –*** As a Project Manager, Mr. White performed a property condition assessment of this retail property. The building occupies 3.67 acres of the Fair Oaks Mall property and is 159,876 square feet in size. He reviewed the condition of the building structural, mechanical, and electrical systems, and the site infrastructure and developed a thorough report. He interviewed management personnel of Lord and Taylor and the Fair Oaks Mall to determine site maintenance responsibilities. Repair and replacement costs were provided for a 12 year reserve term. His work helped EMG complete this project on schedule and within the budget.

City Government Experience

- ***Virginia Beach Municipal Center , Virginia Beach, VA –*** As a Project Engineer/Technician, Mr. White performed structural facility condition assessment of City Hall, Voter Registration Building, Police Station, Court Support Building, Special Education Building, Heating Plant and related infrastructure within the City of Virginia Beach Municipal Complex. Buildings ranged in size from 28,000 to 90,000 square feet. His team met with the Director of Maintenance to discuss known conditions prior to commencing a thorough visual inspection of designated high profile facilities. Inspection scheduling involved strict visit guidelines in order to minimize disruption of normal business activities. Special consideration was required in conjunction with planned major mechanical and structural systems replacements and the anticipated need for removal of known hazardous materials in ceilings and attics. Deficiencies collected included preventative and recurring maintenance items. He created a prioritized backlog of maintenance and repair to affected structural systems for a 10 year plan. An inventory of roof section types and quantities was provided to the client. His work insured the timely completion of the project within the budget guidelines.

Higher Education Experience

- ***Haskell Indian University, Lawrence, KS –*** As a Project Engineer/Technician, Mr. White performed structural facility condition assessment as part of an inspection team. Facilities inspected included administrative offices, maintenance shops, classrooms, cafeteria and gymnasium. His team met with the facility managers to discuss known deficiencies, environmental concerns, and safety issues throughout the approximately 300,000 square feet of assigned buildings. Ideas were exchanged for ways to increase the budget allocation for repairs and upgrades through the identification of some not easily detected deficiencies. He created a prioritized maintenance and repair strategy for a 10 year plan. An inventory of exterior structural components was also provided to the client. His work insured the team's completion of the project within the time constraints and budget.

Department of Defense

- ***US Naval Submarine Base Kings Bay, GA*** – As a Facilities Maintenance Specialist with the federal government, Mr. White applied his expertise in the structural assessment of the nearly one million square feet Trident Training Facility. The comprehensive assessment of interior, exterior, and roof system components was challenging due to size, accessibility, and security. He met with the facility manager to obtain construction drawings, contact names for the various departments, and a history of deficiencies. He provided an overall condition analysis of the building and a brief narrative and inventory of each major structural system. A 5 year maintenance plan was formulated for recurring and deferred maintenance complete with fundable estimates generated from RS Means estimating software. Mr. White entered the deficiency cost data into the activity's maintenance action plan software which is reported to the Department of Defense for budget planning.

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

MARK F. CHAMBERLAIN

Project Manager

Education

- Coursework Completed In Business Administration, Manchester Community College, Manchester, CT, 1985

Project Experience

- ***Herman T. Schneebeli Federal Building, Williamsport, PA -*** Mr. Chamberlain performed a comprehensive Building Evaluation Report (BER) on this 81,308 SF Federal Building consisting of offices and courtrooms. His knowledge of electrical, fire suppression and security elements was critical to the level of detail required for this assessment. Mr. Chamberlain then summarized the site investigations in a GSA Level IV Report prepared exclusively for the client.
- ***Stafford County Public Schools, Stafford, VA*** – Mr. Chamberlain, a professional well-versed in this industry's standards, has performed several Building Condition Assessments on public schools. During his evaluations of the facilities, he conducted interviews with the Facilities Assessment Engineer and Maintenance Staff. His findings included information on existing building conditions to include electrical, security and energy efficient lighting systems.
- ***Foxchase at Alexandria, Alexandria, VA –*** Mr. Chamberlain performed a Physical Needs Assessment (PNA) on one of the largest multi-family properties in the eastern United States. Project consisted of 2,113 dwelling units contained in 200 buildings on 88 acres. Responsibilities included recommending immediate repair items and replacement reserve items over the loan term.
- ***Carriage House Apartments, Petersburg, VA*** – The Moisture Infiltration & Mold Assessment conducted by Mr. Chamberlain at this multi-family property was to identify moisture infiltration-related issues. Upon the on-site assessment, he provided a formal written report to assist the client in identifying and resolving the moisture infiltration deficiencies observed to a level that will provide safe, decent and sanitary living conditions for the residents.
- ***155 Commerce Way, Dover, DE –*** Mr. Chamberlain performed a Property Condition Assessment (PCA) on this 111,632 SF commercial building consisting of office and warehouse space. His knowledge of structural and mechanical building elements was crucial to the level of detail required for this assessment. The report was clear and concise, yet thorough. He provided the information that was essential to the client's needs.

Industry Tenure

- A&E: 1987
- EMG: 2006

Industry Experience

- Commercial
- Government Facilities
- Office Properties
- Industrial
- Higher Education
- K-12
- Retail/Wholesale
- Housing/Multi-family
- Nursing Home Facilities
- Assisted Living Portfolios
- Public Housing Portfolios

Active Licenses/Registration

- Certified Level I & Building Science Thermographer Certification, 2005

Special Skills & Training

- EPA/AHERA Certified Asbestos Inspector / Management Planner 2004
- EPA Model Lead Paint Risk Assessor 2003
- Certified Level I & Building Science Thermographer 2005
- HUD Sponsored Multi-Family Accelerated Processing (MAP) Training Hartford, Connecticut 2001
- Advanced Building Diagnostics and Repairs 2004
- Building Moisture – Avoiding Building Envelope and Mechanical Systems 2003

Regional Location

- Baltimore, MD