FACILITIES NEEDS
ASSESSMENT

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

FACILITIES NEEDS ASSESSMENT
OF
STAMFORD HIGH SCHOOL
55 Strawberry Hill Avenue
Stamford, Connecticut 06902

PREPARED BY:

EMG
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EMG Project #: 88166.09R-021.017
Date of Report: August 30, 2009
On site Date: April 8 - 10, 13, 2009

EMG

Replacement Reserves Report
High Schools / Stamford High School
8/30/2009

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	3803	Civil Engineer Drainage study	0	0	0	1	EA	$6,930.00	$6,930	$6,930										**$6,930**
1.2	3811	Civil Engineer Drainage study	0	0	0	1	EA	$6,930.00	$6,930	$6,930										**$6,930**
1.2	4110	Mechanical Engineer study of waste line drainage problem	0	0	0	1	EA	$5,670.00	$5,670	$5,670										**$5,670**
1.2	3389	Measured ADA Study of Property	0	0	0	1	EA	$6,930.00	$6,930	$6,930										**$6,930**
1.2	3545	HVAC system study	0	0	0	1	EA	$9,135.00	$9,135	$9,135										**$9,135**
1.2	3808	Civil Engineer Drainage study	0	0	0	1	EA	$6,930.00	$6,930	$6,930										**$6,930**
1.2	3846	Follow-up Review by a Structural Engineer	0	0	0	1	EA	$8,190.00	$8,190	$8,190										**$8,190**
3.1	3392	ADA cane detection barrier rails	30	30	0	15	PR	$144.90	$2,174	$2,174										**$2,174**
3.1	3409	ADA, Parking lot access aisle striping	0	0	0	40	LF	$8.19	$328	$328										**$328**
3.1	4216	ADA, paint van-accessible space with signage	5	15	0	2	EA	$277.20	$554	$554					$554					**$1,109**
3.1	6234	Stamford HS - Stadium and Ballfields ADA Access Allowance	0	0	0	1	EA	$94,500.00	$94,500	$94,500										**$94,500**
3.1	3401	ADA, replace H/C access ramp, 3' wide, railings both sides,including demo	25	25	0	30	LF	$611.72	$18,352	$18,352										**$18,352**
3.1	3396	ADA, Wrap drain pipes below accessible lavatory	0	0	0	2	EA	$81.90	$164	$164										**$164**
3.3	3420	Industrial Hygenist for mold remediation	0	0	0	1	EA	$1,827.00	$1,827	$1,827										**$1,827**
5.2	3517	Overlay asphalt	10	8	2	7.7	1000 SF	$963.02	$7,415			$7,415								**$7,415**
5.2	3525	Repair and Seal Coat asphalt	5	2	3	1.8	10000 SF	$5,848.92	$10,528				$10,528					$10,528		**$21,056**
5.2	3520	Overlay asphalt	10	9	1	46	1000 SF	$963.02	$44,299		$44,299									**$44,299**
5.2	3518	Overlay asphalt	10	9	1	5.4	1000 SF	$963.02	$5,200		$5,200									**$5,200**
5.2	3519	Overlay asphalt	10	9	1	107	1000 SF	$963.02	$103,043		$103,043									**$103,043**
5.2	3526	Repair and Seal Coat asphalt	5	2	3	0.8	10000 SF	$5,848.92	$4,679				$4,679					$4,679		**$9,358**
5.2	3528	Repair and Seal Coat asphalt	5	2	3	0.32	10000 SF	$5,848.92	$1,872				$1,872					$1,872		**$3,743**
5.2	3527	Repair and Seal Coat asphalt	5	-1	6	10.7	10000 SF	$5,848.92	$62,583							$62,583				**$62,583**
5.2	3529	Repair and Seal Coat asphalt	5	-1	6	0.54	10000 SF	$5,848.92	$3,158							$3,158				**$3,158**
5.2	3523	Repair and Seal Coat asphalt	5	2	3	2.42	10000 SF	$5,848.92	$14,154				$14,154					$14,154		**$28,309**
5.2	3524	Repair and Seal Coat asphalt	5	-1	6	4.6	10000 SF	$5,848.92	$26,905							$26,905				**$26,905**
5.2	3522	Repair and Seal Coat asphalt	5	0	5	1.54	10000 SF	$5,848.92	$9,007						$9,007					**$9,007**
5.2	3530	Remove & replace 4' wide concrete sidewalk	25	25	0	200	LF	$40.65	$8,130	$8,130										**$8,130**
5.2	3516	Cut & Patch asphalt	10	9	1	8000	SF	$3.86	$30,845		$30,845									**$30,845**
5.2	3532	Remove and replace brick pavers, sand bed	20	17	3	8000	SF	$14.88	$119,045				$119,045							**$119,045**
5.2	3531	Install handrail at exterior steps	20	20	0	48	LF	$65.65	$3,151	$3,151										**$3,151**
5.2	3918	Install handrail at exterior steps	20	20	0	20	LF	$65.65	$1,313	$1,313										**$1,313**
5.4	4104	Replace Brick retaining wall	40	38	2	180	SF Face	$130.10	$23,417			$23,417								**$23,417**
5.4	3538	Replace stone retaining wall, mortar set	50	46	4	140	SF Face	$94.82	$13,274					$13,274						**$13,274**

Replacement Reserves Report
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5.4	3537	Mature Tree Removal or major trimming	0	0	0	8	EA	$1,108.80	$8,870	$8,870										**$8,870**
5.5	4912	Replace wrought iron gate	45	45	0	12	EA	$1,478.04	$17,737	$17,737										**$17,737**
5.5	3540	Replace chain link fence, 6-foot high	20	19	1	2020	LF	$37.31	$75,363		$75,363									**$75,363**
5.5	3541	Remove and replace 4-foot chain link fence	10	10	0	80	LF	$27.87	$2,230	$2,230										**$2,230**
5.5	3543	Resurface asphalt tennis court	7	2	5	5	Court	$8,492.40	$42,462						$42,462					**$42,462**
5.5	4105	Replace Colored latex track surface	20	13	7	3150	SY	$32.38	$102,003								$102,003			**$102,003**
5.5	4118	Replace goal posts at playing field	20	14	6	1	PR	$4,026.96	$4,027							$4,027				**$4,027**
5.5	4116	Replace football scoreboard	15	9	6	1	EA	$21,023.10	$21,023							$21,023				**$21,023**
5.5	3539	New Aluminum pole-mounted double light 400 W HPS fixture and pole	0	0	0	4	EA	$8,651.16	$34,605	$34,605										**$34,605**
6.1	3807	Waterproof concrete wall	10	10	0	20	CSF	$282.87	$5,657	$5,657										**$5,657**
6.1	3809	Waterproof concrete wall	10	10	0	25	CSF	$282.87	$7,072	$7,072										**$7,072**
6.1	3975	Below grade curtain drain at Student Courtyard	0	0	0	1	EA	$25,578.00	$25,578	$25,578										**$25,578**
6.2	6232	Stamford HS - First Floor Subfloor Repair Allowance	0	0	0	1	EA	$37,800.00	$37,800	$37,800										**$37,800**
6.2	6233	Stamford HS - First Floor Subfloor Repair Allowance	0	0	0	1	EA	$37,800.00	$37,800	$37,800										**$37,800**
6.3	3874	General painting cost per SF, minor prep work, single story bldg. (up to 15 feet)	10	2	8	2000	SF	$1.56	$3,125									$3,125		**$3,125**
6.3	3876	Replace metal soffit material	25	20	5	500	SF	$13.73	$6,867						$6,867					**$6,867**
6.3	17023	Stamford Roof Assessment - BUR Roof Replacement	20	18	2	412	SQ	$1,631.70	$672,260			$672,260								**$672,260**
6.3	17022	Stamford Roof Assessment Roof Repair Recommendations	0	0	0	1	EA	$12,412.26	$12,412	$12,412										**$12,412**
6.4	3880	Paint existing stucco one coat, spray,medium prep work	5	5	0	12000	SF	$1.78	$21,319	$21,319					$21,319					**$42,638**
6.4	3881	Point brick wall upper floor	10	10	0	8	CSF	$1,301.58	$10,413	$10,413										**$10,413**
6.4	3878	Replace stucco and lath	25	25	0	7	CSF	$913.12	$6,392	$6,392										**$6,392**
6.4	3877	Point brick wall upper floor	10	10	0	30	CSF	$1,301.58	$39,047	$39,047										**$39,047**
6.4	3882	Caulking, expansion joints,1"x1/2", remove and replace	15	15	0	480	LF	$7.95	$3,816	$3,816										**$3,816**
6.5	3973	Replace stone veneer - first floor	40	40	0	200	SF	$40.62	$8,124	$8,124										**$8,124**
6.6	3885	Replace curtain wall system with double glazing	30	29	1	2800	SF	$94.19	$263,718		$263,718									**$263,718**
6.6	3883	Replace curtain wall system with double glazing	30	29	1	350	SF	$94.19	$32,965		$32,965									**$32,965**
6.7	3917	Replace curtain wall system with double glazing	30	27	3	250	SF	$94.19	$23,546				$23,546							**$23,546**
6.7	3888	Replace granite pavers	20	18	2	90	SF	$24.22	$2,180			$2,180								**$2,180**
6.7	3805	Remove & replace 3' wide concrete sidewalk	30	30	0	100	LF	$32.51	$3,251	$3,251										**$3,251**
6.7	3972	Gravel Walkway 3 feet wide	15	7	8	300	LF	$7.28	$2,185									$2,185		**$2,185**
6.7	3890	Replace metal bench, 8' long	20	15	5	10	EA	$687.96	$6,880						$6,880					**$6,880**
6.8	4911	Replace steel locker, baked enamel, up to 6',including demo	20	18	2	620	LF	$411.82	$255,327			$255,327								**$255,327**
6.8	3897	Paint interior walls, drywall	5	2	3	120000	SF	$1.06	$127,008				$127,008					$127,008		**$254,016**
6.8	3892	Paint interior walls, drywall	5	5	0	3000	SF	$1.06	$3,175	$3,175					$3,175					**$6,350**
6.8	3907	Replace hardwood Standard	40	40	0	2100	SF	$17.30	$36,330	$36,330										**$36,330**
6.8	3908	Sand and refinish hardwood floor	10	2	8	10500	SF	$6.93	$72,765									$72,765		**$72,765**
6.8	3895	Replace carpet - standard commercial	8	3	5	1200	SY	$63.23	$75,872						$75,872					**$75,872**

Replacement Reserves Report
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8/30/2009

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6.8	3900	Paint ceilings	20	15	5	300	CSF	$223.65	$67,095						$67,095					**$67,095**
6.8	3894	Replace acoustical ceiling tiles - partial	9	9	0	3	CSF	$693.00	$2,079	$2,079									$2,079	**$4,158**
6.8	4907	Horizontal Blinds aluminum 1" slats	7	5	2	25000	SF	$6.49	$162,225			$162,225								**$162,225**
6.8	3903	Asbestos floor tile and mastic removal	0	0	0	3000	SF	$3.15	$9,450	$9,450										**$9,450**
7.1	4107	Replace 200 gallon expansion tank	20	20	0	1	EA	$2,707.74	$2,708	$2,708										**$2,708**
7.1	3544	Install Air-Conditioning at entire building	30	28	2	195000	SF	$16.22	$3,162,159			$3,162,159								**$3,162,159**
7.1	3547	Replace Circulation pump 1 hp	15	7	8	4	EA	$5,443.20	$21,773									$21,773		**$21,773**
7.1	3554	Replace rooftop unit 5-10 tons (heating and cooling)	15	14	1	1 @ 5	Ton	$1,688.40	$8,442		$8,442									**$8,442**
7.1	4109	Replace Roof-Mounted Condenser 15-ton	15	7	8	1	EA	$22,717.80	$22,718									$22,718		**$22,718**
7.1	3556	Replace rooftop unit 5-10 tons (heating and cooling)	15	7	8	1 @ 10	Ton	$1,688.40	$16,884									$16,884		**$16,884**
7.1	3557	Air Conditioner, DX package (Liebert) 5-ton	20	11	9	1	EA	$9,185.40	$9,185										$9,185	**$9,185**
7.1	3550	Replace Roof-Mounted Condenser 5-ton	15	7	8	3	EA	$6,391.98	$19,176									$19,176		**$19,176**
7.1	3555	Replace rooftop unit 5-10 tons (heating and cooling)	15	7	8	1 @ 9	Ton	$1,688.40	$15,196									$15,196		**$15,196**
7.1	3553	Replace Roof-Mounted Condenser 3-ton	15	6	9	1	EA	$3,814.02	$3,814										$3,814	**$3,814**
7.1	4108	Replace Roof-Mounted Condenser 7.5-ton	15	7	8	2	EA	$8,641.08	$17,282									$17,282		**$17,282**
7.1	3548	Replace Roof-Mounted Condenser 5-ton	15	14	1	1	EA	$6,391.98	$6,392		$6,392									**$6,392**
7.1	3549	Replace Roof-Mounted Condenser 1.5-ton	15	6	9	4	EA	$2,832.48	$11,330										$11,330	**$11,330**
7.1	3552	Replace Roof-Mounted Condenser 5-ton	15	6	9	3	EA	$6,391.98	$19,176										$19,176	**$19,176**
7.1	3551	Replace Roof-Mounted Condenser 5-ton	15	6	9	3	EA	$6,391.98	$19,176										$19,176	**$19,176**
7.1	3546	Replace UST, Steel, Fuel oil storage, 20,000 gallon	25	22	3	1	EA	$193,966.92	$193,967				$193,967							**$193,967**
7.2	4112	Cost allowance to resolve sanitary sewer backup problem	0	0	0	1	EA	$27,798.12	$27,798	$27,798										**$27,798**
7.4	3558	Room intercom units	10	8	2	120	EA	$205.54	$24,665			$24,665								**$24,665**
7.5	3562	Replace passenger cab finishes	20	18	2	1	EA	$18,345.60	$18,346			$18,346								**$18,346**
7.5	3560	Replace passenger cab finishes	20	18	2	1	EA	$18,345.60	$18,346			$18,346								**$18,346**
7.5	3559	Replace traction elevator machinery and controls	30	29	1	1	EA	$111,321.00	$111,321		$111,321									**$111,321**
7.5	4114	Replacement of dumbwaiter equipment	30	28	2	2	EA	$27,241.20	$54,482			$54,482								**$54,482**
8.1	3912	Paint interior walls, CMU,including surface prep	7	3	4	128000	SF	$1.12	$143,539					$143,539						**$143,539**
8.1	3851	Replace Vinyl tile	18	18	0	1900	SY	$81.90	$155,610	$155,610										**$155,610**
8.1	3845	Replace Vinyl tile	18	18	0	100	SY	$81.90	$8,190	$8,190										**$8,190**
8.1	3913	Paint ceilings	20	15	5	200	CSF	$223.65	$44,730						$44,730					**$44,730**
8.1	3911	Replace acoustical ceiling tiles - partial	9	9	0	4	CSF	$693.00	$2,772	$2,772									$2,772	**$5,544**
8.1	3905	Asbestos floor tile and mastic removal	0	0	0	21000	SF	$3.15	$66,150	$66,150										**$66,150**
8.2	17007	Stamford Kitchen Equipment Replacement Allowance	10	5	5	1	EA	$94,500.00	$94,500						$94,500					**$94,500**
9.0	3914	Replace damaged concrete	30	30	0	350	SY	$450.99	$157,847	$157,847										**$157,847**
9.0	3915	Stone masonry wall to 8' - joint repair/pointing	20	20	0	2000	SF	$6.54	$13,079	$13,079										**$13,079**
9.0	3812	Waterproof concrete wall	10	10	0	50	CSF	$282.87	$14,144	$14,144										**$14,144**
9.0	3916	Breaker panel 100 amps, comm. 14 circuits	40	40	0	3	EA	$1,798.27	$5,395	$5,395										**$5,395**

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9.0	3974	Below grade curtain drain at Boyle Stadium	0	0	0	1	EA	$52,038.00	$52,038	$52,038										**$52,038**
Totals, Unescalated										**$1,020,093**	**$681,588**	**$4,400,823**	**$494,799**	**$156,813**	**$372,462**	**$117,697**	**$102,003**	**$349,344**	**$67,532**	**$7,763,155**
Soft Costs:																				
		Architectural/Consultant Fees (10.0%)								**$102,009**	**$68,159**	**$440,082**	**$49,480**	**$15,681**	**$37,246**	**$11,770**	**$10,200**	**$34,934**	**$6,753**	**$776,316**
		General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)								**$102,009**	**$68,159**	**$440,082**	**$49,480**	**$15,681**	**$37,246**	**$11,770**	**$10,200**	**$34,934**	**$6,753**	**$776,316**
		Prevailing Wage/Labor Compliance (5.0%)								**$51,005**	**$34,079**	**$220,041**	**$24,740**	**$7,841**	**$18,623**	**$5,885**	**$5,100**	**$17,467**	**$3,377**	**$388,158**
		Contingency (5.0%)								**$51,005**	**$34,079**	**$220,041**	**$24,740**	**$7,841**	**$18,623**	**$5,885**	**$5,100**	**$17,467**	**$3,377**	**$388,158**
Location Factor (1.11)										**$109,150**	**$72,930**	**$470,888**	**$52,944**	**$16,779**	**$39,853**	**$12,594**	**$10,914**	**$37,380**	**$7,226**	**$830,658**
Totals, Escalated (see inflation table above)										**$1,435,272**	**$987,764**	**$6,632,825**	**$775,581**	**$258,089**	**$643,663**	**$213,566**	**$194,343**	**$698,873**	**$141,855**	**$11,981,830**

* Markup has been included in unit costs.

Cost Comparison Between JMOA Capital Plan and EMG Replacement Reserves						
Stamford High School						
Client - Project Name	**Client Cost**	**EMG Cost**	**EMG Shortage**	**Out of Scope?**	**Is work completed?**	**EMG Cost Comments**
Repair damaged sidewalks and curbs	$67,155	$8,130	$59,025	No	Partial	**Some repairs made**
Repave existing parking lots	$372,741	$190,802	$181,939	No	Partial	**Some lots completed**
Replace selected exterior doors	$121,299	$0	$121,299	No	No	**Assumed Complete.** No deficiencies observed or reported
Replace all window treatment	$191,645	$162,225	$29,420	No	No	
Perform needed restoration on coping and masonry parapet	$234,737	$0	$234,737	No		**Assumed Complete**. No deficiencies observed or reported
Replace all windows at courtyard and rear classrooms	$811,038	$296,683	$514,355	No	No	**Some work complete**
Repair masonry wall at Auditorium and repoint all brick work	$708,536	$49,460	$659,076	No	No	JMOA Scope Not Defined
Renovate Guidance and Admin areas	$1,692,958	$0	$1,692,958	Yes	No	JMOA Scope Not Defined
Replace corridor lockers	$241,779	$255,327	-$13,548	No	No	
Asbestors and lead abatement allowance	$500,000	$66,150	$433,850	No	No	JMOA Scope Not Defined
Repair air conditioning at auditorium	$28,531	$0	$28,531	No	Yes	**Complete**
Replace stage lighting	$232,770	$0	$232,770	No	Yes	**Complete**
Replace entire PA sound system	$234,737	$24,665	$210,072	No	No	**Assume partially complete.** JMOA Scope Not Defined
Install exterior lighting and repair existing	$94,314	$34,605	$59,709	No	No	**Assume partially complete.** JMOA Scope Not Defined
Install security gates for night functions	$17,505	$17,736	-$231	No	No	
	JMOA Cost	**EMG Cost**	**Shortage**			
	$5,549,745	$7,763,155	-$2,213,410			
less completed items	$3,907,308					
Soft Costs (30%)		$2,328,947				
Location factor(11%)		$853,947				
Totals(Unescalated)		$10,946,049	-$7,038,741			

*Note: Major renovation work has been completed since the JMOA report was compiled; however there are outstanding issues with some of this work. Details of these issues were not provided. EMG does not address costs for these issues in its report.

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CERTIFICATION

EMG has completed a Comprehensive Facilities Needs Assessment of the subject property, Stamford High School, located at 55 Strawberry Hill Avenue in Fairfield County, 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: Joseph Abbate and Kevin Lantry, Field Observers

Reviewed by: Daniel White

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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:	55 Strawberry Hill Avenue, Stamford, Fairfield County, Connecticut, 06902
Year constructed:	The original school building was constructed in 1927. There have been several additions. The first addition is the adjacent building in 1971 and the last building addition occurred in 2006. The original building has had numerous renovations occurring in years 1959, 1969-71, 2000 and 2006. Similarly the 1971 building was renovated in 2000 and 2006
Current owner of property:	City of Stamford
School occupying building:	Stamford High School
Current usage of property:	High 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:	14.99 acres
Gross floor area:	313,794 Square Feet total for the 1927 and 1971 Buildings 60,708 for the 9th Grade Annex
Number of buildings:	Three
Number of stories:	Three
Parking type and number of spaces:	350 spaces in five open lots; one carport under the 9th Grade Annex

Property Information	
Building construction:	The 1927 original building and the 1971 addition building foundations consist of reinforced, concrete slabs-on-grade with integral, perimeter footings; piers or piles supporting the interior columns. The gymnasium section of the 1971 building foundations consist of cast-in-place concrete perimeter wall footings with concrete foundation walls. The foundation systems include reinforced concrete column pads or load bearing wall pads. The original 1927 building has concrete encased structural steel columns supporting the upper floors. The upper floors are reinforced cast-in-place concrete slabs. The roofs are constructed of cast-in-place concrete and are supported by concrete beams and steel beams. The 1971 addition and gymnasium have steel columns and interior concrete masonry unit (CMU) bearing walls supporting the upper floors. The upper floors are reinforced cast-in-place concrete slabs. The roofs are constructed of cast-in-place concrete and are supported by concrete and steel beams
Bay Column Spacing:	Approximately 15 Feet
Interior vertical clearance:	Approximately 15 Feet
Roof construction:	Hipped roofs with slate shingles above 1927 building entrance elevation; barrel roof above the east section of the 1927 building and the remaining are flat roofs with built-up membrane or single ply membrane
Exterior Finishes:	Original building has brick and limestone veneer. The 1971 building has brick veneer. The exterior elevations of the additions to these buildings are either pre-cast panels, curtain wall, storefront, stone or brick veneer finishes
Heating and/or Air-conditioning:	Heating provided by dual fuel steam boilers with heat exchanger and hot water distribution to radiant heating units and unit ventilators. Cooling provided in limited areas by large capacity air handling units with roof-mounted and pad-mounted condensing units. Supplemental cooling provided by packaged rooftop units and small split system air conditioners
Fire and Life/Safety:	Wet pipe sprinkler system, partial dry pipe system, central alarm system with pull stations and alarm horns, smoke detectors, hydrants, and extinguishers
Dates of visit:	April 8 - 10, 13, 2009
Point of Contact (POC):	Mr. Rodney Bass, Principal and Mr. Thomas McIntosh, Head Custodian

Generally, the property appears to have been constructed within industry standards in force at the time of construction. The property appears to have been well maintained since it was first occupied and is in good overall condition.

During the course of the site visit, the POC had indicated the suspended ceiling panels had collapsed in classroom 231. Discussions with custodial staff and City of Stamford representatives indicated the collapse of the panels resulted from water intrusion through a roof leak. Observation of the area above the panels revealed an additional suspended ceiling between the current acoustical panels and the floor deck. The additional suspended ceiling was constructed of black iron ties attached to the floor deck finished with gypsum wall boards. In numerous areas the current suspended ceiling was attached to the gypsum wall boards and black iron ties. The construction of the acoustical ceiling panels occurred during the 2006 renovation. The panels within 231 were repaired and certified by a City Engineer. The Engineer inspected the remaining attachments throughout the building and was determined to be of satisfactory construction. EMG did not inspect the remaining areas to confirm or verify these conditions nor determine the attachments structural integrity. EMG would require conducting a follow-up study of these areas to prior to providing any recommendations.

The scope of work for the Comprehensive Facilities Needs Assessment of Stamford High School does not include the 9th Grade Annex building completed in 2006. However Sections 2.4, 3, 4 and 7 will include relevant information regarding the 9th Grade Annex to provide an accurate report. The report will specifically include information regarding number of rooms, ADA compliancy and mechanical equipment which feed from the central HVAC plants. The report will exclude all costs for deficiencies and renovations to the 9th Grade Annex.

According to City of Stamford Public Schools personnel, the property has had an active capital improvement expenditure program over the past three years, primarily consisting of a major exterior and interior renovation of the original building (1927) and the 1971 addition in 2006. Supporting documentation was not provided in support of these claims but the work is evident.

1.2. FOLLOW-UP RECOMMENDATIONS

The following issues require additional study:

- A full ADA study is required to determine the means of providing complete handicapped accessibility to Boyle Stadium. An accessibility specialist must be retained to analyze the existing condition, provide recommendations and, if necessary, estimate the scope and cost of any required repairs. The estimated cost to retain a specialist is included in the Replacement Reserves Report. Separate itemized costs for various interim accessibility improvements are included in the Replacement Reserves Report and described in detail in section 3.1.
- The majority of the classrooms and corridors in the school are not air conditioned. The unit ventilators in the classrooms are reportedly equipped for air-conditioning through a central system. This could not be verified in the field. As such, a follow-up study is recommended to examine the feasibility and determine design constraints and costs estimates for installing a central air-conditioning system to serve the areas currently without cooling. The cost of the study is included in the Replacement Reserves Report. The costs for the follow-up recommendations are to be determined by the study. An estimated budgetary cost allowance for the installation of air-conditioning is included in section 7.1. Additional costs may arise based upon the findings of the feasibility study; subsequent costs are not included in the report.
- Backups have been reported in the sanitary waste lines during periods of heavy rain. This issue indicates possible cross flow from storm drain lines. It is recommended that a plumbing contractor be retained to inspect the waste lines, determine the cause of the issue and the required corrective action, and make the required repairs. The cost of the plumbing study is included in the Replacement Reserves Report. The cost of the required repairs is to be determined by the study. An estimated budgetary cost allowance for the repairs is included in section 7.2. Additional costs may arise based upon the findings of the study; subsequent costs are not included in the report.

- Student Courtyard between 1927 and 1971 buildings. The foundations and footings cannot be directly observed. There are several isolated areas along the fourth floor (Level F) ceiling in the maintenance elevator lobby, storage rooms and corridor with evidence of efflorescence, suspect mold growth and excessive moisture conditions on the walls, ceiling structure and ceiling tiles. Water intrusion occurs from the adjacent brick paved courtyard on the north side of the passageway wall. The courtyard floor elevation is approximately at the same level or just above the ceiling height of the fourth floor (Level F) on the east side. The west section is approximately 3 feet higher with a retaining wall. The brick pavers adjacent to the wall are uneven with vegetative growth indicating pooling water and poor drainage occurring at these locations. The retaining wall within the courtyard is also out of plumb. A Professional Engineer with specific expertise in waterproofing and drainage design, in this geographical area must be retained to evaluate the site conditions and provide recommendations consistent with local regulatory and code requirements. The estimated cost of this work is included in the Replacement Reserves Report. Based upon the observed conditions of the interior walls, courtyard brick pavers and retaining wall, repairs may include removal of the brick pavers and retaining wall within this courtyard. It is recommended the perimeter bricks be replaced with cast in place concrete pavement along the surrounding walls sloping down towards the edge of the pavement where curtain drains are to be installed. The center area brick pavers will require replacement and sloping towards the curtain drains. During the repair of the courtyard; the exterior below grade wall should be waterproofed. The interior concrete walls, ceilings and corroded steel are to be repaired to seal all areas of water penetration. The estimated cost of this work is included in the Replacement Reserves Report. Additional costs may arise based upon the findings of the study; subsequent costs are not included in the report.
- Courtyard No. 2 (North) and Lower Media Center. The foundations and footings can not be directly observed. There are several isolated areas along the lower level media center foundation walls adjacent to the courtyard with evidence of efflorescence and moisture conditions/intrusion on the walls. The water intrusion occurs from the adjacent landscaped courtyard wall. The concrete above the walls is spalling with areas of exposed re-bar. A Professional Engineer with specific expertise in waterproofing and drainage design, in this geographical area must be retained to evaluate the site conditions and provide recommendations consistent with local regulatory and code requirements. The estimated cost of this work is included in the Replacement Reserves Report. Based upon the observed conditions of the interior and exterior walls; repairs may include excavation of the foundation, waterproofing and installation of a curtain drain. During the repair of the courtyard; the interior concrete walls should be repaired to seal all areas of water penetration. The estimated cost of this work is included in the Replacement Reserves Report. Additional costs may arise based upon the findings of the study; subsequent costs are not included in the report.
- Boyle Stadium Grandstands. The foundations and footings can not be directly observed. There are numerous sections within the north and south ends storage rooms of the east grandstand and within the boiler room of the west grandstand with evidence of efflorescence, pooling water and excessive moisture conditions on the ceilings, floors and walls. The water intrusion in the east grandstand occurs from the adjacent landscaping wall and through the open windows. In addition water enters the east and west grandstand through the cracked concrete seating areas. A Professional Engineer with specific expertise in waterproofing and drainage design, in this geographical area must be retained to evaluate the site conditions and provide recommendations consistent with local regulatory and code requirements. The estimated cost of this work is included in the Replacement Reserves Report. Based upon the observed conditions of the interior and exterior walls; repairs may include excavation of the foundation, waterproofing and installation of a curtain drain. During the repair of the landscaped wall; the interior concrete and masonry walls should be repaired to seal all areas of water penetration. The estimated cost of this work is included in the Replacement Reserves Report. Additional costs may arise based upon the findings the findings of the study; subsequent costs are not included in the report. The stands do have landmark (historical) status; all repairs to the stands should be compliant with building codes regarding landmark (historical) structures.

- The floors are not plumb or level in numerous rooms within the 1927 original building. The 1st floor (Level C) floors along the northwest section of the building are warped and have significant sub-flooring damage. According to the POC, this section of the building was originally utilized as the vocational shops. The floors housed numerous large pieces of mechanical equipment. The floor damage extends down to the wood joists. This condition exists in classroom 106; currently the room is under a complete finished floor, sub-flooring and joist repair. Additional classrooms along this corridor and the northern corridor exhibited a varying level of floor damages ranging from buckling of the floor tiles to unevenness or depressions within the floor. Classrooms with significant issues include 110 and 114; formerly vocational rooms. The rooms with a lesser degree appeared to be a result of numerous layers of finished flooring placed on top of one another or due to the classroom demising wall moved to a new location; resulting in unevenness at the location and settling. The classrooms along the east corridor had unevenness adjacent to the doorways. These floors were added during the 1971 renovation when the gymnasium was converted into classrooms; a similar condition exists on the second and third floor in this section of the building. The unevenness appeared to be resulting from settling or movement occurring during construction. The following recommendations are provided for repairs of these issues.
    - Classroom 106 is a down unit and currently under renovation; therefore no additional costs or action is required.
    - Classrooms 110 and 114 will require removal and replacement of the flooring to the supporting joists. The repairs should be supervised by a Structural Engineer with specific expertise in wood flooring and supporting structure and completed by a qualified contractor. The remainder of the affected classrooms will also require floor finish removal/replacement and sub-flooring removal and/or repairs. A cost allowance for retaining a Professional Engineer and contractor as well as a cost for the removal and replacement of the sub-flooring is included in the Replacement Reserves Report. Additional costs at these rooms and other areas of concern may arise based upon the findings the findings of the study; subsequent costs are not included in the report. During the demolition of the flooring, worn and damaged suspect ACM (Asbestos-containing Material) floor tiles may exists below the current layer of vinyl tiles. The estimated cost of removing the suspect ACM tiles is included in the Replacement Reserves Report. In 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law as Title II of the Toxic Substance Control Act (TSCA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools. Specifically, Asbestos-Containing Materials in Schools (October 30, 1987 40CFR Part 763, Subpart E) outlines a detailed process that ensures the safe management of all asbestos-containing building materials (ACBM) by a designated person (DP) for a Local Education Agency (LEA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools and public and commercial buildings. Specifically, the Asbestos Model Accreditation Plan (40 CFR Part 763, Appendix C) required the use of accredited inspectors, workers, supervisors, project designers, and management planners (schools only) when conducting asbestos activities at schools and public and commercial buildings.
- According to information provided by Stamford Fire and Rescue there are a number of unresolved Fire Code violations. See Section 3.2 of the Facilities Needs Assessment for descriptions and comments.

The following issues should be considered.

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

1.3. OPINIONS OF PROBABLE COST

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

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

1.3.1. Methodology

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

In addition to determining the EUL and the RUL for each major prime system and building component, EMG will categorize each cited deficiency within one of the following 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
Mr. Rodney Bass, Principal	Stamford High School	203.977.4226
Mr. Thomas McIntosh, Head Custodian	Stamford High School	203.977.4252
Mr. Gus Burreisci Project Manager	City of Stamford Public Schools	203.223.8118
Steven Maintenance	Stamford High School – Boyle Stadium	203.977.4252

The Comprehensive Facilities Needs Assessment was performed with the assistance of Mr. Rodney Bass, Principal, Mr. Thomas McIntosh, Head Custodian and Steven, Maintenance for Stamford High School, the on site Point of Contacts (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 two, twelve and five 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:

- Client supplied floor plans
- Department schedules with teacher, class and room assignment

- 2006-2007 Stamford High School Handbook
- Architectural Drawings by Wiles and Associates Architects dated October 31, 2000
- Architectural Drawings by Perkins Eastman Architects, PC dated February 4, 2005
- Original Architectural Drawings by Knappe and Morris Architects dated September 14, 1926
- Mechanical Inspection Certificates
- Stamford Public Schools – High School Program of Studies 2009-2010

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

2.5. PRE-SURVEY QUESTIONNAIRE

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

3. ACCESSIBILITY, CODE & MOLD

3.1. ADA ACCESSIBILITY

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

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

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

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

Parking

- Access aisles adjacent to parking spaces, crossing hazardous vehicle areas, from main roadways and pavement markings to the building sidewalks and entrances are not provided adjacent to 9th Grade Annex. A total of 40 LF is required.
- Currently there is no van–accessible parking spaces provided. Based on the number of ADA parking spaces provided, a minimum requirement of two spaces is required.

Ramps

- The softball/baseball field requires the construction of a straight entrance ramp with handrails and landing to allow wheelchair access. A length of 30 LF is required.

Paths of Travel

- Obstacle or protrusion from wall impeding access. Install cane detection for all 15 of the drinking fountains adjacent to the restrooms.

Restrooms

- Wrap drain pipes below lavatory with insulation; protect against contact with hot, sharp, or abrasive surfaces. A total of two are required.

Boyle Stadium and Softball/Baseball Field

- A full ADA study is required to determine the means of providing complete handicapped accessibility to Boyle Stadium. Currently, the only access is provided by an access ramp leading from the high school parking area to Boyle Stadium. The following site and stadium issues include:
    - There are no adjacent handicapped parking spaces leading from the parking area to the Boyle Stadium ramp and the adjacent ball fields. This includes location and installation of parking stalls, walkway pavement, pavement markings and signage.
    - The stadium seating has been designated as an historical structures; thus minimal to no modifications can be made to the structure; therefore a separate ADA seating section should be added to the site; located in the end zone adjacent to the site ramp and concession stand. This will include the required walkway pavement.
    - An accessible restroom is also required. The recommend area for installation is within the Girls Locker room adjacent to the concession stand. The restroom will have a separate entrance from the locker room.
- Additional issues, recommendations and all associated costs are to be determined by the ADA study as noted in section 1.2.

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 information provided by the office of Stamford Fire and Rescue, Office of the Fire Marshal, there are outstanding fire code violations on file for Stamford High School. The most recent inspection was conducted by the fire department on August 14, 2008. The fire department inspects the property on an annual basis. A Request for Information (RFI) letter was forwarded to obtain a copy of the inspection report. A copy is included in Appendix C. Significant information will be forwarded upon receipt. No costs to correct the code violations are included in the Replacement Reserves Report.

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:

- Classrooms, Offices and Storage Rooms; the ceiling tiles affected by the moisture were approximately two to six square feet in size resulting from HVAC condensate leaks, current or past repaired roof leaks. The number of locations affected by the moisture was approximately fifteen percent of the rooms.
- Common Corridors; the ceiling tiles affected by the moisture were approximately two to eight square feet in size resulting from HVAC condensate leaks, current or past repaired roof leaks. The locations affected by the moisture were at least one in every corridor.
- Restrooms; no significant suspect mold and/or evidence of moisture was observed (i.e., beyond the presence of very small quantities found at commonly found locations such as grout in bathtubs, shower lines and other frequently wet areas).

Additional discussion and description of the correction efforts required with regard to the moisture infiltration issues are discussed in Sections 6.8 and 8.1 of this report; associated costs are included within those sections.

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

Suspect mold growth was observed in the following areas:

- Audio Visual Room; the ceiling tiles affected by the moisture were approximately two square feet in size resulting from condensate leaks.
- Fourth Floor (Level F) Maintenance Corridor; the ceiling tiles affected by the moisture were approximately eight square feet in size resulting from exterior water intrusion.
- Auditorium First Floor (Level C) Exterior Corridor; the ceiling tiles affected by the moisture were approximately two square feet in size resulting from condensate leaks.
- Level D North Passageway; the ceiling tiles affected by the moisture were approximately eight square feet in size resulting from exterior water intrusion.
- Classroom 637; the ceiling tiles affected by the moisture were approximately four square feet in size resulting from exterior water intrusion.

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. The estimated costs to address the moisture noted above are included in the Replacement Reserves Report. 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; these estimated costs are not included in the tables.

4. EXISTING BUILDING EVALUATION

4.1. ROOM TYPES

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

Room Types and Mix			
Quantity	**Type**	**Vacant Rooms**	**Down Rooms**
151	Classroom	0	4
72	Office	0	0
42	Mechanical	0	0
66	Storage	0	0
2	Gymnasium	0	0
1	Cafeteria	0	0
1	Auditorium	0	0
1	Media Center	0	0
336	**TOTAL**	**0**	**4**

4.2. ROOMS OBSERVED

EMG observed approximately 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. Due to extensive sub-flooring damage, classroom 106 is considered a down unit. Please refer to Section 8.1 for associated costs and recommendations. In addition there are three rooms considered down; classrooms 401, 523 and 525, due to their utilization for storage.

5. SITE IMPROVEMENTS

5.1. UTILITIES

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

Site Utilities		
Utility	**Supplier**	**Condition & Adequacy**
Sanitary sewer	City of Stamford	Good
Storm sewer	City of Stamford	Good
Domestic water	Aquarian	Good
Electric service	Connecticut Light and Power (CL&P)	Good
Natural gas service	Yankee Gas	Good

Observations/Comments:

- The utilities provided appear to be adequate for the property. There are no unique, on site utility systems such as septic systems, or water/waste water treatment plants.
- See Section 7.1 for descriptions and comments regarding the underground storage tank (UST).
- See Section 7.3 for descriptions and comments regarding the propane gas tanks.
- 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 Strawberry Hill Avenue, on the west side of the property. Additional entrance drives are located north of the main entrance from Strawberry Hill Avenue and at the south and west sides of the property from Hillandale Avenue. The parking areas, drive aisles, and service drives are paved with asphalt. The entrance driveway aprons are paved with concrete.

Based on a physical count, parking is provided for approximately 334 cars in six parking lots. The parking ratio is 1.09 spaces per thousand square feet of floor area. The front parking lot contains 20 parking stalls. The tennis court parking lot contains 46 parking stalls. The east staff parking lot contains 24 parking stalls and the student parking lot contains 200 parking stalls. The north parking lot at the soccer/lacrosse field contains four parking stalls. The remaining 60 parking stalls are sheltered beneath the northeast portion of the building. A limited amount of unmarked additional parking is provided near the maintenance entrance. The north and south drive aisle provide access along both sides of the building. There are a total of eleven handicapped–accessible parking stalls, none of which are van-accessible. The curbs and gutters are constructed of cast-in-place concrete and extruded, asphalt curbing placed at the edge of the pavement.

The sidewalks throughout the property are constructed of cast-in-place concrete. Cast-in-place concrete steps with metal handrails are located at the front entrance to the property from Strawberry Hill Avenue, in the courtyard east of the original building, and along the walkways near Boyle Stadium. Brick pavers are located in the pedestrian areas near the gymnasium entrance and in the courtyard east of the original building and the addition.

Observations/Comments:

- The asphalt pavement is in good to poor condition. The pavement sections in the drive aisles at the north and south sides of the building, in the north half of the front parking lot, and the parking area beneath the building appear to have been recently repaved and are in good condition. The east staff parking lot was recently constructed and the pavement appears to be in good condition.
- The pavement in the student parking lot, the tennis court parking lot, the maintenance parking lot, and the south half of the front parking lot is in fair to poor condition. Significant signs of cracking and surface deterioration were observed in these areas. The damaged sections of pavement will require full depth repair and the lots will require an overlay with new asphalt pavement. The estimated cost of this work is included in the Replacement Reserves Report.
- In order to maximize the pavement life, pothole patching, crack sealing, seal coating, and restriping of all of the asphalt paving will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The concrete sidewalks are in good to poor condition. The sidewalks along the front elevation of the building and near Boyle Stadium appear to be in good condition. Epoxy sealing of minor cracks will be required during the evaluation period as part of the Physical Plant's routine maintenance program.
- Areas of heavy cracking and vertical displacement were observed near the south side of the gymnasium and near the southwest corner of the building. The damaged sections of sidewalk will require removal and replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The concrete curbs throughout the property are in good to fair condition. Routine cleaning and maintenance will be required during the evaluation period.
- The concrete steps are in good to fair condition. Minor concrete damage and missing handrails were observed at steps near the west entrance to the property. The steps will require minor concrete repair and handrail replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition, there is a missing handrail on the site steps within Courtyard No. 2. A handrail is required for these stairs. The estimated cost of this work is included in the Replacement Reserves Report.
- The brick pavers are in good to fair condition. Minor damage and deterioration were observed to the pavers in the courtyard between the original building and the addition. The brick pavers in this area will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The asphalt pedestrian pavement in the interior courtyards is in poor condition. The pavement will require replacement. 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.

Observations/Comments:

- The storm water system appears to provide adequate runoff capacity. There is no evidence of major erosion.
- A ponding issue has been reported at the south end of Boyle Stadium during periods of heavy rain. This issue is reportedly being addressed through the City of Stamford Engineering Department. As such, no costs to study or correct the issue are included in this report.

Sustainable Recommendations:

- There are no sustainable recommendations for storm drainage runoff.

5.4. TOPOGRAPHY AND LANDSCAPING

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

The landscaping consists of trees, shrubs, and grasses. Flowerbeds are located throughout the site.

The baseball fields are irrigated by an in-ground sprinkler system consisting of underground piping, shut-off valves, pop-up sprinkler heads, and automatic timers. The irrigation controls are located in the pump house near Boyle Stadium.

Surrounding properties include single-family and multi-family residential developments.

Stone masonry retaining walls are located at grade changes along the north property line and at the south side of the school near the main property entrance. A brick masonry retaining wall is located in the courtyard between the original building and the addition. The retaining walls are topped with concrete copings. A reinforced concrete retaining wall is located near the entrance to the courtyard between the original building and the addition.

Observations/Comments:

- The topography and adjacent uses do not appear to present conditions detrimental to the property.
- The landscape materials are in good condition and will require routine maintenance during the evaluation period.
- Some of the trees along the perimeter of the building, in the interior courtyards and the courtyard behind the original building were becoming overgrown and were making contact with the roof and exterior walls. It is recommended that the trees near the building be trimmed or removed as appropriate. The estimated cost of this work is included in the Replacement Reserves Report
- The underground irrigation system appears to be in good working order. Replacement of sprinkler heads and minor repairs will be required during the evaluation period. This work is considered to be routine maintenance.

- The stone masonry retaining wall is in good to fair condition. Portions of the retaining wall along the north property line are out-of-plumb; the concrete copings are broken. The stone masonry retaining wall will require sectional repairs. The estimated cost of this work is included in the Replacement Reserves Report.
- The student courtyard brick retaining wall is in fair to poor condition. Please refer to Sections 1.2, 6.1 and 6.7 for additional comments and associated repair costs.

Sustainable Recommendations:

- A sustainable recommendation for irrigation is to use non-potable water for irrigation purposes through a rain-water collection system, in order to reduce domestic water consumption.

5.5. GENERAL SITE IMPROVEMENTS

Property identification is provided by a monument sign located along Strawberry Hill Avenue. A metal framed informational sign is located adjacent to the main entrance drive.

Site lighting is provided by property-owned, metal, streetlight standards. The light standards are spaced along the drive aisles throughout the parking areas. Exterior building illumination is provided by surface-mounted light fixtures on the exterior walls.

Perimeter fencing is located along the north, south, and east property lines. Additional fencing is located around the tennis courts, baseball fields, soccer field, and the east parking lots. The fences are constructed of chain link with metal posts. Metal guardrails are placed along the perimeter of the north and south drive aisles. Entry gates are located at the south entrance to the front parking lot and at the entrance to the north drive aisle.

The football field is located at Boyle Stadium, at the northeast corner of the property. Refer to section 9 for descriptions and comments regarding the structures at Boyle Stadium. The football field consists of artificial turf and contains two goal posts and a scoreboard. A quarter mile running track is located around the perimeter of the football field. The track is paved with asphalt and is topped with a synthetic coating.

A baseball field and a softball field are located east of the school. The ball fields have dirt infields topped with brick dust and grass outfields. The backstops and line fences are constructed of chain link fencing with metal posts. A soccer/lacrosse field is located east of Boyle Stadium. The field is covered with natural grass and contains interchangeable goals and perimeter fencing.

Five tennis courts are located south of the gymnasium. The tennis courts are paved with asphalt and topped with a synthetic sealant. The courts are surrounded by chain link fencing.

Dumpsters are located near the loading dock, at the south side of the property. The dumpsters are not in enclosures. A trash compactor is also located near the loading dock.

Observations/Comments:

- The property identification signs are in good to fair condition. Minor repairs and routine maintenance will be required during the evaluation period.
- The exterior site and building light fixtures are in good condition. Routine maintenance will be required during the evaluation period.

- The lighting was reported to be inadequate in the east student parking lot. It is recommended that additional lighting be installed in this area. The estimated cost of this work is included in the Replacement Reserves Report.
- The site fencing is in good to poor condition. The fencing around the baseball field and along the east property line was recently replaced. Observed areas of damaged fencing include: the north property line fencing at the east end of the school and along the soccer/lacrosse field, the south property line fencing along the south drive aisle, and the divider fencing in the student parking lot. These sections of fencing will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- Additional gates are recommended for security during public events and night functions. The estimated cost of this work is included in the Replacement Reserves Report.
- The football field at Boyle Stadium is in fair condition. The field is reportedly scheduled to be replaced within the year. The cost of this work is not included in the cost tables. The goal posts and scoreboard are in good to fair condition and will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The running track is in good to fair condition. The track will require minor repairs and application of sealant during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The baseball fields appear to be in good condition and will require routine maintenance during the evaluation period. The backstops, fences, benches and bleachers also appear to be in good condition and will require routine maintenance during the evaluation period.
- The soccer/lacrosse field appears to be in good condition and will require routine maintenance during the evaluation period.
- The tennis courts are in good condition. The asphalt will resurfacing and sealing during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The dumpsters are owned and maintained by the City of Stamford and appear to be in good condition.
- The trash compactor is owned and maintained by the City of Stamford and appears to be in good condition.

Sustainable Recommendations:

- A sustainable recommendation for site lighting is to install energy efficient light fixtures controlled by photo cells.
- A sustainable recommendation for fencing is to use fencing constructed of recycled PVC material during future replacements.

6. BUILDING ARCHITECTURAL AND STRUCTURAL SYSTEMS

6.1. FOUNDATIONS

According to the structural drawings for the 1927 original building, the foundations consist of reinforced, concrete slabs-on-grade, integral, perimeter footings with piers or piles supporting the interior columns, all bearing directly on the soil. Steel reinforced concrete grade beams connected and tie to each pier cap.

Based on structures of similar size, configuration, and geographic location, the foundations for the 1971 addition consist of reinforced, concrete slabs-on-grade, integral, perimeter footings with piers or piles supporting the interior columns, all bearing directly on the soil. Steel reinforced concrete grade beams connected and tie to each pier cap.

Based on structures of similar size, configuration, and geographic location, it is assumed that the gymnasium section of the 1971 building foundations consist of cast-in-place concrete perimeter wall footings with concrete foundation walls. The foundation systems include reinforced concrete column pads.

The subterranean basements have load-bearing, concrete, concrete masonry unit (CMU) and masonry, perimeter retaining walls and interior load bearing walls.

Observations/Comments:

- Student Courtyard between 1927 and 1971 buildings. The foundations and footings cannot be directly observed. There are several isolated areas along the fourth floor (Level F) ceiling in the maintenance elevator lobby, storage rooms and corridor with evidence of efflorescence, suspect mold growth and excessive moisture conditions on the walls, ceiling structure and ceiling tiles. Water intrusion occurs from the adjacent brick paved courtyard on the north side of the passageway wall. The courtyard floor elevation is approximately at the same level or just above the ceiling height of the fourth floor (Level F) on the east side. The west section is approximately 3 feet higher with a retaining wall. The brick pavers adjacent to the wall are uneven with vegetative growth indicating pooling water and poor drainage occurring at these locations. The retaining wall within the courtyard is also out of plumb. A Professional Engineer with specific expertise in waterproofing and drainage design, in this geographical area must be retained to evaluate the site conditions and provide recommendations consistent with local regulatory and code requirements. The estimated cost of this work is included in the Replacement Reserves Report. Based upon the observed conditions of the interior walls, courtyard brick pavers and retaining wall, repairs may include removal of the brick pavers and retaining wall within this courtyard. It is recommended the perimeter bricks be replaced with cast in place concrete pavement along the surrounding walls sloping down towards the edge of the pavement where curtain drains are to be installed. The center area brick pavers will require replacement and sloping towards the curtain drains. During the repair of the courtyard; the exterior below grade wall should be waterproofed. The interior concrete walls, ceilings and corroded steel are to be repaired to seal all areas of water penetration. The estimated cost of this work is included in the Replacement Reserves Report. Additional costs may arise based upon the findings of the study; subsequent costs are not included in the report.

- Courtyard No. 2 (North) and Lower Media Center. The foundations and footings can not be directly observed. There are several isolated areas along the lower level media center foundation walls adjacent to the courtyard with evidence of efflorescence and moisture conditions/intrusion on the walls. The water intrusion occurs from the adjacent landscaped courtyard wall. The concrete above the walls is spalling with areas of exposed re-bar. A Professional Engineer with specific expertise in waterproofing and drainage design, in this geographical area must be retained to evaluate the site conditions and provide recommendations consistent with local regulatory and code requirements. The estimated cost of this work is included in the Replacement Reserves Report. Based upon the observed conditions of the interior and exterior walls; repairs may include excavation of the foundation, waterproofing and installation of a curtain drain. During the repair of the courtyard; the interior concrete walls should be repaired to seal all areas of water penetration. The estimated cost of this work is included in the Replacement Reserves Report. Additional costs may arise based upon the findings the findings of the study; subsequent costs are not included in the report.
- The subterranean basement walls are in good condition. There is no evidence of movement.

Sustainable Recommendations:

- There are no sustainable recommendations for foundations.

6.2. SUPERSTRUCTURE

The original 1927 building has concrete encased structural steel columns supporting the upper floors. The upper floors are reinforced cast-in-place concrete slabs, supported by cast-in-place concrete or steel beams. The roofs are constructed of cast-in-place concrete and are supported by concrete and steel beams.

The 1971 addition has steel columns and interior concrete masonry unit (CMU) bearing walls supporting the upper floors. The upper floors are reinforced cast-in-place concrete slabs, supported by cast-in-place concrete or steel beams. The roofs are constructed of cast-in-place concrete and are supported by concrete and steel beams.

The gymnasium section of the 1971 building has concrete masonry unit (CMU) bearing walls and steel columns supporting the upper floors. The upper floors are reinforced cast-in-place concrete slabs, supported by cast-in-place concrete or steel beams. The roofs are constructed of cast-in-place concrete and are supported by concrete and steel beams.

Observations/Comments:

- The superstructure is exposed in some locations, allowing for limited observation. Walls and floors appear to stable with no significant signs of deflection or movement.
- The electrical vault ceilings and walls have evidence of water intrusion resulting from cracks in the exterior concrete parging and suspect roof leaks. In addition the concrete ceilings within the rooms are spalling with exposed re-bar. The repairs to the structure should be made in conjunction with the repairs to the water damaged structure detailed in Section 6.1. The estimated costs for repairs are included in Section 6.1.

- The floors are not plumb or level in numerous rooms within the 1927 original building. The 1st floor (Level C) floors along the northwest section of the building are warped and have significant sub-flooring damage. According to the POC, this section of the building was originally utilized as the vocational shops. The floors housed numerous large pieces of mechanical equipment. The floor damage extends down to the wood joists. This condition exists in classroom 106; currently the room is under a complete finished floor, sub-flooring and joist repair. Additional classrooms along this corridor and the northern corridor exhibited a varying level of floor damages ranging from buckling of the floor tiles to unevenness or depressions within the floor. Classrooms with significant issues include 110 and 114; formerly vocational rooms. The rooms with a lesser degree appeared to be a result of numerous layers of finished flooring placed on top of one another or due to the classroom demising wall moved to a new location; resulting in unevenness at the location and settling. The classrooms along the east corridor had unevenness adjacent to the doorways. These floors were added during the 1971 renovation when the gymnasium was converted into classrooms; a similar condition exists on the second and third floor in this section of the building. The unevenness appeared to be resulting from settling or movement occurring during construction. The following recommendations are provided for repairs of these issues.
    - Classroom 106 is a down unit and currently under renovation; therefore no additional costs or action is required.
    - Classrooms 110 and 114 will require removal and replacement of the flooring to the supporting joists. The repairs should be supervised by a Structural Engineer with specific expertise in wood flooring and supporting structure and completed by a qualified contractor. The remainder of the affected classrooms will also require floor finish removal/replacement and sub-flooring removal and/or repairs. A cost allowance for retaining a Professional Engineer and contractor as well as a cost for the removal and replacement of the sub-flooring in Rooms 110 and 114 is included in the Replacement Reserves Report. Additional costs at these rooms and other areas of concern may arise based upon the findings the findings of the study; subsequent costs are not included in the report. During the demolition of the flooring, worn and damaged suspect ACM (Asbestos-containing Material) floor tiles may exists below the current layer of vinyl tiles. The estimated cost of removing the suspect ACM tiles is included in the Replacement Reserves Report. In 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law as Title II of the Toxic Substance Control Act (TSCA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools. Specifically, Asbestos-Containing Materials in Schools (October 30, 1987 40CFR Part 763, Subpart E) outlines a detailed process that ensures the safe management of all asbestos-containing building materials (ACBM) by a designated person (DP) for a Local Education Agency (LEA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools and public and commercial buildings. Specifically, the Asbestos Model Accreditation Plan (40 CFR Part 763, Appendix C) required the use of accredited inspectors, workers, supervisors, project designers, and management planners (schools only) when conducting asbestos activities at schools and public and commercial buildings.

Sustainable Recommendations:

- There are no sustainable recommendations for superstructure.

6.3. ROOFING

The primary roofs covering the 1927 original building and the 1971 addition are classified as flat roofs. The roofs are finished with a mineral-surfaced cap sheet over a multi-ply, bituminous, built-up membrane. The roofs are insulated with rigid insulation boards and topped with gravel. Lower level, stair towers and penthouse roofs are finished with a single-ply "rubber" roofing membrane base and edge flashing.

The exterior perimeter walls extend above the surface of the roofs, creating parapet walls. The parapet walls are finished with an exterior insulation and finish system (EIFS) on stud-framed walls. The roof membrane terminates along a flashed cant strip at the base of the parapet walls for the built-up roofs. The roof membrane turns up the sides of the parapet walls and terminates at sheet metal copings for the single ply membrane roofs. The roofs have sheet metal flashing elements or built-up base and edge flashing.

There is a barrel shaped roof on the original building over the section of the former location of the gymnasium in the 1927 building. The roof is finished with a mineral-surfaced cap sheet over a multi-ply, bituminous, built-up membrane. The roof is insulated with rigid insulation boards.

Storm water is drained from the roofs by internal drains and sheet metal scuppers with downspouts draining onto the lower level roofs with internal drains. The drains discharge into the underground storm drainage system.

Curb-mounted skylights provide natural illumination in sections of the building including the first floor (Level C) music room, cafeteria, and the third floor (Level A) corridor. There are no attics under the flat roofs. The roof structures are exposed.

The building entrance roof section is classified as hipped roofs. The roofs are finished with slate shingles over waterproofed wood sheathing. The roofs have sheet metal and copper flashing elements. The roofs are insulated with fiberglass batts. A decorative painted metal, wood and stone cupola is centered on the pitched roof.

The roofs drain over the eaves to sheet metal gutters and downspouts that discharge onto the lower roofs. The lower roofs internal drains are connected to the underground piping into the storm drainage system.

The attics are ventilated through the cupola. The attics do not have draft stops. Attic access is provided by a scuttle hole located in the upper floor classroom 361.

The 1927 original south side exit canopy is constructed of steel with a metal roof.

Observations/Comments:

- The roof finishes vary in age. The barrel roof on the original building is fifteen years old. The remaining built-up roofs are greater than ten years old. The single-ply membrane roofs appeared to be slightly newer than the BUR roofs. The slate tile pitched roof appeared original. The only warranty provided is for the barrel roof. A copy of the warranty is attached in Appendix C. The roofs are maintained by an outside contractor or the in-house maintenance staff.
- EMG conducted a separate roof assessment for this project. Infrared scans of the roof revealed areas of wet insulation at Sections 1, 8, and 11. A large portion of Section 1 was found wet. 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.

- There is evidence of active roof leaks. There are water-damaged ceiling tiles and water-damaged interior finishes on the third floor (Level A) of the 1927 building in the corridor and within classroom 361 underneath the cupola. All active leaks must be repaired. The cost to repair the roof leaks 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.
- 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 requiring routine maintenance during the evaluation period.
- The copings are in good condition requiring routine maintenance during the evaluation period.
- The parapet walls are in good to fair condition requiring routine maintenance during the evaluation period with the exception of the EIFS material. There are several isolated areas of hairline cracking along the southwest parapet wall and the west center elevation wall. The damaged finishes must be repaired and/or replaced. The cost to replace the damaged finishes is relatively insignificant and the work can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- Roof drainage appears to be adequate. Clearing and minor repair of drain system components should be performed regularly as part of the Physical Plant's routine maintenance program.
- The roof vents are in good condition requiring routine maintenance during the evaluation period.
- The skylights are in good condition requiring routine maintenance during the evaluation period.
- The rooftop cupola is in good to fair condition with evidence of numerous past repairs. The ceiling tiles in classroom 361 directly under the cupola were water damaged indicating a prior repaired leak. The cupola will require general maintenance repairs during the evaluation period. A cost allowance is provided for the cupola repairs and is included in the Replacement Reserves Report.
- The entrance canopy on the south side of the building is of original construction. The steel framing is beginning to corrode requiring scraping and painting repairs. A cost allowance for this work is included in the Replacement Reserves Report.
- The slate roof attic is not accessible and it could not be determined if there is moisture, water intrusion, or excessive daylight in the attics.

Sustainable Recommendations:

- A sustainable recommendation for roofing is to replace the built-up roofing with a light colored single ply membrane.

6.4. EXTERIOR WALLS

The original 1927 buildings have brick veneer, pre-cast panels and limestone veneer exterior walls. Portions of the lower and rear elevations along maintenance areas are finished with concrete stucco. Additions to the 1927 building and the 1971 building have stone veneer, brick veneer, pre-cast panels and curtain wall exteriors. The stair tower and passageway curtain wall system is anchored to the superstructure. The curtain wall has horizontal bands of tinted, glazed, vision panels. The spandrels are finished with factory-finished, metal panels. The 1971 addition is finished with brick veneer and pre-cast concrete panels.

The curtain wall horizontal and vertical bands have sealant installed at glazing joints, spandrel panel joints, and at joints between finish transitions.

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

Observations/Comments:

- The original 1927 building brick veneer is in good to poor condition. There is one section of the veneer along the north corner of the west elevation which requires pointing. Additional pointing is required on the interior courtyard parapets. Significant portions of the mortar joints are cracked requiring cleaning and pointing. The estimated cost of this work is included in the Replacement Reserves Report.
- The original 1927 building concrete walls along the interior courtyards are in fair to poor condition. There are numerous localized areas of cracked, spalled and exposed re-bar damaged concrete generally occurring at the windows. A similar condition exists on the maintenance elevation of the building adjacent to the windows and along the courtyard. The concrete along the courtyard elevations had several vertical cracks resulting from settling. Painting and patching will be required to the repaired and remaining areas of the foundation walls. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition based on the estimated Remaining Useful Life (RUL), the painting will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The curtain wall system of the 1927 building is in good condition requiring routine maintenance during the evaluation period.
- The 1971 building exterior brick veneer is in good to poor condition. There are numerous damaged sections of the veneer below the window sills on the west side elevation. Additional pointing is required on the east side patio deck walls and south side stairwell walls. The mortar joints are cracked requiring cleaning and pointing. The estimated cost of this work is included in the Replacement Reserves Report.
- The building expansion joints are in good to poor condition. The expansion joints on the 1927 original building were replaced within the last three years requiring routine maintenance during the evaluation period. The 1971 expansion joints appeared greater than ten years old, brittle and exposed. The expansion joints will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The building sealants are in good condition requiring routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for exterior finishes is to use low VOC sealant or caulking around exterior doors and windows and the paint finishes on the stucco.
- A sustainable recommendation for windows is to replace the gymnasium clerestory single pane storefront with double paned insulated units.

6.5. EXTERIOR AND INTERIOR STAIRS

The exterior entrance stairs to the 1927 original building are constructed of cut granite slabs with steel handrails and balusters. The landings are finished with granite and brick pavers. The 1971 building exterior stairs are constructed of reinforced concrete. The handrails and balusters are constructed of metal.

The interior stairs are constructed of steel and have closed risers and concrete-filled steel pan or precast concrete treads covered with non-skid vinyl surfaces. The stairs within the mechanical rooms, storage rooms or leading to access areas are constructed of steel and have open or closed risers with textured steel or concrete filled tread pans.

Observations/Comments:

- The interior stairs, balusters, and handrails are in good to fair condition requiring routine maintenance during the evaluation period.
- The exterior stairs, balusters, and handrails are in good to poor condition. There are several sections of railing, specifically in the high traffic sections of the building, such as the auditorium exhibiting minor rust or exposed metal. The cost for railing finishing 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 remaining handrails and guardrails are in good to fair condition requiring routine maintenance during the evaluation period.
- The limestone veneer on the auditorium entrance stairs is damaged on the south side. A cost allowance for the repair of the limestone veneer is included in the Replacement Reserves Report.
- The stair landing within the boiler room is in good to poor condition. There is one concrete landing that is broken and requires general maintenance repairs.

Sustainable Recommendations:

- A sustainable recommendation for exterior and interior stairs is to use low VOC coatings for the stairs and guardrails when repainting.

6.6. WINDOWS AND DOORS

The classroom windows of the 1927 original building are metal-framed double-glazed, double-hung units. The entrance doors to the original building are glazed aluminum-framed doors set in a metal framing system.

The entrance to the 1971 building is a metal-framed storefront system. The aluminum and steel-framed, curtain wall system incorporates the entry doors. The doors are steel paneled doors set in the metal framing system. The classroom windows are steel-framed, single-glazed, fixed units with operable hopper openings along the sill.

The service doors to both buildings are painted, solid core metal doors set in metal frames. The doors have cylindrical locksets with lever or knob handle hardware. The fire exit doors have panic bars and push/pull plates.

The remaining windows of the 1927 original building and 1971 building additions are a part of the metal-framed curtain wall system described in Section 6.4. The aluminum-framed, curtain wall system incorporates the entry doors. The windows are glazed with insulated panes set in metal frames. The doors are fully-glazed, aluminum-framed doors set in the metal framing system.

Overhead doors are located at the maintenance garage, cafeteria area and the gymnasium storage equipment rooms. The overhead doors are coiling metal doors and are equipped with mechanical and automatic openers. The loading docks are equipped with bumpers.

Observations/Comments:

- The 1971 entrance storefront window system is in fair to poor condition. The steel columns are beginning to corrode. The front entrance door hinges have been replaced and the steel doors have numerous impact damage. The window gaskets and building to metal sealant are in fair condition. The vision lights are glazed with single pane glass. Based on the estimated Remaining Useful Life (RUL) and condition, the entrance storefront system will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the POC, the property does not experience a significant number of complaints regarding window leaks or window condensation. Several windows in classroom 625 were reported to be leaking. The water appeared to be entering through the sill or head. The cost for repairing these windows 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 windows of the 1927 original building are in good condition requiring routine maintenance during the evaluation period.
- The steel framed windows of the 1971 building are in fair condition. Based on the estimated Remaining Useful Life (RUL), condition and having single pane glazing, the building windows will require replacement with new efficient storefront windows. The estimated cost of this work is included in the Replacement Reserves Report.
- The 1927 and 1971 building entrance and service doors and door hardware are in good condition requiring routine maintenance during the evaluation period.
- The overhead doors are in good condition and will require routine maintenance during the evaluation period.
- The dock equipment is in good condition and will require routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for doors is to replace with insulated, energy efficient doors.

6.7. PATIO, TERRACE, AND BALCONY

There are two courtyards within the centers of the 1927 original building. These courtyards are not utilized for specific purposes. Courtyard No. 2 has gravel pathways landscaped with grass and trees as well as natural rock formations. Courtyard No. 1 is landscaped fitted with slate pavers and a picnic area utilized by the staff.

The student courtyards are located between the 1927 and 1971 buildings. The courtyards are finished with brick pavers and accessed by concrete staircases and ADA ramps. The courtyards have pre-cast concrete benches and partially landscaped areas. There is a roof setback patio adjacent to the classroom 406 (Level F) of the 1971 building. The patio has a brick parapet along the perimeter and finished with landscaping.

There is one original copper paneled enclosed balcony in lounge room 265. The windows are steel framed with single-glazed hung units.

Observations/Comments:

- The gravel pathways and landscaping within courtyard 2 are in good to fair condition. Based on the estimated Remaining Useful Life (RUL) and condition, the gravel pavement will require replacement over the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The slate pathways and landscaping within courtyard 1 fair to poor condition. The pavers are overgrown with vegetation. The slate pavers will require resetting or replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The brick pavers within the student courtyards are in poor condition. The pavers are uneven with evidence of ponding water occurring in the south end of the courtyard. The brick pavers require replacement with new concrete, brick pavers and renovation to the area drainage. The estimated cost of this work is included in the Replacement Reserves Report. Please refer to Section 1.2 and 6.1 for additional information and associated costs.
- The exterior of the balcony in room 265 is in fair to poor condition. It is not known if the balcony has historical significance. A cost to replace the balcony with a curtain wall finish is included in the Replacement Reserves Report.
- The courtyard benches are in good to fair condition. Based on their estimated Remaining Useful Life (RUL), the benches 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 courtyards is to use low VOC coatings for the guardrails when repainting.

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

The main entrance vestibule along Strawberry Hill Avenue enters onto the first floor (Level C) of the 1927 building. The entrance lobby contains display cases, bulletin boards and the entrances to the main administrative offices, media center, auditorium, infirmary and guidance consoler's offices. Corridors leading to the remainder of the building's facilities and classrooms are accessed directly from corridors beyond the lobby and from corridors on each floor. Elevators provide access to various locations throughout the buildings.

Common area restrooms are located off the lobby and within the main office. There are restrooms located adjacent to each main building facility; that is gymnasium, auditorium and cafeteria. Additional boys and girls restroom are located adjacent to the classrooms; one set per floor within each building. All of the boys and girls restrooms are handicapped accessible. The staff restrooms are located on each floor and within each department and are also ADA compliant.

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

Common Area	Floors	Walls	Ceilings
Entrance Lobby	Polished quarry bricks and tiles	Painted plaster	Suspended acoustic tiles and painted drywall

Common Area	Floors	Walls	Ceilings
Gymnasium Lobby	Vinyl tiles	Brick veneer and painted drywall and CMU	Suspended acoustic tiles
Auditorium Lobby	Vinyl tiles	Painted plaster	Suspended acoustic tiles and painted drywall
Corridor	Vinyl tiles	Painted drywall and painted CMU; lined with lockers or display cases	Suspended acoustic tiles and painted drywall
Common Area Restroom	Ceramic tile	Ceramic tile or painted drywall or painted CMU or brick	Suspended acoustic tiles and painted drywall
Office	Vinyl tile or carpet	Painted drywall, wood paneling, painted CMU	Suspended acoustic tiles or painted drywall
Media Center	Carpet and vinyl tile	Painted drywall and painted concrete	Painted drywall and suspended acoustic tiles
Auditorium	Vinyl tile, carpet, painted concrete with wood plank stage	Acoustical panels and painted plaster	Painted drywall and plaster
Gymnasium	Wood plank	Painted drywall, CMU and brick	Exposed structure and painted drywall
Cafeteria	Vinyl tile	Painted CMU and painted drywall	Suspended acoustic tiles

The interior doors within the passageways are aluminum-framed doors with vision panels set in the metal framing system. The classroom doors are hollow metal or wood doors set in metal or the original wood framing respectively. The classroom doors have vision panels fitted with safety glass. The doors have cylindrical locksets with lever handle; the interior service doors have lever or knob handle hardware, panic bars and push plates with keyed deadbolts.

Observations/Comments:

- The common areas have been renovated over the last ten years. Various sections of the buildings have had upgrades and finish replacement occurring in the years 2006, 2004 and 2001.
- There are numerous isolated areas of drywall, plaster and ceiling tiles throughout the buildings' common areas which have water damage. The moisture is caused by HVAC condensate, existing and/or repaired roof leaks. Additional damages occur from exterior water intrusion though windows and walls. The water stained finishes have not been replaced and require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior finishes in the common areas are in good to fair condition. Based on its estimated Remaining Useful Life (RUL), the common area carpet will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

- Interior painting will also be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior vinyl floor tiles are in good to fair condition. Several isolated areas of the common area floors were covered with VCT. These tiles are worn, damaged and contain suspect ACM (Asbestos-containing Material). Due to these conditions replacement of the floor tiles is recommended. The estimated cost of this work is included in the Replacement Reserves Report. In 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law as Title II of the Toxic Substance Control Act (TSCA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools. Specifically, Asbestos-Containing Materials in Schools (October 30, 1987 40CFR Part 763, Subpart E) outlines a detailed process that ensures the safe management of all asbestos-containing building materials (ACBM) by a designated person (DP) for a Local Education Agency (LEA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools and public and commercial buildings. Specifically, the Asbestos Model Accreditation Plan (40 CFR Part 763, Appendix C) required the use of accredited inspectors, workers, supervisors, project designers, and management planners (schools only) when conducting asbestos activities at schools and public and commercial buildings.
- The remaining vinyl tiles are in good to fair condition requiring routine maintenance during the evaluation period.
- The wood flooring on the auditorium stage is in fair to poor condition. Removal and replacement is required. The estimated cost of this work is included in the Replacement Reserves Report.
- The gymnasium wood flooring is in good to fair condition requiring refinishing during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The quarry stone flooring is in good to fair condition requiring a protective urethane coating during the evaluation period. The cost for the urethane coating 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 window treatments are in good to fair condition and will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The lockers in the corridors are in fair condition. Based on their current condition and estimated Remaining Useful Life (RUL), the lockers will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior doors are in good to fair condition requiring routine maintenance during the evaluation period.

Sustainable Recommendations:

- Sustainable recommendations for the interior finishes are 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)

Heating is provided in the corridors by perimeter, baseboard-mounted and wall-mounted, finned-tube, and radiant heat units. Heating is provided in the stairways and restrooms by recessed wall-mounted, finned-tube, radiant heat units. The radiant units are supplied with heated water by the central system.

Heating is provided in the classrooms by unit ventilators mounted along the exterior walls. 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 ranging from 750 to 1,500 CFM each. The unit ventilators are controlled by local thermostats. Mechanical exterior window louvers provide fresh air intake or exhaust for the interior ventilation units.

Heating and cooling are provided in the common areas by high-capacity, air handling units equipped with heating and cooling coils. The air handling units are located in mechanical rooms and above ceilings and are supplied with heated and chilled water by the central system. Some of the larger air handling units are located on the roof of the building. Heated and/or cooled air is distributed through ducts to variable air volume (VAV) terminals concealed above the ceilings in each common area and space. The heating and cooling system are controlled by the building energy management system (EMS). The following table describes the air handling units:

Air Handling Units					
Designation	**Location**	**Area Served**	**Air Flow**	**Cooling**	**Heating**
AHU-A1	Level A Roof	Level A	12,000 CFM	30-ton Air-cooled condensing unit	None
AHU-B1	Auditorium Roof	Auditorium	20,600 CFM	100-ton Air-cooled condensing unit	Hot water coil
AHU-D1	Cafeteria Ceiling	Cafeteria	7,325 CFM	30-ton Air-cooled condensing unit	Hot water coil
AHU-D2	Cafeteria Ceiling	Cafeteria	7,325 CFM	30-ton Air-cooled condensing unit	Hot water coil
AHU-F1	1971 Building Mech. Room	Locker Rooms	9,375 CFM	Enthalpy Wheel	Enthalpy Wheel
AHU-F2	1971 Building Mech. Room	Level F Corridors	13,500 CFM	None	Hot water coil
AHU-F3	1971 Building Mech. Room	Level F Band Room	4,325 CFM	15-ton Air-cooled condensing unit	Hot water coil
AHU-F4	Auto Shop Ceiling	Level F Choral Room	2,100 CFM	7.5-ton Air-cooled condensing unit	Hot water coil

Air Handling Units					
Designation	**Location**	**Area Served**	**Air Flow**	**Cooling**	**Heating**
AHU-F5	Gymnasium Mech. Room	Gymnasium	29,000 CFM	None	Hot water coil
AHU-F6	Gymnasium Mech. Room	Gymnasium	29,000 CFM	None	Hot water coil
AHU-F7	Auto Shop Ceiling	Auto Shop	4,320 CFM	Enthalpy Wheel	Enthalpy Wheel
AHU-F8	Auto Shop Ceiling	Garage	1,000 CFM	Enthalpy Wheel	Enthalpy Wheel

Additional heating and cooling are provided in some of the computer equipped classrooms and offices by smaller capacity split systems with fan coil units and remote condensing units. The fan coil units are equipped with hot water coils supplied by the central system. The fan coil units are concealed above the ceilings and the condensing units are roof-mounted or pad-mounted on grade. The cooling capacity of the units ranges from 1.5 tons to 7.5 tons.

Steam for the central heating system is supplied by four, dual fuel boilers. Each boiler has a rated input capacity of 5,862 MBH and is located in the boiler room. Fuel oil is supplied to the boilers by a fuel oil pump set and a 20,000-gallon steel underground storage tank (UST). The UST is located beneath the parking lot near the north elevation of the building.

The steam and primary hot water loop are separated by heat exchangers. Circulating pumps provide hot water to each temperature-controlled space via a two-pipe distribution system. The hot water supplies the air handling units, fan coil units, finned-tube radiant heat units, and unit ventilators. Steam is supplied to steam radiators located in the maintenance areas and some of the corridors. The condensate is returned to the boilers through a condensate return system. The hot water loop is equipped with four 200-gallon expansion tanks.

Heating and cooling are provided in additional rooms by individual, direct-expansion, constant-volume, gas-fired, packaged, rooftop-mounted, HVAC units. There are a total of three units ranging in size from five to ten tons. The cooling equipment uses R-22 as a refrigerant. The following table describes the rooftop units:

Packaged Rooftop Units					
Designation	**Manufacturer**	**Area Served**	**Cooling Capacity**	**Heating Type**	**Manufacture Year**
RTU-C1	Carrier	Large Group Instruction Room	9 tons	Gas-fired	2003
RTU-C2	Carrier	Administrative Offices	10 tons	Gas-fired	2003
RTU-3	Trane	Guidance Office	5 tons	Gas-fired	1993

Supplemental cooling is provided in the computer equipment room by a split system Liebert air-conditioning unit. The fan coil unit is located above the ceiling and the condensing unit is pad-mounted on grade. Cooling is provided in some of the classrooms and offices by individual wall-mounted air-conditioning units.

The bathrooms, locker rooms, laboratories, cooking areas, gymnasium, and cafeteria 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 in the janitorial office. The EMS provides individual control and performance data for the boilers, rooftop units, air handling units, unit ventilators. The system is actuated by direct digital controls (DDC). The hot water circulating pumps and the fan motors at the air handling units are controlled by variable frequency drives (VFDs).

Observations/Comments:

- The HVAC systems are maintained by an outside contractor.
- The HVAC equipment varies in age. The majority of the HVAC equipment was replaced in the current renovation. The boilers were installed in 1998. It should be noted that some of the work from the renovation project is not complete. This assessment assumes that all remaining work will be completed to the satisfaction of the Owner and municipal authorities, and assumes that an occupancy permit will be issued. This FNA is not intended to be used for construction inspection or observation purposes, and no opinion as to the quality of workmanship or the state of completion should be implied.
- The majority of the classrooms and corridors in the school are not air conditioned. The unit ventilators in the classrooms are reportedly equipped for air-conditioning through a central system. This could not be verified in the field. As such, a follow-up study is recommended to examine the feasibility and determine design constraints and costs estimates for installing a central air-conditioning to serve the areas currently without cooling. The cost of the study is included in section 1.2. The costs for the follow-up recommendations are to be determined by the study. An estimated budgetary cost allowance for the installation air-conditioning is included in the Replacement Reserves Report.
- The boilers appear to be in good condition and will require routine maintenance during the evaluation period.
- The boiler room is not equipped with a flash tank for blow-down of the boilers. It is recommended that a flash tank be installed as a safety measure. The estimated cost of this work is included in the Replacement Reserves Report.
- The underground fuel oil storage tank could not be directly observed during the assessment. Based on its estimated Remaining Useful Life (RUL), the fuel oil tank will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- 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 heat exchangers 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 unit ventilators appear to be in good condition and will require routine maintenance during the evaluation period.
- The finned tube radiant heat units appear to be in good to fair condition and will require routine maintenance during the evaluation period.
- The air handling units appear to be in good condition and will require routine maintenance during the evaluation period.

- The air cooled condensing units appear to be in good condition and will require routine maintenance during the evaluation period.
- The split system fan coil units appear to be in good condition and will require routine maintenance during the evaluation period.
- The split system condensing units appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL), some of the condensing units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The rooftop units appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL), the rooftop units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The Liebert air-conditioning unit appears to be in good condition. Based on its estimated Remaining Useful Life (RUL), the Liebert unit will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The window air-conditioning units are in good to fair condition. The window units will require replacement during the evaluation period. This work can be completed as part of routine maintenance at the property.
- 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.
- The building EMS appears to be in good condition and will require routine maintenance during the evaluation period. The VFDs did not appear to be functioning at the time of the assessment. It is recommended that the VFDs be activated and checked to ensure they are functioning properly.
- The mechanical louvers in the 1971 building gymnasium are in good to fair condition. Several louvers were noted to be semi-clogged with debris. The louvers require general maintenance cleaning. The cost is not included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for HVAC is to replace the existing air-conditioning equipment with high-efficiency components.

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 a combination of galvanized steel and copper pipe. The sanitary sewer and vent systems are reported to be cast iron. 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 500 MBH and is located in the boiler room. Hot water storage is provided by a 940-gallon stainless steel storage tank. The storage tank is located adjacent to the boilers in the boiler room.

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

Observations/Comments:

- The plumbing system appears to be well maintained and in good condition. The water pressure appears to be adequate.
- 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.
- Backups have been reported in the sanitary waste lines during periods of heavy rain. This issue indicates possible cross flow from storm drain lines. It is recommended that a plumbing contractor be retained to inspect the waste lines, determine the cause of the issue and the required corrective action, and make the required repairs. The cost of the plumbing study is included in section 1.2. The cost of the required repairs is to be determined by the study. An estimated budgetary cost allowance for the repairs is included in the Replacement Reserves Report.
- The domestic water boilers appear to be in good condition and will require routine maintenance during the evaluation period.
- The hot water storage tank appears to be in good condition and will require routine maintenance during the evaluation period.
- The accessories and fixtures in the common area restrooms are in good condition and will require routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for plumbing is to install high-efficiency boilers for the domestic hot water system.
- A sustainable recommendation for plumbing is to install low flush volume toilets and faucet aerators to reduce domestic water consumption.

7.3. BUILDING GAS DISTRIBUTION

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

The property maintains a propane tank for use in Boyle Stadium Concession Stand. The propane tank is located on the rear side of the building. The location and use of the propane tanks does not appear to pose any safety hazards.

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.
- The propane tanks and storage equipment appeared in good condition requiring routine maintenance during the evaluation period.

Sustainable Recommendations:

- There are no sustainable recommendations for gas distribution.

7.4. BUILDING ELECTRICAL

The electrical supply lines run underground to pad-mounted transformers that feed the interior-mounted electrical meter.

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 the electrical room. 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 an advanced stage lighting system and sound system. The sound equipment is located in a room near the stage entrance. The sound and lighting control equipment is located in both near the rear of the auditorium.

A natural gas-powered, 625-kVA, emergency generator is located near the maintenance entrance to the building. The generator is housed in a steel enclosure. The generator provides back-up power for elements of the fire and life safety systems.

Observations/Comments:

- The on site electrical systems are owned and maintained by the utility company. This includes transformers, meters, and all elements of the on site systems.
- The electrical power appears to be adequate for the property's demands.
- The switchgear, circuit breaker panels, and electrical meters appear to be in good condition and will require routine maintenance during the evaluation period.
- The public address system appears to be in good to fair condition. Intermittent issues have been reported with the public address system. Based on the reported issues, the public address system will require upgrades during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The auditorium lighting system was recently upgraded and appears to be in good condition. The lighting system will require routine maintenance during the evaluation period.
- The auditorium sound system was recently upgraded and appears to be in good condition. The sound system will require routine maintenance during the evaluation period.
- The generator was installed in 2002 and appears to be in good condition. The generator is reportedly tested on a weekly basis. The generator will require routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for building electrical is to install occupancy sensors in all classrooms, restrooms, and offices to ensure that lights are turned off when the space is not occupied.

7.5. ELEVATORS AND CONVEYING SYSTEMS

There are four passenger elevators, two dumb waiters and one hydraulic lift in the building. The passenger elevators include three hydraulic elevators and one overhead traction elevator. The dumb waiters serve the media center and the art wing. The hydraulic lift serves the kitchen and serving area.

Elevator 1 is located at the back of the original building, near the 1971 addition. Elevator 1 serves five floors and utilizes hydraulic equipment. The elevator has a rated capacity of 4,000 pounds. The elevator machinery is located in a room adjacent to the base of the shaft.

Elevator 2 is located in the original portion of the building. Elevator 2 serves five floors and utilizes hydraulic equipment. The elevator has a rated capacity of 3,500 pounds. The elevator machinery is located in a room adjacent to the base of the shaft.

Elevator 3 is located near the gymnasium. Elevator 3 serves two floors and utilizes hydraulic equipment. The elevator has a rated capacity of 1,500 pounds. The elevator machinery is located in a room adjacent to the base of the shaft.

Elevator 4 is a maintenance elevator. The maintenance elevator serves five floors and utilizes traction equipment. The maintenance elevator has a rated capacity of 1,000 pounds. The elevator machinery is located in a penthouse at the top of the shaft.

Each elevator cab has vinyl-tiled floors, metal wall panels, and surface-mounted, light fixtures. The doors are fitted with electronic safety stops. Emergency communication equipment is provided in each cab.

Observations/Comments:

- The elevators, and their responsiveness, appear to be adequate. The elevators are serviced by Northeast Elevator on a routine basis. The elevator machinery and controls vary in age. Elevator 1 was installed in 1971 and the equipment was upgraded in 2003. Elevator 2 was installed in 2000. Elevator 3 was installed in 1971 and the equipment was upgraded in 2003. Elevator 4 appears to be original. Based on its estimated Remaining Useful Life (RUL), the elevator equipment for elevator 4 will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The elevators are inspected on an annual basis by the municipality, and a certificate of inspection is displayed in the elevator cabs. The inspection certificates have expired. It is common for inspections to occur behind schedule. A new inspection should be scheduled as soon as possible.
- The emergency communication equipment in the elevators appears to be functional. Equipment testing is not within the scope of a Facilities Needs Assessment.
- The finishes in the elevator cabs appear to be in fair condition. Based on their estimated Remaining Useful Life (RUL), the cab finishes will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The dumb waiters are in fair to poor condition. One of the dumb waiters is not currently operational. The remaining dumb waiter appears to be in fair condition. The dumb waiters will require equipment replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The hydraulic lift in the kitchen area appears to be in good condition and will require routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for the elevator is to install high-efficiency motors on the hydraulic pumps and traction equipment to reduce energy consumption.

7.6. FIRE PROTECTION SYSTEMS

The fire protection systems consist of a wet-pipe sprinkler system, wet standpipes with fire department hose valves and connections the stair towers, a partial dry-pipe sprinkler system covering the parking are beneath the building, portable fire extinguishers, smoke detectors, pull stations, and alarm horns. Fire department hose connections are located on the exterior of the building, near the entrance to the maintenance garage. Hardwired smoke detectors are located throughout the common areas. The nearest fire hydrants are located along the property's drive aisles and are approximately 30 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 the fire protection equipment room, adjacent to the auto shop. The system is equipped with a fire pump rated at 1,250 gallons per minute. The system is also equipped with a backflow preventer.

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

The building is equipped with a security system, included motion sensors, door alarms, and a closed circuit camera system. The main security panel is located in the main office.

The commercial kitchen is equipped with a dry-chemical, fire suppression system. Fire suppression heads are located in the exhaust hoods above the cooking areas, and the chemical tanks are mounted on the wall.

Observations/Comments:

- Information regarding fire department inspection information is included in Section **3.2.** Fire code violations exist at this property. A written request listing the violations has been submitted. A copy of this request has been included in Appendix C. No costs to correct the code violations are included in the Replacement Reserves Report.
- It should be noted that some of the work from the renovation project is not complete. Elements not complete include the fire alarm system and the fire sprinkler system. This assessment assumes that all remaining work will be completed to the satisfaction of the Owner and municipal authorities, and assumes that an occupancy permit will be issued. This PCR is not intended to be used for construction inspection or observation purposes, and no opinion as to the quality of workmanship or the state of completion should be implied.
- The fire sprinklers were recently installed and appear to be in good condition. Subsequent to completion of the sprinkler system and approval by the fire department, the sprinkler system will require routine maintenance during the evaluation period.
- The fire extinguishers are tested annually and appear to be in good condition. The fire extinguishers were tested and inspected within the last year.

- The pull stations and alarm horns appear to be in good condition and will require routine maintenance during the evaluation period.
- Smoke detector replacement is considered to be routine maintenance.
- Exit sign and emergency light replacement is considered to be routine maintenance.
- The central alarm panel appears to be in good condition and is tested regularly by a qualified fire equipment contractor. Equipment testing is not within the scope of a Facilities Needs Assessment. Subsequent to completion of the alarm system and approval by the fire department, the alarm system will require routine maintenance during the evaluation period.
- The security panel appears to be in good condition. Equipment testing is not within the scope of a Facilities Needs Assessment. The security panel is monitored by Sonitrol.
- The dry-chemical, fire suppression system appears to be in good condition and is tested regularly by a qualified fire equipment contractor.

Sustainable Recommendations:

- There are no sustainable recommendations for fire protection.

8. INTERIOR SPACES

8.1. INTERIOR FINISHES

The following table generally describes the interior finishes in units:

Typical Space Finishes			
Room	**Floor**	**Walls**	**Ceiling**
Classrooms	Vinyl tiles and vinyl composition tiles	Painted drywall and painted CMU	Suspended acoustic tiles and painted drywall
Maintenance Shop & Storage	Vinyl tiles and vinyl composition tiles	Painted drywall, painted CMU and concrete	Suspended ceiling tiles, unfinished and painted drywall
Kitchens	Ceramic tile	CMU, ceramic tile and painted drywall	Painted drywall and suspended acoustic tiles
Restrooms	Ceramic tile and vinyl tiles	Painted drywall, painted CMU and ceramic tiles	Painted drywall and suspended acoustic tiles

The interior doors within the classroom, kitchens, shops and restrooms are hollow metal or wood doors set in metal or the original wood framing respectively. The doors have cylindrical locksets with lever handle or knob handle hardware with keyed deadbolts.

Observations/Comments:

- The classroom, kitchens and restrooms have been renovated over the last ten years. Various sections of the buildings have had upgrades and finish replacement occurring in the years 2006, 2004 and 2001.
- The interior vinyl floor tiles are in good to fair condition. A considerable number of classroom floors are covered with VCT. In addition, there are additional classrooms with damaged 12x12 tiles covering VCT tiles. These tiles are worn, damaged and contain suspect ACM (Asbestos-containing Material). Due to these conditions replacement of the floor tiles is recommended. The estimated cost of this work is included in the Replacement Reserves Report. Please refer to Section 1.2 and 6.2 for additional information and associated costs. In 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law as Title II of the Toxic Substance Control Act (TSCA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools. Specifically, Asbestos-Containing Materials in Schools (October 30, 1987 40CFR Part 763, Subpart E) outlines a detailed process that ensures the safe management of all asbestos-containing building materials (ACBM) by a designated person (DP) for a Local Education Agency (LEA). Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) passed in 1990, required accreditation of personnel working on asbestos activities in schools and public and commercial buildings. Specifically, the Asbestos Model Accreditation Plan (40 CFR Part 763, Appendix C) required the use of accredited inspectors, workers, supervisors, project designers, and management planners (schools only) when conducting asbestos activities at schools and public and commercial buildings.

- There are numerous isolated areas of drywall, plaster and ceiling tiles throughout the buildings' classrooms which have water damage. The moisture is caused by HVAC condensate, existing and/or repaired roof leaks. Additional damages occur from exterior water intrusion though windows and walls. The water stained finishes have not been replaced and require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- Interior painting will also be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior doors and door hardware are in good condition and will require routine maintenance during the evaluation period.

Sustainable Recommendations:

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

8.2. COMMERCIAL KITCHEN EQUIPMENT

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

Appliance	Comment
Refrigerators	Walk-in, Upright, Chest
Freezers	Walk-in, Upright, Chest
Ranges	Gas
Ovens	Gas
Griddles / Grills	Gas
Fryers	Yes
Steamer	Yes
Hood	Exhaust ducted to exterior
Dishwasher	None
Microwave	Yes
Ice Machines	Yes
Steam tables	Yes
Work tables	Stainless steel
Shelving	Stainless steel

Observations/Comments:

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

Sustainable Recommendations:

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

8.3. HVAC

See Section 7.1 for building mechanical systems.

8.4. PLUMBING

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

9. OTHER STRUCTURES

The site contains numerous storage and mechanical housing structures adjacent to the play fields. The structures all have a concrete slab foundation and constructed of CMU, concrete, wood or metal stud framing. The exterior walls are painted unfinished or covered with metal or wood siding. The flat roofs are built-up roofs over wood joists or metal roofs over metal structure. The structures are only supplied with electricity to service the stored equipment, provide lighting and/or powering the HVAC equipment.

Boyle Stadium contains three full structures. A concession stand building is located on the southwest corner of the field. The building is constructed of CMU set on a concrete slab covered with a flat built-up membrane roof over wood joists and sheathing. The building is supplied with 100 to 150-amps of service. Heating is supplied by electrical space heaters, the building has no cooling. Domestic hot water is provided by a 10-gallon electrical unit. A 50-gallon propane tank provides gas for cooking. The interior finishes consist of painted unfinished surfaces. The ceiling is covered with a suspended acoustical ceiling tile system.

The remaining two structures are the landmark (historical) designated grandstands. The grandstands are constructed of concrete and stone masonry set on a concrete slab floor with perimeter and integral footings at the load bearing walls and columns.

The west grandstand is heated by a central boiler plant. The gas-fired boiler is rated for 1,548 MBH providing steam heat to the storage rooms, offices and locker rooms. The building does not have a central cooling system. Ventilation fans are located in each space. Domestic hot water is provided by a 50-gallon heat exchanger. The electrical service is approximately 400-Amps.

The east grandstand restrooms and storage rooms are heated by individual electric space heaters. The building does not have a central cooling system. Ventilation fans are located in each space. Domestic hot water is provided by individual electrical units. The electrical service is rated for 600-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC). The electrical service provides power to the grandstand and stadium lighting systems.

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.

- Boyle Stadium Grandstands. The foundations and footings can not be directly observed. There are numerous sections within the north and south ends storage rooms of the east grandstand and within the boiler room of the west grandstand with evidence of efflorescence, pooling water and excessive moisture conditions on the ceilings, floors and walls. The water intrusion in the east grandstand occurs from the adjacent landscaping wall and through the open windows. In addition water enters the east and west grandstand through the cracked concrete seating areas. A Professional Engineer with specific expertise in waterproofing and drainage design, in this geographical area must be retained to evaluate the site conditions and provide recommendations consistent with local regulatory and code requirements. The estimated cost of this work is included in the Replacement Reserves Report. Based upon the observed conditions of the interior and exterior walls; repairs may include excavation of the foundation, waterproofing and installation of a curtain drain. During the repair of the landscaped wall; the interior concrete and masonry walls should be repaired to seal all areas of water penetration. The estimated cost of this work is included in the Replacement Reserves Report. Additional costs may arise based upon the findings the findings of the study; subsequent costs are not included in the report. The stands do have landmark (historical) status; all repairs to the stands should be compliant with building codes regarding landmark (historical) structures.
- The superstructure is exposed in some locations, which allows for limited observation. Walls and floors appear to be plumb, level, and stable. There are no significant signs of deflection or movement.
- The roof finishes vary in age. The roofs are maintained by the in-house maintenance staff.
- The fields of the roofs are in good condition requiring routine maintenance during the evaluation period.
- The exterior finishes of the small structures are in good condition requiring routine maintenance during the evaluation period.
- The exteriors and seating areas of the grandstands are in good to poor condition. There are numerous areas on the seating section and stair landings with spalling, missing and cracked concrete. The damaged concrete and stone pavers will require replacement in conjunction interior water intrusion repairs. A cost allowance for the concrete repairs is included in the Replacement Reserves Report. Additional costs may arise based upon the findings of the study; subsequent costs are not included in the report.
- There are numerous minor cracks in the mortar joints of the exterior elevations and on the seating surfaces requiring pointing or an epoxy sealant for minor cracks. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior finishes are in good to fair condition. Interior painting will also be required during the evaluation period. The cost for the painting 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 HVAC systems are maintained by an outside contractor.
- The HVAC equipment varies in age. The boilers are newly installed. The ventilation equipment is greater than ten years old. The space heaters vary in age.
- The boiler is in good condition requiring routine maintenance during the evaluation period.
- The ventilation units are in good to fair condition requiring replacement during the evaluation period. The costs for the units are 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 domestic hot water heaters are in good to fair condition requiring replacement during the evaluation period. The cost for the units 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 accessories and fixtures in the restrooms are in poor condition. In addition, the restrooms require ADA renovations. Please refer to Section 3.2 for associated costs of the accessories and fixtures.

- There is one fused electrical service supply in the restroom of the east grandstand and two older electrical panels; one in the concession stand and the other in the remaining restroom of the east grandstand. The electrical panels require replacement and upgrades. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for roofing is to replace the built-up roofs with a light colored single ply membrane.
- A sustainable recommendation for exterior finishes is to use low VOC sealant or caulking around exterior doors and windows and the paint finishes on the CMU.
- A sustainable recommendation for doors is to replace with insulated, energy efficient doors.
- Sustainable recommendations for the interior finishes are to use low VOC paints, linoleum or cork flooring, and recycled material carpeting.
- 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.
- A sustainable recommendation for building electrical is to install occupancy sensors in place of light switches at the bathrooms.
- 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.
- A sustainable recommendation for fire protection is to install Energy Star rated illuminated "LED" exit signs.

10. ENERGY BENCHMARKING

This Section is pending additional information 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-021.017 **Project Name: Stamford High School**

Photo #1:	South entrance to parking lot

Photo #2:	Front parking lot

Photo #3:	Accessible parking stalls

Photo #4:	Drive aisle at north side

Photo #5:	Drive aisle at south side

Photo #6:	Maintenance parking area

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #7:	Parking area beneath 9th grade wing

Photo #8:	Staff parking lot along Hillandale Avenue

Photo #9:	Student parking lot along Hillandale Avenue

Photo #10:	East parking lot near upper playing field

Photo #11:	Typical asphalt damage

Photo #12:	Typical asphalt damage

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #13:	Sidewalks along front elevation

Photo #14:	Sidewalks and drive aisle along gymnasium

Photo #15:	New sidewalk along front elevation

Photo #16:	Sidewalk damage near gymnasium

Photo #17:	Sidewalk damage near gymnasium entrance

Photo #18:	Concrete steps near Strawberry Hill Avenue

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #19:	Brick pavers east of original building

Photo #20:	Damaged brick pavers

Photo #21:	Interior courtyard

Photo #22:	Retaining wall near south entrance

Photo #23:	Retaining wall along north property line

Photo #24:	Retaining wall near building connector

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #25:	Boyle Stadium

Photo #26:	Seating structure at Boyle Stadium

Photo #27:	Softball and baseball fields

Photo #28:	Bleachers at ball fields

Photo #29:	Tennis courts

Photo #30:	Tennis court surface

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #31:	Soccer/lacrosse playing field

Photo #32:	New fencing along Hillandale Avenue

Photo #33:	Old fencing near upper playing field

Photo #34:	Damaged fencing in student parking lot

Photo #35:	Damaged fencing along north property line

Photo #36:	Damaged gate at south entrance

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #37:	Property signage

Photo #38:	Minor damage to signage

Photo #39:	Site lighting

Photo #40:	Site lighting

Photo #41:	Trash compactor

Photo #42:	Dumpsters

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #43:	Boilers (2 of 4)

Photo #44:	Fuel oil pump set

Photo #45:	Circulating pumps

Photo #46:	Condensate return system

Photo #47:	Typical unit ventilator for classroom

Photo #48:	Wall mounted radiant heat unit for corridor

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #49:	Air handling unit for auditorium

Photo #50:	Condensing unit for auditorium

Photo #51:	Ventilation unit for cafeteria

Photo #52:	Condensing unit for cafeteria

Photo #53:	Air handling unit for cafeteria

Photo #54:	Condensing units for cafeteria

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #55:	Air handling unit for Locker Rooms

Photo #56:	Air handling unit for Level F

Photo #57:	Air handling unit for Band Room

Photo #58:	Air handling unit for gymnasium (1 of 2)

Photo #59:	Air handling unit for gymnasium (2 of 2)

Photo #60:	Air handling unit for Choral Room

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #61:	Air handling unit for Auto Mechanic Room

Photo #62:	Typical VAV terminal

Photo #63:	Typical roof-mounted condensing unit

Photo #64:	Typical pad-mounted condensing unit

Photo #65:	Typical split system air handling unit

Photo #66:	Typical roof-mounted condensing units

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #67:	Typical pad-mounted condensing unit

Photo #68:	Small roof-mounted condensing units

Photo #69:	Liebert condensing unit for computer room

Photo #70:	Typical window air conditioning unit

Photo #71:	Rooftop unit for Large Group Instructional area

Photo #72:	Rooftop unit for Administrative Offices

Photo #73:	Rooftop unit for Guidance Office

Photo #74:	Condensing unit for Guidance Office

Photo #75:	Typical roof-mounted exhaust fan

Photo #76:	Typical exhaust louver

Photo #77:	VFD controllers for air handling units

Photo #78:	VFD controllers for circulating pumps

Photo #79:	Incoming domestic water service

Photo #80:	Domestic water distribution lines

Photo #81:	Domestic water boilers

Photo #82:	Domestic hot water storage tank

Photo #83:	Restroom fixtures – water closet

Photo #84:	Restroom fixtures – urinals

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #85:	Restroom fixtures – lavatories

Photo #86:	Plumbing fixtures – drinking fountain

Photo #87:	Main electrical switchgear

Photo #88:	Typical breaker panel

Photo #89:	Generator enclosure

Photo #90:	Emergency generator

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #91:	PA system control panel

Photo #92:	Classroom clock and PA speaker

Photo #93:	Classroom call button

Photo #94:	Older PA speaker in classroom

Photo #95:	Advanced lighting in art classroom

Photo #96:	Advanced lighting control panel

EMG

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #97:	Auditorium lighting and sound control booth

Photo #98:	Auditorium sound system

Photo #99:	Auditorium speaker

Photo #100:	Stage lighting

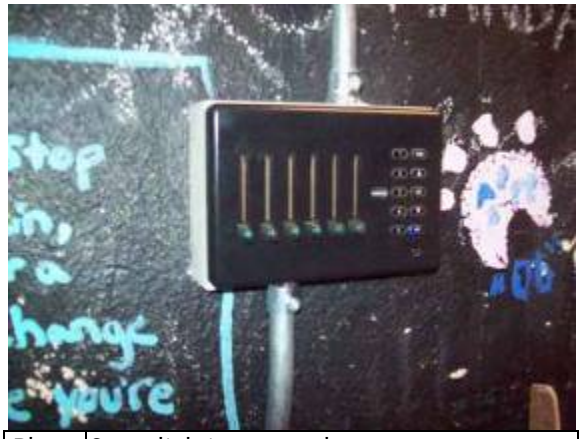


Photo #101:	Stage lighting control

Photo #102:	Stage rigging system

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #103:	Elevator 1 cab doors

Photo #104:	Elevator 1 cab interior

Photo #105:	Elevator 1 control panel

Photo #106:	Elevator 1 hydraulic equipment

Photo #107:	Elevator 2 cab doors

Photo #108:	Elevator 2 cab interior

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #109:	Elevator 2 control panel

Photo #110:	Elevator 2 hydraulic equipment

Photo #111:	Elevator 3 cab interior

Photo #112:	Elevator 3 control panel

Photo #113:	Elevator 3 hydraulic equipment

Photo #114:	Elevator 3 control unit

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-021.017 **Project Name: Stamford High School**

Photo #115:	Elevator 4 cab interior

Photo #116:	Elevator 4 traction equipment

Photo #117:	Elevator 4 control unit

Photo #118:	Hydraulic lift in kitchen

Photo #119:	Dumb waiter in Art Corridor

Photo #120:	Dumb waiter in Media Center

Photo #121:	Fire pump and controller

Photo #122:	Air compressor for dry system section

Photo #123:	Fire department hose connection

Photo #124:	Fire sprinkler riser and test valves

Photo #125:	Fire sprinkler heads

Photo #126:	Fire sprinkler piping and head

Photo #127:	Fire alarm annunciator panel

Photo #128:	Fire alarm power and communicator panels

Photo #129:	Fire alarm booster panels

Photo #130:	Fire alarm pull station

Photo #131:	Fire alarm horn with strobe light

Photo #132:	Ansul tanks in kitchen

Photo #133:	Kitchen equipment – Ovens

Photo #134:	Kitchen equipment – Ovens and range

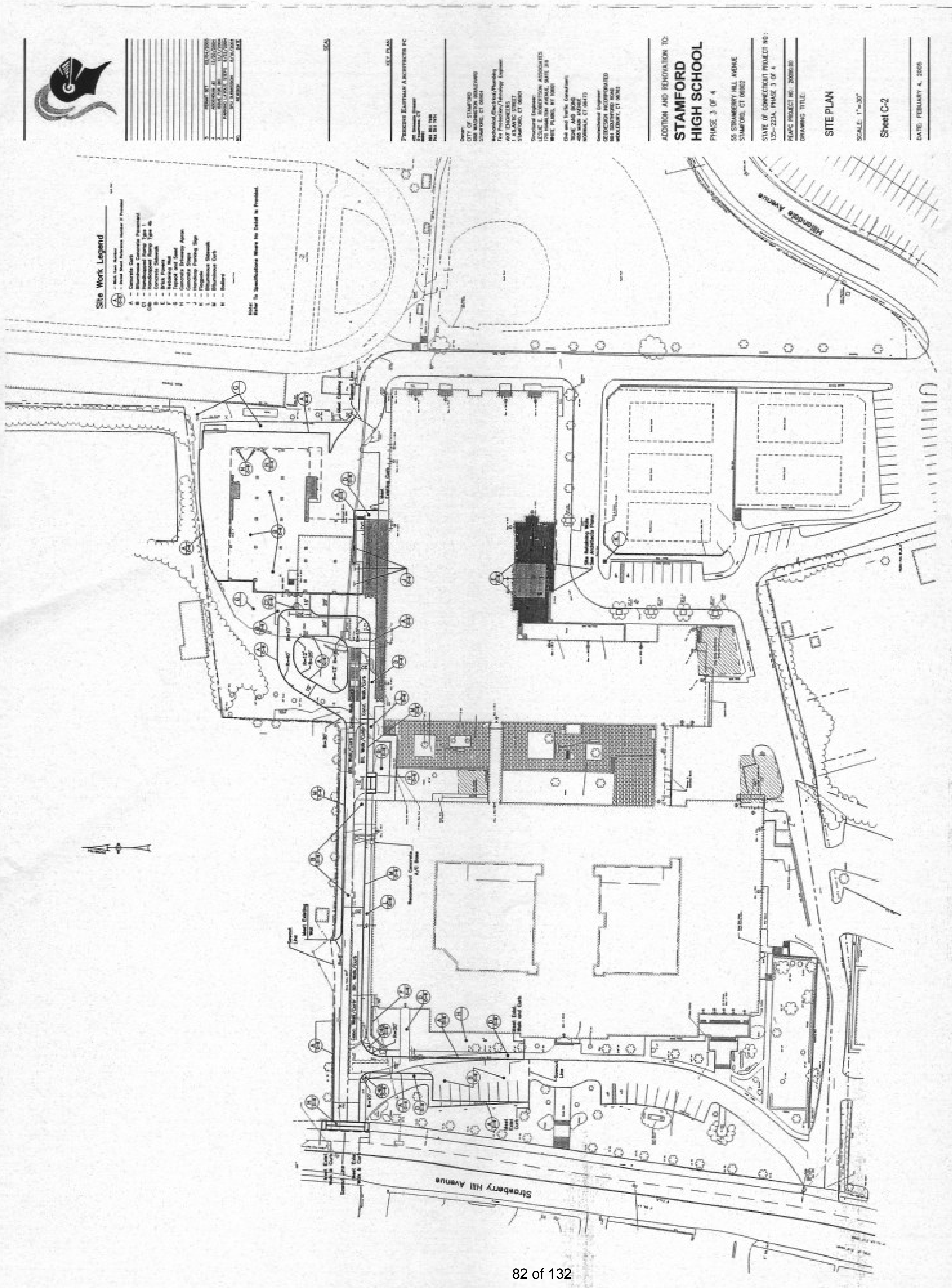
Photo #135:	Kitchen equipment – Fryer

Photo #136:	Kitchen equipment – Refrigerators

Photo #137:	Kitchen equipment – Steamer

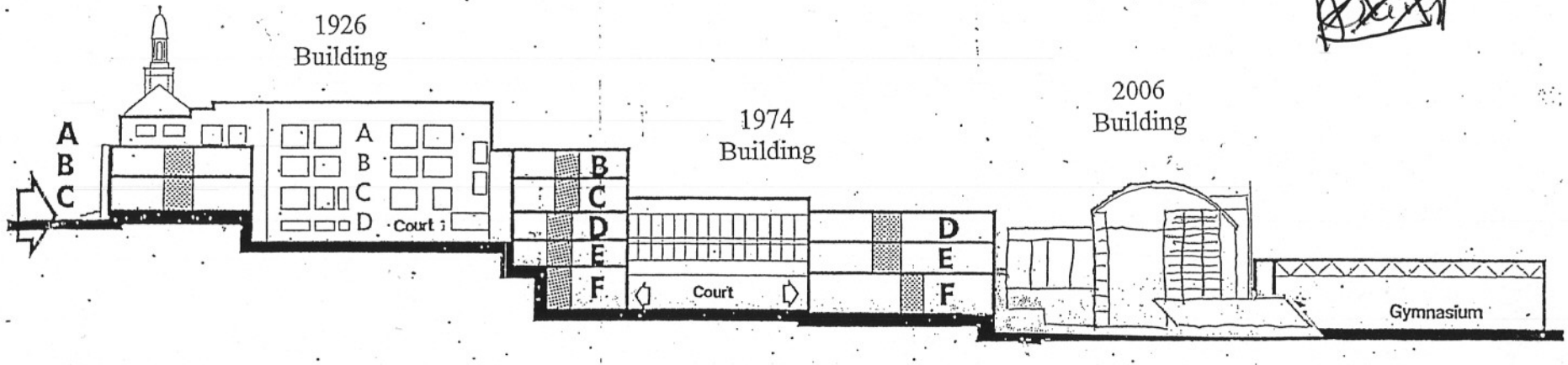
Photo #138:	Kitchen equipment – Serving line

APPENDIX B:
SITE AND FLOOR PLANS



Site Work Legend
ADDITION AND RENOVATION TO:
STAMFORD HIGH SCHOOL
PHASE 3 OF 4
SITE PLAN
Sheet C-2
Strawberry Hill Avenue
Hillandale Avenue

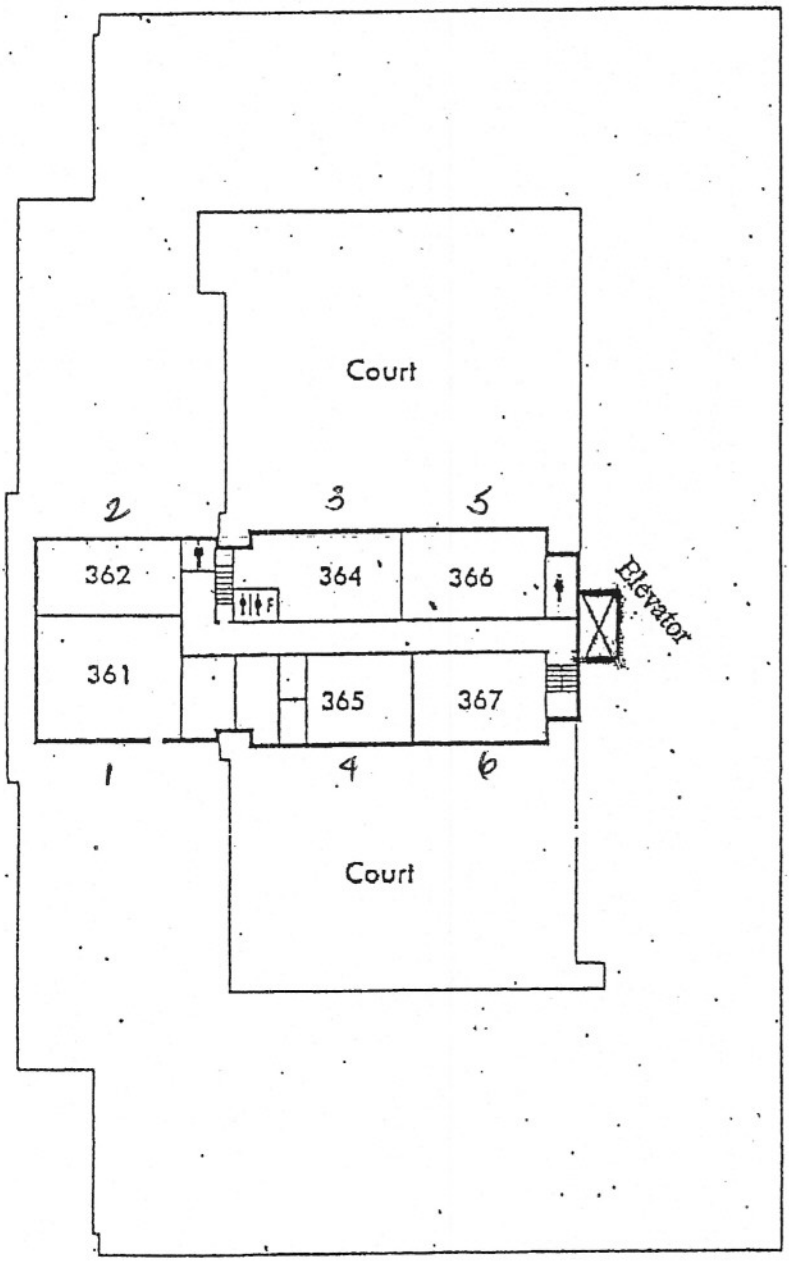
For your review.
post construction eva
room assignments.



STAMFORD HIGH SCHOOL

Revised 2006

3 RD Floor - 6 classrooms
NO - outside door

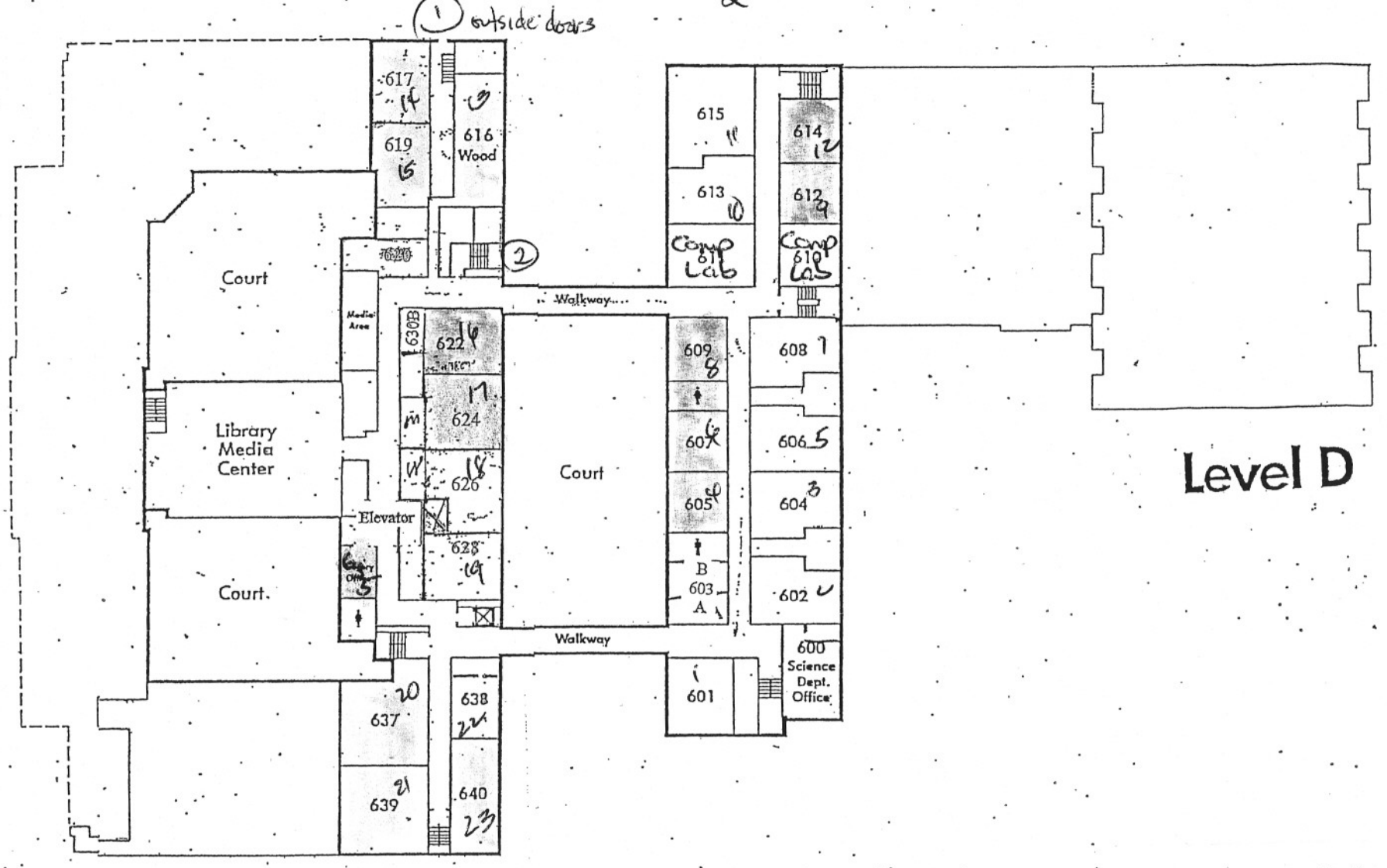


Level A

VA Science Foreign Language Bilingual

23 classrooms

2 - outside doors

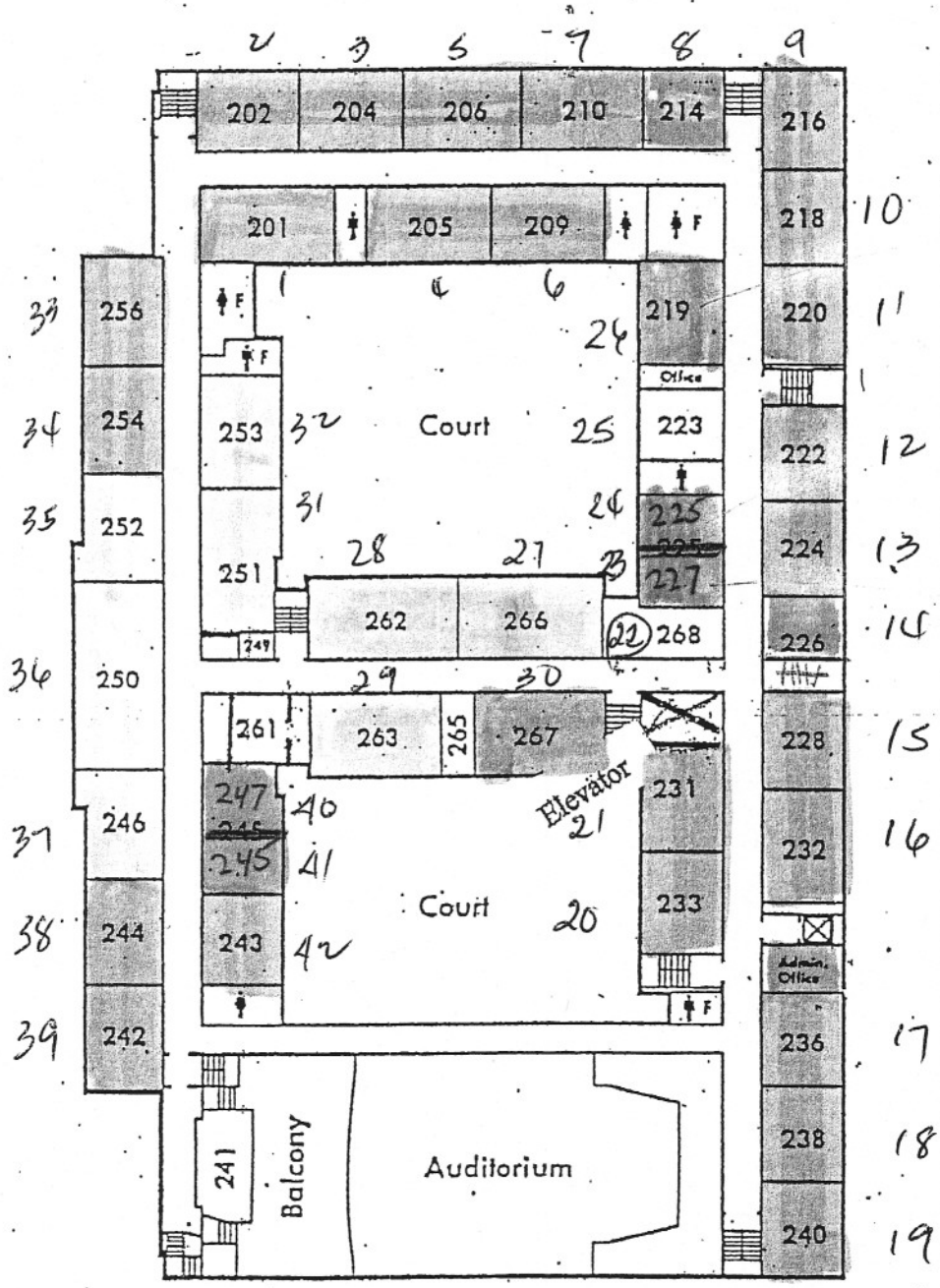


4th Floor

STAMFORD HIGH SCHOOL

2nd Floor - 42 classrooms

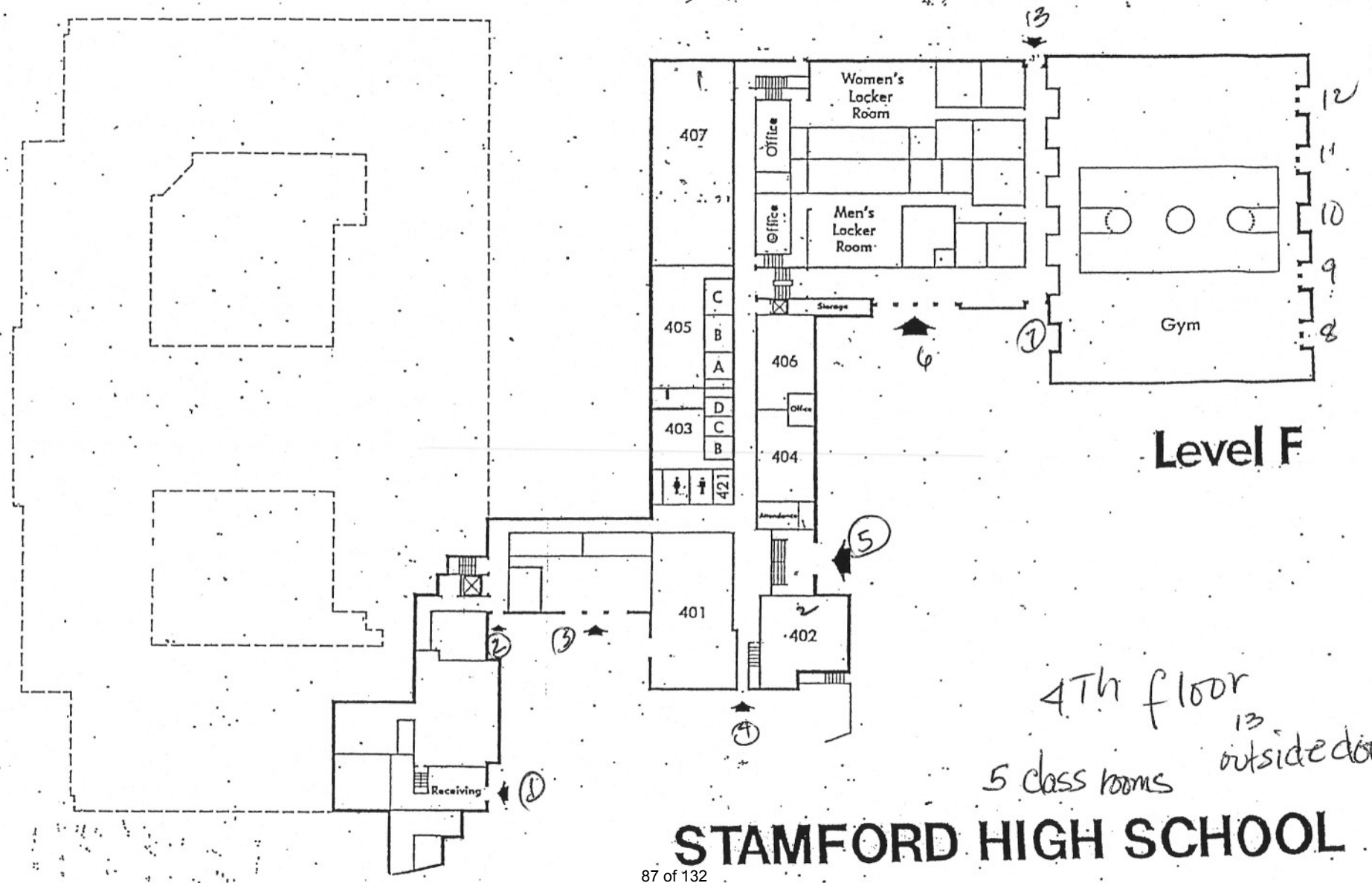
No outside doors



Special Ed

Business

English



Level F

4th floor

13 outside door

5 class rooms

STAMFORD HIGH SCHOOL

Science

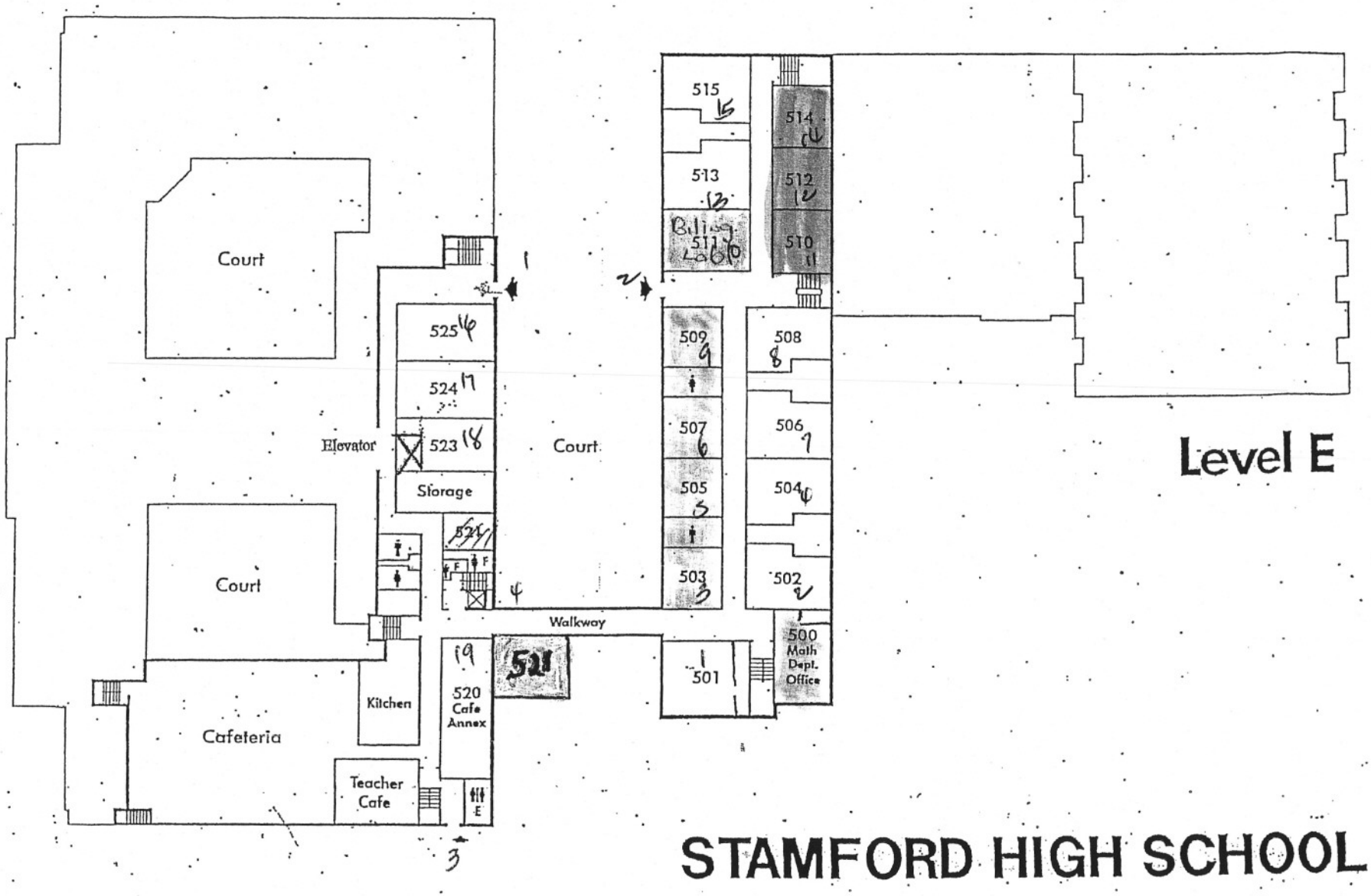
Foreign Language

~~Math~~

~~Bilingual~~

5th Floor - 15 ~~18~~ classrooms

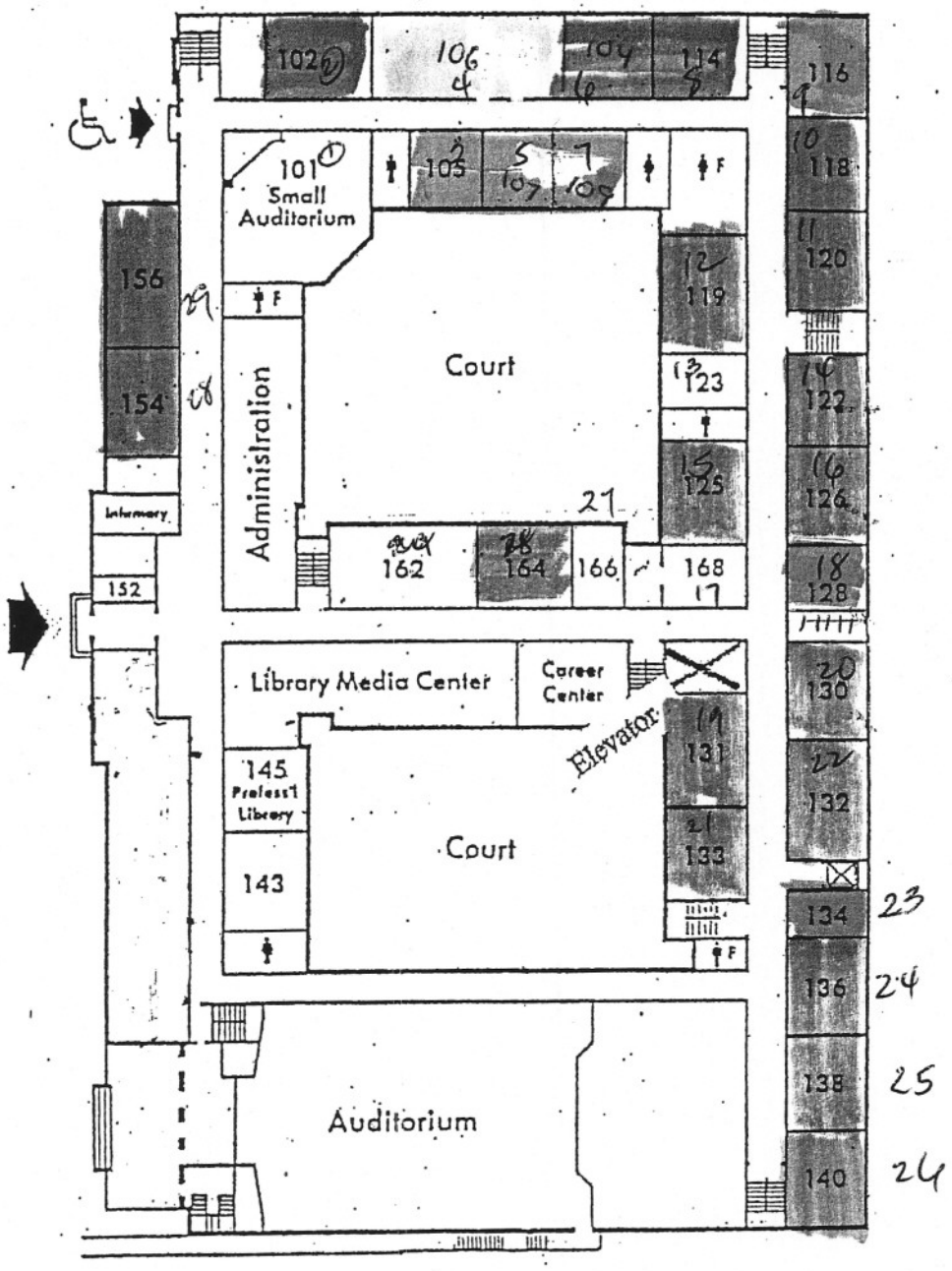
4 - outside doors



STAMFORD HIGH SCHOOL

1ST Floor 29 Class rooms
6-outside doors

C.A
English
History
Special Education



Level C

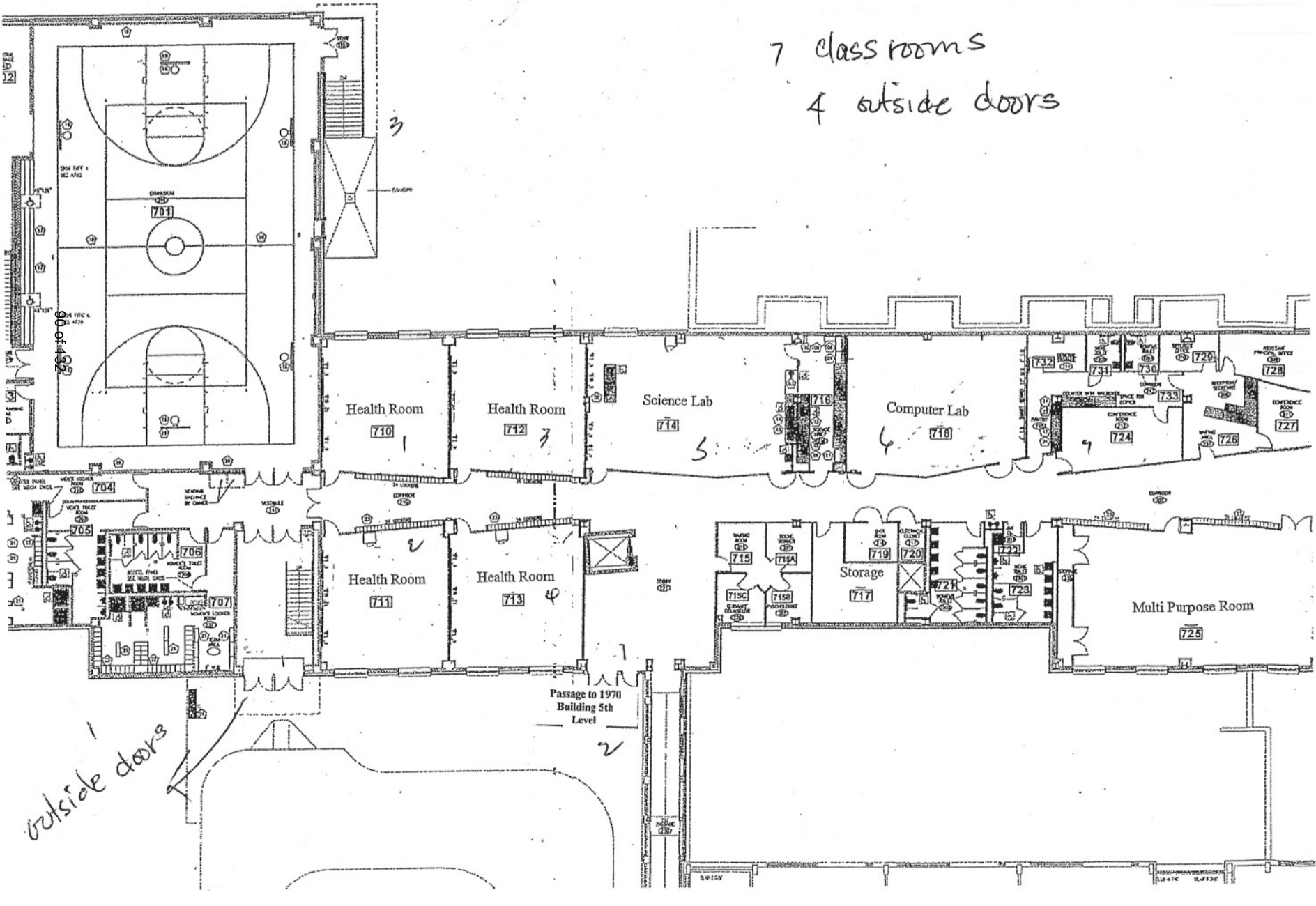
Sciera

STAMFORD HIGH SCHOOL

2006 Addition

7 classrooms

4 outside doors

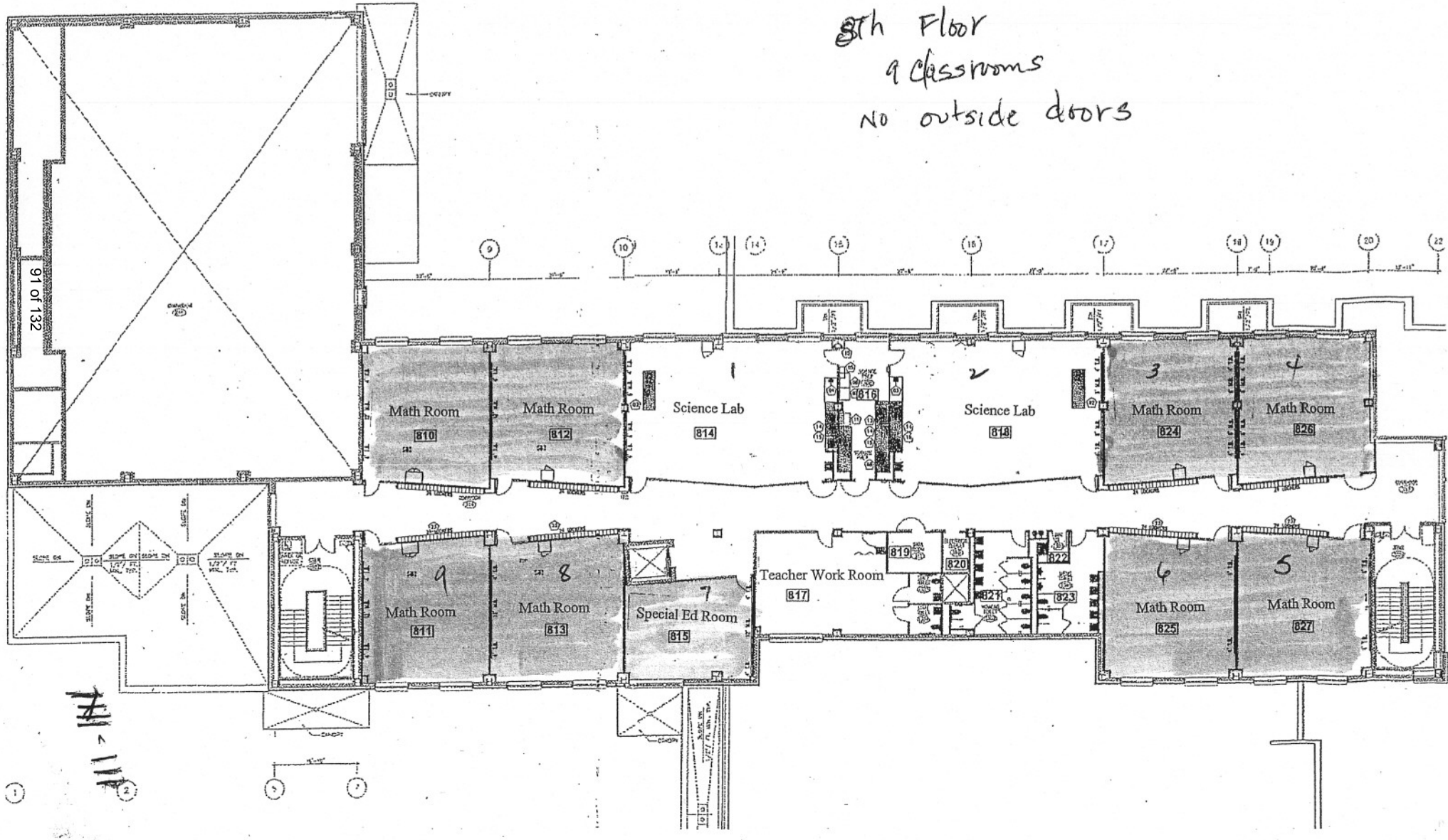


Special Ed Science

STAMFORD HIGH SCHOOL

2006 Addition

8th Floor
9 classrooms
No outside doors



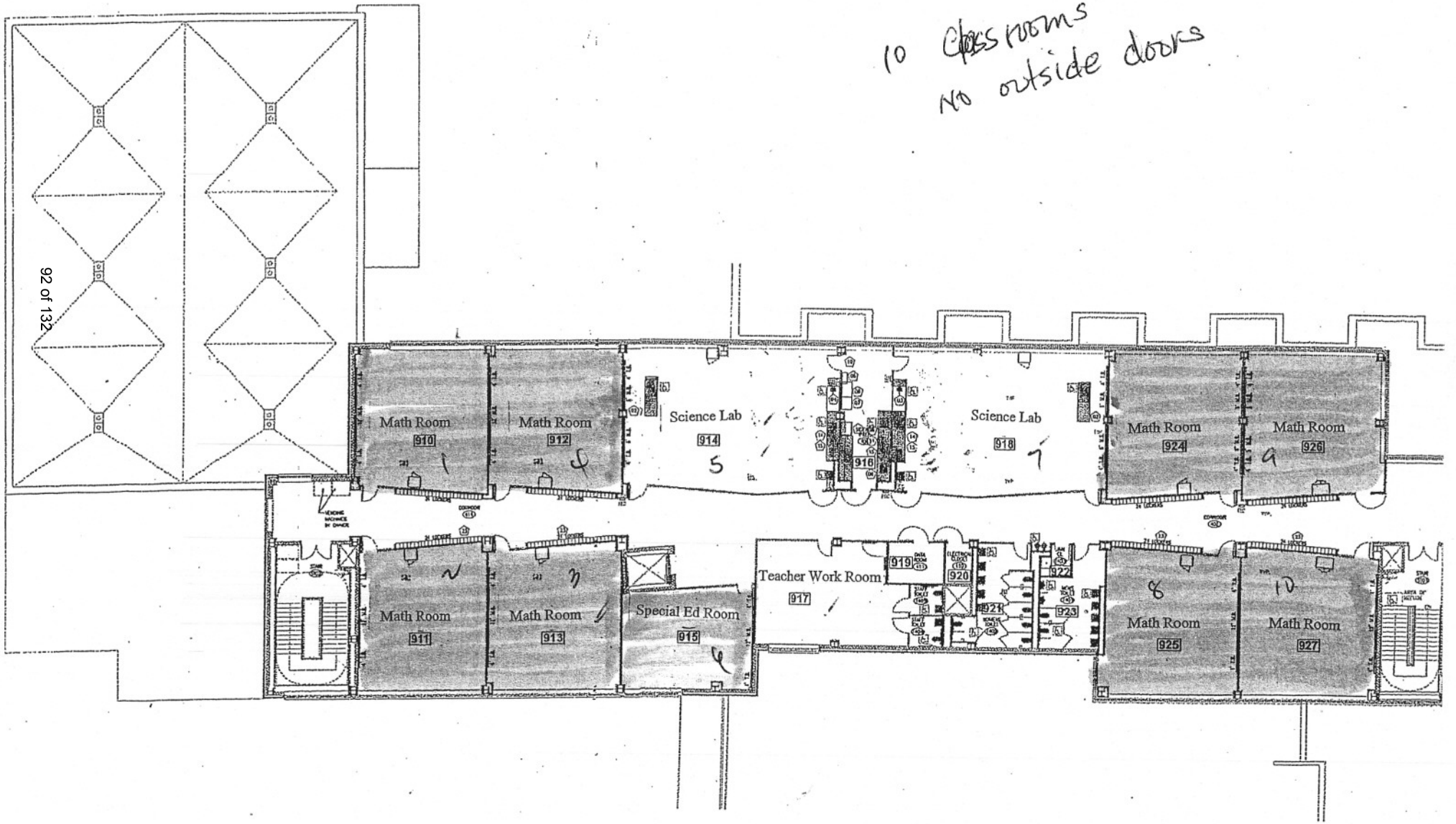
Science

Special Ed

STAMFORD HIGH SCHOOL

2006 Addition

10 classrooms
No outside doors



APPENDIX C:
SUPPORTING DOCUMENTATION

To: Robert Sollitto
Deputy Fire Marshal
Stamford Fire and Rescue
Office of the Fire Marshal
888 Washington Boulevard
Stamford, CT 06901

Date: April 20, 2009
Phone: 203.977.4651
Fax: 203.977.5475
Email: rsollitto@ci.stamford.ct.us

Re: Stamford High School
55 Strawberry Hill Avenue
Stamford, CT 06902

EMG Project No: 88166.09R-021.017 Project Manager: Mr. Joseph Abbate

Dear Mr. Sollitto,

EMG is an engineering firm currently conducting a property condition survey of the above-referenced property. As part of the due-diligence process, we are submitting this Request for Information (RFI) letter to obtain information specific to the property. We request your assistance by providing us with the following information concerning the site and buildings:

1. According to information provided by the City of Stamford, the last inspection of Stamford High School occurred on August 14, 2008 resulting in the finding of active violations. Please forward a copy of the August 14, 2008 report detailing the open violations and their current status.

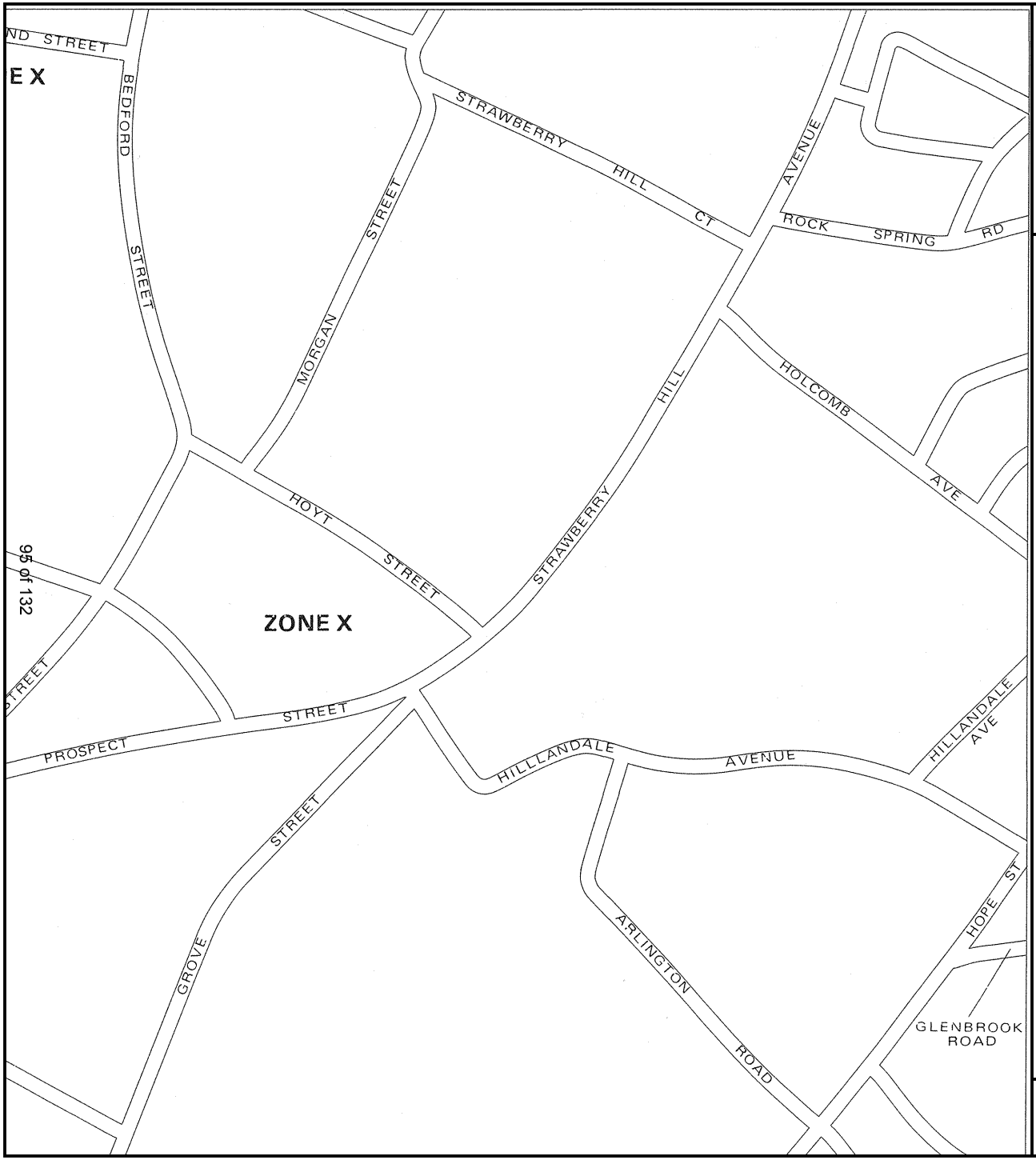
Please electronically mail, postal mail or fax to the number noted below. Responses may be faxed directly to our office, at 410.785.6220, or mailed to our corporate offices:

EMG
Attn: Municipal Research Department
222 Schilling Circle, Suite 275
Hunt Valley, Maryland 21031

Please note the EMG Project Number and the Project Manager's name on all correspondence. If you need additional information to complete this request or would like to discuss the report and findings, please contact me at 410.785.6200 or email. Thank you for your prompt attention in this matter.

Sincerely,

Joseph Abbate
Project Manager
jaabbate@emgcorp.com



APPROXIMATE SCALE

500 0 500 FEET

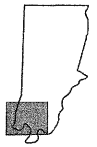
NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
STAMFORD,
CONNECTICUT
FAIRFIELD COUNTY

PANEL 7 OF 9
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER
090015 0007 D

MAP REVISED:
NOVEMBER 17, 1993

Federal Emergency Management Agency

ATTENDANCE POLICY

Students are expected to attend class regularly. Exceptions are made for illness, emergency, or calendar religious holidays. If a student is passing a course for the quarter but exceeds the seven absence limit, he/she will receive a failing grade of F (59) for the marking quarter. Two unexcused absences in a course result in an automatic failure for a marking quarter, and exceeding 14 absences per semester course or 28 absences per year course also result in automatic failure. Students may seek an appeal or waiver(s) to rectify violations of the attendance policy. Students who fail a course because of a violation of the attendance policy cannot make up the course in remedial summer school.

CURRICULUM

Stamford High School utilizes a single, open curriculum with no prescribed tracking system. Providing prerequisites are met, most subjects are available to students. There are over 200 course offerings in the program of studies. Two college preparatory mathematics programs are offered: a traditional sequence of Algebra 1, Geometry, Algebra 2, Pre-Calculus, and Calculus, and a two year course (A & B) that is equivalent to a full year of algebra and geometry. Bilingual educational program is offered to Hispanic as well as English as a Second Language (ESL) and Sheltered programs. A comprehensive special education program accommodates a full range of students with special needs. Several focused school-to-career academies augment the regular curriculum: Academy of Finance, Academy of Architecture and Engineering (housed at the Academy of Information Technology and Engineering), and a Regional Center for Agriscience and Technology (housed at Westhill High School).

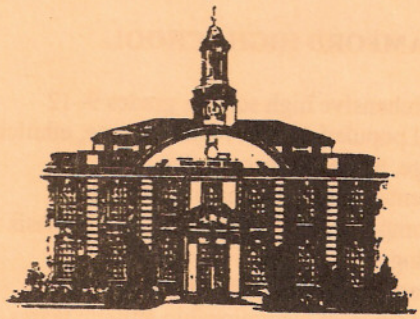
Honors (Accelerated) courses ("H" on transcript)
Achievement, test scores, and teacher recommendation determine eligibility. These courses are available in English, Algebra 2, Pre-Calculus, Biology, Chemistry, Physics, Social Studies 9, Modern World History, Civics, French, and Spanish. Accelerated students in the honors program will have taken the first level of world language, Algebra 1, and CP Physical Science in the eighth grade year.

Advanced Placement courses ("AP" on transcript)
Achievement, test scores, and teacher recommendation determine eligibility. These courses are available in English Language, English Literature, Studio Art, Art History, Calculus, Statistics, Biology, Chemistry, Physics, Government and Politics, European History, United States History, Microeconomics, Psychology, Music Theory, French, and Spanish. Two-hundred eight (208) students took 422 AP examinations in May, 2008.

sports website is seperate from this website.

This is...
Stamford High School

Fall 2008



School Administration

Dr. Joshua P. Starr, Superintendent
Mr. Rodney Bass, Principal
Mr. Gary Lutterman, Assistant Principal, Grade 11
Miss Janet Skwiersky, Assistant Principal, Grade 12
Mrs. Angela Thomas Graves, Assistant Principal, Grade 10

Guidance Department

Mr. Robert Augustyn, School Counselor
Ms. Anna Englis, School Counselor
Mr. James Henry, School Counselor
Mr. Benjamin Levy, School Counselor
Ms. Maria Longo, School Counselor
Mrs. Francene Moavero, School Counselor
Ms. Geraldine Nuzzo, Department Head
Ms. Maria Olveira, School Counselor
Mr. Arthur Solomon, School Counselor
Ms. Rebecca Wilson, School Counselor

Stamford High School
55 Strawberry Hill Avenue
Stamford, CT 06902
(203) 977-4223

Guidance Department
(203) 977-4271/4272
Fax: (203) 324-8982

High School Code: 070750

Web Site: www.stamfordhigh.org

STAMFORD, CONNECTICUT...

Settled in 1641
Fourth largest city in CT (population 119,261)
Located in southwestern CT, Fairfield County
Thirty-five miles from New York City
A business and corporate center
Two comprehensive public high schools, two magnet high schools, three private high schools, and a vocational high school
One general hospital
A psychiatric clinic for family and children's services
A child guidance center

STAMFORD HIGH SCHOOL

Founded 1873
Four-year comprehensive high school, grades 9–12
A diverse school population with regard to race, ethnicity, language, and socio-economics
A large media center with a myriad of resources
A number of computer laboratories and an emphasis on technology
A career center and a work and internship program
A history and tradition of championship athletic teams
A wide variety of student clubs and activities
A faculty of over 140 teachers
A community resource police officer and a security staff
A pupil personnel staff of counselors, psychologists, social workers, a language/speech specialist, and special educators to support students with special needs
Enrollment: 1,758
Accreditation:
The New England Association of Schools and Colleges — full ten year award, 2003
The Connecticut State Department of Education

MISSION STATEMENT

The Stamford High School partnership of staff, parents, and community empower students to develop their unique potential, pursue excellence, and become contributing, responsible mem-bers of society.

MINIMUM GRADUATION REQUIREMENTS

English – four years
Social Studies – three years (including U.S. History & Civics)
Mathematics – three years
Science – two years
Fine Arts/Music/Unified Arts – one year
Health Education – one year or two semesters
Physical Education – one year or two semesters

Students must earn one-hundred (100) points from grades 9–12. Full-year courses are worth 5 points, half-year courses are worth 2.5 points, and a total of 35 points can be earned per year. Summer school is remedial and only failed courses can be made up for credit. Students can drop courses with no penalty to grade point average but will receive a "W" on their transcript after the first marking quarter. Students graduating with the Class of 2008 will be required to pass a minimum of three of four sections of the Connecticut Academic Performance Test (CAPT) at the proficiency level or must fulfill an alternative assessment.

GRADING SYSTEM

Letter Grade	Number Value	Grade Point
A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-62	0.7
F	0-59	0
M		medical
P		pass
I		incomplete
W		withdrawn

Students achieve honor roll status with a 3.0 GPA and high honor roll status with a 4.0 GPA.

CLASS RANK

Each student receives two class ranks: unweighted and weighted. The unweighted rank is computed by using the grade point average of the final marks earned by each student in all subjects except those on P (Pass) / F (Fail), physical education, and independent study taken in grades 9–12. The weighted rank is calculated by adding the following values to the unweighted grade point average: .05 weight for each honors classes and .07 for each Advanced Placement courses. Rank is computed at the end of the junior year. Only students who have attended a district high school for four semesters are included in the class rank. In the Class of 2009, 364 are included in the rank out of an enrollment of 420 in the class.

COLLEGE BOARD RESULTS (SATs) FOR 2008

Mean Scores SAT – Reasoning Test (75.5% participation):

Critical Reading	Math	Writing
469	479	480

Mean Scores SAT – Reasoning Test (for students who reported their high school rank as being in the top 10%):

Critical Reading	Math	Writing
623	657	650

Mean Scores SAT – Subject Tests
Math Level 1 = 632
Math Level 2 = 681
Chemistry = 688
Literature = 638
U.S. History = 632
Biology = 639

National Merit Scholarship Program – Class of 2008
Finalist = 1
Commended Students = 4

HIGHER EDUCATION FOR THE CLASS OF 2008

Four-year colleges	58.0%
Two-year colleges	29.0%
Other forms of higher education	3.0%
Total in higher education	90.0%
Employment	6.0%
Military	1.0%
Other	5.0%

ART DEPARTMENT

TEACHER		ROOM	1	2	3	4	5	6	7
Cusano	T1C	367	PLC CD 3	367 Computer Graphics	367 Computer Graphics		367 Digital Photo	365 Photo 1	361 AP Studio
Nerreau	T1D	362	Color & Design / Color & Design		Drawing & Painting 1	Jewelry	Crafts	PLC CD 10	Drawing & Painting 1
Wade	T1R	365	Photo 1	PLC CD 3		Photo 1	Photo 2 Studio	364 Yearbook	367 Adobe Photo / 367 Adobe Photo
Wheeler	T1S	628	Ceramics 1		Col & Design 366 / Potter's Wheel 628	Potter's Wheel 628 / Potter's Wheel 628	PLC CD 3	367 Digital Photo	Ceramics 1
Zielinski,DH	T1Z	366	AP Art	Drawing & Painting 1		Drawing & Painting 1	PLC	Drawing & Painting 2	
				MUSIC DEPARTMENT					
Bagley	T1U	407	Hist of Music	Jazz	Band	Band		Practical Theory / AP Music Theory	PLC CD 4
Sinaguglia	T1M	402	Voice / Intro Mus Bus	Concert Choir			Orchestra	Chamber Madrigals	PLC CD 4

Provides # of classes and locations Teacher

BILINGUAL DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
Garcia T4M	605	PLC CD 6	Bil Phys Sci	Shelt Alg 1A	Shelt Alg 1		ELL AC Sup	ELL AC Sup
Palmer T4Y	624	ELL AC Sup		ELL AC Sup	ELL AC Sup	Bil SS	9 Bil Health 9 Bil Health	PLC CD 6

BUSINESS DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
Bonaddio T2L	262	246 Notetaking	Consumer Math	PLC CD 2	MS Office 1	619 CISCO 1 & 2	619 MS Officel	619 Pers Fin
							MS Office2 262	MS Office 1 262
Garasimowicz T2M	266	Entrepren	MS Office 1		PLC CD 2	266 PC Basics	Accounting 1	Entrepren
			MS Office 2			Intro Wrd 266		
Levy T2C	251	MKE & Dist 2	PLC CD 2	Mkt & Dist 1		Mkt & Dist 1	Mkt &Dist 1	Mkt & Dist 2
Mackey-Chutan T2D	252	PLC CD 10		Pers 250 Finance	National Academy of Finance	MS Off 250 1	Pers 250 Finance	MS Ofc 1 250
			Intro 250 Word Proc			Pers 250 Finance	Pers 250 Finance	Intro 250 Word Proc
Saldicco T2E	253	Intro 250 Word Proc	PLC CD 2	MS Ofc 262 1	Mkt & Dist 251 1	Pers Fin	Mkt & Dist 2	Mkt & Dist 2
						Pers Fin		
Sylvester T2F	263	Accounting 1	Accounting 1	246 Consumer Math	Accounting 2	Accounting 1	PLC Cafe	
Cantow, DH T2H		246 Notetaking	246 Notetaking	263 Accounting 1			246 Notetaking	
			246 Notetaking					

UNIFIED ARTS DEPARTMENT

TEACHER	ROOM							
Chacra T1W	637	Intro Foods	Intro Foods	Intro Foods		PLC CD 6	Foods & Culinary 2	640 Fash & Furn 1 & 2
		Intro Foods	Intro Foods	Intro Foods				
Mecca T1K		524 Graphic Com Tech		Intro 524 Tech	PLC CD 10	616 Wood	524 Graphic Com Tech	616 Wood
				Intro 524 Tech		Wood 616		Wood 616
Van Nostrand T1N	640		Fash & Furn 1 & 2	Fash & Furn 1 & 2	Ready for Reality	637 Foods & Culinary 1	PLC Cafe	637 Foods & Cul 1
					Ready for Reality			

ENGLISH DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7	
BALL T3M	206	Literacy/ New Arriv	ESL PLC	ESL B	ESL C		ESL A	ESL A	6
Barry TBX	209	English Lab	English Lab	Sr CAPT Portfolio		PLC SH	English Lab	English Lab	6
Bisset T3D	228	ESL A	ESL PLC		ESL A	ESL B	ESL B	ESL C	6
DeAngelis TBL	238	9-3 1	PLC CD 10 - 1Sem / SH Pri - 2Sem	9-0 2	9-2 3	9-3 4	9-0 5		6
DiBuono TAT	205	9-1 8	9-2 7	CAPT Rev / CAPT Rev	PLC SH		CAPT Rev / CAPT Rev	9-1 6	6
Drugge T3E	219	WST PLC C	AP Lit B	Survey	9-0 9	WST	AP Lit A	WST D	7
Forker T3F	240	11-2	11-1 2	PLC CD 10	10-2 2	10-2 1	11-2 3		6
Grady TAV	243	10-3 3	10-2 4	10-1 5	10-1 6	PLC CD 2	10-1 7		6
Hough TBJ	222	10-2 9	10-R	10-0 10	PLC CD 1		10-0 9	10-1 8	6
Johnson TBA	242	Survey	11-2 7	11-3 6		11-3 5	PLC CD 2	11-1 4	6
Kelley T3N	201	People in Lit E		9-R A	Survey	Survey	Survey	PLC CD 1	6
Kenna T3I	256	11-1 11		Sports Lit F / Sports Lit	11-1 10	11-2 9	PLC SH	11-2 B	6
Konrad TBO	218	9-0 10	9-1 11	Writer's Workshop	10-3 11	Writer's Workshop	PLC Cafe	9-0 12	7
Lutz T3P	224	WST PLC	10-0 12	Themes	People in Lit G	10-0 5	WST	WST	7
Hempstead TBN	236	9-2 13	PLC SH		9-1 14	9-1 15	10-2 15	10-2 14	6
McCaffrey T3S	202	10-0 16	10-1 17	9-R B	PLC SH	10-1 18	Sports Lit H / Writer's Workshop		6
McLaughlin T3K	244	Shelt Eng 1 J		PLC SH	Shelt Eng 1 I	11-1 17	11-1 12	Shelt Eng 1 K	6
Peck T3Y	220	WST PLC	Writer's Workshop / Writer's Workshop	AP Lit L	WST	AP Lit M	SAT Prep / SAT Prep	WST	7
Colandro TBC	267	12-3 1		12-3 2	Themes N	Themes O	PLC SH	Survey	6

O - Top Grade
3 - Bottom group
9 - Grade #
CP - College Prep
AP - Advanced Placement

ENGLISH DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7	
Reed TBR	204	WST PLC	Sci-Fi / Sci-Fi	Sci-Fi / Sci-Fi	AP Lang	AP Lang	WST	WST	7
Stashenko TBE	233	X	Survey	9-1	12-3	9-2	9-1	PLC CD 2	6
Stone TBD	216	Themes	Speech / Speech	Speech / SAT Prep	CAPT Rev / CAPT Rev	PLC SH	Design & Pub	X	6
Strom T3A	232	11-0	PLC SH	11-2	Shelt Eng 2	X	Shelt Eng 2	11-0	6
Perry, Act DH T3R	210		SAT Prep / SAT Prep		11-0	11-0			3

MATH DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
Cardillo T6A	611	Computer Orien	SR SAT Rev / SR SAT Rev	PLC B CD 6	Geom 1B	Computer Orien	X	Geom 1A
Chaikind T6B	911	Algebra 2	Geom - 0	PLC B SH	Shelt Geom	X	Plane Geom	Algebra 2
Dinucci T6Z	924	X	Algebra 2	Plane Geom	Alg 1A	Alg 1A	SH - Friday PLC E CD 9	Plane Geom
Dodd T6G	927	X	Alg 1A	Pre-Calc	Algebra 2	Alg 1A	Algebra 2	PLC Z SH
Fletcher TCE	826	Algebra 2	CAPT Rev 10 / X	X / Sr SAT Rev	Math CAPT Rev / Math CAPT Rev	Algebra 2	Geom-0	PLC Z SH
Genovese TBQ	813	X	Plane Geom	Algebra 1	Algebra 1	CAPT Rev / CAPT Rev	Plane Geom	PLC Z CD 9
Hofmann TEB	810	Algebra 1	AP Stat	PLC B CD 7	AP Stat	Geom 1A	Geom 1A	X
Katz TCB	925	Algebra 1B	PreCalc	Algebra 2	PLC Gamma CD 9	X	Sr SAT Rev / SAT Rev	Algebra 1B
Odoom T6J	824	PreCalc-0	Calculus	PLC A CD 8	X	Calculus	Algebra 1A	Algebra 1A
Petitti T6K	812	Plane Geom	X	Plane Geom	PreCalc	PLC Delta CD 8	Geom 1B	Geom 1B
Pisano (Anderson) TBP	825	X	Algebra 1A	Algebra 1A	Plane Geom	Plane Geom	PLC E CD 8	Algebra 2
Parchesky,DH TMB	913		Alg 1B	AP Calc	PLC Gamma	PreCalc-0		
Sartor T6M	827	PreCalc	X	Alg 3 & Trig / Prob & Stat	Alg 3 & Trig / Prob & Stat	PLC Delta CD 7	RampUp	RampUp
Schell T6R	912	Geom-0	X	PLC A CD 9	Alg 2-0	Alg 1B	Alg 1B	PreCalc-0
Welch T6V	910	Alg 2-0	RampUp	RampUp	X	Geom-0	Alg2-0	PLC H CD 8
Widmer T6H	926	X	Algebra 1	CAPT Math Portfolio	RampUp	RampUp	Algebra 1	PLC H CD 10
Boughton T6C	811	Geom 1A	Geom 1A	Geom 1A	PLC Gamma CD 7	Alg 2	X	Algebra 1

PHYSICAL EDUCATION DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
			SEMESTER 1					
Carpenter T9H	710	PE 9	PE 9	CD		710 Health 9	710 Health 9	710 Health 9
D Amico T9M		CD / 713 Health 10 TR	713 Health 10 MWF / 713 Health 10 TR	711 Health 9	711 Health 10 MWF / CD		403 Cardio	PE 9
Jones T9I	712		CD	712 Hum Beh 1	712 Hum Beh 1	712 Hum Beh 1	PE 9	406 Fit
Lacomis T9P	711	CD / Health 711 10 TR	711 Health 10 MWF / Health 711 10 TR	406 Fit	PE 9	711 Health 10 MWF / CD	Health 711 10 TR	711 Health 10 MWF
Parness T9E		712 Health 9	712 Health 9 MWF / Health 712 9 TR	PE 9	Health 710 9 MWF / CD	Team	CD / Health 712 9 TR	
Perry T9J	713		Life	713 Health 10 MWF / Health 713 10 TR	Health 713 10 MWF / Health 713 10 TR	PE 9	CD / Health 713 10 TR	Health 713 10 MWF / CD
Samperi T9C		Team	403 Cardio		406 Fit			
Bradbury, DH T9B		Shelt 622 Health 10 TR	622 Shelt Health		Health 622 10 MWF	Power Walk		
			SEMESTER 2					
Carpenter T9H	710	PE 9	710 Health 9	CD	811 Health 9		PE	710 Health 9
D Amico T9M		CD / 713 Health 10 TRF	Health 713 10 MW / Health 713 10 TRF	403 Cardio	Health 711 10 MW / CD	PE 9	710 Health 9	
Jones T9I	712		CD	712 Hum Beh 2	712 Hum Beh 2	712 Hum Beh 1	406 Fit	Team
Lacomis T9P	711	CD / 711 Health 10 TRF	Health 711 10 MW / 711 Health 10 TRF	Team	Team	Health 711 10 MW / CD	Health 711 10 TRF	Health 711 10 MW
Parness T9E		Team	712 Health 9 MWF / 712 Health 9 TR		Health 710 9 MW / CD	710 Health 9	CD / 712 Health 9 TRF	PE 9
Perry T9J	713	Life	PE 9	713 Health 10 MW / 713 Health 10 TRF	713 Health 10 MW / 713 Health 10 TRF	CD	713 Health 10 TRF	Health 713 10 MW
Samperi T9C			406 Fit		406 Fit	406 Fit		
Bradbury, DH T9B		622 Health 10 TRF	403 Cardio	PE 9	622 Health 10 MW			

SCIENCE DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
Evans T8H	501	MWF ← CD 7	Shelt Bio		TR ←	CP Bio	Phys Sci	Phys Sci
Amon T6T	506	X	CD 7	CP Phys	AP Phys	AP Phys	Hon Phys	Hon Phys
Butcaris T8Z	613	Gen Chem → M		CPS	CP Chem → W		F ← CD 7	CP Chem
Coppola T8S	606	CPS	Gen Bio → TR CD 6		X	CPS	MWF ←	CP Bio
DelGiudice T8D	814	X	TR ← CD 8	Hon Chem	Hon Phys	CP Chem → F	MW ←	Hon Chem
Cozza T8W	601	MWF ← CD 10	CP Bio	Marine / Enviro	Gen Bio → TR		X	Forensics / Marine
Drake T8N	615	Gen Chem → M		Hon Chem → TR		Gen Chem → W	F ← CD 6	Gen Chem
Driscoll T8Q	608	CP Earth Sci	CD 5	Earth Sci	Earth Sci	AP Enviro	X	Earth Sci
Abramowitz T8B	513	CPS	CPS	MWF ←	CP Bio	X	Gen Bio → TR CD 5	
Gifford T8U	818	X	Gen Chem → T CD 8		MWF ←	Hon Chem	AP Chem	AP Chem
Grillo T8R	714	Hon Bio → MWF	TR ←	Hon Bio	CPS	X	CP Forensics	CD 7
Halmeck T8Y	914	AP Bio	AP Bio	CP Bio → TR CD 8		X	MWF ←	Gen Bio
Jahangir T8W	508	CD 6	X	Phys Sci	Phys Sci	Gen Phys	CP Phys	CP Phys
Kaiser T8K	602	X	CP Chem → T	R ←	Gen Chem	CP Chem → W CD 5	F ←	CP Chem
Pucci T8M	504	Phys Sci	Phys Sci	X	TR ← CD 4	Hon Bio	MWF ←	Hon Bio
Rinaldi T8T	918	MWF ← CD 9	CP Bio	X	TR ←	Gen Bio	AP Bio	AP Bio
Teich T8F	511	X	CP Foren	Forensics / Forensics	CD 6	CP Forensics	Shelt Phys Sci	619 Robotics / 619 Robotics
Townes T8O	502	Gen Bio → MWF		Hum Phys	X	Human Phys	CP Bio → TR CD 6	
Van Acker T8T	515	CP Bio → MWF	TR ←	Gen Bio	X	CD 5	CPS	CPS
Vavrinec, DH T8P	604			CAPT Portfolio	CPS	CPS		

SOCIAL STUDIES DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
Arcano T5G	164	PLC CD 1	Journal Comm	11-2		Journal Comm	9-0 1	9-0 2
Barnett T5S	138	PLC SH	11-1	Just&Law / Mod Wrld 10-1		Just & Law / Just & Law	11-2	Mod Wrld 10-2 / Mod Wrld 10-1
Barry, K T5O	122	PLC CD 2	Shelt US	CAPT Portfolio	11-2		AP US	AP US
Taylor T5B	132	Civics 10-1 / Civics 10-2	PLC CD 6	Civics 10-3 / Civics 10-2	Civics 10-2 / Civics 10-1	9-1 3	9-1 4	
Brown, M T5P	126	11-1	PLC CD 1	App Eco / App Eco	11-3	11-3	AP Govern	
Clark T5I	130	Mod Wrld 10-2	9-1 5	9-1 6	Mod Wrld 10-1 / Mod Wrld 10-0	PLC CD 10	Civics 10-2 / Mod Wrld 10-0	Civics 10-2 / Mod Wrld 10-0
Dooley T5Y	102	9-1 10	9-2 9	Cont Iss	9-3 8	PLC CD 1	9-1 7	
Figliuzzi T5N	114	PLC SH	9-0 11	AP Psych		9-0 12	9-3 13	9-3 14
Porker, M T5R	156	PLC CD 1	Sen Sem	Mod Wrld 10-0 / Mod Wrld 10-3	AP Euro	Mod Wrld 10-3	Mod Wrld 10-2	AP Euro
Fraser T5C	133	Mod Wrld 10-1	Cont Iss / Civics 10-1 / Mod Wrld 10-1	Civics 10-1 / Civics 10-0 / Latin Am	Civics 10-0 / Civics 10-3	PLC CD 1	Civics 10-0	Civics 10-1 / Civics 10-0
Gutierrez T5F	110	PLC CD 2	World Geo		9-1 15	9-2 16	Cont Iss	9-1 17
Malave T5T	136	AVID	Shelt Civ	9-0 18	Civics 10-1	Shelt Mod Wrld / Shelt Civics	PLC CD 10	AVID
Moriarty T5H	131	11-2	Cont Iss	Afro Am / Afro Am	11-1	20th Cent	PLC CD 1	11-1
Salerno T5D	120	9-2 19	PLC CD 1	11-1	Mod Wrld 10-3 / Mod Wrld 10-2	11-1	11-1	
Valentine T5J	119	PLC SH	Psych / Psych	Mod Wrld 10-2 / Psych		AP Psych	AP Psych	AP Psych
White T5X	154	AP Econ	11-3	Cont Iss / Cont Iss	AP Econ		PLC Cafe	AP Econ
Zezima T5Q	118	Economics	PLC CD 6	9-2 21	Mod Wrld 10-1	Civics 10-3	Economics	9-2 20
Maclehose, DH T5U	125	122 AP US	125 AP US			125 11-2	PLC	

TEACHER	ROOM	1	2	3	4	5	6	7
Bucciarelli T7V	815	PLC 1	LAP Sci 9	IED	Reading / Reading	IED	X	AC Bio 10
DiGiacomo T7N	226	X	Consumer Math	AC Geom 10	PLC 2	LAP Math 10	IED	IED
Forrest T7D	128	PLC 3	AC SS 9	LAP SS 9	X	IED	Civics / Wrld Hist	IED
Kaufman T7W	107	PSA Soc Skills	X	Ramp Up Math Support	PLC 2	LAP Math 9	IED	IED
Larison T7E	915	Health 10 / Health 9	Health 9 / Health 10	X	IED	AC Math 9	IED	PLC 4
Moynihan T7H	116	AC IED 10	X	IED	AC SS 10 / Civics	214 LAP SS 11	252 Keyboard	PLC 4
Plair T7F	245	RLC SS 11	IED	X	RLC SS 9/10 / Civics	RLC Math 9/10/11	IED	PLC 4
Ricco T7S	105	IED	RLC Sci 9/10	LAP Sci 10	PLC 4	IED	X	Reading
Singleton T7J	214	IED	RLC Eng 11/12	AC Eng 9	IED	PLC 5	LAP Eng 9	X
Wiess T7I	109	PLC 3	IED	RLC Eng 9/10	IED	X	RLC Voc 11/12	RLC Voc 9/10
Reid T7K	247	IED	LAP Eng 10	IED	X	PLC 5	IED Eng Tutorial	Reading
Pitiger T7Q	227	IED	Eng 10	X	AC 9	PLC 5	LAP Eng 9	AC IED 9
Chandler, DH T7B	234	240 Eng 11-2	116 AC Eng 10	247 IED		PLC 5		

WORLD LANGUAGE DEPARTMENT

TEACHER	ROOM	1	2	3	4	5	6	7
Anderson T4A	514	French 4	Hon Span 3	Hon French 4	Hon Span 3	Spanish 2	PLC Cafe	
Bourret T4B	503		Hon Span 4	Hon Span 4	Spanish 4	Spanish 3	PLC SH	Spanish 3
Cahill T4C	509	Hon French 3	AP French	Spanish 2	Hon Span 2	PLC CD 6		Hon Span 2
Gladstone T4P	614	Hon Span 3	PLC CD 5	Spanish 3	Spanish 3		Spanish 1	Spanish 4
Grady T4E	505	Latin 1		Latin 3	Latin 2	Latin 2	Latin 1	PLC CD 7
Rich T4I	512	AP Spanish	Spanish 1		Spanish 1	PLC CD 5	Hon Span 2	Spanish 2
Ruffo T4R	612	PLC CD 5	Italian 4		Italian 2	Italian 2	Italian 3	Italian 1
Salomon T4S	510	French 2	French 2		PLC CD 5	French 1	Hon Fr 2	French 1
Steele T4D	507	French 3	Spanish 2	PLC CD 3	Hon Span 4		Spanish 2	Hon Span 3
Walker T4X	609	Hon Span 2	Spanish 3	Spanish 1	Spanish 2		PLC Cafe	Spanish 1
Caminiti, DH T4Z			505 Italian 2		510 Italian 1	512 Spanish 1		

Building Owner:

CITY OF STAMFORD
STAMFORD CT 06902

Building Name:

STAMFORD HIGH SCHOOL

55 STRAWBERRY HILL AVENUE

STAMFORD CT 06902

Approved Roofing Contractor:

SILKTOWN ROOFING INC
27 PLEASANT STREET

MANCHESTER CT 06040

Date of Completion: 06/27/97

SCHULLER

Roofing Systems Gold Shield® Roofing System Guarantee

114062

Guarantee Number: ANB0152307

Term & Maximum Monetary Obligation to Maintain a Watertight Roofing System

Years 20 **$**
NO DOLLAR LIMIT
TOTAL SQUARES 480

COVERAGE
The components of the Roofing System covered by this Guarantee are:

Membrane Spec. and Type	4GIG	BUR
Flashing Spec. and Type	DFE-9,FE-11,DFE-8,FE-2,FE-9	1650 LINEAR FEET
Insulation Type	UGG,,FB	
Accessories (Type and Quantity)		

These Schuller Guaranteed components are referred to below as the "Roofing System", and ALL OTHER COMPONENTS OF THE OWNER'S BUILDING ARE EXCLUDED FROM THE TERMS OF THIS GUARANTEE.

Schuller International, Inc.* guarantees to the original Owner that during the Term commencing with the Date of Completion, Schuller will pay for the materials and labor required to promptly repair the Roofing System to return it to a watertight condition if leaks occur due to: (i) ordinary wear and tear, or deficiencies in any or all of the component materials of the Roofing System or (ii) workmanship deficiencies in the application of the Roofing System.

WHAT TO DO IF YOUR ROOF LEAKS
In the event any leak should occur in the Roofing System:

1. Building Owner must notify Schuller Guarantee Services (see reverse) in writing immediately upon discovery of the leak and in no event later than 30 days after discovery of the leak.
2. In response to this notice, Schuller will arrange to inspect the Roofing System, and
   (i) if the leaks are the responsibility of Schuller under this Guarantee (see Coverage, Limitations and Exclusions), Schuller will take prompt appropriate action to return the Roofing System to a watertight condition, or
   (ii) if the leaks are not the responsibility of Schuller under this Guarantee, its representatives may, at the Building Owner's request, advise the Building Owner within a reasonable time of the minimum repairs that Schuller believes are required to return the Roofing System to a watertight condition. If the Building Owner, at his expense, promptly makes such repairs to the Roofing System this Guarantee will remain in effect for the unexpired portion of its Term. Failure to make these repairs in a timely and reasonable fashion will void any further obligation of Schuller under this Guarantee as to the damaged portion of the Roofing System.
3. In the event an emergency condition exists which requires immediate repair to avoid damage to the Building or its contents, then Building Owner may make essential temporary repairs. Schuller will reimburse Building Owner for those repair expenses which would have been the responsibility of Schuller under the Guarantee but for the emergency condition.

LIMITATIONS AND EXCLUSIONS
This Guarantee is not a maintenance agreement or an insurance policy; therefore, routine inspections and maintenance are the Building Owner's responsibility (see reverse side of this document). The Guarantee does not obligate Schuller to repair the Roofing System, or any part of the Roofing System, for leaks resulting from (a) natural disasters, (b) misuse, abuse or negligence, (c) installation or material failures other than those involving the component materials expressly defined above as the Roofing System or exposure of the Roofing System components to damaging substances such as oil or solvents or to damaging conditions such as vermin, (d) changes to the Roofing System or the Building's usage that are not preapproved in writing by Schuller, or (e) failure of the Building substrate (mechanical, structural or otherwise and whether resulting from Building movement, design defects or other causes) or improper drainage (ponded water). Schuller is not responsible for leaks and damage resulting from water entry from any portion of the Building structure not a part of the Roofing System.

Schuller shall have no obligation under this Guarantee until all bills for installation, materials and services have been paid in full to Schuller Roofing Systems and the Approved Roofing Contractor.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, SCHULLER DISCLAIMS ANY IMPLIED WARRANTY, INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR LIMITS SUCH WARRANTY TO THE DURATION AND TO THE EXTENT OF THE EXPRESS WARRANTY CONTAINED IN THIS GUARANTEE.

THE EXCLUSIVE RESPONSIBILITY AND LIABILITY OF SCHULLER UNDER THIS GUARANTEE IS TO MAKE REPAIRS THAT MAY BE NECESSARY TO MAINTAIN THE ROOFING SYSTEM IN A WATERTIGHT CONDITION IN ACCORDANCE WITH THE OBLIGATIONS WHICH ARE THE RESPONSIBILITY OF SCHULLER UNDER THIS GUARANTEE.

SCHULLER AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE BUILDING STRUCTURE (UPON WHICH THE ROOFING SYSTEM IS AFFIXED) OR ITS CONTENTS, LOSS OF TIME OR PROFITS OR ANY INCONVENIENCE. SCHULLER AND ITS AFFILIATES SHALL NOT BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN THE EXCLUSIVE LIABILITY SET FORTH IN THIS GUARANTEE. INCIDENTAL AND CONSEQUENTIAL DAMAGES SHALL NOT BE RECOVERABLE EVEN IF THE REMEDIES OR THE ACTIONS PROVIDED FOR HEREIN FAIL OF THEIR PURPOSE.

No one is authorized to change. alter or modify the provisions of this Guarantee other than the Manager, Marketing and Technical Services or authorized delegate. Schuller's delay or failure in enforcing the terms and conditions contained in this Guarantee shall not operate as a waiver of such terms and conditions. This Guarantee is solely for the benefit of the Building Owner identified above and will be transferred by Schuller in its sole discretion only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of Building ownership transfer.

In the event Schuller pays for repairs which are required due to the acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs.

Because Schuller does not practice Engineering or Architecture, neither the issuance of this Guarantee nor any review of the Building's construction or inspection of roof plans (or the Building's roof deck) by Schuller representatives shall constitute any warranty by Schuller of such

P.O. Box 13678
Macon, GA 31208-3678

FIFTEEN YEAR ROOFING LIMITED WARRANTY

Nord Bitumi U.S., Inc. (Nord) warranties that the Nord roofing Product(s) listed below was installed by CT-8038, M. Gottfried, Inc.
89 Research Drive, Stamford, CT 06906 203/323-8173
who is a Nord Registered Roofing Contractor, will be free of defects in material and workmanship that cause it to leak for a period of fifteen (15) years from the date of completion upon the following terms and conditions: During the first two years of this Warranty, Nord shall be responsible for defects in material only, notwithstanding anything contained herein to the contrary. As a precondition to the validity of this Warranty, Owner agrees that the Registered Roofing Applicator shall be responsible for any and all costs to correct any roof water leaks caused by defective workmanship or installation for the first two [illegible] whatsoever against Nord with regard to defective workmanship or installation discovered during such period. For the remaining thirteen years of this Warranty, Nord will correct the water leaks caused by defective material or workmanship. [illegible] by the elements as provided herein. This Warranty applies only to the Nord roofing products installed in accordance with Nord's then current roofing specifications, application instructions and approved products. In order for this warranty to be in effect for smooth surface membranes the roof must be surfaced with a Nord approved coating.

Nord shall not be liable for and this Warranty does not cover the following conditions, leaks, claims or damages arising from:

- A. windspeeds in excess of 54 miles per hour, hailstorms, hurricanes, tornados, lightning, earthquakes, fire, explosion, flood, chemical attack, solid objects falling on the roof, traffic or storage of materials on the roof, Acts of God, wear through misuse or abuse, damage physically inflicted through accidents or man-made causes, riots, vandalism or war.
- B. defects in, failure of or improper application, construction or design of any roof deck, roof insulation, or any other material [illegible] products are applied.
- C. moisture entering the roofing system through walls, rooftop hardware or equipment, copings or any part of the building structure.
- D. standing water that will not dissipate within 48 hours [illegible] improper drainage.
- E. movement, deterioration or separation from expansion or contraction of any sheet metal or other material used in conjunction with the Nord membrane.
- F. any major changes in the [illegible] usage of the building unless approved in advance, in writing, by Nord.
- G. settlement, distortion, failure or cracking of the roof deck, walls or foundation of a building or defects or failures of copings or any part of the building structure.
- H. repair of metal work or flashing receptacles or other materials furnished by others and such damage as may result from the application or failure of these materials.
- I. [illegible] by anyone except those authorized by Nord.
- J. improper maintenance.
- K. birds, vermin, rodents, insects, or any other animal or pest.
- L. Applications over cooler, cold storage or freezer buildings, kiln, oven, hot storage, or buildings with high moisture and/or humidity content.
- M. exposure to any ionized radiation, or contamination from any hazardous substance or waste.
- N. negligence or misuse to the roof.

Nord shall not be liable for any damage to the building or the contents thereof, or any bodily injuries to persons. If repairs or changes are made to the roof which are not covered by this Warranty, including repairs which become necessary as a result of the owner's alteration, installation, extension or addition to the roof, without prior written approval of Nord as to the specifications and the procedures for such repairs, this Warranty shall become null and void immediately. The obligation of Nord under this Warranty shall be limited to the amount of the original cost of labor and material for installation of the Nord membrane.

THE BUYER'S SOLE AND EXCLUSIVE RIGHT AND REMEDY FOR ANY BREACH OF THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF ANY PART OF THE INSTALLED ROOF ASSEMBLY AS NORD DEEMS APPROPRIATE TO PERFORM THE WARRANTY SET FORTH HEREIN. NORD'S OBLIGATION UNDER THIS WARRANTY SHALL BE LIMITED TO THE AMOUNT OF THE ORIGINAL COST OF LABOR AND MATERIALS FOR INSTALLATION OF THE INSTALLED ROOF ASSEMBLY. BUYER HEREBY WAIVES ANY AND ALL OTHER RIGHTS, REMEDIES, CLAIMS, ACTIONS, PROCEEDINGS AND/OR DEMANDS RELATING TO ANY PART OF THE INSTALLED ROOF ASSEMBLY, INCLUDING, BUT NOT LIMITED TO, THOSE BASED UPON NEGLIGENCE, STRICT LIABILITY, BREACH OF CONTRACT AND/OR BREACH OF WARRANTY IN TORT OR CONTRACT. UNDER NO CIRCUMSTANCES SHALL NORD BE LIABLE OR HOLDEN FOR [illegible] CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGES, INCLUDING [illegible] TO, REIMBURSEMENT OR CONTRIBUTION DAMAGES, LOST PROFITS, LOSS OF USE, LOSS OF OR DAMAGE TO GOODWILL, DAMAGE TO THE CONTENTS AND/OR TO ANY PART OF THE BUILDING (OR IMPROVEMENTS, FIXTURES, OR ATTACHMENTS THERETO) AND/OR ANY OTHER PROPERTY, ECONOMIC AND/OR BUSINESS DAMAGES. THIS LIMITATION AND EXCLUSION OF REMEDIES AND LIABILITY SHALL SURVIVE THE EXPIRATION OF THE TERM OF THE LIMITED WARRANTY.

Nord shall not be liable for damages to the other components of the roof or the building.
Some states do not allow limitations on how long an implied warranty lasts or the exclusion of incidental or consequential damages so the above limitations or exclusions may not apply to you.

All claims under this warranty must be directed to:

Director of Technical Services
Nord Bitumi U.S., Inc.
P.O. Box 13678, Macon, GA 31208-3678

and must be received within 72 hours of the original occurrence and must be confirmed in writing [illegible] (10) days of the occurrence.

This Warranty shall only become operative from the date of completion, and upon payment in full for all costs of installation being paid, including those of the roofing contractor and material supplier.

This Limited Warranty shall be transferable subject to Nord's inspection, written approval, and payment of the current transfer fee.

The expense of removing and replacing overburden built over the roof shall be borne by the Owner.

During the term of this Limited Warranty, Nord, its designated representative or employees, shall have full access to the roof during normal business hours.

OWNER'S NAME Stamford Board of Education (Barrel Vault-Stamford H.S.)
ADDRESS OF BUILDING 55 Strawberry Hill Avenue
CITY Stamford STATE CT ZIP 06902
SPECIFICATION NUMBER W-E-007 COMPLETION DATE 11/15/95
PRODUCT(S) USED Nordply 5B Smooth
PRINCIPAL BUILDING USAGE School Gymnasium
Issued: 12/2/6/95 (vlk)
SIGNATURE [signature]
FOR NORD BITUMI U.S., INC.

15 year
11-15-95
11-15-2010

10-27-1999 01:35PM P.03

PAGE #1

AIR HANDLING UNIT SCHEDULE

UNIT NO.	LOCATION	SERVING	MANUFACTURER	MODEL & SIZE	TOTAL CFM	MIN. O.A. CFM	SUPPLY FAN DATA: FAN TYPE	E.S.P. "WC	T.S.P. "WC	RPM	SPEED CONTROL	MAX. BHP (NOL)	MHP	RETURN FAN DATA: FAN TYPE	TOTAL CFM	E.S.P. "WC	T.S.P. "WC	RPM	SPEED CONTROL	BHP	MHP	ELEC. DATA: VOLTS	PH	Hz	RPM
AHU-01	Auditorium Roof	Auditorium	TRANE	T Series - 40	20,600	12650	0	1.25	6.10	1635	VFD	29.5	30	N/A	N/A	N/A	N/A	N/A	VFD	N/A	N/A	460	3	60	1800
AHU-01	Cafeteria Ceiling	Cafeteria	TRANE	MCC - 14	7,325	7,325	FC	1.58	5.18	1391	VFD	9.6	15	FC	7100	1.0	1.46	858	VFD	4.6	7.5	460	3	60	1800
AHU-02	Cafeteria Ceiling	Cafeteria	TRANE	MCC - 14	7,325	7,325	FC	1.58	5.18	1391	VFD	9.6	15	FC	7100	1.0	1.46	858	VFD	4.6	7.5	460	3	60	1800
AHU-F1	71 Mechanical Rm	Locker Rm	TRANE	MCC - 17	9,375	9,375	FC	1.26	4.06	1114	NONE	11.1	15	FC	9,775	1.0	2.19	885	NONE	7.2	10	460	3	60	1800
AHU-F2	71 Mechanical Rm	Level F	TRANE	MCC - 23	13,500	2,300	FC	2.0	3.17	1016	VFD	18.1	20	N/A	N/A	N/A	N/A	N/A	VFD	N/A	N/A	460	3	60	1800
AHU-F3	71 Mechanical Rm	Level F Band Rm	TRANE	MCC - 5	4,325	1,500	FC	1.0	4.49	1816	NONE	5.3	7.5	N/A	N/A	N/A	N/A	N/A	NONE	N/A	N/A	460	3	60	1800
AHU-F4	Auto Mech Ceiling	Level F Choral Room	TRANE	MCC - 5	2,100	1,020	FC	.75	3.24	1783	NONE	1.76	3	FC	1,300	.75	.89	1015	NONE	.71	1.0	460	3	60	1800
AHU-F5	Gymnasium Mech Rm	Gymnasium	TRANE	MCC-50 (Vertical)	29,000	16,330	FC	1.0	3.54	586	VFD	30.4	30	N/A	N/A	N/A	N/A	N/A	VFD	N/A	15	460	3	60	1800
AHU-F6	Gymnasium Mech Rm	Gymnasium	TRANE	MCC-50 (Vertical)	29,000	16,330	FC	1.0	3.54	586	VFD	30.4	30	N/A	N/A	N/A	N/A	N/A	VFD	N/A	15	460	3	60	1800
AHU-F7	Auto Mechanics	Auto Mechanics	GREENHECK	ERV-5294-A	4320	4200	N/A			1326	NONE	4.02	5	N/A	4320	0.5	0.5	1420	NONE	4.49	5	460	3	60	1725
AHU-F8	Auto Mechanics	Grounds Equipment	GREENHECK	ERV-3815-A	1000	1000	N/A	0.5	50	1915	NONE	0.33	1/2	N/A	1000	0.5		999	NONE	0.31	1/2	460	3	60	1725

UNIT NO.	HOT WATER COIL DATA: FLUID	#HIGH/#WIDE/ROWS/F.P.I.	E.D.B. °F	L.D.B. °F	E.W.T. °F	L.W.T. °F	MBH	GPM	W.P.D. FT.	FACE VEL. FPM	A.P.D. "WC	COOLING COIL DATA: FLUID	#HIGH/#WIDE/ROWS/F.P.I.	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B °F	E.W.T. °F	L.W.T. °F	MBH (TOTA
AHU-01	WATER	1/1/4/80	23.6	95	180	160	1595.9	160	3.8	840	.59	O/X	1/1/8/145	83.6	70.1	55	54	N/A	N/A	1012
AHU-01	WATER	1/1/2/155	39.8	95	180	160	439*	44	2.8	606	.25	O/X	1/1/8/142	83.9	70.4	55	54	N/A	N/A	3(
AHU-02	WATER	1/1/2/155	39.8	95	180	160	439	44	2.8	606	.25	O/X	1/1/8/142	83.9	70.4	55	54	N/A	N/A	3(
AHU-F1																				NONE
AHU-F2	WATER	2/1/1/157	52	95	180	160	630	63	5.4	680	.24	WATER	1/1/8/100	78.8	66.5	55	54	44	60	4(
AHU-F3	WATER	1/1/2/84	43	95	180	160	244	25	1.7	574	.20	O/X	1/1/6/162	81	67	55	54	N/A	N/A	1(
AHU-F4	WATER	1/1/2/127	34.3	95	150	130	129	14	1.9	720	.36	O/X	1/1/8/99	83.8	68.2	55	54	N/A	N/A	69
AHU-F5																				NONE
AHU-F6																				NONE
AHU-F7	WATER	2/1/2/113	31.3	90	180	160	1847	148	7	798	.27									
AHU-F8	WATER	2/1/2/113	31.3	90	180	160	1847	148	7	798	.37									

UNIT NO.	ENERGY WHEEL: OA CFM	RA CFM	SUMMER WHEEL INPUT CONDITIONS: OA DB/WB	RA DB/WB	WINTER WHEEL INPUT CONDITIONS: OA DB/WB	RA DB/WB	SUMMER WHEEL OUTPUT CONDITIONS: SA DB/WB	ENTHALPY	HUMIDITY RATIO	EFFECTIVENESS	WINTER WHEEL OUTPUT CONDITIONS: SA DB/WB	ENTHALPY	HUMIDITY RATIO	EFFECTIVENESS	WHEEL PD: SA	EXH.	TOTAL PD: OA/SA	RA/EXH.	FROST CONTROL: REQUIRED	TYPE	POWER: HP	VOLTAGE/PH	AMPS
AHU-01											NONE												
AHU-01											NONE												
AHU-02											NONE												
AHU-F1	9,375	9,775	95/77	75/63.9	0/-0.6	70/53	59.9/58	32.3	83.5	70.6%	59.3/41.3	15.8	24.3	70.6%	1.19	1.19	1.19	1.19	YES	BYPASS	1/4	460/3	0.8
AHU-F2											NONE												
AHU-F3											NONE												
AHU-F4											NONE												
AHU-F5											NONE												
AHU-F6											NONE												
AHU-F7	4200	4320	86/75	75/50% RH	8/5.9	72/35% RH	78/66.6	31.2	76%	70.9%	54.7/45.7	17.9	31	70.9%	.83	.86	.83	.86	YES	20KW PRE-HEATER	1/2	460/3	
AHU-F8	1000	1000	88/77	68/75	0/56.8	11.1/72	77/64.3	28.4	70%	84.8%	60.9/48.7	20.1	35	84.8%	.69	.69	.69	.69	YES	5KW PRE-HEATER	1/6	460/3	

UNIT NO.	COMPONENT ARRANGEMENT	REMA
AHU-01	MIXING BOX, ECONOMIZER/MIXING BOX, FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), D/X COIL, FACE AND BYPASS SECTION, HOT WATER COIL, ACCESS, SUPPLY FAN.	PROVIDE WITH TRAQ DAM
AHU-01	RETURN FAN, ECONOMIZER, MIXING BOX, FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), HOT WATER COIL, ACCESS, D/X COIL, SUPPLY FAN.	PROVIDE WITH 6" BASE
AHU-02	RETURN FAN, ECONOMIZER, MIXING BOX, FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), HOT WATER COIL, ACCESS, D/X COIL, SUPPLY FAN.	PROVIDE WITH 6" BASE
AHU-F1	BOTTOM - FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), ENERGY WHEEL W/ 100% BY-PASS DAMPERS, SUPPLY FAN, ACCESS. TOP - RETURN/EXHAUST FAN SECTION, TOP OF ENERGY WHEEL SECTION.	6" BASE RAILS
AHU-F2	MIXING BOX SECTION, FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), HOT WATER COIL WITH ACCESS SECTION, CHILLED WATER COOLING COIL SECTION, SUPPLY FAN.	PROVIDE WITH TRAQ DAM
AHU-F3	MIXING BOX SECTION, FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), D/X COIL SECTION, ACCESS SECTION, HOT WATER COIL SECTION, SUPPLY FAN	6" BASE RAILS
AHU-F4	RETURN FAN, ECONOMIZER, MIXING BOX, FILTER SECTION (30% PLEATED PRE-FILTER AND 80-85% CARTRIDGE FINAL FILTER), FACE AND BYPASS DAMPER SECTION, HOT WATER COIL, ACCESS, D/X COIL, SUPPLY FAN	6" BASE RAILS
AHU-F5	MIXING BOX W/ 30% PLEATED FILTERS, FACE AND BYPASS DAMPER SECTION, HOT WATER COIL, SUPPLY FAN, 6" DISCHARGE PLENUM.	PROVIDE WITH TRAQ DAM
AHU-F6	MIXING BOX W/ 30% PLEATED FILTERS, FACE AND BYPASS DAMPER SECTION, HOT WATER COIL, SUPPLY FAN, 6" DISCHARGE PLENUM.	PROVIDE WITH TRAQ DAM
AHU-F7	PACKAGED UNIT	
AHU-F8	PACKAGED UNIT	

GENERAL NOTE:
1. ALL MANUFACTURERS PROVIDING ACCEPTABLE EQUIVALENT EQUIPMENT SHALL PROVIDE AN EQUIVALENT MEANS OF OUTSIDE AIR FLOW MEASUREMENT SIMILAR TO TRANE TRAQ DAMPER WHERE SPECIFIED. ONLY DEVICES WHICH MEASURE OUTSIDE AIR DIRECTLY, SUCH AS ELECTRONIC AIR FLOW MEASUREMENT OR VELOCITY PRESSURE TUBES, WILL BE ACCEPTED.
2. AHU-01 OUTDOOR AIR HANDLING UNIT(T-SERIES) SHALL BE FURNISHED WITH FACTORY WIRED MOTOR STARTERS, VARIABLE FREQUENCY DRIVE, VFD BY-PASS, CONTROL TRANSFORMER AND DISCONNECT SWITCH. ATC CONTRACTOR SHALL PROVIDE ALL AHU END DEVICES AND DDC CONTROLLER.
3. AHU-01 ROOF MOUNTED AHU SHALL BE PROVIDED WITH 14" SEISMIC SLOPING ROOF CURB, INSULATED PIPING CABINET FOR PIPING AND VALVES, AND INTAKE AND EXHAUST HOODS.
4. ATC CONTRACTOR SHALL COORDINATE NUMBER OF DAMPER ACTUATORS REQUIRED W/ THE AHU MANUFACTURER. BASE BID ROOF MOUNTED AHU'S REQUIRE TWO (2) DAMPER ACTUATORS ON O.A. INTAKE HOODS.
5. AHU-F5 AND AHU-F6 UNITS SHALL BE FACTORY REINFORCED WITH INTERNALLY LOCATED 14 GA. GALVANIZED G90 SQUARE TUBES TO ADEQUATELY SUPPORT VERTICALLY MOUNTED SECTIONS ABOVE. TUBES SHALL BE LOCATED BETWEEN EXTERNAL SKIN AND INTERNAL LINER AND NOT BE VISIBLE FROM INSIDE OR OUTSIDE THE UNIT.

AIR HANDLING UNIT (SPLIT SYSTEM)SCHEDULE

	LOCATION	SERVING	MANUFACTURER	MODEL & SIZE	TOTAL CFM	MIN. O.A. CFM	SUPPLY FAN DATA: E.S.P. "WC	RPM	SPEED CONTROL	MHP	ELEC. DATA: VOLTS	PH	Hz	RPM	DX COIL DATA: E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	MBH (TOTAL)	MBH (SENS.)	SUCT. TEMP. °F	FACE VEL. FPM	A.P.D. "WC
AHU-01	27 BLDG. LEVEL 8	TYPING LAB 362	TRANE	TWC060A	1800	450	0.875	958	NONE	1.0	460	3	60	1725	78.8	66.0	60.2	56.4	54.0	36.2	44.1	360	----
AHU-02	27 BLDG. LEVEL 8	TYPING LAB 366	TRANE	TWC060A	1800	450	0.875	958	NONE	1.0	460	3	60	1725	78.8	66.0	60.2	56.4	54.0	36.2	44.1	360	----
AHU-03	27 BLDG. LEVEL 8	COMPUTER LAB 283	TRANE	TWC060A	1800	450	0.875	958	NONE	1.0	460	3	60	1725	78.8	66.0	60.2	56.4	54.0	36.2	44.1	360	----
AHU-F1	71 BLDG. MECH. RM.	PE OFFICE	TRANE	TWH048	530	100	.45	HI SPEED	NONE	.25	208	1	60	1725	80	67	58	56	18.1	12.5	48.8	239	----
AHU-F2	71 BLDG. MECH. RM.	PE OFFICE	TRANE	TWH024	620	100	.55	HI SPEED	NONE	.25	208	1	60	1725	80	67	56	54	24.1	15.8	45.5	279	----
AHU-F3	71 BLDG. LEVEL F CLG.	PE OFFICES	TRANE	TWH048	500	125	.49	HI SPEED	NONE	.25	208	1	60	1725	80	67	57	55	17.9	12.1	48.3	225	----
AHU-F4	71 BLDG. LEVEL F CLG.	PE OFFICES	TRANE	TWH024	640	160	.53	HI SPEED	NONE	.25	208	1	60	1725	80	67	57	55	24.3	15.8	45.8	288	----
AHU-01	71 BLDG. LEVEL 8 CLG.	CLASSROOM 611	TRANE	TWC090	2,600	465	0.75	842	NONE	1.5	460	3	60	1725	80	67	59	56.7	84.9	58.8	45	321	----
AHU-02	71 BLDG. LEVEL 8 CLG.	CLASSROOM 610	TRANE	TWC060	2,000	375	0.75	940	NONE	1.0	460	3	60	1725	80	67	60	57.9	58.6	42.8	50	323	----
AHU-03	27 BLDG. LEVEL 8 CLG.	LIBRARY	TRANE	TWC090	3,120	780	0.875	885	NONE	1.5	460	3	60	1725	79	67	61	58	88.8	60.2	----	----	----
AHU-04	27 BLDG. LEVEL 8 CLG.	LIBRARY	TRANE	TWC090	3,120	780	0.875	885	NONE	1.5	480	3	60	1725	79	67	61	58	88.8	60.2	----	----	----
AHU-C1	27 BLDG. LEVEL C CLG.	PROFESSIONAL LIBRARY	TRANE	TWE036	1,000	225	0.67	HI SPEED	NONE	.33	208	1	60	1725	80	67	57.5	55.5	36.2	24.3	45.9	256	----

	HOT WATER COIL DATA: FLUID	E.D.B. °F	L.D.B. °F	E.W.T. °F	L.W.T. °F	MBH	GPM	W.P.D. FT.	FACE VEL. FPM	A.P.D. "WC	CONDENSER UNIT: MODEL	MANUF.	AMBIENT TEMP	COMPRESSOR: HP	PH	VOLTS	E.E.R.	UNIT NO.	REMAR
AHU-01	WATER	52.5	98.4	180	160	89.55	8.95	1	400	0.47	TTA060C4	TRANE	95	14Amp	3	460	8.9	CU-1	Provide with: Low ambient control
AHU-02	WATER	52.5	98.4	180	160	89.55	8.95	1	400	0.47	TTA060C4	TRANE	95	14Amp	3	460	8.9	CU-2	Provide with: Low ambient control
AHU-03	WATER	52.5	98.4	180	160	89.55	8.95	1	400	0.47	TTA060C4	TRANE	95	14Amp	3	460	8.9	CU-3	Provide with: Low ambient control
AHU-F1	WATER	----	----	180	----	----	----	----	----	----	TTP048	TRANE	95	11 Amp	1	208	12.0	CU-4	Provide with: Low ambient control
AHU-F2	WATER	----	----	180	----	----	----	----	----	----	TTP024	TRANE	95	14 Amp	1	208	12.0	CU-5	Provide with: Low ambient control
AHU-F3	WATER	----	----	180	----	----	----	----	----	----	TTP048	TRANE	95	11 Amp	1	208	12.0	CU-6	Provide with: Low ambient control
AHU-F4	WATER	----	----	180	----	----	----	----	----	----	TTP024	TRANE	95	14 Amp	1	208	12.0	CU-7	Provide with: Low ambient control
AHU-01	WATER	57	80	180	160	108	9.6	1	400	.45	TTA090A4	TRANE	95	18.2Amp	3	460	8.9	CU-8	Provide with: Low ambient control
AHU-02	WATER	57	80	180	160	96	8.3	1	400	.70	TTA060C4	TRANE	95	14 Amp	3	460	8.9	CU-9	Provide with: Low ambient control
AHU-03	WATER	52.5	95	180	160	143.8	14.3	1	400	0.44	TTA090A4	TRANE	95	18.2Amp	3	460	8.9	CU-11	Provide with: Low ambient control
AHU-04	WATER	52.5	95	180	160	143.8	14.3	1	400	0.44	TTA090A4	TRANE	95	18.2Amp	3	460	8.9	CU-12	Provide with: Low ambient control
AHU-C1	WATER	----	----	180	----	----	----	----	----	----	TTA036	TRANE	95	8 Amp	3	460	12.0	CU-10	Provide with: Low ambient control

ROOF TOP UNIT SCHEDULE

UNIT NO.	MANUFACTURER	MODEL NO.	LOCATION	SERVING	TOTAL CFM	MIN. OA CFM	COOLING MBH: TOTAL	SENS.	SUPPLY FAN: E.S.P.	RPM	HP	POWER RELIEF FAN (HP)	E.A.T. DB/WB	L.A.T. DB/WB	POWER VOLT/PH	MCA	MIN EER AT AIR CONDITION
RTU-A1	TRANE	7D036D4D	LEVEL A - ROOF	LEVEL A - ART ROOMS	12,000	3,000	356	286	1.5	680	10.0	1.0	76.5/66.0	60.2/57.1	460-3	90.4	9.6
RTU-C1	TRANE	THC102A4	LEVEL-B-ROOF	LARGE GROUP INSTRUCTION 101	3,300	800	95.6	70.9	1.00	887	2.0	1.0	78.0/66	58.1/56.4	460-3	21.4	11.4
RTU-C2	TRANE	THC120A4	LEVEL-B-ROOF	OFFICE/ADMIN.	4,160	600	108.4	85.0	1.25	1064	3.0	1.0	77.0/65	58.5/56.5	460-3	25.3	11.5

* ALL RTU'S ARE HIGH EFFICIENCY

ENERGY RECOVERY COIL LOOP

UNIT NO.	TYPE	MANUFACTURER	LOCATION	MODEL	LEN/WID	VEL.	SERVING	ROWS	FPF	GPM	TURBULATORS	WINTER PERFORMANCE: CFM	MBH	EDB	LDB	APD	WPD	CFM
ERC-1	INTAKE	TRANE	CAFETERIA CLG.	W	60"x42"	419	AHU-01	6	13D	60	YES	7,325	312.5	0	39.6	.58	8.2	7,32
ERC-2	EXHAUST	TRANE	CAFETERIA CLG.	W	60"x42"	419	AHU-01	6	13D	60	YES	7,325	312.2	72	43.6	.46	8.2	7,32
ERC-3	INTAKE	TRANE	CAFETERIA CLG.	W	60"x42"	419	AHU-02	6	13D	60	YES	7,325	313.5	0	39.6	.58	8.2	7,32
ERC-4	EXHAUST	TRANE	CAFETERIA CLG.	W	60"x42"	419	AHU-02	6	13D	60	YES	7,325	312.2	72	43.6	.46	8.2	7,32

NOTE: HEAT RECOVERY LOOP WITH 40% PROPYLENE GLYCOL

APPENDIX D:
EMG ABBREVIATED ACCESSIBILITY CHECKLIST

Property Name: Stamford High School
Date: April 8 - 10, 13, 2009
Project Number: 88166.09R-021.017

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?	✓			
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?				Unknown
6.	Is any litigation pending related to ADA issues?				Unknown
	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?		✓		See Section 3.2
5.	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths, and drop-offs?		✓		
6.	Does signage exist directing you to accessible parking and an accessible building entrance?		✓		

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)	✓	✓		The softball field requires a ramp. See Section 3.2
2.	Are ramps longer than 6 ft complete with railings on both sides?	✓			
3.	Is the width between railings at least 36 inches?	✓			
4.	Is there a level landing for every 30 ft horizontal length of ramp, at the top and at 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?	✓			See Section 3.2
3.	Are floor surfaces firm, stable, and slip resistant (carpets wheelchair friendly)?	✓			
4.	Is at least one wheelchair-accessible public telephone available?			✓	There were no phones in the common areas
5.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	✓			

EMG Abbreviated Accessibility Checklist					
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)?	✓			
5.	Are public restrooms large enough to accommodate a wheelchair turnaround (60″ turning diameter)?	✓			

EMG Abbreviated Accessibility Checklist					
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?			✓	See Section 3.2
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:	**Stamford High School**	**Project Number:**	**88166.09R-021.017**
Person completing form:	**Mr. Rodney Bass, Principal Mr. Thomas McIntosh, Custodian**	**Date:**	**April 8 - 10, 13, 2009**
Association with Project:		**Phone Number:**	**203.977.4226**
Years associated w/Proj.:	**Two and twelve years**	**Fax Number:**	**203.977.4252**
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?					
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?	✓				
6. Has the property ever had an ADA accessibility review?	✓				
If so, is a copy available?					
7. Does a Barrier removal plan exist for the property?		✓			
8. Are there any unresolved accessibility issues at the property?			✓		
9. Is there any pending litigation concerning the property?			✓		
10. Is site drainage adequate?					
11. Has a termite inspection occurred within the last year?	✓				
Is a copy of an inspection report available?					
12. Are there any problems with foundations or structures?		✓			
If so, are there plans to address?					
13. Is there any water infiltration in basements or crawl spaces?	✓				
14. Are there any wall or window leaks?	✓				
15. Are there any poorly insulated areas?		✓			
16. Are there any current roof leaks at the property?	✓				
17. Are any roof finishes more than ten years old?	✓				
18. Is the roofing covered by a warranty or bond?	✓				
19. Is Fire Retardant Treated (FRT) plywood used at the property?		✓			
20. Does the property have an exterior insulation and finish system (EIFS) with a synthetic stucco finish	✓				

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

	Yes	No	Unk	NA	Comments
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.	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.
2. A site plan, preferably 8 1/2" X 11", which depicts the arrangement of buildings, roads, parking stalls, and other site features.	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.
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).	10. Records of system & material ages (roof, MEP, paving, finishes, and furnishings).
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.	11. Any brochures or marketing information.
5. For hotel or nursing home properties, provide a summary of the room types and room type quantities.	12. Appraisal, either current or previously prepared.
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.	13. Current occupancy percentage and typical turnover rate records (for commercial and apartment properties).
7. The names of the local utility companies which serve the property, including the water, sewer, electric, gas, and phone companies.	14. Previous reports pertaining to the physical condition of property.
	15. ADA survey and status of improvements implemented.
	16. Current / pending litigation related to property condition.

Your timely compliance with this request is greatly appreciated.

APPENDIX F:
ACRONYMS AND OUT OF SCOPE ITEMS

ASTM E2018-01 ACRONYMS

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

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

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

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

APPENDIX G:
RESUMES FOR REPORT REVIEWER AND FIELD OBSERVER

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.

JOSEPH ABBATE

Project Manager

Education

- Bachelor of Science in Mechanical Engineering from Rutgers University, College of Engineering in 1985

Project Experience

- ***Durham Housing Authority, Durham, NC –*** As a Field Technician, Mr. Abbate performed a Physical (Capital) Needs Assessment for seven public housing developments. The largest development consisted of sixty buildings with 360 units, totaling 336,400 square feet on 25 acres. He reviewed the condition of the site, building structure and systems and developed a thorough report with a twenty-year evaluation period. His work helped EMG complete this project on schedule and within the budget.
- ***The Carlyle Hotel, New York, NY –*** As a Field Technician, Mr. Abbate performed a Property (Equity) Condition Assessment of the historical hotel consisting of 187 guest rooms within the 38 story building. 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.
- ***300 and 306 West 22nd Street Hotel and Apartments, New York, NY –*** As a Field Technician, Mr. Abbate provided construction management services for partial demolition and complete restoration of the existing hotel. The services were provided to near completion of the 8 million dollar budget hotel. He reviewed the construction work, budget and rate of completion on a monthly basis and developed a thorough report. His work helped EMG complete this project on schedule and within the budget.
- ***Bank of America, Sky Portfolio, New York, NY –*** As a Field Technician, Mr. Abbate performed a Property Condition Assessment for numerous prestigious high-rise commercial office buildings within Manhattan. 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.

Industry Tenure

- A/E: 1995
- EMG: 2005

Related Experience

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

Industry Experience

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

Special Skills & Training

- AutoCAD
- Phase I Environmental Site Assessments
- Phase II Site Remediation and Techniques

Regional Location

- New York, NY

KEVIN M. LANTRY

Project Manager

Education

- BS, Mechanical Engineering, Purdue University School of Mechanical Engineering, 2003

Project Experience

- **Kettering Tower, Dayton, OH –** Project Manager. Completed a Property Condition Assessment of this 30-story building in downtown Dayton. The 486,000 square foot facility contains office and retail space and an attached six level parking garage.
- **Two Illinois Center, Chicago, IL –** Project Manager. Completed an Equity Level Property Condition Evaluation of this 32-story building in Chicago's East Loop office district. The 1.2 million square foot facility contains office and retail space along with a four level subterranean parking garage.
- **Orange County Parks Depreciation Study, Orange County, CA** – Project Manager. Performed facility assessments on over 20 harbor, beach and park properties, including recreational facilities, maintenance facilities, and offices. Compiled data into individual Property Condition Reports, which included a Depreciation Study and 10-year Capital Plan for each facility.
- **Mark to Market Green PCAs, Various Locations –** Project Manager. Completed multiple Mark to Market Green PCAs per Housing and Urban Development (HUD) protocol. Reports included standard Mark to market assessments with energy audits and recommendations for sustainability.
- **Alan Bible Federal Building, Las Vegas, NV –** Project Manager. Completed a Level IV Web Building Engineering Report (BER) for the US Government General Services Administration. Evaluated the mechanical, plumbing, and elevator systems as part of the assessment team sent by EMG to analyze all building components.
- **First Energy Facility Assessments, Multiple Sites, PA -** Project Manager. Performed facility assessments on over forty sites for a large electric utility in central and eastern Pennsylvania. Evaluated a wide range of sites, including district offices, regional headquarters and maintenance facilities. Compiled results into individual Facility Condition Reports and EMG's Assetcalc software to be used by the client for capital planning and facility investment purposes.

Industry Tenure

- A/E: 2001
- EMG: 2004

Related Experience

- GSA Assessment Team

Industry Experience

- Industrial
- Commercial
- Multi-family Residential

Special Skills & Training

- ISO 9000
- AutoCAD
- VFA.Facility Certified
- Cross Trained for Environmental Assessments

Memberships

- ASHRAE
- ASME

Regional Location

- Indianapolis, IN