FACILITIES NEEDS
ASSESSMENT

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

FACILITIES NEEDS ASSESSMENT
OF
WESTHILL HIGH SCHOOL
125 Roxbury Road
Stamford, Connecticut 06902

PREPARED BY:

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EMG Project #:	88166.09R-020.017
Date of Report:	August 30, 2009
On site Date:	April 21 - 23, 2009

Replacement Reserves Report
High Schools / Westhill High School / New AgriScience Building
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%

High Schools / Westhill High School / New AgriScience Building

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
5.3	4507	Re-grading landscape and establishment of ground cover	25	25	0	200	SY	$11.48	$2,296	$2,296										**$2,296**
6.3	4758	Replace painted gypsum board soffit	0	0	0	4	CSF	$1,228.50	$4,914	$4,914										**$4,914**
6.3	4756	Built-up roofing, Place insulation and new membrane over existing	15	12	3	5	SQ	$826.33	$4,132				$4,132							**$4,132**
6.4	4766	Waterproof concrete wall	10	7	3	60	CSF	$282.87	$16,972				$16,972							**$16,972**
6.8	5322	Paint interior walls, CMU,including surface prep	7	5	2	40000	SF	$1.12	$44,856			$44,856							$44,856	**$89,712**
6.8	5324	Replace carpet - standard commercial	8	6	2	220	SY	$63.23	$13,910			$13,910								**$13,910**
7.1	4565	Replace air cooled condenser, 50 ton	15	7	8	1	EA	$30,429.00	$30,429									$30,429		**$30,429**
7.1	5349	Air Handler rooftop 30,000 CFM	15	7	8	1	EA	$25,593.12	$25,593									$25,593		**$25,593**
7.1	4555	Circulation Pump 7.5 HP	20	13	7	4	EA	$6,892.20	$27,569								$27,569			**$27,569**
7.1	5337	Condenser, roof-mounted, 10-ton	15	7	8	1	EA	$16,584.12	$16,584									$16,584		**$16,584**
7.1	5338	Condenser, roof-mounted, 25-ton	15	7	8	1	EA	$37,919.70	$37,920									$37,920		**$37,920**
Totals, Unescalated										**$7,210**	**$0**	**$58,766**	**$21,104**	**$0**	**$0**	**$0**	**$27,569**	**$110,526**	**$44,856**	**$270,030**
Soft Costs:																				
Architectural/Consultant Fees (10.0%)										**$721**	**$0**	**$5,877**	**$2,110**	**$0**	**$0**	**$0**	**$2,757**	**$11,053**	**$4,486**	**$27,003**
General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)										**$721**	**$0**	**$5,877**	**$2,110**	**$0**	**$0**	**$0**	**$2,757**	**$11,053**	**$4,486**	**$27,003**
Prevailing Wage/Labor Compliance (5.0%)										**$360**	**$0**	**$2,938**	**$1,055**	**$0**	**$0**	**$0**	**$1,378**	**$5,526**	**$2,243**	**$13,502**
Contingency (5.0%)										**$360**	**$0**	**$2,938**	**$1,055**	**$0**	**$0**	**$0**	**$1,378**	**$5,526**	**$2,243**	**$13,502**
Location Factor (1.11)										**$771**	**$0**	**$6,288**	**$2,258**	**$0**	**$0**	**$0**	**$2,950**	**$11,826**	**$4,800**	**$28,893**
Totals, Escalated (see inflation table above)										**$10,144**	**$0**	**$88,571**	**$33,080**	**$0**	**$0**	**$0**	**$52,526**	**$221,110**	**$94,222**	**$499,653**

* Markup has been included in unit costs.

High Schools / Westhill High School / Old AgriScience Building

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
6.2	4928	Wood Timber/Framing Structural Repair	0	0	0	1	EA	$8,190.00	$8,190	$8,190										**$8,190**
6.3	4755	Metal steep roofing, minor finish repairs - (2% of roof area)	5	5	0	300	SF	$4.57	$1,372	$1,372										**$1,372**
6.6	4790	Replace aluminum storefront 10' tall w/o door	25	24	1	432	SF	$42.34	$18,289		$18,289									**$18,289**
6.6	4791	Replace 3'-0" x 7'-0" steel, painted, door	45	39	6	6	EA	$769.23	$4,615							$4,615				**$4,615**
6.8	5320	Paint interior walls, CMU,including surface prep	7	4	3	10000	SF	$1.12	$11,214			$11,214								**$11,214**
6.8	5319	Replace Vinyl tile	18	10	8	350	SY	$81.90	$28,665									$28,665		**$28,665**
7.2	4550	Replace hydronic circulating pump, 2 HP	20	11	9	2	EA	$6,544.44	$13,089										$13,089	**$13,089**
Totals, Unescalated										**$9,562**	**$18,289**	**$0**	**$11,214**	**$0**	**$0**	**$4,615**	**$0**	**$28,665**	**$13,089**	**$85,435**
Soft Costs:																				
Architectural/Consultant Fees (10.0%)										**$956**	**$1,829**	**$0**	**$1,121**	**$0**	**$0**	**$462**	**$0**	**$2,867**	**$1,309**	**$8,543**
General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)										**$956**	**$1,829**	**$0**	**$1,121**	**$0**	**$0**	**$462**	**$0**	**$2,867**	**$1,309**	**$8,543**
Prevailing Wage/Labor Compliance (5.0%)										**$478**	**$914**	**$0**	**$561**	**$0**	**$0**	**$231**	**$0**	**$1,433**	**$654**	**$4,272**
Contingency (5.0%)										**$478**	**$914**	**$0**	**$561**	**$0**	**$0**	**$231**	**$0**	**$1,433**	**$654**	**$4,272**
Location Factor (1.11)										**$1,023**	**$1,957**	**$0**	**$1,200**	**$0**	**$0**	**$494**	**$0**	**$3,067**	**$1,401**	**$9,141**
Totals, Escalated (see inflation table above)										**$13,454**	**$26,505**	**$0**	**$17,578**	**$0**	**$0**	**$8,375**	**$0**	**$57,345**	**$27,494**	**$150,750**

* Markup has been included in unit costs.

High Schools / Westhill High School

Replacement Reserves Report
High Schools / Westhill High School / New AgriScience Building
8/30/2009

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
Totals, Unescalated										$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Soft Costs:																				
		Architectural/Consultant Fees (10.0%)								$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)								$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Prevailing Wage/Labor Compliance (5.0%)								$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Contingency (5.0%)								$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Location Factor (1.11)										$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Totals, Escalated (see inflation table above)										$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

* Markup has been included in unit costs.

High Schools / Westhill High School / Westhill High School - Main Building

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
1.2	4713	Measured ADA Study of Property	0	0	0	1	EA	$6,930.00	$6,930	$6,930										**$6,930**
1.2	4715	Mold Study at Buildings	0	0	0	1	EA	$3,339.00	$3,339	$3,339										**$3,339**
1.2	4458	HVAC system study	0	0	0	1	EA	$9,135.00	$9,135	$9,135										**$9,135**
3.1	4730	ADA cane detection barrier rails	30	30	0	2	PR	$144.90	$290	$290										**$290**
3.1	4728	Replace school door knobs with ADA lever	20	20	0	350	EA	$682.92	$239,022	$239,022										**$239,022**
3.1	4738	ADA, Renovate restroom for full compliance	20	20	0	1	EA	$30,240.00	$30,240	$30,240										**$30,240**
3.1	4736	ADA, Renovate restroom for full compliance	20	19	1	6	EA	$15,120.00	$90,720		$90,720									**$90,720**
3.1	6621	ADA Compliant Wheelchair Lift Installation	0	0	0	1	EA	$22,680.00	$22,680	$22,680										**$22,680**
3.1	4734	Set up for Elevator equipment for speech impaired communication	0	0	0	2	EA	$7,056.00	$14,112	$14,112										**$14,112**
3.1	4732	Add ADA raised markings at elevator control panel, jambs and hall buttons	0	0	0	2	Floor	$693.00	$1,386	$1,386										**$1,386**
3.1	4723	ADA, Install curb cut, concrete, 6" rise	25	25	0	1	EA	$1,164.34	$1,164	$1,164										**$1,164**
3.1	4939	ADA, Parking lot access aisle striping	0	0	0	40	LF	$8.19	$328	$328										**$328**
3.1	4717	ADA - Install signage indicating Accessible Parking, pole mounted	20	19	1	3	EA	$134.01	$402		$402									**$402**
3.1	4719	ADA, install/replace signage giving direction to accessible entrance	0	0	0	2	Sign	$134.01	$268	$268										**$268**
3.1	6624	Westhill HS - Baseball, Soccer, and Tennis Court Access Improvement Allowance	0	0	0	1	EA	$37,800.00	$37,800	$37,800										**$37,800**
3.1	4726	ADA, install new H/C access ramp, 3' wide, railings both sides	25	25	0	74	LF	$604.88	$44,761	$44,761										**$44,761**
3.1	4804	ADA, install 2 - rail, 1-1/2" handrail on exterior ramp, wall mounted, one side	20	20	0	34	LF	$106.39	$3,617	$3,617										**$3,617**
5.2	4498	Overlay asphalt	10	7	3	26	1000 SF	$963.02	$25,038				$25,038							**$25,038**
5.2	4499	Seal Coat and stripe asphalt, no repairs	5	1	4	17	10000 SF	$4,315.53	$73,364					$73,364					$73,364	**$146,728**
5.2	4497	Repair and Seal Coat asphalt	5	4	1	3	10000 SF	$5,848.92	$17,547		$17,547					$17,547				**$35,094**
5.2	4505	Replace asphalt curbs	10	9	1	100	LF	$14.63	$1,463		$1,463									**$1,463**
5.2	4504	Replace concrete curbs	25	24	1	175	LF	$38.12	$6,670		$6,670									**$6,670**
5.2	4503	Remove & replace 4' wide concrete sidewalk	25	24	1	800	LF	$40.65	$32,518		$32,518									**$32,518**
5.2	4500	Replace cast-in-place concrete stairs, no rails,including demo	25	24	1	300	LF Nosing	$38.28	$11,484		$11,484									**$11,484**
5.4	4510	Re-grading landscape and establishment of ground cover	25	24	1	300	SY	$11.48	$3,444		$3,444									**$3,444**
5.5	5321	Pool Filter	15	12	3	1	EA	$4,032.00	$4,032				$4,032							**$4,032**
5.5	4618	Pool Boiler, Gas-fired 752 MBH	35	34	1	1	EA	$40,729.50	$40,730		$40,730									**$40,730**
5.5	4512	High pressure sodium fixture 250 W	20	20	0	3	EA	$1,239.56	$3,719	$3,719										**$3,719**
5.5	4635	High pressure sodium fixture 250 W	20	20	0	25	EA	$1,239.56	$30,989	$30,989										**$30,989**
5.5	5300	Regrout pool tile	15	12	3	10000	SF Surf.	$19.73	$197,316				$197,316							**$197,316**
5.5	4516	Replace chain link fence, 8-foot high	20	19	1	1100	LF	$64.58	$71,033		$71,033									**$71,033**

Replacement Reserves Report
High Schools / Westhill High School / New AgriScience Building
8/30/2009

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
5.5	4542	Replace chain link fence tennis courts	25	16	9	1100	LF	$39.40	$43,340										$43,340	**$43,340**
5.5	4524	Replace bleacher, outdoor portable, 3 to 5 tiers, per seat	20	11	9	80	Seat	$116.80	$9,344										$9,344	**$9,344**
5.5	4517	Re-grading and establishment of ground cover at playing field	25	24	1	4	1000 SF	$3,222.80	$12,891		$12,891									**$12,891**
5.5	4525	Replace bleacher, outdoor portable, 3 to 5 tiers, per seat	20	19	1	96	Seat	$116.80	$11,213		$11,213									**$11,213**
5.5	4518	Re-grading and establishment of ground cover at playing field	25	24	1	8	1000 SF	$3,222.80	$25,782		$25,782									**$25,782**
5.5	4522	Replace baseball backstop, large	20	17	3	2	EA	$11,748.24	$23,496				$23,496							**$23,496**
5.5	4520	Replace exterior wood bench, 8' long	15	8	7	4	EA	$1,512.00	$6,048								$6,048			**$6,048**
5.5	4540	Resurface asphalt tennis court	7	2	5	6	Court	$8,492.40	$50,954						$50,954					**$50,954**
5.5	4691	Replace Aluminum light pole, pole and base only	20	20	0	1	EA	$3,640.85	$3,641	$3,641										**$3,641**
5.5	4637	New Aluminum pole-mounted double light 400 W HPS fixture and pole	0	0	0	8	EA	$8,651.16	$69,209	$69,209										**$69,209**
6.3	4761	Snow Guards on Standing Seam metal roof	15	15	0	200	EA	$37.72	$7,545	$7,545										**$7,545**
6.3	17101	Stamford Roof Assessment - EPDM Replacement	20	17	3	147	SQ	$1,631.21	$239,788				$239,788							**$239,788**
6.3	17097	Stamford Roof Assessment - BUR Roof Replacement	20	18	2	13	SQ	$1,666.67	$21,667			$21,667								**$21,667**
6.3	17094	Stamford Roof Assessment Roof Repair Recommendations	0	0	0	1	EA	$3,546.90	$3,547	$3,547										**$3,547**
6.4	4768	Recaulk expansion and control joints up to 1/2" wide	10	8	2	3000	LF	$16.58	$49,745			$49,745								**$49,745**
6.4	4763	Repair Brick Veneer - first level	0	0	0	3000	SF	$75.64	$226,913	$226,913										**$226,913**
6.4	4765	Remove and replace retaining wall, cast in place concrete, reinforced, up to 6' high, no shoring or protection	50	49	1	32	LF	$708.02	$22,657		$22,657									**$22,657**
6.5	5395	Add ADA handrail extensions to existing metal handrails	30	30	0	24	EA	$441.00	$10,584	$10,584										**$10,584**
6.6	4785	Replace 6' x 3' aluminum window upper floor	25	24	1	307	EA	$2,232.72	$685,445		$685,445									**$685,445**
6.6	4787	Replace 2' x 3' aluminum window fixed	25	23	2	299	EA	$738.36	$220,770			$220,770								**$220,770**
6.6	4789	Replace aluminum storefront 10' tall w/o door	25	23	2	880	SF	$42.34	$37,256			$37,256								**$37,256**
6.6	4795	Replace 3'-0" x 7'-0" aluminum storefront doors	50	48	2	8	EA	$2,588.67	$20,709			$20,709								**$20,709**
6.6	4793	Replace 3'-0" x 7'-0" steel, insulated core, ptd. door	45	45	0	4	EA	$1,383.48	$5,534	$5,534										**$5,534**
6.6	4792	Replace 3'-0" x 7'-0" steel, insulated core, ptd. door	45	40	5	45	EA	$1,383.48	$62,257						$62,257					**$62,257**
6.6	4797	Replace 12' x 12' steel roll-up door	35	30	5	7	EA	$4,888.80	$34,222						$34,222					**$34,222**
6.6	5398	Rekey exsiting locks and new Master Key system	30	30	0	350	Door	$79.83	$27,942	$27,942										**$27,942**
6.6	4800	Replace loading dock bumpers 6"thick 10" high 36"long	10	8	2	12	EA	$242.30	$2,908			$2,908								**$2,908**
6.6	5282	Remove and replace Vertical blinds PVC	5	4	1	13205	SF	$12.37	$163,388		$163,388					$163,388				**$326,776**
6.6	4802	Epoxy Mortar Repair for Concrete Structure	0	0	0	200	SF	$472.50	$94,500	$94,500										**$94,500**
6.7	4807	Replace damaged concrete	30	30	0	15	SY	$450.99	$6,765	$6,765										**$6,765**
6.8	4818	Paint interior walls, CMU,including surface prep	7	4	3	200000	SF	$1.12	$224,280				$224,280							**$224,280**
6.8	4821	Replace existing drywall	50	49	1	2000	SF	$5.07	$10,130		$10,130									**$10,130**
6.8	4819	Sand and refinish hardwood floor	10	3	7	42500	SF	$6.93	$294,525								$294,525			**$294,525**
6.8	4823	Replace 4x4 ceramic tile	30	29	1	40	CSF	$1,862.28	$74,491		$74,491									**$74,491**
6.8	4814	Replace Vinyl tile	18	10	8	13500	SY	$81.90	$1,105,650									$1,105,650		**$1,105,650**
6.8	4811	Replace carpet - standard commercial	8	3	5	1750	SY	$63.23	$110,647						$110,647					**$110,647**
6.8	4820	Replace acoustical ceiling tile system, fire rated,including demo	20	16	4	1867	CSF	$627.48	$1,171,505					$1,171,505						**$1,171,505**
6.8	6594	Asbestos floor tile and mastic removal	0	0	0	13500	SF	$4.10	$55,283	$55,283										**$55,283**
7.1	4619	Gas service for boiler conversion to gas	40	39	1	1400	LF	$75.29	$105,399		$105,399									**$105,399**
7.1	5308	Replace heating water distribution pump 10 HP	15	9	6	5	EA	$12,050.64	$60,253							$60,253				**$60,253**
7.1	4545	Install Air-Conditioning at entire building	30	29	1	200000	SF	$16.22	$3,243,240		$3,243,240									**$3,243,240**
7.1	4588	Replace air handler 8,000 to 12,000 CFM	20	19	1	8460	CFM	$1.68	$14,177		$14,177									**$14,177**

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8/30/2009

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7.1	5346	Air handler 13,000 to 15,000 CFM	15	14	1	1	EA	$12,341.70	$12,342		$12,342									**$12,342**
7.1	4582	Replace air handler 4,000 to 8,000 CFM	20	19	1	5900	CFM	$3.78	$22,302		$22,302									**$22,302**
7.1	5358	air handler 3600-3800 CFM	15	14	1	1	EA	$7,853.58	$7,854		$7,854									**$7,854**
7.1	5355	Air handler 18000-20,000 CFM	15	14	1	1	EA	$17,837.82	$17,838		$17,838									**$17,838**
7.1	4586	Replace air handler 2500-3000 CFM	15	14	1	1	EA	$4,037.04	$4,037		$4,037									**$4,037**
7.1	5353	Replace air handler 2500-3000 CFM	15	14	1	1	EA	$4,037.04	$4,037		$4,037									**$4,037**
7.1	5356	Air handler 18000-20,000 CFM	15	14	1	1	EA	$17,837.82	$17,838		$17,838									**$17,838**
7.1	4579	Replace air handler 30,000 CFM	20	19	1	1	EA	$14,587.02	$14,587		$14,587									**$14,587**
7.1	4575	Replace air handler 8,000 to 12,000 CFM	20	19	1	10325	CFM	$1.68	$17,303		$17,303									**$17,303**
7.1	5352	Air handler 20,000-22,000 CFM	15	14	1	1	EA	$19,618.20	$19,618		$19,618									**$19,618**
7.1	4587	Replace air handler 8,000 to 12,000 CFM	20	19	1	8000	CFM	$1.68	$13,406		$13,406									**$13,406**
7.1	5351	Air-handler 300 CFM	15	14	1	1	EA	$919.80	$920		$920									**$920**
7.1	4577	Replace air handler 4,000 to 8,000 CFM	20	19	1	4000	CFM	$3.78	$15,120		$15,120									**$15,120**
7.1	4580	Replace air handler 4,000 to 8,000 CFM	20	19	1	4000	CFM	$3.78	$15,120		$15,120									**$15,120**
7.1	5354	Air handler 13,000 to 15,000 CFM	15	14	1	1	EA	$12,341.70	$12,342		$12,342									**$12,342**
7.1	5357	Air handler 18000-20,000 CFM	15	14	1	1	EA	$17,837.82	$17,838		$17,838									**$17,838**
7.1	5348	air handler 3600-3800 CFM	15	14	1	1	EA	$7,853.58	$7,854		$7,854									**$7,854**
7.1	4563	Replace Unit Ventilator 1250 CFM	15	14	1	131	EA	$9,683.10	$1,268,486		$1,268,486									**$1,268,486**
7.1	5347	Replace air handler 1,500 to 2,500 CFM	20	19	1	2370	CFM	$2.23	$5,286		$5,286									**$5,286**
7.1	4584	Replace air handler 4,000 to 8,000 CFM	20	19	1	4600	CFM	$3.78	$17,388		$17,388									**$17,388**
7.1	4581	Replace air handler 8,000 to 12,000 CFM	20	19	1	8910	CFM	$1.68	$14,931		$14,931									**$14,931**
7.1	5306	Circulation Pump 5 HP	20	14	6	5	EA	$6,424.74	$32,124							$32,124				**$32,124**
7.1	4562	Circulation Pump 15 HP	20	14	6	2	EA	$9,215.64	$18,431							$18,431				**$18,431**
7.1	5304	Circulation Pump 15 HP	20	14	6	4	EA	$9,215.64	$36,863							$36,863				**$36,863**
7.1	5359	Retrofit of HVAC and Controls	0	0	0	23	EA	$10,080.00	$231,840	$231,840										**$231,840**
7.1	6595	Asbestos duct insulation	0	0	0	5000	SF	$18.02	$90,090	$90,090										**$90,090**
7.2	4496	Replace flush valve & water closet	25	24	1	65	EA	$1,123.59	$73,034		$73,034									**$73,034**
7.2	4495	Replace urinal	35	33	2	16	EA	$1,277.51	$20,440			$20,440								**$20,440**
7.2	4494	Replace china wall hung lavatory and faucet	35	34	1	70	EA	$807.16	$56,501		$56,501									**$56,501**
7.2	4493	Replace china wall hung lavatory and faucet	35	35	0	9	EA	$807.16	$7,264	$7,264										**$7,264**
7.2	4491	Replace drinking fountain	10	9	1	12	EA	$1,505.70	$18,068		$18,068									**$18,068**
7.2	4492	Replace drinking fountain	10	5	5	12	EA	$1,505.70	$18,068						$18,068					**$18,068**
7.2	4666	Replace 2-inch copper pipe	25	23	2	2400	LF	$62.31	$149,537			$149,537								**$149,537**
7.2	5653	Replace Domestic water boiler, 496 MBH	30	29	1	1	EA	$13,104.00	$13,104		$13,104									**$13,104**
7.2	5650	Replace Domestic water boiler, 2,052 MBH	30	29	1	2	EA	$23,310.00	$46,620		$46,620									**$46,620**
7.2	5652	Replace Domestic water boiler, 739 MBH	30	29	1	1	EA	$15,246.00	$15,246		$15,246									**$15,246**
7.2	5654	Replace Domestic water boiler, 328 MBH	20	19	1	1	EA	$10,647.00	$10,647		$10,647									**$10,647**
7.2	5655	Replace Domestic water boiler, 205 MBH	20	19	1	1	EA	$7,150.50	$7,151		$7,151									**$7,151**
7.2	4852	Replace cast iron pipe 6"	40	38	2	1200	LF	$71.09	$85,307			$85,307								**$85,307**
7.2	4664	Replace cast iron pipe 4"	40	38	2	2400	LF	$64.70	$155,282			$155,282								**$155,282**
7.4	4490	Breaker panel 225 amps, 32 circuits	40	39	1	3	EA	$3,445.85	$10,338		$10,338									**$10,338**
7.4	6585	Capital Plan - Public Address System Upgrade	0	0	0	388800	SF	$0.63	$244,944	$244,944										**$244,944**

Replacement Reserves Report
High Schools / Westhill High School / New AgriScience Building
8/30/2009

Report Section	ID	Cost Description	Lifespan (EUL)	Observed Age (EAge)	Remaining Life (RUL)	Quantity	Unit	Unit Cost *	Subtotal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Deficiency Repair Estimate
7.4	4486	Replace Diesel Generator 100KW	25	24	1	1	EA	$53,844.15	$53,844		$53,844									**$53,844**
7.4	6593	Asbestos electrical insulation, removal 300 LF	0	0	0	1	EA	$5,733.00	$5,733	$5,733										**$5,733**
7.4	5293	UST, Steel, Fuel oil storage, 550 gallon	25	24	1	1	EA	$37,918.44	$37,918		$37,918									**$37,918**
7.5	4680	Elevator hydraulic system, replace, 3,500 lb capacity	25	25	0	1	EA	$19,492.20	$19,492	$19,492										**$19,492**
7.5	4484	Replace elevator hydraulic system, 2000 lb capacity	25	24	1	1	EA	$18,165.42	$18,165		$18,165									**$18,165**
7.6	5623	Water tank for fire sprinklers, 10,000 gal	30	25	5	1	EA	$27,058.50	$27,059						$27,059					**$27,059**
7.6	4468	Install Ansul System at kitchen hood	20	20	0	3	EA	$6,142.50	$18,428	$18,428										**$18,428**
8.1	6598	Fire door, wood, flush, 60 minute, incl. demo, with hardware	24	21	3	350	EA	$1,197.00	$418,950				$418,950							**$418,950**
8.1	5396	Capital Plan - Replace base cabinet w/drawer and acidproof tops	0	0	0	1440	LF	$706.86	$1,017,878	$1,017,878										**$1,017,878**
8.2	4459	Replace commercial dryers 50lb	20	17	3	2	EA	$5,589.91	$11,180				$11,180							**$11,180**
8.2	4460	Replace commercial washers 50lb	20	11	9	1	EA	$16,343.80	$16,344										$16,344	**$16,344**
8.2	4466	Replace cooler 6' long	15	6	9	3	EA	$5,898.46	$17,695										$17,695	**$17,695**
8.2	4465	Replace Reach in refrigerator 68 CF	15	6	9	3	EA	$8,884.56	$26,654										$26,654	**$26,654**
Totals, Unescalated										**$2,596,912**	**$6,531,904**	**$763,620**	**$1,144,080**	**$1,244,869**	**$303,206**	**$328,606**	**$300,573**	**$1,105,650**	**$186,741**	**$14,506,162**
Soft Costs:																				
Architectural/Consultant Fees (10.0%)										**$259,691**	**$653,190**	**$76,362**	**$114,408**	**$124,487**	**$30,321**	**$32,861**	**$30,057**	**$110,565**	**$18,674**	**$1,450,616**
General Requirements (Bonds, Insurance, GC/CM Mark-up) (10.0%)										**$259,691**	**$653,190**	**$76,362**	**$114,408**	**$124,487**	**$30,321**	**$32,861**	**$30,057**	**$110,565**	**$18,674**	**$1,450,616**
Prevailing Wage/Labor Compliance (5.0%)										**$129,846**	**$326,595**	**$38,181**	**$57,204**	**$62,243**	**$15,160**	**$16,430**	**$15,029**	**$55,283**	**$9,337**	**$725,308**
Contingency (5.0%)										**$129,846**	**$326,595**	**$38,181**	**$57,204**	**$62,243**	**$15,160**	**$16,430**	**$15,029**	**$55,283**	**$9,337**	**$725,308**
Location Factor (1.11)										**$277,870**	**$698,914**	**$81,707**	**$122,417**	**$133,201**	**$32,443**	**$35,161**	**$32,161**	**$118,305**	**$19,981**	**$1,552,159**
Totals, Escalated (see inflation table above)										**$3,653,855**	**$9,466,101**	**$1,150,912**	**$1,793,307**	**$2,048,854**	**$523,980**	**$596,267**	**$572,671**	**$2,211,883**	**$392,260**	**$22,410,090**

* Markup has been included in unit costs.

Cost Comparison Between JMOA Capital Plan and EMG Replacement Reserves						
Westhill High						
Client - Project Name	Client Cost	EMG Cost	EMG Shortage	Out of Scope?	Is work completed?	EMG Cost Comments
Replace handrails	$38,086	$14,201	$23,885	No	No	JMOA Scope not defined
Repair and resurface walkways and parking lots	$384,637	$156,600	$228,037	No	No	Cost seems high
Replace perimeter fencing and backstops	$87,016	$94,529	-$7,513	No	No	
Repair selected window units and install new screens	$68,019	$906,215	-$838,196	No	No	
Install new window treatment throughout school	$163,353	$163,388	-$35	No	No	
Perform selected masonry restoration and brick repointing	$255,863	$226,913	$28,950	No	No	
Replace doors and hardware	$176,825	$418,950	-$242,125	No	No	
Replace selected flooring	$126,459	$1,553,397	-$1,426,938	No	No	
Improve master lock system	$84,287	$33,131	$51,156	No	No	
Replace damaged flooring and paint walls at stairwells	$32,426	$0	$32,426	No	No	No deficiency noted some flooring replacement costs captured under 3.1 and 6.8
Repair or replace stage rigging equipment	$231,613	$189,000	$42,613	No	No	
Replace selected science lab cabinetry	$825,092	$1,017,878	-$192,786	No	No	
Renovate finishes in all toilet rooms	$220,137	$259,216	-$39,079	No	No	EMG allowance does not include toilets and urinals. See below. ADA upgrades included.
Paint selected areas throughout school	$209,626	$280,350	-$70,724	No	No	
Reconfigure classroom spaces	$319,970	$0	$319,970	No	No	JMOA Scope not defined
Replace toilet fixtures	$200,345	$93,474	$106,871	No	No	Cost seems high
Repair or replace leaking piping	$115,875	$0	$115,875	No	No	See allowance below
Upgrade pool system equipment	$91,388	$44,762	$46,626	No	No	Cost seems high
Repair or replace water distribution piping	$363,677	$149,537	$214,140	No	No	Cost seems high. JMOA Scope not defined
Replace water fountains	$29,917	$36,136	-$6,219	No	No	
Replace all pumps, circulators, and valves	$23,552	$13,089	$10,463	No	No	
Upgrade and replace equipment to improve heat	$465,808	$810,210	-$344,402	No	No	
Replace PA system	$289,993	$244,944	$45,049	No	No	
Repair and upgrade exterior lighting as needed	$74,469	$103,917	-$29,448	No	No	

	JMOA Cost	EMG Cost	Shortage
	$4,878,433	$14,861,627	-$9,983,194
less completed items	$4,878,433		
Soft Costs (30%)		$4,458,488	
Location factor(11%)		$1,634,779	
Totals(Unescalated)		$20,954,894	-$16,076,461

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CERTIFICATION

EMG has completed a Comprehensive Facilities Needs Assessment of the subject property, Westhill High School, located at 125 Roxbury Road, in Stamford, 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.

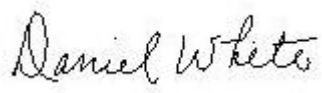
No testing, exploratory probing, dismantling or operating of equipment or in depth studies were performed unless specifically required under Section 2 of this report. This evaluation did not include engineering calculations to determine the adequacy of the Property's original design or existing systems.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

Reviewed by: 

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

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:	125 Roxbury Road, Stamford, Fairfield County, Connecticut, 06902
Year constructed:	Main Building – 1971 New AgriScience Building - 2002 Old AgriScience Building – approximately 1970's to 1980's
Current owner of property:	City of Stamford
School occupying building:	Westhill 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:	32.43 acres
Gross floor area:	Main Building – 341,000 Square Feet New AgriScience Building – 42,300 Square Feet Old AgriScience Building – 5,500 Square Feet
Number of buildings:	Three
Number of stories:	One to three
Parking type and number of spaces:	449 spaces in open lots
Building construction:	Main Building – Steel frame with cast-in-place concrete waffle slab flooring and roof, and steel joist and beam roofing with metal decking New AgriScience Building - Steel frame with concrete-topped metal decks Old AgriScience Building – Concrete masonry unit bearing walls with wood timber trusses and joists, and wood decking and with steel joists and metal decking

Property Information	
Bay Column Spacing:	Approximately 12′ to 17′-4″
Interior vertical clearance:	Ranges from 9′-0″ to 13′-6″ to 22′-2½″ Feet
Roof construction:	Main Building – flat roofs with single ply membrane New AgriScience Building - flat roofs with built-up roofing with asphaltic wearing layer Old AgriScience Building – flat roofs with built-up roofing and single ply membrane and sloped roof with standing seam metal
Exterior Finishes:	Main Building - Brick veneer and cast in place and pre-cast concrete panels New AgriScience Building - pre-cast concrete panels and curtain wall Old AgriScience Building - painted and stucco on concrete masonry unit
Heating and/or Air-conditioning:	Central heating system with hot water boilers for the Main Building, New AgriScience Building and Old AgriScience Building. Heated water supplies air handling units, cabinet and baseboard radiant heat units, unit ventilators and unit heaters. Cooling system with chiller and cooling tower for interior classrooms without windows, administration, choral room, music room, auditorium and media center Cooling system with rooftop air-cooled condensers for New AgriScience Building Packaged rooftop units Old AgriScience Building
Fire and Life/Safety:	Fire sprinklers, fire alarm system, security system, hydrants, smoke detectors, alarms, fire extinguishers
Dates of visit:	April 21 - 23, 2009
Point of Contact (POC):	Camille Figluizzi

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 in recent years and is in good to fair overall condition.

According to City of Stamford Public Schools personnel, the property has had an active capital improvement expenditure program over the past three years, primarily consisting of a 9th grade wing addition in 2007 (not part of this assessment per client), new gymnasium addition in 2007, and new Astroturf on the soccer field in 2008. Supporting documentation was not provided in support of these claims but some of the work is evident.

The New AgriScience Building has had no major capital improvements. The building is less than seven years old and has not required any major capital improvements.

1.2. FOLLOW-UP RECOMMENDATIONS

The following issues require additional study:

- Access in some restrooms, to the main office in the Raynor (B) wing, and to the stage for mobility impaired is poor or non-existent. 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. Some of the existing ADA designated restrooms are used for storage and will require clearing as required.
- Based on the numerous locations of moisture and water infiltration, a mold assessment should be conducted by a health and safety professional with experience performing microbial investigations. In addition, the source of this moisture should be addressed in order to prevent future mold problems. Moisture stained ceiling tiles were in observed in the main building and old AgriScience Building. Suspect mold was observed on the piping in the weight room. The estimated costs of corrective action shall be determined as part of the mold assessment recommended. See Section 3.3 for further information. The estimated costs are included in the Replacement Reserves Report.
- The HVAC system is reportedly highly inconsistent. Custodial and administration staff reported that temperature control and ventilation is inadequate in the building and that heating and cooling are at times required simultaneously maintaining a comfortable environment. According to the Head Custodian, there are two energy management system (EMS) operating the HVAC in the building. It is recommended that an HVAC contractor evaluate the building for the potential reconfigure of the existing HVAC control system and/or to add increased zoning for better temperature control in the building. The cost of the follow-up evaluation is included in the Replacement Reserves Report. A budgetary allowance for control upgrades/repairs is included in Section 7.1.
- In addition to the aforementioned HVAC study; it is recommended that the HVAC contractor evaluate the building for the potential reconfigure and design of installing a central cooling system for the entire building, as the majority of the classrooms do not have cooling. This would allow for a more comfortable indoor environment in the building throughout the year. The cost of the HVAC study is included above. In addition, costs are included in Section 7.1 for installing central cooling throughout the remainder of the building.

The following issues should be considered.

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

1.3. OPINIONS OF PROBABLE COST

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

These estimates are based on invoices and/or bid documents provided by the Owner and/or facility, construction costs developed by construction resources such as *R.S. Means* and *Marshall & 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
Camille Figluizzi Principal	Westhill High School	203.977.4838
Carlo Buccino Department Head – Custodial Services	Westhill High School	203.977.4951
Gus Burreisci Project Manager	City of Stamford Public Schools	203.223.8118
Captain Antonio L. Olive Jr. Fire Marshal	Turn of River Fire Department	203.329.7728

The Comprehensive Facilities Needs Assessment was performed with the assistance of Camille Figluizzi, Principal, and Carlo Buccino, Head Custodian, Westhill High School, the on site Points of Contact (POC), who were cooperative and provided information that appeared to be accurate based upon subsequent site observations. The on site contacts are very knowledgeable about the subject property and answered most questions posed during the interview process. The POC's management involvement at the property has been for the past eleven 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:

- Construction documents for new gymnasium by Friar Associates dated October 10, 2005
- Original main building construction documents by Knappe & Johnson Architects dated April 15, 1969
- Construction documents for new AgriScience Building by Wiles & Associates Architects dated May 7, 2001

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

- Signage indicating accessible parking spaces for cars and vans is not provided. Two signs are missing at main building and one sign missing at new AgriScience lot.
- Access aisles adjacent to parking spaces, crossing hazardous vehicle areas, from main roadways or public transportation stops to the building sidewalks and entrances are not provided. The current van stalls are sized for standard stalls. A total of 40 LF is needed.
- Signage directing to accessible parking or accessible building entrances to the facility are not provided. A total of two are required.
- One curb ramp is required from the parking area to the sidewalks providing access to the building. The transition from the parking to the sidewalk is not smooth and requires repairs or replacement.

Ramps

- The building requires the construction of a straight entrance ramp with handrails to allow wheelchair access at the main office of the Raynor (B) Wing. Two separate ramps for this area are required at a combined length of 74 feet.

Sport Fields

- Access to the baseball field, soccer field and tennis courts is not provided. Accessible parking and accessible paths to each field and the courts is required. Due to the change in elevation at these locations, a full accessibility study must determine the most feasible solution. A budgetary cost allowance for this work is included in the cost tables.

Entrances/Exits

- Lever action hardware is not provided at all accessible locations. Areas include but are not limited to main offices, Media Center, Auditorium, interior entrance doors to (A) wing classrooms, guidance center, nurse's area and most classrooms. In addition, the classrooms have locks that can only be engaged from outside of the classroom which presents a life safety situation during lock downs. Locking mechanisms should be accessible on both sides of the door. The school should be fitted with a master key system or an electronic locking system.

Paths of Travel

- Obstacle or protrusion from wall impeding access. Some drinking fountains protrude into path of travel. Drinking fountains require cane detection or wing walls. A total of two are required.
- Existing exterior stairs at the courtyard are not equipped with the required handrails. A total of 34 LF are required.

Elevators

- Elevator communication equipment not set up for speech impaired communication. A total of two are required.
- Raised elevator markings at jamb are provided in Braille and Standard Alphabet on one side only and both jambs are required. Two levels are required.
- Elevator cab is not compliant in size for a wheelchair and should be replaced. See Section 7.5 for more information regarding costs.
- A wheelchair lift is recommended for access to the auditorium stage.

Restrooms

- EMG recommends combining two stalls into one accessible stall in the non compliant restrooms. Due to unknown individual occupancy and/or uses and possible local code requirements it is recommended that the local building department be consulted prior to removal of any permanent plumbing fixtures (ie: toilets, urinals and/or lavatories). The provided resolution is for achieving accessibility only and does not take into consideration any required fixture counts which could vary with each structure. The cost estimate includes but is not limited to adding grab bars, paddle faucet handles, drain pipe insulation, lowering accessories and replacing finishes as required. This cost should also include replacing paper towel dispensers that require twisting to operate. The restroom outside of PT/OT requires enlarging to become accessible. The ADA restroom near 301, too far for PT/OT use, is signed for adults and should be signed for wheelchair bounds students as well. A total of six regular renovation and one enlargement renovation are required.

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

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

3.2. CODE INFORMATION AND FLOOD ZONE

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

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

3.3. MOLD

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

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

- Classroom #12. The area affected by the moisture was approximately seven square feet in size.
- Classroom #9. The area affected by the moisture was approximately seven square feet in size.
- Classroom #7. The area affected by the moisture was approximately five square feet in size.
- Corridor outside classroom #423. The area affected by the moisture was approximately four square feet in size.
- Music Classroom #15. The area affected by the moisture was approximately 12 square feet in size.
- Weight Room #1. The area affected by the moisture was approximately 20 square feet in size.
- Corridor outside Classroom #12. The area affected by the moisture was approximately 12 square feet in size.
- Boiler. The area affected by the moisture was approximately 15 square feet in size.
- Cafeteria (west). The area affected by the moisture was approximately four square feet in size.

Suspect mold growth was observed in the following area:

- Weight Room #1 piping insulation. The area affected by the moisture was approximately 32 square feet in size.
- Wood shop classroom #4. The area affected by the moisture was approximately eight square feet in size.
- ADA restroom at main building on exterior near track. The area affected by the moisture was approximately five square feet in size.

Additional discussion and description of the correction efforts required with regard to the moisture infiltration issues are discussed in Sections 6.3, 6.8 and 7.2 of this report, and associated costs are included within those sections.

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.

Prior to remediation by personnel specifically trained in the handling of hazardous materials, a mold assessment should be conducted by a health and safety professional with experience performing microbial investigations. In addition, the source of this moisture should be addressed in order to prevent future mold problems. The estimated costs of corrective action shall be determined as part of the mold assessment recommended. The estimated costs are not included in the tables. See Section 1.2 for further follow up study information.

4. EXISTING BUILDING EVALUATION

4.1. ROOM TYPES

The following table identifies the reported room types and mix at the subject property (all counts do not include 9th grade wing 500's to 600's).

Room Types and Mix			
Quantity	**Type**	**Vacant Rooms**	**Down Rooms**
92 (not including 9th grade wing 500's to 600's) 6 (old AgriScience)	Homerooms	0	0
43 (main building - not including 9th grade wing 500's to 600's) 4 (old AgriScience)	Non-homeroom classrooms not including Art, Shop & Music (111, 101, 203, 202A & 202B, 220, 122, 120, 115A, 108, 106, 104, 82, 82B, 81, 80B, 80A)	0	0
145	**Total classrooms**		
4	ESL (207, 208, 214 and 217)	0	0
2	Bi-Lingual (307 and 409)	0	0
17	Special Education	0	0
13	Business/Unified Arts - Core	0	0
20 (not including 9th grade wing 500's to 600's)	English - Core	0	0
14 (not including 9th grade wing 500's to 600's)	Math Core	0	0
22 (not including 9th grade wing 500's to 600's)	Science Lab - Core	0	0
15 (not including 9th grade wing 500's to 600's)	Social Studies - Core	0	0
13	World/Foreign Language – Core	0	0
7	Art	0	0
1	Music	0	0
2	Shop (Wood, Automotive)	0	0

Room Types and Mix			
Quantity	**Type**	**Vacant Rooms**	**Down Rooms**
12	Office or Office Suite (Departmental)	0	0
2	Conference Room	0	0
1	OT/PT	0	0
4	Mechanical	0	0
7	Storage	0	0
2	Gymnasium	0	0
3	Auxiliary Gymnasium (baseball batting and wrestling and Cardio workout)	0	0
1	Weight Room	0	0
2	Cafeteria	0	0
1	Auditorium	0	0
1	Small Forum/Auditorium	0	0
1	Media Center	0	0
1	Computer Lab	0	0
313	**TOTAL**	**0**	**0**

4.2. ROOMS OBSERVED

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

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

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

The following areas were not available for observation during the site visit:

- ROTC #13 – locked
- Art Department office – locked
- Hydroponics Greenhouse at new AgriScience building – locked
- Conservatory at new AgriScience building – locked

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	Aquarion	Good
Electric service	CL&P	Good
Natural gas service	Yankee Gas	Good

Observations/Comments:

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

5.2. PARKING, PAVING, AND SIDEWALKS

The main entrance drive is located along Roxbury Road on the south side of the property. An additional entrance drive is also located along Roxbury Road. The parking areas, drive aisles, and service drives are paved with asphalt. A gravel lot is located at the rear of the main building adjacent to the service drive.

According to the site plan, parking is provided for approximately 449 cars. The parking ratio is 1.32 spaces per thousand square feet of floor area. All of the parking stalls are located in open lots. There are a total of 16 handicapped-accessible parking stalls, five of which are van-accessible.

The sidewalks adjacent to the buildings at the property are constructed of cast-in-place concrete. Cast-in-place concrete steps with metal handrails are located at the front main entrance. Masonry steps with metal handrails are located at the new soccer field.

There are asphalt sidewalks that serve the tennis courts, soccer fields, and baseball field. Concrete sidewalks serve the football field. A gravel path serves the softball field.

The vast majority of the curbs are constructed of cast-in-place concrete curbing placed at the edge of the pavement. Limited areas of curbs consist of extruded asphalt curbing.

Observations/Comments:

- The asphalt pavement is in good overall condition. There are no significant signs of cracks or surface deterioration. In order to maximize the pavement life, pothole patching, crack sealing, seal coating, and restriping 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 asphalt pavement at the student parking lot is in fair condition. There are significant signs of cracks or surface deterioration. In order to maximize the pavement life, pothole patching, crack sealing, seal coating, and restriping of the asphalt paving will be required within the year. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition, the student parking lot must be overlaid with new asphalt paving during the evaluation period, in order to maintain the integrity of the overall pavement system. The estimated cost of this work is included in the Replacement Reserves Report.
- The gravel lot is in good condition. Routine maintenance will be required during the evaluation period.
- The concrete sidewalks are in good to fair condition. Isolated areas of cracking occur at the front elevation of the main building. Based on the estimated Remaining Useful Life (RUL) and current condition, a concrete sidewalk replacement program will be required during the evaluation. The estimated cost of this work is included in the Replacement Reserves Report.
- The asphalt sidewalks are in good condition. Routine cleaning and maintenance will be required during the evaluation period.
- The gravel path at the softball field is in good to fair condition. Routine maintenance will be required during the evaluation period.
- The site steps are in good to fair condition. Isolated damage was observed at the front of the main building. The concrete damaged areas at the steps will require repair or replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The concrete and asphalt curbs throughout the property are in good overall condition. However, there are areas of deterioration of concrete curbing along the front drive aisle and an area of deterioration and displacement of asphalt curbing in the parking area adjacent to the baseball field. Replacement of all damaged concrete and asphalt curbing will be required within the year. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

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

5.3. DRAINAGE SYSTEMS AND EROSION CONTROL

Storm water from the roofs, landscaped areas, and paved areas flows into on site inlets and catch basins with underground piping connected to the municipal storm water management system.

The main building is equipped with sump pumps and basins located below the pool and in the basement mechanical room below the stage.

Observations/Comments:

- There is no evidence of storm water runoff from adjacent properties. The storm water system appears to provide adequate runoff capacity. There is no evidence of major ponding or erosion. There is however, water infiltrating into the New AgriScience building at the rear elevation, due to level or sloping landscaping towards the foundation walls and drainage from the roof. To prevent water infiltration into the building, it is recommended that fill dirt be added and the area re-graded to obtain the required slope for proper drainage away from the building. The estimated cost of this work is included in the Replacement Reserves Report.

- The sump pumps are reported to be in good to poor condition. The sump pump next to the pool filtration equipment is non-operational and has contributed to water overflowing the basin into the tunnel below pool. Replacement of the non-operational sump pump will be required. The cost of this work is relatively insignificant and can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.

Sustainable Recommendations:

- There are no sustainable recommendations for the drainage systems.

5.4. TOPOGRAPHY AND LANDSCAPING

The property slopes gently downward from the south side of the property toward the north property line.

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

Landscaped areas at the baseball and softball fields are irrigated by an in-ground sprinkler system consisting of underground piping, shut-off valves, pop-up sprinkler heads, and automatic timers.

Surrounding properties include a school, parking garage, nursing homes, and residential developments.

Reinforced concrete retaining walls are located at grade changes around various locations of the main building and courtyard. Split-faced masonry block retaining walls are located at grade changes along the southwest elevation of the main building and adjacent to the new soccer field. Wood guardrails are mounted on top of the southwest retaining walls and chain link fencing mounted on top of the new soccer field retaining walls. Masonry block retaining walls are located adjacent to the tennis courts.

Dry-stacked stone masonry walls are located at a portion of the southern perimeter of the property along Roxbury Road.

Observations/Comments:

- The topography and adjacent uses do not appear to present conditions detrimental to the property.
- The landscape materials are in good condition, requiring routine maintenance during the evaluation period; however, some landscape trees were noted over-hanging the roof surfaces, as noted at the front elevation of the main building and interior courtyard. To prevent damage to the building exterior components and clogging of the roof drainage system, routine landscape maintenance, including tree pruning, will be required throughout the evaluation period. This work can be performed as part of the property management's routine maintenance program.
- The landscaping at various locations along the front elevation of the main building is partially barren and will require re-grading and reestablishment of ground cover. 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 retaining walls are in good condition. Routine maintenance will be required during the evaluation period.
- The stone masonry wall is in good condition, requiring routine maintenance during the evaluation period.

Sustainable Recommendations:

- There are no sustainable recommendations for landscaping.

5.5. GENERAL SITE IMPROVEMENTS

Property identification is provided by a monument sign along Roxbury Road. The school name is displayed on the front exterior elevation.

Site lighting is provided by property-owned, metal, streetlight standards. The light standards are spaced along the drive aisles throughout the parking areas. Light fixtures mounted on metal poles are located along walkways and drive aisles throughout the property. Bollard light fixtures are located along the sidewalks adjacent to the New AgriScience Building.

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

A perimeter fence is located along the north, east and west property lines. The fence is constructed of chain link with metal posts. Chain link fencing is also located at the bus parking lot, at the gas metering, tennis courts and at the following play fields; football field, new soccer field, baseball field and softball field.

Wood and metal guardrails are located at entrances drives and parking areas at various locations throughout the property.

One football field is located at the left side of the property (west elevation). The football field has an artificial turf playing field with two metal goals. The football field has a six-lane running track surround, with a rubberized surface. There is a press box and two bleachers constructed of aluminum and metal. The bleachers are equipped with accessible ramps and seating areas.

One soccer field is located at the right side of the property (east elevation). The soccer field has an artificial turf playing field with two metal-framed field goals and netting. There are two metal benches and one bleacher constructed of aluminum and metal.

One practice soccer field is located at the rear of the property (north elevation). The soccer field has a grass play field and is equipped with metal-framed field goals and netting.

One baseball field is located at the rear of the property (north elevation). The ball field has grass and compacted dirt infield and grass outfield. The backstop and line fences are constructed of chain link fencing with metal posts. There are two benches constructed of wood. There are two bleachers constructed of metal.

One softball field is located at the rear of the property (north elevation). The ball field has a compacted dirt infield and grass outfield. There are two benches constructed of wood. There are four bleachers, one constructed of wood and three constructed of metal.

The football field, baseball field, softball field and new soccer field are each equipped with a "Fair-Play" LED Scoreboard.

One batting cage is located at the rear of the baseball field. The cage has metal-framing and a netting enclosure.

There are six asphalt-paved tennis courts located at the rear of the property (north elevation). The courts are surrounded by a chain link fence. There is one bleacher constructed of metal.

The property has one indoor swimming pool, which is located at the main building (west elevation). The pool has a ceramic tile coping and ceramic tile at the water line. The pool is equipped with two diving boards and six swim lanes. The pool is constructed of concrete and finished with ceramic tile. The pool is surrounded by a ceramic tile walkway.

The pool equipment is located in the pool filter room adjacent to the pool. The equipment consists of commercial water filtration equipment and circulating pumps. A 220 kW electric water heater, located adjacent to the pool equipment, serves the swimming pool. The heated water is assisted by the domestic water heaters and heat exchanger described in Section 7.2.

Dumpsters are located adjacent to the rear service drive and placed on the asphalt pavement. The dumpster adjacent to the New AgriScience Building is placed on a concrete pad. The dumpsters are not enclosed.

A trash compactor is located at the rear loading dock.

Observations/Comments:

- The property identification signs are in good condition. Routine maintenance will be required during the evaluation period.
- The exterior site and building light fixtures varies from good to poor condition. There were three building light fixtures found damaged and non-operational at the left and rear exterior walls of the main building. In addition, according to the custodial staff, the site and building lights do not have good illumination. The lack of adequate illumination is a safety hazard. Replacement of the damaged light fixtures and installation of additional building and site lights will be required within the year, to provide for necessary levels of night lighting for security measures. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition to the aforementioned light fixture replacements; there is an old abandoned pole light concrete base adjacent to the front sidewalk. Installation of a new pole light at the abandoned concrete base is recommended. The estimated cost of this work is included in the Replacement Reserves Report.
- The site fencing is in good to fair condition. A damaged fence pole was noted adjacent to the Old AgriScience building that can be repaired as part of routine maintenance practices. In addition, based on its estimated Remaining Useful Life (RUL) and condition, the baseball field and portion of perimeter fencing will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The wood and metal guardrails are in good condition and will require routine maintenance during the evaluation period.
- The football field, running track, bleachers, press box and goals are in good condition. Routine maintenance will be required during the evaluation period.
- See Section 9 for details on the concession stand building.
- The soccer field (east elevation), benches, goals and bleacher were installed in 2008 and are in good condition. Routine maintenance will be required during the evaluation period.
- The practice soccer field is partially barren requiring re-grading and reestablishment of ground cover. The estimated cost of this work is included in the Replacement Reserves Report.
- The soccer field goals are in good to fair condition. The field goals will require painting and netting replacement during the evaluation period. The cost of this work is relatively insignificant and can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- The baseball and softball fields have partially barren areas, ponding and sink holes. The baseball and softball fields will require re-grading and reestablishment of ground cover during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The baseball and softball field bleachers, benches and chain link backstops are in good to fair condition. Based on the estimated Remaining Useful Life (RUL) and condition, the bleachers, benches and backstops will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The play field scoreboards are in good condition, requiring routine maintenance during the evaluation period.
- The batting cage is in good condition. Routine maintenance will be required during the evaluation period.

- The tennis courts are in good condition. Based on the estimated Remaining Useful Life (RUL), the court surface must be replaced during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The tennis court fencing is in good condition. Based on its estimated Remaining Useful Life (RUL), the tennis court fencing will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The pool is in good condition and will require routine maintenance during the evaluation period. Re-grouting of the ceramic tile pool liner is recommended during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The ceramic tile pool deck is in good condition and will require routine maintenance during the evaluation period. There are no significant areas of cracks or damage.
- The pool equipment appears to be in good condition. Based on its estimated Remaining Useful Life (RUL), the pool filtration equipment will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The pool water heater appears to be in fair condition. Based on its estimated Remaining Useful Life (RUL), the pool water heater will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The dumpsters and trash compactor are owned by the City of Stamford. The dumpsters and trash compactor are in good condition, requiring routine maintenance during the evaluation period.

Sustainable Recommendations:

- A sustainable recommendation for site lighting is to install photo sensors on exterior lighting. This will reduce energy consumption by reducing the time the exterior lights are used.
- A sustainable recommendation for fencing is to install recycled PVC fence sections during fencing replacement.

6. BUILDING ARCHITECTURAL AND STRUCTURAL SYSTEMS

6.1. FOUNDATIONS

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

The subterranean basement and pool have load-bearing, concrete perimeter, retaining walls.

Observations/Comments:

- The foundations and footings could not be directly observed during the site visit. There is no evidence of movement that would indicate excessive settlement.
- Narrow cracking and calcification around the subterranean pool walls was observed. This is typical of concrete pools and should be monitored regularly and cracks should be sealed as part of routine maintenance. See Section 5.5 for relining costs.
- The subterranean basement walls are in good condition. There is no evidence of movement or water infiltration.

Sustainable Recommendations:

- There are no sustainable recommendations for foundations.

6.2. SUPERSTRUCTURE

The main building has structural steel columns supporting the upper floors and roofs. The majority of the upper floors and roof are supported by reinforced pre-cast concrete waffle forms. Portions of the upper floors have concrete-topped metal decks and are supported by steel beams and open-web, steel joists. The roofs are constructed of metal decks supported by steel beams and open-web, steel joists.

The old AgriScience building has load-bearing, concrete masonry unit (CMU), exterior walls supporting the attic storage space and roofs. The lower roof is constructed of metal decks supported by steel beams and open-web, steel joists. The upper roof is sheathed with wood boards over wood rafters and wood joists. The sloped roofing is supported by a wood timber truss.

The new AgriScience building has structural steel columns supporting the upper floors and roofs. The upper floors have concrete-topped metal decks and are supported by steel beams and open-web, steel joists. The roofs are constructed of metal decks supported by steel beams and open-web, steel joists.

Observations/Comments:

- The superstructure is exposed in some locations, allowing for limited observation. Walls and floors appear to be plumb, level, and stable. There are no significant signs of deflection or movement.
- The isolated roof leak damage to the wood structure in the old AgriScience building will require repair. The estimated cost of this work is included in the Replacement Reserves Report.

- The exposed steel lintels are in fair condition. Minor rusting was observed. Scraping and painting should be performed to prevent further deterioration. The cost of this work is relatively insignificant and can be performed through routine maintenance.

Sustainable Recommendations:

- Sustainable recommendation for the superstructure is the use of low VOC paint.

6.3. ROOFING

The primary roofs are classified as flat roofs. The flat roofs on the main building and the upper roof of the old AgriScience building are finished with a single ply membrane. The flat roofs on the new AgriScience building are finished with a mineral-surfaced cap sheet over a multi-ply, bituminous, built-up membrane. The lower flat roof on the old AgriScience building is finished with a mineral-surfaced cap sheet over a multi-ply, bituminous, built-up membrane. The roofs are insulated with rigid insulation boards.

The exterior perimeter walls extend above the surface of the roofs, creating low parapet curbs. The roof membrane turns up and over the sides of the parapet curbs and terminates at sheet metal drip edges. The roofs have sheet metal flashing elements and built-up base and edge flashing. Some of the perimeter walls terminate at the roof and the membrane terminates at a metal drip edge nearly flush with the roof plane.

Storm water is drained from the main building and new AgriScience building roofs by internal drains. The drains discharge into the underground storm drainage system. The old AgriScience building drains storm water to sheet metal gutters and downspouts that discharge onto paved and landscaped areas.

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

The secondary roofs such as over the new gymnasium are classified as a barrel vault roof. The roof is finished with standing seam metal panels over asphalt-saturated paper. The roof has sheet metal flashing elements.

The secondary sloped roof at the old AgriScience building is classified as a shed roof. It is finished with standing seam metal panels.

The soffit of the covered walkway at the new AgriScience building is finished with painted drywall.

There is an attic space in the old AgriScience building. It does not have draft stops. Attic access is provided by stairs and door. The majority of the roof structures at the main building are exposed above suspended acoustic tile ceilings. The roof structure at the new AgriScience building is exposed.

Observations/Comments:

- The roof finishes vary in age. The majority of the flat roof of the main building is nine years old. The roof over the auditorium is reportedly original. The barrel roof is two years old. The new AgriScience building roof is original at seven years old. The old AgriScience building roofs vary in age. The built up section is greater than ten years old, and the single ply section is approximately nine years old. The roofs of the main building except the auditorium are covered by a 20 year warranty. A copy of the warranty is attached in Appendix C. The roofs are maintained by the in-house maintenance staff or contractor when required.
- The fields of the single ply roofs are in good condition and will require routine maintenance during the evaluation period. The field of the auditorium roof is in fair to poor condition. Based on their estimated Remaining Useful Life (RUL), the roof membranes will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

- The fields of the built up roofs are in good to poor condition. Based on their estimated Remaining Useful Life (RUL), the roof membranes will require replacement during the evaluation period. Due to the leaks in the old AgriScience building, early replacement with single ply membrane is recommended since the built up roofing is wrapping over sharp corners and patches have been performed but are not working. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the POC, there are some active roof leaks. There is some evidence of active roof leaks. These leaks will require immediate repair. The estimated cost of this work is included in the Replacement Reserves Report.
- There is no evidence of roof deck or insulation deterioration. The roof substrate and insulation should be inspected during any future roof repair or replacement work.
- There is no evidence of fire retardant treated plywood (FRT) and, according to the POC, FRT plywood is not used.
- The roof flashings are in good condition and will require routine maintenance during the evaluation period.
- The parapet curbs and metal edging are in good condition and will require routine maintenance during the evaluation period.
- Roof drainage appears to be inadequate at the auditorium roof and the small roof at the northeast corner of the Raynor Wing and at isolated areas of the new AgriScience building. Some of the roof drains are clogged and not draining. Clearing and minor repair of drain system components should be performed regularly as part of the Physical Plant's routine maintenance program. Re-sloping or additional tapered insulation is required at the areas that are prone to ponding and should be directed to existing roof drains. Some of the concrete walkway pavers at the new AgriScience building require separating to allow for water flow between them in addition to new tapered insulation. The estimated cost of this work is included in the Replacement Reserves Report.
- The skylights are in good condition and will require routine maintenance during the evaluation period.
- There is no evidence of moisture, water intrusion, or excessive daylight in the attic. The insulation in the attics appears to be adequate.
- The soffit at the new AgriScience building is in fair to poor condition. The precast concrete panels do not have drip edges cast into the panels and it appears that moisture is infiltrating the soffit due to this design. The material is falling and moisture damaged and will require replacement. In addition, some consideration such as a properly placed metal drip edge may be considered to prevent this problem in the future. The estimated cost of this work is included in the Replacement Reserves Report.
- The fields of the standing seam metal sloped roofs are in good condition and will require routine maintenance during the evaluation period. There is a minor leak requiring immediate repair at the old AgriScience roof at the rear of the building. The estimated cost of this work is included in the Replacement Reserves Report.
- The snow dams at the sloped roofing are horizontal strips at the top of the ribs and are located over walkways. Significant complaints of sheeting ice and snow have been reported along the full lengths of the metal roofs and in addition the existing snow dam bar is broken over the door to the new gym. It appears that the positioning of the snow dams is not performing the task of stopping, slowing or preventing the snow or ice from falling off in sheets. Due to the life safety risks, installation of snow cleats/guards or warming pads is recommended immediately. The estimated cost of the installation of snow cleats is included in the Replacement Reserves Report.
- EMG also conducted a separate roof assessment for this project. Minor repairs and 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.

Sustainable Recommendations:

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

6.4. EXTERIOR WALLS

The main building is finished with brick masonry veneer and unfinished, cast in place, concrete panels. Portions of the main building such as at the pool and new gymnasium have translucent acrylic sandwich panels such as a Kalwall system.

The new AgriScience building is finished with pre-cast concrete panels.

The exterior walls of the old AgriScience building are finished with stucco and painted concrete masonry units.

Portions of the new AgriScience building are clad with a metal-framed, curtain wall system. The curtain wall system is anchored to the superstructure. The curtain wall has horizontal bands of tinted, glazed, vision panels.

Horizontal and vertical bands of sealant are 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 exterior finishes are in good to poor condition. The brick along the perimeter from the base up to at least two to three feet and other isolated areas above this perimeter was severely worn and deteriorated. Areas include but are not limited to the masonry walls along the service drive area/loading dock, old gymnasium and portions of the auditorium. Tuck pointing, patching and some replacements will be required early in the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Some cast in place concrete panels on the main building are exhibiting spalling and exposed rebar. Previous patches were observed to be failing including spalling and cracking. Full replacement of affected panels and patching where small isolated areas can be accomplished are required. Areas include several panels at the northwest corner of the old gymnasium and some isolated areas at the auditorium. In addition to the repairs and replacements, the corrugated design allows for water to penetrate at grade which may cause damage during freezing and thawing cycles and requires sealing of any exposed areas or gaps. The estimated cost of this work is included in the Replacement Reserves Report.
- The precast concrete panels at the new AgriScience building are in good to fair condition. Moisture staining was observed due to lack of any drip flashing on the horizontal surfaces. Power washing and sealing will be required throughout the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The Kalwall type system is in good condition and will require routine maintenance during the evaluation period.
- The curtain wall system is in good condition and will require routine maintenance during the evaluation period.
- The sealant is flexible, smooth, and in good to fair condition. Some joint separation was observed around windows. Based on its estimated Remaining Useful Life (RUL), the sealant will require replacement during the evaluation period. This work can occur in conjunction with the window and door replacement.

- The building control joints are in good to fair condition. Some joint separation and a loose gasket were observed. Based on its estimated Remaining Useful Life (RUL), the control joint sealant will require replacement and the loose gasket will require repair during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- Sustainable recommendations for the exterior is the use of low VOC Sealant/Caulking around windows, doors, control joints and change of finish and low VOC paint.

6.5. EXTERIOR AND INTERIOR STAIRS

The interior stairs in the fire stairwells are constructed of steel and have closed risers and concrete-filled, steel pan treads. The handrails and balusters are constructed of metal. The interior stairs in the main lobby are terrazzo with open risers.

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

Observations/Comments:

- The exterior and interior stairs, balusters, and handrails are in good condition and will require routine maintenance during the evaluation period. The main building lobby stairway has handrails which do not extend 12″ beyond the top and bottom flights at each rail. The cost to add extension is included in the Replacement Reserves Report.

Sustainable Recommendations:

- A sustainable recommendation for interior stairs is to use low VOC paints when repainting handrails.

6.6. WINDOWS AND DOORS

The doors are fully-glazed, aluminum-framed doors set in a metal framing system.

The windows are aluminum-framed, single-pane glazed, sliding and fixed units.

Some of the windows at the old AgriScience building are part of an aluminum-framed, storefront system. The windows are glazed with insulated panes set in metal frames.

The new AgriScience building windows are a part of the metal-framed, curtain wall system described in Section 6.4. The greenhouse portion is fabricated with acrylic channel panels.

The entrance doors have cylindrical locksets with push/pull handle hardware and keyed deadbolts.

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

There are a total of seven overhead doors at the main building including the loading dock and shop classrooms. The new AgriScience building has two overhead doors. The seven overhead doors are flush-paneled metal doors and are equipped with mechanical openers and the other two are coiling with automatic openers.

There are three loading docks, two for custodial area and one for the auditorium. Each loading dock is equipped with bumpers.

Observations/Comments:

- According to the POC, the property does experience a significant number of complaints regarding window leaks and window condensation. There is evidence of window leaks and condensation. The windows are in fair condition and are not energy efficient. Some damage was observed to window frames. The nurse's office has plastic sheeting over the window to block drafts.
- Most of the windows are in fair condition and are original. Due to the majority of the windows being single paned and without thermal breaks, it is recommended that all single paned windows be replaced with double paned windows. Based on their estimated Remaining Useful Life (RUL), the windows will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- A cost to install new window treatments throughout the school has been added to the Replacement Reserves Report as part of the Capital Plan.
- The new storefront windows at the old AgriScience building have exposed wood shims from construction and should be enclosed to keep water from penetrating and causing damage. No costs for this are included since this work should be completed as part of the installation process. Some of the panes of glass on the older unit are broken and fogged. The older windows require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The exterior doors and door hardware are in good to poor condition. Some of the doors such as on the west side including new doors on the gymnasium do not close properly and appear easy to open when locked presenting a life safety situation. Some of the doors will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The overhead doors are in good to fair condition. Some of the overhead doors will require replacement. The estimated cost of this work is included in the Replacement Reserves Report.
- The dock equipment is in fair to poor condition. Cracking and spalling was observed on all loading docks. The bumpers are worn and should be replaced. Impact damage was also observed overhead. Repairs and replacements will be required. Bumper guards are recommended to be installed at the overhead location to prevent future damage once the impact damage is repaired. The estimated cost of this work is included in the Replacement Reserves Report.
- The school should be fitted with a master key system or an electronic locking system. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

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

6.7. PATIO, TERRACE, AND BALCONY

A concrete-paved terrace is located at the center of the main building. The terrace serves as an outdoor dining area.

Observations/Comments:

- The terrace slabs and pavers are in good to poor condition. There are significant signs of movement, vertical displacement and settlement. Replacement and repair will be required. The estimated cost of this work is included in the Replacement Reserves Report.

Sustainable Recommendations:

- There are no sustainable recommendations for the terrace.

6.8. COMMON AREAS, ENTRANCES, AND CORRIDORS

The lobby contains bulletin boards and display cases. Corridors are accessed directly from the lobby. The elevators and stairways are located down corridors off of the lobby.

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

Common area restrooms are located near the main office area and along corridors throughout the school. There are approximately eleven adult restrooms and 12 student restrooms plus locker rooms.

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

Common Area	Floors	Walls	Ceilings
Lobby	Polished stone and vinyl tile	Exposed brick	Suspended acoustic tiles and painted concrete
Corridor	Vinyl tile and polished stone	Painted concrete masonry units and exposed brick	Suspended acoustic tiles and painted concrete structure
Restrooms and locker rooms	Ceramic tile and epoxy flooring	Ceramic tile and painted concrete masonry units	Ceramic tile and suspended acoustic tiles and painted drywall
Office	Vinyl tile and minimal carpet	Painted concrete masonry units and stained wood paneling	Suspended acoustic tiles and painted concrete structure
Media Center	Carpet	Painted drywall	Suspended acoustic tiles
Auditoriums	Painted concrete, carpet and wood strip	Stained wood slat paneling and exposed brick and painted drywall	Painted drywall
Cafeteria	Vinyl tile	Painted concrete masonry units	Suspended acoustic tiles
Gymnasiums	Wood strip and rubber flooring tiles	Painted concrete masonry units	Exposed structure
Indoor Pool	Ceramic tile	Painted concrete masonry units and suspended acoustic tiles	Suspended acoustic tiles

Observations/Comments:

- It appears that the interior finishes vary in age. Some of the finishes are original and others have not been replaced in ten years.

- The interior finishes in the common areas are in good to fair condition. Based on their estimated Remaining Useful Life (RUL) and conditions, the carpet, vinyl tile and some ceramic tile finishes will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The wood flooring in the gymnasiums, wood shop, art classrooms and auditorium stage are in good condition. Refinishing will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Interior painting will also be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- Suspended ceiling tile replacement will also be required during the evaluation period. Several locations including many classrooms and the Media Center were exhibiting bulging or cupping tiles due to the excessive humidity. The estimated cost of this work is included in the Replacement Reserves Report.
- The ceramic tile is in good to fair condition. Some of the restrooms have ceramic tile on the ceiling which presents a safety hazard if any fall. Some ceramic tile replacements will be required in addition to changing to painted drywall or suspended ceiling tile. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided JMOA five year capital plan, the stage rigging is planned for repair or replacement. A budgetary cost allowance for this work is included in the Replacement Reserves Report.
- According to the client provided AHERA document flooring with asbestos-containing material is located in the many of the classrooms, restrooms, and corridors. A cost allowance for proper removal and disposal of the asbestos-containing vinyl tile is included in the Replacement Reserves Report as part of the recommended vinyl tile replacement work. This allowance is based solely on the information presented in the client provided AHERA document. An excerpt of this AHERA document is included in the appendices. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

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

7. BUILDING (CENTRAL) MECHANICAL AND ELECTRICAL SYSTEMS

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

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

The following table describes the rooftop units:

Packaged Rooftop Units				
Quantity	**Manufacturer**	**Cooling Capacity**	**Heating Type**	**Manufacture Year**
2	Trane	5 tons	Electric Resistance	2005

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

Hot water for the central heating system for the main building is supplied by four cast iron boilers. The boilers have dual-fuel capability, utilizing natural gas or fuel oil. Each boiler has a rated input capacity of 4,360 MBH and is located in the main mechanical room. The central heating system also supplies the new 500-600 building.

Hot water for the central heating system for the New AgriScience Building is supplied by two cast iron boilers. The boilers have dual-fuel capability, utilizing natural gas or fuel oil. Each boiler has a rated input capacity of 1,709 MBH and is located in the main mechanical room.

Hot water for the central heating system for the New AgriScience Building Greenhouse is supplied by two cast iron boilers. The boilers have dual-fuel capability, utilizing natural gas or fuel oil. Each boiler has a rated input capacity of 1,014 MBH and is located in the greenhouse mechanical room.

Hot water for the central heating system for the Old AgriScience Building is supplied by one oil-fired boiler. The boiler has a rated input capacity of 447 MBH and is located in the main mechanical room.

The hot water loop contains expansion tanks and circulating pumps. Circulating pumps provide heated water to each temperature-controlled space via a two-pipe distribution system. Hot water supplies the air handling units, cabinet radiant units, baseboard radiant units, and unit ventilators.

Fuel oil is supplied to the boilers by a fuel oil pump set and underground storage tanks (UST). The UST's capacity and locations are as follows:

- Fuel oil supplies the Main Building by one 10,000-gallon UST, located beneath the paved service drive at the rear of the building.
- Fuel oil supplies the New AgriScience Building by one 6,000-gallon UST, located beneath the landscaped area adjacent to the building.
- Fuel oil supplies the Old AgriScience Building by one 1,000-gallon UST, located beneath the paved bus parking lot.

Heating is provided in the classrooms by unit ventilators mounted above the ceilings or on the floor 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 of 750 to 1,500 CFM each. The unit ventilators have limited control provided by local thermostats.

Heating is provided in the offices, media center, cafeteria and classrooms by baseboard or cabinet-mounted, finned-tube, radiant heat units. Heating is provided in the restrooms, stairwells, and corridors by recessed or wall-mounted finned-tube radiant heat units. Heating is provided in garages, generator room, electrical and mechanical areas by ceiling-mounted unit heaters. The heating units are supplied with hot water by the central system.

Chilled water for the central cooling system is supplied by one water-cooled chiller and a cooling tower. The chiller has a nominal rating of 320 tons and uses R-123 as a refrigerant.

The cooling tower is constructed of stainless steel and is located at the right side of the main building. The cooling tower has a capacity of 254 tons.

Circulating pumps provide chilled water to each temperature-controlled space via a two-pipe distribution system. The chilled water supplies the air handling units.

Cooling is provided in the New AgriScience Building by three air-cooled condensing units, which supplies the one rooftop unit RTU-1 and/or VAV boxes. The condensing units are located on the rooftop and the nominal capacities are as follows; 10-tons, 25-tons and 50-tons. The cooling equipment uses R-22 as a refrigerant. Heated and/or cooled air is distributed through ducts to variable air volume (VAV) terminals exposed or concealed above the ceilings.

Window air-conditioning units provide cooling in the offices and computer lab classrooms.

Heating, cooling and/or ventilation are provided in the common areas by high-capacity, air handling units equipped with heating and/or cooling coils. The air handling units are supplied with heated and/or chilled water by the central system. Air distribution is provided to supply air registers by ducts concealed above the ceilings. Return air grilles are located in each space. The heating and cooling system is 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**
AC-1	Penthouse "A"	Interior Class Rooms	13,820 CFM	Chilled water coil	Hot water coil
AC-2	Penthouse "A"	Administration Areas	10,325 CFM	Chilled water coil	Hot water coil
AC-3	Penthouse "A"	Choral Room	4,000 CFM	Chilled water coil	Hot water coil
AC-4	Penthouse "B"	Interior Class Rooms	20,685 CFM	Chilled water coil	Hot water coil
AC-5	Penthouse "B"	Administration Areas	2,900 CFM	Chilled water coil	Hot water coil
AC-6	Penthouse "B"	Greenhouse & Animal Room	300 CFM	Chilled water coil	Hot water coil
AC-7	Auditorium Mechanical Room	Auditorium	30,000 CFM	Chilled water coil	Hot water coil

Air Handling Units					
Designation	**Location**	**Area Served**	**Air Flow**	**Cooling**	**Heating**
AC-8	Auditorium Mechanical Room	Library / Media	13,500 CFM	Chilled water coil	Hot water coil
AC-9	Auditorium Mechanical Room	Music Room	4,000 CFM	Chilled water coil	Hot water coil
V-1	Build "A" Storage room 18	Shop	8,910 CFM	None	Hot water coil
V-2	Build "A" Corridor	Finishing Room	5,900 CFM	None	Hot water coil
V-3	Gym Penthouse	Boys Aux. Gym	4,600 CFM	None	Hot water coil
V-4	Gym Penthouse	Boys Locker Room	3,000 CFM	None	Hot water coil
AHU-4	Rooftop above Garage	Gym & Garage	30,000 CFM	None	Hot water coil
V-5	Gym Penthouse	Pool	18,575 CFM	None	Hot water coil
V-6	Gym Penthouse	Cafeteria #1	8,000 CFM	None	Hot water coil
V-7	Gym Penthouse	Boys Main Gym	19,600 CFM	None	Hot water coil
V-8	Gym Penthouse	Girls Main Gym	19,600 CFM	None	Hot water coil
V-9	Gym Penthouse	General Supply	3,670 CFM	None	Hot water coil
V-10	Gym Penthouse	Cafeteria #2	8,460 CFM	None	Hot water coil
V-11	Gym Penthouse	Girls Locker Room	2,370 CFM	None	Hot water coil
V-12	Gym Penthouse	Girls Aux. Gym	3,700 CFM	None	Hot water coil
RTU-1	Rooftop of New AgriScience Building	New AgriScience Building	30,000 CFM	Chilled water coil	None

The cafeteria, kitchen, auditorium, gym, locker rooms, bathrooms, greenhouse and other areas are ventilated by mechanical exhaust fans. High-capacity ventilation fans are mounted on the roof and are connected by concealed ducts to each ventilated space.

The garages are equipped with a mechanical ventilation system. The system consists of exhaust fans and is automatically controlled by carbon monoxide sensors.

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

Observations/Comments:

- The HVAC systems are maintained by the in-house maintenance staff.
- The HVAC equipment varies in age. The boilers range from 7 to 14 years old. The boilers at the main building were refurbished in 1995. The chiller and cooling tower are 11 years old. The rooftop air-cooled condensers are 7 years old. The air handling units are original. The unit ventilators are original. The package units are 4 years old. HVAC equipment is reportedly replaced on an "as needed" basis.
- The HVAC system is reportedly highly inconsistent. Custodial and administration staff reported that temperature control and ventilation is inadequate in the building and that heating and cooling are at times required simultaneously maintaining a comfortable environment. According to the Head Custodial, there are two energy management system (EMS) operating the HVAC in the building. It is recommended that an HVAC contractor evaluate the building for the potential reconfigure of the existing HVAC control system and/or to add increased zoning for better temperature control in the building. The cost of the follow-up evaluation is included in section 1.2. A budgetary allowance to upgrade or replace aspects of the control system is included in the Replacement Reserves Report.
- In addition to the aforementioned HVAC study; it is recommended that the HVAC contractor evaluate the building for the potential reconfigure and design of installing a central cooling system for the entire the building, as the majority of the classrooms do not have cooling. This would allow for a more comfortable indoor environment in the building throughout the year. The cost of the HVAC study is included above. The estimated cost for installing central cooling throughout the remainder of the building is included in the Replacement Reserves Report.
- The rooftop-mounted, packaged, "Trane" HVAC units appear to be in good condition and will require routine maintenance during the evaluation period.
- The boilers appear to be in good condition and will require routine maintenance during the evaluation period.
- The expansion tanks appear to be in good condition and will require routine maintenance during the evaluation period.
- The fuel oil pumps appear to be in good condition and will require routine maintenance during the evaluation period.
- The underground fuel storage tanks could not be directly observed during the assessment. The UST's will require routine maintenance during the evaluation period.
- The circulating pumps appear to be in good condition. Based on their estimated Remaining Useful Life (RUL), the hot and cold water circulating pumps will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The unit ventilators appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL), the unit ventilators will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The finned-tube radiant heat units appear to be in good condition and will require routine maintenance during the evaluation period.
- The chiller appears to be in good condition and will require routine maintenance during the evaluation period.
- The cooling tower appears to be in good condition and will require routine maintenance during the evaluation period.

- The rooftop air-cooled condensing units appear to be in good condition. Based on its estimated Remaining Useful Life (RUL), the rooftop air-cooled condensing units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The VAV terminals are reported to be in good condition and will require routine maintenance during the evaluation period.
- The air handling units appear to be in fair condition. Based on their estimated Remaining Useful Life (RUL) and condition, the air handling units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The through-wall air-conditioning units appear to be in good condition. Based on the estimated Remaining Useful Life (RUL), some of the AC units will require replacement during the evaluation period. The cost of replacement is relatively insignificant and the work can be performed as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- The ceiling-mounted unit heaters appear to be in good condition. Routine maintenance will be required during the evaluation period.
- The mechanical ventilation system and equipment appear to be in good condition and will require routine maintenance during the evaluation period. Equipment or component replacements can be performed as part of the Physical Plant's routine maintenance program.
- According to the client provided AHERA document flooring with asbestos-containing material is located in some duct insulation, pipe and pipe fitting insulation and end caps. A cost allowance for proper removal and disposal of the asbestos-containing duct insulation is included in the Replacement Reserves Report as part of the recommended HVAC improvement work. Removal of the pipe and pipe fitting insulation is anticipated to be minimal and no costs are included for this work. This allowance is based solely on the information presented in the client provided AHERA document. An excerpt of this AHERA document is included in the appendices. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

- A sustainable recommendation for HVAC is to pursue the installation of a central air-conditioning system for the entire building.
- An additional sustainable recommendation for HVAC is to replace the air handling units with modern air handlers, which include economizer modes and a centralized exhaust air system with an enthalpy wheel. This would reduce energy consumption by managing the amount of energy used in ventilating the areas supplied by the air handling units.
- An additional sustainable recommendation for HVAC is to equip the circulating pumps with high efficiency motors to reduce energy consumption.

7.2. BUILDING PLUMBING

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

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

Domestic hot water is supplied by six electric hot water heaters. The water heaters have a rated kW input and nominal-gallon capacity, which are as follows; 600-kW - 1,200 gallons (2), 216-kW - 500 gallons (1), 145-kW - 350 gallons (1), 96-kW - 250 gallons (1) and 60-kW - 200 gallons (1). The electric water heaters are located in the pool filter room, main mechanical room and custodial closets.

One of the 600-kW electrical water heaters is equipped with a heat exchanger that supplies additional hot water for the pool heater.

Domestic hot water is supplied to the New AgriScience Building by one 400-gallon commercial water heater. The water heater has a dual-fuel capability, utilizing natural gas or fuel oil. The water heater is located in the main mechanical room. The domestic water system consists of circulating pumps and an expansion tank. See Section 7.1 for the fuel UST.

A dual pump sewage system is located at the rear exterior of the New AgriScience Building. The sewage pumps eject the waste into the municipal sanitary sewer system.

A dual pump sewage system is located at an interior closet in the Old AgriScience Building. The sewage pumps eject the waste into the municipal sanitary sewer system.

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

Observations/Comments:

- The plumbing system appears to be well maintained and in good condition. The water pressure appears to be adequate. Based on their estimated Remaining Useful Life (RUL), partial replacement of the plumbing system piping will be required during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- There is no evidence that the property uses polybutylene piping for the domestic water distribution system. According to the POC, polybutylene piping is not used at the property.
- The pressure and quantity of hot water appear to be adequate.
- The domestic electric water heaters for the main building appear to be in fair condition. Several burned out elements were reported in the pool filter room. Based on their estimated Remaining Useful Life (RUL) and condition, the water heaters will require replacement during the evaluation period. EMG recommends the units be replaced with energy efficient gas-fired water heaters. The estimated cost for replacement with gas boilers and running pipe for gas service is included in the Replacement Reserves Report.
- The domestic gas-fired water heater for the New AgriScience building appears to be in good condition, requiring routine maintenance during the evaluation period.
- The sewage pumps are reported to be in good condition. Equipment testing is not within the scope of a Facilities Needs Assessment. The sewage pump system will require routine maintenance during the evaluation period.
- The accessories and fixtures in the restrooms are in fair to poor condition. There was one broken and eight missing lavatory sinks noted at the ground floor, 200 floor, and 400 floor boy's restrooms. Based on the estimated Remaining Useful Life (RUL) and condition, the restroom fixtures will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The drinking fountains are in good to fair condition. Based on the estimated Remaining Useful Life (RUL), the drinking fountains will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The pipe insulation was observed with water stains and suspect mold at weight room #1 and cardio room #2 (total approximately 20 LF). Remediation can be conducted by properly trained building maintenance staff. In addition, the source of this moisture should be addressed in order to prevent future mold problems. The estimated costs of corrective action are of a minimal quantity, and are considered to be part of routine maintenance operations. No other costs are included in the tables.

Sustainable Recommendations:

- A sustainable recommendation for plumbing is to replace the restroom fixtures with water-saving devices, such as low-flow faucet aerators and low-flush volume toilets and urinals.
- A sustainable recommendation for plumbing is to replace the electric domestic water heaters with more efficient gas-fired domestic boilers.

7.3. BUILDING GAS DISTRIBUTION

Gas service is supplied from the gas main on the adjacent public street. The gas meters and regulators are located along the exterior walls of the Main Building and New AgriScience Buildings. The gas distribution piping within the buildings is malleable steel (black iron).

Gas service is not supplied to the Old AgriScience Building.

Observations/Comments:

- The pressure and quantity of gas appear to be adequate.
- The gas meters and regulators 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.
- A cost is provided in section 7.1 for expansion of the gas service for recommended boiler conversions to gas.

Sustainable Recommendations:

- There are no sustainable recommendations for gas distribution.

7.4. BUILDING ELECTRICAL

The electrical supply lines run underground to a pad-mounted transformer and enclosed vaults at each building, which feed interior-mounted and exterior-mounted electrical meters.

The main electrical service size at the main building is 6,000-Amps, 480/277-Volt, three-phase, four-wire, alternating current (AC). The main electrical service size at the New AgriScience Building ranges from a minimum of 800-Amps, 480/277-Volt, three-phase, four-wire, alternating current (AC). The main electrical service size to each building ranges from a minimum of 200-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC). Stepdown transformers are located in electrical and mechanical rooms in the main building and New AgriScience Building. The electrical wiring is reportedly copper, installed in metallic conduit. Circuit breaker panels are located throughout each building.

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

A diesel-powered, 205-kW, emergency generator is located at the rear of the main building in close proximity to the loading dock. The generator provides back-up power for elements of the fire and life safety systems. The fuel tank is an aboveground tank located below the generator.

A diesel-powered, 100-kW, emergency generator is located in the main building basement mechanical room below the stage. The generator provides back-up power for the auditorium. The fuel tank is a 500-gallon underground storage tank (UST), located at the right side of the building adjacent to the cooling tower.

A diesel-powered, 130-kW, emergency generator is located at the rear of the New AgriScience Building. The generator provides back-up power for elements of the fire and life safety systems at the New AgriScience Building. The fuel tank is an aboveground tank located below the generator.

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. However, according to the custodial staff, the breakers in the commercial kitchen trip periodically and upgrading the electrical power to the kitchen are recommended. The estimated cost of this work is included in the Replacement Reserves Report.
- The interior lighting is in fair condition. Upgrades and replacements to the interior lighting have not been performed in recent years. Based on energy conservation and current condition, EMG recommends replacing all lighting fixtures with high-efficiency fluorescent light fixtures or LED fixtures. The estimated cost of this work is included in the Replacement Reserves Report.
- The public address system appears to be in good condition and will require routine maintenance during the evaluation period. Based on its estimated Remaining Useful Life (RUL) and the Capital Plan, the public address system will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The auditorium lighting and sound system appears to be in good condition. Some replacement work is anticipated as part of the stage rigging repairs discussed in Section 6.8.
- The generators are in good to fair condition and are reportedly tested on a weekly basis. The 205-kW generator is approximately 12 years old, the 100-kW generator is original and the 130-kW generator is approximately 7 years old. Based on its estimated Remaining Useful Life (RUL) and condition, the 100-kW generator will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The underground 550-gallon storage tank could not be directly observed and is reported to be in good condition. Based on its estimated Remaining Useful Life (RUL), the UST will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- According to the client provided AHERA document flooring with asbestos-containing material is located in the stage wiring. A cost allowance for proper removal and disposal of the asbestos-containing insulation is included in the Replacement Reserves Report as part of the recommended stage rigging replacement work. This allowance is based solely on the information presented in the client provided AHERA document. An excerpt of this AHERA document is included in the appendices. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

- A sustainable recommendation for building electrical is to install occupancy sensors in place of light switches in classrooms, offices and restrooms throughout the building.

7.5. ELEVATORS AND CONVEYING SYSTEMS

There are two hydraulic, passenger elevators at the main building. The elevators were manufactured by Dover Elevator. Each elevator has a rated capacity of 2,000 pounds and a speed of 100 feet per minute. The elevator machinery is located in a room adjacent to the base of the shaft.

There is one hydraulic, passenger elevator in the New AgriScience Building. The elevator was manufactured by Thyssen Krupp Elevator. The elevator has a rated capacity of 3,500 pounds and a speed of 100 feet per minute. The elevator machinery is located in a room adjacent to the base of the shaft.

Each elevator cab has vinyl-tiled floors, plastic-laminated wood and stainless steel wall panels, and recessed, ceiling 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 at the main building are the originally installed system, with replacement controls. The elevator machinery and controls at the New AgriScience Building are the originally installed system in 2002. Based on their estimated Remaining Useful Life (RUL), some of the elevator equipment will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- In addition to the aforementioned elevator replacements, replacement of the elevator cab, which serves the cafeteria, will be required in order to allow ADA access in the main building. The existing interior cab measures 3 feet 6 inches by 6 feet. The estimated cost of this work is included in the Replacement Reserves Report.
- In order to handle a larger elevator cab, replacement of the 2,000 lb capacity elevator system with a 3,500 lb capacity elevator will be required. A cost for this work is included above with the elevator replacements.
- The elevators are inspected on an annual basis by the municipality, and a certificate of inspection is displayed in the elevator cabs.
- 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 good to fair condition. Based on their estimated Remaining Useful Life (RUL), some of the cab finishes will require replacement during the evaluation period. The cost to replace the finishes is relatively insignificant and the work can be performed as part of the Physical Plant's routine maintenance program. The estimated cost of this work is not included in the cost tables.

Sustainable Recommendations:

- A sustainable recommendation for the elevator is to equip the hydraulic pumps with high efficiency motors to reduce energy consumption.

7.6. FIRE PROTECTION SYSTEMS

The fire protection systems consist of a wet-pipe sprinkler system, portable fire extinguishers, smoke detectors, pull stations, and alarm horns. Siamese connections are located on the exterior of the buildings. Hardwired smoke detectors are located throughout the common areas. The nearest fire hydrants are located along the property's drive aisles and are approximately 50 feet from each building.

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

Fire sprinkler risers are located in a fire protection equipment room at each building. The system is equipped with a backflow preventer.

The main building system is equipped with a fire pump rated at 1,000 gallons per minute and fire pump controller. The system is also equipped with a backflow preventer. A nominal 10,000-gallon, aboveground, storage tank supplies the fire prevention system and is located in the main mechanical room adjacent to the heating boilers.

A central fire alarm panel is located in the main mechanical room 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.

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

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

The walls of the fire stairwells are finished with exposed masonry. The stairs discharge at the ground floor, directly to the interior and exterior of the building.

Observations/Comments:

- Information regarding fire department inspection information is included in Section **3.2.**
- The fire sprinklers appear to be in good condition and are inspected by a qualified contractor on a routine basis. The fire sprinklers will require routine maintenance during the evaluation period.
- The fire extinguishers are tested annually and appear to be in good condition. The fire extinguishers were tested and inspected within the last year.
- The pull stations and alarm horns appear to be in good condition and will require routine maintenance during the evaluation period.
- Smoke detector replacement is considered to be routine maintenance.
- Exit sign and emergency light replacement is considered to be routine maintenance. There was two exit signs noted broken, one at the ground floor corridor and one in the corridor adjacent to room 211. Replacement of these exit signs can be performed as part of the property management's routine maintenance program.
- 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.
- The security panel appears to be in good condition. Equipment testing is not within the scope of a Facilities Needs Assessment.
- The dry-chemical, fire suppression system appears to be in good condition and is tested regularly by a qualified fire equipment contractor. Although the main kitchen cooking area is equipped with an exhaust hood and fire suppression system, not all areas are covered by the fire suppression system above the cooking areas. Based on the observed condition, it is recommended that a dry-chemical "Ansul" type fire protection system be installed above all cooking surfaces. The estimated cost of this work is included in the Replacement Reserves Report.
- The water storage tank for the fire suppression system appears to be in good condition. Based on its estimated Remaining Useful Life (RUL), the 10,000-gallon water storage tank will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The fire pump appears to be in good condition and will require routine maintenance during the evaluation period.
- The exit stairwells appear to have been constructed in accordance with applicable codes in force at the time of construction. The stairwells appear to be in general compliance.

- The stairwell doors and door hardware are fire-rated. Components bearing certification labels are displayed on the doors.

Sustainable Recommendations:

- A sustainable recommendation for fire protection is to install Energy Star rated illuminated "LED" exit signs.

8. INTERIOR SPACES

8.1. INTERIOR FINISHES

The following table generally describes the interior finishes in units:

Typical Space Finishes			
Room	**Floor**	**Walls**	**Ceiling**
Classrooms	Vinyl tile and carpet in limited areas	Painted concrete masonry units and painted Masonite in music and ROTC classrooms	Suspended acoustic tiles
Shop Classrooms	Painted or sealed concrete and wood	Painted concrete masonry units	Suspended acoustic tiles or exposed structure
Maintenance Shop & Storage	Vinyl tile	Painted drywall	Suspended acoustic tiles and exposed structure
Kitchens	Quarry tile	Painted concrete masonry units	Suspended acoustic tiles
Restrooms	Ceramic tile	Painted concrete masonry units and ceramic tile	Ceramic tile and suspended acoustic tiles and painted drywall
Greenhouse	Concrete pavers	Exposed structure	Exposed structure

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

Observations/Comments:

- The interior finishes are in good to fair condition. Based on the Estimated Useful Life and the observed conditions, painting is recommended during the term. The costs are included in the Replacement Reserves Report within Section 6.8.
- The wood strip flooring in the wood shop and auditorium stage are included with the gymnasium floor cost in Section 6.8.
- The interior doors and door hardware are in fair to poor condition. The veneer is delaminating on several doors and will require replacement. See Section 3.1 for information about the handles. The costs are included in the Replacement Reserves Report.
- The laboratory cabinets are in fair condition due to age and frequent use. Based on the Capital Plan and condition, the cabinets, lavatories, and acid proof countertops will require replacement during the assessment period. The cost is included in the Replacement Reserves Report. This cost includes an allowance for proper removal and disposal of the asbestos-containing tops as part of the recommended replacement work. Identifying asbestos-containing material is not within the scope of this facility condition assessment.

Sustainable Recommendations:

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

8.2. COMMERCIAL KITCHEN EQUIPMENT

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

Appliance	Comment
Refrigerators	Walk-in (1), Chest (3), Upright (3)
Freezers	Walk-in (1)
Ranges	None
Ovens	Electric
Griddles / Grills	None
Fryers	Yes
Hood	Exhaust ducted to exterior
Dishwasher	None, has a 3-compartment sink
Microwave	None
Ice Machines	None
Steam tables	Yes
Work tables	Stainless steel
Shelving	Stainless steel

A commercial laundry is located in a room adjacent to the loading dock and custodial office. The laundry has one commercial washing machine, with a 40-pound capacity, and two commercial electric dryers, each with a 40-pound capacity.

Observations/Comments:

- The kitchen appliances appear to be in good condition. Based on their estimated Remaining Useful Life (RUL), some of the kitchen appliances will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The refrigeration equipment appears to be in good condition. Based on their estimated Remaining Useful Life (RUL), the refrigeration units will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The commercial laundry washer and dryers appear to be in good to fair condition. Based on their estimated Remaining Useful Life (RUL), the washer and dryers will require replacement during the evaluation period. The estimated cost of this work is included in the Replacement Reserves Report.
- The main kitchen cooking area is equipped with an exhaust hood and fire suppression system. However, not all areas are covered by the fire suppression system above the cooking areas. Based on the observed condition, an Ansul system and fire suppression system will be required at the hood above all cooking areas. The cost for this work is included in Section 7.6.

Sustainable Recommendations:

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

8.3. HVAC

See Section 7.1 for building mechanical systems.

8.4. PLUMBING

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

9. OTHER STRUCTURES

A concession stand building is located adjacent to the football field and running track. The building is a CMU constructed structure set on a concrete slab covered with an asphalt shingled pitched roof over wood sheathing. The building is supplied with 200-Amp service and contains a concession stand with refrigeration equipment, hot dog roller, sinks, a storage room and a men's and women's restroom. There is one electric ceiling-mounted unit heater for heating the interior concession stand area and one 40-gallon electric water heater supplies domestic hot water.

An old pump house building is located adjacent to the new soccer field. The old pump house building is a CMU constructed structure set on a concrete slab covered with an asphalt shingled pitched roof over wood sheathing. The building is utilized for storage.

Observations/Comments:

- The concession stand building is in good overall condition, requiring routine maintenance during the evaluation period. There are, however, some deficiencies noted that are as follows; a damaged roll-up metal door, an unattached downspout, damaged gutters and damaged and missing soffit material. In addition, there is a small gap under the roll-up doors, which is a potential area for water infiltration. Repair of the aforementioned is recommended as part of the property management's routine maintenance program. The cost of this work is not included in the cost tables.
- The concession stand equipment appears to be in good condition requiring routine maintenance during the evaluation period.
- The water heater appears to be in good condition requiring routine maintenance during the evaluation period.
- The unit heater appears to be in good condition requiring routine maintenance during the evaluation period.
- The accessories and fixtures in the restrooms are in good condition and will require routine maintenance during the evaluation period.
- The old pump house building is in good condition and will require routine maintenance during the evaluation period.

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-020.017 **Project Name: Westhill High School**

Photo #1:	Property identification signage at front elevation of building

Photo #2:	Front elevation of building and building identification signage

Photo #3:	Main property entrance drive off Roxbury Road

Photo #4:	Accessible parking at east elevation

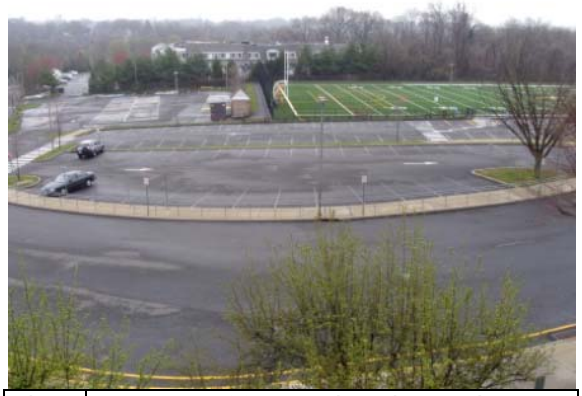


Photo #5:	Overview of front parking lot, student parking and new soccer field

Photo #6:	Parking lot at front of building (south elevation)

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #7:	Parking lot at front of building (east elevation)

Photo #8:	Parking lot at rear of building (north elevation)

Photo #9:	Drive aisle and parking stalls adjacent to New AgriScience Building

Photo #10:	Service drive at rear of building

Photo #11:	Drive aisle along west elevation of building

Photo #12:	Gravel parking adjacent to the rear service drive

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #13:	Concrete sidewalk at front of building

Photo #14:	Concrete sidewalk at front of building

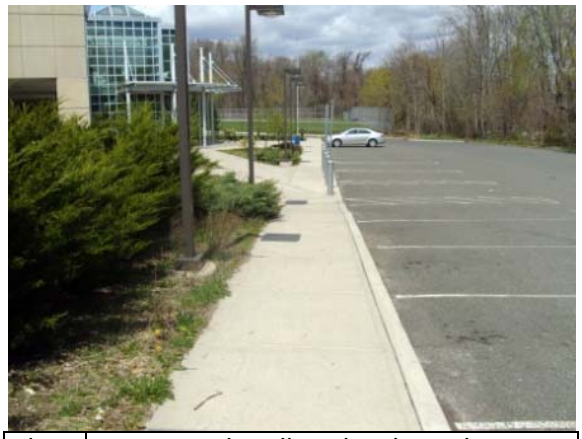


Photo #15:	Concrete sidewalk and curbing along New AgriScience Building

Photo #16:	Concrete sidewalk and curbing at west elevation of building

Photo #17:	Cracking at concrete sidewalk at front of building

Photo #18:	Asphalt sidewalk leading to practice soccer field and tennis courts

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

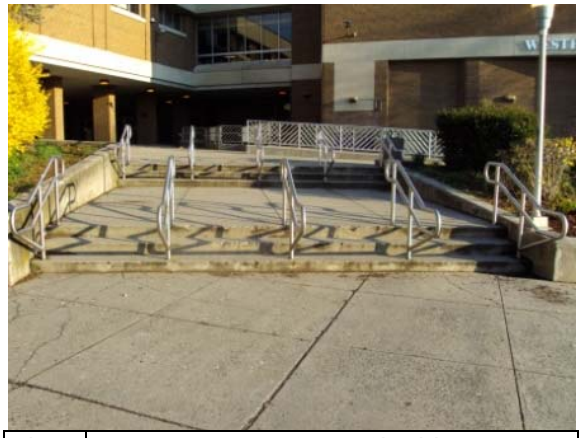


Photo #19:	Concrete steps at front of building

Photo #20:	Damaged concrete steps

Photo #21:	Concrete curbing

Photo #22:	Asphalt curbing

Photo #23:	Deteriorated concrete curbing along front drive aisle

Photo #24:	Deteriorated and displaced asphalt curbing adjacent to baseball field

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #25:	Landscaping sloped towards foundation wall at New AgriScience Building

Photo #26:	Water in tunnel below pool from overflowing sump pump basin, due to non-operational sump pump

Photo #27:	Drainage inlet at hard surface

Photo #28:	Drainage inlet at landscaping

Photo #29:	Exterior landscaping at south elevation of building

Photo #30:	Barren landscaping at front of building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #31:	Overgrown tree at front of building

Photo #32:	Concrete retaining wall and sidewalk at front of building

Photo #33:	Masonry retaining wall adjacent to new soccer field

Photo #34:	Surface-mounted light fixtures at covered walkways

Photo #35:	Damage building-mounted wall light at west side elevation of the building

Photo #36:	Abandoned pole light concrete base at front sidewalk

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #37:	Chain link fencing at football field

Photo #38:	Chain link fencing condition at baseball field

Photo #39:	Chain link fencing at softball field

Photo #40:	Damaged fence pole adjacent to Old AgriScience Building

Photo #41:	Chain link tennis court fencing

Photo #42:	Chain link tennis court fencing

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #43:	Football field

Photo #44:	Running track surround at football field

Photo #45:	Bleachers and press box at football field

Photo #46:	ADA ramp at football field bleachers leading to press box

Photo #47:	Football field scoreboard

Photo #48:	New soccer field

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #49:	New soccer field scoreboard

Photo #50:	Practice soccer field

Photo #51:	Practice soccer field condition

Photo #52:	Baseball field

Photo #53:	Baseball field chain link fence backstop

Photo #54:	Baseball field bench

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #55:	Baseball field bleachers

Photo #56:	Infield repairs to baseball field by custodial staff

Photo #57:	Softball field

Photo #58:	Softball field chain link fence backstop

Photo #59:	Softball field bench

Photo #60:	Softball field bleachers

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #61:	Baseball field ponding

Photo #62:	Softball field ponding and sink holes

Photo #63:	Tennis courts

Photo #64:	Tennis courts

Photo #65:	Batting cage at rear of baseball field

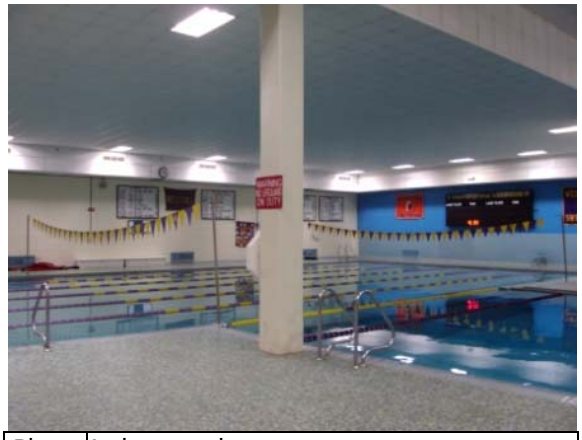


Photo #66:	Indoor pool

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #67:	Indoor pool diving boards

Photo #68:	Pool electric heater

Photo #69:	Pool filtration equipment

Photo #70:	Trash dumpsters at rear service drive

Photo #71:	Compactor at rear loading dock

Photo #72:	Rooftop package unit at Old AgriScience Building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #73:	Heating boilers at main building (1 of 4)

Photo #74:	Heating boilers at New AgriScience Building (main mechanical room)

Photo #75:	Heating boilers at New AgriScience Building (greenhouse mechanical room)

Photo #76:	Heating boiler, circulator pumps and expansion tank at Old AgriScience Building

Photo #77:	Expansion tanks at main building

Photo #78:	Hot water circulating pumps at main building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #79:	Hot water circulating pumps at main building

Photo #80:	Hot water circulating pumps at New AgriScience Building

Photo #81:	Underground 10,000-gallon fuel oil storage tank rear of main building

Photo #82:	Underground 6,000-gallon fuel oil storage tank adjacent New AgriScience

Photo #83:	Underground 1,000-gallon fuel oil storage tank adjacent Old AgriScience

Photo #84:	Air Handling Unit (AC-1)

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #85:	Air Handling Unit (AC-4)

Photo #86:	Air Handling Unit (AC-8)

Photo #87:	Air Handling Unit (V-3 & V-4)

Photo #88:	Air Handling Unit (V-7)

Photo #89:	Air Handling Unit (V-9 & V-10)

Photo #90:	Classroom floor-mount unit ventilator and cabinet radiant heater

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #91:	Classroom floor-mount unit ventilator

Photo #92:	Recessed cabinet-mounted radiant heat unit at stairs

Photo #93:	Cooling tower at east side of building

Photo #94:	Chiller at basement mechanical room

Photo #95:	Chilled water circulating pumps at basement mechanical room

Photo #96:	Rooftop air-cooled condensing unit at New AgriScience Building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #97:	Rooftop air-cooled condensing unit at New AgriScience Building

Photo #98:	Rooftop air-cooled condensing unit at New AgriScience Building

Photo #99:	RTU-1 at New AgriScience Building

Photo #100:	Domestic electric water heater at pool filter room

Photo #101:	Domestic electric water heater and heat exchanger at pool filter room

Photo #102:	Domestic electric water heater at main mechanical room

Photo #103:	Domestic electric water heater at custodial closet

Photo #104:	Domestic water heater at New AgriScience Building

Photo #105:	Overview of common area restroom

Photo #106:	Common area restroom lavatory sinks

Photo #107:	Common area restroom lavatory sinks with two missing sinks

Photo #108:	Common area restroom missing two lavatory sinks

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #109:	Common area restroom with broken lavatory sink

Photo #110:	Boys common area restroom urinals

Photo #111:	Wall-mounted toilet at common area restroom

Photo #112:	Suspect mold on pipe insulation at weight room #1

Photo #113:	Common area drinking fountain

Photo #114:	Enclosed and protected gas metering

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #115:	Main electrical switchgear at main building

Photo #116:	Main electrical switchgear at New AgriScience Building

Photo #117:	Main electrical switchgear at Old AgriScience Building

Photo #118:	Main electric meter at main building basement adjacent interior vault

Photo #119:	Pad-mounted transformer at rear of main building

Photo #120:	Interior vault at basement mechanical room

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #121:	Step-down transformer

Photo #122:	Electrical panels at main kitchen

Photo #123:	Electrical panels

Photo #124:	School PA system equipment at office

Photo #125:	Classroom PA system speaker and call button

Photo #126:	Auditorium light controls

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #127:	Auditorium audio controls

Photo #128:	Generator for main building

Photo #129:	Generator for New AgriScience Building

Photo #130:	Generator for auditorium

Photo #131:	Buried UST fuel oil storage tank for auditorium generator

Photo #132:	Elevator at main building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #133:	Elevator cab interior at main building

Photo #134:	Hydraulic elevator machinery at main building

Photo #135:	Elevator cab interior at New AgriScience Building

Photo #136:	Hydraulic elevator machinery New AgriScience Building

Photo #137:	Fire hydrant at front of building

Photo #138:	Central fire alarm panel at main mechanical room

Photo #139:	Annunciator panel at lobby

Photo #140:	Main fire suppression system risers at main mechanical room

Photo #141:	Water storage for fire suppression system

Photo #142:	Fire pump controller

Photo #143:	1,000 GPM Fire pump

Photo #144:	Exhaust hood with fire suppression above fryer

Photo #145:	Fire suppression equipment for kitchen hood

Photo #146:	Missing sprinkler heads above portion of kitchen hood

Photo #147:	Fire extinguisher in classroom

Photo #148:	Illuminated exit sign and emergency lights

Photo #149:	Common area fire pull station and strobe alarm

Photo #150:	Fire sprinkler head

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #151:	Siamese connection at front of building

Photo #152:	Broken exit sign at common area

Photo #153:	Commercial washer and dryers adjacent to rear loading dock

Photo #154:	Kitchen ovens

Photo #155:	Kitchen steamers

Photo #156:	Kitchen fryers

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #157:	Walk in refrigerator and freezer

Photo #158:	Refrigeration unit in kitchen

Photo #159:	Chest cooler in kitchen

Photo #160:	3-Compartment sink in kitchen

Photo #161:	Concession stand building adjacent to football field

Photo #162:	Interior concession stand

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #163:	Damaged roll-up door

Photo #164:	Damaged gutter and soffit

Photo #165:	Unattached downspout and missing soffit

Photo #166:	Old pump house building adjacent to new soccer field

Photo #167:	Main entrance and partial elevations

Photo #168:	Street/south facing elevation

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #169:	Partial west elevation with 9th grade addition on left

Photo #170:	Elevation of old gym facing football field

Photo #171:	Concrete foundation wall with failing patches, exposed steel rebar and severe spalling

Photo #172:	Concrete foundation wall with failing patches, exposed steel rebar and severe spalling

Photo #173:	Loose gasket at joint of 9th grade wing and original building

Photo #174:	Walkway between old gym and new gym

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #175:	Ponding along walkway between old gym and new gym

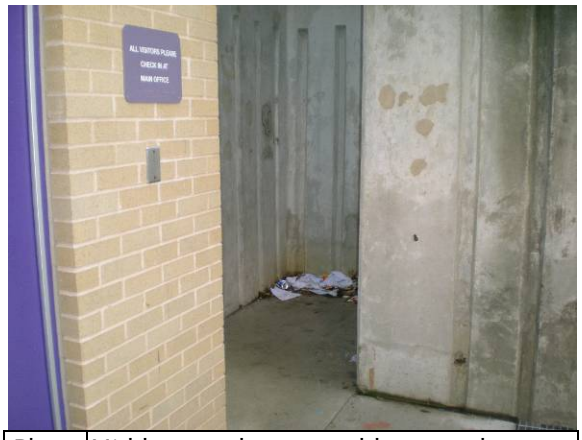


Photo #176:	Hidden area between old gym and new gym – life safety issue

Photo #177:	One of a few pairs of doors that do not close properly

Photo #178:	New gymnasium addition

Photo #179:	Overview of courtyard

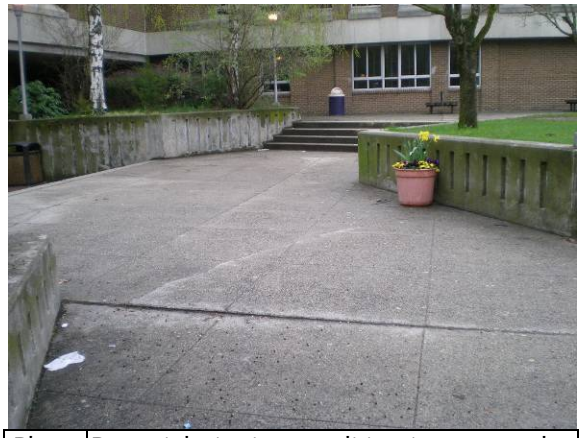


Photo #180:	Potential tripping condition in courtyard with vertically displaced concrete

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #181:	Loading dock area

Photo #182:	Loading dock damage at brick overhead

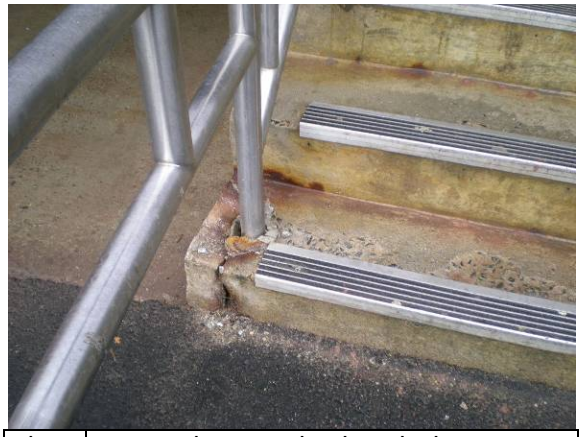


Photo #183:	Damaged stairs at loading dock

Photo #184:	Worn mortar along base of wall perimeter including perimeter of old gym area, loading dock and audit.

Photo #185:	Single paned sliding window with damaged frame

Photo #186:	Partial north elevation of Finch (A) Wing

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #187:	Minor cracking of brick veneer at corner

Photo #188:	East elevation of auditorium

Photo #189:	Main ADA parking area

Photo #190:	Steel lintel beginning to rust

Photo #191:	Roof hatch

Photo #192:	Damaged snow guard over new gym entrance – overall design of snow guard does not work

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #193:	Partial overview of skylights and roofing

Photo #194:	Clogged roof drain and ponding at small roof section at NE corner of Raynor (B) Wing

Photo #195:	Roof flashing improperly shaped to hold water

Photo #196:	Large area of ponding at clogged roof drain

Photo #197:	Failing roof patches and ponding areas not sloped to existing drains

Photo #198:	Large area of ponding at auditorium roof smoke evacuation hatches

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #199:	Main lobby with ADA access to main office within Finch (A) wing

Photo #200:	Open riser stair in main lobby in Finch

Photo #201:	Auditorium doors with knob handle hardware

Photo #202:	Auditorium

Photo #203:	ADA restroom - ground floor level near auditorium and music classrooms

Photo #204:	Finishes in guidance center – missing stair riser nosing and vinyl surface

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #205:	Pre-cast concrete waffle system

Photo #206:	Dentist area within Nurse's Office

Photo #207:	Nurse's bed area

Photo #208:	Protruding drinking fountain and knob handle hardware at classroom

Photo #209:	Typical corridor in classroom wings

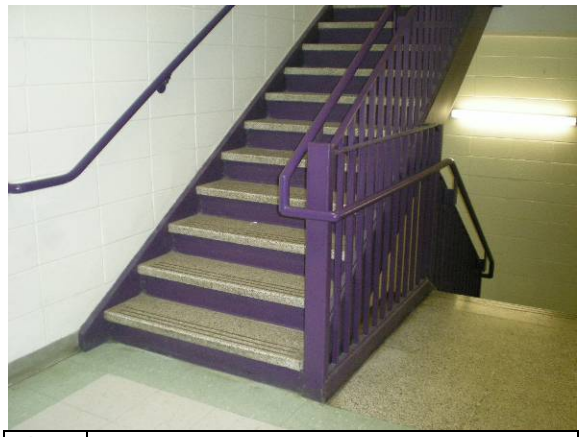


Photo #210:	Fire evacuation stairway

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #211:	Typical science lab

Photo #212:	Teachers' restroom in Finch (A) Wing

Photo #213:	Finishes in students' restroom in Finch (A) Wing

Photo #214:	Conference room in main office

Photo #215:	Bleacher seating in pool area

Photo #216:	Door conditions in locker room off pool

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #217:	Showers in locker room off pool

Photo #218:	Restroom in locker room off pool

Photo #219:	Paper towel dispenser requiring replacement due to twisting mechanism

Photo #220:	Entrance to Boys' Locker room – non-ADA

Photo #221:	Shower controls in Boys' Locker room for pool too high and require twisting

Photo #222:	Loading dock at Auditorium

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #223:	Old gymnasium

Photo #224:	Cafeteria

Photo #225:	Media Center

Photo #226:	Cupping acoustic tiles in Media Center

Photo #227:	Condition of classroom door

Photo #228:	Student store

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #229:	Typical classroom

Photo #230:	Leaks in classroom 435

Photo #231:	No ADA access to Main Office in Raynor (B) Wing

Photo #232:	New gymnasium

Photo #233:	ADA shower/restroom in new gym locker room used for storage

Photo #234:	No ADA access to wrestling room

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #235:	Structure at pool below grade

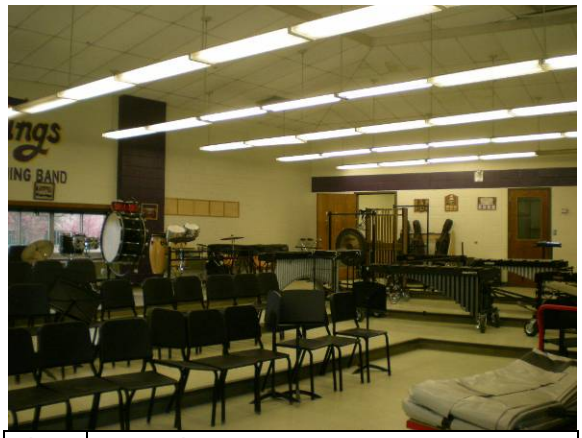


Photo #236:	Music classroom

Photo #237:	Auto shop

Photo #238:	Wood shop

Photo #239:	New AgriScience Building – east elevation

Photo #240:	Peeling soffit at New AgriScience

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #241:	New AgriScience Building – north elevation

Photo #242:	New AgriScience Building – southeast elevation

Photo #243:	New AgriScience Building – south and southwest elevations

Photo #244:	New AgriScience Building – west elevation

Photo #245:	Acrylic panels of greenhouse

Photo #246:	Roof overview – new AgriScience Building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #247:	Roof overview – new AgriScience Building

Photo #248:	Ponding at entrance to roof of new AgriScience Building

Photo #249:	Corridor of new AgriScience Building

Photo #250:	Structure of new AgriScience Building

Photo #251:	Food science classroom of new AgriScience Building

Photo #252:	Restroom of new AgriScience Building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #253:	Main office of new AgriScience Building

Photo #254:	Main entrance stair tower of new AgriScience Building

Photo #255:	Greenhouse in new AgriScience Building

Photo #256:	Structure of acrylic panel walls

Photo #257:	Elevator control panel

Photo #258:	Leak in classroom #12

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #259:	Roll up door and structure in new AgriScience Building

Photo #260:	Old AgriScience Building – south elevation

Photo #261:	Old AgriScience Building – east and north elevations

Photo #262:	Close up of window damage

Photo #263:	Old AgriScience Building – west elevation

Photo #264:	Roof overview of old AgriScience Building

EMG PHOTOGRAPHIC RECORD

Project No.: 88166.09R-020.017 **Project Name: Westhill High School**

Photo #265:	Roof overview of old AgriScience Building

Photo #266:	Close up of roof vent damage at old AgriScience Building

Photo #267:	Classroom in old AgriScience Building

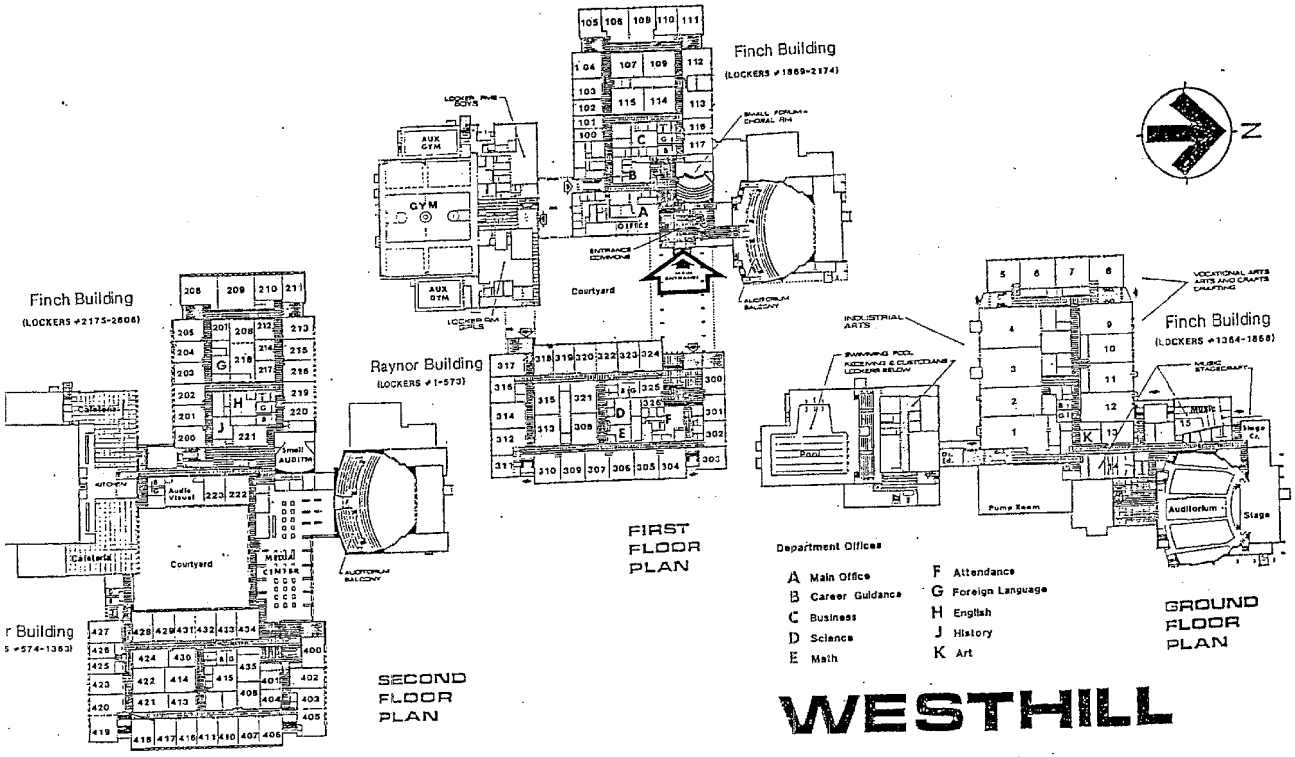
Photo #268:	Leak at old skylight locations

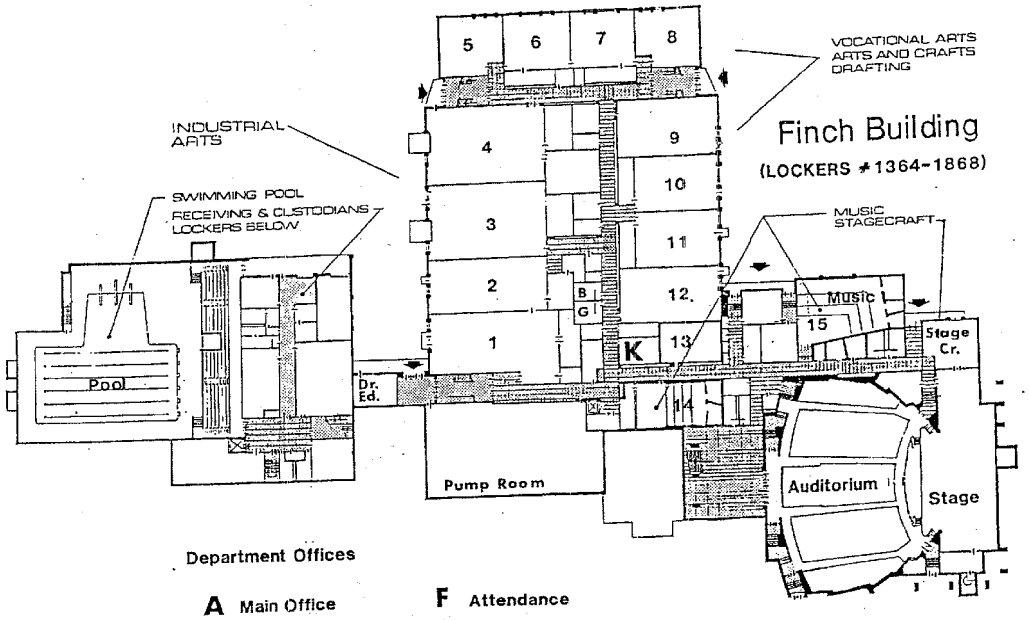
Photo #269:	SPED classroom with kitchenette workstations and ADA access

Photo #270:	Water leak with rotted wood timber structure

APPENDIX B:
SITE AND FLOOR PLANS

WESTHILL
HIGH SCHOOL
SERVICE
ENTRANCE ROAD
ROXBURY ROAD


Finch Building
(LOCKERS #2175-2606)
Raynor Building
(LOCKERS #1-573)
Finch Building
(LOCKERS #1869-2174)
Finch Building
(LOCKERS #1364-1868)
Courtyard
Courtyard
Cafeteria
Audio Visual
Small AUDITM
AUX GYM
GYM
OFFICE
Pool
Pump Room
Auditorium
Stage
Music
N
SECOND FLOOR PLAN
FIRST FLOOR PLAN
GROUND FLOOR PLAN
Department Offices
A Main Office
B Career Guidance
C Business
D Science
E Math
F Attendance
G Foreign Language
H English
J History
K Art
WESTHILL

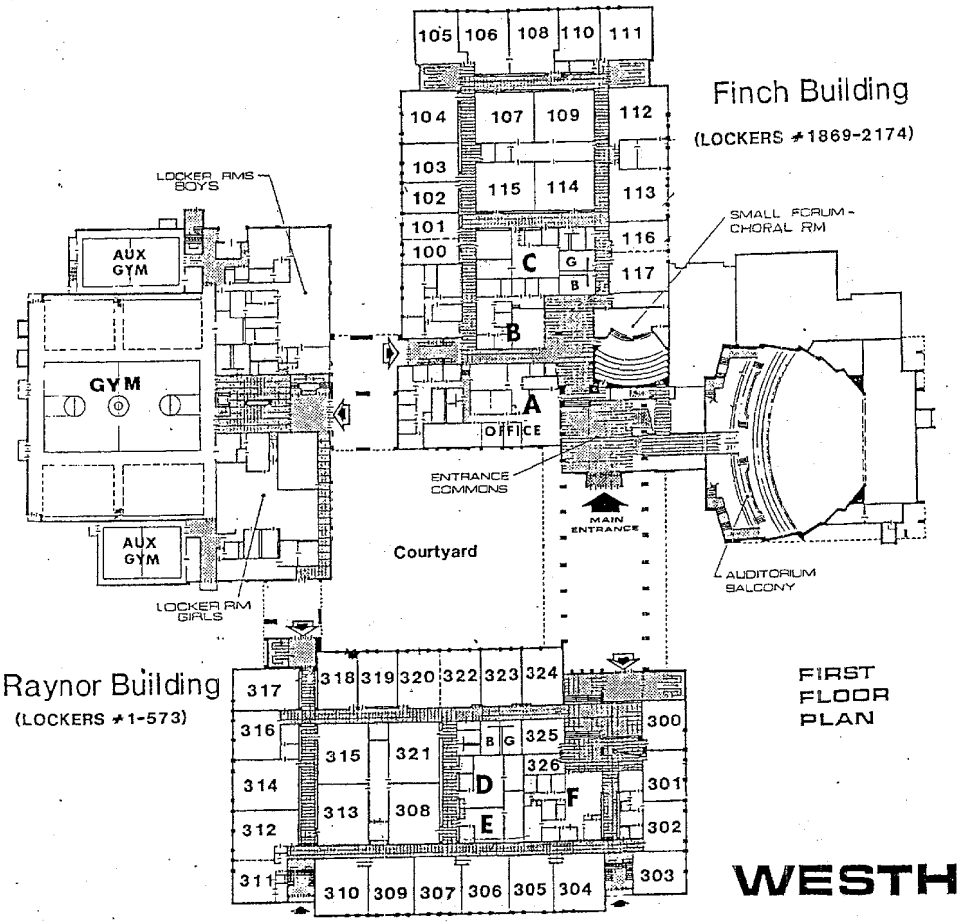


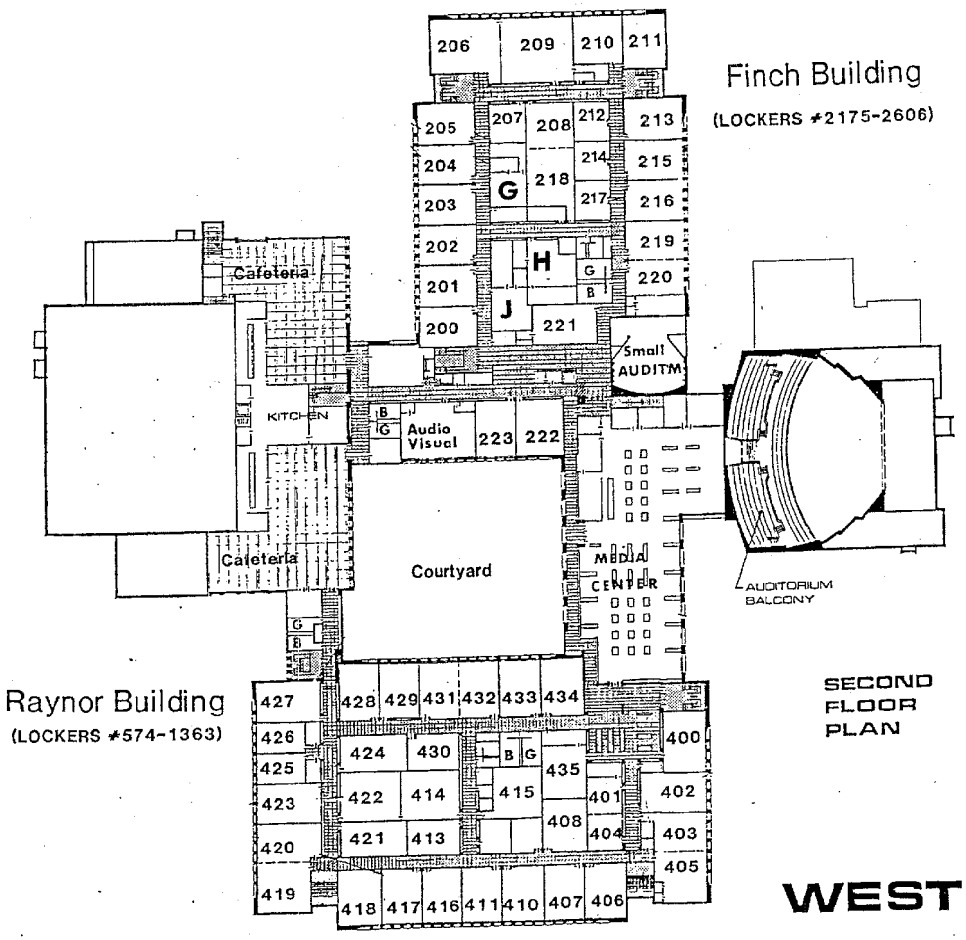
Department Offices

A	Main Office	**F**	Attendance
B	Career Guidance	**G**	Foreign Language
C	Business	**H**	English
D	Science	**J**	History
E	Math	**K**	Art

GROUND
FLOOR
PLAN

WESTHILL


Finch Building
(LOCKERS #1869-2174)
105 106 108 110 111
104 107 109 112
103
102 115 114 113
101
100 116
C G B 117
B
A
OFFICE
LOCKER RMS BOYS
AUX GYM
GYM
AUX GYM
LOCKER RM GIRLS
SMALL FORUM - CHORAL RM
ENTRANCE COMMONS
MAIN ENTRANCE
Courtyard
AUDITORIUM BALCONY
Raynor Building
(LOCKERS #1-573)
317 318 319 320 322 323 324
316 315 321 B G 325 326 300
314 313 308 D E F 301
312 302
311 310 309 307 306 305 304 303
FIRST FLOOR PLAN
WESTHILL


Finch Building
(LOCKERS #2175-2606)
206
209
210
211
205
207
208
212
213
204
214
215
G
218
203
217
216
202
219
H
201
220
J
200
221
Small AUDITM
Cafeteria
KITCHEN
Audio Visual
223
222
Courtyard
Cafeteria
MEDIA CENTER
AUDITORIUM BALCONY
Raynor Building
(LOCKERS #574-1363)
427
428
429
431
432
433
434
426
400
424
430
435
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422
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415
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SECOND FLOOR PLAN
WESTHILL

APPENDIX C:
SUPPORTING DOCUMENTATION

	Westhill High School										
Status	Client - Project Name	Client Scheduled	Client Cost	EMG Cost	EMG Year	EMG Shortage	Out of Scope? Yes/No	Is work completed? Yes/No/Don't Know	EMG Cost Comments		
2	Replace handrails	2005/06	$38,086	$8,400	2009	$29,686	No	Partial	Work complete in all other locations		
2	Repair & resurface walkways & parking lots	2007/08	$384,637	$156,600	2010-2012	$228,037	No	Yes	Major pavement work has been complete within recent years		
N	Replace perimeter fencing & backstops	2006/07	$87,016	$94,529	2010-2012	-$7,513	No	No	No action required		
N	Repair selected window units and install new screens	2006/07	$68,019	$685,445	2010	-$617,426	No	No			
R	Install new window treatments throughout school	2007/08	$163,353	$129,673	2010	$33,680	Yes	No	Cost added per Capital Plan withing 25%		
N	Perform selected masonry restoration & brick pointing	2007/08	$255,863	$257,432		-$1,569	No	No	No action required		
N	Replace doors & hardware	2007/08	$176,825	$318,527	2009-2015	-$141,702	No	No	Various costs		
N	Replace selected flooring	2005/06	$61,079	$110,647	2014	-$49,568	No	No	carpet, no action required		
	above			$1,105,650	2017				vinyl tile, no action requireed		
1	Improve master lock system	2006/07	$67,465	$13,622	2009	$53,843	Yes	No	Enhanced by door costs above		
N	Replace damaged flooring & paint walls at stairwells	2006/07	$32,426	$0		$32,426	No		Covered by interior paint and floor coverings listed		
1	Repair or replace stage rigging equipment	2007/08	$231,613	$0		$231,613	Yes	Don't know	Client must define, no deficiencies noted		
R	Replace selected science lab cabinetry	2008/09	$825,092	$807,840	2009	$17,252	No	No	Capital Plan		
N	Renovate finishes in all toilet rooms	2005/06	$220,137	$205,581	2009/10	$14,556	No	No	ADA renovations & ceramic tile ceiling replacements		
N	Paint selected areas throughout school	2006/07	$209,626	$224,280	2012	-$14,654	No	No	No action required		
1	Reconfigure classroom spaces	2007/08	$319,970	$0		$319,970	Yes	Don't know	Client must define, envir.programmattic		
N	Replace toilet fixtures	2006/07	$200,345	$157,239	2009-2011	$43,106	No	No	No action, within 75%		
N	Repair or replace leaking piping	2006/07	$115,875	$240,589	2011	-$124,714	No	No	Drain piping		
	Upgrade pool system equipment	2007/08	$91,388	$242,078	2012	-$150,690	No	No	Includes tile grout		
1	Repair or replace water distribution piping	2005/06	$363,677	$149,537	2011	$214,140	No	Don't know	Based on EUL, no other issues reported nor observed		
N	Replace water fountains	2005/06	$29,917	$36,136	2010-2014	-$6,219	No	No	No action required		
N	Replace all pumps, circulators and valves	2005/06	$23,552	$75,531	2012	-$51,979	No	No	All EMG costs are at least 3 years out, pending any new		
N	Upgrade & replace equipment to improve heat	2007/08	$465,808	$1,759,194	2010	-$1,293,386	No	No	Pending additional cost from PM; no action		
R	Replace PA system	2007/08	$289,933	$232,500	2016	$57,433	No	No	Within 25%		
N	Repair & upgrade exterior lighting as needed	2004/05	$74,469	$107,558	2009	-$33,089	No	No	No action required		
			$4,796,171	$7,118,588		-$2,322,417					
	W/ 25% Gov. Markup			$8,898,235		-$4,102,064					

Status Key											
1	List 1 - As defined by Michael (needs clairification)										
2	List 2 - As defined by Michael (item complete, to be verified)										
3	Need Assetcalc item added										
R	Item has been reconciled										
N	No change needed					$4,796,171	5-year Capital Plan Total				
						-$4,102,064	EMG Shortage				
						-$4,224,153	EMG Shortage w/o completed items				
						$13,826,157	EMG 10-year Replacement Reserve Total				
						(Includes all Assetcalc items w/o escalation)					

APPENDIX D:
EMG ABBREVIATED ACCESSIBILITY CHECKLIST

Property Name: Westhill High School
Date: April 21 - 23, 2009
Project Number: 88166.09R-020.017

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?		✓		
6.	Is any litigation pending related to ADA issues?		✓		
	Parking	**Yes**	**No**	**N/A**	**Comments**
1.	Are there sufficient parking spaces with respect to the total number of reported spaces?	✓			
2.	Are there sufficient van-accessible parking spaces available (96" wide/ 96" aisle for van)?		✓		Aisles are non-compliant
3.	Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?	✓			
4.	Is there at least one accessible route provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, if provided, and public streets and sidewalks?	✓			

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

EMG Abbreviated Accessibility Checklist					
3.	Are floor surfaces firm, stable, and slip resistant (carpets wheelchair friendly)?	✓			
4.	Is at least one wheelchair-accessible public telephone available?	✓			
5.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	✓			
6.	Is there a path of travel that does not require the use of stairs?	✓	✓		Main office in Raynor (B) wing and auditorium stage are not accessible – stage is a far distance without steps
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?		✓		

EMG Abbreviated Accessibility Checklist					
	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)?	✓			
6.	In unisex toilet rooms, are there safety alarms with pull cords?	✓			
7.	Are stall doors wheelchair accessible (at least 32" wide)?	✓			
8.	Are grab bars provided in toilet stalls?	✓			
9.	Are sinks provided with clearance for a wheelchair to roll under (29" clearance)?	✓			
10.	Are sink handles operable with one hand without grasping, pinching or twisting?	✓			
11.	Are exposed pipes under sink sufficiently insulated against contact?	✓			
12.	Are soap dispensers, towel, etc., reachable (48" from floor for frontal approach, 54" for side approach)?	✓			
13.	Is the base of the mirror no more than 40" from the floor?	✓			

APPENDIX E:
PRE-SURVEY QUESTIONNAIRE AND DOCUMENTATION REQUEST CHECKLIST

PRE-SURVEY QUESTIONNAIRE

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

Project Name:	**Westhill High School**	**Project Number:**	**88166.09R-020.017**
Person completing form:	**Camille Figluizzi & Carlo Buccino**	**Date:**	**April 21-23, 2009**
Association with Project:	**Principal and Head Custodian**	**Phone Number:**	**203.977.4838**
Years associated w/Proj.:	**11 and 5**	**Fax Number:**	
Current Owner:		**Estimated Value:**	

Unk = Unknown, NA = Not Applicable

	Yes	No	Unk	NA	Comments
1. Does the property have full-time maintenance personnel on site?	✓				
2. Have there been any capital improvements in the last five years?	✓				
If so, are details available?	1998 – auditorium seating, handicapped upgrades 2001 – football field and concession stands 2000 – main building roof except auditorium 2002 – new AgriScience building, additional parking 2007 – additions of 9th grade wing and gymnasium 2008 – soccer field Astroturf				
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?	✓				Need for speed bumps
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?		✓			Only pool which is reportedly from a previously broken pump
14. Are there any wall or window leaks?		✓			Original windows in main building and most in old AgriScience
15. Are there any poorly insulated areas?		✓			
16. Are there any current roof leaks at the property?	✓				

	Yes	No	Unk	NA	Comments
17. Are any roof finishes more than ten years old?		✓			
18. Is the roofing covered by a warranty or bond?	✓				
19. Is Fire Retardant Treated (FRT) plywood used at the property?		✓			
20. Does the property have an exterior insulation and finish system (EIFS) with a synthetic stucco finish		✓			
21. Do the utilities (electric, gas, sewer, water) provide adequate service?		✓			Not enough power in kitchen for equipment
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?	✓				

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

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

INFORMATION REQUIRED	
1. All available construction documents (blueprints) for the original construction of the building or for any tenant improvement work or other recent construction work.	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 *system*s or *component*s.
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 *system*s 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

MARK F. CHAMBERLAIN

Project Manager

Education

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

Project Experience

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

Industry Tenure

- A&E: 1987
- EMG: 2006

Industry Experience

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

Active Licenses/Registration

- Certified Level I & Building Science Thermographer Certification, 2005

Special Skills & Training

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

Regional Location

- Baltimore, MD

JILL E. ORLOV

Technical Report Reviewer

Education

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

Project Experience

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

Industry Tenure

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

Industry Experience

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

Active Licenses/Registration

- Architectural, MD

Special Skills & Training

- AUTOCAD, 2000

Regional Location

- Baltimore, MD

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.