

SBPAC

# Staff Activities Report

May 16, 2014

Issue #	WBS #	Issue/action
002	4.3.1	Roof pitch statutory change – PA13-256

As discussed in the May 9, 2014 SBPAC Staff Activities Report, prior to 2013, General Statutes Sec. 10-291(b)(2) had required that new and renovated roofs on school building projects have a ½ inch per foot pitch. This was put into place under the assumption that ponding water on rooftops could create the possibility for leaks into the structure, causing mold and mildew from moisture entering the buildings. With evidence showing that other, more cost effective solutions accomplish the same goals, the SBPAC staff proposed and gained approval in the legislature for PA13-256, which changed roof pitch standards to roof designs that comply with the State Building Code. There is favorable evidence that this has led to significant reductions in roof replacement costs in school building projects.

In the first year that this change was made (2013), a number of school districts utilized and saw savings from it. The following school districts put out for bid both roof pitch requirements, in anticipation that the change might be coming. These districts saw real savings, as demonstrated, below.

District	Project #	Project Name	Project Type	Total Sqft	1/2" Pitch Cost	1/4" Pitch Cost	Cost per sqft Savings	Total Savings	Savings as a % of Total
Manchester	TMP-077-PDCR	Bowers Elementary	RR	41,030	\$ 955,724	\$ 682,660	\$ 6.66	\$ 273,064	29%
Manchester	TMP-077-KGDQ	Waddell Elementary	RR	26,390	\$ 542,808	\$ 387,720	\$ 5.88	\$ 155,088	29%
Berlin	007-0066	Willard Elementary	RR	71,430	\$ 1,610,799	\$ 1,150,571	\$ 6.44	\$ 460,228	29%
South Windsor	TMP-132-KSFW	Orchard Hill	RR	35,395	\$ 868,000	\$ 746,000	\$ 3.45	\$ 122,000	14%
South Windsor	TMP-132-TVFB	Pleasant Valley	RR	31,765	\$ 768,000	\$ 652,000	\$ 3.65	\$ 116,000	15%
South Windsor	TMP-132-XJBQ	SWHS	RR	43,385	\$ 989,000	\$ 876,000	\$ 2.60	\$ 113,000	11%
Salem	121-0017	Salem School	RR/CV	48,671	\$ 988,026	\$ 954,239	\$ 0.69	\$ 33,787	3%
Torrington	143-0069	Forbes School	RR	38,080	\$ 1,050,000	\$ 1,035,200	\$ 0.39	\$ 14,800	1%
Danbury	TMP-034-RXZZ	Mill Ridge MS	EA/RR	71,750	\$ 1,428,000	\$ 1,298,000	\$ 1.81	\$ 130,000	9%
<b>Total Savings</b>								<b>\$ 1,417,967</b>	

This \$1,417,967 savings was 18% of roof replacement costs, with an average cost reduction of \$3.95 per sq. ft.

Analyzing 2014 projects for similar savings is more problematic. School districts have generally not submitted design documents at this stage of the school construction process, so there is not adequate information to determine the square footage of the roof replacements in these projects. However, for the roof replacement projects for which



districts have submitted this level of detail, a total savings of more than \$2 million can be estimated<sup>1</sup>, as demonstrated below.

District	Project Number	Project Type	Facility Name	Estimated Project Costs	Reimb. Rate	Estimated Grant	Authorization Date	Roof Square Foot	Estimated Savings
Clinton	027-0061	N/PS	The Morgan School	\$64,750,000	43.93%	\$28,444,675	7/2/2013		TBD
East Windsor	047-0035	E/EC	Broad Brook Elementary	\$3,770,000	57.86%	\$2,181,322	7/2/2013		TBD
Ellington	048-0058	EA/RR/PS	Crystal Lake School	\$18,457,497	58.21%	\$10,744,109	7/2/2013		TBD
Ellington	048-0059	A	Windermere School	\$2,582,503	58.21%	\$1,503,275	7/2/2013		TBD
Enfield	049-0138	EA/RR	Enfield High School	\$103,316,770	72.14%	\$74,532,718	7/2/2013		TBD
Greenwich	057-0111	EA	Greenwich High School	\$30,115,000	20.00%	\$6,023,000	7/2/2013		TBD
Hartford	064-0307	A/RR/EC	Weaver High School	\$100,000,000	80.00%	\$80,000,000	7/2/2013		TBD
Milford	084-0185	EA	East Shore Middle School	\$18,950,000	55.00%	\$10,422,500	7/2/2013		TBD
Naugatuck	088-0067	EA/EC	Naugatuck High School	\$77,967,900	75.00%	\$58,475,925	7/2/2013		TBD
Naugatuck	088-0068	BE/EA	Central Administration	\$3,032,100	37.50%	\$1,137,038	7/2/2013		TBD
Norwalk	103-0241	EA	Rowayton School	\$7,695,260	32.14%	\$2,473,257	7/2/2013		TBD
Norwalk	103-0242	EA	Naramake Elementary School	\$4,139,284	32.14%	\$1,330,366	7/2/2013		TBD
Rocky Hill	119-0049	EA/RR	Rocky Hill High School	\$44,955,000	44.29%	\$19,910,570	7/2/2013		TBD
Southington	131-0127	EA/RR/PS	Joseph A. DePaolo Middle School	\$45,000,000	56.07%	\$25,231,500	7/2/2013		TBD
Southington	131-0128	EA/RR/PS	John F. Kennedy Middle School	\$45,000,000	56.07%	\$25,231,500	7/2/2013		TBD
Waterbury	151-0288	EA	John F. Kennedy High School	\$25,232,000	50.36%	\$12,706,835	7/2/2013		TBD
Wethersfield	159-0100	EA/RR	Wethersfield High School	\$74,816,617	50.71%	\$37,939,506	7/2/2013		TBD
Regional District 16	216-0026	N	Region 16 PK-5 Elementary School	\$36,609,000	58.21%	\$21,310,099	7/2/2013		TBD
Regional District 16	216-0027	EA/RR	Laurel Ledge School	\$7,746,000	68.21%	\$5,283,547	7/2/2013		TBD
Regional District 16	216-0028	BE/A	Central Administration	\$2,371,000	34.105%	\$808,630	7/2/2013		TBD
CREC	241-0102	MAG/N/PS	Gtr. Htfd. Acad. of Arts Elementary Magnet	\$49,673,596	80.00%	\$39,738,877	7/2/2013		TBD
CREC	241-0103	MAG/N/PS	Gtr. Htfd. Acad. of Arts Middle Magnet	\$74,614,104	80.00%	\$59,691,283	7/2/2013		TBD

<sup>1</sup> This analysis estimated the savings from the new roof pitch standard for 2014 Priority List projects by multiplying the square footage of the roofs in the projects by \$3.95, which is the average savings achieved from the 2013 Priority List projects where the school districts received bid options for both the ½ inch per foot and ¼ inch per foot standards.



CREC	241-0104	MAG/ N/ PS	Two Rivers Magnet High School	\$108,308,509	80.00%	\$86,646,807	7/2/2013		TBD
Meriden	080-0094	RR	Israel Putnam	\$1,750,779	0.7893	\$1,750,779	7/17/2013		TBD
Thomaston	140-0041	RR/ CV	Thomaston Center School	\$2,547,200	0.675	\$2,547,200	8/9/2013		TBD
Thomaston	140-0040	RR	Thomaston High School	\$1,094,000	0.675	\$1,094,000	8/9/2013	62,750	\$247,863
Naugatuck	088-0069	RR	Maple Hill School	\$1,565,590	0.7571	\$1,565,590	8/9/2013	53,212	\$210,187
Thomaston	140-0042	RR	Black Rock School	\$1,634,000	0.675	\$1,634,000	8/16/2013	57,684	\$227,852
South Windsor	132-0080	RR	Pleasant Valley	\$780,200	0.4786	\$780,200	9/10/2013	49,223	\$194,431
Waterbury	151-0290	RR	Bucks Hill Elementary	\$443,800	0.7857	\$443,800	9/19/2013		TBD
Windsor Locks	165-0075	RR	Windsor Locks HS	\$595,325	0.5393	\$595,325	10/1/2013	23,450	\$92,628
Stamford	135-0276	RR	Springdale School	\$1,000,000	0.2929	\$1,000,000	10/3/2013		TBD
South Windsor	132-0081	RR	Orchard Hill	\$878,250	0.4786	\$878,250	10/9/2013	36,260	\$143,227
South Windsor	132-0082	RR	SWHS	\$799,037	0.4786	\$799,037	10/9/2013	43,385	\$171,371
Orange	107-0044	RR	Turkey Hill School	\$697,207	0.3643	\$697,207	10/29/2013	54,124	\$213,790
Orange	107-0045	RR	Peck Place School	\$791,526	0.3643	\$791,526	10/29/2013	61,497	\$242,913
Orange	107-0046	RR	Race Brook School	\$808,476	0.3643	\$808,476	10/29/2013		TBD
Manchester	077-0232	RR	Bowers School	\$909,090	0.6536	\$909,090	12/3/2013	41,030	\$162,069
Manchester	077-0231	RR	Waddell School	\$911,950	0.6536	\$911,950	12/20/2013	35,700	\$141,015
Columbia	030-0019	RR	Horace Porter School	\$3,465,921	0.4714	\$3,465,921	1/23/2014		TBD
Windsor Locks	165-0077	RR	Windsor Locks MS	\$269,015	0.5393	\$269,015	3/11/2014		TBD
<b>Total Estimated Savings</b>									<b>\$ 2,047,344</b>

Even though most of the costs of the projects listed as To-Be-Determined, above, are not for roofs alone, the fact that a small sample of the full list produced an estimate of more than \$2 million in savings shows a likelihood of additional savings for 2014's Priority List.

These cost savings demonstrate that the work of SBPAC and its staff, when acting on findings and recommendations of the formal report, have begun to accomplish both administrative and legislative initiatives in pursuit of improved processes for the management of School Building Projects.

A future staff activities report will discuss ongoing work to improve cost estimating for projects of less than \$2 million. This will allow for more accurate estimates of costs, such as the type of information this report analyzes, much earlier in the school construction process than is possible presently.