

RSU No. 5 Energy Efficiencies

Pownal Entry Enclosure

This design will decrease the inrush of cold air when the front door is opened saving heating costs cost for this Project \$2,040

Payback or energy savings is difficult to quantify but reducing the influx of cold air will reduce heating costs in the main hall area

Pownal Gym Lighting

We replaced 36 T-12 lighting fixtures with 12 T-5 fixtures and installed 3 occupancy sensors to shut down lights when room is not used

	Old Lights T-12	New lights New T-5
Remove 36- T-12 fixtures	36 fixtures	0
Installed 12- T -5 high efficient fixtures	0	12
Installed 3 occupancy sensors	0	3
Hours of operation	2000	1600
Electrical usage per year	\$2,048	\$651
Cost of project	\$3,759	
Rebate from Efficiency Maine	\$900	
Cost of project after rebate	\$2,859	
Savings per year	\$1,397	
Payback years	2.04 years	

Natural gas Conversion

Cost of natural gas per therm	0.859	Therm
Fuel Oil equivalent	1.12	Gallon
Propane equivalent	0.079	Gallon
KWH electricity	\$0.13	kwh

2009/2010		Pownal	Morse Street	High School	Totals
	Gallons of heating oil	10,100	13,730	22,669	46,499
	Cost per gallon	\$1.95	\$1.95	\$1.95	
	Budget	\$19,695	\$26,774	\$44,205	\$90,674
Anticipated		Pownal	Morse Street	High School	
	Therms	14,039	19,084	31,510	64,633
	Cost per therm	0.859	0.859	0.859	
	Anticipated Budget	\$12,055	\$16,393	\$27,067	\$55,515
	Total savings	\$7,640	\$10,381	\$17,138	\$35,159
		Pownal	Morse Street	High School	
	Conversion costs	\$25,780	\$21,238	\$51,053	
	Less rebate for conversion	\$1,000	\$1,000	\$1,000	
	Adjusted conversion costs	\$24,780	\$20,238	\$50,053	\$95,071
	Payback	3.24 years	1.94 years	2.92 years	
Funding source					
Freeport School Reserve Account has a balance of			\$67,650		
	Fuel savings		\$35,159		

Morse Street Water Heater

We replaced a 27 year old electric water heater at the end of its life cycle with a natural gas fired unit.
The new unit will run less and use natural gas at a cost savings

Electrical usage 2009/2010	\$44.13/day	\$16,107/year
Natural gas usage anticipated	\$12.84/day	\$4,686/year
Savings	\$31.29/day	\$11,421/year

Cost to convert \$28,482

Payback 2.49 years

**Durham Community School
Geothermal Construction**

This closed loop system uses a series of wells that allows an antifreeze to be pumped through pipe loops removing heat from the ground water in winter and expelling heat in the warmer months. this system is environmentally efficient by not relying on fossil fuels such as heating oil to supply heat in winter and cool air in warmer months.

We will use this year as a baseline year to determine future savings, We began using this system over the summer of 2010. the system worked smoothly and kept the school temperature cool throughout this past very hot summer

**Durham Community School
Use of Building Materials**

over this past summer we salvaged pendant lighting from the Durham Elementary School and used some of these fixtures at the Freeport High School in a small classroom near the main office we have stored the remainder of these lights for future use in other areas as the need becomes identified

We also removed ceiling tiles from the main hall and the middle school wing giving us enough tile to replace the ceiling tile in the main hall and the 200 wing hall at the high school

We removed bookcases, white boards, projectors, furniture, bookcases, a score board and sound system to be used throughout the district

The re-use of these materials lowers the impact on the environment, the ceiling tiles were in great shape and by reusing these we lowered the impact of the solid waste stream.

**Freeport Middle School
Dishwasher Relocated from Durham to Freeport Middle School**

We removed the old dish washer at the Freeport Middle School and replaced it with the low temperature dish machine from Durham Elementary. This replacement unit does not require a high temperature heater or booster to clean the dishes thus requiring less electrical energy to operate. savings from high temperature machine to low temp equal 6.88 KWH per hour used