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School Construction Aid & Performance Contracting

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Eric Lafayette – Vice President

- Project Developer
- Burlington, VT – BHS Grad of 06’
- Roger Williams University in Rhode Island majoring in Construction Management
- Live in So. Burlington w/ wife & two girls
- School Construction Aid Task Force

Why am I Here

- Advocate for Performance Contracting and its ability to address key infrastructure problems in the state affordably
- Delivery Methods for Schools
  - Currently Plan & Spec. & Construction Manager where an Architect leads the project planning
  - Looking at a model similar to Rhode Island

Who is EEI?

- ESCO (Energy Service Company) that provides “turn-key” energy services typically through performance contracting
  - Office in Williston, VT
  - 18 Employees
- We help schools, universities, hospitals, and municipalities meet their energy goals – Analysis to Completion
- We focus on efficiency & sustainability trying to utilize renewable energies
- Currently working at Springfield School District, Hannaford Career Center, Missisquoi Salley Supervisory Union, Burlington City & Schools, Barre School District, Two River SU, White River SU, Orleans

Why - Energy Performance Contracting?

- Financing & Grants
  - Help customers attain grants & rebates – State & Federal
  - Provide Investment Grade Audits to finance lower cost lease payments for energy efficiency
- Reduced Energy Cost
  - Use energy savings to help finance the project
- On going analytics have allowed for increases in savings over a period of time – continuously monitoring the system
- Significant rebates from Efficiency Vermont
- No Risk or Cost to Schools upfront – if we can't come up w/ energy savings projects that the school accepts to, there is no charge for our services
- The best way to address infrastructure is through performance contracting.

Our Process

1. **Identify Options** - Identify building inefficiencies and provide “a-la-cart” energy cost measures that reduce building operating expenses (utility & operational)
2. **Review** - Review all options with the owner and align measures with the goals and objective of the owner – Steam Heating, Geothermal, Solar, CO2 Reduction, Renewable Energies
    - Review “magnitude of cost” for each measure and present potential energy savings & grant opportunities for each measure.
3. **Design** - Owner selects measures for development – EEI than engages the design team to put measures to paper. We then develop the final energy savings & guaranteed savings
4. **Procurement -** EEI reviews design, schedule, and updated pricing with the owner based on engineers design &
    - EEI procures work by creating bid packages and putting the project out to bid
5. **Site Management** - EEI provides on site management constructs project with a team of subcontractors
6. **Commissioning & Guaranteed Savings -** EEI commissions the building and provides ongoing data analytics & measurement & verification

Options We Provide & Analysis

1. What is the fuel source of the future?
- Oil, LP, Biomass, Geothermal, Heatpump

2. Does the campus keep Steam or Convert to hot water?
- Maintaining a Steam system means standard efficient boilers and a commitment to fossil fuel or biomass
- Key infrastructure still needs upgrade but could reuse some boilers and building mechanical rooms
- Do they stay on oil or propane – or move away from fossil fuels

3. How far do we take the energy upgrades, and where does it go?
4. Should we change the lights to LED?
5. What additional code or capital needs do we need.
6. Phase Approach

Franklin Elementary School, VT – 2022
- Oil to LP w/ Condensing Boilers

Notes from Work

#1 - We ran absentee statistics for Springfield High School from before and after the ventilation project. The school district has seen a 30% reduction in sick days since installation.

- Added dehumidification, advanced filtration through Air Source Heat Pumps
- Also achieved a 10% energy reduction while adding dehumidification to the school

#2 – We did a comprehensive project a the Hannaford Career Center a few years ago. We abated almost every piece of Asbestos, except 1 room that was not in the scope.

- When they did PCB indoor air quality tests in the building, it was the only interior occupied space that failed threshold levels

Case Study #1 - Rochester Performance Contract

ECM Matrix - Rochester Elementary School

Measure	Description	Cost	Savings	Breakouts	ESSER	Eff. VT IAQ	HPS / HAP	Lease	Capital Funds & Rebates
ECM 1	Remove Existing Underground Fuel Oil Tank & Patch Pavement	$30,000							
ECM 2	Install Underground LP Tanks & Pipe to the Building (2 Underground - 1,000 Gallon Tanks)	$35,000							
ECM 3	Install new wood chip boiler w/ LP gas back up	$600,000	$33,000				$250,000		$46,000
ECM 4	Replace Steam Piping w/ Hot Water System Including ERU Coils	$225,000							
ECM 5	Hot Water Coil w/ Gym Radiation	$90,000							
ECM 7	LED Lighting upgrade thoughout	$66,000	$3,500					$66,000	
ECM 8	Abestos Abatement (allowance)	$50,000			$30,000				$20,000
ECM 9	DDC Control System for boilers & radiation (eliminate pneumatic controls)	$85,000	$3,500		$85,000				
	Efficiency VT Rebates								
	Total	**$1,221,000**	**$40,000**		**$115,000**	**$0**	**$250,000**	**$66,000**	**$66,000**
	Less Grants & Rebates	$922,000							
	WRVSD ESSER Contribution	$350,000							
	Rochester - Stockbridge Responsibility	**$572,000**							
	15-Year Lease w/ Energy Savings @ 3.75%	$450,000	**$40,000/Year**						
	District Responsibility	**$122,000**							

$42,000 in Realized Savings Per Year

Case Study #2 - WRVSD Performance Contract

ECM Matrix - Bethel Campus

Measure	Description	Cost	Savings	Grants	Rebate
ECM 1	Remove Existing Underground Fuel Oil Tank	$35,000			
ECM 2	Install Underground LP Tanks & Pipe to the Building (4 Underground - 1,000 Gallon Tanks)	$50,000			
ECM 3	Add Wood Pellet Boiler w/ LP Backup	$675,000	$48,000		
ECM 4	Convert Steam to Hydronic	$425,000		$250,000	$24,000
ECM 5	DDC Control System	$245,000	$12,300		
ECM 6	LED Lighting upgrade thoughout (fixture replacement)	$240,000	$22,000		$65,000
ECM 7	Abestos Abatement (allowance)	$50,000			
	Total	**$1,802,300**	**$82,300**	**$250,000**	**$89,000**
	Less Grants & Rebates	$1,463,300			
	WRVSU ESSER Contribution	$310,000			
	Bethel/Royalton Responsibility	$1,153,300			
	15 Year Lease on LED Lighting & Pellet Boiler	$920,000			
	WRVSD - Contribution	$233,300			

$116,000 in Realized Savings Per Year

Financing & Project Funding

Financing & Grant Opportunities

- **Lease** - Ability to obtain leases for school improvements. Renewable energy and efficiency projects could be eligible for 10 year – 2% interest funding through the USDA.
- **Financing / Donor Contributions?**
- **Inflation Reduction Act –** The IRA will pay non tax paying entities 30% of the project costs for geothermal & solar projects
- **Efficiency Vermont –** Rebate programs are changing and a custom incentive will be applied for once the owner selects measures they would like us to investigate
- **State & Federal Grants –** EEI applies & helps school districts apply for state & federal grants

The Challenge

The Challenge: We are working more and more with schools that are considering energy improvements but don't either have the space in there current school or the space allocation doesn't work for current teaching methods. We are also working with schools with little to no ventilation in key spaces. Ventilation is the process of introducing outside air into a space and creates healthy environments for our students. HVAC is the cornerstones of healthy and comfortable schools and improve student well-being and academic performance.

The Request

- Language that clarifies that performance contracting works for additions as well
- Indoor Air Quality be added as a metric in consideration for the evaluation of Performance Based Contracting
- We have suggested language that will be sent

Thank You

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