



# Resica Elementary

## ACT 77 Report

May 6, 2011



## Summary Report for Resica Elementary ACT 77 Project

The selected energy conservation measures will improve the infrastructure while delivering economic benefits. All energy conservation measures include the required engineering and design by third party licensed engineers, demolition, turnkey installation, and disposal of material with job site cleanup at the end of each working day.

### **Project Scope: Resica Elementary at East Stroudsburg Area School District**

**Energy Conservation Measure:** Replace existing 1994 electric heating plant and associated controls with high efficiency propane fired heating plant and direct digital control.

**Energy Conservation Measure:** Installation of web based Building Automation system with integration into existing district wide Trane Tracer Direct Digital Control system existing in the district. Replace all remaining controls with direct digital control devices and control applications for the Heating, Ventilation and Air Conditioning systems for primary and secondary environmental comfort systems.

**Energy Conservation Measure:** Replace existing fluorescent and Incandescent, and interior Metal Halide lighting with T8 bulb and ballasts technology, Compact fluorescent bulbs, reflectors and occupancy control applications in select areas.

**Energy Conservation Measure:** Implement weather-stripping, caulking, and insulation of select areas where infiltration and exfiltration is occurring in building envelope.

**Energy Conservation Measure:** Recommission existing air and water systems for balancing and required flow rates per system design.

**Energy Conservation Measure:** Implement power capacitors for select distribution feeds.

**Energy Conservation Measure:** Implement Energy Dash Board and Behavioral Modification Training for school staff for energy conservation efforts of implemented projects and general energy conservation awareness. Provide Btu Crew training materials for teachers and students for classroom instruction made available to East Stroudsburg Area School District as a curriculum course as determined by district.

**Energy Conservation Measure:** Implement power management devices and applications of vending misers, power strips and power management software for select plug-in loads and pc power management.

**Energy Conservation Measure:** Replace existing 1994 chiller and associated controls with high efficiency SEER chiller and direct digital control.

**Energy Conservation Measure:** Replace existing pneumatic valve operators and damper actuators with electric devices, eliminate pneumatic air compressor and convert all control function and applications to direct digital control.

**Energy Conservation Measure:** Replace existing electric domestic hot water system with new high efficiency propane fuel heating system.

Trane will install equipment, labor and other materials in this turnkey project. Balancing and commissioning of equipment requiring same will be completed by Trane.

**Based upon the current utility rates and projected escalation, the detail audit analysis indicates that the scope of services above is estimated to generate a total calculated energy and operational savings of \$2,737,876 during a 20 year contract term.**

**Capital Cost Avoidance savings**

East Stroudsburg Area School District will experience investment and interest dollar savings by procuring the following improvements as part of the energy savings project. The following equipment is reaching the respective life expectancy and the district is experiencing equipment failures and has incurred numerous repair costs due to the equipment age and continued use. The following systems that are critical to provide an optimum learning environment at Resica Elementary are in need of replacement.

- Replacement of Boilers**
- Replacement of Luminaries**
- Replacement of Controls**
- Replacement of Chiller**

**Project Summary of Financials for the ACT 77 Project**

**All figures are based on a 20 year term.**

ACT 77 Project Investment	\$1,840,708
Bond Issue Interest and Issuance Cost	\$921,119
Measurement and Validation Service	\$213,493
<b>Total ACT 77 Expenditure</b>	<b>\$2,975,320</b>
Utility Savings	\$2,361,691
Operations Savings	\$376,185
Capital Cost Avoidance	\$243,175
Interest Cost Avoidance	\$229,260
<b>Total ACT 77 Savings</b>	<b>\$3,210,311</b>
<b>Net savings for ESASD</b>	<b>\$234,991</b>

**Proposed Contractors and Sub-Contractors**

All sub contractors selected for use on this project must meet and adhere to Trane safety standards and requirements. Trane intends to utilize the following subcontractors in its fulfillment of this ESASD Resica Elementary energy savings project. Trane's subcontractor qualification process is ongoing at this time. Accordingly, Trane reserves the right to alternate subcontractors from the list below due to financial, safety, or performance determinations; or related to changes impacting scope of services, costs of the project, or energy use savings guarantee.

Warko  
West Side Hammer  
Zero Draft  
Atlantic Energy Concepts  
Flood & Sterling  
Strunk Albert Engineering  
Pathfinder Engineering