

Energy Performance Contract (EPC) for the Somers CSD

Presented by: The ECG Group



Re-Introduction to The ECG Group

- Our job is to protect the District's interests – We perform all due diligence needed to ensure District receives optimal value for savings
- *Specialists* in Energy Performance Contract (EPC) Owner's Representative Services
- Comprehensive Service throughout the Project
- 125+ Successful EPC Projects – All meeting and exceeding guaranteed energy savings

"I can say without reservation that ECG's involvement in my EPC project has made it the smoothest process that I have experienced."

--Dr. Martin D. Handler

Superintendent, Pine Plains Central School District

What is an EPC?

- Authorized by NYS Energy Law Article 9
- Partnership between a School District, Energy Services Company (ESCO), and Owner's Representative
- Make needed building improvements now and pay for them out of future, guaranteed energy savings
- **Large Funding Source for Needed Capital Upgrades**
- **Zero Taxpayer Impact & Budget Neutral**

Activity-To-Date at Somers CSD

Summer/Fall 2020

- ECG conducted preliminary study to identify EPC opportunity
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Fall 2020

- The ECG Group issued a Request for Proposals (RFP) on behalf of the District
 - Four proposals received: Johnson Controls (JCI), Honeywell, Ameresco, and Siemens
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Winter 2021

- ECG evaluated/interviewed respondents with District Staff
- JCI recommended to proceed

Next Steps

March 9th, 2021

- Resolution to appoint Johnson Controls to proceed with detailed Comprehensive Energy Audit (CEA)
 - **No cost & No obligation** to ultimately proceed with the EPC
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Comprehensive Energy Audit (CEA)

- Evaluate potential for additional opportunities for energy savings
- Identify other needed capital upgrades (ventilation upgrades, additional solar, etc.)
- Finalize the detailed scope, cost, and savings of the EPC project to be presented to BOE

Somers Central School District

An Energy Conservation Plan



Performance Contract Team

- Account Executives
 - Kieran Moran, Hawthorne, NY
 - Operations Management
 - Robert Rolston, Hawthorne, NY
 - Michael Weason, Hawthorne, NY
 - Energy Engineering
 - Pratik Thakkar, Hawthorne, NY
 - Steve Stuart, Hawthorne, NY
 - Hirav Joshi, Hawthorne, NY
- Over 100 Years of Combined Experience in school construction and SED design
 - Dedicated NYSED Team located in Albany
 - Undisputed Leader in Energy Performance Contracting Nationwide
 - NYSED Team Entering into 99th Project - #1 in Region
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Project Overview

Energy Performance Contracting is:

An agreement that allows school districts to take budgeted utility and operational costs and reallocate them into energy saving capital Improvements without the need for Increased Taxes.

Energy Conservation
Measures (ECM) :
22

SED Payback:
17.9 years

Positive Cash Flow:
\$2,623,380

Project Cost:
\$7,683,030

District Annual
Savings:
\$415,657

W / MBE
Participation:
31%



Environmental Impact

Environmental Impact: *Somers Central School District*

Equates to CO2 Equivalents of:



75,213

Trees

Grown for 10 years in an
urban scenario



6,822 barrels
of oil



537
passenger
vehicles



667

Acres
of pine forests



259
Home's energy
use



15
Railcars
Of coal

Energy Conservation Measures





Lighting – Interior & Exterior Retrofit

- LED Lighting throughout the District – **Over 6,900 Upgrades**
- New LED Fixture/Retrofit Kits with Adaptable Controls in Classrooms, Hallways, Cafés and Offices
- New LED High Bay with Adaptable Controls and wire guards in Gyms
- New LED Troffer Fixtures with Adaptive Controls at Middle School Library and Café
- Exterior: Existing Floods, Decorative, Wallpack to be converted to LED



Somers High School



Somers Middle School



Intermediate School

Annual Energy Savings: \$100,925
Annual O&M Savings: \$19,662



Lighting – Interior & Exterior Retrofit

- Wind Solar off-grid powered LED Light Pole with Somers CSD Banner – **At High School**

Exterior Upgrades	New Fixture	Re-Lamp	RLRB	NR	Totals
Primrose Elementary School	46	6		12	64
Somers High School	143	8	3	1	155
Somers Intermediate School	35	13		3	51
Somers Middle School	35	18		12	65
Totals	259	45	3	28	335



Interior Upgrades	New Fixture	Retrofit Kit	RLRB	Re-Lamp	RLDW	NR	Dis	Totals
Primrose Elementary School	39	511	530	150	2	18		1250
Somers High School	163	590	1290	354		91	1	2489
Somers Intermediate School	138	973	89	59				1259
Somers Middle School	125	638	666	311		17		1757
Totals	465	2712	2575	874	2	126	1	6755



Energy Management System

■ Temperature Setback

- Eliminate all the Pneumatics and covert to Full Direct Digital Control (DDC) at all Schools
- Single Platform Front-end at all Schools (JCI FX – 80)
- Pneumatic to DDC Conversion of Boilers, AHUs, RTUs, UVs, Heating and Cooling End Devices
- Boiler Room Automatic Temperature Control

Building	# of Boiler Rooms
High School	2
Middle School	2
Primrose School	1
Total	5

- Air Handling Unit DDC Refit

Building	AHU/RTU/HV
High School	18
Middle School	14
Intermediate School	12
Primrose School	3
Total	47



BMS Panel at High School



Exhaust Fans at Primrose School

Annual Savings: \$96,386



Energy Management System

- End Devices Direct Digital Control Conversion

Building	Pneumatic T-stat	UV (P)	Rad Controlled	Rad No Control	DDC Stat	UV- DDC	FCU	UH	Conv	ETS
High School	76	8	90	8	42	0	3	1	12	2
Middle School	40	20	87	4	53	4	6	0	4	12
Intermediate School	1	0	18	1	63	11	0	0	6	1
Primrose Elementary	73	21	66	6	3	0	8	0	3	9
Total	190	49	261	19	161	15	17	1	25	24

- Direct Digital Control Reheat Zones at Intermediate School - **59**



■ Demand Controlled Ventilation – 8 AHUs

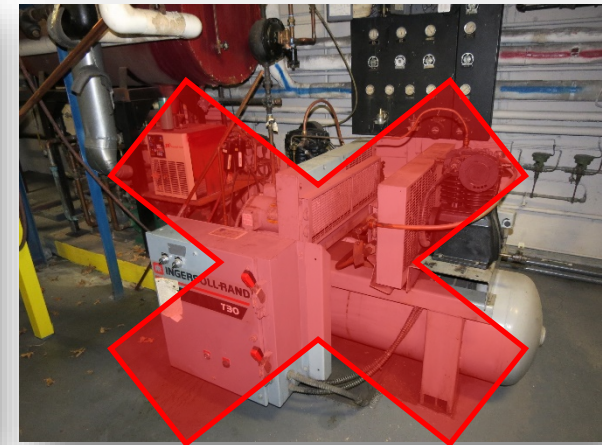
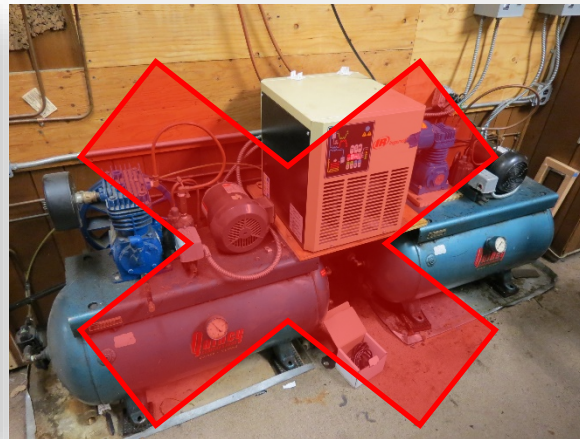
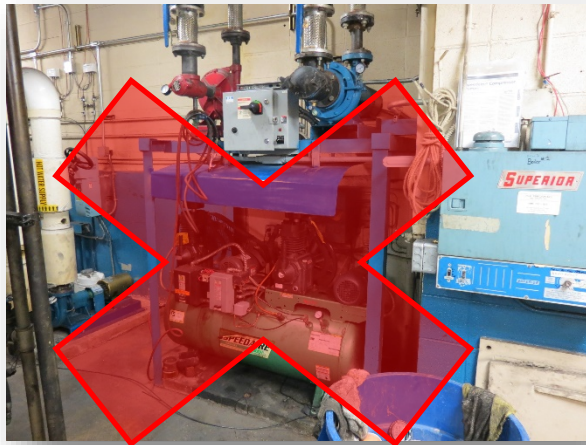
- High School : Auditorium (2)
- High School: New Gymnasium (2)
- Middle School: Auditorium (2)
- Middle School: Gymnasium (1)
- Intermediate School: Auditorium/Gym (1)



Energy Management System

- Exhaust Fans DDC Controls & Building Management System (BMS) Integration
- Eliminates all the Pneumatic Compressors

Building	Exhaust Fan Count	Kitchen Hood Exhausts
High School	34	2
Middle School	21	1
Intermediate School	14	1
Primrose School	42	1



Existing Compressors at the School District



Boilers Replacement

- New Unilux oil-fired steam boilers at **High School** and **Middle School**
- New Boiler Plants at both buildings
- Linkageless Dual fuel burners with provision for combustion air

Building	Number of Boilers*
Somers High School (Original Boiler Room)	2
Somers Middle School (1954 Boiler Room)	2
Total	4

*Primrose Elementary School – Three (3) Boilers during the detailed audit



High School Boilers



Middle School Boilers



Proposed Steam Boilers

Annual Savings: \$39,827



Renewable Energy – Photovoltaic (PV) Electric Generation

- Total Photovoltaics at the District :
50 kW at the **Intermediate School**
- Solar electric production to off-set
energy use at full electric building
- Full Benefit of Solar Ownership
- Student STEM Learning Experience



Annual Savings: \$4,860



Energy Conservation Measures – Other Measures

Air Handling Unit/ RTU Replacement – Savings - \$3,334

Steam Traps Replacements – Savings - \$18,616

Domestic Hot Water System Replacement – Savings - \$23,671

Heat Recovery System – Savings - \$9,703

Solar Thermal System – Savings - \$945

Unit Ventilator Replacement – Savings - \$9,184

Building Envelope - Weatherization – Savings - \$16,538

Energy Efficient Motors Replacement – Savings - \$366

Heating System – Boiler/DHW Controllers - \$25,318

Heating System - Pipe and Valve Insulation – Savings - \$16,595

Refrigeration Compressor Replacement – Savings - \$949

Refrigeration Compressor Controllers- Savings - \$576

Water Conservation – Savings - \$6,982

Energy Efficient Transformers – Savings – 4,915

Plug Load Controllers - Savings - \$7,419

Vending Machine Controllers – Savings - \$484

AC Compressor Controllers – Savings - \$8,403

Cost and Savings Summary





Positive Cash Flow!

Proposed Project at 3.25% interest rate and 38.5% NYSED aid

	Year 1	Total
Tax exempt lease payment	(\$647,835)	(\$9,717,525)
Annual Energy Savings	\$395,995	\$8,479,173
Annual Lighting O&M Savings	\$19,662	\$421,009
NYSED aid	\$215,137	\$3,227,053
Estimated Rebates	\$203,170	\$213,670
Net cash flow to District	\$186,129	\$2,623,380

Measurement & Verification Services at No Additional Cost to the District: For three (3) years.



Project Timeline

JCI to Perform audit with Input from ECG & District: Mar 2021

BOE to Authorize EPC: Apr 2021

JCI to provide design criteria to ECG: Jun 2021

ECG to prepare submission to SED: Aug 2021

SED Approval & Financing: Oct 2021

Construction Commences Dec 2021

Final Completion:

Nov 2022

Questions?

