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Oswego City School District

Energy Program – Executive Overview

January 18, 2022

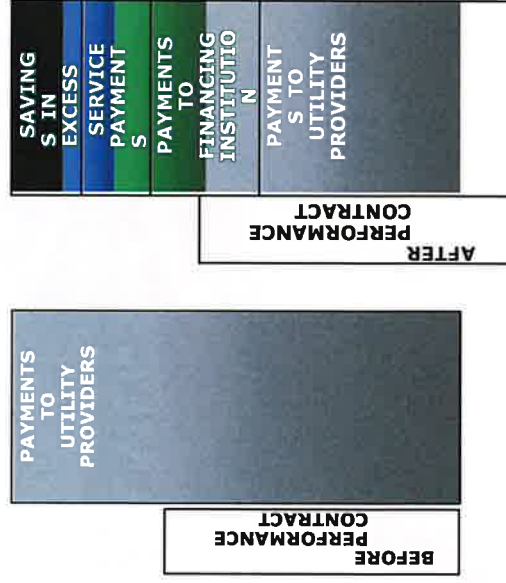
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New York State Article 9
(Energy Performance Contracting EPC)

An alternative means of financing building improvements

Program is self-funded through energy retrofits



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- Guaranteed performance
- Single source responsibility
- Life-cycle versus first cost approach
- Energy retrofits fund additional capital needs
- Improvements can be made with no impact to taxpayers
- Lease purchase financing “no impact on City Debt Cap”
- State Building Aid included
- NYSERDA P-12 and utility incentives

Facility Improvement Measures:

Facility Improvement Measure	High School	Middle School	Fitzhugh ES	Kingsford Park ES	Leighton ES	Minetto ES	Riley ES	Bus Garage & Trans
Electrical Improvements								
Lighting Retrofits & Controls	X	X	X	X	X	X	X	X
Install De-stratification Fans	X	X	X	X	X	X	X	
Vending Machine Controls	X	X	X	X	X	X	X	X
High Efficiency Transformers	X	X	X	X	X	X	X	X
Mechanical Upgrades								
Boiler Replacement					X		X	
Building Automation Upgrades								
HVAC Control Optimization	X	X	X	X	X	X	X	X
Siemens Digital Services (NYSERDA RTEM)	X	X	X	X	X	X	X	
Walk-in Cooler / Freezer Controls	X	X	X	X	X	X	X	
Building Envelope Improvements	X	X	X	X	X	X	X	X
Miscellaneous Measures								
Replace Pool Cover	X	X						
Plug Load Controllers	X	X	X	X	X	X	X	X
Pipe Insulation / Replacement	X	X	X	X	X	X	X	X

Future Measures to be Considered								
Boiler Replacement								o
Convert Pneumatic Controls to DDC		o						
Retro-Commissioning	o	o	o	o	o	o	o	o
Convert Field Lights to LED	o	o						
Water Conservation Measures	o	o	o	o	o	o	o	o

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Key: X = Included in Project o = Pending Inclusion as Allotment FIM =BCS Target

Facility Improvement Measures – Electrical



Typical LED Fixtures



Dim Hallway Lighting



Outdoor Area Lighting



Gym LED Fixtures

Benefits: Improved light quality for the learning environment

Reduced maintenance

Reduction in energy losses due to hot air concentration near the ceiling

Electrical Improvements

- District-wide Upgrades to LED Technology
 - └ Replace fluorescent lamps and fixtures with LED fixtures
 - └ Provide local dimming and occupancy controls in specified areas
- Install De-stratification Fans in Gymnasiums
- Vending Machine Controls
- Electrical Transformer Replacements

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Facility Improvement Measures – Mechanical



Riley Elementary Boilers



Leighton Elementary Boilers



New Patterson-Kelley Condensing Boiler

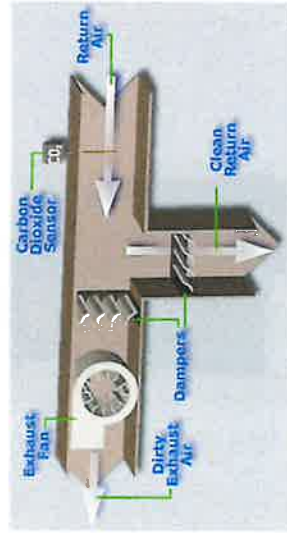
Benefits:
*Upgrade Capital Infrastructure (BCS)
Reduced future maintenance expenses
Replacing equipment currently past useful life
Increased efficiency and reliability*

Mechanical Upgrades

- **Replace Boilers at Riley and Leighton Elementary**
 - └ (2) condensing boilers at each building (P-K SC-2000)
 - └ (2) non-condensing boilers at each building (P-K N2500)
 - └ Designed to include full redundancy for each system
 - └ (2) new 20 HP heating system water pumps w/VFDs at each building
 - └ Automated controls for each new boiler and pumps

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Facility Improvement Measures – Building Automation



Demand-Controlled Ventilation



Cooler Control Panel

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Benefits: System optimization

Reduction in annual cooling and heating energy

Increased comfort level

Reduction in equipment run-time and lifespan

Building Automation Upgrades

- Air-Handler and Unit Ventilator Optimization
 - Demand controlled ventilation
 - Optimal start-time of air-handling units and unit ventilators
- Real-Time Energy Monitoring and Control
- Walk-In Cooler/Freezer Controls

Facility Improvement Measures – Building Envelope



Gaps at Roof-Wall Intersection to be Sealed



Interior View of Soffit to be Sealed

Benefits:

Tighten the envelope to control infiltration of unconditioned air into occupied spaces. Improved student and staff comfort from elimination of drafts.

Building Envelope Improvements

- Window and Door Weather-stripping
- Window Sealing
- Seal Roof-Wall Intersection
- Soffit Overhang Sealing
- Exhaust Fan Sealing

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Facility Improvement Measures - Miscellaneous



Existing High School Pool Cover



Rotting Pipe at Riley Elementary

Benefits:

- Reduce moister from harming building infrastructure*
- Reduction in annual cooling and heating energy*
- Reduction in equipment run-time and lifespan*
- Replace damaged pipe*

Miscellaneous Measures

- **Replace Existing Pool Covers (HS and MS)**
 - Replacement to include new blanket and new electronic controls
- **Plug Load Control District-wide**
- **Pipe Insulation / Replacements at Riley Elementary**

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Project Financials



Project Implementation Cost	\$4,644,841
Project Cost Over Term (estimated interest 3.5%)	(\$6,712,114)
Energy and Operational Savings	\$5,861,377
Building Aid	\$4,428,508
Rebates/Incentives	\$223,362
18-Year Cumulative Net Benefit	\$ 3,810,036

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Project Timeline

Tasks	Duration	Dates
Project Development - Audit Kickoff - Field Work - Savings Calculations - Project Scope / Pricing - Project Financials	4 Months	February - June 2022
NYSED Submission Preparation - Detailed Energy Audit Report - Contract / Legal Review - Design & Submission Documents - Lighting Mock-Ups	2 Months	July - August 2022
District 3rd Party Consultant Review	1 Month	September 2022
Expedited NYSED Review - 3rd Party Reviewer Procurement - Independent 3rd Party Review - BOCES Review - NYSED QC Review	4 Months	September - January 2023
Financing - Solicit RFP - Review Proposals - Review Lease Documents	1-2 Months	February - March 2023
Project Construction	~12 Months	March - March 2024

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What Drives Us..

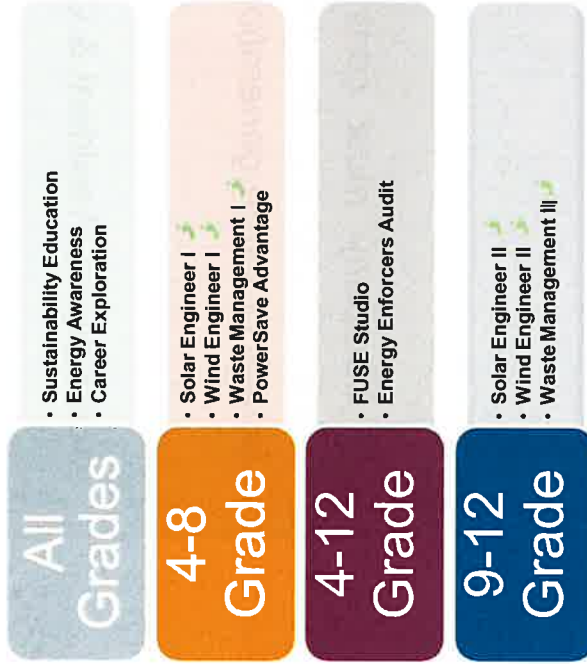
“A company must contribute to prosperity and progress in society - not just for the short term, but sustainably, for the benefit of future generations. We call that Business-to-Society.”

Joe Kaeser, President & CEO of Siemens AG

12-20-2021

Empower Packaged Programs Overview

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Siemens as an Ecosystem Partner

“Leverage the power of your Siemens relationships”

- Sustainable Financial Solutions
- Guaranteed Results
- STEM Education Pathways
- Support your Ecosystem
- Workforce Internship
- Innovation and Technology



Business-to-Society

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