

# **Chappaqua Central School District**

## **JCI Energy Project Update**

January 25, 2017



Chappaqua

Central School  
District



## Agenda

- Facility Improvement Measures (FIMs)
- Project Benefits
- Energy Cost Avoidance
- Energy Rebates
- Energy Star Certifications
- EPC Phase 2
- Service Excellence
- Questions and Answers



## Facility Improvement Measures( FIMs)

The project consists of the following energy conservation and facility improvement measures:

- FIM 1: Lighting and Occupancy Sensors
- FIM 2: Building Envelope Improvements
- FIM 3: Energy Management System
- FIM 4: Steam System Improvements
- FIM 5: Pipe and Valve Insulation
- FIM 6: Boiler Improvements
- FIM 8: RTU Replacement
- FIM 9: RTU Distribution Convert CV to VAV
- FIM 10: Replace AHU evaporator/Condenser
- FIM 11: Pump Improvements
- FIM 12: Fan VFD's And Motor Replacement
- FIM 13: Domestic Hot Water Improvements
- FIM 14: Domestic Hot Water Solar Thermal System
- FIM 16: Window Film
- FIM 17: Renewable PV Electric Generation System
- FIM 18: Wireless Clocks
- FIM 19: Window Replacement
- FIM 20: Advanced Energy Panels
- FIM 21: Renewable Wind Power

## Project Benefits

•Customized Energy Performance  
Project: \$15,183,234

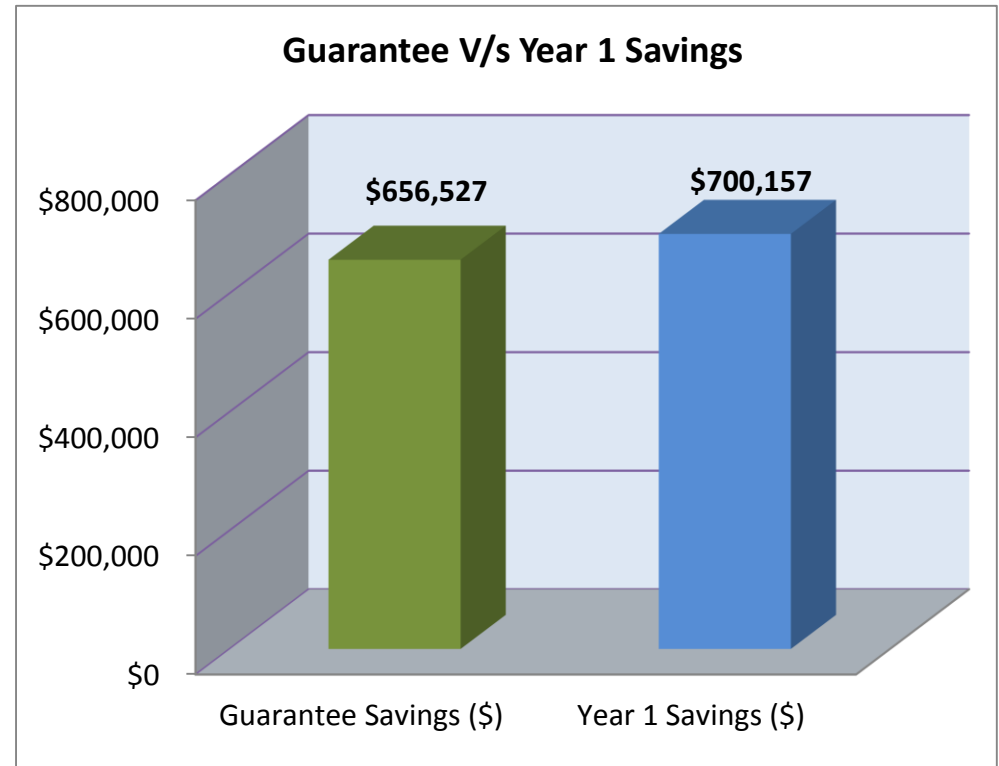
•Year 1 Expected Energy Cost  
Savings: \$656,527

•Actual Year 1 Savings: \$700,157

<u>Year of Contract</u>	<u>Measured Cost Avoidance</u>	<u>O&amp;M Cost Avoidance</u>	<u>Total Guaranteed Project Benefits</u>	<u>Actual Savings</u>	<u>Variance (+/-)</u>
<b>Install.</b>				<b>\$1,713,897</b>	<b>\$1,713,897</b>
<b>1</b>	<b>\$654,074</b>	<b>\$2,453</b>	<b>\$656,527</b>	<b>\$700,157</b>	<b>\$43,630</b>
2	\$673,696	\$2,453	\$676,149		
3	\$693,907	\$2,453	\$696,360		
4	\$714,724	\$2,453	\$717,177		
5	\$736,166	\$2,453	\$738,619		
6	\$758,251	\$2,453	\$760,704		
7	\$780,999	\$2,453	\$783,452		
8	\$804,429	\$2,453	\$806,882		
9	\$828,561	\$2,453	\$831,014		
10	\$853,418	\$2,453	\$855,871		
11	\$879,021	\$2,453	\$881,474		
12	\$905,391	\$2,453	\$907,844		
13	\$905,391	\$2,453	\$907,844		
14	\$932,553	\$2,453	\$935,006		
15	\$960,530	\$2,453	\$962,983		
16	\$989,346	\$2,453	\$991,799		
17	\$1,019,026	\$2,453	\$1,021,479		
18	\$1,049,597	\$2,453	\$1,052,050		
<b>Total</b>	<b>\$15,139,080</b>	<b>\$44,154</b>	<b>\$15,183,234</b>	<b>\$2,414,054</b>	<b>\$1,757,527</b>

## Energy Cost Avoidance

- Year 1 Annual guaranteed savings:\$656,527
- Actual Year 1 savings : \$700,157
- Guarantee Exceed by \$43,630



# Rebates

## Eligible Energy Efficient Measures:

- Energy efficient boilers - \$30,000
- Building Management System- \$85,520
- Weatherization- \$15,060
- Pipe & Valve insulation- \$22,380

**Total Rebates = \$152,960**

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**conEdison**  
a conEdison, Inc. company  
4 Irving Place, New York, NY 10003

The Bank of New York Mellon  
Pittsburgh, PA

0000566543  
DATE 08/25/2016  
VOID AFTER 6 MONTHS

PAY NINETY SEVEN THOUSAND TWO HUNDRED FORTY AND 00/100 DOLLARS

\$\*\*\*\*\*97,240.00

TO THE ORDER OF CHAPPAQUA SCHOOL DISTRICT  
66 ROARING BROOK ROAD  
CHAPPAQUA, NY 10514

AUTHORIZED SIGNATURE

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

**conEdison**  
a conEdison, Inc. company  
4 Irving Place, New York, NY 10003

TO THE ORDER OF CHAPPAQUA SCHOOL DISTRICT  
66 ROARING BROOK ROAD  
CHAPPAQUA, NY 10514

PAY FIFTY FIVE THOUSAND SEVEN HUNDRED TWENTY AND 00/100 DOLLARS

\$\*\*\*\*\*55,720.00

AUTHORIZED SIGNATURE

0000566555  
DATE 08/25/2016  
VOID AFTER 6 MONTHS



# Energy Star Certifications



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## Administration Building

Primary Property Type: Office  
Gross Floor Area (ft<sup>2</sup>): 14,400  
Built: 1960

For Year Ending: November 30, 2015  
Date Generated: February 10, 2016

ENERGY STAR®  
Score<sup>1</sup>

<sup>1</sup> The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

### Property & Contact Information

Property Address	Property Owner	Primary Contact
Administration Building 66 Roaring Brook Road Chappaqua, New York 10520	Chappaqua Central School District 66 Roaring Brook Road Chappaqua, NY 10514	Alex Melathe 8 Skyline Drive 1st Floor Hawthorne, NY 10532 (914) 260 2269 alex.p.melathe@jci.com

Property ID: 4370535

### Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
43.5 kBtu/ft <sup>2</sup>	Electric - Grid (kBtu) 254,758 (41%) Natural Gas (kBtu) 371,913 (59%)	National Median Site EUI (kBtu/ft <sup>2</sup> ) 97.9 National Median Source EUI (kBtu/ft <sup>2</sup> ) 186 % Diff from National Median Source EUI -56%
Source EUI 82.7 kBtu/ft <sup>2</sup>	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO <sub>2</sub> /year) 41	

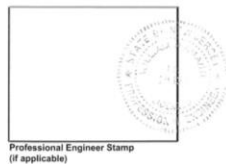
### Signature & Stamp of Verifying Professional

I, William Amann, (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: William Amann Date: 2/11/16

Licensed Professional

William Amann  
26 West High Street  
Somerville, NJ 08876  
908-526-5700  
wamann@meengineers.com



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## Douglas Grafflin Elementary School

Primary Property Type: K-12 School  
Gross Floor Area (ft<sup>2</sup>): 98,820  
Built: 1962

For Year Ending: November 30, 2015  
Date Generated: February 10, 2016

ENERGY STAR®  
Score<sup>1</sup>

<sup>1</sup> The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

### Property & Contact Information

Property Address	Property Owner	Primary Contact
Douglas Grafflin Elementary School 650 King Street Chappaqua, New York 10517	Chappaqua Central School District 66 Roaring Brook Road Chappaqua, NY 10514	Alex Melathe 8 Skyline Drive 1st Floor Hawthorne, NY 10532 (914) 260 2269 alex.p.melathe@jci.com

Property ID: 4370493

### Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
46.8 kBtu/ft <sup>2</sup>	Electric - Grid (kBtu) 1,171,359 (25%) Natural Gas (kBtu) 3,457,187 (75%)	National Median Site EUI (kBtu/ft <sup>2</sup> ) 72.4 National Median Source EUI (kBtu/ft <sup>2</sup> ) 114.4 % Diff from National Median Source EUI -35%
Source EUI 74 kBtu/ft <sup>2</sup>	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO <sub>2</sub> /year) 281	

### Signature & Stamp of Verifying Professional

I, William Amann, (Name) verify that the above information is true and correct to the best of my knowledge.

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Licensed Professional

William Amann  
26 West High Street  
Somerville, NJ 08876  
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wamann@meengineers.com



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## Roaring Brook Elementary School

Primary Property Type: K-12 School  
Gross Floor Area (ft<sup>2</sup>): 102,457  
Built: 1951

For Year Ending: November 30, 2015  
Date Generated: February 10, 2016

ENERGY STAR®  
Score<sup>1</sup>

<sup>1</sup> The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

### Property & Contact Information

Property Address	Property Owner	Primary Contact
Roaring Brook Elementary School 529 Quaker Road Chappaqua, New York 10519	Chappaqua Central School District 66 Roaring Brook Road Chappaqua, NY 10514	Alex Melathe 8 Skyline Drive 1st Floor Hawthorne, NY 10532 (914) 260 2269 alex.p.melathe@jci.com

Property ID: 4370518

### Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
53.2 kBtu/ft <sup>2</sup>	Propane (kBtu) 210,128 (4%) Electric - Grid (kBtu) 1,209,142 (22%) Fuel Oil (No. 2) (kBtu) 4,030,828 (74%)	National Median Site EUI (kBtu/ft <sup>2</sup> ) 75.8 National Median Source EUI (kBtu/ft <sup>2</sup> ) 112.4 % Diff from National Median Source EUI -30%
Source EUI 78.9 kBtu/ft <sup>2</sup>	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO <sub>2</sub> /year) 401	

### Signature & Stamp of Verifying Professional

I, William Amann, (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: William Amann Date: 2/11/16

Licensed Professional

William Amann  
26 West High Street  
Somerville, NJ 08876  
908-526-5700  
wamann@meengineers.com



Professional Engineer Stamp  
(if applicable)

## EPC Phase 2

### PROPOSED MEASURES

Energy Management System - Temperature Setback

Energy Management System - Exhaust Fan/Relief Damper Control

Heating Distribution System - Pipe and Valve Insulation

Boiler/Burner - Replacements & Fuel Switch

Windows - Window Film

Motors - Energy Efficient Motor Replacement

Water Conservation

Vending Machine Controllers

Plug Load Controllers

Fuel Catalyzer Installation

Transformers - Replacements



# Completed Measures to Date:

Energy Management System - Temperature Setback -	90% Complete
Energy Management System - Exhaust Fan/Relief Damper Control -	100% Complete
Heating Distribution System - Pipe and Valve Insulation -	60% Complete
Boiler/Burner - Replacements & Fuel Switch -	90% Complete
Windows - Window Film -	90% Complete
Motors - Energy Efficient Motor Replacement -	Will be completed in February
Water Conservation -	100% Complete
Vending Machine Controllers -	100% Complete
Plug Load Controllers -	90% Complete
Fuel Catalyzer Installation -	100% Complete
Transformers - Replacements -	Will be completed in February

## Service Excellence

***How is it going?***

***How is it helping the District?***

***Any Insights?***

- Service visits twice a month check in with facilities and service schools under the districts direction
- Work with district on area needing attention
- Helping the district to minimize hot/cold spots
- Minimize complaints from teachers and administration
- Continue with Preventive maintenance in order to prevent catastrophic failure.

- QUESTIONS

