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RETRO-COMMISSIONING



The Town of Glastonbury



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INTRODUCTION

Glastonbury is taking advantage of a **Connecticut Energy Efficiency Fund (CEEF)**-sponsored and **Connecticut Light and Power (CL&P)**-administered program to document how our larger facilities should be operated to maximize energy-saving opportunities that improve their overall performance while helping to develop long-term, sustainable energy management strategies. In order to qualify for the program, a facility must: have: **direct digital control (DDC)** of the heating, ventilating and air conditioning systems; exceed 100,000 square feet; and participate in the EPA *Energy Star* Benchmarking program.



RETRO-COMMISSIONING OF MUNICIPAL AND SCHOOL BUILDINGS

The facilities that qualify for the program and that are being investigated and analyzed through the CEEF/CL&P **retro-commissioning (RCx)** program include:

SCHOOLS

- ∞ Glastonbury High School
- ∞ Smith Middle School
(shown at right)

MUNICIPAL FACILITIES

- ∞ Town Hall
- ∞ Police Department
- ∞ Riverfront Community Center
- ∞ Welles-Turner Memorial Library



To deliver results, CL&P's energy engineers collaborate with the Town and a prequalified RCx engineering firm to use targeted functional tests and



DDC trend analysis to survey, investigate and provide recommendations for **energy-efficiency measures (EEMs)** at our facilities. The cost of this investigation is funded 100% through the CEEF.

After the investigation is complete, the RCx firm provides a detailed implementation plan which details the proposed EEMs, the estimated cost to implement and the estimated energy savings. CL&P reimburses the Town for approximately 50% of the implementation costs. After the EEMs are implemented, the program provides training in the operation and maintenance of the measures and the Town continues to record energy usage through the *Energy Star* Portfolio Manager System to verify expected results.

In the case of Smith Middle School, the investigation identified five EEMs. The cost to implement them is \$101,875 (of which CL&P will pay 50%), and the estimated annual energy savings is \$51,453. This yields a one-year net payback on the Town's investment.

EEM #	Measure Description	Total Electrical Savings		Total Heating Savings		Total \$ Savings	Net costs to implement	Payback (Years)
		KWH	\$	MMBTU	\$			
CH-1	Optimize chiller control/seasonal VFD pumping	26,208	\$4,455	0.0	\$0	\$4,455	\$12,399	1.4
HV-1	Add enthalpy economizer mode and optimize RTU 1, 4, 5 and 6	52,968	\$9,005	185.2	\$2,740	\$11,745	\$18,758	0.8
HV-5	Enhance VFD control on beat recovery units HTX 1, 2 and 3	70,725	\$12,023	107.0	\$1,584	\$13,607	\$22,432	0.8
OCC-1	Install VFD occupancy control and optimize Gym RTUs	39,118	\$6,650	164.9	\$2,440	\$9,090	\$26,533	1.5
OCC-3	VFD occupancy control and optimize Auditorium units	59,132	\$10,052	173.9	\$2,504	\$12,556	\$21,753	0.9
Totals		248,151	\$42,185	631.0	\$9,268	\$51,453	\$101,875 of which 50% is \$ 50,938	1.0

GLASTONBURY'S GREEN INITIATIVES PROGRAM

Glastonbury's Green Initiatives program operates under the direction of the Town Manager. The committee is chaired by the Purchasing Agent and the Superintendent of Sanitation. Committee members from across Town departments participate and contribute ideas and suggestions committed to a "greener" community.

The committee assembles information about products and services and makes the information available to specific departments that can evaluate them and develop applications in Town projects with the approval of the Town Manager.

These "Go-Green" bulletins contain information about the results of product evaluations and other accomplishments of Town departments. We hope this information can provide you insight to the Town's green initiatives and also lead others in the community to find ways to use environmentally preferable products. Please contact us if we can help you with further information or if you have additional suggestions. ■

