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HEATING EFFICIENTLY



The Town of Glastonbury

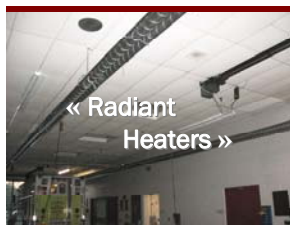


INTRODUCTION

Glastonbury recently replaced the conventional hot water heating system in its largest fire company with a combination of infrared radiant heaters in the equipment bay and a high-efficiency condensing boiler for the occupied spaces. The results have been impressive, with heating fuel usage decreasing by over 40%!



RADIANT HEAT + H.E. CONDENSING BOILER »»» ENERGY AND \$ SAVINGS



Radiant heaters (*left*) rely on infrared heat to warm the equipment and surrounding surfaces rather than the air in the space as the convection unit heaters do.

Unfortunately, with the hot water convection heating system that previously existed in the equipment bay (*below*), much of the heated air in the bay was lost when the equipment doors opened, requiring the boiler to replenish the lost heat.



Equipment bay retrofitted with two vacuum-exhausted radiant heaters; new high-efficiency condensing boiler occupies less than one-fourth space of previous boiler

the boiler, allowing the new replacement boiler to be significantly downsized. The new replacement boiler was specified to be a high-efficiency condensing boiler, resulting in even more efficiency.

The energy usage in the fire company was recorded and analyzed using U.S.

The radiant heating system eliminates this situation. Installing the radiant heaters in the equipment bay removed that heating load from



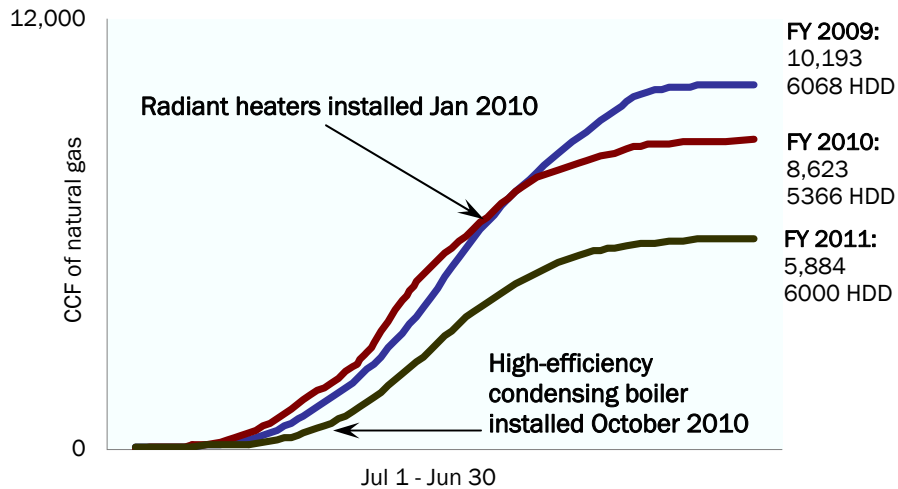
Previous equipment included ceiling-mounted convection-type heaters and conventional 910 MTH output hot water boiler

Environmental Protection Agency's *ENERGY STAR* Portfolio Management System – a free, web-based system available for public use. Natural gas usage in the firehouse was reduced more than 40% over the same period two years prior, and fuel costs were reduced by more than \$10,000.



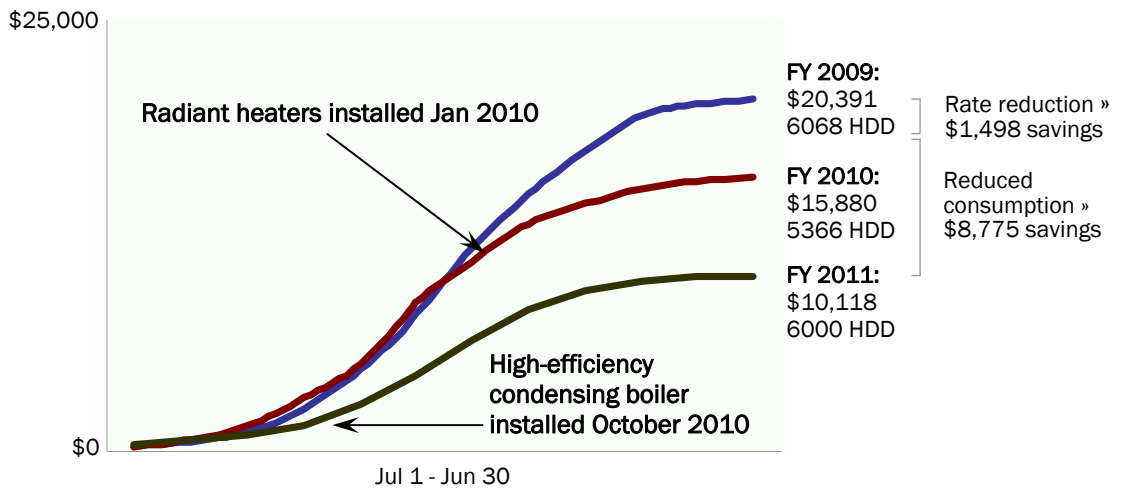
ENERGY SAVINGS

LAST 3 FISCAL YEARS



COST SAVINGS

LAST 3 FISCAL YEARS



Other benefits realized as a result of the heating system improvements were:

- ☞ reduction in electrical usage and demand related to the removal of the previous unit heater fans;
- ☞ avoidance of approximately 20 metric tons of carbon dioxide-equivalent emissions each year;
- ☞ removal of asbestos-containing material in the previous boiler; and
- ☞ better maintenance access to the new boiler, due to its significantly smaller size.

Approximately 60% of the \$88,500 total cost of the project was offset by utility company incentive payments and American Recovery and Reinvestment Act grant funding, resulting in a net cost to the Town of \$35,600 and a simple payback of 4.2 years, based on net cost.

The retrofit has been determined to be an overwhelming success and is now being implemented in other fire houses serviced by natural gas.



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. ■

