



Case Study: St. Matthew's United Methodist Church, Acton, MA



Founded in 1950, the original wood frame church building was comprised of a combination sanctuary/fellowship hall, a 2 story education wing, and kitchen with offices and library on the ground floor. In 2000, a new sanctuary was added increasing the size of the facility by 40%. A new gas-fired hydronic boiler system was added for the addition alongside the original steam boiler, also gas-fired.

The net results of all the improvements?

St. Matthews has reduced their **carbon dioxide emissions by 22%**. Comparing Fall/Winter '13-'14 to Fall/Winter '14-'15 heating costs, St. Matthew's **cut annual heating costs by 19%**, a reduction from \$10,672 to \$8,667. Further conservation efforts resulted in an 8% reduction in electricity demand.

Here's how St. Matthew's did it:

- ❖ **Insulated 60'** of boiler distribution and copper hot water pipe on a community **work day**;
- ❖ Upgraded attic, ceiling, and knee wall insulation from R value of 6 to as much as 40 with blown in cellulose over an area of 1600 sf;
- ❖ Applied clear plastic interior window shields to drafty office and conference room windows during heating season;
- ❖ Modified congregation and tenant's behavior by educating them at services and through weekly E-news the importance of keeping lights off when not in use and doors closed between occupied and unoccupied spaces during heating season;
- ❖ Installed solar walkway lighting. The front side walk is totally illuminated by solar powered fixtures supported by a small internal battery powering the light for 8 hours through the evening.



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