



Colonial-Style Home, Brooklyn, NY

3 Unit, Detached



Project Summary:

Energy-efficiency measures installed:

- ◇ Insulate walls to R17
- ◇ Upgrade attic insulation to R39
- ◇ Air-seal whole house
- ◇ Re-pitch radiators
- ◇ Install bathroom fan and replace sheet-rock
- ◇ Replace 31 incandescent bulbs with CFLs

Savings Summary:

Total Project Cost: \$11,445

Assisted Home Performance with ENERGY

STAR Incentive: \$5,000

Cost to Owner: \$6,445

Estimated Annual Savings:

- ◇ Cost Savings: \$2,630
- ◇ Electric Energy Savings: 1,086 kWh
- ◇ Gas Energy Savings: 220.2 MMBtu = 2201.9996 Therms
- ◇ Saving to Investment Ratio: 4.6
- ◇ CO₂ Lifetime Reduction: 244 tons
- ◇ NO_x Lifetime Reduction: 660 lbs.
- ◇ SO₂ Lifetime Reduction: 2.6 lbs.

This three-unit, detached, Colonial-style, 5,000 square foot home in Brooklyn houses the owner and family - two adults and three children - and two tenants. The owner came to the Association for Energy Affordability seeking assistance through the Assisted Home Performance with ENERGY STAR® program to help make the home more comfortable, which was very cold in the winter, and to help lower the high energy bills.

During the Comprehensive Home Energy Assessment AEA identified numerous opportunities for energy savings, as well as two important health and safety issues: The first was a leaky “Hartford Loop” safety feature on the boiler, which can lead to dry-fire in the boiler and even explosion if unaddressed. AEA fixed this before proceeding with any other work. AEA found mold on the ceiling above the bathroom windows, caused by improper ventilation. Mold can have a significant negative impact on indoor air quality and occupant respiratory health, can cause structural degradation of the building and is very hard to remediate once it spreads. The existing sheetrock was removed and replaced, and a bathroom fan installed.

The most pressing energy need for the house was to address the total absence of insulation in the walls. New insulation was installed, bringing the walls to an R-value of 17; increased insulation in the attic brought it to R39, up from R8; and the entire house was air-sealed. AEA’s blower door tests found air leakage decreased by over a third as a result of these measures.



All radiators on the first and second floor were re-pitched, allowing them to drain properly. Blocked drainage leads to imbalanced heat throughout the building and loud “knocking” sounds in the pipes. In addition, AEA replaced all light bulbs with compact fluorescents.

Total project cost was \$11,445, with \$5,000 reimbursed by NYSERDA, and projected savings of \$2,630 per year. The owner reports that the bills are down 30-40% every year and is very happy with the work performed.

“Your staff, at all levels, was very helpful in assisting me in understanding the benefits to be achieved and costs saved by Home Performance. I also found the process to be much less invasive and stressful than an ordinary home improvement. I would highly recommend your organization to anybody seeking Home Performance services.” - Homeowner

What is Assisted Home Performance with ENERGY STAR®?

Assisted Home Performance with ENERGY STAR is a New York State Energy and Research Development Authority-administered program available to residential buildings where the owner, who must occupy one of the units, or the tenant(s) have an income equal to or less than 80% of state or area median income, whichever is greater. Eligible households receive a free Comprehensive Home Energy Assessment, also referred to as an energy audit, conducted by a participating BPI Accredited Home Performance Contractor such as AEA. In addition, participants may receive financial assistance covering up to 50% of the cost of approved energy efficiency upgrades. Visit AEA’s website or contact Robert Gardella to find out more:

aea.us.org/HPES

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