



Energy Efficiency Program

Joseph Lajewski

Program Manager, RMANH

603-225-9748, joe@rmanh.com

Giving Power Back – Overview

- Giving Power Back is a 3 phase program designed to assist businesses in reducing GHG emissions and energy costs through increased efficiency. It takes a fuel-blind look at the entire building as an interactive system.
 - Initial Energy Assessment (P1): Completely Funded for through the RGGI grant. Identifies potential opportunities for investigation in the Comprehensive Audit and educates the business owner on the value of the audit and implementation of energy efficiency measures
 - Comprehensive Energy Audit (P2): Funded up to 60% through RGGI grant. Investigates the measures in the Initial Assessment and provides the business with financial modeling of individual measures.
 - Project Implementation Assistance (P3): Up to a 20% rebate on energy efficiency measures implemented. Coordinates with other funding sources to maximize project implementation.

Giving Power Back –Initial Objective

Educating Business Owners: Priority #1

- Small/Mid-Sized Businesses tend to:
 - Not have a dedicated energy or facility manager.
 - Be too busy running the daily operations of their business to “figure out the energy thing”.
 - View energy costs as a something that they can do very little to impact.
 - Confuse energy efficiency with conservation—think that they will have to do without something.
 - Not have the knowledge base of energy efficiency opportunities and avoid venturing into unknown territory.
 - Grossly underestimate the financial savings from energy efficiency opportunities.
 - Not understand the value a comprehensive energy audit can provide to them
- How the RMANH Energy Efficiency Program helps:
 - They rely on RMANH as their trusted independent representative throughout the entire process.
 - Educate the business on the potential opportunities and the value of a comprehensive audit through the Phase 1 without cost or obligation to the business.
 - Demonstrate through the audit that there are financially viable options to reduce energy expenses while reducing environmental impacts.

Giving Power Back – Results

- Owner's Quotes:

- Mike Baron owner of Baron's Major Brands.

- "Making my 1980's Laconia vintage retail store into a "green" building was not anything I envisioned even a year ago, but it is now a reality and is reaping benefits for my business, my customers and our overall energy security. Not only is Baron's Major Brands appliance store in Laconia now a more energy-efficient building, its comfort level has improved to the point where customers come up to me and tell me about it. Employees also report on how much more pleasant the store is to work in and the fact that customers want to spend more time here."

- Ken Young owner of Young's Restaurant.

- "I knew that there had to be opportunities for me to reduce my energy costs, but did not realize the significant savings that could be realized through efficiency. The entire audit process was a great education for me. In just the first couple months after the project, I am seeing cost savings that I would have never guessed could have been achieved while greatly improving the comfort within the restaurant. When you are making investment decisions you really need to have a good confident understanding that you are making the right decision. I really needed a resource to help me through this process. Working with Retail Merchants has truly been a great experience. The support I received from Retail Merchants Association has been way over the top"

Giving Power Back – Results

- 2011 Results:
 - **75** Business at locations throughout New Hampshire enrolled into the Program.
 - **36** of those businesses proceeded the Phase 2 Comprehensive Audit.
 - **10** Businesses started the Implementation Phase
 - **8** Businesses Completed their Project.
 - Implemented projects simple payback average 4-7 years

Success Stories—Implementation

- Dr. Bogacz DMD—Concord
- Dorr Mills Store—Guild
- Baron's Major Appliances—Laconia
- Persian Rugs--Nashua
- Rumney Animal Hospital--Rumney
- **Young's Restaurant--Durham**
–Watch interview with owner Ken Young at www.rmanheep.com

Building Shell Upgrades-Doors

Two old exterior doors had decaying door frame and bad seals. Note the dark gap between the door and the frame.



The doors were replaced with insulated steel doors.



Building Shell Upgrades

The dining room windows were 5 feet from adjacent building and facing an alley were inefficient creating comfort issues

They were removed, air sealed and insulated. The remainder of the wall was also re-insulated



Building Shell Upgrades- Insulation/Air Sealing

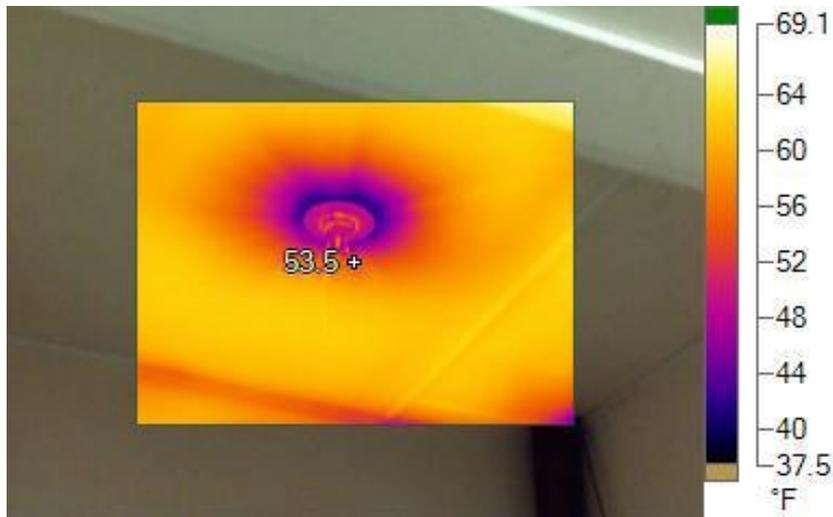
The roof above the dining room was vented via a ridge vent and had no air sealing between the dining room ceiling and the roof. There was virtually no insulation in the attic. The conditioned air from the dining room would travel into the attic and out through the roof.

8 inches of spray foam was used to seal the entire roof plane to prevent conditioned air loss through the roof.



Building Shell Upgrades- Air Sealing

The initial Infrared camera showed air infiltration through the penetration around the sprinkler head.



A strategic surgical air sealing effort using spray foam eliminated the air infiltration



HVAC

Duct work in the attic had about R4 insulation and had been damaged in several places due to contractors over the years

The ductwork was replaced and insulated to R8 and dampers were added



Electrical--Controls

Occupancy sensors were added in low traffic areas such as bathrooms and the basement



Vari-flow energy management system was installed to modulate exhaust fan speed to match actual need based on temperatures above the stoves



Cooler/Freezer Compressors/Fans

The Walk in Freezer and Refrigerator had old refrigeration equipment using R22 and R40 that were inefficient and are not environmentally friendly

New efficient and environmentally friendly equipment using R404A with ECM motors were installed



Other Efforts

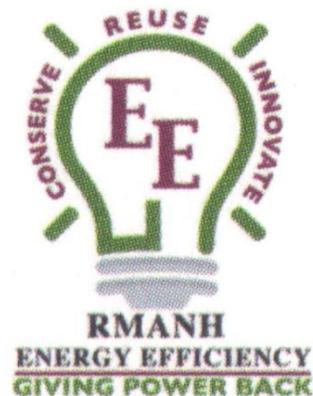
- Refrigerator and Freezer gaskets were replaced
- Lighting was replaced with LED's
- Restaurant was converted to Natural Gas which is burns cleaner and less expensive than propane.
- Switched electrical providers and applied the savings towards purchasing wind credits

Results

- **Projected annual savings of \$12,000**
 - Experienced a 20% reduction in electrical usage in the first couple months and expects to save around \$4,000/year in electricity.
 - Anticipated savings of about 50%, or about \$8,000/year from the insulation and air sealing of the building and conversion from propane to natural gas.
- **Anticipated project payback period of about 4½ years.**
- **Eliminated 110,000 lbs of CO2 emissions annually**

Giving Power Back - *One Building at a Time*

Joseph A. Lajewski



RMANH

Established 1966

Retail Merchants Association of NH

35A South Main St
Concord, NH 03301
www.rmanh.org

Ph 603-225-9748
Fx 603-229-0060
joe@rmanh.com