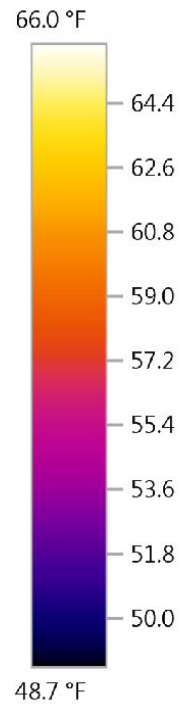
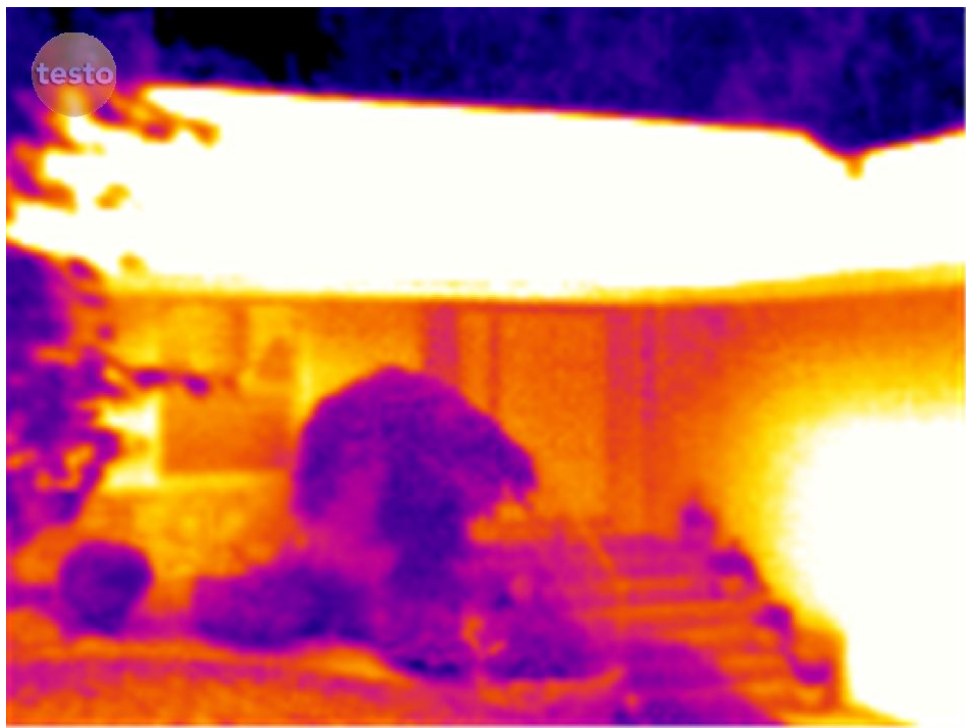




home performance to a science



## Results of Your Home Energy Assessment

Smith Residence  
Audit: May 26, 2011  
Report: Feb 1, 2012

### Prepared for:

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POWERED BY



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robert@revivalenergygroup.com

# Utility Bill Summary

## How much are you spending on gas and electricity per year?

This chart shows how much you're spending annually on utility bills and the amount that's being spent on gas vs. electricity. Your utility costs are an important factor when deciding which efficiency measures make the most sense for your home.

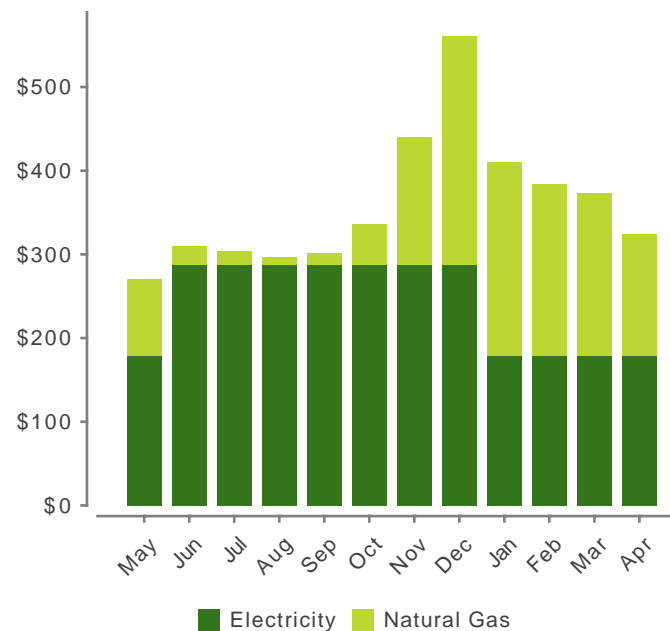
### Energy Costs

Total Electricity Consumed	27,887 kWh
Average Cost per kWh	\$0.11
<b>Total Electricity Cost</b>	<b>\$2,907</b>
Total Natural Gas Consumed	1,152 therms
Average Cost per therm	\$1.22
<b>Total Natural Gas Cost</b>	<b>\$1,402</b>

A kWh is a kilowatt-hour. Used to quantify the amount of electrical energy delivered by electric utilities to consumers

A therm is a unit of heat energy equal to 100,000 BTUs. Therms are used to quantify the amount of natural gas delivered by utilities to consumers.

### Cost of Energy per month from June 2010 through May 2011



# Appliance Efficiency

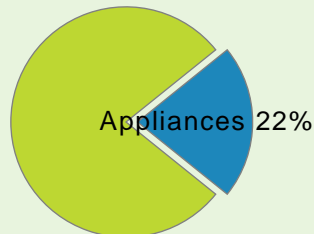
## How much do your appliances cost?

We've estimated the annual cost of operating your applications based on typical use. See our recommendations for an estimate of how much you could save if you replaced some of your appliances with Energy Star models.

### Annual cost of electricity used by appliances

**\$627**

### Estimated percentage of your electric bill



### Yearly cost of operating your appliances

Brand	Age	kWh/yr	Annual Cost
Refrigerator	7	426	\$45
Microwave	11	1,100	\$117
Dishwasher	10	324	\$34
Oven	22	450	\$48
Clothes washer	4	275	\$29
Clothes dryer	4	909	\$97
Hot Tub	12	1,350	\$143
Refrigerator	22	1,067	\$113
	<b>Total</b>		<b>\$627</b>

# Estimated Lighting Cost

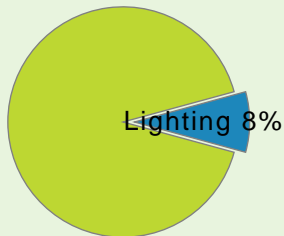
## How much do you pay to light your home?

Lighting can be a major energy drain. While incandescent bulbs continue to be the most common lighting source in homes today, they are the least efficient and shortest - lasting option. 90% of the energy used to light an incandescent bulb is released as heat instead of light. Compact Fluorescent (CFL) bulbs provide very comparable light quality as compared with traditional incandescent, but only use 25% of the energy.

### Estimated annual cost of lighting your home

**\$251**

### Estimated percentage of your electric bill



### Lighting cost per room

Location	Annual Cost
Bathroom, Guest	\$42
Family Room	\$42
Bedroom, Master	\$37
Dining Room	\$28
Kitchen	\$28
Front Hall	\$23
Bedroom, Master	\$23
Kids Room	\$9
Office	\$9
Walkin Closet	\$5
Living Room	\$4
Laundry Room	\$1
Entry	\$0

# Energy Loss

## Where is energy being lost in your home?

We have calculated your home's actual performance through a method known as Air Conditioning Contractors of America (ACCA) Manual J. This process allows us to precisely understand how each component of your building affects your heating load, and identify which areas are most appropriate to improve based on your health, comfort and efficiency goals.

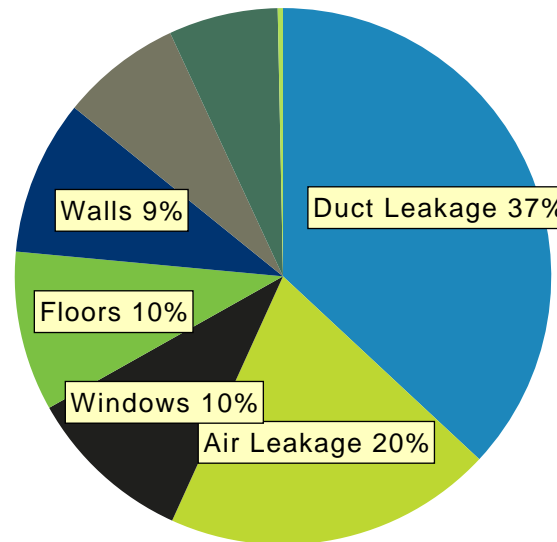
### Energy Loss in Your Home

Energy loss, in BTUh\* by building component, on the coldest night of the year

Duct Leakage	24,075
Air Leakage	12,935
Windows	6,561
Floors	6,275
Walls	6,093
Duct Insulation	4,736
Attic	4,298
Skylights	207
<b>Total</b>	<b>65,180</b>

\*British Thermal Unit, a unit of energy. BTUh is used to quantify the heat loss or heat gain through the building envelope, as well as the power needed for domestic hot water

### Energy loss by building component, on the coldest night of the year in your area



# Cooling Energy Loss

## Where is energy being lost in your home?

We have calculated your home's actual performance through a method known as Air Conditioning Contractors of America (ACCA) Manual J. This process allows us to precisely understand how each component of your building affects your cooling load, and identify which areas are most appropriate to improve based on your health, comfort and efficiency goals.

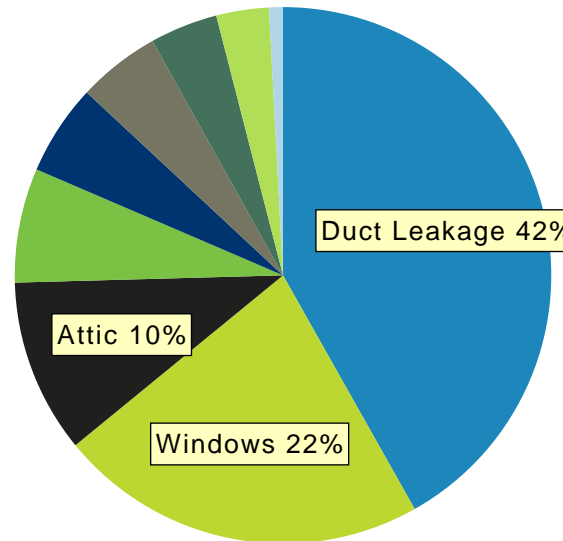
### Energy Loss in Your Home

Energy loss, in BTUh\* by building component, on the hottest day of the year

Duct Leakage	22,698
Windows	12,073
Attic	5,688
Duct Insulation	3,740
Walls	2,973
Air Leakage	2,697
Floors	2,216
Occupant Load	1,720
Skylights	454
<b>Total</b>	<b>54,260</b>

\*British Thermal Unit, a unit of energy. BTUh is used to quantify the heat loss or heat gain through the building envelope, as well as the power needed for domestic hot water

### Energy loss by building component, on the hottest day of the year in your area



# Air Leakage

## How drafty is your home?

Reducing air leakage is often the single most effective step you can take towards a more efficient, healthy and comfortable home. Minimizing air leakage can reduce heating and cooling bills, and improve indoor air quality and comfort. During your energy audit we used a blower door to determine the percentage of air your home exchanges with the outdoors per hour.

### Air Changes Per Hour

Envelope leakage at CFM50*	5,400
Natural ACH** (Air Change Per Hour)	1.24
ASHRAE*** Recommended Level	0.35

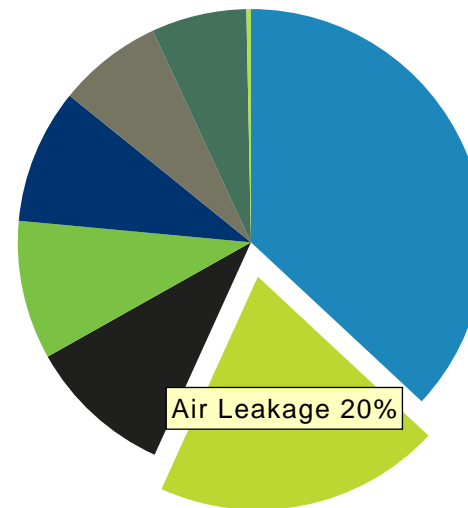
Equivalent to a 17 x 17 in<sup>2</sup> hole in your home

\*Cubic Feet per Minute. Used to quantify the air flow through duct work, air infiltration, or ventilation.

\*\*Air Changes per Hour. The number of times the home's air is replaced from outside in an hour.

\*\*\*American Society of Heating, Refrigerating, and Air Conditioning Engineers.

### Energy lost by air leakage, on the coldest night of the year in your area



# Attic Insulation

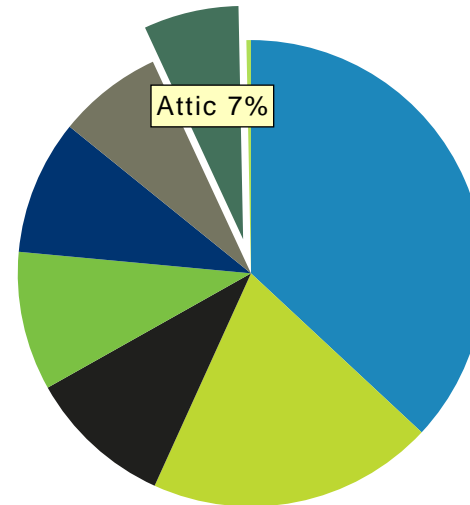
## How well is your attic insulated?

After air sealing, attic insulation is typically one of the best "bang for your buck" steps you can take towards a more efficient and comfortable home. Well installed attic insulation acts as a barrier to summer and winter heat loss to and from your attic. It's like a nice thick, winter hat for your home that saves you money all year round.

### Insulation Type & R-Value

Insulation type	Fiberglass, loose fill R-14 Good installation quality
System R-Value	R-13
Recommended R-Value:	R-49 or greater

### Energy lost by attic, on the coldest night of the year in your area





# HVAC System Summary

## How efficient is your heating and cooling system?

The HVAC summary compares the amount of heat your furnace or boiler can create to the amount needed by your home, and the amount of cooling your air conditioner can create to the amount needed. A properly sized heater will reduce run-time cycling, and increase comfort and efficiency. A properly sized heater and air conditioner combination will reduce run-time cycling, and increase comfort and efficiency.

### Furnace

Age	12 years
Max Input	100,000 BTU
Output (Stage 1)	60,450 BTU
Output (Stage 2)	93,000 BTU

DESIGN EFFICIENCY 93%

CURRENT OUTPUT	60,450 BTU
ACTUAL HEATING LOAD	65,180 BTU

Your system is 7% undersized for your home's requirements

### Air conditioner

Age	10 years
SEER	12.0

CURRENT OUTPUT	36,000 BTU
ACTUAL COOLING LOAD	54,260 BTU

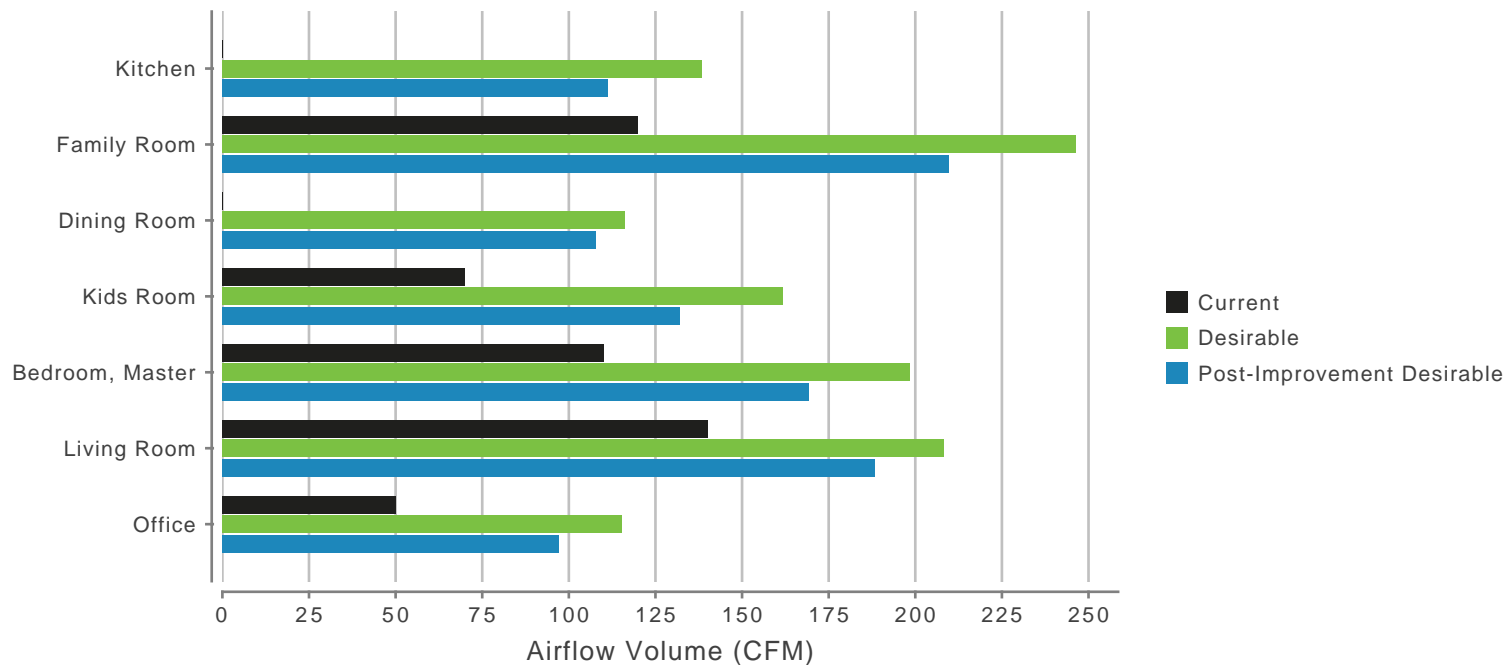
Your system is 34% undersized for your home's requirements

# Room By Room Airflow

## Are your rooms getting the right amount of airflow?

By analyzing the insulation, windows, and building envelope of your home, we can determine the optimal amount of heating and cooling energy necessary for efficiency and comfort. Each room's airflow requirements are calculated using ACCA Manual J.

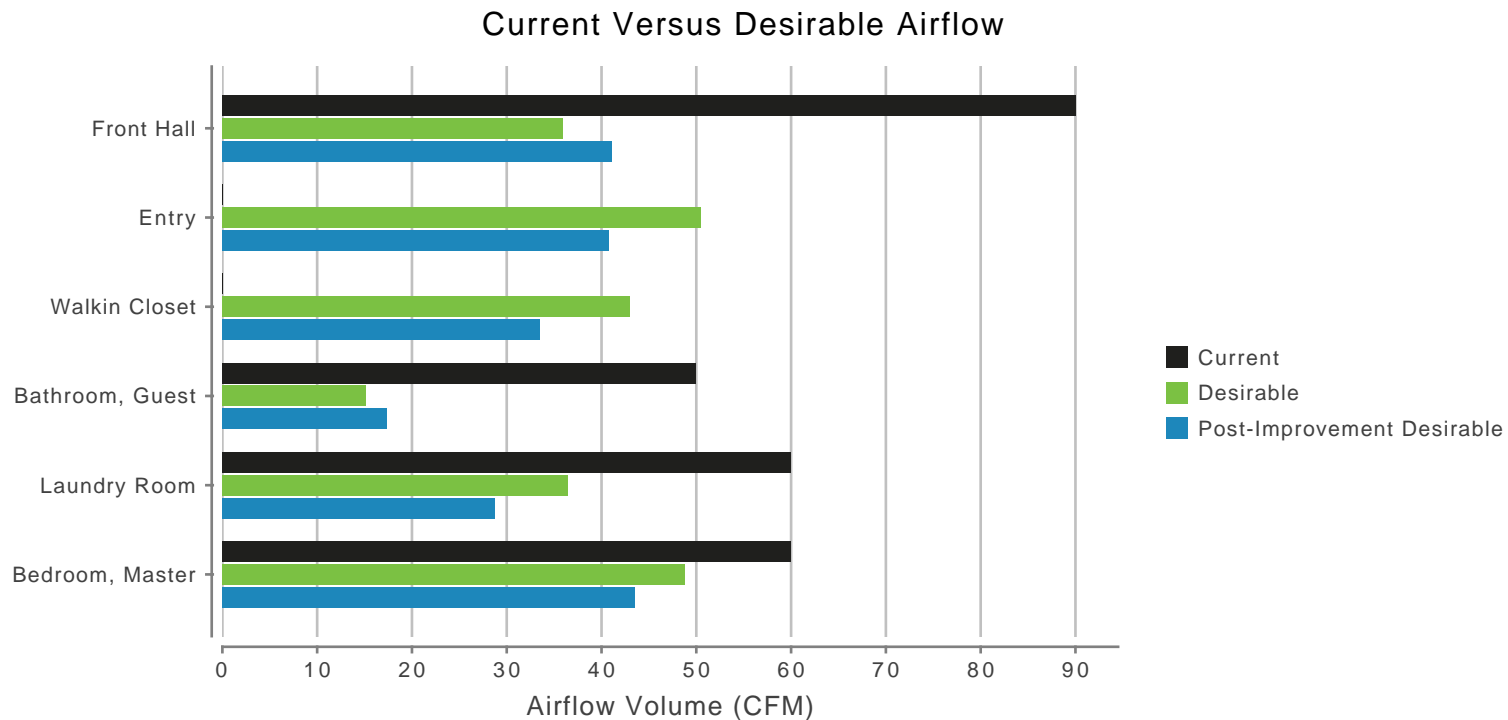
Current Versus Desirable Airflow



# Room By Room Airflow

## Are your rooms getting the right amount of airflow?

By analyzing the insulation, windows, and building envelope of your home, we can determine the optimal amount of heating and cooling energy necessary for efficiency and comfort. Each room's airflow requirements are calculated using ACCA Manual J.



# Peak Load Reduction

## What improvements will reduce energy loss the most?

We have catalogued your home's actual energy performance (the building load) through a method known as Air Conditioning Contractors of America (ACCA) Manual J. This process allows us to precisely understand how each component of your home affects your heating load, and identifies which areas are most appropriate to improve. This chart shows the improvement potential for each component of your home

### TOTAL HEATING LOAD (BTU/h)

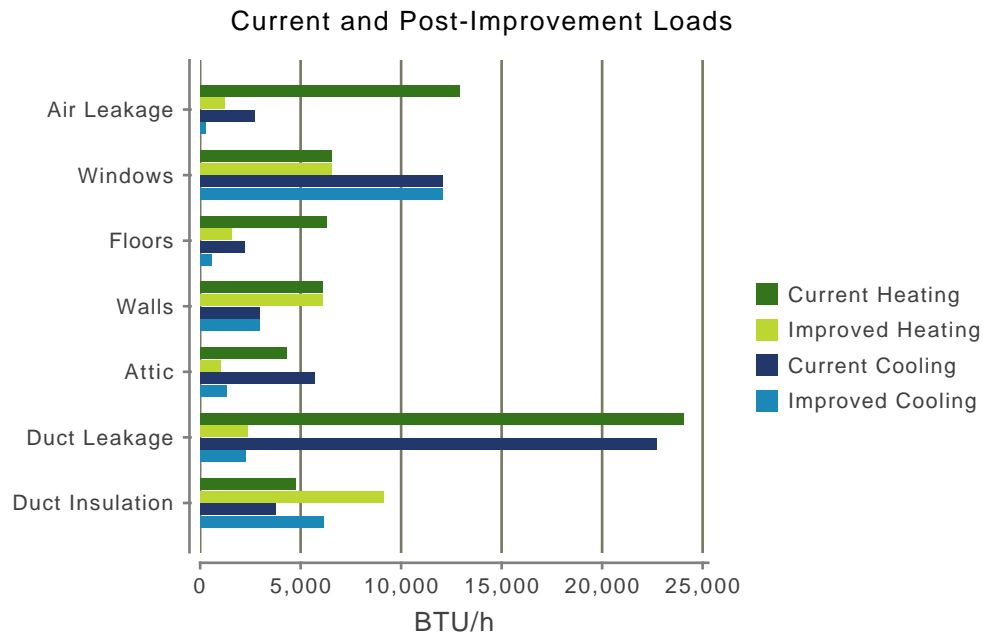
CURRENT: 65,180  
POST-IMPROVEMENT: 28,156

**POTENTIAL REDUCTION 57%**

### TOTAL COOLING LOAD (BTU/h)

CURRENT: 54,260  
POST-IMPROVEMENT: 27,719

**POTENTIAL REDUCTION 49%**



# Savings Prediction



## Home Performance \$7,900

### Included Improvements

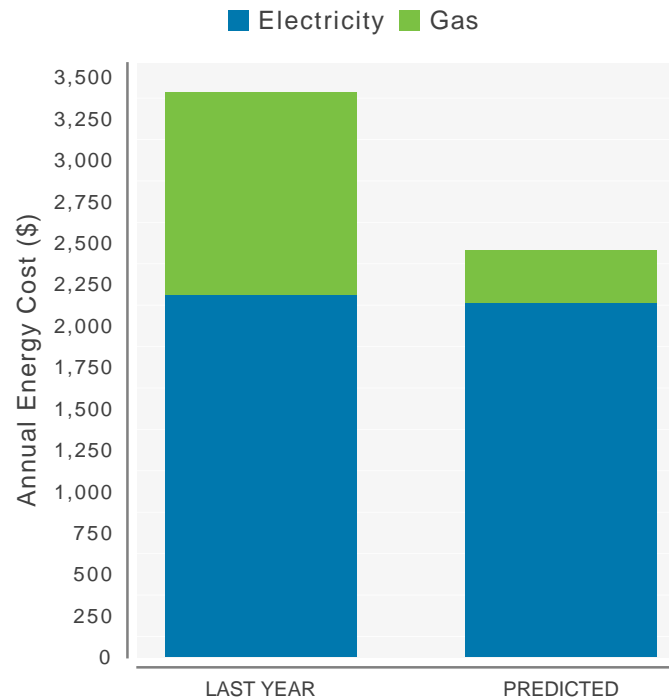
- Building Envelope Sealing (Attic Air Sealing)
- Duct Sealing
- Attic Insulation
- Floor Insulation (Fiberglass Batts)

### Financing

Monthly Loan Payment	\$79.61
Monthly Savings	\$79.91
<b>Monthly Net</b>	<b>+ \$0.30</b>

### Payback

Without Utility Escalation	9.9 yrs
With Utility Escalation (10.0%)	6.8 yrs



### Savings

Electricity	2%	\$54 /yr
Gas	74%	\$905 /yr
<b>Total Savings</b>	<b>28%</b>	<b>\$959/yr</b>