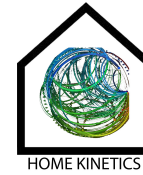




HOME ENERGY ASSESSMENT

2/15/2012



PREPARED FOR:

Bill Smithers
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PREPARED BY:

Johnny Auditor on behalf of
Home Kinetics

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Dear Bill Smithers,

Thank you for choosing Home Kinetics for your home energy performance audit. We hope you have found our products and services helpful and the information our crew shared with you useful. This report provides information to help you understand your energy usage as well as tips and recommendations to help you save more on your energy bill.

Prepared by:

Johnny Auditor on behalf of **Home Kinetics**

Credentials:

CEM

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Energy Technician

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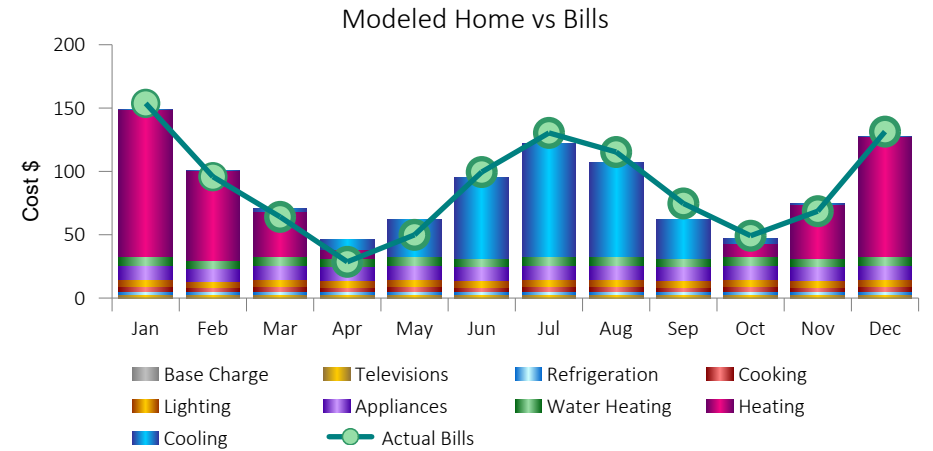
YOUR HOME PERFORMANCE CONCERNS

You reported the following concerns about the energy use and comfort of your home:

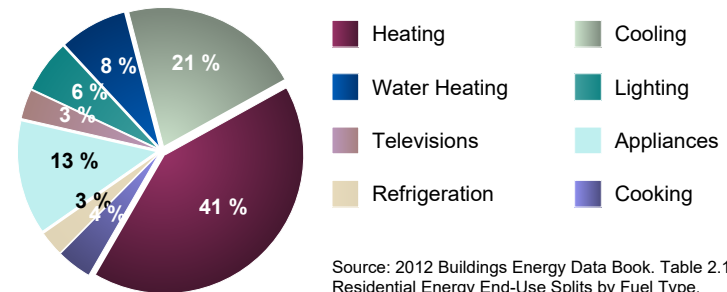
- Drafts and discomfort
- High energy bills
- Old, loud, scary boiler

YOUR HOME'S MONTHLY ENERGY USE

This graph shows how your energy usage can vary each month based on different factors such as weather. The data contained in this graph corresponds to the actual days in the month and not your billing cycle.



**THE USUAL SUSPECTS:
TYPICAL ENERGY USAGE BREAKDOWN**



Source: 2012 Buildings Energy Data Book. Table 2.1.5. 2010 Residential Energy End-Use Splits by Fuel Type. Your usage will vary.



HOME FACTS & SUMMARY OF EXISTING COMPONENTS

About this home

Year Built: 1941
Number of Bedrooms: 1
Number of Stories: 1
Average Ceiling Height: 8 Ft
Conditioned Floor Area: 2084
Front of House Direction: East

Air-tightness

Infiltration Rate (ACH): 1.5

Attic and Foundation

Attic

Attic Type: Open Cavity
Attic Insulation: R-14

Foundation

Foundation Type:
Crawl

Foundation Wall Insulation Value:
/ Crawl: R-0

Rim Joist Insulation Value:
Crawl: R-0

Wall Construction

Wall Type: Frame with Brick veneer
Wall Insulation Value: R-11.9

Windows and Skylights

Window Type: Double-Pane, Clear, Wood Frame

Heating/Cooling Systems

Heating System

System 1 Fuel: Gas
Type: Furnace
Efficiency: 65% AFUE

Cooling System

System 1 Type: Central Air Conditioning
Efficiency: 11.0 SEER

Other Systems

Ducts

Heating Duct 1 Location: 50/50 Attic-Conditioned
Leakage: 30% - Very leaky
Insulation: R-None

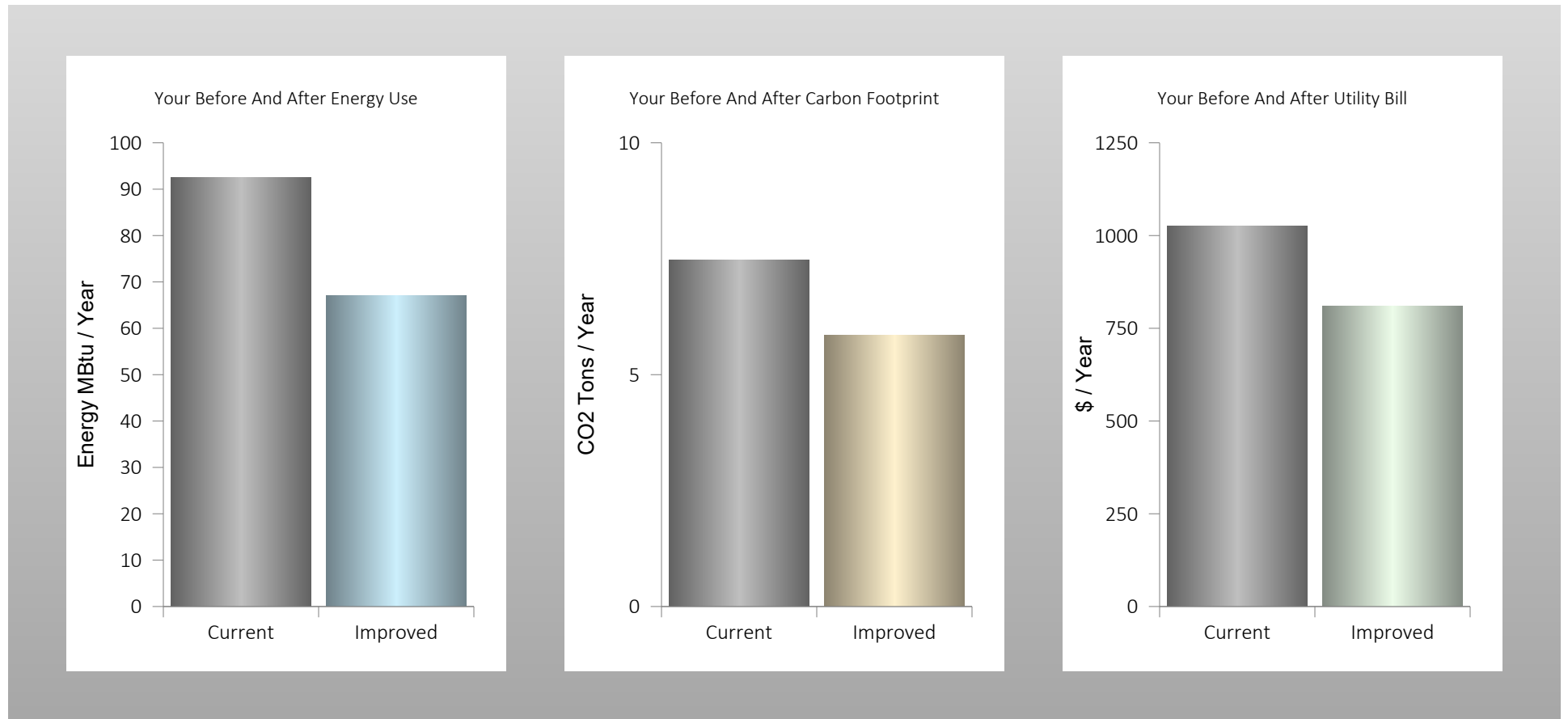
Hot Water System

DHW 1 Fuel: Gas
EF: .56
Type: conventional water heater



ENERGY IMPROVEMENT SUMMARY

View the results of the proposed energy improvements in these three charts, which show the energy saved, your reduced carbon footprint, and the savings in your utility bills.*



*Energy savings estimates are based on typical year and assume building and usage characteristics. Savings may vary depending on building usage, weather and building characteristics.



ESTIMATED IMPACT OF IMPROVEMENTS ON UTILITY BILLS

Utility Bill with Inflation

Current Average Costs

Year	0	5	10	15	20
Electricity	\$541	\$690	\$881	\$1,125	\$1,435
Fuel	\$484	\$618	\$789	\$1,006	\$1,285
Total bill	\$1,025	\$1,308	\$1,670	\$2,131	\$2,720

With Package

Year	0	5	10	15	20
Electricity	\$483	\$616	\$787	\$1,004	\$1,281
Fuel	\$328	\$418	\$534	\$681	\$869
Total bill	\$811	\$1,034	\$1,320	\$1,685	\$2,151

Estimated Savings

Year	0	5	10	15	20
Electricity	\$58	\$74	\$95	\$121	\$154
Fuel	\$156	\$200	\$255	\$325	\$415
Total bill	\$215	\$274	\$349	\$446	\$569



YOUR IMPROVEMENT PACKAGE

Improvements	Base	Improved	Energy Saved MBtu	% Energy Saved	Annual Savings	Cost	SIR
Insulate attic	R=21.0	R=38.0	8.7	9.4%	\$71	\$2,849	.5
Air seal	6124 CFM	4593 CFM	8.4	9.1%	\$62	\$884	1.1
Duct/Pipe Eff	Eff=80%	Eff=93%	8.4	9.0%	\$81	\$80	15.2
Package Total			25.5	28%	\$215	\$3,813	.9

Procedures used to make these estimates are consistent with criteria established by the U.S. Department of Energy for residential assessments. Actual installation costs and savings realized from installing measures may differ from the estimates contained in this report. The cost and incentive detailed above are estimated by your energy advisor. Final costs and incentives may differ from these estimates based on the actual scope of work installed.

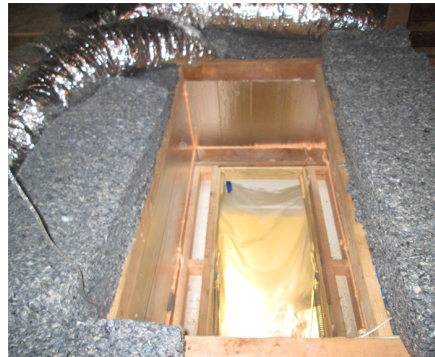


Proposed Improvements for the Attic

Location	Base Cavity Insulation	Base Cont Insulation	Sq. Ft.	Improved Cavity Insulation	Improved Cont Insulation
Attic Area 1	7.5 in.; R-21 Fiberglass loose fill	N/A	2084	13 in.; R-38 Fiberglass, Loose Blown	N/A

Insulation is your primary defense against heat loss/gain through your home's envelope and is almost always the first priority in terms of a practical, cost-effective improvement to a home. The effectiveness of insulation is based on its "R-Value", the standard measure of thermal resistance. A higher R-Value results in slower heat loss/gain, lower heating bills, and a more comfortable and greener home. Installing the right amount of attic insulation is a key to reducing heating and cooling costs.

Sealing and insulating the attic



Although it may not feel like the drafts and outside air you're experiencing is coming directly from the attic, that's where we found the biggest gaps and holes. We'll take the time to remove old insulation, seal all the holes, put your old insulation back and add a thick layer of cellulose on top. That will make the home instantly more comfortable and save you money on energy bills immediately.



Proposed Improvements for Reducing Air Leakage

Air Leakage Testing		ACH 50*
Current Condition	6124 CFM@50pa	22
Improvement Recommended	25% Leakage Reduction	16.5
Ventilation	Base	Improved
Mechanical	None	None

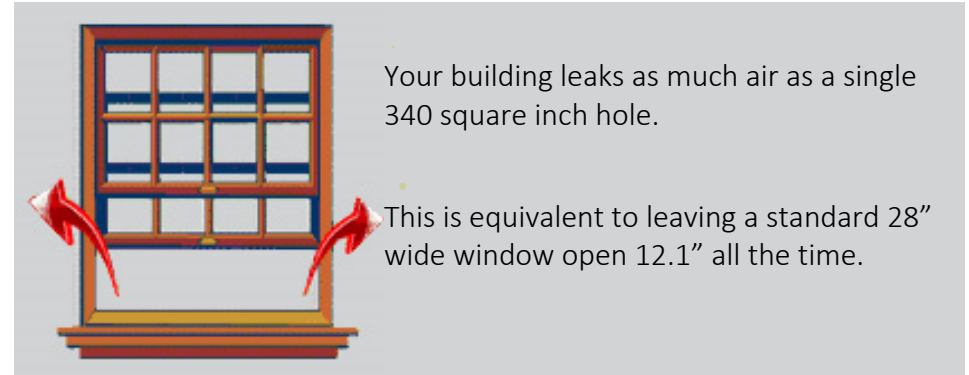
*ACH50 (Air changes per hour at 50 Pascals) compares air leakage to the volume of the house. A higher number indicates a leakier house. Standards for new construction often call for 3 to 5 ACH.

Air leakage allows conditioned air to escape increasing your energy costs. However, the movement of air through your home also removes odors, pollutants, and moisture. When taking steps to air-seal your home, keep in mind that proper ventilation and air distribution work to provide a safe, comfortable and durable home.

Air sealing is critical



Sealing can lights.



We've measured your homes current air leakage and know exactly how much to seal to get it to a healthy, comfortable, and cost-effective level.



Proposed Improvements for Distribution

System Ducts	Base Location	Base Leakage	Base Insulation	Improved Location	Improved Leakage	Improved Insulation
Heating System 1	50/50 Attic-Conditioned	30% - Very leaky	R-0	50/50 Attic-Conditioned	Seal to 6% Leakage	R-6
Cooling System 1	N/A	N/A	R-0	N/A	N/A	R-6

Ducts are used to distribute conditioned air for heating and cooling. On average, about 20 percent of the air that moves through the duct system is lost due to leaks, holes, and poorly connected ducts. A duct system that is properly sealed can make your home more comfortable, energy efficient, and safer.

Duct improvements yield immediate impact

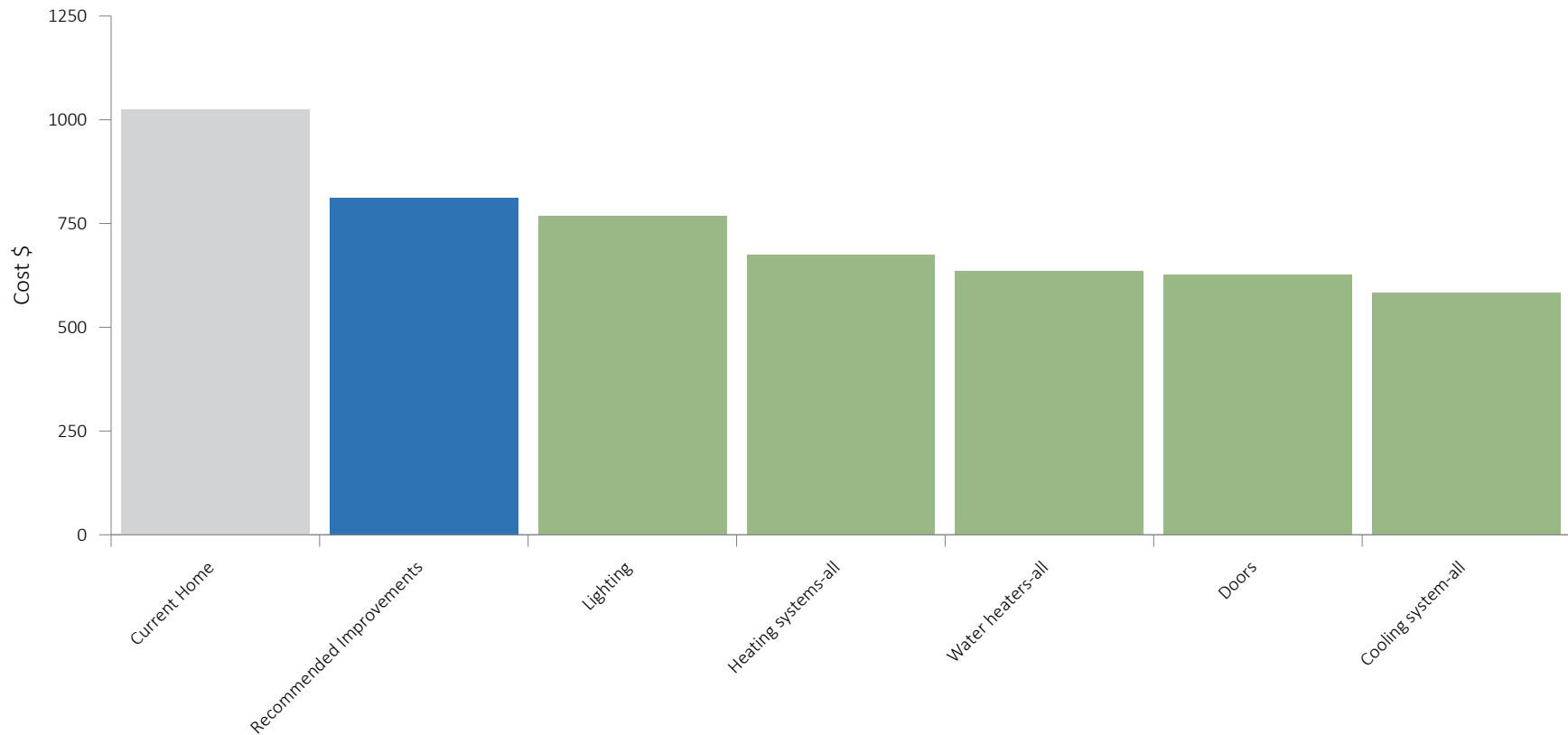


Your ducts are only partially connected in some places, and are leaking everywhere. In that condition your heating and cooling systems need to work much harder, and you will still never be as comfortable as you should be. Before we insulate in the attic, we'll reconnect and seal all the ductwork. Then, after burying the ducts in insulation, your systems will be able to deliver conditioned air the way they were designed to.



Your Roadmap to Reduce Energy Costs

This chart shows your current energy use and the amount it will decrease as each improvement is made in your home. The left-most bars compare your home's usage (before improvements) to a similar home in your area. If you were to complete all of the improvements identified for your home, your energy use would be reduced to the amount shown in the rightmost bar on the graph.

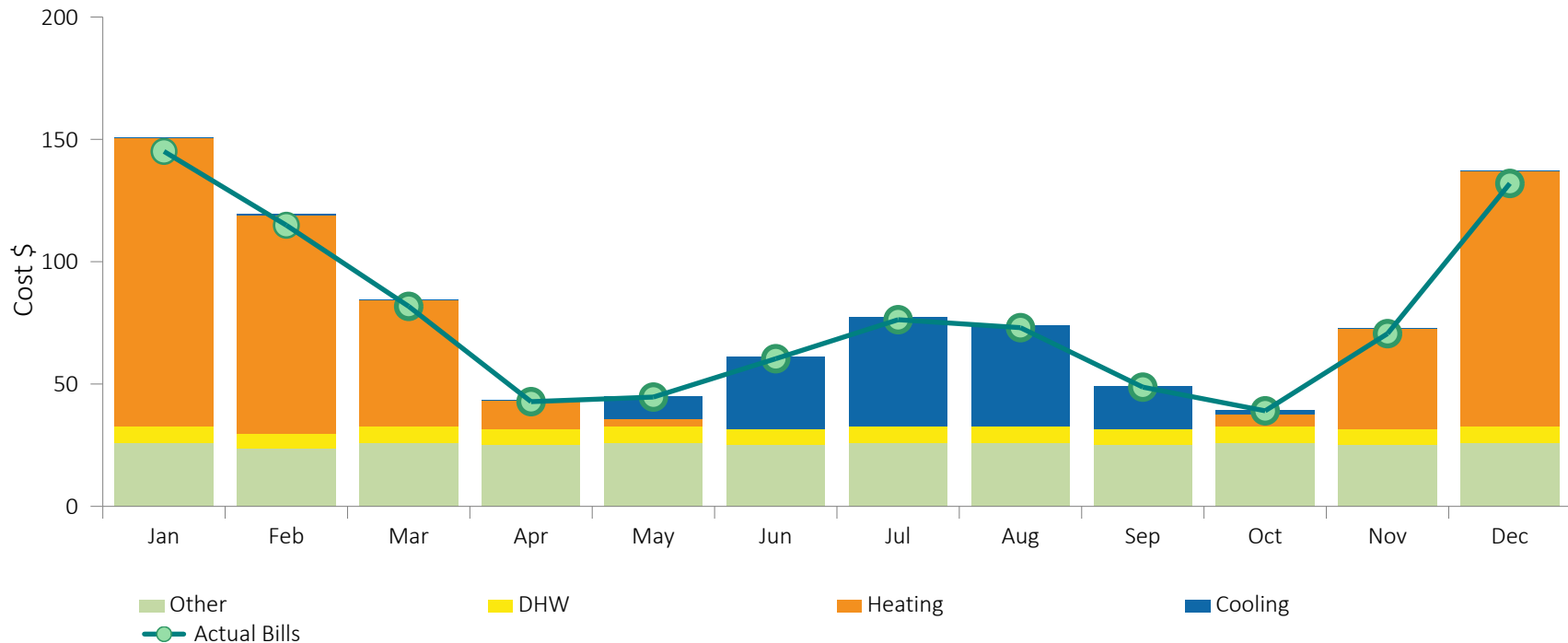




Where Do the Energy Efficiency Estimates Come From?

Information about energy features of your building, like insulation levels, has been entered into a software program that estimates how much energy your building would use, on average, based on those features. This is an energy model of your building, which is represented by bars in the graph below. That estimation is then compared to your building's historical energy usage projected onto an average weather year, represented by the green line below. The contractor compares these two and makes adjustments to the model to match your usage – that “match-up” is displayed below. In this way, the model is “customized” to your building and usage. The customized model then estimates energy savings after installation of recommended energy improvements, like more insulation or air sealing.

If historical bills aren't available to customize the model, estimated energy savings figures are based solely on the present and recommended energy features of your building in a typical weather year with typical usage. In this scenario the green line will not be present in the graph.





PROPOSAL DETAILS

Items by Improvement	Units	Unit	Total Cost	Notes
Attic Insulation				
Attic Area 1 Cavity Insul. - R-38 Fiberglass, Loose Blown	2,084.00	\$/ft ² Attic Floor Area)	2,849.06	
Attic Total			2,849.06	
Air Sealing				
Air Sealing - 25% Leakage Reduction	2,084.00	\$/ft ² Conditioned Floor Area)	883.74	
AirSeal Total			883.74	
Sealing or Insulating Ducts				
Duct Sealing and Insulation	1.00		80.00	
SealDucts Total			80.00	
All Improvements				
Taxable Item Subtotal			3,812.80	
Subtotal			3,812.80	
All Improvements Total			3,812.80	



COMBUSTION APPLIANCE ZONE (CAZ) TEST RESULTS

The data in the following tables are the results of our detailed testing of your home's combustion appliance zone and the individual combustion appliances.

Combustion Appliance Zone					
	Baseline	Worst Case	Pressure Result	Ambient CO	CO Result
CAZ 1	-0.3	-0.9	Pass	0	Proceed with work