



Your Energy Audit



1-800-895-4999 • inquire@xcelenergy.com

Home

Jeff Friesen
813 Fifth Ave,
Lyons, CO 80540
303-555-1212
jeff@jefffriesen.com

Audit Date

October 22, 2012

Audited By

Adam Stenftenagel
Certified Building Analyst
Certified Thermographer
Tunergy
1730 15th St
Boulder, CO 80302
Office: 303-443-3121
Mobile: 720-333-3313
Hours: 9 to 5
adam@tunergy.com



Jeff,

It was great to meet you. We've identified some really useful upgrades that should go a long way in addressing your noise pollution concerns in the home. As always, if you have any questions, call me on my cell at (303) 443-3121.

Thanks!

Adam

Inside Your Report

- Your Concerns
- Solutions For Your Home
- Solution Details
- Health & Safety Tests
- Additional Notes & Photos
- Technical Details
- Glossary of Technical Terms



Your Concerns

We listen to you!

As our client, we want to make sure we're addressing all of your concerns for your home. If we've missed any concerns in this report, please let us know right away.

You'll notice that on the following page we list all of the solutions and match them to the concerns listed here.

Kitchen gets too hot in summer

Homeowner complains about the kitchen always being too hot. When cooking it's even worse and they always have to open the door or turn up the air conditioning. The primary culprit are the large number of halogen can lights. Replacing these lights with LED bulbs will dramatically reduce the heat created by the lighting.

Cold feet in the kitchen

Even though the kitchen overheats when it's being used heavily, the floor still seems to always be cold in the winter and on cool summer mornings. The kitchen floor is ceramic tile that accentuates the effect of the uninsulated crawlspace below.

House feels drafty

Home feels drafty in the living room and the bedrooms. Homeowner believes the cause is the windows. After further inspection, there is no insulation in the walls and that is a bigger problem than the windows.

Street is noisy

Homeowner can clearly hear the traffic noise from the busy highway outside. Some of the occupants use ear-plugs to sleep at night. Again, wall insulation will go a long way to alleviating this problem.

Carbon monoxide poisoning

Homeowner heard about the dangers of carbon monoxide poisoning and bought a CO monitor. The alarm has gone off a few times in the past and is concerned that it's an ongoing issue. CAZ test was performed and leakage was detected. See Health and Safety page for more information.

Gas bills too high

Homeowner feels that gas bills are much higher than their previous home and is concerned that they're much higher than they should be.



Solutions For Your Home

Estimated Totals

**Approximate
Installed Cost
\$7,000**

This is the approximate cost of your upgrades before incentives, based on average pricing for this region and typical installation difficulty. It includes material and labor and will vary among contractors.

**Estimated Savings
\$700/yr.**

This is an estimate of how much you could save starting in year one with today's energy prices.

Impact of upgrades

Energy Reduction	37%
Carbon (CO2) Savings	4 tons
Equivalent cars removed from the road	1.5/yr
Equivalent number of tree seedlings grown for 10 years	83.3

**Call us today at (303) 443-3121
to ask a question or discuss the next step!**

Details	Approx. Installed Cost	Approx. Annual Savings	SIR*
1) Insulate Crawlspace	\$550	\$30	2
2) Replace Lighting with CFLs	\$50	\$130	14.4
3) Program(mable) Thermostat	\$150	\$80	6.5
4) Insulate Walls	\$2250	\$230	1.8
5) Upgrade Water Heater	\$1300	\$90	0.9
6) Add Attic Insulation	\$1600	\$80	0.9
7) Seal Air Leaks	\$1100	\$60	0.8

* SIR is the Savings to Investment Ratio. Simply put, if the SIR is 1 or greater, then the energy savings from the item will pay for itself before it needs to be replaced again. We use this metric to help prioritize the recommendations by financial merit.



Financial Details

Before & After Utility Bills

Historical average:
\$240/mo.

Estimated new bill:
\$195/mo.

Post upgrade savings:
\$45/mo.

Great Loan

This awesome loan product's description goes here. It works like this, you pay for the first \$3000 and then we'll finance the rest for 10 years. This loan program is funded by the US Department of Energy. See details attached with this report.

Terms & conditions

Minimum Loan	\$1,000
Maximum Loan	\$10,000
Cash Down	\$0
Rate	3.25-5.24%
Term	10 years

The math

Your loan payment (3.25% / 10 years)	\$32 / mo
Estimated energy savings	- \$45/mo
Estimated actual cost	- \$17/mo

The negative 'estimated actual cost' means you're actually saving money each month with this financing option

Long-sighted Loan

Yet another loan product's description goes here. It works like this, you pay for the first \$2000 and then we'll finance the rest for 15 years. This loan program is funded by the State of Colorado. Conditions apply.

Terms & conditions

Minimum Loan	\$500
Maximum Loan	\$15,000
Cash Down	\$0
Rate	4.00%
Term	15 years

The math

Your loan payment (3.25% / 10 years)	\$22 / mo
Estimated energy savings	- \$45/mo
Estimated actual cost	- \$23/mo

The negative 'estimated actual cost' means you're actually saving money each month with this financing option

Go Solar Loan

And the last loan product's description is here. It works like this, you pay for the first \$3000 and then we'll finance the rest for 10 years. This loan program is funded by your utility program.

Terms & conditions

Minimum Loan	\$500
Maximum Loan	\$15,000
Cash Down	\$0
Rate	4.00%
Term	8 years

The math

Your loan payment (3.25% / 10 years)	\$72 / mo
Estimated energy savings	- \$45/mo
Estimated actual cost	\$27/mo



Solution: Insulate Your Walls

Benefits Estimate

Installed Cost

Approx. \$ 2250

Energy Savings

Approx. \$ 230/yr.

Why it matters

Insulating your walls can lead to a dramatic reduction in utility bills. The estimated cost shown here is for a contractor drilling small holes in the wall cavities either from the inside or outside and filling the space with cellulose, fiberglass, or even foam insulation. If it's time to replace your exterior siding, then be sure to ask your contractor about adding a layer of rigid foam underneath the new sheathing of 1" or more.



You have ZERO insulation in your walls!

Typical among homes of this age, there is no insulation in the walls. By “dense packing” cellulose insulation in your wall cavities, air leaks and drafts will be dramatically reduced. To install the insulation, contractors will lightly pry up a few rows of siding on your house and temporarily remove it. They will then drill a 2” hole in the sheathing for every wall cavity. A blower pushes cellulose insulation at high speed through a hose into the holes, filling the wall cavity. Great care is taken to ensure the cellulose fills into every part of the wall.

Notes for Homeowner

Wall insulation with air sealing will have the biggest impact on your comfort issues.

Because there is no insulation in your walls, they create a sense of extreme discomfort in your home. The insulation value of your walls is about the same as your windows, but the total surface area of walls is 4x the surface area of windows. Tackling the wall insulation will make a dramatic difference in your discomfort and will also make the house a lot quieter!

Notes for Contractor

Wall Construction

- Balloon framed 2 story house. Be sure to seal off rim joists where possible.
- Difficult access due to landscaping in some areas

Details	Now	Goal
R-Value	1	13
Wall SqFt	4300	



Solution: Seal Your Air Leaks

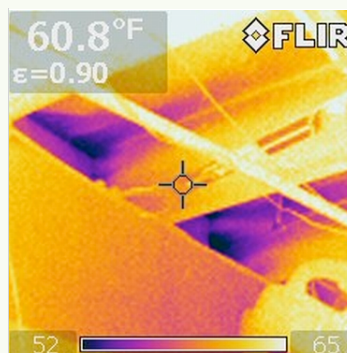
Benefits Estimate

Installed Cost
Approx. \$ 1100

Energy Savings
Approx. \$ 60/yr.

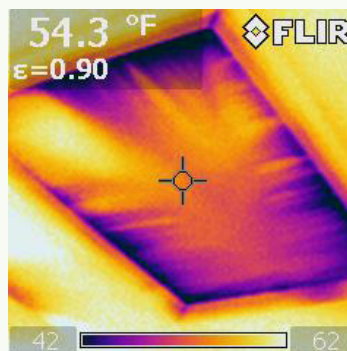
Why it matters

Air leakage, or infiltration, occurs when outside air enters a house uncontrollably through cracks and openings. Properly air sealing such cracks and openings in your home can significantly reduce heating and cooling costs, improve building durability, and create a healthier indoor environment.



Air Leakage at Rim Joists:

The infrared camera suggests energy loss through air leakage and inadequate insulation at foundation rim. The same issue continues in the crawlspaces as well. Although this will be an involved improvement, it will likely improve savings and comfort throughout the house.



Air Leakage at Attic Hatch:

The infrared camera suggests a poorly sealed and uninsulated attic hatch. The outside air from the attic space is leaking into the living space and making the upstairs hallway extremely cold. Since this is where the thermostat is located, the furnace runs more frequently than it needs to in order to maintain a consistent temperature.

Notes for Homeowner

Build Tight & Ventilate Right

Some people are concerned about sealing up their house, thinking it will be stuffy or potentially unsafe. The solution is to ventilate the home properly to bring in lots of fresh air, while exchanging the heat from the outgoing air to the incoming air. Low power fans and Heat Recovery Ventilators (HRVs) are good solutions to this. Radon testing should be done in every home as well.



Solution: Seal Your Air Leaks (cont'd)

Notes for Contractor

Attic

- Access needs sealing & ceiling fixtures need sealing against attic

Windows & Doors:

- Gaps need caulking behind trim
- 3 weather-stripping kits for 36" doors

Walls:

Many leaks (reference thermal images) through drywall penetrations

Recommended Actions: Caulk, repair, and seal holes, gaps behind trim, ceiling fixtures, etc Repair glazing and weather stripping.

Details	Now	Goal
NACH	0.57	0.35
CFM@50Pa	2385	1140
N-Factor	18.5	18.5
House Volume	13549	



Health & Safety Tests Of Your Home

What's This?

These tests are recommended by the Building Performance Institute (BPI). They can help identify potential health and safety concerns in your home.

Test Summary

Natural Condition Spillage	✓
Ambient Carbon Monoxide	✗
Worst Case Depressurization	✓
Worst Case Spillage	⚠
Undiluted Flue CO	✓
Draft Pressure	✓
Gas Leak	✓
Venting	✓
Mold & Moisture	✓
Radon	✗
Asbestos	✓
Lead	✓
Electrical	✓

✓ Passed

✗ Failed

⚠ Warning

Notes for Homeowner

Combustion appliances like furnaces and gas water heaters have the potential for improper venting of the flue gases. This means that carbon monoxide could spill into the home, which is very dangerous. In extreme cases there may even be flame roll-out from the appliances. If the appliances are not vented correctly and supplied with adequate combustion air, as air sealing measures are applied to a house, the chance increases for hazardous back drafting of flue gases to occur.

Notes for Contractor

During the spillage test, the ambient carbon monoxide (CO) level increased to 100 ppm, and the test was immediately halted, the water heater turned off, and all windows opened. The home was evacuated until CO levels decreased to a safe level. The water heater was then tested under natural conditions, and passed the spillage test. The measured level of CO directly from the exhaust was 5,800 ppm, well in excess of the 400 ppm upper limit set by the Building Performance Institute (BPI).

Heating System



Notes for Homeowner

Congratulations! You have a modern high efficiency furnace. This system is a sealed combustion unit. That means that any flue gasses produced by burning the natural gas go directly outside without the opportunity to leak into your home. Also, fresh air from the outside is brought directly to the burners in the furnace as opposed to pulling air from the house. This keeps the cold outside air in a closed loop and keeps the exhaust air outside where it belongs!

Notes for Contractor

Details	Now
AFUE	95

Replace your furnace filter regularly!



Furnace filters should be changed every three months that the equipment is in use. Purchase a high quality furnace filter and inspect it monthly to ensure that it isn't full of dirt and dust. If you have pets or live in a dusty environment, you'll likely need to change the filters more often.

Garage Door Gasket

The gasket at the bottom of your garage door is damaged. This is allowing excessive cold air into your garage as well as rodents. You can get a replacement for



Xcel Energy 2013 Rebate Schedule: CO Residential Energy Efficiency Programs

Check with your local jurisdiction for additional rebates, financing, and incentives you may qualify for beyond the stated Utility Rebates. Rebates and incentives are not guaranteed. Programs are subject to change. Rebates subject to change under pending PUC filings. Current information is located at xcelenergy.com/HomeRebates.

Code	Rebate Area	Qualifiers	Rebate	More Information			
Cooling							
🔥	Evaporative Coolers	Standard unit 2500 CFM	First time install Replacement	\$250 \$100	Must select a qualified unit from the list on xcelenergy.com/HomeRebates		
		Premium unit — 85% media efficiency, with purge control and thermostat	First time install Replacement	\$600 \$500			
		Whole house system — Same equipment as Tier 2 but with ducts covering the whole house. Minimum of four supply ducts.	First time install and replacement	\$1,000			
🔥 📦	High Efficiency Cooling (AC or ASHP)	SEER 14/EER 12 or less	New Trade-in Maximum rebate	\$0 \$500 \$500	In order to receive an AC rebate, customers must use a contractor who is approved by Xcel Energy, as listed on http://hvacaducation.net/xcel-co/public_search.cfm .		
		SEER 14.5/EER 12 (Tier 1)	New Trade-in Maximum rebate	\$250 \$500 \$750			
		SEER 15/EER 12.5 (Tier 2)	New Trade-in Maximum rebate	\$350 \$500 \$850			
		SEER 16, EER 13 (Tier 3)	New Trade-in Maximum rebate	\$500 \$500 \$1,000			
		🔥	Ground Source Heat Pump	ENERGY STAR®-Qualified equals 3.3 COP, 14.1 EER	Per ton Maximum rebate	\$300 \$1,500	Special contractor requirements: to offer GSHP, one IGSHPA certified or NATE installation certified tech is required per contractor
		Heating					
		🔥	Boilers	85% AFUE	\$100		
		🔥	Furnaces	92% AFUE 94% AFUE	\$80 \$120		
Water Heating							
🔥	Standard Tank	.62 EF .65 EF .67 EF	\$25 \$70 \$90	List of qualifying units can be found on www.energystar.gov or www.ahridirectory.org			
		.82 EF	\$100				
🔥	Electric Heat Pump Water Heater		\$450				
Insulation and Air Sealing*							
🔥 🔥	Insulation and air sealing, weather stripping and/or air sealing	As % of invoice, labor included	20%	Wall insulation brought to R-13. Attic insulation that's currently R-19 needs to go to R-40. Attic insulation currently at R-20+ gets <i>additional</i> R-25.			
		Maximum rebate	\$300				

Jeff Friesen - 813 Fifth Ave - Lyons, CO 80540

Brought
to you by









Report
Generated by







Xcel Energy 2013 Rebate Schedule Continued...

Power	Rebate Area	Qualifiers	Rebate	More Information	
Home Energy Audit By Xcel Energy					
  	Infrared Audit	Maximum rebate	\$200	Rebate is 60% of audit cost, up to maximum allowable rebate. Customers can only get rebates if using an auditor approved by Xcel Energy. Approved auditor list can be found at http://hvacaducation.net/xcel-co/public_search.cfm	
	Blower door audit	Maximum rebate	\$160		
	Standard audit	Maximum rebate	\$100		
Home Performance With Energy Star®. Gas and electric use or electric heat only customers. Begins with a Home Energy Audit by Xcel Energy. Customers should specify that they want the higher, bundled rebates before any work is performed by a contractor.					
  	Attic insulation and Bypass Sealing*	R38 or higher		\$350	
	Air Sealing and Weather Stripping*	.15 NACH reduction		\$160	
	High Efficiency lighting*	20 CFLs		\$40	
	Wall insulation	R11 or higher		\$800	
	Evaporative Cooling		Standard unit — first time use		\$275
			Standard unit - replacement		\$125
			Premium unit — first time use		\$625
			Premium unit - replacement		\$525
			Whole house system with new ducting		\$1,000
	Central AC/ASHP		14.5 SEER/EER 12		\$300
			15 SEER/EER 12.5		\$400
			16 SEER/EER 13		\$550
			Trade-in		\$550
	Ground Source Heat Pump	Energy Star Qualified equals 3.3 COP, 14.1 EER, 5 ton maximum	Per ton		\$300
			Maximum rebate		\$1,500
	Electric Heat Pump Water Heater				\$550
	Set Back thermostat	ES programmable			\$25
	High Efficiency Furnace		.92 AFUE, new		\$170
			.94 AFUE or higher, new		\$200
	High Efficiency Boiler	.85 AFUE or higher			\$160
	Electrically Efficient Furnace	ECM furnace fan motor			\$200
	Tankless Water Heater	.82 EF or higher			\$200
	Power Vented Water Heater	.65 EF or higher			\$100
	New ENERGY STAR® Refrigerator	Primary ES refrigerator			\$15
	Dishwasher (Gas or electric DHW)	.65 EF or higher			\$15
	Clothes Washer (Gas or electric DHW)	ENERGY STAR® CW			\$70

*If any of these three measures are a recommended improvement from the energy audit, they must be completed in order to successfully earn the Home Performance rebates.

KEY:  **Natural Gas:** This symbol indicates a program designed for our natural gas customers.  **Electric:** This symbol indicates a program designed for our electricity customers.

 **Participating contractor:** This symbol indicates a program that requires you use an Xcel Energy participating contractor to install the equipment or make the improvement.

Jeff Friesen - 813 Fifth Ave - Lyons, CO 80540

Brought
to you by



Report
Generated by





Technical Details of Your Home

Property Details

Year Built:	1950
Conditioned Square Feet:	3876
House Volume:	34100
Number of Stories:	1.5
# of Occupants:	3
Home Style:	Single family detached
Tuck Under Garage:	Yes
Number of Cars:	2

Insulation & Air Leakage

Attic Insulation Type:	Cellulose
Attic Insulation Amount:	13-15 inches
Foundation Type:	
Basement	60%
Crawlspace	20%
Slab on Grade	20%
Basement Wall Insulation Type:	Finished wall without insulation
Crawlspace Insulation Type:	Insulation installed on the exterior wall area
Exterior Wall Construction:	Concrete Block
Wall Insulation:	Walls are not insulated
Air Leakage (Blower Door Test Results):	2770 CFM50

Heating Equipment

Primary Energy Source:	Natural Gas
Type:	Furnace
Condensing Unit (> 90 AFUE):	No
Age:	41+ years
Capacity:	100,000 Btu
Duct Location:	Conditioned Space
Duct Leakage:	15% Somewhat Leaky
Duct Leakage Measurement:	Not measured
Duct Insulation:	Duct Board 1"

Cooling Equipment

Type:	Central AC
Ultra Efficient (16+ SEER)?	No
Age:	11-15 years
Capacity:	64,000 Btu
Ducts Shared with Heating System?	No
Duct Location:	Conditioned Space
Duct Leakage:	Measured (CFM25)
Duct Leakage Measurement:	423 CFM25
Duct Insulation:	Duct Board 1"

Water Heating

Energy Source:	Natural Gas
Type:	Standard Tank
Age:	16-20 years
Location:	Indoors and within heated area
Temperature:	Medium (130-140 °F)

Thermostat Setpoints

Heating (at home):	70
Heating (sleeping):	62
Cooling (at home):	76
Cooling (sleeping):	78

Windows & Doors

Glazing Type:	Single Pane + storm
Frame Type:	Metal
North Window Area:	12%
East Window Area:	16%
South Window Area:	24%
West Window Area:	5%
North Overhang:	.5 Ft
East Overhang:	1.5 Ft
South Overhang:	.5 Ft
West Overhang:	2 Ft
Skylight Area:	25 Sq Ft
Entry Door Type:	Steel, insulated



Technical Details of Your Home

Appliances & Lighting

Refrigerator 1 Age:	21-25 years
Refrigerator 1 Size:	6-12 cubic feet
Refrigerator 2 Age:	21-25 years
Refrigerator 2 Size:	6-12 cubic feet
Refrigerator 3 Age:	none
Refrigerator 3 Size:	none
# of Standalone Freezers:	1
Cooking Range Fuel:	Electric
Dryer Fuel:	Electric
Lighting % CFLs or LEDs:	51-75%
Approx. # of Light Fixtures:	35

Utility Details

Electric Utility Name:	Longmont Power & Light
Electric Utility Account Number:	AC3-1512316
Gas Utility Name:	Xcel Energy
Gas Utility Account Number:	23-1512316
Fuel Usage Units:	Therms
Electric Usage Units:	kWh

Utility Bills (Detailed Entry)

	Fuel Meter Read Date	Fuel Usage	Electric Meter Read Date	Electric Usage
Start Bill 1:	09/26/2011	-	09/26/2011	-
End Bill 1:	10/22/2011	75	10/22/2011	1241
End Bill 2:	11/28/2011	124	11/28/2011	1021
End Bill 3:	12/24/2011	268	12/24/2011	1034
End Bill 4:	01/21/2012	341	01/21/2012	1098
End Bill 5:	02/23/2012	244	02/23/2012	1124
End Bill 6:	03/22/2012	156	03/22/2012	1254
End Bill 7:	04/25/2012	99	04/25/2012	1241
End Bill 8:	05/23/2012	54	05/23/2012	1324
End Bill 9:	06/24/2012	21	06/24/2012	1854
End Bill 10:	07/27/2012	30	07/27/2012	2140
End Bill 11:	08/22/2012	22	08/22/2012	2640
End Bill 12:	09/23/2012	26	09/23/2012	1672

Auditor's Contact Information

Adam Stenftenagel

Certified Building Analyst

Certified Thermographer

Tunergy

1730 15th St.

Boulder, CO 80302

Office: 303-447-0237

Mobile: 720-333-3333

Hours: 9 to 5

adam@tunergy.com

About This Report

Report Date: 12-Jan-2012

Job ID: 4321

Software: Snugg Pro

For software inquiries, visit www.SnuggHome.com



Glossary of Technical Terms

Annual Fuel Utilization Efficiency (AFUE) — The measure of seasonal or annual efficiency of a residential heating furnace or boiler. It takes into account the cyclic on/off operation and associated energy losses of the heating unit as it responds to changes in the load, which in turn is affected by changes in weather and occupant controls.

Annualized Return — The return an investment provides over a period of time, expressed as a time-weighted annual percentage. This is the equivalent annual interest rate you would get if you put the same amount of money spent on the energy upgrade into a savings account.

Asbestos — Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant, but is no longer used in homes. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems.

British Thermal Unit (Btu) — The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit; equal to 252 calories.

Carbon Monoxide (CO) — A colorless, odorless but poisonous combustible gas with the formula CO. Carbon monoxide is produced in the incomplete combustion of carbon and carbon compounds such as fossil fuels (i.e. coal, petroleum) and their products (e.g. liquefied petroleum gas, gasoline), and biomass.

Cashflow — When financing energy efficiency improvements, cashflow is the difference between the average monthly energy savings and the monthly loan payment.

Combustion Appliance Zone (CAZ) — A contiguous air volume within a building that contains a combustion appliance such as furnaces, boilers, and water heaters; the zone may include, but is not limited to, a mechanical closet, mechanical room, or the main body of a house, as applicable.

Compact Fluorescent Light bulb (CFL) — A smaller version of standard fluorescent lamps which can directly replace standard incandescent lights. These highly efficient lights

consist of a gas filled tube, and a magnetic or electronic ballast.

Cubic Feet per Minute (CFM) — A measurement of airflow that indicates how many cubic feet of air pass by a stationary point in one minute.

Carbon Dioxide (CO₂) — A colorless, odorless noncombustible gas that is present in the atmosphere. It is formed by the combustion of carbon and carbon compounds (such as fossil fuels and biomass) and other methods. It acts as a greenhouse gas which plays a major role in global warming and anthropogenic climate change.

Energy Efficiency Ratio (EER) — The measure of the instantaneous energy efficiency of room air conditioners; the cooling capacity in Btu/hr divided by the watts of power consumed at a specific outdoor temperature (usually 95 degrees Fahrenheit).

Energy Factor (EF) — The measure of overall efficiency for a variety of appliances. For water heaters, the energy factor is based on three factors: 1) the recovery efficiency, or how efficiently the heat from the energy source is transferred to the water; 2) stand-by losses, or the percentage of heat lost per hour from the stored water compared to the content of the water; and 3) cycling losses. For dishwashers, the energy factor is defined as the number of cycles per kWh of input power. For clothes washers, the energy factor is defined as the cubic foot capacity per kWh of input power per cycle. For clothes dryers, the energy factor is defined as the number of pounds of clothes dried per kWh of power consumed.

Heating Seasonal Performance Factor (HSPF) — The measure of seasonal or annual efficiency of a heat pump operating in the heating mode. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of heat delivered for every watt-hour of electricity used by the heat pump over a heating season.

Heat Recovery Ventilator (HRV) / Energy Recovery Ventilator (ERV) — A device that captures the heat or energy from the exhaust air from a building and transfers it to the supply/fresh air entering the building to preheat the

air and increase overall heating efficiency while providing consistent fresh air.

Light Emitting Diode (LED) Lighting — An extremely efficient semiconductor light source. LEDs present many advantages over incandescent light sources including lower energy consumption, longer lifetime, improved physical robustness, and smaller size.

N-Factor — A factor of how susceptible your house is to wind, influenced by weather patterns, location, and the number of floors in the home. Used in the calculation of NACH.

Natural Air Changes per Hour (NACH) — The number of times in one hour the entire volume of air inside the building leaks to the outside naturally.

Payback Period — The amount of time required before the savings resulting from your system equal the system cost.

R-Value — A measure of the capacity of a material to resist heat transfer. The R-Value is the reciprocal of the conductivity of a material (U-Value). The larger the R-Value of a material, the greater its insulating properties.

Radon — A naturally occurring radioactive gas found in the U.S. in nearly all types of soil, rock, and water. It can migrate into most buildings. Studies have linked high concentrations of radon to lung cancer.

Rim Joist — In the framing of a deck or building, a rim joist is the final joist that caps the end of the row of joists that support a floor or ceiling. A rim joist makes up the end of the box that comprises the floor system.

Seasonal Energy Efficiency Ratio (SEER) — A measure of seasonal or annual efficiency of a central air conditioner or air conditioning heat pump. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of cooling delivered for every watt-hour of electricity used by the heat pump over a cooling season.

Savings to Investment Ratio (SIR) — A ratio used to determine whether a project that aims to save money in the future is worth doing. The ratio compares the investment that is put in now with the amount of savings from the project.