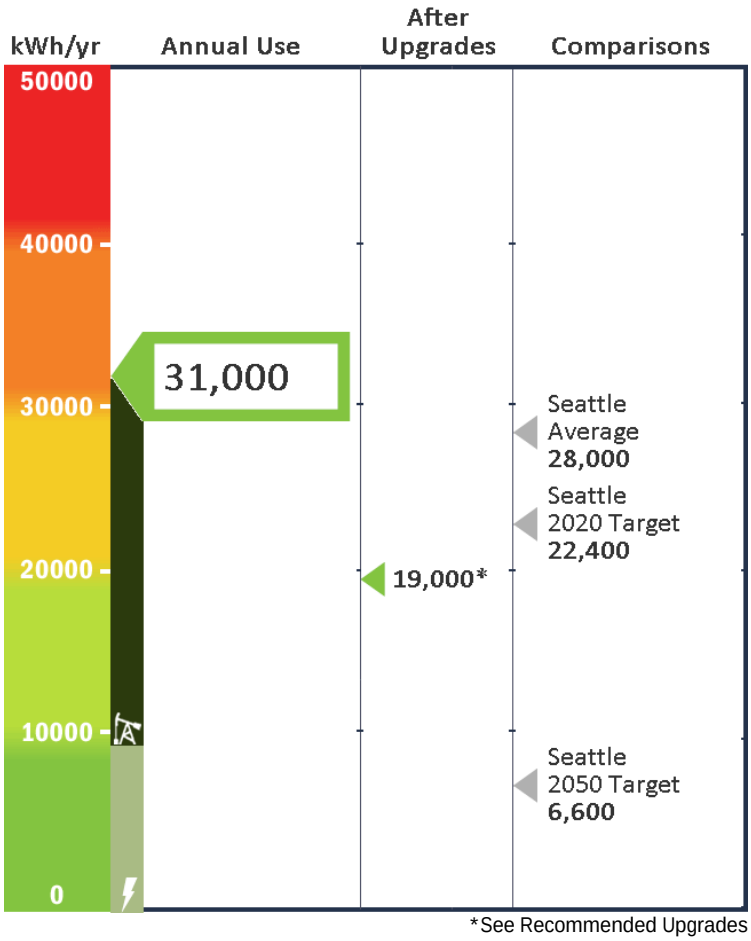
ENERGY PERFORMANCE SCORE

Address: [redacted]

Reference Number: [redacted]

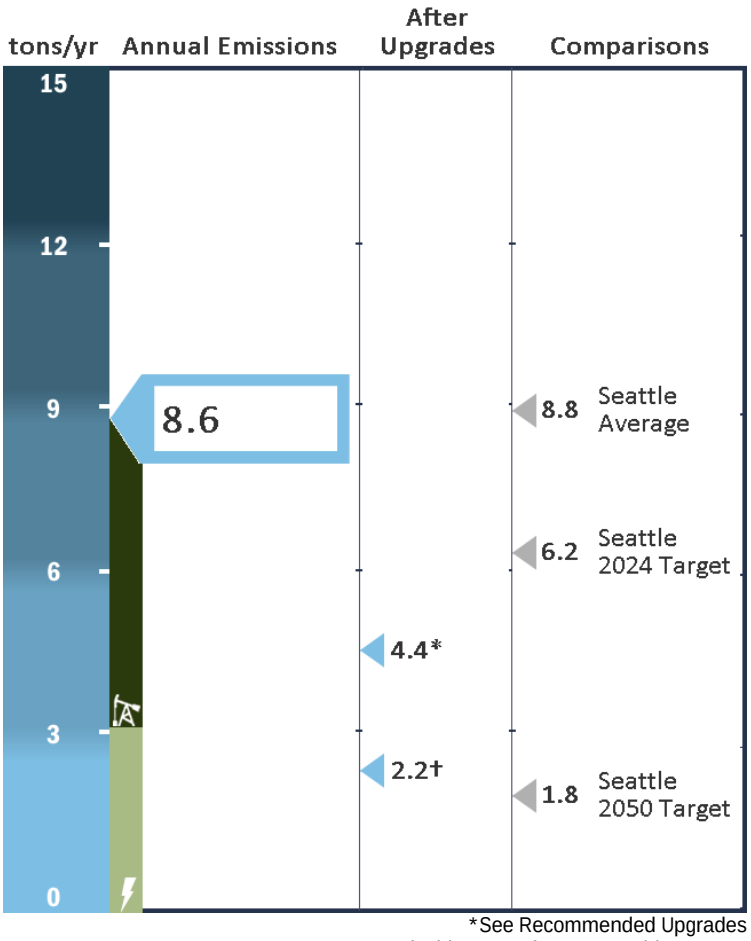
Energy Use:	31,000 kWhe/yr	$2,007	Carbon Emissions:	8.6 tons/yr	
Electric:	9,800 kWh/yr	$684	Electric:	3.2 tons/yr	
Natural Gas:	0 therms/yr	$0	Natural Gas:	0.0 tons/yr	
Oil:	530 gal/yr	$1,323	Oil:	5.4 tons/yr	

Energy Use



*See Recommended Upgrades

Carbon Emissions



*See Recommended Upgrades
†With energy from renewable sources

The energy score measures the estimated total energy use (electricity, natural gas, propane, heating oil) of this home for one year. The lower the score, the less energy required for normal use. Actual consumption and costs may vary.
Measured in kilowatt hours per year (kWhe/yr).

The carbon score measures the total carbon emissions based on the annual amounts, types, and sources of fuels used in this home. The lower the score, the less carbon is released into the atmosphere to power this home.
Measured in metric tons per year (tons/yr).

3 Bedroom, 2,350 sq ft Single Family Detached Home, built in 1957

Assessment Date: 05/09/2014 Energy Professional: ACME Home Performance
Martinson, Dean

SIMPLE Energy Algorithm v 0.9.12.4

Seattle City Light

COMMUNITY POWER WORKS FOR HOME

Energy Performance Score

What is the Energy Performance Score?

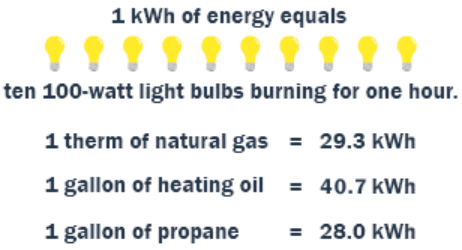
A Certified Score The Energy Performance Score calculation is based on a home energy assessment. Anyone may use the EPS assessment methodology for evaluating energy performance and upgrades of a home, but only a certified EPS analyst has been trained and qualified to conduct an EPS.

Energy

Energy Score Calculation The energy score is based on a home's shape, size, insulation levels, air leakage, heating and cooling systems, major appliances, lighting, and hot water heating. Occupancy, behavior, indoor temperature, and regional weather are standardized to calculate normal energy use. A home's actual energy use will vary with behavior, weather, and changes to the home.

Measurements Defined

Electricity is measured in kilowatt hours (kWh). Natural gas is measured in therms. Oil and propane are measured in gallons (gal). Units of energy can be converted from one to another. Total energy use is represented in kilowatt hour equivalents.



Energy Costs - Fuel costs are based on prices at the time the EPS is issued* and do not include taxes, surcharges, or fees for renewable energy.

Benchmarks Defined

After Upgrades indicates the improvement in the predicted energy use if the lower and higher cost Recommended Energy Upgrades are implemented.

Seattle Average represents the average energy use of households in Seattle as of 2008.

Seattle 2020 Target is reflective of the Green Building Capital initative's stated goal of increasing energy efficiency by 20%.

Seattle 2050 Target is equivalent to an 80% reduction from the Seattle average, and represents the city's energy use goal.

Carbon

Carbon Score Calculation The Carbon Score estimates your home's carbon reduction potential based on fuel sources and the opportunity to reduce energy use. For electricity, Seattle City Light uses hydropower to generate most of its electricity, but purchases additional electricity on the market, which is largely generated from fossil fuels. By conserving electricity, customers reduce the amount of electricity from fossil fuel sources that Seattle City Light buys from the market, and so we use the regional market emissions value to calculate the carbon score.

Measurements Defined

Reducing the average Seattle household's carbon emissions to the Seattle target carbon emissions has the same effect of taking 1.5 cars off the road for a year, or recycling 2.6 tons of garbage annually.

Benchmarks Defined

†With energy from renewable sources indicates the carbon emissions produced if the homeowner chooses to offset the carbon emissions associated with electrical use. Check with your utilities to learn more about these options.

After Upgrades indicates the improvement in the predicted carbon emissions if the lower and higher cost Recommended Energy Upgrades are implemented.

Seattle Average represents the average carbon emissions of households in Seattle as of 2008.

Seattle 2024 Target represents the City of Seattle's goal of increasing energy efficiency 30% by 2024.

Seattle 2050 Target is equivalent to an 80% reduction from the Seattle Average and represents the city's carbon reduction goal.

*Estimated energy costs are based on the following rates.

Electric = $0.07/kWh Oil = $2.49/gal

Natural Gas = $1.30/therm Propane = $2.09/gal

ENERGY ANALYSIS REPORT

Date: 5/13/14

Reference Number: [redacted]

Address: [redacted]

Seattle City Light

COMMUNITY POWER WORKS FOR HOME

Contents

- Annual Estimated Energy Use and Fuel Costs
- Comparing Your Utility Bills with the Energy Performance Estimate
- Summary of Energy Performance Related Elements
- Summary of Recommended Energy Upgrades
- Detailed Notes Explaining Energy Upgrades
- Energy Upgrade Descriptions
- No- and Low-Cost Energy-Savings Strategies
- Financial Incentives

Annual Estimated Energy Use and Fuel Costs**

	Current Home Performance			Potential Home Performance		
	Energy (kWhe)*	Fuel Cost†	Carbon (tons)	Energy (kWhe)*	Fuel Cost†	Carbon (tons)
Heating	21,600	$1,323	5.4	9,300	$413	1.7
Cooling	NA	NA	NA	NA	NA	NA
Water Heating	3,000	$212	1.0	3,200	$140	0.6
Lighting & Appliances	6,700	$472	2.2	6,600	$463	2.2
Total (Rounded-off)	31,000‡	$2,007	8.6	19,000	$1,017	4.4

** These figures are estimates based on your home's attributes under typical weather conditions. Your actual energy use will vary depending on how you operate and maintain your home. See the back of the Energy Performance Score for more details. This is not a guarantee of energy savings.
* All energy forms (i.e. natural gas, oil, propane) are converted to their electrical energy equivalents, expressed in kilowatt-hours equivalent (kWhe).
† Fuel costs are periodically updated, and are based on prices at the time this report is issued. They do not include taxes and surcharges.
‡ Total Annual Estimated Energy Use is rounded to the nearest 1000 kWhe.

Comparing Your Utility Bills with the Energy Performance Estimate

You can determine how your household's energy use compares to the estimated average use for your home by comparing the energy totals on your utility bills with the Energy Performance Estimate.

To calculate your actual annual energy use, you will need to know the amount of energy that you used for each fuel type in your home for a full year. This information is available on your utility bills. The formulas on the back of the Energy Performance Estimate will allow you to convert combustion fuels to KWH. The energy use Estimate should be compared to the annual totals of all fuel types.

If the totals from your utility bills are:

- lower than the Energy Estimate, you are using less energy than would be average for your home. Reasons for this may include housing fewer people than would be average in this home, and/or the occupants of this home are using energy more conservatively than is typical.
- similar to the Energy Estimate, you are using a typical amount of energy for the condition of your home.
- higher than the Energy Estimate, you are using more energy than average for your home. Reasons for this may include housing more people than would be average in this home, and/or occupants in this home are using more energy than is typical. There may be no- and low-cost ways that you can use to save energy.

Energy Performance Estimate

▶ Your Home's Energy Report Card

Element	Description	Notes	Current Performance Very Poor • Poor • Average • Good • Excellent
Air Leakage How tight your home is against air leaks.	Major leakage areas include: Attic hatch, Poor or no weatherstripping at doors, Electrical outlets, Fireplace damper	Fireplace damper is very corroded and open to the outside when closed.	Very Poor
Ceiling and Attic The amount of insulation above the ceiling or in the roof.	Blown in, Cellulose	Blown in in silva wool (wood)	Poor
Walls The amount of insulation inside the walls.	No insulation	No insulation detected.	Very Poor
Floors/Foundation Walls The amount of insulation below the floors.	No insulation	No insulation detected.	Very Poor
Windows The insulation value of the windows.	Double pane, Low E	just a few windows left to upgrade.	Good
Heating How efficient is the heating system.	Oil, Forced air, Programmable thermostat, Furnace, Below 78% efficient	Oil furnace. I saw gas on the house across the street.	Very Poor
Cooling How efficient is the cooling system.	None		Not Applicable
Ducts How well sealed and insulated are the ducts.	Panned floor joist, Not Insulated, Metal ductwork, Sealed, Asbestos on ductwork needs abatement	All ducts in conditioned space.	Poor
Water Heating How efficient and insulated is the hot water system.	Electric, Storage tank	Standard storage tank water heater.	Poor
Lights and Appliances How efficient are the lighting and appliances.	100% cfl's, Electric range, Energy Star dishwasher, Electric clothes dryer	Almost all appliances are efficient.	Good

▶ Financial Incentives

See web site for more sources of financial assistance.

Financing
Community Power Works offers affordable financing to qualified homeowners through both Craft3, a local non-profit community lender, and Puget Sound Cooperative Credit Union (PSCCU). Homeowners can finance up to 100% of the upgrades with no money down, and can use a limited portion of loan funds to finance related upgrade measures. See http://www.communitypowerworks.org/for-home/financing-home/ for details including rates, terms, and dollar limits.

Community Power Works Incentives
When funding is available, the Community Power Works program offers rebates for energy efficiency upgrades within the program service territory. Please see the program website or contact the CPW team for current details.
Website: http://www.communitypowerworks.org/for-home/energy-incentives-home/
Email: home@communitypowerworks.org
Phone: (206) 449-1170

Energy Performance Estimate

Summary of Recommended Energy Upgrades

These recommended upgrades will improve the energy performance of this home. The cost for the upgrades will vary with the size and complexity of the home and the scope of work required. The Approximate Annual Savings are based on the estimated energy reductions with each upgrade.

These are estimates, based on your homes attributes and typical weather. Your actual energy savings will vary depending on how you operate and maintain your home. This is not a guarantee of energy savings.

	Notes	Typical Cost Range	Approximate Annual Savings	Lifetime Carbon Savings
Air Sealing	Seal air leaks to reduce leakage (air leakage rate remains above .35 ACHn).	$400 - $2,000	$97	7.9
Attic / Ceiling Insulation	Insulate attic to R-49.	$1.75 - $3.00 /sf	$153	28.1
Wall Insulation	Dense pack uninsulated wall cavity with cellulose insulation.	$1.25 - $2.50 /sf	$217	39.8
Floors / Foundation Walls	Insulate Basement / Crawlspace Walls to R-15.	$2.00 - $5.00 /sf		0.0
Windows				
Heating System Upgrade	Upgrade to condensing gas furnace (Primary HVAC System)	$3,000 - $6,000	$320	26.4
Cooling System Upgrade				
Duct Sealing	See "Recommended Upgrades Detail" section on the following pages			
Duct Insulation	See "Recommended Upgrades Detail" section on the following pages			
Water Heater Upgrade	Install a tankless water heater.	$1,500 - $3,500	$73	9.3
Solar Water Heater	See "Recommended Upgrades Detail" section on the following pages			
Appliances	Replace washing machine with an ENERGY STAR washing machine.	$600 - $1,200	$9.39	0.4
Solar PV				

Auditor's Notes

Energy Performance Estimate

Air Leakage

Significant corrosion on the fireplace damper.

Upgrade weather stripping on doors.

Current Conditions Observed by Energy Professional

The infiltration rate for your house is believed to be high due to a very large gap in the fireplace damper and the lack of insulation in the walls. A blower door test was not done due to asbestos tape on the duct system.

Recommended Upgrades Detail

The fireplace damper should be repaired. The damper has rusted badly due to water coming down the chimney. A chimney top damper would solve both of these problems with one solution.

By dense packing the walls with cellulose insulation the whole house air sealing will improve by dampening air flow from the outer walls to the inner walls and directly though the walls.

Upgrade weather stripping on doors.

Deep Energy Retrofit Options

Energy Upgrade Description

Air Sealing Air sealing is one of the most cost-effective energy upgrades you can make and should be done before installing insulation. Cold air can infiltrate small cracks and openings during the winter, while hot outdoor air can over- heat your home in the summer resulting in drafts, moisture, and indoor air quality issues. There are many types of air leaks and many strategies for sealing them. You can under- take this work yourself or hire a contractor who can use a blower door to identify and measure the effectiveness of various air sealing measures.

After your home is sealed, it is important to make sure that there is adequate ventilation to maintain proper indoor air quality and to prevent back drafting of combustion appliances. An EPS Auditor or qualified professional will identify any potential ventilation problems.

No-Cost or Low-Cost Strategies

Close your fireplace damper when your fireplace is not in use (but first allow the fireplace to cool completely). If you have fireplace doors, keep them closed.

Put bathroom ventilation fans on a timer or on a humidity sensor which will automatically switch off the fan when the room is dry.

Energy Performance Estimate

Ceiling and Attic

Add cellulose insulation on top of the old silva wool.

Weather strip and insulate the attic hatch.

Current Conditions Observed by Energy Professional

The attic has a few inches of silva wool. This is shredded cedar wood. Maybe R6 or less.

Recommended Upgrades Detail

It is highly recommended that the attic be air sealed and insulated to R49. This will greatly increase your capacity to hold heat in the winter and help keep a the heat from the attic from entering the house on hot/sunny days.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Ceiling & Attic Insulation Attic or ceiling insulation is one of the most cost-effective upgrades you can make and should be done after air sealing in the attic. Attic or ceiling insulation slows heat loss through the roof in the winter and also slows heat gain through the roof in the summer. The insulation is usually installed on the floor of an unfinished attic (the ceiling of the finished room below) and under the roof if the attic space is finished. Insulation is measured with an R-value, and the higher the R-value, the more effective the insulation value. Insulation is made of different materials and comes in several forms: batts, loose-fill or blown-in, foam, and rigid. Each type of insulation varies in terms of advantages, applications, and pricing.

Energy Performance Estimate

Walls

The exterior walls are partial brick veneer and wood.

Back of the house.Insulate from the outside.

Current Conditions Observed by Energy Professional

No Insulation was detected.

Recommended Upgrades Detail

Dense pack the walls with cellulose from the outside.
Using the "tube fill method" is essential since you already have some insulation in the wall. This method gives the installer feedback as to the presence of blocking and ensures an even high density, which prevents settling of the insulation. Make certain you have the wall insulation checked with an infrared camera while the insulation crew is still on site so they can fill any missed wall cavities (a common occurrence). Since you have vertically oriented cedar siding it can't be easily pulled and the installers will have to drill a 2" hole through the face of the siding which isn't ideal but the spackle can be textured to look somewhat similar to the rough sawn cedar texture or sanded smooth.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Wall Insulation Insulating walls will help you to keep heat inside your home during the winter and slow heat gain into your home during the summer. Retrofitting walls with insulation is generally more work and more costly than insulating an attic ceiling or a floor. Walls may be insulated from the outside or inside and this is more easily accomplished during remodeling work which in- volves removal of or painting either of these surfaces.

Energy Performance Estimate

Floors / Foundation Walls

Basement walls have horizontal siding.

Current Conditions Observed by Energy Professional

No Insulation detected.

Recommended Upgrades Detail

Insulate the basement where possible from the outside.
PULL & BLOW - HORIZONTAL SIDING - It is recommend you insulate your walls from the exterior by pulling a row of siding and "dense packing" the walls with the "tube fill method". This method gives the installer feedback as to the presence of blocking and ensures an even high density, which prevents settling of the insulation. Make certain you have the wall insulation checked with an infrared camera while the insulation crew is still on site so they can fill any missed wall cavities (a common occurrence).
Dense packing the walls with cellulose will provide a second bonus in that it will slow the movement of air through the walls to improve your infiltration rate.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Floor Insulation Floor insulation is mainly a cold climate energy saving measure. The importance of floor insulation varies with the type of foundation in the home. The lowest floor cavity in a home should only be insulated if the basement or crawlspace below it is unheated. In a heated basement or crawlspace the insulation will be found in a different location. Slab floors on-grade or in a basement can be retrofitted with insulation above the slab if no insulation was installed beneath the slab before it was poured.

Energy Performance Estimate

Windows

Almost every window has been upgraded.

Upgraded windows.

Current Conditions Observed by Energy Professional

Almost every window has been upgraded. A few remain to be done during a remodel project.

Recommended Upgrades Detail

All good.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Windows Older windows can be responsible for drafts, heat loss in winter and heat gain in summer. They can significantly impact your comfort and energy use for heating and cooling. Storm windows can help eliminate some of these issues. High efficiency, double-paned, low- e, argon-filled windows with insulated frames can help save energy, make rooms more comfortable and also makes them quieter.

No-Cost or Low-Cost Strategies

Capture free solar heat. On cooler days, open curtains to catch the heat from the sun and warm your home.

Block the sun in hot weather. To keep your home cool, adjust window coverings to block the sun's hot summer rays. In the evening, open windows to catch cool breezes.

Plant trees, bushes, and trellises that block unwanted sun in the summer. Strategically located plants on the east, west, and south sides of a house can provide natural cooling through shade. Deciduous plants will shade in summer and allow more light in winter. Plants can also form windbreaks to protect your home from winter winds. Be sure to plant away from the house so you do not trap moisture against the building.

Energy Performance Estimate

Heating

Older oil furnace.

Upgrade to a gas condensing and modulating or multistage gas furnace like this Trane.

Current Conditions Observed by Energy Professional

Older oil furnace.

Recommended Upgrades Detail

Upgrade to a gas condensing and modulating or multistage gas furnace.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Heating System Upgrade Older, poorly maintained, and less efficient furnaces and heat pumps use more energy than newer, high-efficiency models. You may achieve energy savings by upgrading your system. Additionally, you should have your existing system periodically inspected to identify potential problems and extend the life of your system. When upgrading a heating system, you should also have any connected duct system inspected for air leaks and appropriate upgrades.

No-Cost or Low-Cost Strategies

Turn down the heat. A good energy-saving setting when you are at home is 67-68 degrees and 55 degrees at night or when you are away. Each degree you lower your thermostat saves an estimated two percent (2%) on your heating bill. In summer, turn off your heating system or raise the thermostat setting to save on air conditioning.

Higher heat is not faster heat. Turning the thermostat higher will not warm your house faster; it just wastes energy. Lowering the air conditioning setting won't cool your house faster either.

Use a programmable thermostat. Older, manual thermo- stats are often not as accurate as new electronic models, and they require that you manually set them back each night. Some programmable thermostats have smart features such as preprogrammed "night" and "vacation" energy-saving settings that lower the temperature auto- matically. Different heating systems require different thermostats. Check the owner's manual to be sure that your thermostat and heating system work effectively together.

Energy Performance Estimate

Cooling

Current Conditions Observed by Energy Professional

No AC.

Recommended Upgrades Detail

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Cooling System Upgrade. Cooling is not the predominant energy use in a home in our climate zone, however, older, poorly maintained cooling equipment will still use more energy than newer, more efficient equipment. Heat pumps should be commissioned and regularly maintained to maximize their efficiency potential. Air conditioners should be inspected and serviced by a professional to help extend the life of the system.

No-Cost or Low-Cost Strategies

Block the sun in hot weather. To keep your home cool, adjust window coverings to block the sun's hot summer rays. In the evening, open windows to catch cool breezes.

Use air movement to cool people during hot days. When it's warm, use natural ventilation or window and ceiling fans to keep cool. Remember that fans cool people, not rooms. If these are insufficient, consider installing a whole house fan which will vent warm air from the home and pull in cooler outside air throughout the house at night.

Plant trees, bushes, and trellises that block unwanted sun in the summer. Strategically located plants on the east, west, and south sides of a house can provide natural cooling through shade. Deciduous plants will shade in summer and allow more light in winter. Plants can also form windbreaks to protect your home from winter winds. Be sure to plant away from the house so you do not trap moisture against the building.

Energy Performance Estimate

Ducts

This is not a good location for a return air duct. If upgrading furnace move this to a cleaner location.

Metal ducts are inside conditioned space.

Current Conditions Observed by Energy Professional

All ducts are in conditioned space. Good!

Recommended Upgrades Detail

Asbestos tape visible on a few ducts.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Duct Sealing and Insulation Heating and cooling duct work that leaks into unconditioned space can be a major source of energy loss. Sealing and insulating your ducts helps to save energy by more effectively directing the heat or cooling to desired locations. Insulating ducts in semi-conditioned spaces such as basements may or may not be necessary depending on the circumstances.

Ducts should always be sealed before insulating.

Energy Performance Estimate

Water Heating

Standard electric water heater.


Small and relatively efficient on demand gas water heater.

Current Conditions Observed by Energy Professional

Standard electric water heater.

Recommended Upgrades Detail

If upgrading the furnace and bribing gas to the house. Upgrade to a gas on demand water heater. These water heaters do not need a chimney flue and are very small.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Water Heater Upgrade The life cycle of water heaters is approximately 12-15 years. If your water heater is older, consider replacing it with a newer, more efficient one. All new tank water heaters have a built-in insulation layer to conserve energy. Solar water heating may also be an option: it can provide as much as 75% of your hot water needs and offers significant savings over time.

Solar Water Heater Installing a solar water heater on a roof that received adequate sunlight can be a relatively cost-effective means of reducing your energy costs over the long term. These systems can preheat the water going to your hot water heater and significantly reduce, and at times eliminate, the need for additional water heating.

No-Cost or Low-Cost Strategies

Lower your water heater thermostat to 120 degrees, or the lowest setting that is acceptable to you for bathing and dishwashing.

Turn off hot water during vacations. Turn your electric water heater off at the breaker panel if you are leaving town for more than a couple of days. But don't do this during freezing weather. If you have a natural gas water heater, turn it to the "low" or "vacation" setting, but do not turn it off.

Don't let the hot water run while shaving or washing dishes.

Install high-efficiency showerheads and faucet aerators. New showerheads are required to meet a 2.5 gallon per minute standard; the lower the number, the more you will save. If you have a pre-1992 showerhead, it could be using 5.5 gallons of water per minute or more. Look for low-flow aerators of 2.5 gallons or less to fit bath- room and kitchen faucets.

Energy Performance Estimate

Lights and Appliances

Newer but standard washing machine.

It is recomended that you do not use this older refrigerator. If you need a second refrigerator upgrade your main unit and use it as back up.

Current Conditions Observed by Energy Professional

Almost all lights are CFL and all applainces are energy efficient except for the washing machine.

Recommended Upgrades Detail

Upgrade to an energy star washing machine.

Deep Energy Retrofit Options

Energy Upgrade Description

No-Cost or Low-Cost Strategies

Appliances Older appliances can use significantly more energy than newer, energy efficient appliances. Look for ENERGY STAR refrigerators, freezers, dishwashers, clothes washers, and air conditioners. Even within ENERGY STAR there are more and less efficient models and you should look for the most efficient appliance that fits your budget and needs. If you consider the full life cycle costs, more efficient appliances often make up for any difference in price within a few years of operations.

No-Cost or Low-Cost Strategies

Wash laundry in cold water whenever possible. Ninety percent of energy used for washing laundry goes toward heating water. Only run the washer when you have a full load.

Use the dishwasher energy-saver mode and run the dishwasher only when it is full.

Eliminate Phantom Loads. Many home electronics such as computers, televisions, and battery chargers use energy when not in use or turned off. Unplug these or plug them into a power strip that can be turned off when not in use.

Hang your clothes outside to dry whenever possible to reduce the use of your energy-intensive electric or gas dryer.

Eliminate unnecessary lights and replace incandescent bulbs with energy-saving compact fluorescents (CFLs) or LED lights. You can save at least 75% of the energy used for lighting. CFLs that emit a warm color similar to in- candescent bulbs (soft white color) and that turn on more quickly are now available. It is important to handle and recycle broken and burned out CFLs appropriately as they contain small amounts of mercury. Motion detectors and timers can eliminate unnecessary lighting outside and in infrequently used rooms.