ecoENERGY
an ecoACTION initiative

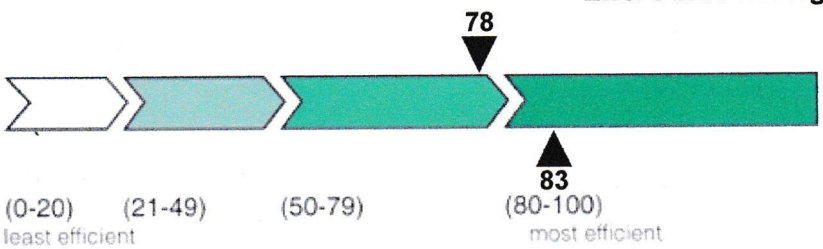
Energy Efficiency Evaluation Report

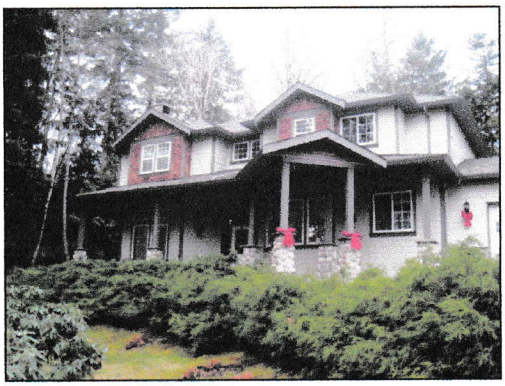
File number: 14K0D00710

Property Owner:

6742 Helgesen
Sooke, British Columbia
V9Z 0V6

EnerGuide Rating





House type: Single detached

No. of storeys: Two

No. of RO windows: 28
RO = rough opening

Air conditioner: No

Heating system: Electricity baseboard/hydronic/plenum

Domestic hot water: Electricity

Air leakage rate @ 50 Pa: 3.89 ACH
ACH = number of air changes per hour

Equivalent Leakage Area: 895 cm^2

The results of your pre-retrofit energy evaluation show that your house rates 78 points on the EnerGuide scale. If you implement all of the recommendations in this report, you could reduce your energy consumption by up to 24% and increase your home's energy efficiency rating to 83 points. The average energy efficiency rating for a house of this age in British Columbia is 71, whereas the highest rating achieved by the most energy-efficient houses in this category is 88.

The sooner you start your renovations, the sooner you will benefit from the energy savings. And let's not forget how reduced energy consumption helps protect the environment.

Did you know that when you reduce the amount of energy used in your home, you also reduce the production of greenhouse gases (GHG) such as carbon dioxide? By improving your home's energy efficiency rating to 83 points, you will reduce its GHG emissions by 2.9 tonnes per year!

The ecoENERGY Retrofit - Homes program stopped accepting bookings for pre-retrofit evaluations as of March 31, 2010. If there is a complimentary grant program offered by a province, territory, municipality, utility or other organization, your file will be transferred to them in accordance with your consent.

Note: If you notice any discrepancies with the above description of your home, contact your service organization immediately.

Service Organization:
Telephone:

Date of evaluation: December 21, 2010
Date of report: December 22, 2010

Certified Energy Advisor:

Certified Energy Advisor Signature

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1. YOUR HOME ENERGY ACTION CHECKLIST

This is your checklist of recommended retrofits to improve the energy efficiency of your home. Included is information on the potential for energy savings and EnerGuide rating improvement. **For more information on implementing the recommended retrofits, read carefully the 'Recommended Energy-Saving Measures' section of this report. Any reference in this report regarding the eligibility for, or availability of, grants under the ecoENERGY Retrofit - Homes program should be disregarded.**

Before undertaking upgrades or renovations, find out about the appropriate products and installation techniques, and ensure that all renovations meet local building codes and by-laws. NRCan does not endorse the services of any contractor, nor any specific product, and accepts no liability in the selection of materials, products, contractors or performance of workmanship.

Note: Some provinces, territories, municipalities and utilities offer complimentary grants and other incentives for reducing energy use. For information on other energy-saving programs, visit ecoaction.gc.ca and follow the links to ecoENERGY Retrofit's "Grants and Rebates" Web page for consumers or call 1 800 O-Canada (1-800-622-6232).

Retrofits	Potential for Energy Savings *	Potential Rating Improvement
* One (1) star = lowest savings / five (5) stars = highest savings		
HEATING SYSTEM Install an ENERGY STAR® qualified air-source heat pump that has a seasonal energy efficiency ratio (SEER) of 14.5 or higher, a minimum heating seasonal performance factor (HSPF) of 7.1 for Region V and a minimum capacity of 12,000 Btu/hour.	★★★★	5.1 points

When replacing ANY of the equipment listed in this report, the new equipment should have an efficiency rating higher than that of the original equipment.

2. THE ENERGUIDE RATING SYSTEM

The EnerGuide rating system is a standardized method of evaluation that lets homeowners compare their house's energy efficiency rating to similar sized houses in similar regions. The EnerGuide rating considers the house's estimated annual energy consumption based on an in-depth evaluation of the house's characteristics such as location, size, equipment and systems, insulation levels, air tightness, etc. In addition, standardized conditions are used when calculating the rating in order to compare the efficiency of one house to another. These conditions include: a complete air change approximately every three hours; four occupants; a fixed thermostat setting of 21°C on main floors and 19°C in the basement; average hot water consumption of 225 litres per day; average national electricity consumption of 24 kWh per day; and regional weather data that is averaged over the last 30 years.

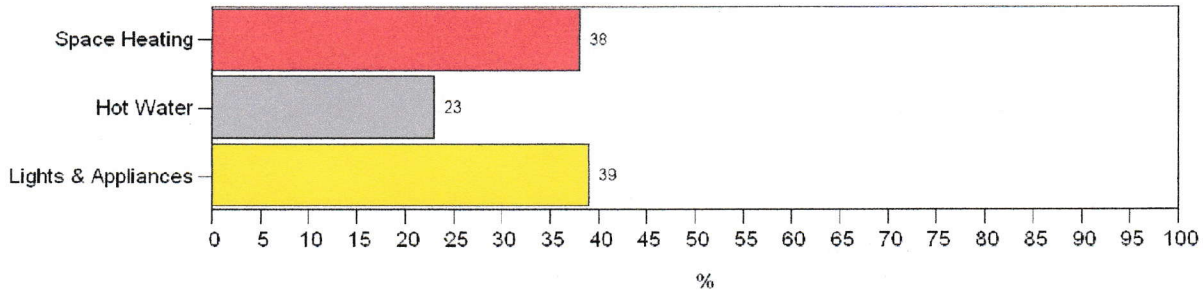
Figures 1 through 3 show the results of your energy evaluation based on the standardized conditions. The results may not entirely reflect your household since your actual energy consumption and future savings are influenced by the number of occupants, their day-to-day habits and lifestyles.

3. ENERGY CONSUMPTION

Houses lose heat to the outdoors during the heating season primarily through air leakage and conduction, such as the transfer of heat through the basement and exterior walls, upper floor ceilings, windows and doors (the 'building envelope'). Canada's demanding climate and modifications made to the house, such as drilling holes in walls for new wiring, pipes and lights, all play a part in reducing the efficiency of the building envelope over time. Houses need to be regularly maintained and upgraded to ensure greater energy efficiency, comfort and savings.

Figure 1 breaks down your house's estimated annual energy consumption for space heating, hot water and lights and appliances.

Figure 1. Estimated Breakdown of Energy Consumption



4. SPACE HEATING ANALYSIS

Figure 2 shows the estimated percentage of energy used for the space heating of your home.

- The right side of the top bar shows the percentage of energy you could save if you were to implement all of the upgrades recommended in this report, excluding changes to the space heating equipment. You could save up to 0 percent by performing all of the recommended non-space heating system upgrades.
- The right side of the bottom bar shows the percentage of energy you could save if you were to implement all of the upgrades recommended in this report, including any space heating system upgrades. You could save up to 62 percent by performing all of the recommended upgrades.

Figure 2. Estimated Percentage of Potential Energy Savings

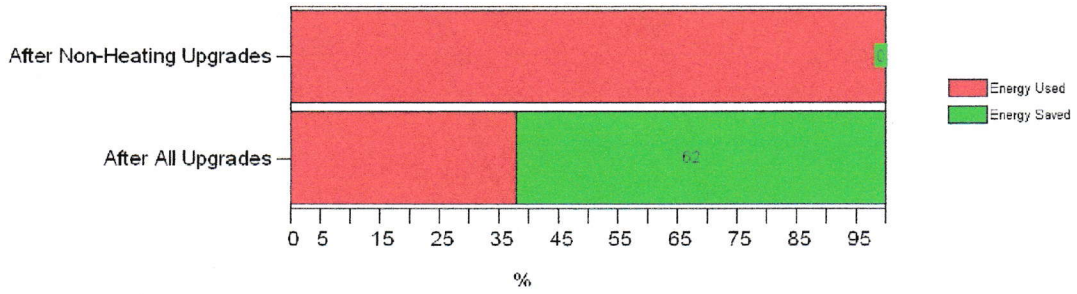
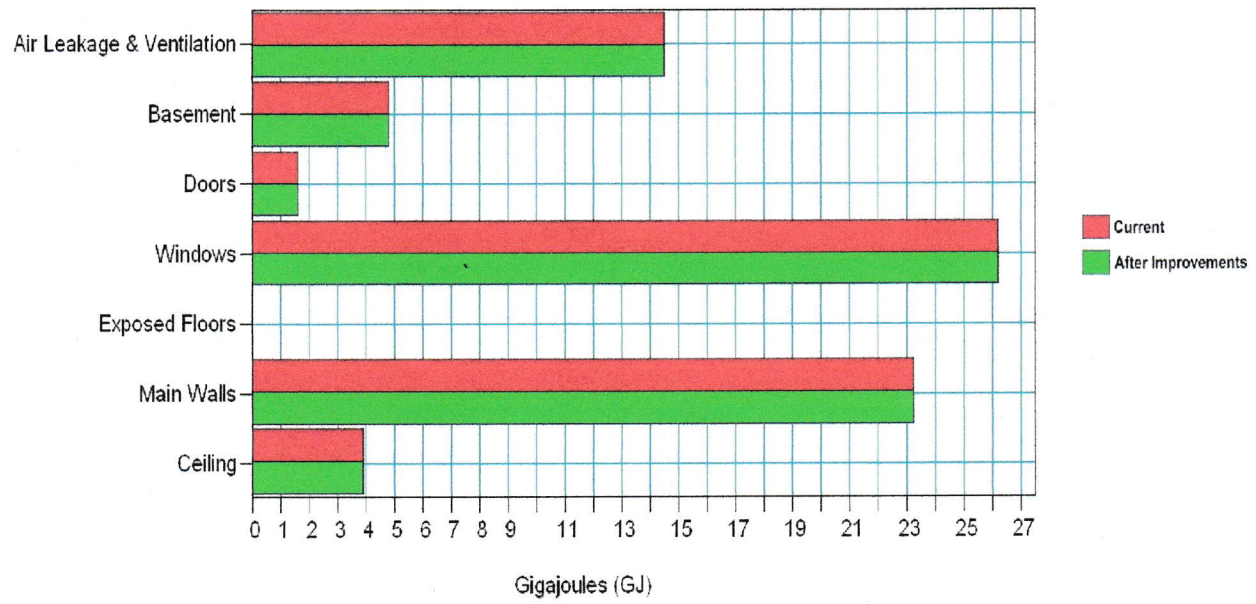


Figure 3 shows where the energy used for space heating is lost from your home. This energy is measured in gigajoules (GJ), where 1 GJ is equivalent to 278 kilowatt-hours (kWh) or 948,000 Btu.

The red bars show the areas where you are losing energy now. The longer the bar, the more energy you are losing. The green bars show the estimated energy loss after you complete your renovations. The larger the difference between the red and the green bars, the greater the potential for energy savings and comfort improvements.

Figure 3. Breakdown of Heat Loss through Building Envelope



Your Home's Estimated Design Heating and Cooling Loads

If you were to implement ALL of the building envelope retrofits recommended in the section of this report entitled 'Your Home Energy Action Checklist', it is estimated that your home's design heat loss would be 24085 Btu/hour (7059 Watts) and its design cooling load would be 20140 Btu/hour (1.7 tons). If you are considering replacing your space heating and/or cooling system, it is recommended that you provide this information to your heating/cooling contractor to help ensure a properly-sized system. However, this is only an estimate based on the data that was collected on your home at the time of the pre-retrofit evaluation. The design heat loss and cooling load can vary depending on different factors, such as the retrofits that you implement and other changes you may make to your home. Prior to having a new heating/cooling system installed, it is recommended that your heating/cooling contractor perform a heat loss/heat gain calculation on your home to determine the capacity and distribution flows for the new equipment. The contractor should hold current certification for Heat Loss/Heat Gain Calculations from the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI). For a list of certified contractors, visit www.hrai.ca and click on "Homeowners and Building Owners" and "Skill*Tech* Academy Canadian Certification Listing", or call 1-800-267-2231.

Important Information Concerning Vermiculite Insulation

Older vermiculite insulation installed in homes may contain amphibole asbestos, which can cause health risks if disturbed and inhaled. If the insulation is contained in the walls or attic spaces and is not disturbed or exposed to the home or interior environment, it poses very little risk. Vermiculite insulation was not detected during the energy evaluation of your home. However, if you find vermiculite insulation during renovations, avoid disturbing it in any way. If you suspect it might be in your home and you plan to undertake renovations (including insulation or air sealing work) that may cause the vermiculite insulation to be disturbed, contact professionals who are qualified to handle asbestos before you proceed with the renovations. For a listing of qualified professionals, look in the Yellow PagesTM under 'Asbestos Abatement & Removal'. For information on vermiculite insulation that contains amphibole asbestos, refer to the Health Canada fact sheet It's Your Health - Vermiculite Insulation Containing Amphibole Asbestos. Visit http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/insulation-isolant-eng.php or call Health Canada at 1-800-443-0395 to order a copy.

5. RECOMMENDED ENERGY-SAVING MEASURES

Air-Source Heat Pumps

Air-source heat pumps, which include air-to-air and air-to-water heat pumps, extract heat in the air from outside and transfer it to a distribution system in the house during the heating season.

Different terminology is used for the efficiency ratings of heat pumps. For example, air-source heat pumps have seasonal heating and cooling ratings. The heating rating is the Heating Seasonal Performance Factor (HSPF), while the cooling rating is the Seasonal Energy Efficiency Ratio (SEER). However, in the manufacturers' catalogues you may still see Coefficient of Performance (COP) or Energy Efficiency Rating (EER) ratings. COP is used to rate cooling or heating efficiencies and EER only rates the cooling efficiency. The higher the rating, the more energy efficient is the heat pump. ENERGY STAR® qualified heat pumps are among the most energy efficient in the marketplace.

An air-source heat pump consists of a matched condenser coil (outdoor unit comprising a condenser coil, compressor and cooling fan) and an indoor evaporator coil (typically located with the furnace). Many manufacturers voluntarily submit their products for testing by the Air Conditioning, Heating and Refrigeration Institute (AHRI) to assure consumers that their energy efficiency claims have been verified by an independent, third-party source. However, the AHRI does not certify individual indoor or outdoor coils. The AHRI only certifies matched indoor and outdoor coils which work together to achieve the given SEER/HSPF rating for the heat pump system. Note that air-source heat pumps can also be sold together with a furnace or fan-coil. In these cases the AHRI number will refer to a furnace or fan-coil in addition to the indoor and outdoor coils.

Natural Resources Canada (NRCan) maintains a database of all registered air-source heat pumps in Canada. ENERGY STAR air-source heat pumps will be marked as such in this database. You can verify that the system your contractor is proposing is a matched system by asking him or her to provide you with an AHRI Certificate of Product Rating, or an AHRI Certified Reference Number (also known as ARI, or AHRI number). This reference number can be entered into the NRCan air-source heat pump database at http://oee.nrcan.gc.ca/residential/business/manufacturers/search/heat-pumps-search.cfm to verify that the system is matched (e.g., AHRI # 1278951 references outside coil YZE03611 and indoor coil AV*36+TXV) and is ENERGY STAR compliant. If you do not have an AHRI number you will need the manufacturer's name and model number for both the indoor and outdoor coils (and furnace/fan coil if applicable) to find the equipment in the NRCan database.

Ask your contractor to indicate the AHRI Certified Reference number on your invoice, as well as the indoor and outdoor unit model numbers (and furnace model number, if applicable) and provide this information to your energy advisor at the time of the post-retrofit evaluation.

For more information on air-source heat pumps, refer to the NRCan publication entitled, *Heating and Cooling with a Heat Pump*.

Grant Eligibility: The installation of an ENERGY STAR qualified air-source heat pump (with a matched condenser coil, indoor evaporator coil, and furnace/fan coil if applicable) that has a SEER of 14.5 or higher, a minimum HSPF of 7.1 for Region V and a minimum heating capacity of 12,000 BTU/hour is eligible for an ecoENERGY Retrofit - Homes grant for the heating system. The heat pump is also eligible for an additional ecoENERGY grant for the cooling system, providing the heat pump replaces an existing central air conditioner. Read the brochure entitled *Grant Table for ecoENERGY Retrofit - Homes* for additional information on the eligibility requirements.

Recommendation:

I recommend that you install an ENERGY STAR qualified air-source heat pump that meets the requirements listed above to heat and cool your home.

6. ENERGY-SAVING TIPS

Although these actions may not be eligible for an incentive, they will help you save energy and money:

- Install and use a programmable electronic thermostat (set the heating temperature to 20°C while you are at home and 17°C at night and when you are away). For each degree of setback, you can save up

to 2 percent on your heating bills.

- When replacing lighting, appliances, electronics and office equipment, look for ENERGY STAR® qualified products. ENERGY STAR® qualified products use less than half as much energy in standby mode (i.e. when they are turned "off"). For more information, go to http://energystar.gc.ca. You can also look for the EnerGuide label to help you select the most energy-efficient model.
- Replace your light bulbs with energy-efficient ones, such as compact fluorescents. They last longer and reduce electricity consumption.
- Insulate the first two metres of the hot and cold water pipes with insulating foam sleeves or pipe wrap insulation. By doing so you will save on your water heating costs and will reduce your water consumption. Besides saving energy, water will arrive at the faucets warmer or colder. Insulating cold water pipes will also avoid condensation from forming on the pipes. This prevents dripping on the ceiling finish or the basement floor. For a fuel-fired water heater, maintain a 15-centimetre (6-inch) clearance between the water piping insulation and the vent pipe.
- Use a timer for your car's block heater. Set the timer so that it turns on two hours before you start your vehicle.
- Install an ENERGY STAR® qualified kitchen or bathroom exhaust fan.
- Install a timer on your bathroom exhaust fan(s).
- Install low-flow showerheads (rated at less than 9.8 litres per minute [L/min]) and faucet aerators.
- Fix leaky faucets and outside hose bibs.
- Plug your home office equipment into a power bar that can be easily turned off when equipment is not in use. Refer to the fact sheet *Standby Power - When "Off" Means "On"* for information on standby losses.

7. INFORMATION RESOURCES

Home Energy Efficiency
Natural Resources Canada (NRCan) publishes a variety of publications that can help you improve the energy efficiency of your home. These publications are available online at oee.nrcan.gc.ca/publications or by calling the order desk at 1-800-387-2000.

Renovation Publications
Canada Mortgage and Housing Corporation (CMHC) publishes a large number of renovation planning fact sheets that are available at no cost. There are also some excellent in-depth publications for sale. Visit cmhc-schl.gc.ca or call 1-800-668-2642 to order your material of interest.

Hiring a Contractor
Before you have any work done, request quotations in writing from professional contractors and obtain a written contract. CMHC has a very useful fact sheet on this subject, *Hiring a Contractor*, which includes a draft contract. Visit cmhc-schl.gc.ca or call 1-800-668-2642 to order.

Mold
If you suspect mold growth in your home, it is recommended that the mold damaged area(s) be cleaned thoroughly or removed and properly disposed of. To control and reduce the potential for mold growth, maintain indoor humidity at appropriate levels, and remedy water infiltration and leakage issues. Refer to the CMHC fact sheet *About Your House: Fighting Mold - The Homeowner's Guide* for information on proper mold identification and cleaning procedures. Visit cmhc-schl.gc.ca or call 1-800-668-2642 to order.

Radon
Radon is a radioactive gas that is colourless, odourless and tasteless. Radon is formed by the breakdown of uranium, a natural radioactive material found in soil, rock and groundwater. When radon is released from the ground into the outdoor air, it gets diluted to low concentrations and is not a concern. However, in enclosed spaces, like houses, it can sometimes accumulate to high levels, which can be a risk to the health of you and your family. For more information, refer to the CMHC publication *Radon – A Guide for Canadian Homeowners* or visit the Health Canada web site at http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/index-eng.php.

Humidity Control
A relative humidity (RH) level of between 30 and 55 percent is recommended in the home. If you have a humidifier or dehumidifier, ensure that it is regularly cleaned and maintained, and that the humidistat is set at an appropriate humidity level. You can use a hygrometer to measure relative humidity and the CMHC fact sheet *Measuring Humidity in Your Home* gives good advice. In addition, dehumidifiers can help reduce moisture levels especially in basements.

GET STARTED TODAY!

Now that you have the tools to improve your home's energy efficiency, you can look forward to enjoying the added comfort of your ecoENERGY improved home. Not only will you benefit from increased comfort, you will also save on your energy bills year after year. And let's not forget your reduction of greenhouse gases!

BUILDINGINSIGHT
the home performance people

Dear Homeowner,

Congratulations on your efforts to upgrade the energy efficiency of your home. Your home should now be more comfortable, and less costly to operate.

Your improvements will reduce the energy used to heat or cool your home, and the greenhouse gases created by that energy use. This, in turn, helps to reduce pollution that contributes to climate change.

Enclosed is your home's new official EnerGuide label. The number on the label is your EnerGuide score out of 100. It shows how well your home performs compared to similar homes in your area. The higher the number, the more energy-efficient your home.

If you have questions regarding your new rating score, you can either contact the HomePerformance energy advisor who visited your home, or you can call a Building Insight customer service representative at the number listed below.

We suggest you proudly affix your EnerGuide rating label to your home's electrical circuit box, where it can be seen by present and future residents, real estate agents and home inspectors. It's proof of the positive changes you've made to your home, and demonstrates your commitment to energy efficiency.

Thank you for participating in the ecoENERGY program. ecoENERGY is a residential energy assessment initiative developed by the Office of Energy Efficiency of Natural Resources Canada (NRCan). Grants are offered to reward homeowners for making recommended energy-saving retrofit choices.

If you have any questions when you receive your grant cheque from NRCan, we encourage you to call us at the phone number listed below. Our customer service representatives will be happy to answer your questions or to request a technical review.

Call us Toll Free: 1 (877) 732-9888

It has been a pleasure to serve you, and we thank you for choosing HomePerformance as your energy audit service provider.

Sincerely,

Building Insight Technologies Inc.
Peter Moffat, President.