



HOME ENERGY RATING CERTIFICATE

The Home Located At:

2410 E. 16th

Anchorage, Alaska

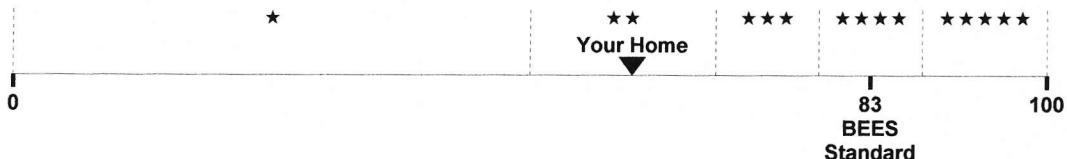
Has Been Energy-Rated As:



Two Stars

Overall Efficiency of Home

59.9 points



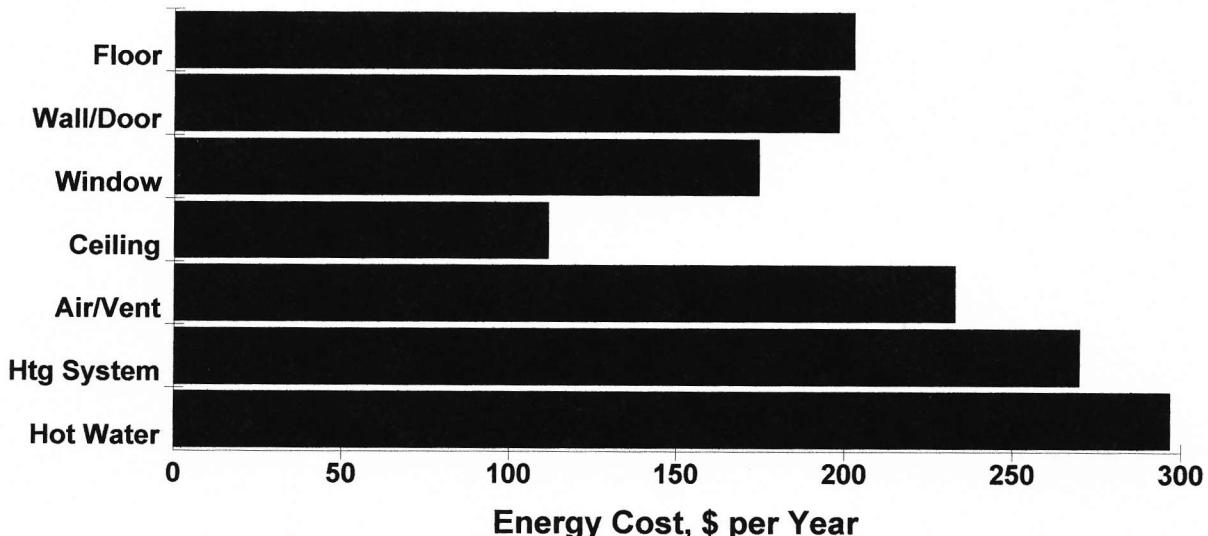
Projected Annual Energy Costs

\$4,106 per year

Amount of CO₂ Produced by the Home

26,364 pounds per year

BREAKDOWN OF HEATING COSTS



Client: Marne Lastufka

Rater: Matt Oster, 108, Red Edge Design

Date: 9/27/08

Rater's City: Anchorage, AK 99508
ver. 1.03d, library: 5/1/2008

Phone: 563.1119

FAX: 563.1119

ENERGY COST AND FEATURES REPORT

Property: Marne Lastufka
2410 E. 16th
Anchorage, Alaska

Rater: Matt Oster, 108
Red Edge Design
3842 Williams
Anchorage, AK 99508

House: Single Family
Living Floor Area: 1,127 square feet
No Attached Garage

Rating: As Is
ID: Im80927

ENERGY FEATURES

Envelope Efficiency

| | |
|------------------------------------|--|
| Floor Insulation | R-11.6 * |
| Wall/Door Insulation | R-9.3 |
| Ceiling Insulation | R-21 |
| Window R-Value | R-1.13 |
| Window to Wall Ratio, Living Space | 14.3% |
| South Facing Window Area | 51 square feet |
| Air Leakage | 13.6 Air Changes per Hour at 50 Pascals 0.65 Air Changes per Hour Natural |

* Includes the insulating value of the ground in contact with these envelope components.

Space Heating System

| | |
|--------------------|----------------|
| System Efficiency | 82% |
| Fuel Type | Natural Gas |
| Supplemental Fuel | None |
| Thermostat Setting | 70.0 degrees F |
| Setback Thermostat | None |

Water Heater

| | |
|------------|-------------------|
| Efficiency | 60% |
| Location | Conditioned Space |
| Fuel Type | Natural Gas |

Ventilation

| | |
|-------------|------|
| System Type | None |
|-------------|------|

Other

| | |
|-------------------------------------|-------------|
| Number of Occupants | 4 |
| Clothes Dryer Fuel | Electricity |
| Cooking Range Fuel | Electricity |
| Miscellaneous Lights/Appliances Use | Average |

ESTIMATED ENERGY USE

Space Heating [REDACTED] \$1,190

Water Heating [REDACTED] \$297

Lights and Appliances [REDACTED] \$2,619

Space Heating 157 kWh of Electricity, 1,304 ccf of Natural Gas

Water Heating 344 ccf of Natural Gas

Lights and Appliances 6,431 kWh of Electricity

Actual use and costs may vary from these estimates depending upon weather conditions, occupant life styles and utility rates currently in effect.

ENERGY EFFICIENCY IMPROVEMENT OPTIONS

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COST-EFFECTIVE IMPROVEMENTS:

| Improvement Description | Location | Savings to Cost Ratio | Installed Cost | Annual Savings | Break-Even Cost | Rating Points Gained | Note |
|--|--|-----------------------|----------------|----------------|-----------------|----------------------|------|
| Install a Setback Thermostat | | 8.88 | \$90 | \$60 | \$799 | 1.1 | 1 |
| Install 2' of R-14 rigid board insulation around perimeter of Slab (vertical or horizontal). | On- or Below-Grade Floor, Perimeter: House | 2.06 | \$799 | \$93 | \$1,645 | 3.4 | 2 |
| Caulk and Seal so that Home Air Leakage is Reduced by 1300 CFM at 50 Pascals. | | 1.70 | \$1,000 | \$190 | \$1,699 | 7.0 | 3 |
| Install R-19 loose-fill insulation in attic. | Ceiling w/ Attic: House | 1.80 | \$710 | \$72 | \$1,278 | 2.7 | 4 |
| Remove existing glass and install triple lowE arg glass. | Window/Skylight: House | 1.55 | \$1,599 | \$139 | \$2,477 | 5.1 | 5 |
| Install R-14 rigid foam board to exterior. Costs do not include siding. | Above-Grade Wall: House | 1.45 | \$1,462 | \$119 | \$2,116 | 4.5 | 6 |
| Remove existing glass and install triple lowE arg glass. | Window/Skylight: South old | 1.40 | \$659 | \$52 | \$925 | 1.9 | |
| Total, Cost-Effective Measures | | 1.73 | \$6,318 | \$725 | \$10,939 | 25.7 | |

New Rating After Measures: Four Stars Plus, 85.6 points
Annual CO2 Reduction: 10,060 pounds per year

General Notes: Consider installing a heat recovery ventilation system or at least new bathroom exhaust fans. Exhaust fans should be controlled by dehumidistats, be rated for continuous duty, and have a sone (noise) rating of 1.0 or less. Each fan should provide about 50cfm. Most fans only deliver about 65% of their rated flow due to duct losses. Ducts should be rigid and insulated to at least R8 where they run through the attic. Duct joints should be sealed with mastic or foil tape. Do not use cloth duct tape. Also have the duct terminations go either through the roof or the gable ends - but not through the gable end vents. They should be far enough away from the vents to keep the expelled moisture from entering the attic.

When buying new appliances, look for the Energy Star label for greater efficiency. Also consider replacing your electric dryer with a gas unit. Electric dryers cost about three times more to operate than gas. Compact fluorescent lamps (CFL) provide the same amount of light for less than one third the energy of incandescent. CFL are available everywhere at a reasonable cost and pay for themselves many times over during their useful life. LED lamps are even more efficient by significantly more expensive. AHFC has decided they will not reimburse for energy star appliances (washers, refrigerators, etc.) or lighting improvements.

The costs associated with these measures are estimated by the AKWarm software and have not been updated since 1995. They should not be relied upon for any purpose other than ranking. It should also be noted that the long term

savings are based on a 5% annual fuel cost increase. Enstar rates increased by 30% last year and about 20% each of the two past years. Please feel free to call Matt Oster at 563.1119 if you have any questions.

Improvement Notes

1 - Setback or programmable thermostats can automatically reduce the house temperature for certain periods such as when the home is unoccupied or during sleeping hours. Thermostats generally have only two low-voltage wires and are easy to install. You will need one thermostat for each zone.

2 - With a slab foundation, the energy loss is greatest at the edge. Excavate to a depth of 2' around the slab and attach rigid insulation to the foundation wall. Make sure the insulation comes all the way up to the bottom of the siding. Cover the upper portion (about 1 foot) of the insulation with flashing. Then backfill.

3 - Air sealing tasks include:

- " Remove baseboard trim and seal the wall/floor joints at the wood floors. Replace the baseboards.
- " Seal wall/ceiling joints
- " Seal window and door frame/wall joints if windows are not replaced. Remove trim and seal the gaps with caulk or low-expanding foam.
- " Seal window sash/frame joints if the windows are not replaced.
- " Seal around plumbing, mechanical, and electrical penetrations into the attics.
- " Seal around the old fireplace flue at the ceiling level. If possible, remove the old chimney and seal up the hole. You may need to get access to this area from the outside.
- " Outlet and switch plates. Use foam gaskets and child protector plugs to seal these items. If leakage is still a problem caulk the wiring penetrations through the box (turn off the breakers first!).
- " Install brush weatherstripping on exterior doors if they are not replaced.
- " Replace or seal around recessed lights. Optimally the lights could be removed, the penetrations sealed, and new, surface-mount lighting installed. The second option is to replace the existing unsealed recessed fixtures with sealed recessed fixtures that are rated for insulation contact. Finally, the existing fixtures could be covered with insulated boxes. The boxes can be made with rigid insulation (Thermax, RMax, or extruded polystyrene) and the joints sealed with foil or plastic tape. Seal the box to the vapor retarder with an adhesive sealant.

In addition to the other recommendations consider a woodstove or gas fireplace insert to reduce air leakage and to act as a supplemental heat source. Open fireplaces are very inefficient and, due to their large combustion air requirements, accentuate drafts throughout the house. Make sure that the insert uses outside air for combustion.

4 - The current attic insulation standard is R38. You only have about R21 with the existing material which has been disturbed. Add about 6" blown cellulose over the existing material. At the eaves consider staggering rigid urethane board such as Thermax or R-max to increase the potential R-value in this area. Make sure you install baffles to keep eave openings clear for attic ventilation. Prior to adding insulation, perform any needed attic air sealing measures. Also, do not use the attic for storage unless you build shelves in the trusses above the insulation. Do not store items on the insulation.

5 - The critical energy issue for new window is the U-factor. The lower the U-factor, the more efficient the product. For our area you should look for U-factors of .33 or lower. If large windows are replaced, consider reducing the area. For the short-term, consider the shrink wrap window film to reduce this winter's energy costs. In the cost/benefit analysis, the AKWarm software does not consider the additional savings gained from reduced window air leakage.

6 - A good way to increase the wall insulation would to use rigid insulation on the exterior if new siding is desired. It would first require removing the existing siding, window trim, building paper, etc. A "peel and stick" membrane (such as bituthane) is then applied to the structural sheathing. Insulation is glued to the membrane, and then a stucco finish or wood siding over 1x4 battens (attached with long screws) is applied. You should try for about an R20 which is 4" of blue/pink foam (instead of the R10 in the recommendation). More information on this system is available from the Cold Climate Housing Research Center website at www.cchrc.org. A DVD on the process is available for free from the Alaska Building Science Network (562-9927).

The following improvements were not found to be cost-effective based on energy savings:

| Improvement Description | Location | Savings to Cost Ratio | Installed Cost | Annual Savings | Break-Even Cost | Rating Points Gained | Note |
|---|---------------------------------|-----------------------|----------------|----------------|-----------------|----------------------|------|
| Remove existing door and install fiberglass door with polyurethane core | Exterior Door: back | 0.85 | \$425 | \$20 | \$362 | 0.7 | 1 |
| Remove existing door and install fiberglass door with polyurethane core | Exterior Door: front | 0.85 | \$480 | \$23 | \$406 | 0.9 | |
| Remove existing glass and install triple lowE arg glass. | Window/Skylight: House W/ storm | 0.71 | \$191 | \$8 | \$136 | 0.3 | |
| Replace Gas tank-type water heater with efficient "side-arm" to 40,000 Btu boiler | | 0.56 | \$850 | \$18 | \$479 | 0.4 | 2 |
| Remove existing glass and install triple lowE arg glass. | Window/Skylight: South new | 0.37 | \$141 | \$3 | \$52 | 0.1 | |
| Total, All Measures | | 1.47 | \$8,405 | \$796 | \$12,374 | 28.1 | |

New Rating After Measures: Five Stars, 88.0 points
 Annual CO2 Reduction: 11,062 pounds per year

Improvement Notes

- 1 - Consider the newer fiberglass, urethane-filled doors rather than metal. Note that the software evaluation does not take into account the reduction in air leakage that can be attributed to the new door.
- 2 - When a boiler is present the most efficient way to provide domestic hot water is with a boilermate. An Amtrol Boilermate (or equivalent) is a storage system that provides domestic hot water as a zone from the boiler. It is more efficient than a stand-alone water heater and does not require combustion air. It also has a higher recovery rate than a regular water heater. A 40 gallon boilermate can provide hot water faster than most 50 gallon regular water heaters. Consider this measure if a new combination boiler is not installed. Also, if a new boiler is installed, the sizing does not have to be increased to accommodate the water heater.

ver. 1.03d, library: 5/1/2008



As-Is Energy Rating Reimbursement Invoice

FINANCE CORPORATION

This form is to be completed by the energy rater and signed by the homeowner. This form will be submitted to AHFC by the homeowner for reimbursement of services rendered for performing the energy rating. Mail form to AHFC, P.O. Box 101020, Anchorage, AK 99510-1020 Attn: R2D2. Payments will be reported to the Internal Revenue Service as income.

Homeowner Information

1. Homeowner Name _____
2. Property Address _____
3. Mailing Address _____
4. City _____
5. State AK Zip Code _____
6. Social Security # _____
7. Day Phone # (907) _____
8. Reimbursement Amount \$ _____ (not to exceed 325.00 of actual rating cost)

I certify that I am the owner of the above-referenced property. Proof of ownership is attached (copy of tax parcel notice or deed of trust) with a copy of the completed energy rating and energy rater's invoice. This is my primary residence, and I occupy this residence on a year-round basis.

Homeowner's Signature

Date

Energy Rater Information

1. Energy Rater Mark Oster, 108
2. Address 3842 Williams St.
3. City Anchorage
4. State AK Zip Code 99508

Energy Rater's Signature

9/30/08
Date

I certify that the information contained in the energy rating on the above-referenced property is true and correct. I have provided the owner of the property with a copy of the As-Is Energy Rating, the Improvement Options Report, and my invoice for the energy rating. I understand that any misrepresentation is subject to penalties detailed in 15 AAC 155.350

15 AAC 155.350. MISREPRESENTATION.

If a rebate was paid as a result of a misstatement of material fact, the applicant shall repay to the Corporation an amount equal to the rebate paid plus accrued interest at the highest permissible rate established by law calculated from the date of issuance of the rebate check by the Corporation. An individual, business, or other entity that misrepresents a material fact in order to qualify an applicant for a subsidy under this program may not receive any benefit from the Corporation for energy rating services or from the program. The Corporation, in its discretion, will reinstate eligibility to receive benefits from the program. (Eff. 5/7/93, Register 130) Authority: AS 18.56.088 AS 18.56.410 AS 18.56.850

AS-IS ENERGY RATING REIMBURSEMENT INSTRUCTIONS

PLEASE READ THESE INSTRUCTIONS CAREFULLY. Failure to provide requested information may result in your reimbursement being delayed or denied. Only one as-is rating reimbursement is allowed per family or per home. **Maximum reimbursement may not exceed \$325.00 of the actual cost of the rating.**

- 1. NAME/SOCIAL SECURITY NUMBER:** Enter your name and social security number as the legal homeowner applying for the rebate. Your social security number is required for you to receive a rebate. The rebate will be reported to the IRS, and a 1099 form will be issued to you by AHFC.
- 2. PROPERTY AND MAILING ADDRESS:** The property address line is for your street address or the legal description of the property being rated and should correspond to the proof of ownership. The mailing address is where you receive your mail and the address the rating reimbursement will be mailed.
- 3. PROOF OF OWNERSHIP:** This energy-rating reimbursement is available only to an owner-occupied home used as year-round residence. Applicants must attach proof of ownership in the form of a tax parcel notice from your city or borough government, or a copy of a deed of trust.
- 4. DAYTIME PHONE NUMBERS:** Enter the numbers where you can be reached between the hours of 8:00 a.m. and 5:00 p.m. if we have questions while processing your reimbursement.
- 5. CERTIFYING STATEMENT:** You must sign and date the certifying statement in order for this reimbursement to be processed. The person signing the reimbursement should be the same individual whose name appears on the deed of trust or tax assessment notice. This certification is required to prevent fraud.
- 6. REQUIRED DOCUMENTS:** The following documents must be included with your reimbursement invoice: A copy of the "As-Is" rating, a copy of your deed of trust or tax assessment notice which matches the property address on the rating, and your energy rater's invoice.
- 7. TIMELINE:** You have 18 months from the date of the As-Is energy rating to complete the energy-efficiency improvements, the Post-Improvement energy rating, and submit the completed application for Post-Improvement reimbursement and rebate. AHFC has 60 days to reimburse the homeowner for the energy ratings and rebate. **Mail all required documents to: Alaska Housing Finance Corporation, P.O. Box 101020, Anchorage, Alaska, 99510-1020; Attn: R2D2.**

If you, your family, or this particular home participated in the weatherization assistance program after May 1, 2008, **you are not eligible** to participate in the energy rebate program. You may also be ineligible if you fail to provide any of the requested information, or if you fail to complete the energy-efficiency improvements and apply for reimbursement or rebate within one year after the As-Is rating was completed.

Questions on the energy rebate program? In Anchorage, call Alaska Housing Finance Corporation at 330-8183, or if you are located outside the Anchorage area, call 1-800-478-2432. Ask for the rebate program manager.

Invoice

Red Edge Design
3842 Williams St.
Anchorage, AK 99508

| |
|--|
| Bill To: |
| Marne Lastufka 2410 E 16th Anchorage, AK 99508 |



| Date | Invoice No. |
|----------|-------------|
| 11/26/08 | 108 |

| Description | Quantity | Rate | Amount |
|---|----------|--------|----------------|
| As-is Home Energy Rating | | 325.00 | 325.00 |
| | | | |
|  | | | |
| Happy House Making! | | | Total \$325.00 |