

Energy Cost and Features

Property

Bob Stringman
24201 178th Street
Spirit Lake, IA 51360

Organization

Johnson Environmental- Intergo
605-940-2738
Jim Johnson

HERS

Confirmed
5-15-2016
Rating No:0001
Rater ID:6527377

Weather:Waterloo, IA

East Lake Home
65273770001 24201 178 St Spirit
Lake IA 51360 - A1.blg

Builder

Schoelerman Construction

Annual Energy Costs

\$/yr

| | |
|---------------------------|-------------|
| Heating | 391 |
| Cooling | 77 |
| Water Heating | 142 |
| Lights & Appliances | 823 |
| Photovoltaics | -0 |
| Service Charges | 282 |
| Total | 1716 |
| Average Monthly(\$/Month) | 143 |

Energy Features

| | |
|---------------------------|---|
| Ceiling w/Attic | None |
| Sealed Attic | CLOSED CELL FOAM*** U=0.033 |
| Vaulted Ceiling | None |
| Above Grade Wall | SIP 5-5/8"***** U=0.036 |
| Foundation Walls (Cond) | ICF***** R=25.0 |
| Foundation Walls (Uncond) | None |
| Doors | Steel-urth w/brk***** U=0.187 |
| Windows | Anderson 2 U=0.300 |
| Floors | Cant foam***** U=0.038 |
| Slab Floors | ICF 13 inch***** U=0.026 |
| Infiltration | Htg: 1246 Clg: 1246 CFM50 |
| Infiltration Measure | Blower door test |
| Mechanical Ventilation | Balanced: ERV, 131 cfm, 63.0 watts. |
| Interior Mass | None |
| Mechanical Equipment 1 | Heating: Fuel-fired air distribution, 58.0 kBtuh, 96.1 AFUE. |
| Mechanical Equipment 2 | Heating: Fuel-fired air distribution, 77.0 kBtuh, 96.1 AFUE. |
| Mechanical Equipment 3 | Heating: Fuel-fired hydronic distribution, 112.0 kBtuh, 95.0 % EFF. |
| Mechanical Equipment 4 | Water Heating: Heat pump, Elec, 2.75 EF. |
| Mechanical Equipment 5 | Cooling: Air conditioner, 36.0 kBtuh, 13.0 SEER. |
| Mechanical Equipment 6 | Cooling: Air conditioner, 30.0 kBtuh, 13.0 SEER. |
| Programmable Thermostat | Heat=Yes; Cool=Yes |
| Ducts | UninsulatedConditioned basement |

Note: Where feature level varies in home, the dominate value is shown.

REM/Rate - Residential Energy Analysis and Rating Software v14.6.3.1

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Energy Features

| | |
|-------------------------|-------------------------|
| Duct Leakage to Outside | 42.00 CFM @ 25 Pascals |
| Total Duct Leakage | 117.00 CFM @ 25 Pascals |
| Lights/Appliances | Rating Tab |
| Active Solar | None |
| Photovoltaics | 0.00 |
| Sunspace | No |

Note: Where feature level varies in home, the dominate value is shown.

Performance Report

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Annual Load

MMBtu/yr

| | |
|---------------|------|
| Heating | 81.6 |
| Cooling | 10.6 |
| Water Heating | 18.9 |

Annual Consumption

MMBtu/yr

| | |
|---------------------|--------------|
| Heating | 86.7 |
| Cooling | 3.0 |
| Water Heating | 6.4 |
| Lights & Appliances | 43.6 |
| Photovoltaics | -0.0 |
| Total | 139.7 |

Annual Energy Cost

\$/yr

| | |
|---------------------|-------------|
| Heating | 391 |
| Cooling | 77 |
| Water Heating | 142 |
| Lights & Appliances | 823 |
| Photovoltaics | -0 |
| Service Charges | 282 |
| Total | 1716 |

Design Loads

kBtu/hr

| | |
|---------------|------|
| Space Heating | 54.0 |
| Space Cooling | 27.3 |

Utility Rates

| | |
|-------------|-------------------------|
| Electricity | Alliant***** |
| Gas | Black Hills Energy***** |

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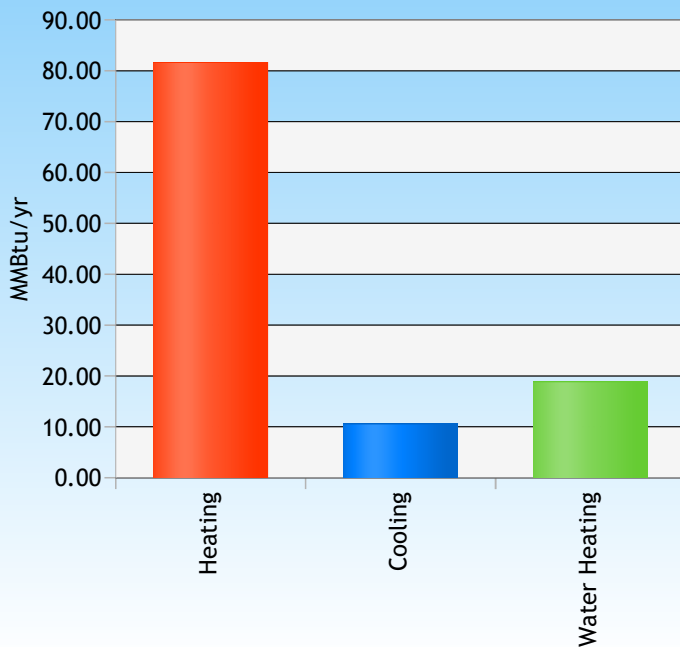
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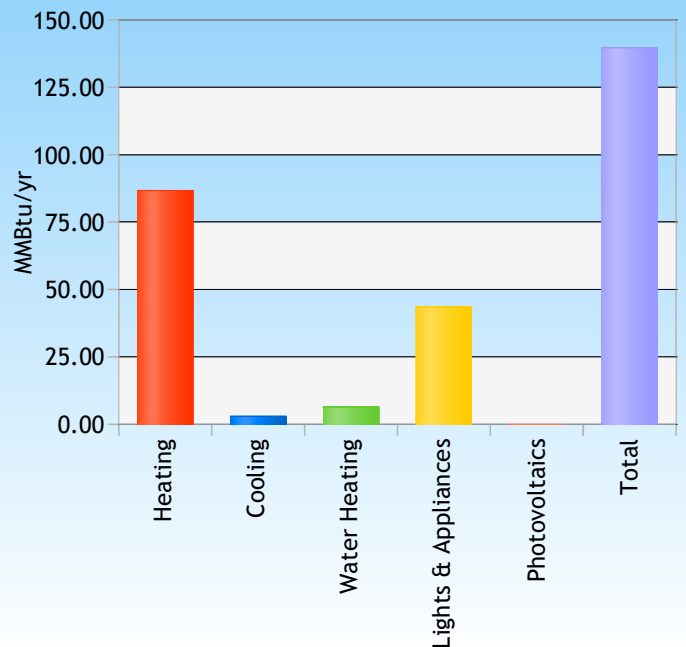
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Annual Load



Annual Consumption



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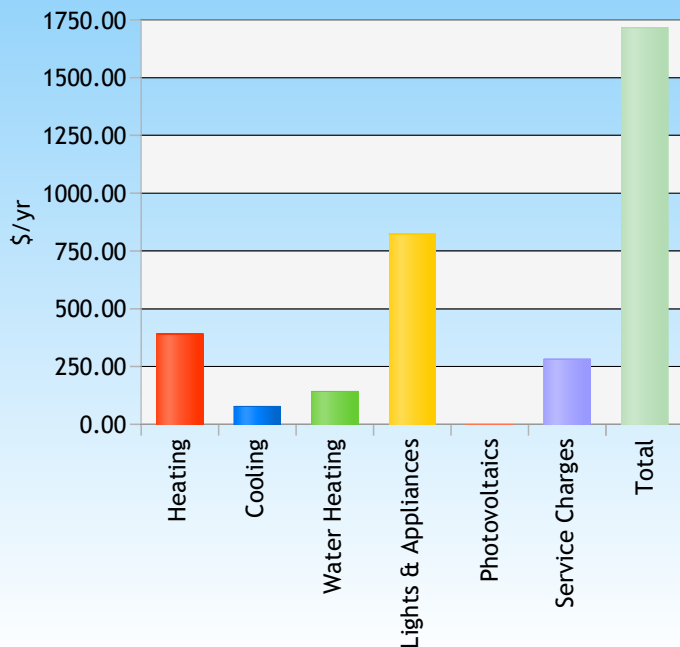
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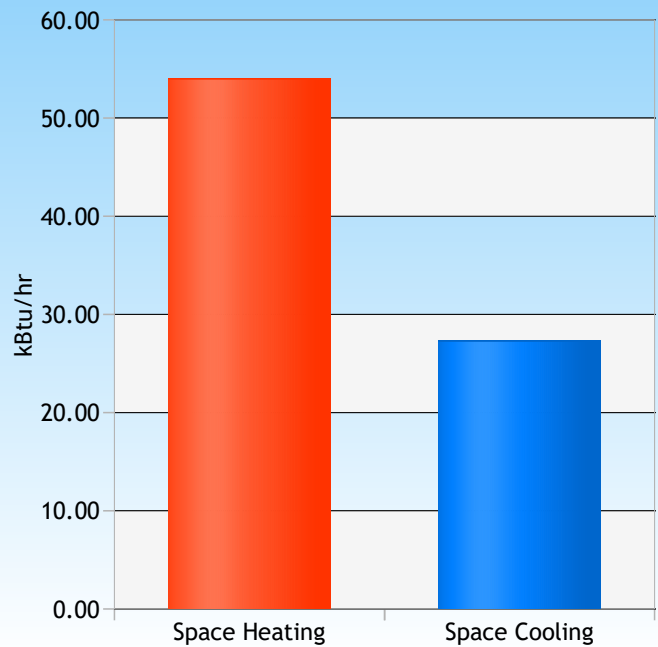
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Annual Energy Cost



Design Loads



2005 EPACT Energy Efficient Home Tax Credit (13-001)

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Rater ID:6527377
Registry ID: 309891743

Normalized, Modified End-Use Loads (MMBtu/yr)

| | 2006 IECC 50% Target | As Designed |
|---------|-------------------------|-------------|
| Heating | 67.1 | 49.3 |
| Cooling | 8.6 | 8.8 |
| Total | 75.7 | 58.1 |

Envelope Loads (MMBtu/yr)

| | 2006 IECC 90% Target | As Designed |
|---------|-------------------------|-------------|
| Heating | 120.7 | 73.5 |
| Cooling | 15.4 | 9.1 |
| Total | 136.2 | 82.6 |

Building Features

| | | | |
|-------------------|--|---------------|---------------------------------------|
| Ceiling Flat | NA | Exposed Floor | R-45.0 |
| Sealed Attic | R-35.0 | Slab | R-35.0 |
| Vaulted Ceiling | NA | Duct | Uninsulated |
| Above Grade Walls | R-24.0 | Window | U-Value: 0.300, SHGC: 0.140 |
| Foundation Walls | R-25.0 | Cooling | Air conditioner, Electric, 13.0 SEER. |
| Heating | Fuel-fired hydronic distribution, Natural gas, 95.0 % EFF. | | |

This home **MEETS** the requirements for the residential energy efficiency tax credits under Section 1332, Credit for Construction of New Energy Efficient Homes, of the Energy Policy Act of 2005 extended to December 31, 2016.

As demonstrated above, this dwelling unit has a projected level of annual heating and cooling energy consumption that is at least 50% below the annual level of heating cooling energy consumption of a 2006 IECC reference dwelling in the same climate zone, and the building envelope components improvements alone account for at least 10% of those savings. The projected heating and cooling energy savings above have been calculated in the manner prescribed in Appendix A of the RESNET Publication No. 13-001. Field inspections of the dwelling unit performed by the undersigned eligible certifier during and after the completion of construction have confirmed that all features of the home affecting such heating and cooling energy consumption comply with the design specifications provided to the undersigned certifier.

Under penalties of perjury, I declare that I have examined this certification, including accompanying documents, and to the best of my knowledge and belief, the facts presented in support of this certification are true, correct, and complete.

| | | | |
|---------|---|-----------|-----------|
| Name | Jim Johnson | Date | 5-15-2016 |
| Company | Johnson Environmental- Intergo | | |
| Address | 625 S Minn., Suite 101, Sioux Falls, SD 57104 | Signature | |

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2012 Iowa Building UA Compliance

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Elements**Insulation Levels**

| | 2012 Iowa Energy Code | As Designed |
|---|--------------------------|-------------|
| Shell UA Check | | |
| Ceilings: | 82.2 | 105.9 |
| Above-Grade Walls: | 175.2 | 112.9 |
| Windows and Doors: | 208.5 | 185.6 |
| Floors Over Ambient: | 0.5 | 0.6 |
| Basement Walls: | 79.2 | 73.6 |
| Overall UA (Design must be equal or lower): | 545.7 | 478.5 |

Mandatory Requirements

The following Mandatory Requirements Fail:

Duct Insulation R-Value Check (Design must be equal or higher - 403.2.1)

| | | |
|----------------|-----|-----|
| Attic, Supply: | 8.0 | 0.0 |
|----------------|-----|-----|

| | | |
|----------------|-----|-----|
| Attic, Return: | 6.0 | 0.0 |
|----------------|-----|-----|

Mandatory Requirements Check Box (IECC 12)

This home DOES NOT MEET the overall thermal performance requirements and verifications of the 2012 Iowa Energy Code based on a climate zone of 6A. (Section 402, Iowa Energy Code, 2012 edition.)

Name | Jim Johnson

Organization | Johnson Environmental- Intergo

Signature |

Date | 13 July 2016