



Basic Home Energy & Weatherization Audit

Home General Information

Floor Space: 1777 sq ft **Volume:** 15,728 cu ft **Stories:** 1 **Built:** 1992

Homeowner:
StanSmith

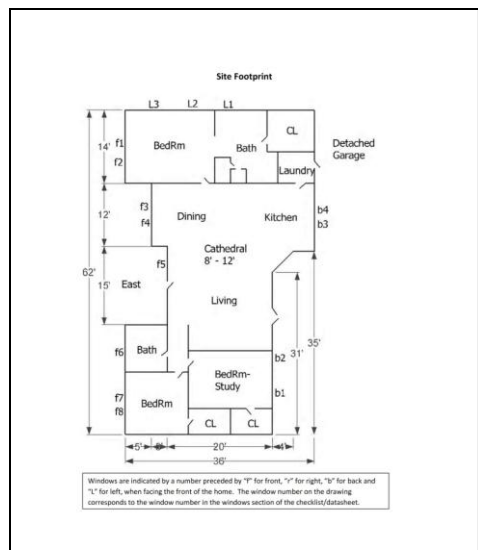
Address:
53 Crossacre Street
Starr, SC 29684

Audit Number: 1XXXStanSmith

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This report was prepared by MAX Building Performance.
 We are home energy auditors for residential and light commercial.
 For more information or questions please call: Spartanburg, Ray Griffin,
 864-706-9254; Greenville, Mark Holden, 864-678-0730.



Audit Findings & Recommendations

Air leakage to or from conditioned space

Blower door reading: 1451 CFM₅₀. This converts, for this size home, to natural *air changes per hour* (ACH_{natural}) of 0.26. To give meaning to this number, see the chart below to see where your house falls relative to other homes. To see how much total leakage area this CFM number represents, see the chart at the right.

		CFM₅₀	<u>Leakage</u> Area SqIn	<u>Leakage</u> Area SqFt
High Performance	0.24 ACH _{natural}			
Energy Efficient	0.39 ACH _{natural}	1451	194	1.34
Standard New	0.68 ACH _{natural}			
Standard Existing	0.97 ACH _{natural}			
Standard Older	1.95 ACH _{natural}			

The main issues for air infiltration:

- 1) The home at 1451 CFM₅₀ is below the Minimum Ventilation Requirement (MVR) of 1973 CFM₅₀ and additional ventilation must be added or precautions taken to add additional ventilation. In order to get from the available ventilation of 1451 (infiltration rate at -50 pascals) to the ventilation required for your size home (1973 CFM₅₀), additional mechanical ventilation can be added or simply open a window or windows to a total opening of 70 square inches.

See http://www.eere.energy.gov/buildings/building_america/pdfs/db/34957.pdf for a good explanation.

Recommendations:

- 1) *Additional ventilation must be added or actions taken (see above) as needed to accommodate MVR, Especially when the propane gas fireplace is in use, guests are in the home for an extended period of time, or an accumulation of moisture, such as condensation on windows, is evident.*

Duct leakage

Pressure Pan Readings In PA:

1	Bk Rt Bed	0.4
2	Bk Rt Bed Closet	6.3
3	Frnt Rt Bed	0.8
4	Frnt Rt Closet	0.6
5	Hall Return	1.5
6	Frnt Bath	0.5
7	Frnt Left Bath	0.7
8	Frnt Left Bath Cl	0.8
9	Front Left Bed	0.5
10	Living 1	0.5
11	Living 2	0.5
12	Kitchen	1.1
13	Laundry	0.7
14	Dining	0.5

Pressure pan readings are generated by having the blower door running to depressurize the house. This also depressurizes the duct system, and any cracks or holes in the system cause the air to be sucked into the ducts and into the house. The pressure pan reading is a pressure reading. **General practice is to consider that any reading over 1 warrants the ducts to be checked for leaks and sealed.**

Recommendations:

- 1) Duct system overall in pretty good shape. Recommend sealing the Back Right Bed Closet supply where the boot meets the ceiling. Also, sealing of the return vent will help keep the system cleaner.

Thermostats:

Recommendations:

Set thermostat to the energy star recommended settings below:

Setting	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)
Wake	≤70°F	≥78°F
Day	setback at least 8°F	setup at least 7°F
Evening	≤70°F	≥78°F
Sleep	setback at least 8°F	setup at least 4°F

Heating and Cooling:

Indoor unit manufactured in 2007.

Quality Installation Delivers 100% Cooling; Problem Installations Don't

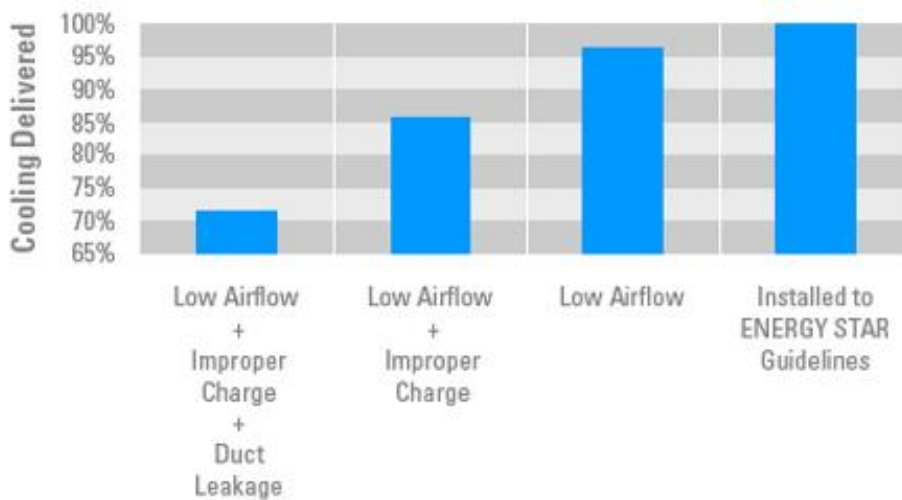


Chart by Energy Star

Recommendations:

- 1) Have units checked and serviced a minimum of once a year.
- 2) Change filters every 3 months at a minimum. Check monthly.
- 3) Seal return to help keep system clean.

Refrigerator:

An energy star qualified refrigerator would save only \$25 per year.

Recommendations:

None.

Clothes Dryer:

Vent hose is plastic flex.

Recommendations:

Change to metal flex for safety.

Insulation attic:

Insulation consists of an average of 7 inches of loose cellulose insulation with an estimated R-value of roughly R-23.

Recommendations:

Bringing the attic insulation level up to R-40 would be cost effective. See SIRs (savings and investment ratios) below.

Insulation floor:

Home on slab.

Recommendations:

None.

Insulation walls:

Walls are insulated.

Recommendations:

None.

Water heater:

See charts below.

Recommendations:

See comments below chart.

Lighting:

See charts below.

Recommendations:

Replace incandescent lighting with energy efficient lights.

Audit Pictures

1. Front of home.



2. Right side of home.



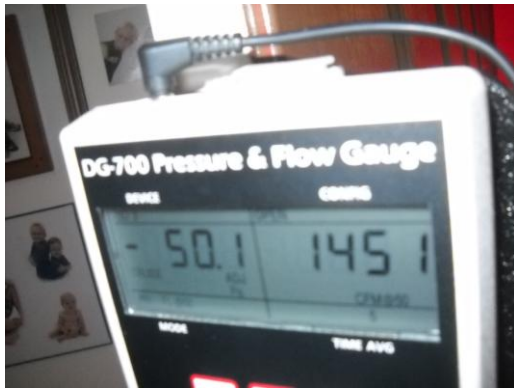
3. Back of home.



4. Left side of home.



5. Blower door number in CFM₅₀.



6. Dryer vent is plastic flex.



Audit Pictures

7. Insulation in attic is blown cellulose, average 7 inches.



8. Insulation on wall of cathedral ceiling out of position.



9. Return not sealed.



10. Air infiltration from attic at recessed lighting.

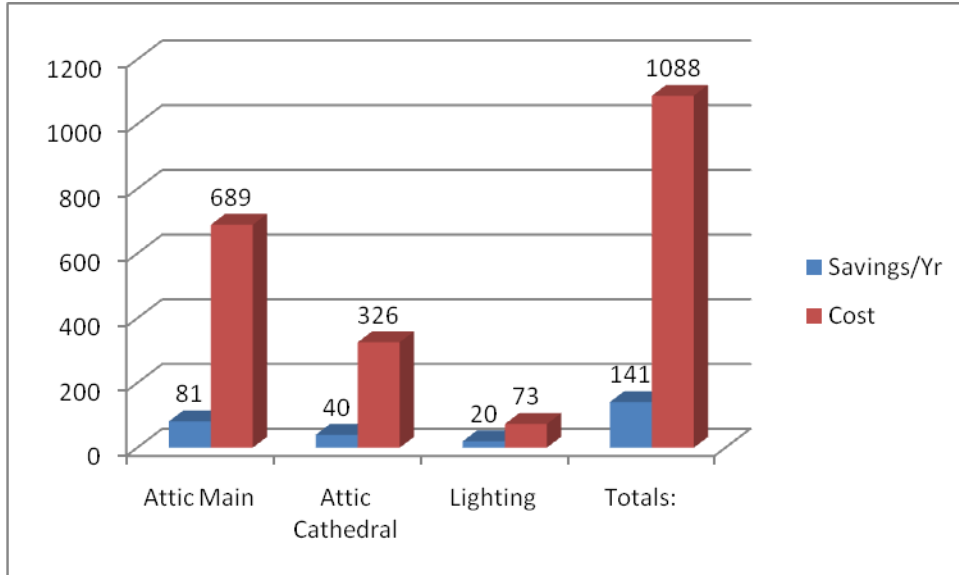


11. This supply had a pressure pan reading of over 6 pascals. All supplies need sealing at the ceiling.

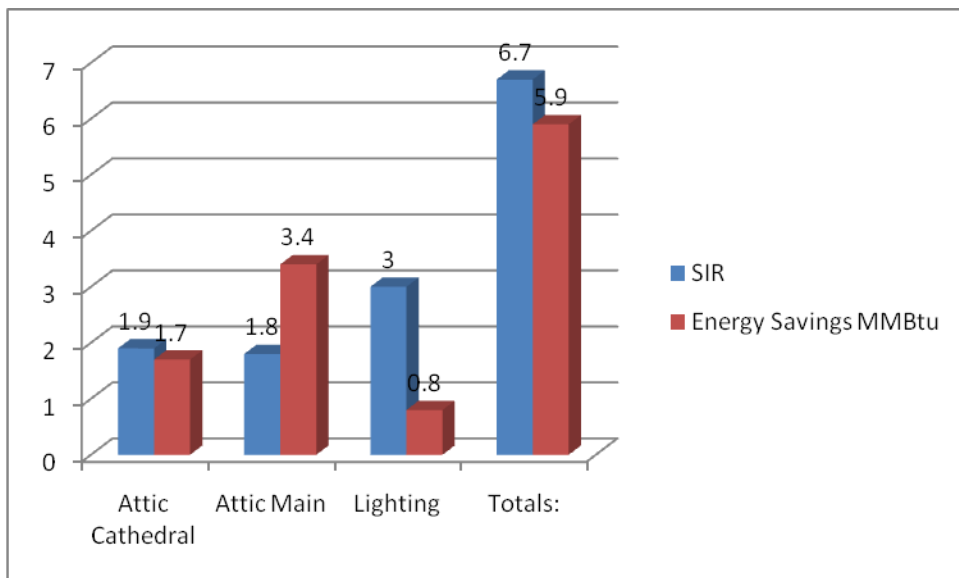


Recommended Measures

Note: Below figures are based on estimates. Quotes should be obtained before purchase.



Savings to Investment Ratio & Energy Savings in MMBtu

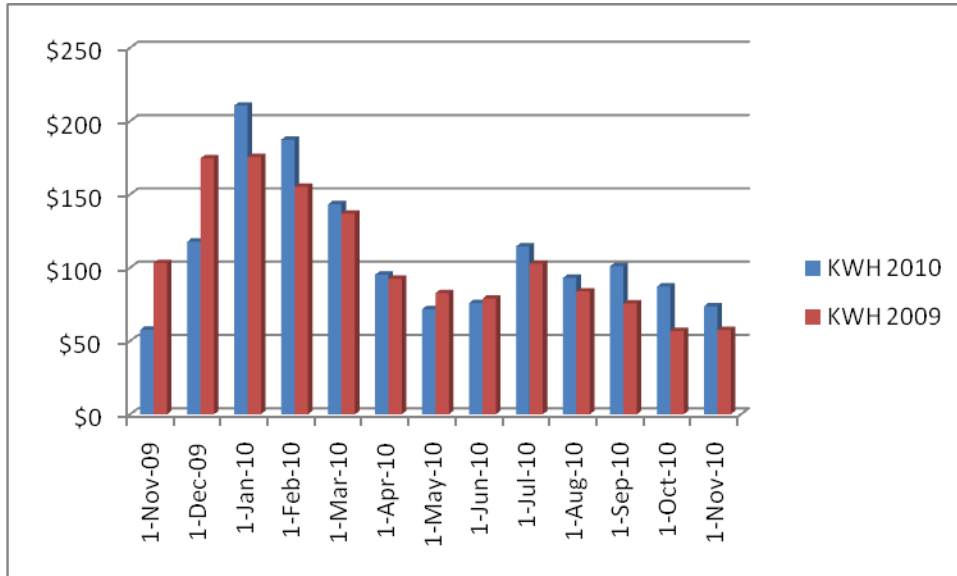


Note: SIR = Lifetime Savings (of the product) / Investment

Note: Estimate 200 Pounds of CO2 Per Million Btu used.

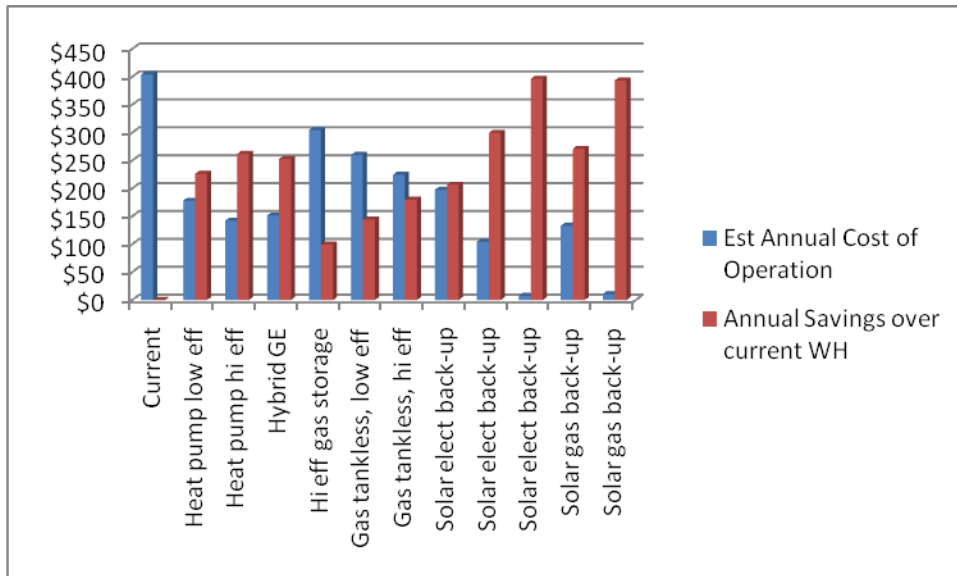
Electricity Usage Past Two Years

(Baseline load is the energy usage without heating and cooling. Below the baseline is best represented by the months May and June, or about \$75 to \$80)



Water Heater Annual Cost of Operation For Yours and Different Systems

(WH represents a little less than 1/2 of your baseline, or about \$33 avg a month)

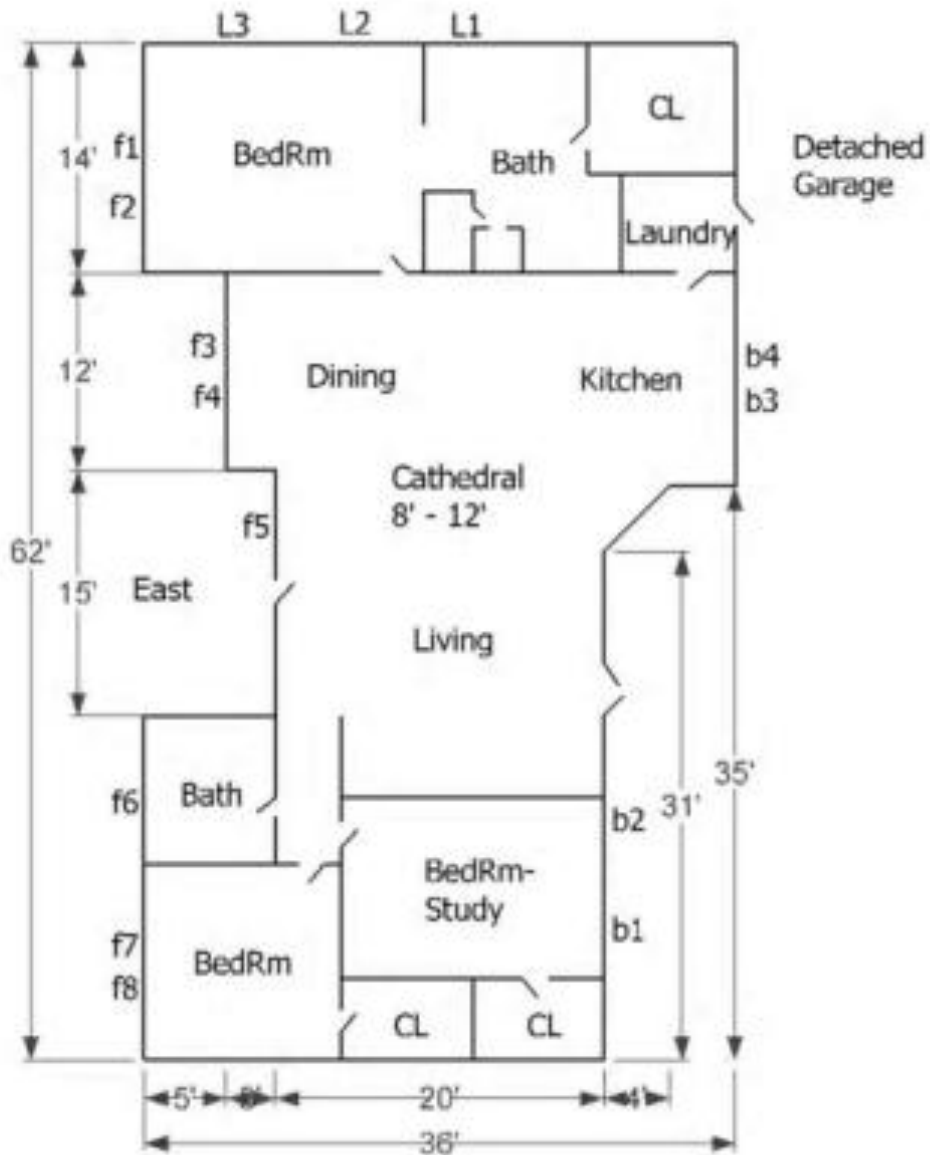


Consideration has to be given to purchase cost and installation costs when evaluating the benefits of using any of the systems above. The hybrid GE heat pump is a good savings, and the cost is a little under \$1500, and installation in the garage where your current unit is may be worth considering and getting quotes.

You should be able to use IRS form 5695 to claim up to 30% off the purchase and installation cost.

http://www.energystar.gov/index.cfm?c=tax_credits.tx_index

Site Footprint



Windows are indicated by a number preceded by "F" for front, "r" for right, "b" for back and "L" for left, when facing the front of the home. The window number on the drawing corresponds to the window number in the windows section of the checklist/datasheet.

Services

MAX BUILDING PERFORMANCE, LLC

Blower Door
Testing

Duct Infiltration
Testing

Computer
Modeling of Home

**OUR HOME ENERGY AND ENVIRONMENTAL AUDITS TAKE A COMPREHENSIVE LOOK AT
YOUR HOME - FROM TOP TO BOTTOM**

MAX BP offers the Department of Energy (DOE) Home Energy Rating Service to qualify homes for Energy Star Certification.

We can also support home energy ratings for USGBC's LEED for Homes Program, EarthCraft House and the National Association of Homebuilders (NAHB) Green Building Program.

MAX BP is committed to improving the energy efficiency of existing homes. Our home energy audits give a complete overview of the energy expenditures of your home by looking at the major home components (wall, floor and ceiling insulation; windows; air leakage into and out of the home; duct leakage; appliances and others). We have trained with the Building Performance Institute (BPI) - a well-known organization for weatherization - to be able to analyze and offer weatherization solutions for existing homes.
