



Home Energy Analysis

Address 453 Elm Street, Monroe
 Owner

Builder Jeff Hallquist

Rater P Harding
 Date 2/11/2009
 Rating #
 File:

Conditioned Area (sf)	5,076
# Bedrooms	5
HERS Index	45
Rating Type	Confirmed
Energy Star	Pass

Energy Efficient Home Tax Credit Status: Pass			
MMBtu/year	Target Load	Design Load	Difference
Heating	44.1	27.0	(17.1)
Cooling	16.6	9.4	(7.2)
Total	60.7	36.4	(24.3)

Annual Energy Cost Projections						
	Load (MMBthu/year)	Consumption (MMBthu/year)	Annual Cost (\$)	Annual Savings (\$)	Reference Home Cost (\$)	Annual Savings (%)
Heating	43.6	41.0	1,636	3,147	4,783	65.8%
Cooling	13.6	3.0	198	518	716	72.3%
Hot Water	15.6	16.9	572	256	828	30.9%
Lights/Appliances	45.5	45.5	2,791	285	3,076	9.3%
Photovoltaics					-	0.0%
Total	118.3	106.4	5,197	4,206	9,403	44.7%

Actual energy costs and savings may differ considerably from above projections depending on number, lifestyle and habits of occupants. Percentage reductions provide a reasonable estimate of savings for a given household.

Mortgage Interest Rate	5.0%	Annual Energy Cost Inflation	5.0%
Marginal Tax Rate	30.0%	Capitalized Annual Savings	\$ 93,501

Capitalized Annual Savings is NPV of Annual Savings including inflation for 20 years discounted at after-tax mortgage rate

Utility Rates	Electric	0.18 \$/kwh	N Gas	1.35 \$/100cf	Propane	2.50 \$/gal	Oil	2.25 \$/gal
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Annual Load by Building Component (MMBthu/year)			
Heating		Cooling	
Component	Load	Component	Load
Mech ventilation	15.5	Internal gains	22.5
Foundation walls	15.0	Windows	3.8
AG walls	12.3		
Ceilings	8.8		
Windows	8.4	Foundation walls	(2.0)
Infiltration	3.3	Mech ventilation	(2.0)
All other	5.2	Nat ventilation	(7.6)
Internal Gains	(24.9)	All other	(1.1)
Total	43.6	Total	13.6

Equipment Sizing Summary	
Heating	MBtuh/hr
Peak Load	31.2
Spec Cap	74.3
Load/Cap	42.0%
Cooling	MBtuh/hr
Peak Load	23.8
Spec Cap	36.0
Load/Cap	66.1%

Infiltration Losses		Duct Losses		Ventilation	
Heating	Cooling	Duct Leakage to Outside		Required* (CFM)	96
ACH Nat	0.10	0.08	CFM@25 Pascals	Specified (CFM)	500
CFM@50 Pascals	1,195	1,195	CFM25/100sf	Specified (hrs)	5.0
CFM50/SF	0.24	0.24	ELA	Sensible Recovery	0%
ELA	65.6	65.6		Total Recovery	0%
ELA/100sf shell	0.66	0.66			

*ASHRAE 62.2 -2003 defines minimum 24 hr continuous ventilation rate

Building Specifications					
Thermal Envelope (dominant type if more than one)				Conditioned	
Type	U	R	Basement Type	Mechanicals	
Ceiling - Flat	R42 LDF + RFB	0.030	33.3	Window/Wall Ratio	0.13
Ceiling - Vaulted		-		Heating	DFHP 9.5 HSPF/95 AFUE
AG Walls	R29 HDF+RFB + RFB	0.038	26.3	Cooling	ASHP 17 seer
Foundation Walls	R 10	-		DHW	0.92 instant propane
Frame Floors	R 30	0.034	29.4	PV	
Slab Floors	R10	-			
Windows	Double/LowE/Argon	0.330	3.0		

Notes