Home Energy Analysis

Home Energy Technologies

Address 939 Candlewood Lake Dr, New Milford
Owner Wayne Liscinsky Builder Jeff Hallquist

Rater P Harding
Date 7/8/2009
Rating #
File:

Conditioned Area (sf)	2,833
# Bedrooms	3
HERS Index	**53**
Rating Type	**Confirmed**
Energy Star	**Pass**

Energy Efficient Home Tax Credit Status: Pass

MMBtu/year	Target Load	Design Load	Difference
Heating	34.6	31.7	(2.9)
Cooling	11.4	9.2	(2.2)
Total	46.0	40.9	(5.1)

Annual Energy Cost Projections

	Load (MMBthu/year)	Consumption (MMBthu/year)	Annual Cost ($)	Annual Savings ($)	Reference Home Cost ($)	Annual Savings (%)
Heating	49.3	40.9	1,431	1,621	3,052	53.1%
Cooling	10.3	2.5	132	234	366	63.9%
Hot Water	11.5	12.1	398	246	644	38.2%
Lights/Appliances	28.9	28.9	1,523	56	1,579	3.5%
Photovoltaics					-	0.0%
Total	**100.0**	**84.4**	**3,484**	**2,157**	**5,641**	**38.2%**

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	**$ 47,951**

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

Annual Load by Building Component (MMBthu/year)

Heating Component	Load	Cooling Component	Load
Windows	13.5	Internal gains	13.6
AG walls	12.5	Windows	5.7
Ceilings	8.7		
Infiltration	8.2		
Foundation walls	7.5	Foundation walls	(1.0)
Slab floors	6.7	Slab floors	(1.3)
All other	7.2	Nat ventilation	(5.2)
Internal Gains	(15.0)	All other	(1.5)
Total	49.3	Total	10.3

Equipment Sizing Summary

Heating	MBtuh/hr
Peak Load	32.5
Spec Cap	56.0
Load/Cap	58.0%
Cooling	MBtuh/hr
Peak Load	18.0
Spec Cap	46.5
Load/Cap	38.7%

Infiltration Losses

	Heating	Cooling
ACH Nat	0.11	0.08
CFM@50 Pascals	875	875
CFM50/SF	0.31	0.31
ELA	48.0	48.0
ELA/100sf shell	0.60	0.60

Duct Losses

Duct Leakage to Outside	
CFM@25 Pascals	-
CFM25/100sf	-
ELA	-

Ventilation

Required* (CFM)	58
Specified (CFM)	80
Specified (hrs)	17.0
Sensible Recovery	72%
Total Recovery	52%

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

Building Specifications

Thermal Envelope (dominant type if more than one)

	Type	U	R
Ceiling - Flat			-
Ceiling - Vaulted	R42 3.5"HDF + R19	0.029	34.5
AG Walls	R31 2"HDF+R13+R5RFB	0.039	25.6
Foundation Walls	R10 ext		-
Frame Floors	R51 2"HDF+R38	0.023	43.5
Slab Floors	R10 under		-
Windows	Double/LowE/Argon	0.330	3.0

Basement Type	conditioned
Window/Wall Ratio	0.13

Mechanicals

Heating	DFHP 48 kBtuh 9.0 AFUE/56kBtuh 94 AFUE
Cooling	ASHP 46.5 kBtuh, 15.5 SEER
DHW	0.95 EF instant propane
PV	

Notes