



CERTIFICATION

“Assuring a Healthy Home”

Southern Homes
Ormond 4
Covington, Louisiana 70433
Facing East (Worst Case)

Guaranteed Monthly HVAC Energy Consumption Using:

- 1. Matched HVAC Equipment, Rated Using A. R. I.'s (Aircondition & Refrigeration Institute) Unitary Directory
2. 13 SEER Electric Air Conditioning with 90% AFUE Gas Furnace
3. R-6 Ductwork Located in Conditioned Space
4. 4" EnergyWise Sprayed Foam Roof Deck Insulation
5. 3.5" EnergyWise Sprayed Foam Exterior Walls
6. 3.5" EnergyWise Sprayed Foam Common Walls (Pink)
8. Slab Floor (No insulation)
9. Double-Pane, Low-E, Aluminum Windows
10. Metal Poly-Core French and Solid-Core Doors

Total Conditioned Floor Area: 1,724 square feet

Conventional Built Construction:..... \$ 87.00 average per month

EnergyWise Construction: "Guaranteed":..... \$ 37.00 average per month

Net Monthly Savings: \$ 50.00 average per month

EnergyWise Energy Consumption Projection

Customer Information

Name: Southern Homes
 Street: Ormond 4
 City: Covington
 ST/ZIP: Louisiana 70433
 Phone: (985) 326-0198
 FAX: (985) 326-0198
 Attn: Mr. David Stanton
 Note: Facing East (Worst Case)

HVAC Design Specifications

Winter Indoor Temp: 70°F
 Winter Outdoor Temp: 33°F
 Summer Indoor Temp: 75°F
 Summer Outdoor Temp: : 95°F
 Estimated Cooling Tonnage: **2.5**

Projected Annual Energy Consumption for Heating & Cooling When Built to EnergyWise Specifications with a Gas Furnace/AC Unit

HVAC Equipment	AC SEER	Avg. Total HVAC \$/mo	Estimated Heat kwh/yr	Estimated Cool kwh/yr	Estimated Fan kwh/r
AFUE 90 Gas Furnace	13.00	\$37	194	3,867	456

HVAC Equipment By: Janitrol, Goodman Man. Corp.

Projected Annual Energy Consumption for Heating & Cooling When Built to Conventional Specifications with Air-to-Air Equipment

Heating Equipment	AC SEER	Avg. Total HVAC \$/mo	Estimated Heat kwh/yr	Estimated Cool kwh/yr	Estimated Fan kwh/r
AFUE 90 Gas Furnace	13.00	\$87	626ccf	7,548	456
Air Heat Pump	13.00	\$79	7,212	7,548	included
Resistance Furnace	13.00	\$130	16,909	7,548	497

Energy costs calculated at:

\$0.064	per kwh electricity – winter
\$0.064	per kwh electricity – summer
\$0.850	per 100 cubic feet natural gas

These projections are subject to the efficiency and performance of the actual HVAC equipment installed.

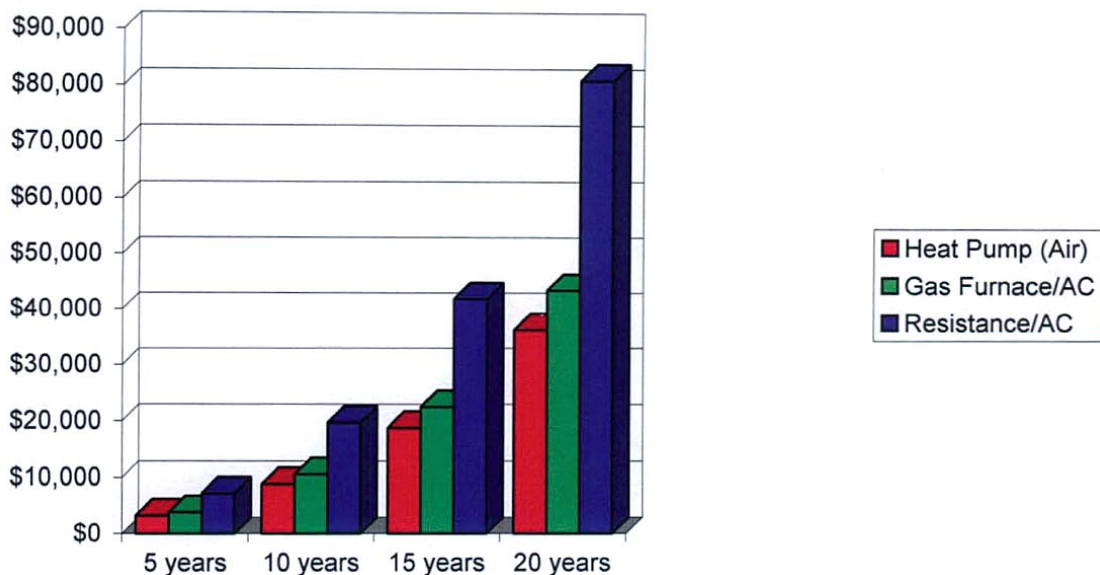
EnergyWise Estimate of Fuel Savings

EnergyWise Structure with a Gas Furnace/AC Unit

To a Conventional Structure with...

		Heat Pump (Air)	Gas Furnace/AC	Resistance/AC
<i>Estimated Savings at 6%</i> <i>Annual Fuel Cost Increase</i>	5 years	\$2,834	\$3,394	\$6,332
	10 years	\$6,626	\$7,936	\$14,806
	15 years	\$11,701	\$14,014	\$26,147
	20 years	\$18,493	\$22,148	\$41,322
<i>Estimated Savings at 12%</i> <i>Annual Fuel Cost Increase</i>	5 years	\$3,194	\$3,825	\$7,136
	10 years	\$8,822	\$10,566	\$19,713
	15 years	\$18,741	\$22,445	\$41,878
	20 years	\$36,223	\$43,381	\$80,939

Estimated Savings of an EnergyWise Structure with a Gas Furnace/AC Unit Assuming a 12% Annual Fuel Cost Increase



Assumptions for Estimating Fuel Savings

1. Energy consumption is estimated using BIN Method calculations.
2. Weather data used is worst case winter and summer.
3. During the summer the interior temperature is maintained at or above 76° F.
4. During the winter the interior temperature is maintained at or below 72° F.
5. The EnergyWise gas furnace has a 90 AFUE rating. The air conditioner has a SEER of 13.00.
6. The comparison heat pump (air) has a SEER of 13.00, 47° COP of 2.90, and a 17° COP of 2.00.
7. The comparison gas furnace has a 90 AFUE rating. The air conditioner has a SEER of 13.00.
8. Annual fuel savings are estimated based on the differences in performance estimates between this structure built according to EnergyWise standards versus less efficient conventional standards.

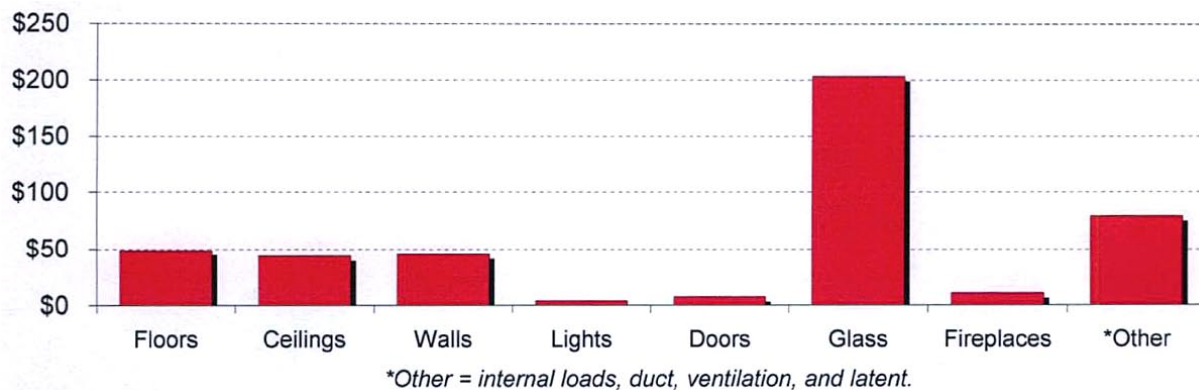
EnergyWise Performance Estimate & Cost Analysis by Component

	<i>Heating</i>	<i>\$/year</i>	<i>kwh/yr</i>	<i>Cooling</i>	<i>\$/year</i>	<i>kwh/yr</i>
Structural Components						
Floors - slab	25.1%	\$49	49	0.0%	\$0	0
Floors - crawl	0.0%	\$0	0	0.0%	\$0	0
Ceilings	10.7%	\$21	21	9.2%	\$23	357
Walls	15.2%	\$30	30	6.3%	\$16	245
Recessed lights	1.3%	\$2	2	0.7%	\$2	26
Skylights	0.0%	\$0	0	0.0%	\$0	0
Doors	2.6%	\$5	5	1.0%	\$2	38
Glass N	5.9%	\$11	11	3.1%	\$8	121
Glass NE	0.0%	\$0	0	0.0%	\$0	0
Glass E	10.9%	\$21	21	10.9%	\$27	422
Glass SE	0.0%	\$0	0	0.0%	\$0	0
Glass S	2.8%	\$5	5	2.5%	\$6	97
Glass SW	0.0%	\$0	0	0.0%	\$0	0
Glass W	20.2%	\$39	39	34.4%	\$85	1,328
Glass NW	0.0%	\$0	0	0.0%	\$0	0
Fireplaces	5.4%	\$11	11	0.0%	\$0	0
Internal Load	0.0%	\$0	0	17.6%	\$43	679
Ventilation Load	0.0%	\$0	0	0.0%	\$0	0
Duct Loss/Gain	0.0%	\$0	0	0.0%	\$0	0
Latent	0.0%	\$0	0	14.3%	\$35	553
	100%	\$194	194	100%	\$247	3,867

Estimated Annual Fuel Cost:

\$442

Annual HVAC Fuel Cost in an EnergyWise Structure



The values calculated are approximate values only and are based on using a 13.00 SEER air conditioner and a oil furnace installed in an EnergyWise structure. The actual energy consumed will be less than projected. Solar correction heat gain for a multi-zone structure is distributed among affected components.

Note: All values are rounded to the nearest unit. So, totals will often be slightly different than column sums

EnergyWise Heating & Cooling Equipment Load Estimate

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HVAC Design Specifications

Winter Design Difference: 37°F db
 Summer Design Difference: 20°F db
 Latent Grains at 50% RH: 58 gr
 Total Conditioned Floor Area: 1,724 sq ft
 Exposed Conditioned Volume: 15,688 cu ft
 Windows, Doors, Skylights & Recessed Lights: 286 sq ft

Equipment Load

	Area	Heat Pump Heating	Furnace Heating	HP/AC Cooling
Structural Components				
Floors - slab	165 lin ft	4,933 Btuh	4,933 Btuh	0 Btuh
Floors - crawl	0 sq ft	0 Btuh	0 Btuh	0 Btuh
Ceilings	1,724 sq ft	2,105 Btuh	2,105 Btuh	2,526 Btuh
Walls	1,745 sq ft	2,992 Btuh	2,992 Btuh	1,733 Btuh
Recessed lights	11 sq ft	248 Btuh	248 Btuh	183 Btuh
Skylights	0 sq ft	0 Btuh	0 Btuh	0 Btuh
Doors	18 sq ft	514 Btuh	514 Btuh	271 Btuh
Glass N	34 sq ft	1,164 Btuh	1,164 Btuh	855 Btuh
Glass NE	0 sq ft	0 Btuh	0 Btuh	0 Btuh
Glass E	66 sq ft	2,146 Btuh	2,146 Btuh	2,981 Btuh
Glass SE	0 sq ft	0 Btuh	0 Btuh	0 Btuh
Glass S	19 sq ft	546 Btuh	546 Btuh	685 Btuh
Glass SW	0 sq ft	0 Btuh	0 Btuh	0 Btuh
Glass W	138 sq ft	3,969 Btuh	3,969 Btuh	9,388 Btuh
Glass NW	0 sq ft	0 Btuh	0 Btuh	0 Btuh
Fireplaces		1,066 Btuh	1,066 Btuh	0 Btuh
Internal Load		0 Btuh	0 Btuh	4,800 Btuh
Ventilation Load		0 Btuh	0 Btuh	0 Btuh
Duct Loss/Gain		0 Btuh	0 Btuh	0 Btuh
Multiple-Zone Solar Correction		0 Btuh	0 Btuh	0 Btuh
Sensible Subtotal		19,684 Btuh	19,684 Btuh	23,422 Btuh
Rating & Swing Multipliers		100%	100%	100%
Equipment Sizing Load - Sensible		19,684 Btuh	19,684 Btuh	23,422 Btuh
Latent Internal Loads				1,840 Btuh
Latent Ventilation Load				0 Btuh
Latent Infiltration Load				2,067 Btuh
Equipment Sizing Load - Latent				3,907 Btuh
Equipment Sizing Load		19,684 Btuh	19,684 Btuh	27,329 Btuh

Heating and cooling loads are calculated in accordance with ACCA Manual J, 7th Edition. Calculations include consideration for conduction, convection, radiation, and infiltration of the structure's components.

Note: All values are rounded to the nearest unit. So, totals will often be slightly different than column sums.

EnergyWise Duct Design Criteria

Duct Design Specifications

Available External Static Pressure: 0.50	Supply Register Pressure Losses: 0.03
Total Pressure Losses: 0.06	Return Grill Pressure Losses: 0.03
Duct System Design Static: 0.44	Cooling Coil Pressure Loss: 0.00
Supply System Design Static: 0.26	Filter Pressure Loss: 0.00
Return System Design Static: 0.18	Other Pressure Losses: 0.00
Return Design: Multiple Returns, Moderate Distance	

Oil Furnace and Air Conditioning Specifications

Zone	Estimated Cooling Tonnage	Cooling Design CFM	Cooling Load BTUh	Sensible Load BTUh	Design Drop over Coils in °F	Heat Strip Output BTUh	Total Heat Loss BTUh	Heating Blower CFM	Temp Rise Heat Strips °F
1	2.5	911	27,324	23,418	17	19,684	19,684	911	20

Duct CFM Specifications by Room (Design CFM is for summer comfort)

Room	Suggested No. Ducts	Design CFM	Comfort in Winter	Cooling CFM	Heating CFM	Cooling Load	Heating Load
Zone 1: Dining Room	2	224		224	178	6,707	3,852
Zone I: Kitchen/Pantry	1	80	warm	80	41	2,395	879
Zone 1: Bedroom 2/Closet	1	34		34	55	1,009	1,193
Zone 1: Bath 2	0	12		12	24	370	512
Zone 1: Bedroom 3/Closet	1	73		73	92	2,191	1,991
Zone 1: Bedroom 4/Closet	1	50	cool	50	76	1,493	1,635
Zone I: Foyer	1	42	cool	42	98	1,265	2,116
Zone I: Family Room	2	205	warm	205	131	6,141	2,839
Zone 1: Master Bedroom	1	112		112	91	3,351	1,977
Zone I: Master Bath/Closet	1	45	cool	45	117	1,350	2,523
Zone 1: Utility	1	35		35	8	1,051	167

Zones are designed for balanced cooling. Rooms with substantial differences in Cooling and Heating CFM may be uncomfortable during the winter. Under such circumstances, consider installing a zone dampering system to rebalance the loads. Rooms with 60 CFM or less should be combined with adjacent rooms that share circulation. Design CFM is calculated at 400 CFM per 12,000 BTUh of Cooling Load. The Design Temperature Drop over the Coils may require a proportional adjustment of the CFMs. Heating Blower CFM will need adjusting if the Temperature Rise is out of range.