

*Jones Residence
Energy Cost Analysis*

for

Mr. and Mrs. Joe Jones
1234 First Street
Warmnister, Pa 18974



Prepared By:

Jeffrey A. Smith
J.A. Smith Heating & Air Cond Inc
360 Patricia Drive
Warminster, Pa 18974
215-956-9400 x113
Thursday, July 31, 2008



Project Summary

General Project Information

Project Title:	Jones Residence	Company Name:	J.A. Smith Heating & Air Cond Inc
Designed By:	Jeffrey A Smith	Company Rep:	Jeffrey A. Smith
Project Date:	7/31/08	Company Address:	360 Patricia Drive
Client Name:	Mr. and Mrs. Joe Jones	Company City:	Warminster, Pa 18974
Client Address:	1234 First Street	Company Phone:	215-956-9400 x113
Client City:	Warmnister, Pa 18974	Company Fax:	215-672-5116
Client Phone:		Company E-Mail	jeff@jasmithheating.com
Client Fax:		Address:	
		Company Website:	www.jasmithheating.com

Design Data

Building Area:	2,400 sq.ft.	Cooling Load:	46,000 Btuh
People:	5	Heating Load:	95,776 Btuh
Occupancy:	12	Loads Adj. Factor:	0.77
		AC On Temp.:	50 °F
Actual City:	Philadelphia, Pennsylvania		
Weather Ref. City:	Philadelphia, Pennsylvania		
Summer Outdoor:	95 °F	Winter Outdoor:	0 °F
Summer Indoor:	75 °F	Winter Indoor:	72 °F
Cooling Hours:	960	Degree Days:	5,023

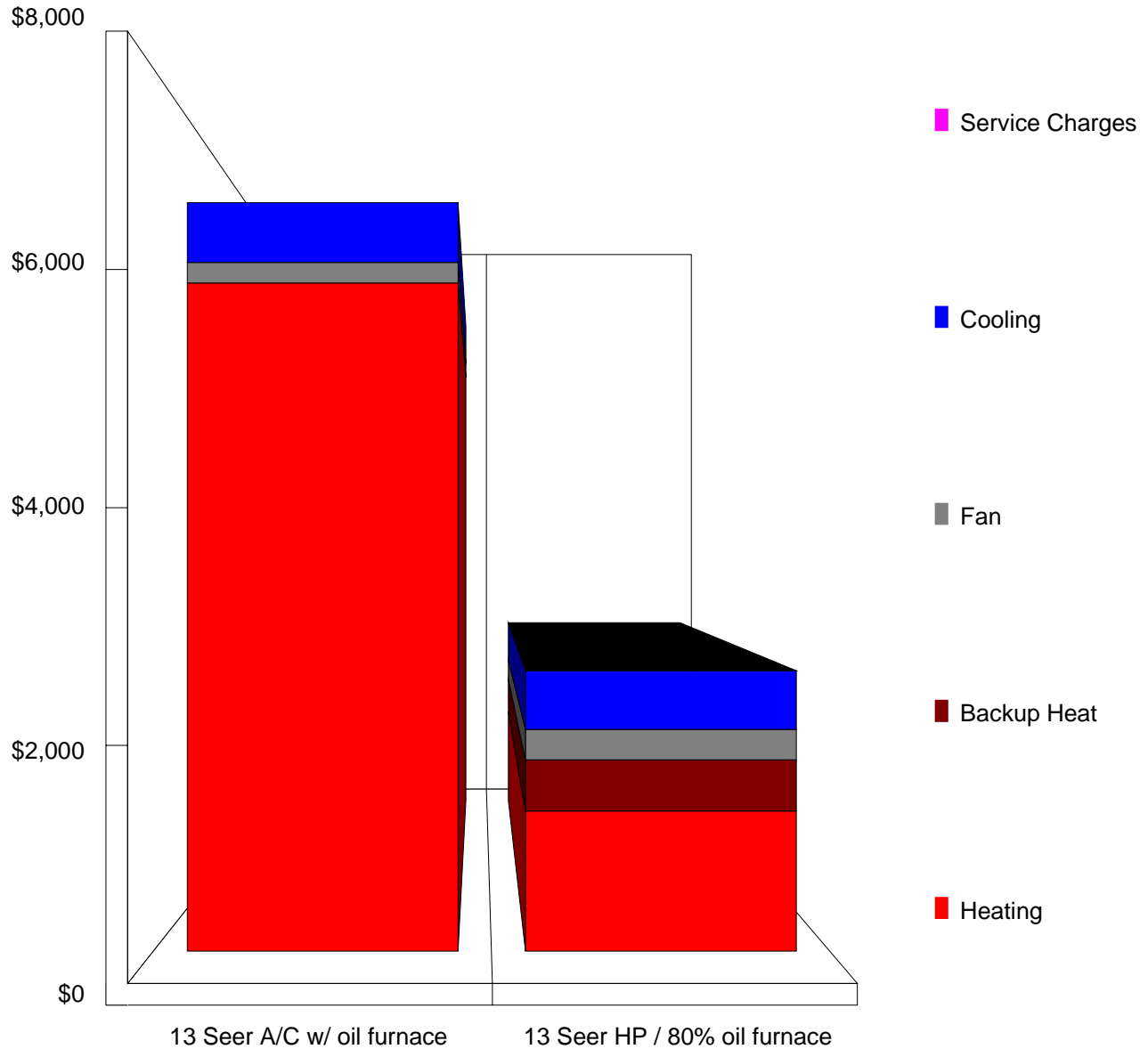
Annual Operating Cost Estimate

System Description	Fuel Rates Set	Total Heating Cost	Total Cooling Cost	Annual Service Charges	Total Oper. Cost	Average Monthly Cost
13 Seer A/C w/ oil furnace	1	\$6,236	\$544	\$0	\$6,779	\$565
13 Seer HP / 80% oil furnace	3	\$2,008	\$532	\$0	\$2,540	\$212



Project Summary Bar Chart

System Operating Cost Comparison





Comparison Report 4 - Sys. 14 vs. Sys. 16

13 Seer A/C w/ oil furnace

Cooling Type: Standard Air Conditioner
 Model Number:
 Efficiency: 13 SEER
 Capacity: 48,000 Btuh
 Cooling Cost: \$544
 Heating Type: Fuel Oil Furnace
 Model Number:
 Efficiency: 80 AFUE
 Capacity: 120,000 Btuh
 Heating Cost: \$6,236

13 Seer HP / 80% oil furnace

Cooling Type: Air Source Heat Pump
 Model Number: 13HPD-048-230/*+CB26UH-048*
 ARI Ref. No.: 703286
 Efficiency: 13 SEER
 Capacity: 50,500 Btuh
 Compressor Warranty: 10 Years
 Outside Coil Warranty: 5 Years
 Parts Warranty: 5 Years
 Labor Warranty: 1 Year
 Microprocessor Warranty:
 Cooling Cost: \$532
 Heating Type: Air Source Heat Pump
 Model Number: 13HPD-048-230/*+CB26UH-048*
 47° Efficiency: 3.42 COP
 17° Efficiency: 2.42 COP
 47° Capacity: 47,500 Btuh
 17° Capacity: 30,600 Btuh
 Heat Exchanger Warranty: 20 Years
 Parts Warranty: 5 Years
 Labor Warranty: 1 Year
 Heating Cost: \$2,008

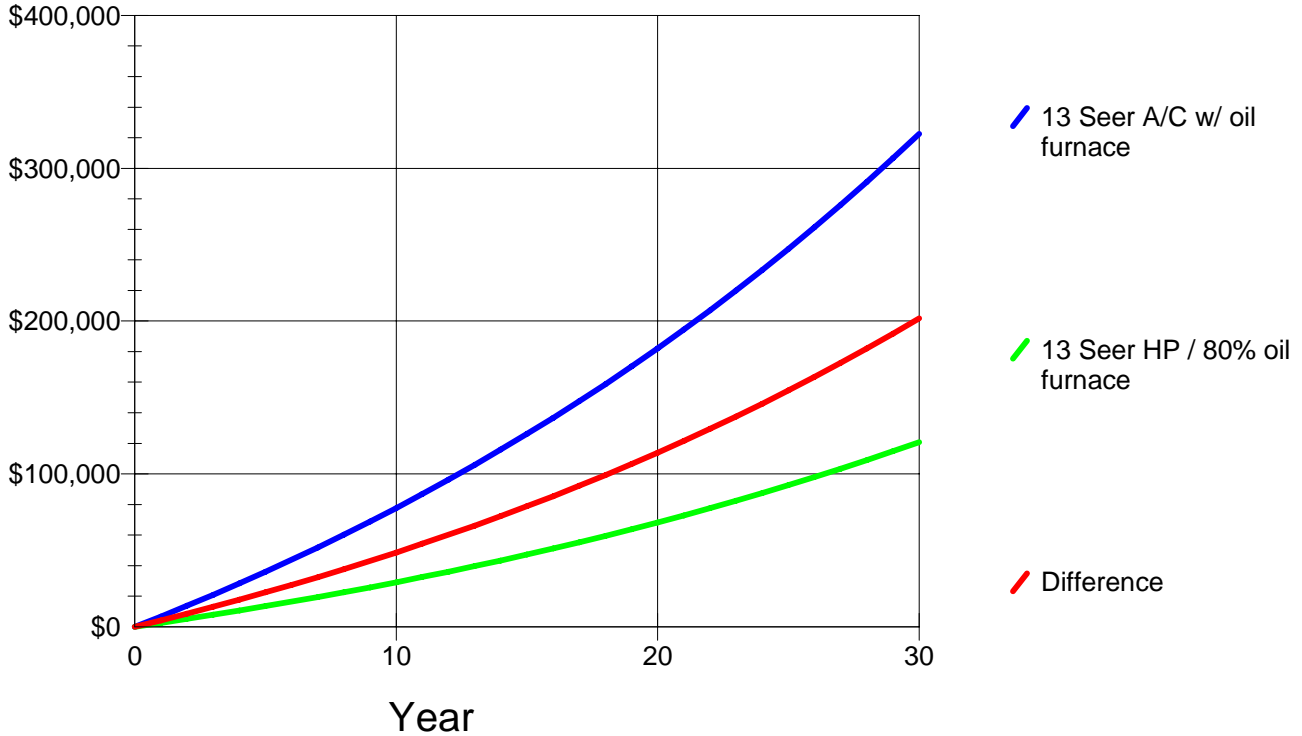
Projected Cumulative Energy Cost Comparison

Year	13 Seer A/C w/ oil furnace Annual Total Cost	13 Seer HP / 80% oil furnace Annual Total Cost	Annual Expected Savings	Cumulative Expected Savings
1	\$6,779	\$2,540	\$4,240	\$4,240
2	\$6,983	\$2,616	\$4,367	\$8,606
3	\$7,192	\$2,695	\$4,498	\$13,104
4	\$7,408	\$2,775	\$4,633	\$17,737
5	\$7,630	\$2,859	\$4,772	\$22,508
10	\$8,846	\$3,314	\$5,532	\$48,601
15	\$10,255	\$3,842	\$6,413	\$78,850
20	\$11,888	\$4,454	\$7,434	\$113,917
25	\$13,781	\$5,163	\$8,618	\$154,570
30	\$15,976	\$5,985	\$9,991	\$201,697

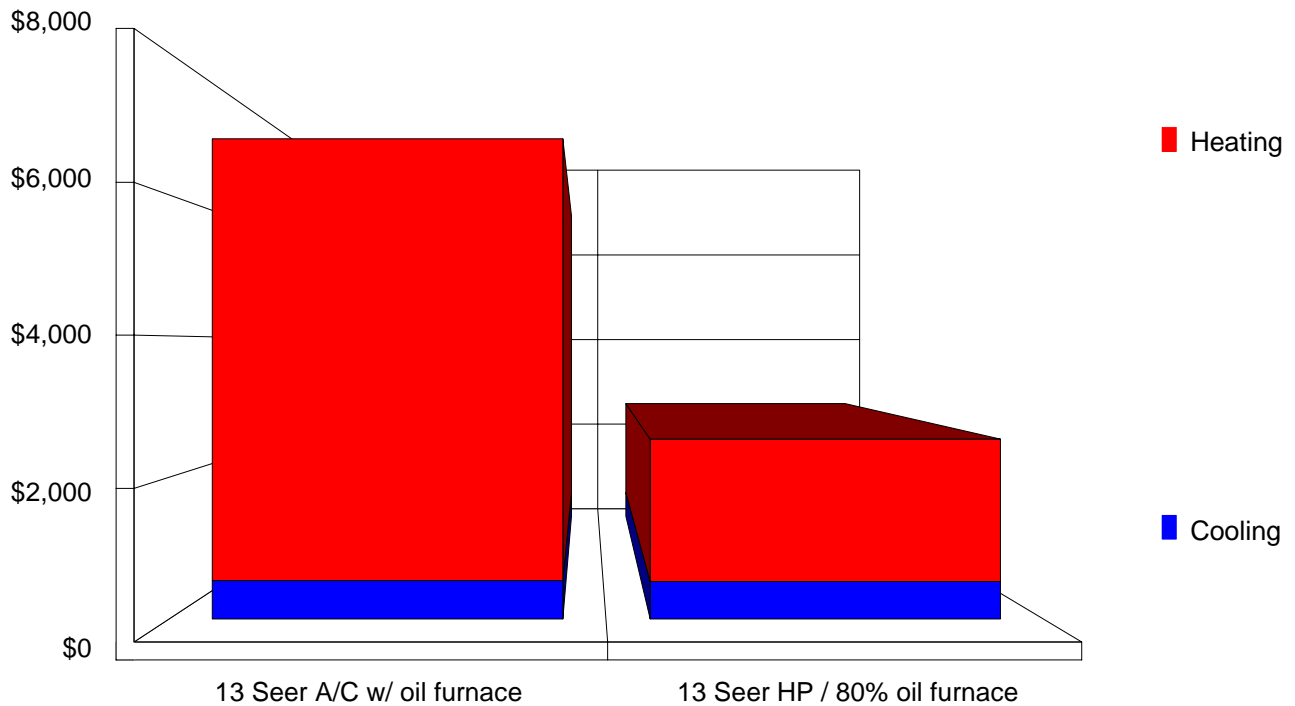


Comparison Graphs 4 - Sys. 14 vs. Sys. 16

System Cost Comparison



1st Year System Cost Comparison





Economic Analysis - Comparison Case 4 - Sys. 14 vs. Sys. 16

Item	14 - 13 Seer A/C w/ oil furnace	16 - 13 Seer HP / 80% oil furnace
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First Year Costs

Cooling	\$544	\$532
Heating	\$6,236	\$2,008

System Costs

System Cost	\$0.00	\$7,000.00
Net System Cost		\$7,000.00

Loan Analysis

Net Loan Amount		\$7,000.00
Annual Interest Rate		8.00%
Savings Over Loan Term of 60 Months		\$22,508.17
Monthly Average Savings		\$375.14
Monthly Loan Payment		\$141.93
Monthly Net Savings		\$233.20

Investment Analysis

Net Investment Amount		\$7,000.00
Savings Over System Lifetime of 20 Years		\$113,917.40
Monthly Average Savings		\$474.66
Break-Even Years (At Zero Interest)		1.6 Years
Return On Investment		63.56%