

*Alvin Clouatre's Home
HVAC Load Calculations*

for

Alvin Clouatre
Lot 225 River Oaks
Covington, LA 70433



RHVAC RESIDENTIAL
HVAC LOADS

Prepared By:
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Tuesday, March 23, 2004



Project Report

General Project Information

Project Filename: C:\Elite\Rhvacw\Projects\Alvin Clouatre.rhv
 Project Title: Alvin Clouatre's Home
 Designed By: Paul LaGrange
 Project Date: Wednesday, August 27, 2003
 Client Name: Alvin Clouatre
 Client Address: Lot 225 River Oaks
 Client City: Covington, LA 70433
 Client Phone: 985-674-6846
 Company Name: LaGrange Energy Consulting
 Company Representative: Paul LaGrange
 Company Address: 256 Calumet Dr.
 Company City: Madisonville, LA 70447
 Company Phone: 985-845-2148
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 Company E-Mail Address: paul_lagrange@charter.net

Design Data

Reference City: Baton Rouge, Louisiana
 Daily Temperature Range: Medium
 Latitude: 30 Degrees
 Elevation: 64 ft.
 Altitude Factor: 0.998
 Elevation Sensible Adj. Factor: 1.000
 Elevation Total Adj. Factor: 1.000
 Elevation Heating Adj. Factor: 1.000
 Elevation Heating Adj. Factor: 1.000

	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	29	0	0	72	0
Summer:	95	77	50	75	47

Check Figures

Total Building Supply CFM:	1,086	CFM Per Square ft.:	0.814
Square ft. of Room Area:	2,615	Square ft. Per Ton:	897
Volume (ft ³) of Cond. Space:	26,965	Air Turnover Rate (per hour):	4.7

Building Loads

Total Heating Required With Outside Air:	58,823 Btuh	58.823 MBH
Total Sensible Gain:	26,250 Btuh	79 %
Total Latent Gain:	7,120 Btuh	21 %
Total Cooling Required With Outside Air:	33,370 Btuh	2.78 Tons (Based On Sensible + Latent)
		2.92 Tons (Based On 75% Sensible Capacity)

Notes

Calculations are based on 8th edition of ACCA Manual J.
 All computed results are estimates as building use and weather may vary.
 Be sure to select a unit that meets both sensible and latent loads.



Load Preview Report

Scope	Area	Sens Gain	Lat Gain	Net Gain	Sens Loss	Win CFM	Sum CFM	Sys CFM	Duct Size
Building: 2.78 Net Tons, 2.92 Recommended Tons, 897 ft.²/Ton, 58.82 MBH Heating									
Building	2,615	26,250	7,120	33,370	58,823	698	1,086	1,086	
System 1: 1.07 Net Tons, 1.07 Recommended Tons, 1,099 ft.²/Ton, 23.70 MBH Heating									
System 1	1,177	9,636	3,189	12,826	23,702	275	384	384	10x9
Zone 1	1,177	8,429	1,453	9,882	21,107	275	384	384	
1-Bedroom 3	155	1,683	270	1,953	2,667	35	77	77	1-5
2-Bedroom 3 Closet	29	112	7	119	476	6	5	5	1-4
3-Bath #2	59	112	15	127	2,016	26	5	5	1-4
4-Bath #2 Tub Rm	36	129	9	138	500	7	6	6	1-4
5-Bedroom 2	199	1,402	281	1,683	3,608	47	64	64	1-5
6-Hall #1	64	96	16	112	2,334	30	4	4	1-4
7-Bedroom 4	162	1,148	272	1,420	2,589	34	52	52	1-4
18-Master Bedroom	252	2,089	525	2,614	3,526	46	95	95	1-6
20-Master Closet #1	85	411	22	433	1,758	23	19	19	1-4
21-Master Bath	136	1,247	35	1,282	1,633	21	57	57	1-4
System 2: 1.71 Net Tons, 1.85 Recommended Tons, 779 ft.²/Ton, 35.12 MBH Heating									
System 2	1,438	16,614	3,931	20,545	35,120	423	702	702	10x12
Zone 1	1,438	15,407	2,194	17,601	32,525	423	702	702	
8-Great Room	479	5,382	815	6,197	8,398	109	245	245	3-5
9-Foyer	70	895	18	913	1,901	25	41	41	1-4
10-Dining Room	169	1,356	44	1,400	4,418	58	62	62	1-5
11-Utility Room	69	1,034	318	1,352	1,467	19	47	47	1-4
12-Kitchen	216	1,692	656	2,348	3,645	47	77	77	1-5
13-Breakfast Room	178	2,374	46	2,420	5,348	70	108	108	1-6
14-Pantry	23	44	6	50	1,142	15	2	2	1-4
15-Hall #2	36	68	9	77	1,493	19	3	3	1-4
16-Hall #3	21	41	5	46	1,083	14	2	2	1-4
17-Office	132	2,435	264	2,699	2,013	26	111	111	2-4
19-Bathroom 3	45	86	12	98	1,617	21	4	4	1-4



Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
DbI Vinyl LowE: Glazing-	358.2	5,543	0	7,526	7,526
11D: Door-Solid Core	23.7	397	0	286	286
11P: Door-Polyurethane Core	9	112	0	81	81
12C-3bw: Wall-Frame, R-13 insulation in 2 x 4 stud cavity, R-3 board insulation, brick finish, wood studs	1318.4	4,252	0	1,543	1,543
12C-3sw: Wall-Frame, R-13 insulation in 2 x 4 stud cavity, R-3 board insulation, siding finish, wood studs	551.3	1,777	0	926	926
R-13, R-3 2 x 6: Wall-	113	3,737	0	1,947	1,947
16B-30: Roof/Ceiling-Under attic or knee wall, Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-30 insulation	2593	3,567	0	4,567	4,567
22A-pm: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy dry or light wet soil	473	24,001	0	0	0
Subtotals for structure:		43,386	0	16,876	16,876
People:	9		2,070	2,700	4,770
Equipment:			900	2,700	3,600
Lighting:	0			0	0
Ductwork:		4,355	677	1,560	2,237
Infiltration: Winter CFM: 125, Summer CFM: 0		5,891	0	0	0
Ventilation: Winter CFM: 110, Summer CFM: 110		5,191	3,473	2,414	5,888
Total Building Load Totals:		58,823	7,120	26,250	33,370

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