Load Calculation 100 years old House Washington D.C.
HVAC Load Calculations

for

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Prepared By:

Rhvac Online Is an ACCA approved Manual J, D And S computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, And ACCA Manual D.

Load Calculation Project Report

General Project Information

Project Title:	Load Calculation 100 years old House Washington D.C.
Project Date:	
Designed By:	
Permit Number(s):	
Project Comment:	
Client Name:	
Client Address:	
Client City:	
Client Phone:	
Client Fax:	
Client E-Mail:	
Client Website:	
Company Name:	
Company Representative:	
Company Address:	
Company City:	
Company Phone:	
Company Fax:	

Design Data

Reference City:		Washington D.C., United States
Building Orientation:		Front door faces W
Daily Temperature Range:		Medium
Latitude:	47	Degrees
Elevation:	322	feet
Altitude Factor:	0.988	

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter	26	24.22	80%	n/a	70	n/a
Summer	80	64	42%	50%	75	-1

Check Figures

Supply CFM:	2,110	CFM per Square ft.	1.743
Square ft. of Room Area:	1,211	Square ft. per ton:	373
Volume (ft³) of Cond. Space:	10,098		

Building Loads

Total Heating Required Including Ventilation Air:	89,543 Btuh	89.543	MBH
Total Sensible Gain	38,076 Btuh	98	%
Total Latent Gain:	847 Btuh	2	%
Total Cooling Required Including Ventilation Air	38,924 Btuh	3.24	Tons (Based On Sensible + Latent)

Notes

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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 according to the manufacturer's performance data at your design conditions.

Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1D-cv-o: Glazing-Double pane, operable window, clear, vinyl frame, U-value 0.3, SHGC 0.2	85.1	1,122	0	1,204	1,204
1D-hw-o: Glazing-Double pane, operable window, heat-absorbing, wood frame, U-value 0.3, SHGC 0.2	94.1	1,242	0	1,543	1,543
1D-hv-o: Glazing-Double pane, operable window, heat-absorbing, vinyl frame, U-value 0.3, SHGC 0.2	17.2	227	0	345	345
1D-ha-o: Glazing-Double pane, operable window, heat-absorbing, wood with metal clad frame, U-value 0.3, SHGC 0.2	38.8	511	0	676	676
11H: Door-Wood - Panel With Wood Storm, U-value 0.32	25.8	364	0	132	132
11G: Door-Wood - Panel, U-value 0.352	107.7	1,669	0	606	606
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.352	1671.3	25,901	0	4,359	4,359
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.387	512.4	8,735	0	1,469	1,469
14B1-4.5b: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, brick veneer, interior finish, 4.5 inch R-15.34 SIP panels, U-value 0.352	195.7	3,034	0	97	97
16B-0: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-0 insulation, U-value 0.408	580.1	10,414	0	9,467	9,467
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.317	1916.2	9,590	0	1,090	1,090
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.072	505.8	1,140	0	128	128
Subtotals for structure:		63,949	0	21,116	21,116
People:	5		1,000	1,150	2,150
Equipment:			358	7,616	7,974
Lighting:	1055			3,598	3,598
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 0, Summer CFM: 0		0	0	0	0
Ventilation: Winter CFM: 535, Summer CFM: 834		25,594	-511	4,533	4,022
AED Excursion:		0	0	64	64
Total Building Load Totals:		89,543	847	38,076	38,924

Check Figures

Supply CFM:	2,110	CFM per Square ft.	1.743
Square ft. of Room Area:	1,211	Square ft. per ton:	373
Volume (ft³) of Cond. Space:	10,098		

Building Loads

Total Heating Required Including Ventilation Air:	89,543 Btuh	89.543 MBH	
Total Sensible Gain	38,076 Btuh	98 %	
Total Latent Gain:	847 Btuh	2 %	
Total Cooling Required Including Ventilation Air	38,924 Btuh	3.24	Tons (Based On Sensible + Latent)

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Be sure to select a unit that meets both sensible And latent loads according to the manufacturer's performance data at your design conditions.

System 1 First Floor Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1D-cv-o: Glazing-Double pane, operable window, clear, vinyl frame, U-value 0.3, SHGC 0.2	85.1	1,122	0	1,204	1,204
1D-hw-o: Glazing-Double pane, operable window, heat-absorbing, wood frame, U-value 0.3, SHGC 0.2	34.2	451	0	584	584
11H: Door-Wood - Panel With Wood Storm, U-value 0.32	25.8	364	0	132	132
11G: Door-Wood - Panel, U-value 0.352	56	868	0	315	315
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.352	750.1	11,625	0	1,957	1,957
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.387	57.5	980	0	165	165
14B1-4.5b: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, brick veneer, interior finish, 4.5 inch R-15.34 SIP panels, U-value 0.352	195.7	3,034	0	97	97
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.317	1261.8	6,314	0	718	718
Subtotals for structure:		24,758	0	5,172	5,172
People:	3		600	690	1,290
Equipment:			358	4,511	4,869
Lighting:	580			1,978	1,978
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 0, Summer CFM: 0		0	0	0	0
Ventilation: Winter CFM: 275, Summer CFM: 424		13,156	-260	2,304	2,044
AED Excursion:		0	0	64	64
System 1 First Floor Load Totals:		37,914	699	14,719	15,417

Check Figures

Supply CFM:	1,139	CFM per Square ft.	1.805
Square ft. of Room Area:	631	Square ft. per ton:	491
Volume (ft³) of Cond. Space:	5,340		

System Loads

Total Heating Required Including Ventilation Air:	37,914 Btuh	37.914 MBH	
Total Sensible Gain	14,719 Btuh	95 %	
Total Latent Gain:	699 Btuh	5 %	
Total Cooling Required Including Ventilation Air	15,417 Btuh	1.28 Tons (Based On Sensible + Latent)	

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Be sure to select a unit that meets both sensible And latent loads according to the manufacturer's performance data at your design conditions.

System 2 Second Floor Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1D-hw-o: Glazing-Double pane, operable window, heat-absorbing, wood frame, U-value 0.3, SHGC 0.2	59.9	791	0	959	959
1D-hv-o: Glazing-Double pane, operable window, heat-absorbing, vinyl frame, U-value 0.3, SHGC 0.2	17.2	227	0	345	345
1D-ha-o: Glazing-Double pane, operable window, heat-absorbing, wood with metal clad frame, U-value 0.3, SHGC 0.2	38.8	511	0	676	676
11G: Door-Wood - Panel, U-value 0.352	51.7	801	0	291	291
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.352	921.2	14,276	0	2,402	2,402
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.387	454.9	7,755	0	1,304	1,304
16B-0: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-0 insulation, U-value 0.408	580.1	10,414	0	9,467	9,467
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.317	654.4	3,276	0	372	372
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.072	505.8	1,140	0	128	128
Subtotals for structure:		39,191	0	15,944	15,944
People:	2		400	460	860
Equipment:			0	3,105	3,105
Lighting:	475			1,620	1,620
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 0, Summer CFM: 0		0	0	0	0
Ventilation: Winter CFM: 260, Summer CFM: 410		12,438	-251	2,229	1,978
System 2 Second Floor Load Totals:		51,629	149	23,358	23,506

Check Figures

Supply CFM:	972	CFM per Square ft.	1.675
Square ft. of Room Area:	580	Square ft. per ton:	296
Volume (ft³) of Cond. Space:	4,758		

System Loads

Total Heating Required Including Ventilation Air:	51,629 Btuh	51.629 MBH	
Total Sensible Gain	23,358 Btuh	99 %	
Total Latent Gain:	149 Btuh	1 %	
Total Cooling Required Including Ventilation Air	23,506 Btuh	1.96 Tons	(Based On Sensible + Latent)

Notes

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Be sure to select a unit that meets both sensible And latent loads according to the manufacturer's performance data at your design conditions.

System 1, Zone 1 Summary Loads (Average Load Procedure for Rooms)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1D-cv-o: Glazing-Double pane, operable window, clear, vinyl frame, U-value 0.3, SHGC 0.2	85.1	1,122	0	1,204	1,204
1D-hw-o: Glazing-Double pane, operable window, heat-absorbing, wood frame, U-value 0.3, SHGC 0.2	34.2	451	0	584	584
11H: Door-Wood - Panel With Wood Storm, U-value 0.32	25.8	364	0	132	132
11G: Door-Wood - Panel, U-value 0.352	56	868	0	315	315
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.352	750.1	11,625	0	1,957	1,957
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.387	57.5	980	0	165	165
14B1-4.5b: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, brick veneer, interior finish, 4.5 inch R-15.34 SIP panels, U-value 0.352	195.7	3,034	0	97	97
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.317	1261.8	6,314	0	718	718
Subtotals for structure:		24,758	0	5,172	5,172
People:	3		600	690	1,290
Equipment:			358	4,511	4,869
Lighting:	580			1,978	1,978
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 0, Summer CFM: 0		0	0	0	0
System 1, Zone 1 Load Totals:		24,758	958	12,415	13,373

Check Figures

Supply CFM:	1,139	CFM per Square ft.	1.805
Square ft. of Room Area:	631	Square ft. per ton:	566
Volume (ft³) of Cond. Space:	5,340		

Zone Loads

Total Heating Required:	24,758 Btuh	24.758 MBH	
Total Sensible Gain	12,415 Btuh	93 %	
Total Latent Gain:	958 Btuh	7 %	
Total Cooling Required	13,373 Btuh	1.11 Tons (Based On Sensible + Latent)	

Notes

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System 2, Zone 1 Summary Loads (Average Load Procedure for Rooms)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1D-hw-o: Glazing-Double pane, operable window, heat-absorbing, wood frame, U-value 0.3, SHGC 0.2	59.9	791	0	959	959
1D-hv-o: Glazing-Double pane, operable window, heat-absorbing, vinyl frame, U-value 0.3, SHGC 0.2	17.2	227	0	345	345
1D-ha-o: Glazing-Double pane, operable window, heat-absorbing, wood with metal clad frame, U-value 0.3, SHGC 0.2	38.8	511	0	676	676
11G: Door-Wood - Panel, U-value 0.352	51.7	801	0	291	291
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.352	921.2	14,276	0	2,402	2,402
13AB-0fcb: Wall-Block, no blanket or board insulation, filled core, brick finish, U-value 0.387	454.9	7,755	0	1,304	1,304
16B-0: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-0 insulation, U-value 0.408	580.1	10,414	0	9,467	9,467
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.317	654.4	3,276	0	372	372
19A1-11op: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, spray foam insulation, passive, R-11 open cell 1/2 lb. spray foam, 3 inches in 2 x 10 joist cavity, U-value 0.072	505.8	1,140	0	128	128
Subtotals for structure:		39,191	0	15,944	15,944
People:	2		400	460	860
Equipment:			0	3,105	3,105
Lighting:	475			1,620	1,620
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 0, Summer CFM: 0		0	0	0	0
System 2, Zone 1 Load Totals:		39,191	400	21,129	21,529

Check Figures

Supply CFM:	972	CFM per Square ft.	1.675
Square ft. of Room Area:	580	Square ft. per ton:	323
Volume (ft³) of Cond. Space:	4,758		

Zone Loads

Total Heating Required:	39,191 Btuh	39.191 MBH	
Total Sensible Gain	21,129 Btuh	98 %	
Total Latent Gain:	400 Btuh	2 %	
Total Cooling Required	21,529 Btuh	1.79 Tons (Based On Sensible + Latent)	

Notes

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Detailed Room Loads - Room 1 - Living Room (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	17.3 ft.	System Number:	1
Room Width:	10.5 ft.	Zone Number:	1
Area:	181.7 sq.ft.	Supply Air:	245 CFM
Ceiling Height:	8.5 ft.	Supply Air Changes:	9.6 AC/hr
Volume:	1,538 cu.ft.	Actual Winter Vent.:	59 CFM
Actual Winter Infil.:	0 CFM	Percent of Supply.:	24 %
Actual Summer Infil.:	0 CFM	Actual Summer Vent.:	145 CFM
		Percent of Supply:	59 %

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-13AB-0fcb 17.3 X 8.5	118.1	0.352	15.5	1,830	2.6	0	308
W-Wall-13AB-0fcb 10.5 X 8.5	60.5	0.352	15.5	938	2.6	0	158
W-Gls-1D-cv-o shgc-0.2 0%S (2)	28.4	0.300	13.2	374	20.0	0	568
S-Gls-1D-cv-o shgc-0.2 0%S (2)	28.4	0.300	13.2	374	11.2	0	318
Floor-19A1-11op 10.5 X 17.3|181.6	181.6	0.317	5.0	909	0.6	0	103
Floor-19A1-11op 10.5 X 17.3|181.6	181.6	0.317	5.0	909	0.6	0	103
Subtotals for Structure:				5,334		0	1,558
Infil.: Win.: 0.0, Sum.: 0.0	235		0.000	0	0.000	0	0
Ductwork:				0			0
AED Excursion:							22
People: 200 lat/per, 230 sen/per:	3					600	690
Equipment:						0	1,307
Lighting:	200						682
Room Totals:				5,334		600	4,259

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Color television	682	0	100	100	682	0
Stereo	375	0	100	100	375	0
Ceiling fan	249	0	100	100	249	0
Total					1,307	0

Detailed Room Loads - Room 2 - Dinning Room (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	16.4 ft.	System Number:	1
Room Width:	9.8 ft.	Zone Number:	1
Area:	161.4 sq.ft.	Supply Air:	331 CFM
Ceiling Height:	8.5 ft.	Supply Air Changes:	14.5 AC/hr
Volume:	1,366 cu.ft.	Actual Winter Vent.:	80 CFM
Actual Winter Infil.:	0 CFM	Percent of Supply.:	24 %
Actual Summer Infil.:	0 CFM	Actual Summer Vent.:	145 CFM
		Percent of Supply:	44 %

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-13AB-0fcb 16.4 X 8.5	110.5	0.352	15.5	1,712	2.6	0	288
E-Wall-13AB-0fcb 9.8 X 8.5	57.5	0.387	17.0	980	2.9	0	165
N-Wall-13AB-0fcb 16.4 X 8.5	138.8	0.352	15.5	2,151	2.6	0	362
E-Door-11H 3.9 X 6.6	25.8	0.320	14.1	364	5.1	0	132
S-Gls-1D-cv-o shgc-0.2 0%S (2)	28.4	0.300	13.2	374	11.2	0	318
Floor-19A1-11op 9.8 X 16.4|161.4	161.4	0.317	5.0	808	0.6	0	92
Floor-19A1-11op 9.8 X 16.4|161.4	161.4	0.317	5.0	808	0.6	0	92
Subtotals for Structure:				7,197		0	1,449
Infil.: Win.: 0.0, Sum.: 0.0	361		0.000	0	0.000	0	0
Ductwork:				0			0
AED Excursion:							22
Equipment:						358	2,272
Lighting:	150						512
Room Totals:				7,197		358	4,255

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Cooking range with hood - four burners on high heat	0	0	100	100	0	0
Dishwasher	4,095	1,433	100	25	1,024	358
Refrigerator or freezer - 16 cubic feet	1,000	0	100	100	1,000	0
Ceiling fan	249	0	100	100	249	0
Total					2,273	358

Detailed Room Loads - Room 3 - Sleeping Porch FF (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	16.4	ft.	System Number:	1	
Room Width:	6.4	ft.	Zone Number:	1	
Area:	105.0	sq.ft.	Supply Air:	221	CFM
Ceiling Height:	8.5	ft.	Supply Air Changes:	14.9	AC/hr
Volume:	888	cu.ft.	Actual Winter Vent.:	53	CFM
Actual Winter Infil.:	0	CFM	Percent of Supply.:	24	%
Actual Summer Infil.:	0	CFM	Actual Summer Vent.:	74	CFM
			Percent of Supply:	34	%

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-14B1-4.5b 6.4 X 8.5	42.8	0.352	15.5	663	0.5	0	21
E-Wall-14B1-4.5b 16.4 X 8.5	98.8	0.352	15.5	1,531	0.5	0	49
N-Wall-14B1-4.5b 6.4 X 8.5	54.2	0.352	15.5	840	0.5	0	27
E-Door-11G 2.6 X 6.6	17.2	0.352	15.5	267	5.6	0	97
S-Gls-1D-hw-o shgc-0.2 0%S	11.4	0.300	13.2	151	11.2	0	128
E-Gls-1D-hw-o shgc-0.2 0%S (4)	22.8	0.300	13.2	300	20.0	0	456
Floor-19A1-11op 6.4 X 16.4|105	105	0.317	5.0	525	0.6	0	60
Floor-19A1-11op 6.4 X 16.4|105	105	0.317	5.0	525	0.6	0	60
Subtotals for Structure:				4,802		0	898
Infil.: Win.: 0.0, Sum.: 0.0	247		0.000	0	0.000	0	0
Ductwork:				0			0
AED Excursion:							11
Equipment:						0	932
Lighting:	100						341
Room Totals:				4,802		0	2,182

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Color television	682	0	100	100	682	0
Ceiling fan	249	0	100	100	249	0
Total					932	0

Detailed Room Loads - Room 4 - Hall (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	13.1 ft.	System Number:	1
Room Width:	6.6 ft.	Zone Number:	1
Area:	86.1 sq.ft.	Supply Air:	158 CFM
Ceiling Height:	8.5 ft.	Supply Air Changes:	13.0 AC/hr
Volume:	729 cu.ft.	Actual Winter Vent.:	38 CFM
Actual Winter Infil.:	0 CFM	Percent of Supply.:	24 %
Actual Summer Infil.:	0 CFM	Actual Summer Vent.:	29 CFM
		Percent of Supply:	19 %

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
E-Wall-13AB-0fcb 6.6 X 8.5	38.3	0.352	15.5	594	2.6	0	100
N-Wall-13AB-0fcb 13.1 X 8.5	111.1	0.352	15.5	1,722	2.6	0	290
E-Door-11G 2.6 X 6.6	17.2	0.352	15.5	267	5.6	0	97
Floor-19A1-11op 6.6 X 13.1|86.1	86.1	0.317	5.0	431	0.6	0	49
Floor-19A1-11op 6.6 X 13.1|86.1	86.1	0.317	5.0	431	0.6	0	49
Subtotals for Structure:				3,445		0	585
Infil.: Win.: 0.0, Sum.: 0.0	167		0.000	0	0.000	0	0
Ductwork:				0			0
AED Excursion:							4
Lighting:	80						273
Room Totals:				3,445		0	862

Detailed Room Loads - Room 5 - Entrance (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	16.4	ft.	System Number:	1	
Room Width:	5.9	ft.	Zone Number:	1	
Area:	96.8	sq.ft.	Supply Air:	183	CFM
Ceiling Height:	8.5	ft.	Supply Air Changes:	13.4	AC/hr
Volume:	819	cu.ft.	Actual Winter Vent.:	44	CFM
Actual Winter Infil.:	0	CFM	Percent of Supply.:	24	%
Actual Summer Infil.:	0	CFM	Actual Summer Vent.:	29	CFM
			Percent of Supply:	16	%

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
N-Wall-13AB-0fcb 16.4 X 8.5	138.8	0.352	15.5	2,151	2.6	0	362
W-Wall-13AB-0fcb 6.6 X 8.5	34	0.352	15.5	527	2.6	0	89
W-Door-11G 3.3 X 6.6	21.5	0.352	15.5	334	5.6	0	121
Floor-19A1-11op 5.9 X 16.4|96.8	96.8	0.317	5.0	484	0.6	0	55
Floor-19A1-11op 5.9 X 16.4|96.8	96.8	0.317	5.0	484	0.6	0	55
Subtotals for Structure:				3,980		0	682
Infil.: Win.: 0.0, Sum.: 0.0	194		0.000	0	0.000	0	0
Ductwork:				0			0
AED Excursion:							4
Lighting:	50						171
Room Totals:				3,980		0	857

Detailed Room Loads - Room 6 - Front Bedroom 1 (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	14.8 ft.	System Number:	2
Room Width:	9.8 ft.	Zone Number:	1
Area:	145.3 sq.ft.	Supply Air:	237 CFM
Ceiling Height:	8.2 ft.	Supply Air Changes:	11.9 AC/hr
Volume:	1,192 cu.ft.	Actual Winter Vent.:	55 CFM
Actual Winter Infil.:	0 CFM	Percent of Supply.:	23 %
Actual Summer Infil.:	0 CFM	Actual Summer Vent.:	100 CFM
		Percent of Supply:	42 %

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-13AB-0fcb 14.8 X 8.2	107.4	0.352	15.5	1,664	2.6	0	280
W-Wall-13AB-0fcb 9.8 X 8.2	59	0.352	15.5	915	2.6	0	154
E-Wall-13AB-0fcb 9.8 X 8.2	80.7	0.352	15.5	1,251	2.6	0	210
W-Gls-1D-hw-o shgc-0.2 0%S (2)	21.7	0.300	13.2	286	20.0	0	434
S-Gls-1D-hw-o shgc-0.2 0%S	13.7	0.300	13.2	181	11.3	0	154
UP-Ceil-16B-0 14.8 X 9.8	145.3	0.408	18.0	2,609	16.3	0	2,372
Floor-19A1-11op 9.8 X 14.8|145.3	145.3	0.317	5.0	728	0.6	0	83
Floor-19A1-11op 9.8 X 14.8|145.3	145.3	0.317	5.0	728	0.6	0	83
Subtotals for Structure:				8,362		0	3,770
Infil.: Win.: 0.0, Sum.: 0.0	282		0.000	0	0.000	0	0
Ductwork:				0			0
People: 200 lat/per, 230 sen/per:	1					200	230
Equipment:						0	682
Lighting:	135						460
Room Totals:				8,362		200	5,143

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Color television	682	0	100	100	682	0
Total					682	0

Detailed Room Loads - Room 7 - Front Bedroom 2 (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	10.3 ft.	System Number:	2
Room Width:	6.0 ft.	Zone Number:	1
Area:	62.4 sq.ft.	Supply Air:	146 CFM
Ceiling Height:	8.2 ft.	Supply Air Changes:	17.1 AC/hr
Volume:	512 cu.ft.	Actual Winter Vent.:	40 CFM
Actual Winter Infil.:	0 CFM	Percent of Supply.:	28 %
Actual Summer Infil.:	0 CFM	Actual Summer Vent.:	62 CFM
		Percent of Supply:	42 %

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-13AB-0fcb 10.3 X 8.2	84.7	0.352	15.5	1,313	2.6	0	221
W-Wall-13AB-0fcb 6 X 8.2	38.7	0.352	15.5	599	2.6	0	101
N-Wall-13AB-0fcb 10.3 X 8.2	84.7	0.387	17.0	1,445	2.9	0	243
E-Wall-13AB-0fcb 6 X 8.2	32.3	0.387	17.0	550	2.9	0	93
E-Door-11G 2.6 X 6.6	17.2	0.352	15.5	267	5.6	0	97
W-Gls-1D-hw-o shgc-0.2 0%S	10.8	0.300	13.2	143	20.0	0	217
UP-Ceil-16B-0 10.3 X 6	62.4	0.408	18.0	1,120	16.3	0	1,018
Floor-19A1-11op 6 X 10.3|62.4	62.4	0.317	5.0	312	0.6	0	35
Floor-19A1-11op 6 X 10.3|62.4	62.4	0.317	5.0	312	0.6	0	35
Subtotals for Structure:				6,061		0	2,060
Infil.: Win.: 0.0, Sum.: 0.0	269		0.000	0	0.000	0	0
Ductwork:				0			0
People: 200 lat/per, 230 sen/per:	1					200	230
Equipment:						0	682
Lighting:	60						205
Room Totals:				6,061		200	3,177

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Color television	682	0	100	100	682	0
Total					682	0

Detailed Room Loads - Room 8 - Rear Bedroom (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	9.8	ft.	System Number:	2	
Room Width:	12.1	ft.	Zone Number:	1	
Area:	119.5	sq.ft.	Supply Air:	199	CFM
Ceiling Height:	8.2	ft.	Supply Air Changes:	12.2	AC/hr
Volume:	980	cu.ft.	Actual Winter Vent.:	51	CFM
Actual Winter Infil.:	0	CFM	Percent of Supply.:	26	%
Actual Summer Infil.:	0	CFM	Actual Summer Vent.:	84	CFM
			Percent of Supply:	42	%

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-13AB-0fcb 12.1 X 8.2	85.9	0.352	15.5	1,331	2.6	0	224
E-Wall-13AB-0fcb 9.8 X 8.2	46.3	0.352	15.5	717	2.6	0	121
N-Wall-13AB-0fcb 12.1 X 8.2	99.5	0.387	17.0	1,697	2.9	0	285
E-Door-11G 2.6 X 6.6	17.2	0.352	15.5	267	5.6	0	97
S-Gls-1D-hw-o shgc-0.2 0%S	13.7	0.300	13.2	181	11.3	0	154
E-Gls-1D-hv-o shgc-0.2 0%S	17.2	0.300	13.2	227	20.0	0	345
UP-Ceil-16B-0 9.8 X 12.1	119.5	0.408	18.0	2,145	16.3	0	1,950
Floor-19A1-11op 12.1 X 9.8|119.5	119.5	0.317	5.0	598	0.6	0	68
Floor-19A1-11op 12.1 X 9.8|119.5	119.5	0.317	5.0	598	0.6	0	68
Subtotals for Structure:				7,761		0	3,312
Infil.: Win.: 0.0, Sum.: 0.0	280		0.000	0	0.000	0	0
Ductwork:				0			0
Equipment:						0	682
Lighting:	100						341
Room Totals:				7,761		0	4,335

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Color television	682	0	100	100	682	0
Total					682	0

Detailed Room Loads - Room 9 - Sleeping Porch Second floor (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	16.4 ft.	System Number:	2
Room Width:	8.2 ft.	Zone Number:	1
Area:	134.5 sq.ft.	Supply Air:	232 CFM
Ceiling Height:	8.2 ft.	Supply Air Changes:	12.6 AC/hr
Volume:	1,103 cu.ft.	Actual Winter Vent.:	51 CFM
Actual Winter Infil.:	0 CFM	Percent of Supply.:	22 %
Actual Summer Infil.:	0 CFM	Actual Summer Vent.:	98 CFM
		Percent of Supply:	42 %

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
E-Wall-13AB-0fcb 16.4 X 8.2	107.1	0.352	15.5	1,660	2.6	0	279
N-Wall-13AB-0fcb 12.5 X 8.2	102.2	0.352	15.5	1,584	2.6	0	266
S-Wall-13AB-0fcb 8.9 X 8.2	61.2	0.352	15.5	949	2.6	0	160
S-Gls-1D-ha-o shgc-0.2 0%S	11.4	0.300	13.2	151	11.2	0	128
E-Gls-1D-ha-o shgc-0.2 0%S (4)	27.4	0.300	13.2	360	20.0	0	548
UP-Ceil-16B-0 16.4 X 8.2	134.5	0.408	18.0	2,414	16.3	0	2,195
Floor-19A1-11op 8.2 X 16.4|134.5	134.5	0.072	2.3	303	0.3	0	34
Floor-19A1-11op 8.2 X 16.4|134.5	134.5	0.072	2.3	303	0.3	0	34
Subtotals for Structure:				7,724		0	3,644
Infil.: Win.: 0.0, Sum.: 0.0	309		0.000	0	0.000	0	0
Ductwork:				0			0
Equipment:						0	1,058
Lighting:	100						341
Room Totals:				7,724		0	5,043

Equipment Cooling Loads

Item Name	Cont. Output Sensible Btuh	Cont. Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Color television	682	0	100	100	682	0
Stereo	375	0	100	100	375	0
Total					1,058	0

Detailed Room Loads - Room 10 - Hall second floor (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	18.0	ft.	System Number:	2	
Room Width:	6.6	ft.	Zone Number:	1	
Area:	118.4	sq.ft.	Supply Air:	158	CFM
Ceiling Height:	8.2	ft.	Supply Air Changes:	9.7	AC/hr
Volume:	971	cu.ft.	Actual Winter Vent.:	62	CFM
Actual Winter Infil.:	0	CFM	Percent of Supply.:	39	%
Actual Summer Infil.:	0	CFM	Actual Summer Vent.:	67	CFM
			Percent of Supply:	42	%

Item Description	Area Quantity	-U-Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S-Wall-13AB-0fcb 18 X 8.2	148	0.352	15.5	2,293	2.6	0	386
W-Wall-13AB-0fcb 6.6 X 8.2	53.8	0.387	17.0	917	2.9	0	154
E-Wall-13AB-0fcb 6.6 X 8.2	36.6	0.387	17.0	624	2.9	0	105
N-Wall-13AB-0fcb 18 X 8.2	148	0.387	17.0	2,522	2.9	0	424
E-Door-11G 2.6 X 6.6	17.2	0.352	15.5	267	5.6	0	97
UP-Ceil-16B-0 18 X 6.6	118.4	0.408	18.0	2,126	16.3	0	1,932
Floor-19A1-11op 6.6 X 18|118.4	118.4	0.072	2.3	267	0.3	0	30
Floor-19A1-11op 6.6 X 18|118.4	118.4	0.072	2.3	267	0.3	0	30
Subtotals for Structure:				9,283		0	3,158
Infil.: Win.: 0.0, Sum.: 0.0	404		0.000	0	0.000	0	0
Ductwork:				0			0
Lighting:	80						273
Room Totals:				9,283		0	3,431

System 1 Room Load Summary

No	Room Name	Area SF	Htg Sens Btuh	Min Htg CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Min Clg CFM	Act Sys CFM
---Zone 1---										
1	Living Room	182	5,334	245	0-0	0	4,259	600	196	245
2	Dinning Room	161	7,197	331	0-0	0	4,255	358	196	331
3	Sleeping Porch FF	105	4,802	221	0-0	0	2,182	0	100	221
4	Hall	86	3,445	158	0-0	0	862	0	40	158
5	Entrance	97	3,980	183	0-0	0	857	0	39	183
-	Ventilation	-	13,156	-	-	-	2,304	-260	-	-
-	System 1 total	631	37,914	1,139	-	-	14,719	699	571	1,139

Cooling System Summary

- -	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.28	95% / 5%	14,719	699	15,417

System 2 Room Load Summary

No	Room Name	Area SF	Htg Sens Btuh	Min Htg CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Min Clg CFM	Act Sys CFM
---Zone 1---										
6	Front Bedroom 1	145	8,362	110	0-0	0	5,143	200	237	237
7	Front Bedroom 2	62	6,061	80	0-0	0	3,177	200	146	146
8	Rear Bedroom	119	7,761	102	0-0	0	4,335	0	199	199
9	Sleeping Porch Second floor	134	7,724	101	0-0	0	5,043	0	232	232
10	Hall second floor	118	9,283	122	0-0	0	3,431	0	158	158
-	Ventilation	-	12,438	-	-	-	2,229	-251	-	-
-	System 2 total	580	51,629	515	-	-	23,358	149	972	972

Cooling System Summary

- -	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.96	99% / 1%	23,358	149	23,506