

Design Data

Reference City: Central Islip, New York
Building Orientation: Front door faces Northeast
Daily Temperature Range: Medium
Latitude: 40 Degrees
Elevation: 98 ft.
Altitude Factor: 0.996

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Differenc e
Winter:	15	13.77	n/a	n/a	70	n/a
Summer:	85	72	54%	50%	75	33

Check Figures

Total Building Supply CFM: 1,439 CFM Per Square ft.: 0.951
Square ft. of Room Area: 1,513 Square ft. Per Ton: 422
Volume (ft³) of Cond. Space: 12,398

Building Loads

Total Heating Required Including Ventilation Air: 65,796 Btuh 65.796 MBH
Total Sensible Gain: 32,254 Btuh 85 %
Total Latent Gain: 5,894 Btuh 15 %
Total Cooling Required Including Ventilation Air: 38,149 Btuh 3.18 Tons (Based On Sensible + Latent)
3.58 Tons (Based On 75% Sensible Capacity)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
All computed results are estimates as building use and weather may vary.

Project Report (cont'd)

Notes

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

Miscellaneous Report

System 1 Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	15	13.77	80%	n/a	70	n/a
Summer:	85	72	54%	50%	75	32.64

Duct Sizing Inputs

	Main Trunk	Runouts
Calculate:	Yes	Yes
Use Schedule:	Yes	Yes
Roughness Factor:	0.00300	0.01000
Pressure Drop:	0.1000 in.wg./100 ft.	0.1000 in.wg./100 ft.
Minimum Velocity:	650 ft./min	450 ft./min
Maximum Velocity:	900 ft./min	750 ft./min
Minimum Height:	0 in.	0 in.
Maximum Height:	0 in.	0 in.

Outside Air Data

	Winter	Summer
Infiltration Specified:	1.907 AC/hr 394 CFM	0.892 AC/hr 184 CFM
Infiltration Actual:	1.907 AC/hr	0.892 AC/hr
Above Grade Volume:	X 12,397 Cu.ft. 23,645 Cu.ft./hr X 0.0167	X 12,397 Cu.ft. 11,057 Cu.ft./hr X 0.0167
Total Building Infiltration:	394 CFM	184 CFM
Total Building Ventilation:	0 CFM	0 CFM

---System 1---

Infiltration & Ventilation Sensible Gain Multiplier:	10.96	= (1.10 X 0.996 X 10.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier:	22.12	= (0.68 X 0.996 X 32.64 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier:	60.29	= (1.10 X 0.996 X 55.00 Winter Temp. Difference)
Winter Infiltration Specified:	1.907 AC/hr (394 CFM)	
Summer Infiltration Specified:	0.892 AC/hr (184 CFM)	

Duct Load Factor Scenarios for System 1

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply		Attic	16B	0.12	6	408	No
1	Return		Attic	16B	0.12	6	76	No

Load Preview Report

Scope	Net Ton	Rec Ton	ft. ² /Ton	Area	Sen Gain	Lat Gain	Net Gain	Sen Loss	Sys Htg CFM	Sys Clg CFM	Sys Act CFM
Building	3.18	3.58	422	1,513	32,254	5,894	38,149	65,796	849	1,439	1,439
System 1	3.18	3.58	422	1,513	32,254	5,894	38,149	65,796	849	1,439	1,439
Supply Duct Latent						496	496				
Return Duct					706	163	869	690			
Zone 1 - Clg.: 73%, Htg.: 69%				922	26,592	3,725	30,317	44,917	585	1,213	1,213
1-Den And Bath				303	8,143	1,396	9,539	16,980	221	371	371
2-Kitchen				143	8,734	1,133	9,867	7,513	98	398	398
3-Dining				127	4,013	368	4,381	6,043	79	183	183
4-Living				246	3,503	615	4,118	10,110	132	160	160
5-Foyer				104	2,201	213	2,414	4,271	56	100	100
Zone 2 - Clg.: 27%, Htg.: 31%				591	9,806	1,510	11,316	20,189	263	447	447
6-Middle Bed				106	1,744	234	1,978	2,906	38	80	80
7-Corner Bed				141	2,129	366	2,495	4,467	58	97	97
8-Bath 1				66	2,460	278	2,738	3,703	48	112	112
9-Hall				72	203	29	232	477	6	9	9
10-Master Bedroom				179	2,380	440	2,820	6,522	85	109	109
11-Master Bath				28	889	163	1,052	2,114	28	41	41
Sum of room airflows may be greater than system airflow because system has multiple zones.											

Duct Size Preview

Room or Duct Name	Source	Minimum Velocity	Maximum Velocity	Rough. Factor	Design L/100	SP Loss	Duct Velocity	Duct Length	Htg Flow	Clg Flow	Act. Flow	Duct Size
System 1												
Supply Runouts												
Zone 1												
1-Den And Bath	Built-In	450	750	0.01	0.1		472.9		221	371	371	4--6
2-Kitchen	Built-In	450	750	0.01	0.1		507.3		98	398	398	4--6
3-Dining	Built-In	450	750	0.01	0.1		466.1		79	183	183	2--6
4-Living	Built-In	450	750	0.01	0.1		406.9		132	160	160	2--6
5-Foyer	Built-In	450	750	0.01	0.1		511.3		56	100	100	1--6
Zone 2												
6-Middle Bed	Built-In	450	750	0.01	0.1		405.2		38	80	80	1--6
7-Corner Bed	Built-In	450	750	0.01	0.1		494.6		58	97	97	1--6
8-Bath 1	Built-In	450	750	0.01	0.1		285.8		48	112	112	2--6
9-Hall	Built-In	450	750	0.01	0.1		47.1		6	9	9	1--6
10-Master Bedroom	Built-In	450	750	0.01	0.1		553		85	109	109	1--6
11-Master Bath	Built-In	450	750	0.01	0.1		206.6		28	41	41	1--6
Other Ducts in System 1												
Supply Main Trunk	Built-In	650	900	0.003	0.1		863.5		849	1,439	1,439	12x20

Summary

System 1

Heating Flow: 849

Cooling Flow: 1439

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 0.57, SHGC 0.56	81.5	2,555	0	3,467	3,467
1D-cw-o: Glazing-Double pane, operable window, clear, wood frame, u-value 0.57, SHGC 0.56	193.3	6,058	0	7,988	7,988
1B-cm: Glazing-Single pane window, fixed sash, clear, metal frame no break, u-value 1.13, SHGC 0.78	21	1,305	0	1,407	1,407
8Ac-swi: Glazing-Skylight, Flat single pane clear, small curb, wood sash, curb R-6 or more, light shaft R-6 or more, with a tilt angle of 30°, u-value 1.03, SHGC 0.75	10	566	0	1,742	1,742
8Ac-smw: Glazing-Skylight, Flat single pane clear, small curb, metal sash no break, wood curb, no insulation, plywood shaft, no insulation, with a tilt angle of 30°, u-value 1.31, SHGC 0.78	10.1	727	0	1,955	1,955
11J: Door-Metal - Fiberglass Core	20	300	0	180	180
11G: Door-Wood - Panel	20	594	0	227	227
12B-0bw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, brick finish, wood studs	430.8	2,299	0	322	322
12B-0bw: Part-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, brick finish, wood studs	228.8	690	0	333	333
12A-0sw: Part-Frame, no insulation in stud cavity, no board insulation, siding finish, wood studs	76.5	459	0	275	275
12B-0sw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	922.6	4,919	0	1,710	1,710
16B-21: 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-21 insulation	1165.2	2,822	0	2,307	2,307
16B-13: 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-13 insulation	56	216	0	176	176
18A-21: Roof/Ceiling-Roof Joists Between Roof Deck and Ceiling or Foam Encapsulated Roof Joists, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, R-21 blanket or loose fill	7.9	20	0	8	8
22A-pm: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy dry or light wet soil	70	4,543	0	0	0
19A-0cp: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, passive, no floor insulation, carpet or hardwood	825.6	5,033	0	913	913
20P-11: Floor-Over open crawl space or garage, Passive, R-11 blanket insulation, any cover	12.8	55	0	5	5
Subtotals for structure:		33,161	0	23,015	23,015
People:	4		800	920	1,720
Equipment:			358	2,024	2,382
Lighting:	0			0	0
Ductwork:		8,877	659	4,276	4,936
Infiltration: Winter CFM: 394, Summer CFM: 184		23,758	4,077	2,019	6,096

Total Building Summary Loads (cont'd)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
Total Building Load Totals:		65,796	5,894	32,254	38,149

Check Figures

Total Building Supply CFM:	1,439	CFM Per Square ft.:	0.951
Square ft. of Room Area:	1,513	Square ft. Per Ton:	422
Volume (ft ³) of Cond. Space:	12,398		

Building Loads

Total Heating Required Including Ventilation Air:	65,796 Btuh	65.796 MBH
Total Sensible Gain:	32,254 Btuh	85 %
Total Latent Gain:	5,894 Btuh	15 %
Total Cooling Required Including Ventilation Air:	38,149 Btuh	3.18 Tons (Based On Sensible + Latent)
		3.58 Tons (Based On 75% Sensible Capacity)

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.

System 1 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 0.57, SHGC 0.56	81.5	2,555	0	3,467	3,467
1D-cw-o: Glazing-Double pane, operable window, clear, wood frame, u-value 0.57, SHGC 0.56	193.3	6,058	0	7,988	7,988
1B-cm: Glazing-Single pane window, fixed sash, clear, metal frame no break, u-value 1.13, SHGC 0.78	21	1,305	0	1,407	1,407
8Ac-swi: Glazing-Skylight, Flat single pane clear, small curb, wood sash, curb R-6 or more, light shaft R-6 or more, with a tilt angle of 30°, u-value 1.03, SHGC 0.75	10	566	0	1,742	1,742
8Ac-smw: Glazing-Skylight, Flat single pane clear, small curb, metal sash no break, wood curb, no insulation, plywood shaft, no insulation, with a tilt angle of 30°, u-value 1.31, SHGC 0.78	10.1	727	0	1,955	1,955
11J: Door-Metal - Fiberglass Core	20	300	0	180	180
11G: Door-Wood - Panel	20	594	0	227	227
12B-0bw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, brick finish, wood studs	430.8	2,299	0	322	322
12B-0bw: Part-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, brick finish, wood studs	228.8	690	0	333	333
12A-0sw: Part-Frame, no insulation in stud cavity, no board insulation, siding finish, wood studs	76.5	459	0	275	275
12B-0sw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	922.6	4,919	0	1,710	1,710
16B-21: 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-21 insulation	1165.2	2,822	0	2,307	2,307
16B-13: 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-13 insulation	56	216	0	176	176
18A-21: Roof/Ceiling-Roof Joists Between Roof Deck and Ceiling or Foam Encapsulated Roof Joists, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, R-21 blanket or loose fill	7.9	20	0	8	8
22A-pm: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy dry or light wet soil	70	4,543	0	0	0
19A-0cp: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, passive, no floor insulation, carpet or hardwood	825.6	5,033	0	913	913
20P-11: Floor-Over open crawl space or garage, Passive, R-11 blanket insulation, any cover	12.8	55	0	5	5
Subtotals for structure:		33,161	0	23,015	23,015
People:	4		800	920	1,720
Equipment:			358	2,024	2,382
Lighting:	0			0	0
Ductwork:		8,877	659	4,276	4,936
Infiltration: Winter CFM: 394, Summer CFM: 184		23,758	4,077	2,019	6,096

System 1 Summary Loads (cont'd)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
System 1 Load Totals:		65,796	5,894	32,254	38,149

Check Figures

Supply CFM:	1,439	CFM Per Square ft.:	0.951
Square ft. of Room Area:	1,513	Square ft. Per Ton:	422
Volume (ft ³) of Cond. Space:	12,398		

System Loads

Total Heating Required Including Ventilation Air:	65,796 Btuh	65.796 MBH
Total Sensible Gain:	32,254 Btuh	85 %
Total Latent Gain:	5,894 Btuh	15 %
Total Cooling Required Including Ventilation Air:	38,149 Btuh	3.18 Tons (Based On Sensible + Latent)
		3.58 Tons (Based On 75% Sensible Capacity)

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.

System 1, Zone 1 Summary Loads (Peak 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 0.57, SHGC 0.56	81.5	2,555	0	5,789	5,789
1D-cw-o: Glazing-Double pane, operable window, clear, wood frame, u-value 0.57, SHGC 0.56	136.3	4,272	0	6,784	6,784
1B-cm: Glazing-Single pane window, fixed sash, clear, metal frame no break, u-value 1.13, SHGC 0.78	21	1,305	0	2,256	2,256
8Ac-swi: Glazing-Skylight, Flat single pane clear, small curb, wood sash, curb R-6 or more, light shaft R-6 or more, with a tilt angle of 30°, u-value 1.03, SHGC 0.75	10	566	0	1,146	1,146
11J: Door-Metal - Fiberglass Core	20	300	0	180	180
11G: Door-Wood - Panel	20	594	0	227	227
12B-0bw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, brick finish, wood studs	430.8	2,299	0	322	322
12B-0bw: Part-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, brick finish, wood studs	228.8	690	0	333	333
12A-0sw: Part-Frame, no insulation in stud cavity, no board insulation, siding finish, wood studs	76.5	459	0	275	275
12B-0sw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	240.8	1,283	0	446	446
16B-21: 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-21 insulation	578.3	1,400	0	1,145	1,145
16B-13: 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-13 insulation	56	216	0	176	176
22A-pm: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, heavy dry or light wet soil	70	4,543	0	0	0
19A-0cp: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, passive, no floor insulation, carpet or hardwood	619.3	3,775	0	685	685
20P-11: Floor-Over open crawl space or garage, Passive, R-11 blanket insulation, any cover	12.8	55	0	5	5
Subtotals for structure:		24,312	0	19,769	19,769
People:	4		800	920	1,720
Equipment:			358	2,024	2,382
Lighting:	0			0	0
Ductwork:		5,648	0	2,608	2,608
Infiltration: Winter CFM: 248, Summer CFM: 116		14,957	2,567	1,271	3,838
System 1, Zone 1 Load Totals:		44,917	3,725	26,592	30,317

Check Figures

Supply CFM:	1,213	CFM Per Square ft.:	1.316
Square ft. of Room Area:	922	Square ft. Per Ton:	322
Volume (ft³) of Cond. Space:	7,667		

Zone Loads

Total Heating Required:	44,917 Btuh	44.917 MBH
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System 1, Zone 1 Summary Loads (Peak Load Procedure for Rooms) (cont'd)

Zone Loads

Total Sensible Gain:	26,592 Btuh	88 %
Total Latent Gain:	3,725 Btuh	12 %
Total Cooling Required:	30,317 Btuh	2.53 Tons (Based On Sensible + Latent)
		2.87 Tons (Based On 75% Sensible Capacity)

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

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1D-cw-o: Glazing-Double pane, operable window, clear, wood frame, u-value 0.57, SHGC 0.56	57	1,786	0	3,732	3,732
8Ac-smw: Glazing-Skylight, Flat single pane clear, small curb, metal sash no break, wood curb, no insulation, plywood shaft, no insulation, with a tilt angle of 30°, u-value 1.31, SHGC 0.78	10.1	727	0	1,702	1,702
12B-0sw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	681.8	3,636	0	1,264	1,264
16B-21: 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-21 insulation	587	1,422	0	1,162	1,162
18A-21: Roof/Ceiling-Roof Joists Between Roof Deck and Ceiling or Foam Encapsulated Roof Joists, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, R-21 blanket or loose fill	7.9	20	0	8	8
19A-0cp: Floor-Over enclosed crawl space, No insulation on exposed walls, sealed or vented space, passive, no floor insulation, carpet or hardwood	206.3	1,258	0	228	228
Subtotals for structure:		8,849	0	8,096	8,096
People:	0		0	0	0
Equipment:			0	0	0
Lighting:	0			0	0
Ductwork:		2,539	0	962	962
Infiltration: Winter CFM: 146, Summer CFM: 68		8,801	1,510	748	2,258
System 1, Zone 2 Load Totals:		20,189	1,510	9,806	11,316

Check Figures

Supply CFM:	447	CFM Per Square ft.:	0.757
Square ft. of Room Area:	591	Square ft. Per Ton:	547
Volume (ft ³) of Cond. Space:	4,730		

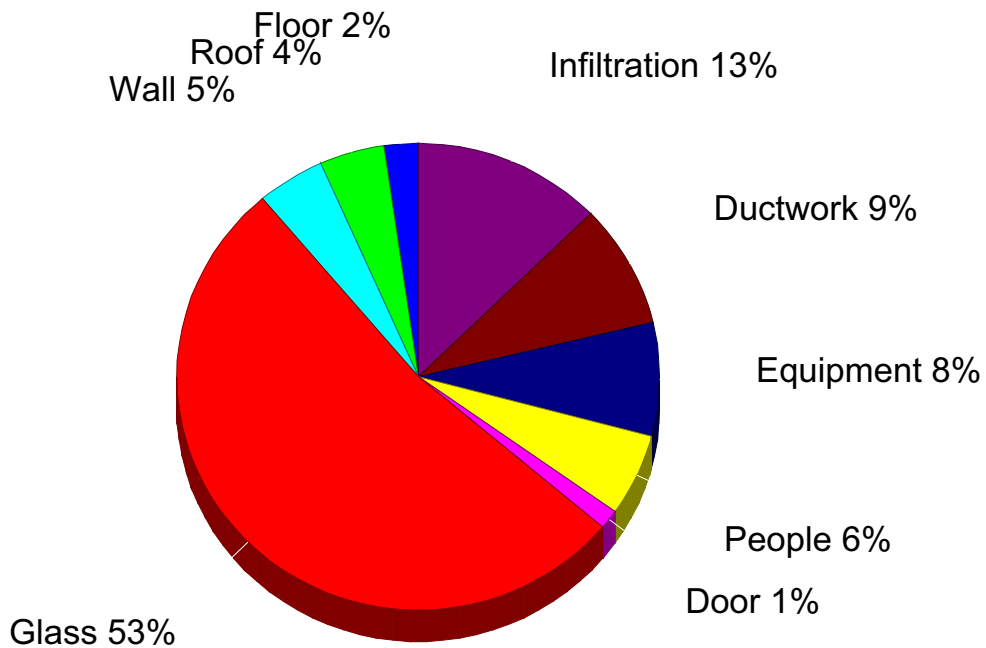
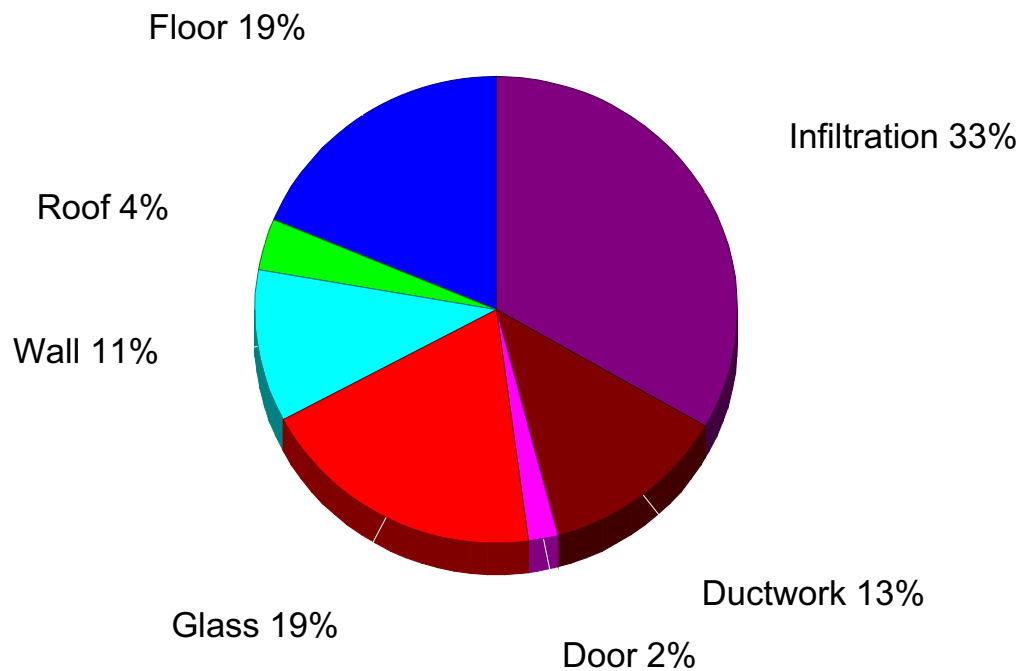
Zone Loads

Total Heating Required:	20,189 Btuh	20.189 MBH
Total Sensible Gain:	9,806 Btuh	87 %
Total Latent Gain:	1,510 Btuh	13 %
Total Cooling Required:	11,316 Btuh	0.94 Tons (Based On Sensible + Latent)
		1.08 Tons (Based On 75% Sensible Capacity)

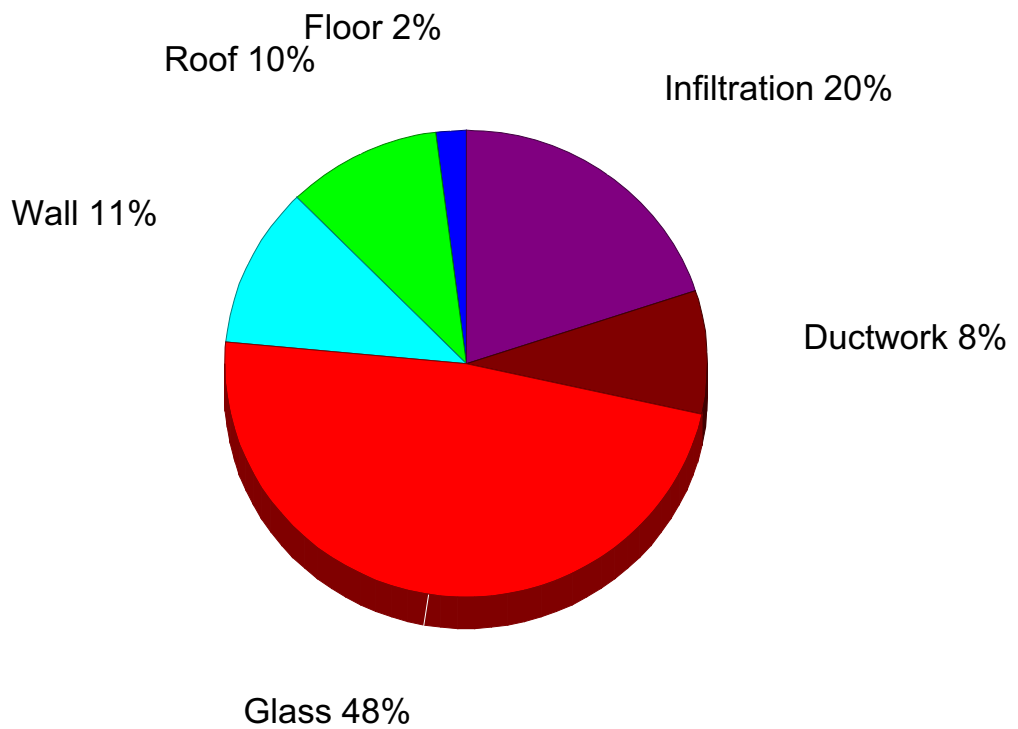
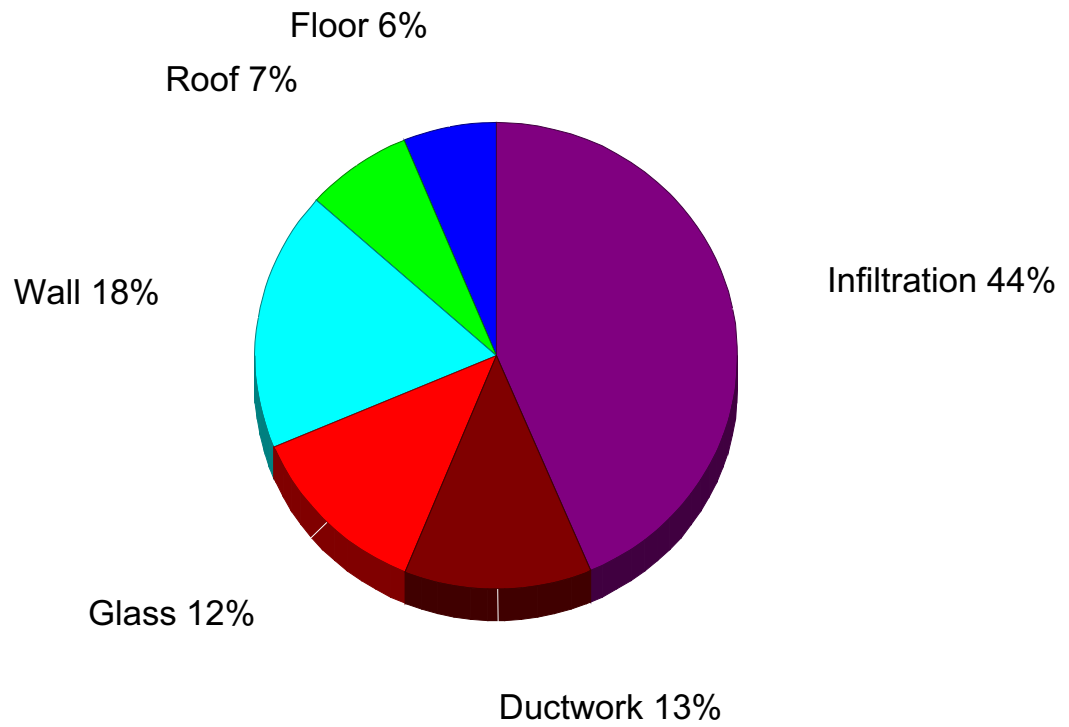
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System 1, Zone 1 Pie Chart



System 1, Zone 2 Pie Chart



Detailed Room Loads - Room 1 - Den And Bath (Peak Fenestration Gain Procedure)

General

Room is in zone 1, which peaks at 10 am			
Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	17.4 ft.	System Number:	1
Room Width:	17.4 ft.	Zone Number:	1
Area:	302.8 sq.ft.	Supply Air:	371 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	9.2 AC/hr
Volume:	2,422.1 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	4	Actual Winter Vent.:	0 CFM
Runout Air:	93 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	473 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	473 ft./min.	Actual Winter Infil.:	96 CFM
Actual Loss:	0.143 in.wg./100 ft.	Actual Summer Infil.:	45 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
SW-Wall-12B-0bw 17.4 X 8	139.2	0.097	5.3	743	0.7	0	104
SE-Wall-12B-0bw 17.4 X 8	57.7	0.097	5.3	308	0.7	0	43
N -Part-15°/25°-12B-0bw 17.4 X 4	49.6	0.097	2.4	120	1.5	0	72
N -Part-15°/35°-12B-0bw 17.4 X 8	139.2	0.097	3.4	473	1.5	0	203
N -Door-11J 3 X 6.7	20	0.600	15.0	300	9.0	0	180
SE-Gls-1D-cv-o shgc-0.56 12%S (2)	80	0.570	31.4	2,508	71.5	0	5,724
SE-Gls-1D-cv-o shgc-0.56 56%S	1.5	0.570	31.4	47	43.3	0	65
Floor-22A-pm 70 ft..Per.	70	1.180	64.9	4,543	0.0	0	0
Subtotals for Structure:				9,042		0	6,391
Infil.: Win.: 96.3, Sum.: 45.0	487		11.911	5,803	1.012	996	493
Ductwork:				2,135			799
People: 200 lat/per, 230 sen/per:	2					400	460
Room Totals:				16,980		1,396	8,143
fireplace							

Detailed Room Loads - Room 2 - Kitchen (Peak Fenestration Gain Procedure)

General

Room is in zone 1, which peaks at 10 am			
Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	13.0 ft.	System Number:	1
Room Width:	11.0 ft.	Zone Number:	1
Area:	143.0 sq.ft.	Supply Air:	398 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	20.9 AC/hr
Volume:	1,144.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	4	Actual Winter Vent.:	0 CFM
Runout Air:	100 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	507 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	507 ft./min.	Actual Winter Infil.:	36 CFM
Actual Loss:	0.164 in.wg./100 ft.	Actual Summer Infil.:	17 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
SE-Wall-12B-0bw 9 X 8	30.9	0.097	5.3	165	0.7	0	23
S -Wall-12B-0bw 2.2 X 8	10.7	0.097	5.3	57	0.7	0	8
E -Wall-12B-0bw 2.2 X 8	10.7	0.097	5.3	57	0.7	0	8
NE-Part-15°/25°-12A-0sw 12.8 X 6	76.5	0.240	6.0	459	3.6	0	275
SE-Gls-1D-cw-o shgc-0.56 0%S (2)	20.1	0.570	31.4	632	79.7	0	1,606
S -Gls-1D-cw-o shgc-0.56 62%S	6.9	0.570	31.4	216	22.6	0	156
E -Gls-1D-cw-o shgc-0.56 28%S	6.9	0.570	31.4	216	62.3	0	429
SE-Gls-1B-cm shgc-0.78 4%S	21	1.130	62.2	1,305	107.4	0	2,256
UP-Ceil-16B-21 13 X 11	143	0.044	2.4	346	2.0	0	283
Floor-19A-0cp 11 X 13	143	0.295	6.1	872	1.1	0	158
Floor-20P-11 2.2 X 5.7	12.8	0.078	4.3	55	0.4	0	5
Subtotals for Structure:				4,380		0	5,207
Infil.: Win.: 36.3, Sum.: 17.0	184		11.911	2,188	1.013	375	186
Ductwork:				945			857
People: 200 lat/per, 230 sen/per:	2					400	460
Equipment:						358	2,024
Room Totals:				7,513		1,133	8,734

Equipment Cooling Loads

Item Name	Continuous Output Sensible Btuh	Continuous Output Latent Btuh	Average In-Use Output	Percent Used per Hour	Sensible Load Btuh	Latent Load Btuh
Refrigerator or freezer - 16 cubic feet	1000	0	100	100	1000	0
Dishwasher	4096	1433	100	25	1024	358
Total					2024	358

Detailed Room Loads - Room 3 - Dining (Peak Fenestration Gain Procedure)

General

Room is in zone 1, which peaks at 10 am

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	11.0 ft.	System Number:	1
Room Width:	11.5 ft.	Zone Number:	1
Area:	126.5 sq.ft.	Supply Air:	183 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	10.9 AC/hr
Volume:	1,012.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	2	Actual Winter Vent.:	0 CFM
Runout Air:	92 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	466 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	466 ft./min.	Actual Winter Infil.:	36 CFM
Actual Loss:	0.139 in.wg./100 ft.	Actual Summer Infil.:	17 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
SE-Wall-12B-0bw 11 X 8	45.6	0.097	5.3	243	0.7	0	34
NE-Wall-12B-0bw 11.5 X 8	92	0.097	5.3	491	0.7	0	69
SE-Gls-1D-cw-o shgc-0.56 16%S (4)	42.4	0.570	31.4	1,328	69.4	0	2,944
UP-Ceil-16B-21 11 X 11.5	126.5	0.044	2.4	306	2.0	0	250
Floor-19A-0cp 11.5 X 11	126.5	0.295	6.1	771	1.1	0	140
Subtotals for Structure:				3,139		0	3,437
Infil.: Win.: 35.6, Sum.: 16.6	180		11.911	2,144	1.011	368	182
Ductwork:				760			394
Room Totals:				6,043		368	4,013

Detailed Room Loads - Room 4 - Living (Peak Fenestration Gain Procedure)

General

Room is in zone 1, which peaks at 10 am			
Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	12.8 ft.	System Number:	1
Room Width:	19.2 ft.	Zone Number:	1
Area:	245.8 sq.ft.	Supply Air:	160 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	4.9 AC/hr
Volume:	1,966.1 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	2	Actual Winter Vent.:	0 CFM
Runout Air:	80 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	407 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	407 ft./min.	Actual Winter Infil.:	59 CFM
Actual Loss:	0.107 in.wg./100 ft.	Actual Summer Infil.:	28 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
NE-Wall-12B-0sw 12.8 X 8	102.4	0.097	5.3	546	1.9	0	190
NW-Wall-12B-0sw 19.2 X 8	117.6	0.097	5.3	627	1.9	0	218
N -Wall-12B-0sw 2.8 X 8	10.4	0.097	5.3	55	1.9	0	19
E -Wall-12B-0sw 2.8 X 8	10.4	0.097	5.3	55	1.9	0	19
N -Gls-1D-cw-o shgc-0.56 0%S	12	0.570	31.4	376	15.7	0	188
E -Gls-1D-cw-o shgc-0.56 0%S	12	0.570	31.4	376	80.8	0	969
NW-Gls-1D-cw-o shgc-0.56 0%S	36	0.570	31.4	1,128	13.7	0	492
(3)							
UP-Ceil-16B-21 12.8 X 19.2	245.8	0.044	2.4	595	2.0	0	487
Floor-19A-0cp 19.2 X 12.8	245.8	0.295	6.1	1,498	1.1	0	272
Subtotals for Structure:				5,256		0	2,854
Infil.: Win.: 59.4, Sum.: 27.8	301		11.912	3,583	1.014	615	305
Ductwork:				1,271			344
Room Totals:				10,110		615	3,503

Bay has foam under vinyl

Detailed Room Loads - Room 5 - Foyer (Peak Fenestration Gain Procedure)

General

Room is in zone 1, which peaks at 10 am			
Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	13.0 ft.	System Number:	1
Room Width:	8.0 ft.	Zone Number:	1
Area:	104.0 sq.ft.	Supply Air:	100 CFM
Ceiling Height:	10.8 ft.	Supply Air Changes:	5.4 AC/hr
Volume:	1,123.2 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	1	Actual Winter Vent.:	0 CFM
Runout Air:	100 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	511 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	511 ft./min.	Actual Winter Infil.:	21 CFM
Actual Loss:	0.167 in.wg./100 ft.	Actual Summer Infil.:	10 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
NW-Wall-12B-0bw 8 X 8	44	0.097	5.3	235	0.7	0	33
N -Part-15°/25°-12B-0bw 4 X 10	40	0.097	2.4	97	1.5	0	58
NW-Door-11G 3 X 6.7	20	0.540	29.7	594	11.3	0	227
NW-Sky-8Ac-swi shgc-0.75	10	1.030	56.7	566	114.8	0	1,146
UP-Ceil-16B-21 3 X 3	9	0.044	2.4	22	2.0	0	18
NW-Ceil-16B-21 8 X 8	54	0.044	2.4	131	2.0	0	107
UP-Ceil-16B-13 2 X 28	56	0.070	3.9	216	3.2	0	176
Floor-19A-0cp 8 X 13	104	0.295	6.1	634	1.1	0	115
Subtotals for Structure:				2,495		0	1,880
Infil.: Win.: 20.5, Sum.: 9.6	104		11.913	1,239	1.010	213	105
Ductwork:				537			216
Room Totals:				4,271		213	2,201

Detailed Room Loads - Room 6 - Middle Bed (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	8.8 ft.	System Number:	1
Room Width:	12.0 ft.	Zone Number:	2
Area:	105.6 sq.ft.	Supply Air:	80 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	5.7 AC/hr
Volume:	844.8 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	1	Actual Winter Vent.:	0 CFM
Runout Air:	80 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	405 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	405 ft./min.	Actual Winter Infil.:	23 CFM
Actual Loss:	0.106 in.wg./100 ft.	Actual Summer Infil.:	11 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
SW-Wall-12B-0sw 13 X 8.8	102.4	0.097	5.3	546	1.9	0	190
SW-Gls-1D-cw-o shgc-0.56 0%S (2)	12	0.570	31.4	376	88.2	0	1,058
UP-Ceil-16B-21 8.8 X 12	105.6	0.044	2.4	256	2.0	0	209
Subtotals for Structure:				1,178		0	1,457
Infil.: Win.: 22.6, Sum.: 10.6	114		11.914	1,363	1.014	234	116
Ductwork:				365			171
Room Totals:				2,906		234	1,744

Detailed Room Loads - Room 7 - Corner Bed (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm			
Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	12.6 ft.	System Number:	1
Room Width:	11.2 ft.	Zone Number:	2
Area:	141.1 sq.ft.	Supply Air:	97 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	5.2 AC/hr
Volume:	1,129.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	1	Actual Winter Vent.:	0 CFM
Runout Air:	97 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	495 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	495 ft./min.	Actual Winter Infil.:	35 CFM
Actual Loss:	0.156 in.wg./100 ft.	Actual Summer Infil.:	17 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
SE-Wall-12B-0sw 11.2 X 7	69.4	0.097	5.3	370	1.9	0	129
SW-Wall-12B-0sw 12.6 X 8	91.8	0.097	5.3	490	1.9	0	170
SE-Gls-1D-cw-o shgc-0.56 0%S	9	0.570	31.4	282	40.3	0	363
SW-Gls-1D-cw-o shgc-0.56 0%S	9	0.570	31.4	282	88.2	0	794
UP-Ceil-16B-21 12.8 X 11.2	142.8	0.044	2.4	346	2.0	0	283
Subtotals for Structure:				1,770		0	1,739
Infil.: Win.: 35.4, Sum.: 16.6	179		11.914	2,135	1.010	366	181
Ductwork:				562			209
Room Totals:				4,467		366	2,129

Detailed Room Loads - Room 8 - Bath 1 (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	11.0 ft.	System Number:	1
Room Width:	6.0 ft.	Zone Number:	2
Area:	66.0 sq.ft.	Supply Air:	112 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	12.8 AC/hr
Volume:	528.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	2	Actual Winter Vent.:	0 CFM
Runout Air:	56 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	286 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	286 ft./min.	Actual Winter Infil.:	27 CFM
Actual Loss:	0.053 in.wg./100 ft.	Actual Summer Infil.:	13 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
N -Wall-12B-0sw 9 X 8	72	0.097	5.3	384	1.9	0	133
SE-Wall-12B-0sw 8 X 8	64	0.097	5.3	341	1.9	0	119
SE-Sky-8Ac-smw shgc-0.78	10.1	1.310	72.1	727	168.8	0	1,702
UP-Ceil-16B-21 10 X 6	60	0.044	2.4	145	2.0	0	119
SE-Roof-18A-21 3 X 6	7.9	0.047	2.6	20	1.0	0	8
Subtotals for Structure:				1,617		0	2,081
Infil.: Win.: 26.9, Sum.: 12.6	136		11.912	1,620	1.015	278	138
Ductwork:				466			241
Room Totals:				3,703		278	2,460

Detailed Room Loads - Room 9 - Hall (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	8.5 ft.	System Number:	1
Room Width:	8.5 ft.	Zone Number:	2
Area:	72.3 sq.ft.	Supply Air:	9 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	1.0 AC/hr
Volume:	578.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	1	Actual Winter Vent.:	0 CFM
Runout Air:	9 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	47 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	47 ft./min.	Actual Winter Infil.:	3 CFM
Actual Loss:	0.002 in.wg./100 ft.	Actual Summer Infil.:	1 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
N -Wall-12B-0sw 2 X 7	14	0.097	5.3	75	1.9	0	26
UP-Ceil-16B-21 8.5 X 8.5	72.2	0.044	2.4	175	2.0	0	143
Subtotals for Structure:				250		0	169
Infil.: Win.: 2.8, Sum.: 1.3	14		11.929	167	1.000	29	14
Ductwork:				60			20
Room Totals:				477		29	203

Detailed Room Loads - Room 10 - Master Bedroom (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	12.0 ft.	System Number:	1
Room Width:	14.9 ft.	Zone Number:	2
Area:	178.8 sq.ft.	Supply Air:	109 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	4.6 AC/hr
Volume:	1,430.4 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	1	Actual Winter Vent.:	0 CFM
Runout Air:	109 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	553 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	553 ft./min.	Actual Winter Infil.:	43 CFM
Actual Loss:	0.195 in.wg./100 ft.	Actual Summer Infil.:	20 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
NW-Wall-12B-0sw 12 X 8	78	0.097	5.3	416	1.9	0	145
SW-Wall-12B-0sw 14.9 X 8	119.2	0.097	5.3	636	1.9	0	221
NW-Gls-1D-cw-o shgc-0.56 0%S (3)	18	0.570	31.4	564	56.2	0	1,011
UP-Ceil-16B-21 12 X 14.9	178.8	0.044	2.4	433	2.0	0	354
Floor-19A-0cp 14.9 X 12	178.8	0.295	6.1	1,090	1.1	0	198
Subtotals for Structure:				3,139		0	1,929
Infil.: Win.: 42.5, Sum.: 19.9	215		11.910	2,563	1.013	440	218
Ductwork:				820			233
Room Totals:				6,522		440	2,380

Detailed Room Loads - Room 11 - Master Bath (Peak Fenestration Gain Procedure)

General

Room is in zone 2, which peaks at 5 pm

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	5.5 ft.	System Number:	1
Room Width:	5.0 ft.	Zone Number:	2
Area:	27.5 sq.ft.	Supply Air:	41 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	11.1 AC/hr
Volume:	220.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	1	Actual Winter Vent.:	0 CFM
Runout Air:	41 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	207 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	207 ft./min.	Actual Winter Infil.:	16 CFM
Actual Loss:	0.028 in.wg./100 ft.	Actual Summer Infil.:	7 CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
NW-Wall-12B-0sw 5 X 8	31	0.097	5.3	165	1.9	0	57
N -Wall-12B-0sw 5 X 8	40	0.097	5.3	213	1.9	0	74
NW-Gls-1D-cw-o shgc-0.56 0%S (2)	9	0.570	31.4	282	56.2	0	506
UP-Ceil-16B-21 5.5 X 5	27.5	0.044	2.4	67	2.0	0	54
Floor-19A-0cp 5 X 5.5	27.5	0.295	6.1	168	1.1	0	30
Subtotals for Structure:				895		0	721
Infil.: Win.: 15.8, Sum.: 7.4	80		11.913	953	1.013	163	81
Ductwork:				266			87
Room Totals:				2,114		163	889