Athems Lot 4
HVAC Load Calculations

for

Assured Development
4 Idaho Way
Henderson, NV 89015

Elite Software

RHVAC Residential HVAC Loads

Prepared By:

JB
Just IN Time
631 N Stephanie St #193
Henderson, NV 89014

Tuesday, January 7, 2020

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.

Project Report

General Project Information

Project Title:	Athems Lot 4
Designed By:	J Baca
Project Date:	Tuesday, Jan 7 2020
Client Name:	Assured Development
Client Address:	4 Idaho Way
Client City:	Henderson, NV 89015
Company Name:	Just IN Time
Company Representative:	JB
Company Address:	631 N Stephanie St #193
Company City:	Henderson, NV 89014

Design Data

Reference City:		Las Vegas, Nevada
Building Orientation:		Front door faces South
Daily Temperature Range:		High
Latitude:	36	Degrees
Elevation:	2162	ft.
Altitude Factor:	0.924	

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	28	26.06	n/a	n/a	70	n/a
Summer:	106	65	9%	50%	75	-36

Check Figures

Total Building Supply CFM:	6,469	CFM Per Square ft.:	0.669
Square ft. of Room Area:	9,664	Square ft. Per Ton:	840
Volume (ft³):	96,640		

Building Loads

Total Heating Required Including Ventilation Air:	155,565	Btuh	155.565	MBH
Total Sensible Gain:	146,600	Btuh	100	%
Total Latent Gain:	-8,522	Btuh	0	%
Total Cooling Required Including Ventilation Air:	146,600	Btuh	12.22	Tons (Based On Sensible + Latent)

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.
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 System 1 Main Floor Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	28	26.06	80%	n/a	70	n/a
Summer:	106	65	9%	50%	75	-35.53

System 2 Kitchen Main Floor Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	28	26.06	80%	n/a	70	n/a
Summer:	106	65	9%	50%	75	-35.53

System 3 Great Area Upstairs Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	28	26.06	80%	n/a	70	n/a
Summer:	106	65	9%	50%	75	-35.53

System 4 Upstairs Master Bedroom Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	28	26.06	80%	n/a	70	n/a
Summer:	106	65	9%	50%	75	-35.53

Duct Sizing Inputs

	Main Trunk		Runouts	
Calculate:	Yes		Yes	
Use Schedule:	Yes		Yes	
Roughness Factor:	0.00300		0.00550	
Pressure Drop:	0.1000	in.wg./100 ft.	0.1000	in.wg./100 ft.
Minimum Velocity:	0	ft./min	0	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:	0.497	AC/hr	0.254	AC/hr
	801	CFM	408	CFM
Infiltration Actual:	0.497	AC/hr	0.254	AC/hr
Above Grade Volume:	X 96,640	Cu.ft.	X 96,640	Cu.ft.
	48,045	Cu.ft./hr	24,502	Cu.ft./hr
	X 0.0167		X 0.0167	
Total Building Infiltration:	801	CFM	408	CFM
Total Building Ventilation:	0	CFM	0	CFM

---System 1---
Infiltration & Ventilation Sensible Gain Multiplier: 31.52 = (1.10 X 0.924 X 31.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier: -22.33 = (0.68 X 0.924 X -35.53 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier: 42.70 = (1.10 X 0.924 X 42.00 Winter Temp. Difference)
Winter Infiltration Specified: 0.560 AC/hr (197 CFM), Construction: Semi-Loose, Fireplaces: 1, 13 CFM, Semi-Tight
Summer Infiltration Specified: 0.290 AC/hr (102 CFM), Construction: Semi-Loose

---System 2---
Infiltration & Ventilation Sensible Gain Multiplier: 31.52 = (1.10 X 0.924 X 31.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier: -22.33 = (0.68 X 0.924 X -35.53 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier: 42.70 = (1.10 X 0.924 X 42.00 Winter Temp. Difference)
Winter Infiltration Specified: 0.430 AC/hr (152 CFM), Construction: Semi-Loose
Summer Infiltration Specified: 0.230 AC/hr (81 CFM), Construction: Semi-Loose

---System 3---
Infiltration & Ventilation Sensible Gain Multiplier: 31.52 = (1.10 X 0.924 X 31.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier: -22.33 = (0.68 X 0.924 X -35.53 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier: 42.70 = (1.10 X 0.924 X 42.00 Winter Temp. Difference)
Winter Infiltration Specified: 0.430 AC/hr (269 CFM), Construction: Semi-Loose
Summer Infiltration Specified: 0.230 AC/hr (144 CFM), Construction: Semi-Loose

Miscellaneous Report (cont'd)

Outside Air Data

---System 4---

Infiltration & Ventilation Sensible Gain Multiplier: 31.52 = (1.10 X 0.924 X 31.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier: -22.33 = (0.68 X 0.924 X -35.53 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier: 42.70 = (1.10 X 0.924 X 42.00 Winter Temp. Difference)
Winter Infiltration Specified: 0.560 AC/hr (157 CFM), Construction: Semi-Loose, Fireplaces: 1, 13 CFM, Semi-Tight
Summer Infiltration Specified: 0.290 AC/hr (81 CFM), Construction: Semi-Loose

Duct Load Factor Scenarios for System 1

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply	main	Attic	16B	0.12	6	426	No
1	Return	main	Attic	16B	0.12	6	394	No

Duct Load Factor Scenarios for System 2

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply		Attic	16B	0.12	6	426	No

Duct Load Factor Scenarios for System 3

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply		Attic	16B	0.12	6	426	No
1	Return		Attic	16B	0.12	6	394	No

Duct Load Factor Scenarios for System 4

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply	main	Attic	16B	0.12	6	426	No
1	Return	main	Attic	16B	0.12	6	394	No

Load Preview Report

Scope	Net Ton	ft²/Ton	Area	Sen Gain	Lat Gain	Net Gain	Sen Loss	Sys Htg CFM	Sys Clg CFM	Sys Act CFM	Duct Size
Building	12.22	840	9,664	146,600	-8,522	146,600	155,565	2,091	6,469	6,469	
System 1	2.27	1,022	2,112	27,233	-2,446	27,233	38,156	504	1,095	1,095	12x16
Supply Duct Latent					92	92					
Return Duct				4,970	-858	4,112	2,259				
Zone 2			2,112	22,263	-1,680	22,263	35,897	504	1,095	1,095	12x16
2-House			2,112	22,263	-1,680	22,263	35,897	504	1,095	1,095	10--6
System 2	3.78	571	2,122	45,304	-738	45,304	36,881	518	2,228	2,228	20x20
Supply Duct Latent					-312	0					
Zone 1			2,122	45,304	-426	45,304	36,881	518	2,228	2,228	20x20
1-Kitchen			2,122	45,304	-426	45,304	36,881	518	2,228	2,228	21--6
System 3	3.49	1,169	3,750	41,888	-3,378	41,888	50,680	680	1,811	1,811	18x18
Supply Duct Latent					90	90					
Return Duct				5,072	-858	4,213	2,308				
Zone 3			3,750	36,816	-2,610	36,816	48,372	680	1,811	1,811	18x18
3-Upstairs			3,750	36,816	-2,610	36,816	48,372	680	1,811	1,811	17--6
System 4	2.68	667	1,680	32,176	-1,959	32,176	29,848	388	1,335	1,335	12x18
Supply Duct Latent					112	112					
Return Duct				5,020	-858	4,163	2,205				
Zone 4			1,680	27,155	-1,213	27,155	27,643	388	1,335	1,335	12x18
4-Upstairs Master Bed			1,680	27,155	-1,213	27,155	27,643	388	1,335	1,335	13--6

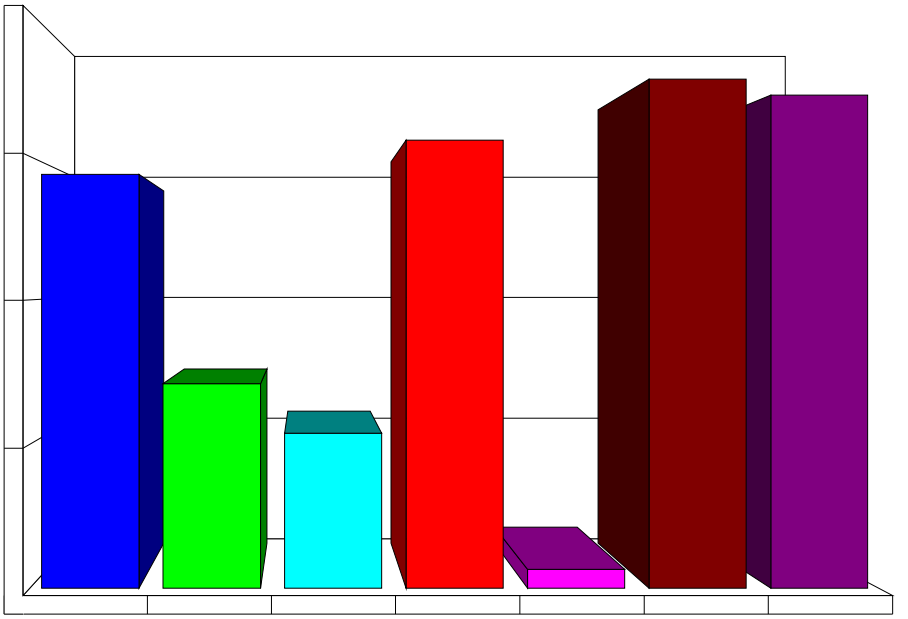
Duct Size Preview

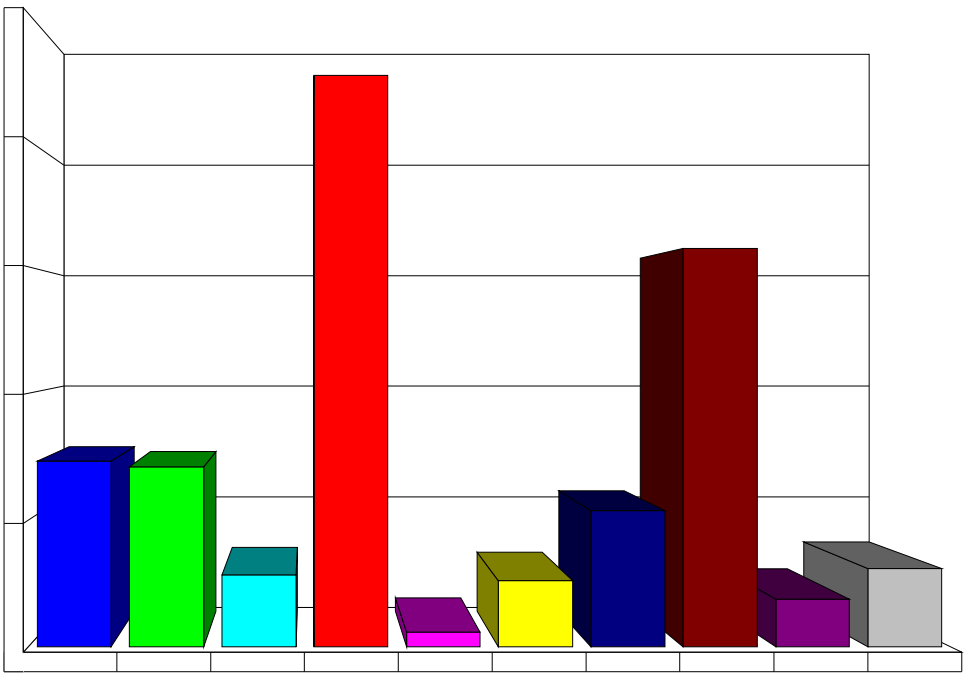
Room or Duct Name	Source	Minimum Velocity	Maximum Velocity	Rough. Factor	Design L/100	SP Loss	Duct Velocity	Duct Length	Htg Flow	Clg Flow	Act. Flow	Duct Size
System 1												
Supply Runouts												
Zone 2												
2-House	Built-In	0	750	0.0055	0.1		557.6		504	1,095	1,095	10--6
Other Ducts in System 1												
Supply Main Trunk	Built-In	0	900	0.003	0.1		821.1		504	1,095	1,095	12x16
System 2												
Supply Runouts												
Zone 1												
1-Kitchen	Built-In	0	750	0.0055	0.1		540.3		518	2,228	2,228	21--6
Other Ducts in System 2												
Supply Main Trunk	Built-In	0	900	0.003	0.1		802		518	2,228	2,228	20x20
System 3												
Supply Runouts												
Zone 3												
3-Upstairs	Built-In	0	750	0.0055	0.1		542.4		680	1,811	1,811	17--6
Other Ducts in System 3												
Supply Main Trunk	Built-In	0	900	0.003	0.1		804.7		680	1,811	1,811	18x18
System 4												
Supply Runouts												
Zone 4												
4-Upstairs Master Bed	Built-In	0	750	0.0055	0.1		523.2		388	1,335	1,335	13--6
Other Ducts in System 4												
Supply Main Trunk	Built-In	0	900	0.003	0.1		890.3		388	1,335	1,335	12x18

Summary

System 1	
Heating Flow:	504
Cooling Flow:	1095
System 2	
Heating Flow:	518
Cooling Flow:	2228
System 3	
Heating Flow:	680
Cooling Flow:	1811
System 4	
Heating Flow:	388
Cooling Flow:	1335

Building Bar Graph





Manual S Performance Data - System 1 - System 1 Main Floor

Loads and Design Conditions

Cooling:

Outdoor Dry Bulb:	0	Sensible Gain:	27.233
Outdoor Wet Bulb:	65	Latent Gain:	-2.446
Indoor Dry Bulb:	75	Total Gain:	24.787
Indoor RH:	50	Load SHR:	1.10
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Heating:

Outdoor Dry Bulb:	28	Sensible Loss:	38.156
Indoor Dry Bulb:	70	Entering Dry Bulb:	65.6
Indoor RH:	30	Supply Airflow:	504

Equipment Performance Data at System Design Conditions

This system's equipment was selected in accordance with ACCA Manual S.

Cooling:
Model Type: Standard Air Conditioner, Model: RA1660AJ1+RCF6024STAM, Nominal Capacity: 58.000, Manufacturer: RUUD

Interpolation Results:

		Load	Percent of Load
Sensible Capacity:	0.000	27.233	0%
Latent Capacity:	0.000	-2.446	0%
Total Capacity:	0.000	24.787	0%

Heating:
Model Type: Natural Gas Furnace, Model: UQPW-B0(42,48)JK08X, Nominal Capacity: 62.000, Manufacturer: RUUD AIR CONDITIONING DIVISION

Results:

		Load	Percent of Load
Heating Capacity:	62.000	38.156	162%

Manual S Performance Data - System 2 - Kitchen Main Floor

Loads and Design Conditions

Cooling:

Outdoor Dry Bulb:	0	Sensible Gain:	45.304
Outdoor Wet Bulb:	65	Latent Gain:	-0.738
Indoor Dry Bulb:	75	Total Gain:	44.565
Indoor RH:	50	Load SHR:	1.02
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Heating:

Outdoor Dry Bulb:	28	Sensible Loss:	36.881
Indoor Dry Bulb:	70	Entering Dry Bulb:	70.0
Indoor RH:	30	Supply Airflow:	518

Equipment Performance Data at System Design Conditions

This system's equipment was selected in accordance with ACCA Manual S.

Cooling:
Model Type: Standard Air Conditioner, Model: RA1660AJ1+RCF6024STAM, Nominal Capacity: 35.400, Manufacturer: RUUD

Interpolation Results:

		Load	Percent of Load
Sensible Capacity:	0.000	45.304	0%
Latent Capacity:	0.000	-0.738	0%
Total Capacity:	0.000	44.565	0%

Heating:
Model Type: Natural Gas Furnace, Model: UQPW-B0(42,48)JK08X, Nominal Capacity: 31.000, Manufacturer: RUUD AIR CONDITIONING DIVISION

Results:

		Load	Percent of Load
Heating Capacity:	31.000	36.881	84%

Manual S Performance Data - System 3 - Great Area Upstairs

Loads and Design Conditions

Cooling:

Outdoor Dry Bulb:	0	Sensible Gain:	41.888
Outdoor Wet Bulb:	65	Latent Gain:	-3.378
Indoor Dry Bulb:	75	Total Gain:	38.510
Indoor RH:	50	Load SHR:	1.09
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Heating:

Outdoor Dry Bulb:	28	Sensible Loss:	50.680
Indoor Dry Bulb:	70	Entering Dry Bulb:	66.7
Indoor RH:	30	Supply Airflow:	680

Equipment Performance Data at System Design Conditions

This system's equipment was selected in accordance with ACCA Manual S.

Cooling:
Model Type: Standard Air Conditioner, Model: RA1660AJ1+RCF6024STAM, Nominal Capacity: 35.400, Manufacturer: RUUD

Interpolation Results:

		Load	Percent of Load
Sensible Capacity:	0.000	41.888	0%
Latent Capacity:	0.000	-3.378	0%
Total Capacity:	0.000	38.510	0%

Heating:
Model Type: Natural Gas Furnace, Model: UQPW-B0(42,48)JK08X, Nominal Capacity: 31.000, Manufacturer: RUUD AIR CONDITIONING DIVISION

Results:

		Load	Percent of Load
Heating Capacity:	31.000	50.680	61%

Manual S Performance Data - System 4 - Upstairs Master Bedroom

Loads and Design Conditions

Cooling:

Outdoor Dry Bulb:	0	Sensible Gain:	32.176
Outdoor Wet Bulb:	65	Latent Gain:	-1.959
Indoor Dry Bulb:	75	Total Gain:	30.216
Indoor RH:	50	Load SHR:	1.06
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Heating:

Outdoor Dry Bulb:	28	Sensible Loss:	29.848
Indoor Dry Bulb:	70	Entering Dry Bulb:	64.4
Indoor RH:	30	Supply Airflow:	388

Equipment Performance Data at System Design Conditions

This system's equipment was selected in accordance with ACCA Manual S.

Cooling:
Model Type: Standard Air Conditioner, Model: RA1648AC1+C(A,C,D)60E44+TDR, Nominal Capacity: 48.000, Manufacturer: RUUD

Interpolation Results:

		Load	Percent of Load
Sensible Capacity:	0.000	32.176	0%
Latent Capacity:	0.000	-1.959	0%
Total Capacity:	0.000	30.216	0%

Heating:
Model Type: Natural Gas Furnace, Model: UQPW-B0(42,48)JK08X, Nominal Capacity: 62.000, Manufacturer: RUUD AIR CONDITIONING DIVISION

Results:

		Load	Percent of Load
Heating Capacity:	62.000	29.848	208%

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

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	n/a		System Number:	1	
Room Width:	n/a		Zone Number:	2	
Area:	2,112.0	sq.ft.	Supply Air:	1,095	CFM
Ceiling Height:	10.0	ft.	Supply Air Changes:	3.1	AC/hr
Volume:	21,120	cu.ft.	Req. Vent. Clg:	0	CFM
Number of Registers:	10		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:	558	ft./min.	Percent of Supply:	0	%
Runout Air Velocity:	558	ft./min.	Actual Winter Infil.:	210	CFM
Actual Loss:	0.151	in.wg./100 ft.	Actual Summer Infil.:	102	CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
N -Wall-12E-2bw 66.2 X 10	488.6	0.063	2.6	1,293	1.4	0	665
E -Wall-12E-0bw 60 X 10	558	0.068	2.9	1,594	1.5	0	850
W -Wall-12E-0bw 60 X 10	600	0.068	2.9	1,714	1.5	0	914
N -Door-CustomDoor2 6 X 8	48	0.360	15.1	726	13.3	0	639
E -Gls-1D-hv-o shgc-0.44 0%S	42	0.570	23.9	1,005	59.6	0	2,502
N -Gls-1D-hv-o shgc-0.44 100%S	125	0.570	23.9	2,993	26.5	0	3,311
UP-Ceil-16ER-30 48 X 44	2112	0.032	1.3	2,839	1.2	0	2,433
Floor-22A-pl 186 ft..Per.	186	0.989	41.5	7,726	0.0	0	0
Subtotals for Structure:				19,890		0	11,314
Infil.: Win.: 210.1, Sum.: 102.1	1,862		4.820	8,973	1.728	-2,280	3,217
Ductwork:				7,033			4,634
People: 200 lat/per, 275 sen/per:	3					600	825
Equipment:						0	2,273
Room Totals:				35,897		-1,680	22,263

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
Vented clothes dryer - 10 percent to space	1707	0	50	50	427	0
Color television	683	0	100	100	683	0
Stereo	375	0	100	100	375	0
Computer and monitor	1536	0	35	100	538	0
Ceiling fan	250	0	100	100	250	0
Total					2273	0

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

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	n/a		System Number:	2	
Room Width:	n/a		Zone Number:	1	
Area:	2,122.0	sq.ft.	Supply Air:	2,228	CFM
Ceiling Height:	10.0	ft.	Supply Air Changes:	6.3	AC/hr
Volume:	21,220	cu.ft.	Req. Vent. Clg:	0	CFM
Number of Registers:	21		Actual Winter Vent.:	0	CFM
Runout Air:	106	CFM	Percent of Supply.:	0	%
Runout Duct Size:	6	in.	Actual Summer Vent.:	0	CFM
Runout Air Velocity:	540	ft./min.	Percent of Supply:	0	%
Runout Air Velocity:	540	ft./min.	Actual Winter Infil.:	152	CFM
Actual Loss:	0.142	in.wg./100 ft.	Actual Summer Infil.:	81	CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
S -Wall-12E-2bw 66.2 X 10	95.6	0.063	2.6	253	1.4	0	130
S -Door-11J 3 X 8	24	0.600	25.2	605	22.2	0	533
S -Gls-1D-hv-o shgc-0.44 0%S	42	0.570	23.9	1,005	33.5	0	1,407
S -Gls-1D-cm-o shgc-0.67 0%S	500	0.870	36.5	18,270	51.1	0	25,530
UP-Ceil-16ER-30 48 X 44	2112	0.032	1.3	2,839	1.2	0	2,433
Subtotals for Structure:				22,972		0	30,033
Infil.: Win.: 152.1, Sum.: 81.3	662		9.816	6,494	3.875	-1,817	2,564
Ductwork:				7,415			5,064
AED Excursion:							3,589
People: 200 lat/per, 275 sen/per:	2					400	550
Equipment:						991	3,504
Room Totals:				36,881		-426	45,304

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
Microwave	4949	1732	75	25	928	325
Cooking range with hood - four burners on high heat	0	0	100	100	0	0
Dishwasher	4096	1433	100	25	1024	358
Refrigerator or freezer - 12 cubic feet	700	0	100	100	700	0
Toaster	3532	392	100	10	353	39
Crock pot - low heat	166	90	100	100	166	90
Coffee maker - brewer	1331	717	100	25	333	179
Total					3504	991

Detailed Room Loads - Room 3 - Upstairs (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	75.0	ft.	System Number:	3	
Room Width:	50.0	ft.	Zone Number:	3	
Area:	3,750.0	sq.ft.	Supply Air:	1,811	CFM
Ceiling Height:	10.0	ft.	Supply Air Changes:	2.9	AC/hr
Volume:	37,500	cu.ft.	Req. Vent. Clg:	0	CFM
Number of Registers:	17		Actual Winter Vent.:	0	CFM
Runout Air:	107	CFM	Percent of Supply.:	0	%
Runout Duct Size:	6	in.	Actual Summer Vent.:	0	CFM
Runout Air Velocity:	542	ft./min.	Percent of Supply:	0	%
Runout Air Velocity:	542	ft./min.	Actual Winter Infil.:	269	CFM
Actual Loss:	0.144	in.wg./100 ft.	Actual Summer Infil.:	144	CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
N -Wall-12E-2bw 36 X 10	135	0.063	2.6	357	1.4	0	184
S -Wall-12E-2bw 36 X 10	360	0.063	2.6	953	1.4	0	490
E -Wall-12E-2bw 21 X 10	210	0.063	2.6	556	1.4	0	286
N -Gls-1D-hv-o shgc-0.44 100%S	225	0.570	23.9	5,387	26.5	0	5,960
UP-Ceil-16ER-30 75 X 50	3750	0.032	1.3	5,040	1.2	0	4,320
Floor-19A-0cp 50 X 75	3750	0.295	4.7	17,454	3.4	0	12,883
Subtotals for Structure:				29,747		0	24,123
Infil.: Win.: 268.8, Sum.: 143.8	930		12.340	11,476	4.872	-3,210	4,531
Ductwork:				7,149			4,645
People: 200 lat/per, 275 sen/per:	3					600	825
Equipment:						0	2,692
Room Totals:				48,372		-2,610	36,816

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
Computer and monitor	1536	0	35	100	538	0
Color television	683	0	100	100	683	0
Color television	683	0	100	100	683	0
Ceiling fan	250	0	100	100	250	0
Computer and monitor	1536	0	35	100	538	0
Total					2692	0

Detailed Room Loads - Room 4 - Upstairs Master Bed (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.		Occurrences:	1	
Room Length:	n/a		System Number:	4	
Room Width:	n/a		Zone Number:	4	
Area:	1,680.0	sq.ft.	Supply Air:	1,335	CFM
Ceiling Height:	10.0	ft.	Supply Air Changes:	4.8	AC/hr
Volume:	16,800	cu.ft.	Req. Vent. Clg:	0	CFM
Number of Registers:	13		Actual Winter Vent.:	0	CFM
Runout Air:	103	CFM	Percent of Supply.:	0	%
Runout Duct Size:	6	in.	Actual Summer Vent.:	0	CFM
Runout Air Velocity:	523	ft./min.	Percent of Supply:	0	%
Runout Air Velocity:	523	ft./min.	Actual Winter Infil.:	170	CFM
Actual Loss:	0.134	in.wg./100 ft.	Actual Summer Infil.:	81	CFM

Item Description	Area Quantity	-U- Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sen Gain
W -Wall-stucco 100 X 10	920	0.068	2.9	2,628	1.5	0	1,401
S -Wall-stucco 25 X 10	250	0.068	2.9	714	1.5	0	381
N -Wall-stucco 25 X 10	250	0.068	2.9	714	1.5	0	381
W -Gls-1F-cm-o shgc-0.6 0%S	80	0.720	30.2	2,419	79.5	0	6,356
UP-Ceil-16BR-19 1680 X 1	1680	0.049	2.1	3,457	3.0	0	5,022
Floor-20P-19 1 X 1680	1680	0.050	2.1	3,528	1.1	0	1,764
Subtotals for Structure:				13,460		0	15,305
Infil.: Win.: 169.8, Sum.: 81.2	1,500		4.834	7,251	1.706	-1,813	2,559
Ductwork:				6,932			4,612
AED Excursion:							2,582
People: 200 lat/per, 275 sen/per:	3					600	825
Equipment:						0	1,272
Room Totals:				27,643		-1,213	27,155

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
Clothes washing machine - 10 percent to space	205	0	50	50	51	0
Color television	683	0	100	100	683	0
Computer and monitor	1536	0	35	100	538	0
Total					1272	0