

Project Information

For: CCBA Spec Home

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	37	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	33	52		

HEATING EQUIPMENT

Make	
Trade	
Model	
AHRI ref	
Efficiency	100 EFF
Heating input	4.3 kW
Heating output	14727 Btuh
Temperature rise	14 °F
Actual air flow	944 cfm
Air flow factor	0.048 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	

COOLING EQUIPMENT

Make	
Trade	
Cond	
Coil	
AHRI ref	
Efficiency	15 SEER
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	944 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.79

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Living Room Kitch	630	8606	10233	410	433
Hall Bath	81	868	1468	41	62
Bed 3	156	2416	2197	115	93
Bed 2	130	1660	1273	79	54
M Bed	263	3164	3318	151	140
Mbath	78	1524	1844	73	78
Laundry	88	1547	1984	74	84
Entire House	1426	19784	22316	944	944
Other equip loads		0	0		
Equip. @ 0.97 RSM			21647		
Latent cooling			5960		
TOTALS	1426	19784	27606	944	944

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Information

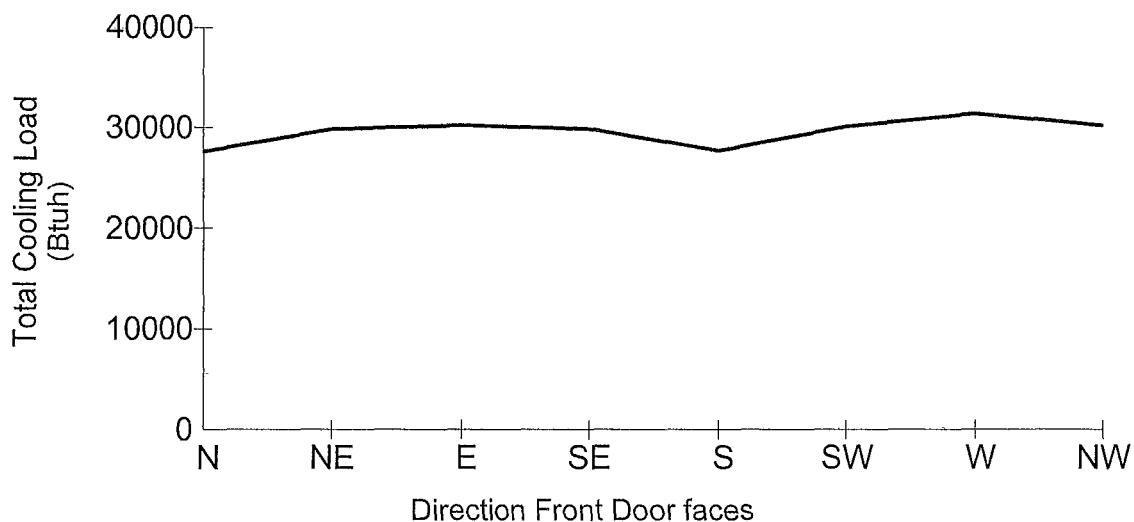
For: CCBA Spec Home

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville, FL, US		Indoor temperature (°F)		70	75
Elevation: 151 ft		Design TD (°F)		37	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		32.8	52.0
Outdoor:		Heating	Cooling	Infiltration:	
Dry bulb (°F)		33	92		
Daily range (°F)		-	19 (M)		
Wet bulb (°F)		-	77		
Wind speed (mph)		15.0	7.5		

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	21647	23689	24069	23736	21742	23927	25089	24080
Latent Load (Btuh)	5960	6145	6149	6145	5959	6150	6271	6149
Total Load (Btuh)	27606	29834	30218	29881	27701	30077	31360	30229
Heating AVF (cfm)	944	1022	1039	1024	948	1033	1085	1040
Cooling AVF (cfm)	944	1022	1039	1024	948	1033	1085	1040

Building Orientation Cooling Load



Current Orientation: Front Door faces North
Highest Cooling Load: Front Door faces West

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Information

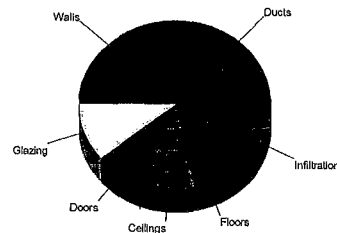
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Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville, FL, US		Indoor temperature (°F)		70	75
Elevation 151 ft		Design TD (°F)		37	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		32.8	52.0
Outdoor:		Heating	Cooling		
Dry bulb (°F)		33	92		
Daily range (°F)		-	19 (M)		
Wet bulb (°F)		-	77		
Wind speed (mph)		15.0	7.5		
		Infiltration:			
		Method		Simplified	
		Construction quality		Average	
		Fireplaces		0	

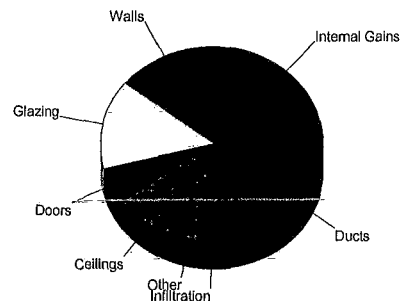
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.4	4900	24.8
Glazing	17.4	2226	11.3
Doors	22.2	1684	8.5
Ceilings	1.2	1688	8.5
Floors	0.6	896	4.5
Infiltration	2.3	3844	19.4
Ducts		4546	23.0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		19784	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	3199	14.3
Glazing	25.8	3300	14.8
Doors	17.5	1326	5.9
Ceilings	1.7	2402	10.8
Floors	0.3	412	1.8
Infiltration	0.5	903	4.0
Ducts		5625	25.2
Ventilation		0	0
Internal gains		5150	23.1
Blower		0	0
Adjustments		0	0
Total		22316	100.0



Latent Cooling Load = 5960 Btuh
 Overall U-value = 0.078 Btuh/ft²·°F

Data entries checked.

Project Information

For: CCBA Spec Home

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville, FL, US		Indoor temperature (°F)		70	75
Elevation: 151 ft		Design TD (°F)		37	17
Latitude: 30°N		Relative humidity (%)		50	50
Outdoor:		Moisture difference (gr/lb)		32.8	52.0
Dry bulb (°F)		Infiltration:			
Daily range (°F)		Method		Simplified	
Wet bulb (°F)		Construction quality		Average	
Wind speed (mph)		Fireplaces		0	
Heating	33	Cooling	92		
	-		19 (M)		
	-		77		
	15.0		7.5		

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
12C-0sw Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm	n	314	0.091	13.0	3.37	1057	2.20	690
	ne	23	0.091	13.0	3.37	76	2.20	50
	e	382	0.091	13.0	3.37	1286	2.20	840
	s	318	0.091	13.0	3.37	1071	2.20	699
	w	404	0.091	13.0	3.37	1360	2.20	888
	nw	15	0.091	13.0	3.37	50	2.20	33
	all	1455	0.091	13.0	3.37	4900	2.20	3199

Partitions (none)

Windows

4A3-2ov 2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk	n	64	0.470	0	17.4	1113	16.5	1057
	e	12	0.470	0	17.4	209	47.3	568
	s	28	0.470	0	17.4	487	19.2	539
	w	24	0.470	0	17.4	417	47.3	1136
	all	128	0.470	0	17.4	2226	25.8	3300

Doors

11J0 Door, mtl fbgrl type	ne	20	0.600	6.3	22.2	440	17.5	347
	s	42	0.600	6.3	22.2	932	17.5	735
	nw	14	0.600	6.3	22.2	311	17.5	245
	all	76	0.600	6.3	22.2	1684	17.5	1326

Ceilings

16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 cell ins		1426	0.032	30.0	1.18	1688	1.68	2402
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Floors

19C-19cscp Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-2 ext ins, r-19 cav ins, tight cowl ovr, r-11 wall insul		1426	0.049	30.0	0.63	896	0.29	412
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Project Information

For: CCBA Spec Home

Notes:

Design Information

Weather: Gainesville, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	52 gr/lb

Heating Summary

Structure	15238 Btuh
Ducts	4546 Btuh
Central vent (0 cfm)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	19784 Btuh

Sensible Cooling Equipment Load Sizing

Structure	16691 Btuh
Ducts	5625 Btuh
Central vent (0 cfm)	0 Btuh
Blower	0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	21647 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	1426	1426
Volume (ft ³)	12663	12663
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	95	49

Latent Cooling Equipment Load Sizing

Structure	4707 Btuh
Ducts	1253 Btuh
Central vent (0 cfm)	0 Btuh
Equipment latent load	5960 Btuh

Equipment total load	27606 Btuh
Req. total capacity at 0.70 SHR	2.6 ton

Heating Equipment Summary

Make	
Trade	
Model	
AHRI ref	
Efficiency	100 EFF
Heating input	4.3 kW
Heating output	14727 Btuh
Temperature rise	14 °F
Actual air flow	944 cfm
Air flow factor	0.048 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	

Cooling Equipment Summary

Make	
Trade	
Cond	
Coil	
AHRI ref	
Efficiency	15 SEER
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	944 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.79

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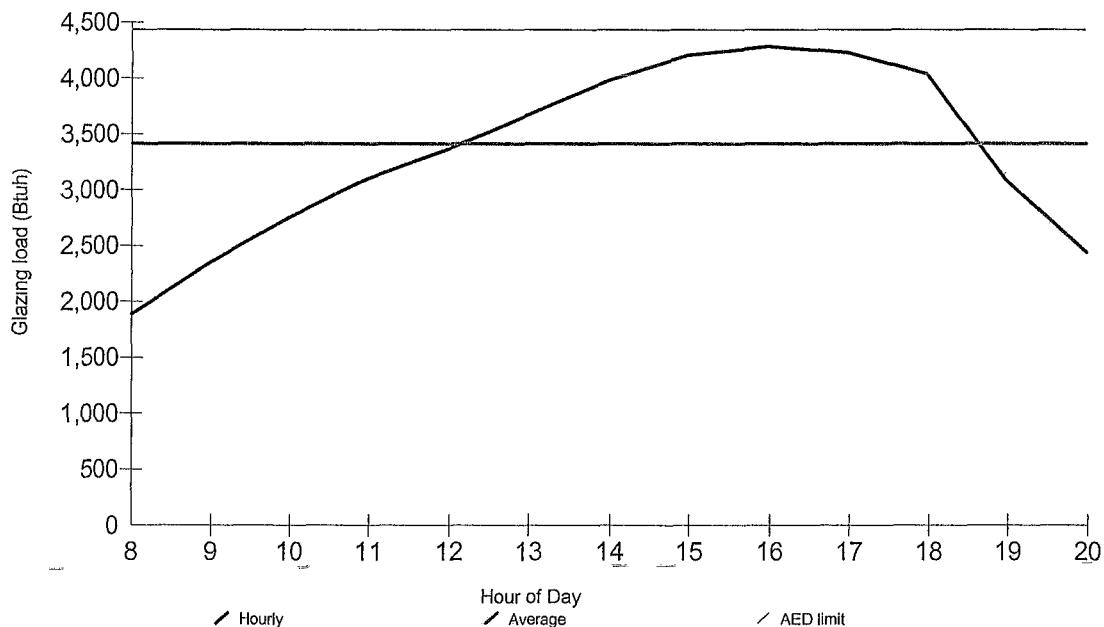
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Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville, FL, US		Indoor temperature (°F)		70	75
Elevation: 151 ft		Design TD (°F)		37	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		32.8	52.0
Outdoor:		Heating	Cooling	Infiltration:	
Dry bulb (°F)	33	92			
Daily range (°F)	-	19 (M)			
Wet bulb (°F)	-	77			
Wind speed (mph)	15.0	7.5			

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 25.5%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

Right-J® Worksheet Entire House

Job:
Date: Nov 22, 2013
By:

1	Room name					Entire House				Living Room Kitch				
2	Exposed wall					190 8 ft				66.2 ft				
3	Room height					8.9 ft				10 0 ft				
4	Room dimensions					d				1 0 x 629 5 ft				
5	Room area					1425.5 ft²				629 5 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0 091	n	3 37	2.20	378	314	1057	690	250	198	667	435
	G	4A3-2ov	0 470	n	17 39	16.52	64	0	1113	1057	52	0	904	859
	W	12C-0sw	0.091	ne	3.37	2 20	42	23	76	50	42	23	76	50
	D	11J0	0 600	ne	22.20	17 49	20	20	440	347	20	20	440	347
11	W	12C-0sw	0 091	e	3 37	2.20	394	382	1286	840	90	90	303	198
	G	4A3-2ov	0 470	e	17 39	47 34	12	0	209	568	0	0	0	0
	W	12C-0sw	0.091	s	3 37	2 20	388	318	1071	699	60	39	131	86
	G	4A3-2ov	0.470	s	17 39	19.23	28	0	487	539	0	0	0	0
	D	11J0	0 600	s	22.20	17 49	42	42	932	735	21	21	466	367
	W	12C-0sw	0 091	w	3 37	2.20	428	404	1360	888	220	204	687	448
	G	4A3-2ov	0.470	w	17 39	47 34	24	0	417	1136	16	0	278	757
	W	12C-0sw	0.091	nw	3.37	2 20	29	15	50	33	0	0	0	0
	D	11J0	0 600	nw	22.20	17 49	14	14	311	245	0	0	0	0
	C	16B-30ad	0 032	-	1 18	1 68	1426	1426	1688	2402	630	630	745	1061
	F	19C-19cscp	0 049	-	0.63	0.29	1426	1426	896	412	630	630	396	182
6	c) AED excursion									0				-77
	Envelope loss/gain								11394	10638			5094	4713
12	a) Infiltration								3844	903			1535	360
	b) Room ventilation								0	0			0	0
13	Internal gains					Occupants @ 230	15			3450	6			1380
	Appliances/other									1700				1200
	Subtotal (lines 6 to 13)								15238	16691			6629	7653
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								15238	16691			6629	7653
15	Duct loads						30%	34%	4546	5625	30%	34%	1977	2579
	Total room load								19784	22316			8606	10233
	Air required (cfm)								944	944			410	433

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1	Room name					Hall Bath					Bed 3				
2	Exposed wall					9 0 ft					31 0 ft				
3	Room height					8 0 ft					8 0 ft				
4	Room dimensions					9 0 x 9 0 ft					12.0 x 13 0 ft				
5	Room area					81 0 ft²					156 0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0 091	n	3.37	2 20	0	0	0	0	0	0	0	0	
	G	4A3-2ov	0 470	n	17 39	16.52	0	0	0	0	0	0	0	0	
	W	12C-0sw	0 091	ne	3 37	2.20	0	0	0	0	0	0	0	0	
	D	11J0	0 600	ne	22.20	17 49	0	0	0	0	0	0	0	0	
11	W	12C-0sw	0 091	e	3 37	2.20	0	0	0	0	48	48	162	105	
	G	4A3-2ov	0 470	e	17 39	47.34	0	0	0	0	0	0	0	0	
	W	12C-0sw	0 091	s	3 37	2 20	0	0	0	0	96	84	283	185	
	G	4A3-2ov	0 470	s	17 39	19 23	0	0	0	0	12	0	209	231	
	D	11J0	0 600	s	22.20	17 49	0	0	0	0	0	0	0	0	
	W	12C-0sw	0 091	w	3.37	2 20	72	64	215	141	104	104	350	229	
	G	4A3-2ov	0 470	w	17 39	47 34	8	0	139	379	0	0	0	0	
	W	12C-0sw	0 091	nw	3.37	2.20	0	0	0	0	0	0	0	0	
	D	11J0	0 600	nw	22.20	17 49	0	0	0	0	0	0	0	0	
	C	16B-30ad	0 032	-	1 18	1 68	81	81	96	136	156	156	185	263	
	F	19C-19cscp	0 049	-	0 63	0 29	81	81	51	23	156	156	98	45	
6	c) AED excursion									150				-9	
	Envelope loss/gain									501	829		1286	1048	
12	a) Infiltration									167	39		575	135	
	b) Room ventilation									0	0		0	0	
13	Internal gains					Occupants @ 230	1			230	2			460	
	Appliances/other									0				0	
	Subtotal (lines 6 to 13)									668	1098		1861	1643	
	Less external load									0	0		0	0	
	Less transfer									0	0		0	0	
	Redistribution									0	0		0	0	
14	Subtotal									668	1098		1861	1643	
15	Duct loads						30%	34%		199	370	30%	34%	555	
	Total room load									868	1468		2416	2197	
	Air required (cfm)									41	62		115	93	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

1	Room name					Bed 2 18 0 ft					M Bed 33 6 ft				
2	Exposed wall					8.0 ft					8 0 ft				
3	Room height					10 0 x 13.0 ft					1 0 x 263.0 ft				
4	Room dimensions					130 0 ft²					263 0 ft²				
5	Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0 091	n	3.37	2.20	0	0	0	0	128	116	391	255	
	G	4A3-2ov	0 470	n	17 39	16 52	0	0	0	0	12	0	209	198	
	W	12C-0sw	0 091	ne	3 37	2 20	0	0	0	0	0	0	0	0	
	D	11J0	0 600	ne	22.20	17 49	0	0	0	0	0	0	0	0	
11	W	12C-0sw	0 091	e	3 37	2.20	64	64	215	141	80	80	269	176	
	G	4A3-2ov	0 470	e	17 39	47 34	0	0	0	0	0	0	0	0	
	W	12C-0sw	0 091	s	3.37	2 20	80	64	215	141	0	0	0	0	
	G	4A3-2ov	0 470	s	17 39	19 23	16	0	278	308	0	0	0	0	
	D	11J0	0 600	s	22 20	17 49	0	0	0	0	0	0	0	0	
	W	12C-0sw	0 091	w	3.37	2.20	0	0	0	0	32	32	108	70	
	G	4A3-2ov	0 470	w	17 39	47 34	0	0	0	0	0	0	0	0	
	W	12C-0sw	0 091	nw	3 37	2.20	0	0	0	0	29	15	50	33	
	D	11J0	0 600	nw	22.20	17 49	0	0	0	0	14	14	311	245	
	C	16B-30ad	0 032	-	1 18	1 68	130	130	154	219	263	263	311	443	
	F	19C-19cscp	0 049	-	0 63	0 29	130	130	82	38	263	263	165	76	
6	c) AED excursion									28				-81	
	Envelope loss/gain									945	873			1814	1415
12	a) Infiltration									334	78			623	146
	b) Room ventilation									0	0			0	0
13	Internal gains					Occupants @ 230	0			0	0	4			920
	Appliances/other									0	0				0
	Subtotal (lines 6 to 13)									1278	952			2437	2482
	Less external load									0	0			0	0
	Less transfer									0	0			0	0
	Redistribution									0	0			0	0
14	Subtotal									1278	952			2437	2482
15	Duct loads						30%	34%		381	321	30%	34%	727	836
	Total room load									1660	1273			3164	3318
	Air required (cfm)									79	54			151	140

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed

Right-J® Worksheet

Entire House

Job:
Date: Nov 22, 2013
By:

1	Room name					M bath				Laundry				
2	Exposed wall					19.0 ft				14.0 ft				
3	Room height					heat/cool				heat/cool				
4	Room dimensions					8.0 ft 1.0 x 7.8 ft				8.0 ft 1.0 x 8.0 ft				
5	Room area					78.0 ft²				88.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.37	2.20	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	n	17.39	16.52	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	ne	3.37	2.20	0	0	0	0	0	0	0	0
	D	11J0	0.600	ne	22.20	17.49	0	0	0	0	0	0	0	0
11	W	12C-0sw	0.091	e	3.37	2.20	88	76	256	167	24	24	81	53
	G	4A3-2ov	0.470	e	17.39	47.34	12	0	209	568	0	0	0	0
	W	12C-0sw	0.091	s	3.37	2.20	64	64	215	141	88	67	226	147
	G	4A3-2ov	0.470	s	17.39	19.23	0	0	0	0	0	0	0	0
	D	11J0	0.600	s	22.20	17.49	0	0	0	0	21	21	466	367
	W	12C-0sw	0.091	w	3.37	2.20	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	47.34	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.37	2.20	0	0	0	0	0	0	0	0
	D	11J0	0.600	nw	22.20	17.49	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.18	1.68	78	78	92	131	88	88	104	148
	F	19C-19cscp	0.049	-	0.63	0.29	78	78	49	23	88	88	55	25
6	c) AED excursion									37				-48
	Envelope loss/gain								821	1067			932	693
12	a) Infiltration								352	83			259	61
	b) Room ventilation								0	0			0	0
13	Internal gains					Occupants @ 230	1			230	1			230
	Appliances/other									0				500
	Subtotal (lines 6 to 13)								1174	1379			1192	1484
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1174	1379			1192	1484
15	Duct loads						30%	34%	350	465	30%	34%	355	500
	Total room load								1524	1844			1547	1984
	Air required (cfm)								73	78			74	84

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.