HVAC Load Analysis

for

Rock Creek Winery
6025 Rockhill Rd
Aubrey, TX

Elite Software

CHVAC Commercial HVAC Loads

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Saturday, June 1, 2024

Building Summary Loads

Building peaks in August at 10am.

Bldg Load Descriptions	Area Quan	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Roof	6,192	10,830	5.03	0	3,229	3,229	0.93
Wall	4,642	18,944	8.80	0	8,173	8,173	2.35
Glass	1,148	41,496	19.27	0	98,562	98,562	28.36
Floor Slab	0	0	0.00	0	0	0	0.00
Skin Loads		71,269	33.10	0	109,963	109,963	31.64
Lighting	6,185	0	0.00	0	22,159	22,159	6.38
Equipment	3,025	0	0.00	0	10,835	10,835	3.12
Pool Latent	0	0	0.00	0	0	0	0.00
People	197	0	0.00	39,262	47,527	86,789	24.97
Partition	0	0	0.00	0	0	0	0.00
Cool. Pret.	0	0	0.00	0	0	0	0.00
Heat. Pret.	0	0	0.00	0	0	0	0.00
Cool. Vent.	2,371	0	0.00	48,947	38,091	87,038	25.04
Heat. Vent.	2,371	132,680	61.62	0	0	0	0.00
Cool. Infil.	0	0	0.00	0	0	0	0.00
Heat. Infil.	0	0	0.00	0	0	0	0.00
Draw-Thru Fan	0	0	0.00	0	2,070	2,070	0.60
Blow-Thru Fan	0	0	0.00	0	0	0	0.00
Reserve Cap.	0	0	0.00	0	11,828	11,828	3.40
Reheat Cap.	0	0	0.00	0	0	0	0.00
Supply Duct	0	8,544	3.97	0	12,116	12,116	3.49
Return Duct	0	2,829	1.31	0	4,784	4,784	1.38
Misc. Supply	0	0	0.00	0	0	0	0.00
Misc. Return	0	0	0.00	0	0	0	0.00
Building Totals		215,321	100.00	88,208	259,373	347,581	100.00

Building Summary	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Ventilation	132,680	61.62	48,947	38,091	87,038	25.04
Infiltration	0	0.00	0	0	0	0.00
Pretreated Air	0	0.00	0	0	0	0.00
Room Loads	71,269	33.10	39,262	202,313	241,574	69.50
Plenum Loads	0	0.00	0	0	0	0.00
Fan/Duct/Misc Loads	11,372	5.28	0	18,969	18,969	5.46
Building Totals	215,322	100.00	88,208	259,373	347,581	100.00

Check Figures

Total Building Supply Air (based on a 18° TD):	11,270	CFM
Total Building Vent. Air (21.04% of Supply):	2,371	CFM
Total Conditioned Air Space:	8,884	Sq.ft
Supply Air Per Unit Area:	1.2685	CFM/Sq.ft
Area Per Cooling Capacity:	306.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0033	Tons/Sq.ft
Heating Capacity Per Area:	24.24	Btuh/Sq.ft
Total Heating Required With Outside Air:	215,322	Btuh
Total Cooling Required With Outside Air:	28.97	Tons

Air Handler #1 - Main Entry - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
1	Main Entry	1,200	10,237	26,111	2,394	5/P, 0.06/ft²	5/P, 0.06/ft²
	10am August	12	539	1,443	0	132	132
	Zn 1, Flr 1	12,000	0.45	1.20	0	132	132
	Room Peak Totals:	1,200	10,237	26,111	2,394		
	Total Rooms: 1	12	539	1,443	0	132	132
	Unique Rooms: 1	12,000	0.45	1.20	0	132	132

Air Handler #1 - Main Entry - Total Load Summary

Air Handler Description:	Main Entry Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.11 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	0.94 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	10am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 87° DB, 71° WB, 92.22 grains, Htg: 22° DB
Indoor Conditions:	Clg: 72° DB, 50% RH, Htg: 75° DB

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	10,237	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	7,385	Btuh	132	CFM	
Supply Duct sensible loss:	1,137	Btuh			
Return Duct sensible loss:	569	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					19,329 Btuh
Heating Supply Air: 11,375 / (.977 X 1.08 X 20) =			539	CFM	
Winter Vent Outside Air (24.5% of supply) =			132	CFM	
Room space sensible gain:	25,532	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	265	Btuh			
Supply duct sensible gain:	1,551	Btuh			
Reserve sensible gain:	570	Btuh			
Total sensible gain on supply side of coil:					27,917 Btuh
Cooling Supply Air: 27,917 / (.977 X 1.1 X 18) =			1,442	CFM	
Summer Vent Outside Air (9.2% of supply) =			132	CFM	
Return duct sensible gain:	704	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	2,129	Btuh	132	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					2,833 Btuh
Total sensible gain on air handling system:					30,751 Btuh
Room space latent gain:	1,915	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	2,736	Btuh			
Total latent gain on air handling system:					4,651 Btuh
Total system sensible and latent gain:					35,402 Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	1,442	CFM
Total Air Handler Vent. Air (9.15% of Supply):	132	CFM
Total Conditioned Air Space:	1,200	Sq.ft
Supply Air Per Unit Area:	1.2020	CFM/Sq.ft
Area Per Cooling Capacity:	351.2	Sq.ft/Ton
Cooling Capacity Per Area:	0.0028	Tons/Sq.ft
Heating Capacity Per Area:	16.11	Btuh/Sq.ft
Total Heating Required With Outside Air:	19,329	Btuh
Total Cooling Required With Outside Air:	3.42	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.

Air Handler #2 - Hall__Low Roof Section - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
2	Hall-Low Roof Section 9am August Zn 2, Flr 1	1,080 48 10,800	12,765 672 0.62	52,930 2,925 2.71	9,576 0 0	7.5/P, 0.06/ft² 425 425	7.5/P, 0.06/ft² 425 425
	Room Peak Totals: Total Rooms: 1 Unique Rooms: 1	1,080 48 10,800	12,765 672 0.62	52,930 2,925 2.71	9,576 0 0	 425 425	 425 425

Air Handler #2 - Hall__Low Roof Section - Total Load Summary

Air Handler Description:	Hall__Low Roof Section Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.22 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	0.88 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	9am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 83° DB, 70° WB, 93.84 grains, Htg: 22° DB
Indoor Conditions:	Clg: 72° DB, 50% RH, Htg: 75° DB

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	12,765	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	23,767	Btuh	425	CFM	
Supply Duct sensible loss:	1,418	Btuh			
Return Duct sensible loss:	709	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					38,659 Btuh
Heating Supply Air: 14,183 / (.977 X 1.08 X 20) =			672	CFM	
Winter Vent Outside Air (63.2% of supply) =			425	CFM	
Room space sensible gain:	50,612	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	537	Btuh			
Supply duct sensible gain:	3,144	Btuh			
Reserve sensible gain:	2,306	Btuh			
Total sensible gain on supply side of coil:					56,599 Btuh
Cooling Supply Air: 56,599 / (.977 X 1.1 X 18) =			2,924	CFM	
Summer Vent Outside Air (14.5% of supply) =			425	CFM	
Return duct sensible gain:	1,344	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	5,024	Btuh	425	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					6,368 Btuh
Total sensible gain on air handling system:					62,967 Btuh
Room space latent gain:	7,661	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	9,053	Btuh			
Total latent gain on air handling system:					16,713 Btuh
Total system sensible and latent gain:					79,681 Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	2,924	CFM
Total Air Handler Vent. Air (14.53% of Supply):	425	CFM
Total Conditioned Air Space:	1,080	Sq.ft
Supply Air Per Unit Area:	2.7079	CFM/Sq.ft
Area Per Cooling Capacity:	154.4	Sq.ft/Ton
Cooling Capacity Per Area:	0.0065	Tons/Sq.ft
Heating Capacity Per Area:	35.80	Btuh/Sq.ft
Total Heating Required With Outside Air:	38,659	Btuh
Total Cooling Required With Outside Air:	7.00	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.

Air Handler #3 - Hall-High Roof Section - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
3	Hall- 20 Ft High Section 10am August Zn 3, Flr 1	3,280 156 65,600	20,349 1,367 0.42	60,717 3,356 1.02	31,122 0 0	7.5/P, 0.06/ft² 1,367 1,367	7.5/P, 0.06/ft² 1,367 1,367
	Room Peak Totals: Total Rooms: 1 Unique Rooms: 1	3,280 156 65,600	20,349 1,367 0.42	60,717 3,356 1.02	31,122 0 0	 1,367 1,367	 1,367 1,367

Air Handler #3 - Hall-High Roof Section - Total Load Summary

Air Handler Description:	Hall-High Roof Section Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.25 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	0.72 --- This system occurs 1 time(s) in the building. ---
Air System Peak Time:	8am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 81° DB, 70° WB, 96.03 grains, Htg: 22° DB
Indoor Conditions:	Clg: 72° DB, 50% RH, Htg: 75° DB

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	20,349	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	76,471	Btuh	1,367	CFM	
Supply Duct sensible loss:	2,886	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					99,706 Btuh
Heating Supply Air: 23,235 / (.977 X 1.08 X 16) =			1,367	CFM	
Winter Vent Outside Air (100.0% of supply) =			1,367	CFM	
Room space sensible gain:	51,972	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	616	Btuh			
Supply duct sensible gain:	3,607	Btuh			
Reserve sensible gain:	7,523	Btuh			
Total sensible gain on supply side of coil:					63,718 Btuh
Cooling Supply Air: 64,928 / (.977 X 1.1 X 18) =			3,355	CFM	
Summer Vent Outside Air (40.7% of supply) =			1,367	CFM	
Return duct sensible gain:	1,069	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	13,226	Btuh	1,367	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					14,295 Btuh
Total sensible gain on air handling system:					78,013 Btuh
Room space latent gain:	24,898	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	32,075	Btuh			
Total latent gain on air handling system:					56,972 Btuh
Total system sensible and latent gain:					134,985 Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	3,355	CFM
Total Air Handler Vent. Air (40.74% of Supply):	1,367	CFM
Total Conditioned Air Space:	3,280	Sq.ft
Supply Air Per Unit Area:	1.0228	CFM/Sq.ft
Area Per Cooling Capacity:	172.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0058	Tons/Sq.ft
Heating Capacity Per Area:	30.40	Btuh/Sq.ft
Total Heating Required With Outside Air:	99,706	Btuh
Total Cooling Required With Outside Air:	18.99	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.

Air Handler #4 - Storage _104 - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
4	Storage _104	400	5,923	15,550	0	None	None
	9am August	0	312	811	0	48	48
	Zn 4, Flr 1	4,000	0.78	2.03	0	48	48
	Room Peak Totals:	400	5,923	15,550	0		
	Total Rooms: 1	0	312	811	0	48	48
	Unique Rooms: 1	4,000	0.78	2.03	0	48	48

Air Handler #4 - Storage _104 - Total Load Summary

Air Handler Description:	Storage _104 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.06 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	1.00 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	9am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 83° DB, 70° WB, 93.84 grains, Htg: 22° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 75° DB

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	5,923	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	2,686	Btuh	48	CFM	
Supply Duct sensible loss:	658	Btuh			
Return Duct sensible loss:	329	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					9,596 Btuh
Heating Supply Air: 6,581 / (.977 X 1.08 X 20) =			312	CFM	
Winter Vent Outside Air (15.4% of supply) =			48	CFM	
Room space sensible gain:	15,550	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	149	Btuh			
Supply duct sensible gain:	872	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					16,571 Btuh
Cooling Supply Air: 16,571 / (.977 X 1.1 X 19) =			811	CFM	
Summer Vent Outside Air (5.9% of supply) =			48	CFM	
Return duct sensible gain:	410	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	413	Btuh	48	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					823 Btuh
Total sensible gain on air handling system:					17,394 Btuh
Room space latent gain:	0	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	818	Btuh			
Total latent gain on air handling system:					818 Btuh
Total system sensible and latent gain:					18,212 Btuh

Check Figures

Total Air Handler Supply Air (based on a 19° TD):	811	CFM
Total Air Handler Vent. Air (5.92% of Supply):	48	CFM
Total Conditioned Air Space:	400	Sq.ft
Supply Air Per Unit Area:	2.0279	CFM/Sq.ft
Area Per Cooling Capacity:	207.0	Sq.ft/Ton
Cooling Capacity Per Area:	0.0048	Tons/Sq.ft
Heating Capacity Per Area:	23.99	Btuh/Sq.ft
Total Heating Required With Outside Air:	9,596	Btuh
Total Cooling Required With Outside Air:	1.93	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.

Air Handler #5 - Kitchen - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
5	Kitchen_106	1,008	2,877	17,054	1,197	None	None
	10am August	6	151	842	0	0	0
	Zn 5, Flr 1	10,080	0.15	0.84	0	0	0
	Room Peak Totals:	1,008	2,877	17,054	1,197		
	Total Rooms: 1	6	151	842	0	0	0
	Unique Rooms: 1	10,080	0.15	0.84	0	0	0

Air Handler #5 - Kitchen - Total Load Summary

Air Handler Description:	Kitchen Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.06 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	0.95 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	10am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 87° DB, 71° WB, 92.22 grains, Htg: 22° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 75° DB

Summer: Exhaust controls outside air, ----- Winter: Exhaust controls outside air.

Room Space sensible loss:	2,877	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	0	Btuh	0	CFM	
Supply Duct sensible loss:	320	Btuh			
Return Duct sensible loss:	160	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					3,357 Btuh
Heating Supply Air: 3,197 / (.977 X 1.08 X 20) =			151	CFM	
Winter Vent Outside Air (0.0% of supply) =			0	CFM	
Room space sensible gain:	16,764	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	155	Btuh			
Supply duct sensible gain:	905	Btuh			
Reserve sensible gain:	283	Btuh			
Total sensible gain on supply side of coil:					18,107 Btuh
Cooling Supply Air: 18,107 / (.977 X 1.1 X 20) =			842	CFM	
Summer Vent Outside Air (0.0% of supply) =			0	CFM	
Return duct sensible gain:	453	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	0	Btuh	0	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					453 Btuh
Total sensible gain on air handling system:					18,560 Btuh
Room space latent gain:	958	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	0	Btuh			
Total latent gain on air handling system:					958 Btuh
Total system sensible and latent gain:					19,517 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	842	CFM
Total Air Handler Vent. Air (0.00% of Supply):	0	CFM
Total Conditioned Air Space:	1,008	Sq.ft
Supply Air Per Unit Area:	0.8353	CFM/Sq.ft
Area Per Cooling Capacity:	488.8	Sq.ft/Ton
Cooling Capacity Per Area:	0.0020	Tons/Sq.ft
Heating Capacity Per Area:	3.33	Btuh/Sq.ft
Total Heating Required With Outside Air:	3,357	Btuh
Total Cooling Required With Outside Air:	2.06	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.

Air Handler #6 - Hallway _106 - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
6	Hallway_106	168	3,395	3,995	0	None	None
	10am August	0	179	221	0	10	10
	Zn 6, Flr 1	1,680	1.06	1.31	0	10	10
	Room Peak Totals:	168	3,395	3,995	0		
	Total Rooms: 1	0	179	221	0	10	10
	Unique Rooms: 1	1,680	1.06	1.31	0	10	10

Air Handler #6 - Hallway _106 - Total Load Summary

Air Handler Description:	Hallway _106 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.02 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	1.00 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	10am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 87° DB, 71° WB, 92.22 grains, Htg: 22° DB
Indoor Conditions:	Clg: 72° DB, 50% RH, Htg: 75° DB

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	3,395	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	564	Btuh	10	CFM	
Supply Duct sensible loss:	377	Btuh			
Return Duct sensible loss:	189	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					4,525 Btuh
Heating Supply Air: 3,773 / (.977 X 1.08 X 20) =			179	CFM	
Winter Vent Outside Air (5.6% of supply) =			10	CFM	
Room space sensible gain:	3,995	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	41	Btuh			
Supply duct sensible gain:	237	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					4,273 Btuh
Cooling Supply Air: 4,273 / (.977 X 1.1 X 18) =			221	CFM	
Summer Vent Outside Air (4.6% of supply) =			10	CFM	
Return duct sensible gain:	113	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	163	Btuh	10	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					276 Btuh
Total sensible gain on air handling system:					4,548 Btuh
Room space latent gain:	0	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	209	Btuh			
Total latent gain on air handling system:					209 Btuh
Total system sensible and latent gain:					4,757 Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	221	CFM
Total Air Handler Vent. Air (4.57% of Supply):	10	CFM
Total Conditioned Air Space:	168	Sq.ft
Supply Air Per Unit Area:	1.3139	CFM/Sq.ft
Area Per Cooling Capacity:	332.4	Sq.ft/Ton
Cooling Capacity Per Area:	0.0030	Tons/Sq.ft
Heating Capacity Per Area:	26.94	Btuh/Sq.ft
Total Heating Required With Outside Air:	4,525	Btuh
Total Cooling Required With Outside Air:	0.51	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.

Air Handler #7 - Tasting Room - Summary Loads

Rm No	Description Room Peak Time Zn No., Flr No.	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
7	Tasting Room_107	1,748	15,722	30,301	4,788	7.5/P, 0.12/ft²	7.5/P, 0.12/ft²
	10am August	24	827	1,675	0	390	390
	Zn 7, Flr 1	17,480	0.47	0.96	0	390	390
	Room Peak Totals:	1,748	15,722	30,301	4,788		
	Total Rooms: 1	24	827	1,675	0	390	390
	Unique Rooms: 1	17,480	0.47	0.96	0	390	390

Air Handler #7 - Tasting Room - Total Load Summary

Air Handler Description:	Tasting Room Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.12 HP
Fan Input:	85% motor and fan efficiency with 0.4 in. water across the fan
Sensible Heat Ratio:	0.89 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	10am in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions:	Clg: 87° DB, 71° WB, 92.22 grains, Htg: 22° DB
Indoor Conditions:	Clg: 72° DB, 50% RH, Htg: 75° DB

Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Room Space sensible loss:	15,722	Btuh			
Infiltration sensible loss:	0	Btuh	0	CFM	
Outside Air sensible loss:	21,807	Btuh	390	CFM	
Supply Duct sensible loss:	1,747	Btuh			
Return Duct sensible loss:	873	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					40,149 Btuh
Heating Supply Air: 17,469 / (.977 X 1.08 X 20) =			827	CFM	
Winter Vent Outside Air (47.1% of supply) =			390	CFM	
Room space sensible gain:	29,141	Btuh			
Infiltration sensible gain:	0	Btuh			
Draw-thru fan sensible gain:	307	Btuh			
Supply duct sensible gain:	1,800	Btuh			
Reserve sensible gain:	1,146	Btuh			
Total sensible gain on supply side of coil:					32,395 Btuh
Cooling Supply Air: 32,395 / (.977 X 1.1 X 18) =			1,674	CFM	
Summer Vent Outside Air (23.3% of supply) =			390	CFM	
Return duct sensible gain:	690	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	6,286	Btuh	390	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					6,976 Btuh
Total sensible gain on air handling system:					39,371 Btuh
Room space latent gain:	3,830	Btuh			
Infiltration latent gain:	0	Btuh			
Outside air latent gain:	8,078	Btuh			
Total latent gain on air handling system:					11,909 Btuh
Total system sensible and latent gain:					51,280 Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	1,674	CFM
Total Air Handler Vent. Air (23.29% of Supply):	390	CFM
Total Conditioned Air Space:	1,748	Sq.ft
Supply Air Per Unit Area:	0.9576	CFM/Sq.ft
Area Per Cooling Capacity:	399.6	Sq.ft/Ton
Cooling Capacity Per Area:	0.0025	Tons/Sq.ft
Heating Capacity Per Area:	22.97	Btuh/Sq.ft
Total Heating Required With Outside Air:	40,149	Btuh
Total Cooling Required With Outside Air:	4.37	Tons

Note: Tonnages are 'adjusted' tons, based on percent sensible capacity of the air handler.