PRCTI20221714

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JMontgomery
01/18/2023
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THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

CHC Puyallup Garage
HVAC Load Analysis

for

Miller Hayashi Architect
118 North 35th St. Suite 200
Seattle, WA. 98103

Elite Software

CHVAC COMMERCIAL HVAC LOADS

Prepared By:

Tres West Engineers

Saturday, October 29, 2022

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Building Summary Loads

Building peaks in July at 5pm.

Bldg Load Descriptions	Area Quan	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Roof	9,835	22,731	10.06	0	11,459	11,459	4.04
Wall	1,996	7,431	3.29	0	6,631	6,631	2.34
Glass	581	11,865	5.25	0	32,765	32,765	11.56
Floor Slab	236	6,859	3.04	0	0	0	0.00
Skin Loads		48,886	21.64	0	50,855	50,855	17.95
Lighting	7,517	0	0.00	0	29,495	29,495	10.41
Equipment	11,218	0	0.00	0	44,019	44,019	15.53
People	175	0	0.00	40,250	50,313	90,563	31.96
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.	3,871	0	0.00	11,510	36,694	48,204	17.01
Heat. Vent.	3,871	146,394	64.80	0	0	0	0.00
Cool. Infil.	535	0	0.00	1,561	7,608	9,169	3.24
Heat. Infil.	535	30,625	13.56	0	0	0	0.00
Draw-Thru Fan	0	0	0.00	0	10,751	10,751	3.79
Blow-Thru Fan	0	0	0.00	0	0	0	0.00
Reserve Cap.	0	0	0.00	0	331	331	0.12
Reheat Cap.	0	0	0.00	0	0	0	0.00
Supply Duct	0	0	0.00	0	0	0	0.00
Return Duct	0	0	0.00	0	0	0	0.00
Misc. Supply	0	0	0.00	0	0	0	0.00
Misc. Return	0	0	0.00	0	0	0	0.00
Building Totals		225,905	100.00	53,321	230,067	283,388	100.00

Building Summary	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Ventilation	146,394	64.80	11,510	36,694	48,204	17.01
Infiltration	30,625	13.56	1,561	7,608	9,169	3.24
Pretreated Air	0	0.00	0	0	0	0.00
Zone Loads	48,886	21.64	40,250	175,014	215,264	75.96
Plenum Loads	0	0.00	0	0	0	0.00
Fan/Duct/Misc Loads	0	0.00	0	10,751	10,751	3.79
Building Totals	225,905	100.00	53,321	230,067	283,388	100.00

Check Figures

Total Building Supply Air (based on a 20° TD):	9,152	CFM
Total Building Vent. Air (42.30% of Supply):	3,871	CFM
Total Conditioned Air Space:	9,835	Sq.ft
Supply Air Per Unit Area:	0.9305	CFM/Sq.ft
Area Per Cooling Capacity:	416.5	Sq.ft/Ton
Cooling Capacity Per Area:	0.0024	Tons/Sq.ft
Heating Capacity Per Area:	22.97	Btuh/Sq.ft
Total Heating Required With Outside Air:	225,905	Btuh
Total Cooling Required With Outside Air:	23.62	Tons

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Air Handler #1 - FCU1-1 - Summary Loads

Zn No	Description Zone Peak Time	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	Stair 125	205	2,044	2,101	-4	2AC/Hr	2AC/Hr
	3pm July	0	83	102	0	68	68
		2,050	0.41	0.50	0	44	34
2	Lobby 101	188	4,070	5,957	262	2AC/Hr	2AC/Hr
	5pm July	1	166	290	0	63	63
		1,880	0.88	1.55	0	87	97
	Zone Peak Totals:	393	6,114	8,058	258		
	Total Zones: 2	1	250	393	0	131	131
	Unique Zones: 2	3,930	0.64	1.00	0	131	131

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Air Handler #1 - FCU1-1 - Total Load Summary

Air Handler Description:	FCU1-1 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.18 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.97 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	5pm in July.
Outdoor Conditions:	Clg: 86° DB, 67° WB, 69.39 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	4,802	Btuh			
Infiltration sensible loss:	1,312	Btuh	23	CFM	
Outside Air sensible loss:	5,996	Btuh	131	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					12,110 Btuh
Heating Supply Air: 6,114 / (.986 X 1.08 X 23) =			250	CFM	
Winter Vent Outside Air (52.5% of supply) =			131	CFM	
Zone space sensible gain:	7,611	Btuh			
Infiltration sensible gain:	326	Btuh			
Draw-thru fan sensible gain:	461	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	113	Btuh			
Total sensible gain on supply side of coil:					8,511 Btuh
Cooling Supply Air: 8,511 / (.986 X 1.1 X 20) =			392	CFM	
Summer Vent Outside Air (33.4% of supply) =			131	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	1,562	Btuh	131	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					1,562 Btuh
Total sensible gain on air handling system:					10,073 Btuh
Zone space latent gain:	230	Btuh			
Infiltration latent gain:	67	Btuh			
Outside air latent gain:	389	Btuh			
Total latent gain on air handling system:					686 Btuh
Total system sensible and latent gain:					10,760 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	392	CFM
Total Air Handler Vent. Air (33.38% of Supply):	131	CFM
Total Conditioned Air Space:	393	Sq.ft
Supply Air Per Unit Area:	0.9987	CFM/Sq.ft
Area Per Cooling Capacity:	438.3	Sq.ft/Ton
Cooling Capacity Per Area:	0.0023	Tons/Sq.ft
Heating Capacity Per Area:	30.81	Btuh/Sq.ft
Total Heating Required With Outside Air:	12,110	Btuh
Total Cooling Required With Outside Air:	0.90	Tons

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Air Handler #2 - FCU1-2 - Summary Loads

Zn No	Description Zone Peak Time	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	Waiting 105	320	4,993	9,308	744	2AC/Hr	2AC/Hr
	5pm July	3	204	454	0	107	107
		3,200	0.64	1.42	0	107	107
	Zone Peak Totals:	320	4,993	9,308	744		
	Total Zones: 1	3	204	454	0	107	107
	Unique Zones: 1	3,200	0.64	1.42	0	107	107

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Air Handler #2 - FCU1-2 - Total Load Summary

Air Handler Description:	FCU1-2 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.21 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.93 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	5pm in July.
Outdoor Conditions:	Clg: 86° DB, 67° WB, 69.39 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	3,925	Btuh		
Infiltration sensible loss:	1,068	Btuh	19	CFM
Outside Air sensible loss:	4,882	Btuh	107	CFM
Supply Duct sensible loss:	0	Btuh		
Return Duct sensible loss:	0	Btuh		
Return Plenum sensible loss:	0	Btuh		
Total System sensible loss:				9,875 Btuh
Heating Supply Air: 4,993 / (.986 X 1.08 X 23) =			204	CFM
Winter Vent Outside Air (52.3% of supply) =			107	CFM
Zone space sensible gain:	9,042	Btuh		
Infiltration sensible gain:	265	Btuh		
Draw-thru fan sensible gain:	533	Btuh		
Supply duct sensible gain:	0	Btuh		
Reserve sensible gain:	0	Btuh		
Total sensible gain on supply side of coil:				9,841 Btuh
Cooling Supply Air: 9,841 / (.986 X 1.1 X 20) =			454	CFM
Summer Vent Outside Air (23.5% of supply) =			107	CFM
Return duct sensible gain:	0	Btuh		
Return plenum sensible gain:	0	Btuh		
Outside air sensible gain:	1,272	Btuh	107	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				1,272 Btuh
Total sensible gain on air handling system:				11,113 Btuh
Zone space latent gain:	690	Btuh		
Infiltration latent gain:	54	Btuh		
Outside air latent gain:	317	Btuh		
Total latent gain on air handling system:				1,062 Btuh
Total system sensible and latent gain:				12,174 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	454	CFM
Total Air Handler Vent. Air (23.50% of Supply):	107	CFM
Total Conditioned Air Space:	320	Sq.ft
Supply Air Per Unit Area:	1.4182	CFM/Sq.ft
Area Per Cooling Capacity:	315.4	Sq.ft/Ton
Cooling Capacity Per Area:	0.0032	Tons/Sq.ft
Heating Capacity Per Area:	30.86	Btuh/Sq.ft
Total Heating Required With Outside Air:	9,875	Btuh
Total Cooling Required With Outside Air:	1.01	Tons

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Air Handler #3 - FCU1-3 - Summary Loads

Zn No	Description Zone Peak Time	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
8	Jan. 124	38	584	458	-1	2AC/Hr	2AC/Hr
	3pm July	0	36	24	50	13	13
		380	0.94	0.62	50	36	22
9	Restroom 123	90	957	1,013	-2	4AC/Hr	4AC/Hr
	3pm July	0	58	52	50	60	60
		900	0.65	0.58	50	58	48
10	Restroom 122	67	625	694	-1	4AC/Hr	4AC/Hr
	3pm July	0	38	36	50	45	45
		670	0.57	0.53	50	38	33
11	Restroom 121	67	625	694	-1	4AC/Hr	4AC/Hr
	3pm July	0	38	36	50	45	45
		670	0.57	0.53	50	38	33
12	Restroom 120	67	625	694	-1	4AC/Hr	4AC/Hr
	3pm July	0	38	36	50	45	45
		670	0.57	0.53	50	38	33
13	Public Restroom 118	69	390	652	-1	4AC/Hr	4AC/Hr
	3pm July	0	24	34	50	46	46
		690	0.35	0.49	50	24	31
14	Hall 137	220	1,489	2,081	-4	2AC/Hr	2AC/Hr
	3pm July	0	91	107	0	73	73
		2,200	0.41	0.49	0	91	99
15	Hall 136	190	1,073	1,885	-3	2AC/Hr	2AC/Hr
	3pm July	0	66	97	0	63	63
		1,900	0.35	0.51	0	66	90
	Zone Peak Totals:	808	6,368	8,171	-14		
	Total Zones: 8	0	389	421	300	389	389
	Unique Zones: 8	8,080	0.48	0.52	300	389	389

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Air Handler #3 - FCU1-3 - Total Load Summary

Air Handler Description:	FCU1-3 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.20 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	1.00 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	3pm in July.
Outdoor Conditions:	Clg: 89° DB, 67° WB, 65.22 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

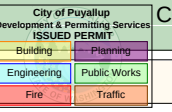
Summer: Ventilation controls outside air, ----- Winter: Ventilation controls outside air.

Zone Space sensible loss:	3,672	Btuh		
Infiltration sensible loss:	2,697	Btuh	47	CFM
Outside Air sensible loss:	17,821	Btuh	389	CFM
Supply Duct sensible loss:	0	Btuh		
Return Duct sensible loss:	0	Btuh		
Return Plenum sensible loss:	0	Btuh		
Total System sensible loss:				24,189 Btuh
Heating Supply Air: 6,368 / (.986 X 1.08 X 15) =			389	CFM
Winter Vent Outside Air (100.0% of supply) =			389	CFM
Zone space sensible gain:	7,348	Btuh		
Infiltration sensible gain:	823	Btuh		
Draw-thru fan sensible gain:	494	Btuh		
Supply duct sensible gain:	0	Btuh		
Reserve sensible gain:	0	Btuh		
Total sensible gain on supply side of coil:				8,665 Btuh
Cooling Supply Air: 8,665 / (.986 X 1.1 X 19) =			421	CFM
Summer Vent Outside Air (92.6% of supply) =			389	CFM
Return duct sensible gain:	0	Btuh		
Return plenum sensible gain:	0	Btuh		
Outside air sensible gain:	5,910	Btuh	389	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				5,910 Btuh
Total sensible gain on air handling system:				14,575 Btuh
Zone space latent gain:	0	Btuh		
Infiltration latent gain:	-10	Btuh		
Outside air latent gain:	-99	Btuh		
Total latent gain on air handling system:				-110 Btuh
Total system sensible and latent gain:				14,465 Btuh

Check Figures

Total Air Handler Supply Air (based on a 19° TD):	421	CFM
Total Air Handler Vent. Air (92.56% of Supply):	389	CFM
Total Conditioned Air Space:	808	Sq.ft
Supply Air Per Unit Area:	0.5206	CFM/Sq.ft
Area Per Cooling Capacity:	665.3	Sq.ft/Ton
Cooling Capacity Per Area:	0.0015	Tons/Sq.ft
Heating Capacity Per Area:	29.94	Btuh/Sq.ft
Total Heating Required With Outside Air:	24,189	Btuh
Total Cooling Required With Outside Air:	1.21	Tons

Note: Due to the system's negative latent gain, tonnage is based solely on sensible gain.



Air Handler #4 - FCU1-4 - Summary Loads

Zn No	Description Zone Peak Time	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
19	Small Meeting 106 5pm July	370 16 3,700	6,009 245 0.66	16,775 818 2.21	3,743 0 0	6.25/P, 0.075/ft² 128 128	6.25/P, 0.075/ft² 128 128
	Zone Peak Totals: Total Zones: 1 Unique Zones: 1	370 16 3,700	6,009 245 0.66	16,775 818 2.21	3,743 0 0	 128 128	 128 128

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Air Handler #4 - FCU1-4 - Total Load Summary

Air Handler Description:	FCU1-4 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.38 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.83 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	5pm in July.
Outdoor Conditions:	Clg: 86° DB, 67° WB, 69.39 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	4,774	Btuh			
Infiltration sensible loss:	1,235	Btuh	22	CFM	
Outside Air sensible loss:	5,847	Btuh	128	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					11,856 Btuh
Heating Supply Air: 6,009 / (.986 X 1.08 X 23) =			245	CFM	
Winter Vent Outside Air (52.1% of supply) =			128	CFM	
Zone space sensible gain:	16,468	Btuh			
Infiltration sensible gain:	307	Btuh			
Draw-thru fan sensible gain:	961	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					17,736 Btuh
Cooling Supply Air: 17,736 / (.986 X 1.1 X 20) =			818	CFM	
Summer Vent Outside Air (15.6% of supply) =			128	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	1,524	Btuh	128	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					1,524 Btuh
Total sensible gain on air handling system:					19,260 Btuh
Zone space latent gain:	3,680	Btuh			
Infiltration latent gain:	63	Btuh			
Outside air latent gain:	380	Btuh			
Total latent gain on air handling system:					4,123 Btuh
Total system sensible and latent gain:					23,382 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	818	CFM
Total Air Handler Vent. Air (15.62% of Supply):	128	CFM
Total Conditioned Air Space:	370	Sq.ft
Supply Air Per Unit Area:	2.2105	CFM/Sq.ft
Area Per Cooling Capacity:	189.9	Sq.ft/Ton
Cooling Capacity Per Area:	0.0053	Tons/Sq.ft
Heating Capacity Per Area:	32.04	Btuh/Sq.ft
Total Heating Required With Outside Air:	11,856	Btuh
Total Cooling Required With Outside Air:	1.95	Tons

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Air Handler #5 - FCU1-5 - Summary Loads

Zn No	Description Zone Peak Time	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
18	lt 117	82	463	6,490	229	2AC/Hr	2AC/Hr
	3pm July	1	27	316	0	27	27
		820	0.33	3.86	0	27	27
	Zone Peak Totals:	82	463	6,490	229		
	Total Zones: 1	1	27	316	0	27	27
	Unique Zones: 1	820	0.33	3.86	0	27	27

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Air Handler #5 - FCU1-5 - Total Load Summary

Air Handler Description:	FCU1-5 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.15 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.97 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	190	Btuh			
Infiltration sensible loss:	274	Btuh	5	CFM	
Outside Air sensible loss:	1,251	Btuh	27	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					1,714 Btuh
Heating Supply Air: 463 / (.986 X 1.08 X 16) =			27	CFM	
Winter Vent Outside Air (100.0% of supply) =			27	CFM	
Zone space sensible gain:	6,410	Btuh			
Infiltration sensible gain:	79	Btuh			
Draw-thru fan sensible gain:	372	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					6,861 Btuh
Cooling Supply Air: 6,861 / (.986 X 1.1 X 20) =			316	CFM	
Summer Vent Outside Air (8.6% of supply) =			27	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	385	Btuh	27	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					385 Btuh
Total sensible gain on air handling system:					7,246 Btuh
Zone space latent gain:	230	Btuh			
Infiltration latent gain:	3	Btuh			
Outside air latent gain:	22	Btuh			
Total latent gain on air handling system:					256 Btuh
Total system sensible and latent gain:					7,502 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	316	CFM
Total Air Handler Vent. Air (8.64% of Supply):	27	CFM
Total Conditioned Air Space:	82	Sq.ft
Supply Air Per Unit Area:	3.8588	CFM/Sq.ft
Area Per Cooling Capacity:	131.2	Sq.ft/Ton
Cooling Capacity Per Area:	0.0076	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	1,714	Btuh
Total Cooling Required With Outside Air:	0.63	Tons

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Air Handler #6 - FCU1-6 - Summary Loads

Zn No	Description Zone Peak Time	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
20	Hall 132	182	1,028	2,213	-3	2AC/Hr	2AC/Hr
	3pm July	0	61	108	0	61	61
		1,820	0.33	0.59	0	61	61
21	Kitchenette 116	120	678	1,422	228	2AC/Hr	2AC/Hr
	3pm July	1	40	69	0	40	40
		1,200	0.33	0.58	0	40	39
	Zone Peak Totals:	302	1,706	3,635	225		
	Total Zones: 2	1	101	177	0	101	101
	Unique Zones: 2	3,020	0.33	0.59	0	101	101

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Air Handler #6 - FCU1-6 - Total Load Summary

Air Handler Description:	FCU1-6 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.08 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.94 --- This system occurs 1 time(s) in the building. ---

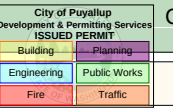
Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	698	Btuh		
Infiltration sensible loss:	1,008	Btuh	18	CFM
Outside Air sensible loss:	4,608	Btuh	101	CFM
Supply Duct sensible loss:	0	Btuh		
Return Duct sensible loss:	0	Btuh		
Return Plenum sensible loss:	0	Btuh		
Total System sensible loss:				6,314 Btuh
Heating Supply Air: 1,706 / (.986 X 1.08 X 16) =			101	CFM
Winter Vent Outside Air (100.0% of supply) =			101	CFM
Zone space sensible gain:	3,342	Btuh		
Infiltration sensible gain:	290	Btuh		
Draw-thru fan sensible gain:	208	Btuh		
Supply duct sensible gain:	0	Btuh		
Reserve sensible gain:	0	Btuh		
Total sensible gain on supply side of coil:				3,841 Btuh
Cooling Supply Air: 3,843 / (.986 X 1.1 X 20) =			177	CFM
Summer Vent Outside Air (56.8% of supply) =			101	CFM
Return duct sensible gain:	0	Btuh		
Return plenum sensible gain:	0	Btuh		
Outside air sensible gain:	1,419	Btuh	101	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				1,419 Btuh
Total sensible gain on air handling system:				5,260 Btuh
Zone space latent gain:	230	Btuh		
Infiltration latent gain:	12	Btuh		
Outside air latent gain:	83	Btuh		
Total latent gain on air handling system:				324 Btuh
Total system sensible and latent gain:				5,584 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	177	CFM
Total Air Handler Vent. Air (56.81% of Supply):	101	CFM
Total Conditioned Air Space:	302	Sq.ft
Supply Air Per Unit Area:	0.5868	CFM/Sq.ft
Area Per Cooling Capacity:	649.0	Sq.ft/Ton
Cooling Capacity Per Area:	0.0015	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	6,314	Btuh
Total Cooling Required With Outside Air:	0.47	Tons



Air Handler #7 - FCU1-7 - Summary Loads

Zn No	Description Zone Peak Time	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
27	Large Meeting 119 3pm July	1,200 60 10,200	8,637 465 0.39	29,365 1,432 1.19	13,782 465 465	6.25/P, 0.075/ft² 465 465	6.25/P, 0.075/ft² 465 465
	Zone Peak Totals: Total Zones: 1 Unique Zones: 1	1,200 60 10,200	8,637 465 0.39	29,365 1,432 1.19	13,782 465 465	 465 465	 465 465

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Air Handler #7 - FCU1-7 - Total Load Summary

Air Handler Description:	FCU1-7 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.67 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.69 --- This system occurs 1 time(s) in the building. ---

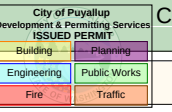
Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	5,233	Btuh		
Infiltration sensible loss:	3,404	Btuh	60	CFM
Outside Air sensible loss:	21,284	Btuh	465	CFM
Supply Duct sensible loss:	0	Btuh		
Return Duct sensible loss:	0	Btuh		
Return Plenum sensible loss:	0	Btuh		
Total System sensible loss:				29,922 Btuh
Heating Supply Air: 8,637 / (.986 X 1.08 X 17) =			465	CFM
Winter Vent Outside Air (100.0% of supply) =			465	CFM
Zone space sensible gain:	28,354	Btuh		
Infiltration sensible gain:	981	Btuh		
Draw-thru fan sensible gain:	1,682	Btuh		
Supply duct sensible gain:	0	Btuh		
Reserve sensible gain:	0	Btuh		
Total sensible gain on supply side of coil:				31,017 Btuh
Cooling Supply Air: 31,047 / (.986 X 1.1 X 20) =			1,432	CFM
Summer Vent Outside Air (32.5% of supply) =			465	CFM
Return duct sensible gain:	0	Btuh		
Return plenum sensible gain:	0	Btuh		
Outside air sensible gain:	6,554	Btuh	465	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				6,554 Btuh
Total sensible gain on air handling system:				37,571 Btuh
Zone space latent gain:	13,800	Btuh		
Infiltration latent gain:	40	Btuh		
Outside air latent gain:	381	Btuh		
Total latent gain on air handling system:				14,221 Btuh
Total system sensible and latent gain:				51,792 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	1,432	CFM
Total Air Handler Vent. Air (32.48% of Supply):	465	CFM
Total Conditioned Air Space:	1,200	Sq.ft
Supply Air Per Unit Area:	1.1931	CFM/Sq.ft
Area Per Cooling Capacity:	278.0	Sq.ft/Ton
Cooling Capacity Per Area:	0.0036	Tons/Sq.ft
Heating Capacity Per Area:	24.93	Btuh/Sq.ft
Total Heating Required With Outside Air:	29,922	Btuh
Total Cooling Required With Outside Air:	4.32	Tons



Air Handler #8 - FCU1-8 - Summary Loads

Zn No	Description Zone Peak Time	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
28	Large Meeting 119 3pm July	1,200 60 10,200	8,637 465 0.39	29,365 1,432 1.19	13,782 465 465	6.25/P, 0.075/ft² 465 465	6.25/P, 0.075/ft² 465 465
	Zone Peak Totals: Total Zones: 1 Unique Zones: 1	1,200 60 10,200	8,637 465 0.39	29,365 1,432 1.19	13,782 465 465	 465 465	 465 465

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Air Handler #8 - FCU1-8 - Total Load Summary

Air Handler Description:	FCU1-8 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.67 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.69 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	5,233	Btuh			
Infiltration sensible loss:	3,404	Btuh	60	CFM	
Outside Air sensible loss:	21,284	Btuh	465	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					29,922 Btuh
Heating Supply Air: 8,637 / (.986 X 1.08 X 17) =			465	CFM	
Winter Vent Outside Air (100.0% of supply) =			465	CFM	
Zone space sensible gain:	28,354	Btuh			
Infiltration sensible gain:	981	Btuh			
Draw-thru fan sensible gain:	1,682	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					31,017 Btuh
Cooling Supply Air: 31,047 / (.986 X 1.1 X 20) =			1,432	CFM	
Summer Vent Outside Air (32.5% of supply) =			465	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	6,554	Btuh	465	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					6,554 Btuh
Total sensible gain on air handling system:					37,571 Btuh
Zone space latent gain:	13,800	Btuh			
Infiltration latent gain:	40	Btuh			
Outside air latent gain:	381	Btuh			
Total latent gain on air handling system:					14,221 Btuh
Total system sensible and latent gain:					51,792 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	1,432	CFM
Total Air Handler Vent. Air (32.48% of Supply):	465	CFM
Total Conditioned Air Space:	1,200	Sq.ft
Supply Air Per Unit Area:	1.1931	CFM/Sq.ft
Area Per Cooling Capacity:	278.0	Sq.ft/Ton
Cooling Capacity Per Area:	0.0036	Tons/Sq.ft
Heating Capacity Per Area:	24.93	Btuh/Sq.ft
Total Heating Required With Outside Air:	29,922	Btuh
Total Cooling Required With Outside Air:	4.32	Tons

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Air Handler #9 - FCU1-9 - Summary Loads

Zn No	Description Zone Peak Time	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
16	Hall 139	567	3,203	5,363	-10	2AC/Hr	2AC/Hr
	3pm July	0	143	276	0	189	189
		5,670	0.25	0.49	0	143	173
17	Hall 139	353	3,651	4,142	14	2AC/Hr	2AC/Hr
	2pm July	0	163	213	0	118	118
		3,530	0.46	0.60	0	163	134
	Zone Peak Totals:	920	6,853	9,506	4		
	Total Zones: 2	0	307	489	0	307	307
	Unique Zones: 2	9,200	0.33	0.53	0	307	307

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Air Handler #9 - FCU1-9 - Total Load Summary

Air Handler Description:	FCU1-9 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.23 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	1.00 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	3pm in July.
Outdoor Conditions:	Clg: 89° DB, 67° WB, 65.22 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	3,783	Btuh			
Infiltration sensible loss:	3,071	Btuh	54	CFM	
Outside Air sensible loss:	14,037	Btuh	307	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					20,890 Btuh
Heating Supply Air: 6,853 / (.986 X 1.08 X 21) =			307	CFM	
Winter Vent Outside Air (100.0% of supply) =			307	CFM	
Zone space sensible gain:	8,560	Btuh			
Infiltration sensible gain:	937	Btuh			
Draw-thru fan sensible gain:	575	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					10,071 Btuh
Cooling Supply Air: 10,076 / (.986 X 1.1 X 19) =			489	CFM	
Summer Vent Outside Air (62.7% of supply) =			307	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	4,655	Btuh	307	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					4,655 Btuh
Total sensible gain on air handling system:					14,726 Btuh
Zone space latent gain:	0	Btuh			
Infiltration latent gain:	-12	Btuh			
Outside air latent gain:	-78	Btuh			
Total latent gain on air handling system:					-90 Btuh
Total system sensible and latent gain:					14,636 Btuh

Check Figures

Total Air Handler Supply Air (based on a 19° TD):	489	CFM
Total Air Handler Vent. Air (62.70% of Supply):	307	CFM
Total Conditioned Air Space:	920	Sq.ft
Supply Air Per Unit Area:	0.5317	CFM/Sq.ft
Area Per Cooling Capacity:	749.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0013	Tons/Sq.ft
Heating Capacity Per Area:	22.71	Btuh/Sq.ft
Total Heating Required With Outside Air:	20,890	Btuh
Total Cooling Required With Outside Air:	1.23	Tons

Note: Due to the system's negative latent gain, tonnage is based solely on sensible gain.

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Air Handler #10 - FCU1-10 - Summary Loads

Zn No	Description Zone Peak Time	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
26	Manager Office 110	120	678	1,422	228	2AC/Hr	2AC/Hr
	3pm July	1	40	69	0	40	40
		1,200	0.33	0.58	0	40	40
	Zone Peak Totals:	120	678	1,422	228		
	Total Zones: 1	1	40	69	0	40	40
	Unique Zones: 1	1,200	0.33	0.58	0	40	40

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Air Handler #10 - FCU1-10 - Total Load Summary

Air Handler Description: FCU1-10 Constant Volume - Sum of Peaks
Supply Air Fan: Draw-Thru with program estimated horsepower of 0.03 HP
Fan Input: 67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio: 0.87 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 2pm in July.
Outdoor Conditions: Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	277	Btuh			
Infiltration sensible loss:	401	Btuh	7	CFM	
Outside Air sensible loss:	1,831	Btuh	40	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					2,509 Btuh
Heating Supply Air: 678 / (.986 X 1.08 X 16) =			40	CFM	
Winter Vent Outside Air (100.0% of supply) =			40	CFM	
Zone space sensible gain:	1,306	Btuh			
Infiltration sensible gain:	115	Btuh			
Draw-thru fan sensible gain:	81	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					1,503 Btuh
Cooling Supply Air: 1,504 / (.986 X 1.1 X 20) =			69	CFM	
Summer Vent Outside Air (57.7% of supply) =			40	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	564	Btuh	40	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					564 Btuh
Total sensible gain on air handling system:					2,067 Btuh
Zone space latent gain:	230	Btuh			
Infiltration latent gain:	5	Btuh			
Outside air latent gain:	33	Btuh			
Total latent gain on air handling system:					267 Btuh
Total system sensible and latent gain:					2,334 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	69	CFM
Total Air Handler Vent. Air (57.72% of Supply):	40	CFM
Total Conditioned Air Space:	120	Sq.ft
Supply Air Per Unit Area:	0.5775	CFM/Sq.ft
Area Per Cooling Capacity:	617.0	Sq.ft/Ton
Cooling Capacity Per Area:	0.0016	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	2,509	Btuh
Total Cooling Required With Outside Air:	0.19	Tons

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Air Handler #11 - FCU1-11 - Summary Loads

Zn No	Description Zone Peak Time	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
29	Call Center 114	203	1,147	4,220	1,836	2AC/Hr	2AC/Hr
	3pm July	8	68	206	60	68	68
		2,030	0.33	1.01	60	68	114
30	Centrall Fill 113	910	5,140	9,755	904	2AC/Hr	2AC/Hr
	3pm July	4	303	476	260	303	303
		9,100	0.33	0.52	260	303	264
31	Storage 115	99	559	936	-2	2AC/Hr	2AC/Hr
	3pm July	0	33	46	30	33	33
		990	0.33	0.46	30	33	25
	Zone Peak Totals:	1,212	6,846	14,911	2,739		
	Total Zones: 3	12	404	727	350	404	404
	Unique Zones: 3	12,120	0.33	0.60	350	404	404

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Air Handler #11 - FCU1-11 - Total Load Summary

Air Handler Description:	FCU1-11 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.34 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.84 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	1pm in July.
Outdoor Conditions:	Clg: 86° DB, 67° WB, 69.81 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	2,801	Btuh			
Infiltration sensible loss:	4,045	Btuh	71	CFM	
Outside Air sensible loss:	11,129	Btuh	404	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					17,976 Btuh
Heating Supply Air: 6,846 / (.986 X 1.08 X 16) =			404	CFM	
Winter Vent Outside Air (100.0% of supply) =			404	CFM	
Zone space sensible gain:	13,707	Btuh			
Infiltration sensible gain:	982	Btuh			
Draw-thru fan sensible gain:	854	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					15,543 Btuh
Cooling Supply Air: 15,765 / (.986 X 1.1 X 20) =			727	CFM	
Summer Vent Outside Air (55.6% of supply) =			404	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	2,688	Btuh	404	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					2,688 Btuh
Total sensible gain on air handling system:					18,231 Btuh
Zone space latent gain:	2,760	Btuh			
Infiltration latent gain:	229	Btuh			
Outside air latent gain:	1,201	Btuh			
Total latent gain on air handling system:					4,190 Btuh
Total system sensible and latent gain:					22,421 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	727	CFM
Total Air Handler Vent. Air (55.57% of Supply):	404	CFM
Total Conditioned Air Space:	1,212	Sq.ft
Supply Air Per Unit Area:	0.5998	CFM/Sq.ft
Area Per Cooling Capacity:	648.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0015	Tons/Sq.ft
Heating Capacity Per Area:	14.83	Btuh/Sq.ft
Total Heating Required With Outside Air:	17,976	Btuh
Total Cooling Required With Outside Air:	1.87	Tons

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Air Handler #12 - FCU1-12 - Summary Loads

Zn No	Description Zone Peak Time	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
23	Pharmacy 112	1,490	7,522	16,121	1,887	4AC/Hr	4AC/Hr
	2pm July	8	764	793	815	815	815
		12,218	0.51	0.53	815	764	794
24	Restroom 109	66	373	684	-1	4AC/Hr	4AC/Hr
	3pm July	0	38	34	50	44	44
		660	0.57	0.51	50	38	34
32	Storage 108	236	1,333	2,232	-4	2AC/Hr	2AC/Hr
	3pm July	0	135	110	0	79	79
		2,360	0.57	0.47	0	135	110
	Zone Peak Totals:	1,792	9,228	19,036	1,882		
	Total Zones: 3	8	937	936	865	937	937
	Unique Zones: 3	15,238	0.52	0.52	865	937	937

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Air Handler #12 - FCU1-12 - Total Load Summary

Air Handler Description:	FCU1-12 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.44 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.91 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	1pm in July.
Outdoor Conditions:	Clg: 86° DB, 67° WB, 69.81 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	4,142	Btuh			
Infiltration sensible loss:	5,086	Btuh	89	CFM	
Outside Air sensible loss:	24,702	Btuh	937	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					33,929 Btuh
Heating Supply Air: 9,228 / (.986 X 1.08 X 9) =			937	CFM	
Winter Vent Outside Air (100.0% of supply) =			937	CFM	
Zone space sensible gain:	17,525	Btuh			
Infiltration sensible gain:	1,235	Btuh			
Draw-thru fan sensible gain:	1,100	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	172	Btuh			
Total sensible gain on supply side of coil:					20,031 Btuh
Cooling Supply Air: 20,306 / (.986 X 1.1 X 20) =			936	CFM	
Summer Vent Outside Air (100.1% of supply) =			937	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	5,913	Btuh	937	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					5,913 Btuh
Total sensible gain on air handling system:					25,944 Btuh
Zone space latent gain:	1,840	Btuh			
Infiltration latent gain:	288	Btuh			
Outside air latent gain:	2,786	Btuh			
Total latent gain on air handling system:					4,914 Btuh
Total system sensible and latent gain:					30,858 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	936	CFM
Total Air Handler Vent. Air (100.09% of Supply):	937	CFM
Total Conditioned Air Space:	1,792	Sq.ft
Supply Air Per Unit Area:	0.5225	CFM/Sq.ft
Area Per Cooling Capacity:	696.9	Sq.ft/Ton
Cooling Capacity Per Area:	0.0014	Tons/Sq.ft
Heating Capacity Per Area:	18.93	Btuh/Sq.ft
Total Heating Required With Outside Air:	33,929	Btuh
Total Cooling Required With Outside Air:	2.57	Tons

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Air Handler #13 - FCU1-13 - Summary Loads

Zn No	Description Zone Peak Time	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
22	Pharmacy Waiting 107 5pm July	620 7 5,890	10,176 416 0.67	25,393 1,238 2.00	1,710 210 210	2AC/Hr 196 227	2AC/Hr 196 229
25	Consult 111 3pm July	104 1 1,040	587 24 0.23	1,271 62 0.60	228 30 30	2AC/Hr 35 13	2AC/Hr 35 11
	Zone Peak Totals: Total Zones: 2 Unique Zones: 2	724 8 6,930	10,763 440 0.61	26,664 1,300 1.80	1,938 240 240	 231 240	 231 240

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Air Handler #13 - FCU1-13 - Total Load Summary

Air Handler Description:	FCU1-13 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.61 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.94 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	5pm in July.
Outdoor Conditions:	Clg: 86° DB, 67° WB, 69.39 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	8,450	Btuh			
Infiltration sensible loss:	2,313	Btuh	40	CFM	
Outside Air sensible loss:	5,740	Btuh	240	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					16,503 Btuh
Heating Supply Air: 10,763 / (.986 X 1.08 X 23) =			440	CFM	
Winter Vent Outside Air (54.6% of supply) =			240	CFM	
Zone space sensible gain:	26,023	Btuh			
Infiltration sensible gain:	575	Btuh			
Draw-thru fan sensible gain:	1,526	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	47	Btuh			
Total sensible gain on supply side of coil:					28,171 Btuh
Cooling Supply Air: 28,171 / (.986 X 1.1 X 20) =			1,299	CFM	
Summer Vent Outside Air (18.5% of supply) =			240	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	781	Btuh	240	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					781 Btuh
Total sensible gain on air handling system:					28,951 Btuh
Zone space latent gain:	1,840	Btuh			
Infiltration latent gain:	118	Btuh			
Outside air latent gain:	714	Btuh			
Total latent gain on air handling system:					2,671 Btuh
Total system sensible and latent gain:					31,623 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	1,299	CFM
Total Air Handler Vent. Air (18.47% of Supply):	240	CFM
Total Conditioned Air Space:	724	Sq.ft
Supply Air Per Unit Area:	1.7944	CFM/Sq.ft
Area Per Cooling Capacity:	274.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0036	Tons/Sq.ft
Heating Capacity Per Area:	22.79	Btuh/Sq.ft
Total Heating Required With Outside Air:	16,503	Btuh
Total Cooling Required With Outside Air:	2.64	Tons

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Air Handler #14 - FCU1-14 - Summary Loads

Zn No	Description Zone Peak Time	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	Office 130	98	554	1,214	228	2AC/Hr	2AC/Hr
	3pm July	1	33	59	0	33	33
		980	0.33	0.60	0	33	33
	Zone Peak Totals:	98	554	1,214	228		
	Total Zones: 1	1	33	59	0	33	33
	Unique Zones: 1	980	0.33	0.60	0	33	33

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Air Handler #14 - FCU1-14 - Total Load Summary

Air Handler Description:	FCU1-14 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.03 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.85 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	227	Btuh			
Infiltration sensible loss:	327	Btuh	6	CFM	
Outside Air sensible loss:	1,495	Btuh	33	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					2,049 Btuh
Heating Supply Air: 554 / (.986 X 1.08 X 16) =			33	CFM	
Winter Vent Outside Air (100.0% of supply) =			33	CFM	
Zone space sensible gain:	1,119	Btuh			
Infiltration sensible gain:	94	Btuh			
Draw-thru fan sensible gain:	70	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					1,283 Btuh
Cooling Supply Air: 1,284 / (.986 X 1.1 X 20) =			59	CFM	
Summer Vent Outside Air (55.2% of supply) =			33	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	460	Btuh	33	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					460 Btuh
Total sensible gain on air handling system:					1,743 Btuh
Zone space latent gain:	230	Btuh			
Infiltration latent gain:	4	Btuh			
Outside air latent gain:	27	Btuh			
Total latent gain on air handling system:					261 Btuh
Total system sensible and latent gain:					2,004 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	59	CFM
Total Air Handler Vent. Air (55.22% of Supply):	33	CFM
Total Conditioned Air Space:	98	Sq.ft
Supply Air Per Unit Area:	0.6037	CFM/Sq.ft
Area Per Cooling Capacity:	586.8	Sq.ft/Ton
Cooling Capacity Per Area:	0.0017	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	2,049	Btuh
Total Cooling Required With Outside Air:	0.17	Tons

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Air Handler #15 - FCU1-15 - Summary Loads

Zn No	Description Zone Peak Time	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	Office 127	98	554	1,214	228	2AC/Hr	2AC/Hr
	3pm July	1	33	59	0	33	33
		980	0.33	0.60	0	33	33
	Zone Peak Totals:	98	554	1,214	228		
	Total Zones: 1	1	33	59	0	33	33
	Unique Zones: 1	980	0.33	0.60	0	33	33

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Air Handler #15 - FCU1-15 - Total Load Summary

Air Handler Description:	FCU1-15 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.03 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.85 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	227	Btuh		
Infiltration sensible loss:	327	Btuh	6	CFM
Outside Air sensible loss:	1,495	Btuh	33	CFM
Supply Duct sensible loss:	0	Btuh		
Return Duct sensible loss:	0	Btuh		
Return Plenum sensible loss:	0	Btuh		
Total System sensible loss:				2,049 Btuh
Heating Supply Air: 554 / (.986 X 1.08 X 16) =			33	CFM
Winter Vent Outside Air (100.0% of supply) =			33	CFM
Zone space sensible gain:	1,119	Btuh		
Infiltration sensible gain:	94	Btuh		
Draw-thru fan sensible gain:	70	Btuh		
Supply duct sensible gain:	0	Btuh		
Reserve sensible gain:	0	Btuh		
Total sensible gain on supply side of coil:				1,283 Btuh
Cooling Supply Air: 1,284 / (.986 X 1.1 X 20) =			59	CFM
Summer Vent Outside Air (55.2% of supply) =			33	CFM
Return duct sensible gain:	0	Btuh		
Return plenum sensible gain:	0	Btuh		
Outside air sensible gain:	460	Btuh	33	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				460 Btuh
Total sensible gain on air handling system:				1,743 Btuh
Zone space latent gain:	230	Btuh		
Infiltration latent gain:	4	Btuh		
Outside air latent gain:	27	Btuh		
Total latent gain on air handling system:				261 Btuh
Total system sensible and latent gain:				2,004 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	59	CFM
Total Air Handler Vent. Air (55.22% of Supply):	33	CFM
Total Conditioned Air Space:	98	Sq.ft
Supply Air Per Unit Area:	0.6037	CFM/Sq.ft
Area Per Cooling Capacity:	586.8	Sq.ft/Ton
Cooling Capacity Per Area:	0.0017	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	2,049	Btuh
Total Cooling Required With Outside Air:	0.17	Tons

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Air Handler #16 - FCU1-16 - Summary Loads

Zn No	Description Zone Peak Time	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	Office 128	98	554	1,214	228	2AC/Hr	2AC/Hr
	3pm July	1	33	59	0	33	33
		980	0.33	0.60	0	33	33
	Zone Peak Totals:	98	554	1,214	228		
	Total Zones: 1	1	33	59	0	33	33
	Unique Zones: 1	980	0.33	0.60	0	33	33

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Air Handler #16 - FCU1-16 - Total Load Summary

Air Handler Description: FCU1-16 Constant Volume - Sum of Peaks
Supply Air Fan: Draw-Thru with program estimated horsepower of 0.03 HP
Fan Input: 67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio: 0.85 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 2pm in July.
Outdoor Conditions: Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	227	Btuh			
Infiltration sensible loss:	327	Btuh	6	CFM	
Outside Air sensible loss:	1,495	Btuh	33	CFM	
Supply Duct sensible loss:	0	Btuh			
Return Duct sensible loss:	0	Btuh			
Return Plenum sensible loss:	0	Btuh			
Total System sensible loss:					2,049 Btuh
Heating Supply Air: 554 / (.986 X 1.08 X 16) =			33	CFM	
Winter Vent Outside Air (100.0% of supply) =			33	CFM	
Zone space sensible gain:	1,119	Btuh			
Infiltration sensible gain:	94	Btuh			
Draw-thru fan sensible gain:	70	Btuh			
Supply duct sensible gain:	0	Btuh			
Reserve sensible gain:	0	Btuh			
Total sensible gain on supply side of coil:					1,283 Btuh
Cooling Supply Air: 1,284 / (.986 X 1.1 X 20) =			59	CFM	
Summer Vent Outside Air (55.2% of supply) =			33	CFM	
Return duct sensible gain:	0	Btuh			
Return plenum sensible gain:	0	Btuh			
Outside air sensible gain:	460	Btuh	33	CFM	
Blow-thru fan sensible gain:	0	Btuh			
Total sensible gain on return side of coil:					460 Btuh
Total sensible gain on air handling system:					1,743 Btuh
Zone space latent gain:	230	Btuh			
Infiltration latent gain:	4	Btuh			
Outside air latent gain:	27	Btuh			
Total latent gain on air handling system:					261 Btuh
Total system sensible and latent gain:					2,004 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	59	CFM
Total Air Handler Vent. Air (55.22% of Supply):	33	CFM
Total Conditioned Air Space:	98	Sq.ft
Supply Air Per Unit Area:	0.6037	CFM/Sq.ft
Area Per Cooling Capacity:	586.8	Sq.ft/Ton
Cooling Capacity Per Area:	0.0017	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	2,049	Btuh
Total Cooling Required With Outside Air:	0.17	Tons

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Air Handler #17 - FCU1-17 - Summary Loads

Zn No	Description Zone Peak Time	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	Office 129	98	554	1,214	228	2AC/Hr	2AC/Hr
	3pm July	1	33	59	0	33	33
		980	0.33	0.60	0	33	33
	Zone Peak Totals:	98	554	1,214	228		
	Total Zones: 1	1	33	59	0	33	33
	Unique Zones: 1	980	0.33	0.60	0	33	33

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Air Handler #17 - FCU1-17 - Total Load Summary

Air Handler Description:	FCU1-17 Constant Volume - Sum of Peaks
Supply Air Fan:	Draw-Thru with program estimated horsepower of 0.03 HP
Fan Input:	67% motor and fan efficiency with 2 in. water across the fan
Sensible Heat Ratio:	0.85 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time:	2pm in July.
Outdoor Conditions:	Clg: 88° DB, 67° WB, 66.47 grains, Htg: 29° DB
Indoor Conditions:	Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	227	Btuh		
Infiltration sensible loss:	327	Btuh	6	CFM
Outside Air sensible loss:	1,495	Btuh	33	CFM
Supply Duct sensible loss:	0	Btuh		
Return Duct sensible loss:	0	Btuh		
Return Plenum sensible loss:	0	Btuh		
Total System sensible loss:				2,049 Btuh
Heating Supply Air: 554 / (.986 X 1.08 X 16) =			33	CFM
Winter Vent Outside Air (100.0% of supply) =			33	CFM
Zone space sensible gain:	1,119	Btuh		
Infiltration sensible gain:	94	Btuh		
Draw-thru fan sensible gain:	70	Btuh		
Supply duct sensible gain:	0	Btuh		
Reserve sensible gain:	0	Btuh		
Total sensible gain on supply side of coil:				1,283 Btuh
Cooling Supply Air: 1,284 / (.986 X 1.1 X 20) =			59	CFM
Summer Vent Outside Air (55.2% of supply) =			33	CFM
Return duct sensible gain:	0	Btuh		
Return plenum sensible gain:	0	Btuh		
Outside air sensible gain:	460	Btuh	33	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				460 Btuh
Total sensible gain on air handling system:				1,743 Btuh
Zone space latent gain:	230	Btuh		
Infiltration latent gain:	4	Btuh		
Outside air latent gain:	27	Btuh		
Total latent gain on air handling system:				261 Btuh
Total system sensible and latent gain:				2,004 Btuh

Check Figures

Total Air Handler Supply Air (based on a 20° TD):	59	CFM
Total Air Handler Vent. Air (55.22% of Supply):	33	CFM
Total Conditioned Air Space:	98	Sq.ft
Supply Air Per Unit Area:	0.6037	CFM/Sq.ft
Area Per Cooling Capacity:	586.8	Sq.ft/Ton
Cooling Capacity Per Area:	0.0017	Tons/Sq.ft
Heating Capacity Per Area:	20.91	Btuh/Sq.ft
Total Heating Required With Outside Air:	2,049	Btuh
Total Cooling Required With Outside Air:	0.17	Tons