

Calculation time	09:19 AM on 06/05/2019	
TRACE® 700 version	6.3.3	
Location		
Latitude	34.8	deg
Longitude	82.3	deg
Time Zone	5	
Elevation	476	ft
Barometric pressure	29.4	in. Hg
Air density	0.0747	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	1.0958	Btu/h·cfm·°F
Latent heat factor	4,823.6	Btu·min/h·cu ft
Enthalpy factor	4.4829	lb·min/hr·cu ft
Summer design dry bulb	91.2	°F
Summer design wet bulb	74.0	°F
Winter design dry bulb	19.5	°F
Summer clearness number	1.00	
Winter clearness number	1.00	
Summer ground reflectance	0.20	
Winter ground reflectance	0.20	
Carbon Dioxide Level	400	ppm
Design simulation period	January - December	
Cooling load methodology	CLTD-CLF (ASHRAE TFM)	
Heating load methodology	UATD	



Energy Cost Budget / PRM Summary

Project Name:	Date: June 06, 2019
City: Moore, SC	Weather Data: 8760 Greenville SC

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

		* Alt-2 Baseline ASHRAE 90_1-2			Alt-1 Proposed Climate Zone 3A		
		Energy 10^6 Btu/yr	Proposed / Base %	Peak kBtuh	Energy 10^6 Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	19,253.4	3	2,258	7,397.9	38	888
Space Heating	Electricity	39.2	0	7	4,485.8	11,456	1,991
	Gas	28,516.3	5	20,810	20,375.1	71	18,759
Space Cooling	Electricity	5,547.0	1	4,049	1,385.5	25	976
Pumps	Electricity	1,705.1	0	731	276.5	16	320
Heat Rejection	Electricity	1,009.2	0	529	378.0	37	174
Fans - Conditioned	Electricity	6,369.3	1	1,244	10,152.9	159	1,352
Receptacles - Conditioned	Electricity	188.0	0	53	188.0	100	53
Stand-alone Base Utilities	Electricity	161,455.2	28	18,496	161,116.7	100	18,424
	Gas	350,485.1	61	40,010	350,485.1	100	40,010
Total Building Consumption		574,567.7			556,241.4		

		* Alt-2 Baseline ASHRAE 90_1-2	Alt-1 Proposed Climate Zone 3A
Total	Number of hours heating load not met	208	295
	Number of hours cooling load not met	0	25

	* Alt-2 Baseline ASHRAE 90_1-2		Alt-1 Proposed Climate Zone 3A	
	Energy 10^6 Btu/yr	Cost/yr \$/yr	Energy 10^6 Btu/yr	Cost/yr \$/yr
Electricity	195,566.4	3,552,627	185,381.3	3,367,608
Gas	379,001.4	2,020,091	370,860.1	1,976,698
Total	574,568	5,572,718	556,241	5,344,306

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

		----- Monthly Consumption -----													
Equipment - Utility		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	
Lights															
	Electric (kWh)	183,981.2	166,184.1	184,442.6	177,971.9	184,212.0	178,433.1	183,750.5	184,442.7	177,971.8	184,211.9	178,202.7	183,750.6	2,167,555.0	
	Peak (kW)	260.1	260.1	260.1	260.1	260.1	260.1	260.1	260.1	260.1	260.1	260.1	260.1	260.1	
Misc. Ld															
	Electric (kWh)	4,594.8	4,155.7	4,938.7	4,391.1	4,766.8	4,735.0	4,422.9	4,938.7	4,391.1	4,766.8	4,563.1	4,422.9	55,087.7	
	Peak (kW)	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	
Cooling Coil Condensate															
	Recoverable Water (1000gal)	0.2	0.3	0.8	1.6	5.8	52.4	93.4	72.9	29.2	6.4	4.4	0.3	267.5	
	Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.3	0.1	0.1	0.0	0.4	
Bsu 1: QRO Motor Loads															
	Electric (kWh)	3,443,976.0	3,110,688.0	3,443,976.0	3,332,880.0	3,443,976.0	3,332,880.0	3,443,976.0	3,443,976.0	3,332,880.0	3,443,976.0	3,332,880.0	3,443,976.0	40,550,040.0	
	Peak (kW)	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	
Bsu 2: Kitchen Gas															
	Gas (therms)	297,672.2	268,865.4	297,672.2	288,069.9	297,672.2	288,069.9	297,672.2	297,672.2	288,069.9	297,672.2	288,069.9	297,672.2	3,504,850.0	
	Peak (therms/Hr)	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	
Bsu 3: HVLS Fans															
	Electric (kWh)	13,392.0	12,096.0	13,392.0	12,960.0	13,392.0	12,960.0	13,392.0	13,392.0	12,960.0	13,392.0	12,960.0	13,392.0	157,680.0	
	Peak (kW)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	
Bsu 4: Parking lot lights															
	Electric (kWh)	8,261.5	7,462.0	8,261.5	7,995.0	8,261.5	7,995.0	8,261.5	8,261.5	7,995.0	8,261.5	7,995.0	8,261.5	97,272.5	
	Peak (kW)	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
Bsu 5: Air Compressor Load-CS															
	Electric (kWh)	427,202.2	385,860.7	427,202.2	413,421.7	427,202.2	413,421.7	427,202.2	427,202.2	413,421.7	427,202.2	413,421.7	427,202.2	5,029,963.0	
	Peak (kW)	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	
Bsu 6: Air Compressor Load-VSD															
	Electric (kWh)	116,511.2	105,235.9	116,511.2	112,752.7	116,511.2	112,752.7	116,511.2	116,511.2	112,752.7	116,511.2	112,752.7	116,511.2	1,371,825.1	
	Peak (kW)	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	
Bsu 7: QRO Dom Hot Water															
	Proc. Hot Water (therms)	69.2	62.5	69.2	67.0	69.2	67.0	69.2	69.2	67.0	69.2	67.0	69.2	814.9	
	Peak (therms/Hr)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Bsu 8: QRO Dom Hot Water													
Proc. Hot Water (therms)	237.4	214.4	237.4	229.7	237.4	229.7	237.4	237.4	229.7	237.4	229.7	237.4	2,795.1
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Cpl 1: Chiller Plant [Sum of dsn coil capacities=1,725 tons]													
CH-001 [Clg Nominal Capacity/F.L.Rate=575 tons / 330.8 kW] (Cooling Equipment)													
Electric (kWh)	3,224.9	4,645.5	8,707.7	15,537.4	25,458.6	60,929.1	89,634.1	71,092.6	40,524.8	20,064.7	13,766.4	4,721.7	358,307.3
Peak (kW)	35.1	36.1	43.5	52.9	121.6	176.2	176.2	176.2	176.2	105.9	65.6	43.3	176.2
Optimized VFD C-tower-10 Range [Design Heat Rejection/F.L.Rate=669.1 tons / 44.16 kW]													
Electric (kWh)	4,126.1	5,023.1	7,151.6	9,717.6	10,754.9	10,174.1	10,674.7	10,550.1	10,083.3	9,865.9	8,713.1	5,249.3	102,083.9
Peak (kW)	18.4	18.3	18.3	18.2	18.1	18.8	18.8	27.0	17.1	18.2	18.2	18.4	27.0
Optimized VFD C-tower-10 Range													
Make Up Water (1000gal)	22.3	31.6	57.9	103.2	174.6	445.6	664.3	520.6	279.0	131.6	89.6	32.0	2,552.3
Peak (1000gal/Hr)	0.2	0.2	0.3	0.3	1.0	1.3	1.3	1.3	1.3	0.8	0.5	0.3	1.3
90.1-10 Min Var Vol Chilled Water Pump [F.L.Rate=14.91 kW] (Misc Accessory Equipment)													
Electric (kWh)	85.4	117.5	208.4	354.3	562.1	1,457.8	2,260.6	1,706.8	873.0	432.4	305.8	119.1	8,483.1
Peak (kW)	0.7	0.8	0.9	1.0	3.1	5.0	5.0	5.0	5.0	2.5	1.3	0.9	5.0
90.1-10 Min Var Vol Cond Water Pump [F.L.Rate=39.77 kW] (Misc Accessory Equipment)													
Electric (kWh)	227.7	313.3	555.6	944.7	1,498.8	3,887.4	6,028.3	4,551.5	2,328.0	1,153.0	815.6	317.6	22,621.4
Peak (kW)	1.8	2.1	2.4	2.8	8.2	13.3	13.3	13.3	13.3	6.6	3.5	2.4	13.3
90.1-10 Min Var Vol Chilled Water Pump [F.L.Rate=79.54 kW] (Cooling Plant Circulation Pump)													
Electric (kWh)	169.6	233.1	413.7	709.9	1,143.4	2,611.7	3,788.2	3,021.5	1,721.8	880.7	615.3	236.8	15,545.6
Peak (kW)	1.3	1.6	1.9	2.2	5.4	8.1	8.2	8.5	7.7	4.7	2.8	1.8	8.5
CH-002 [Clg Nominal Capacity/F.L.Rate=575 tons / 330.8 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	1,453.2	4,941.2	1,917.3	274.3	0.0	0.0	0.0	8,586.0
Peak (kW)	0.0	0.0	0.0	0.0	0.0	69.9	74.2	90.7	53.5	0.0	0.0	0.0	90.7
Optimized VFD C-tower-10 Range [Design Heat Rejection/F.L.Rate=669.1 tons / 44.16 kW]													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	814.9	2,342.5	997.9	148.5	0.0	0.0	0.0	4,303.8
Peak (kW)	0.0	0.0	0.0	0.0	0.0	20.5	20.9	21.0	19.7	0.0	0.0	0.0	21.0

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Cpl 1: Chiller Plant [Sum of dsn coil capacities=1,725 tons]</u>													
Optimized VFD C-tower-10 Range													
Make Up Water (1000gal)	0.0	0.0	0.0	0.0	0.0	7.3	25.2	9.9	1.3	0.0	0.0	0.0	43.7
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.6	0.3	0.0	0.0	0.0	0.6
90.1-10 Min Var Vol Chilled Water Pump [F.L.Rate=14.91 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	20.6	69.3	27.2	3.8	0.0	0.0	0.0	120.8
Peak (kW)	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.2	0.7	0.0	0.0	0.0	1.2
90.1-10 Min Var Vol Cond Water Pump [F.L.Rate=39.77 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	54.8	184.8	72.4	10.1	0.0	0.0	0.0	322.2
Peak (kW)	0.0	0.0	0.0	0.0	0.0	2.6	2.7	3.1	1.9	0.0	0.0	0.0	3.1
<u>Cpl 2: RTU-201 DX [Sum of dsn coil capacities=2.98 tons]</u>													
RTU-201 DX [Ctg Nominal Capacity/F.L.Rate=2.98 tons / 1.91 kW] [**Orig F.L.Rate=2.48 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	0.0	1.6	55.6	201.3	279.6	229.3	90.6	15.4	1.2	0.0	874.5
Peak (kW)	0.0	0.0	0.0	0.7	0.8	1.2	1.3	1.2	1.1	0.8	0.6	0.0	1.3
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=3.58 tons / 0.20 kW]													
Electric (kWh)	0.0	0.0	0.0	0.1	4.4	17.8	25.8	20.2	7.6	1.2	0.1	0.0	77.3
Peak (kW)	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.2
Cntl panel & interlocks - 0.05 KW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.5	7.7	14.8	16.7	16.5	10.9	3.0	0.4	0.0	70.3
Peak (kW)	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
<u>Cpl 3: RTU-202 DX [Sum of dsn coil capacities=5.34 tons]</u>													
RTU-202 DX [Ctg Nominal Capacity/F.L.Rate=5.34 tons / 3.71 kW] [**Orig F.L.Rate=4.51 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.1	1.0	8.5	54.2	282.5	472.9	312.4	101.6	24.4	7.2	0.2	1,265.0
Peak (kW)	0.0	1.1	1.2	1.4	1.4	1.7	1.8	1.6	1.5	1.3	1.3	1.2	1.8
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=6.50 tons / 0.36 kW]													
Electric (kWh)	0.0	0.0	0.1	0.7	4.0	20.2	36.3	22.5	7.4	1.9	0.6	0.0	93.6
Peak (kW)	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.1	0.1	0.0	0.0	0.0	0.4
Cntl panel & interlocks - 0.05 KW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.2	0.6	3.5	12.7	26.8	35.1	30.1	17.5	7.8	2.4	0.2	136.7
Peak (kW)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Cpl 4: RTU-203 DX [Sum of dsn coil capacities=3.76 tons]</u>													
RTU-203 DX [Clg Nominal Capacity/F.L.Rate=3.76 tons / 2.41 kW] [**Orig F.L.Rate=3.01 kW] (Cooling Equipment)													
Electric (kWh)	0.0	1.4	6.2	34.7	149.9	497.2	765.1	584.4	268.1	84.7	26.0	1.3	2,418.9
Peak (kW)	0.0	0.7	0.8	0.9	1.3	1.7	1.7	1.6	1.5	1.1	1.0	0.8	1.7
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=4.51 tons / 0.25 kW]													
Electric (kWh)	0.0	0.1	0.5	2.9	12.4	45.0	71.5	54.0	23.8	7.2	2.3	0.1	219.7
Peak (kW)	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.0	0.3
Cntl panel & interlocks - 0.05 kW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.5	1.0	4.4	14.6	30.0	37.0	34.4	20.6	8.8	3.5	0.5	155.1
Peak (kW)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<u>Cpl 5: RTU-301/2 DX [Sum of dsn coil capacities=26.38 tons]</u>													
RTU-301/2 DX [Clg Nominal Capacity/F.L.Rate=26.38 tons / 11.98 kW] [**Orig F.L.Rate=21.11 kW] (Cooling Equipment)													
Electric (kWh)	39.0	172.7	506.7	1,327.7	2,563.3	4,161.3	4,636.5	4,437.9	3,684.0	1,911.7	1,051.4	172.9	24,665.0
Peak (kW)	4.1	4.7	6.0	6.5	7.1	8.2	8.8	8.2	8.1	7.1	6.3	5.9	8.8
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=30.27 tons / 1.67 kW]													
Electric (kWh)	4.4	20.1	61.6	164.9	326.9	545.7	597.6	586.4	495.0	252.1	136.1	20.9	3,211.4
Peak (kW)	0.5	0.6	0.8	0.9	0.9	1.3	1.7	1.3	1.3	0.9	0.9	0.8	1.7
Cntl panel & interlocks - 0.05 kW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	2.1	5.2	11.3	23.3	33.2	36.0	37.2	37.2	35.9	25.2	18.3	5.0	269.7
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<u>Cpl 6: RTU-401 DX [Sum of dsn coil capacities=3.85 tons]</u>													
RTU-401 DX [Clg Nominal Capacity/F.L.Rate=3.85 tons / 2.43 kW] [**Orig F.L.Rate=3.26 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	34.0	277.9	430.8	361.5	116.7	5.5	0.0	0.0	1,226.4
Peak (kW)	0.0	0.0	0.0	0.0	1.2	2.2	2.3	2.1	1.8	1.0	0.0	0.0	2.3
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=4.62 tons / 0.26 kW]													
Electric (kWh)	0.0	0.0	0.0	0.0	2.9	27.3	45.7	36.6	11.3	0.5	0.0	0.0	124.1
Peak (kW)	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.3
Cntl panel & interlocks - 0.05 kW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	2.8	13.0	16.3	15.6	7.0	0.9	0.0	0.0	55.4
Peak (kW)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Cpl 7: RTU-402 DX [Sum of dsn coil capacities=2.98 tons]</u>													
RTU-402 DX [Clg Nominal Capacity/F.L.Rate=2.98 tons / 1.87 kW] [**Orig F.L.Rate=2.52 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	1.2	14.8	98.1	298.9	430.9	343.4	165.1	46.4	19.9	0.1	1,418.8
Peak (kW)	0.0	0.0	0.6	0.7	1.2	1.7	1.7	1.6	1.5	0.9	0.7	0.5	1.7
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=3.57 tons / 0.20 kW]													
Electric (kWh)	0.0	0.0	0.1	1.3	8.6	29.3	42.5	34.4	15.7	4.1	1.8	0.0	137.8
Peak (kW)	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.2
Cntl panel & interlocks - 0.05 KW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.4	2.8	10.6	21.8	28.4	24.2	15.4	5.8	2.2	0.1	111.3
Peak (kW)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<u>Cpl 8: Split System HP [Sum of dsn coil capacities=2.88 tons]</u>													
Air-cooled unitary - 009 [Clg Nominal Capacity/F.L.Rate=2.88 tons / 2.10 kW] [**Orig F.L.Rate=2.29 kW] (Cooling Equipment)													
Electric (kWh)	414.7	380.1	432.9	452.9	522.3	590.4	658.4	616.1	540.2	485.2	436.3	420.5	5,950.0
Peak (kW)	0.7	0.8	0.8	0.9	1.0	1.1	1.1	1.0	1.0	0.9	0.9	0.8	1.1
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=3.54 tons / 0.20 kW]													
Electric (kWh)	24.8	25.9	35.2	43.9	49.6	50.6	54.4	52.4	49.4	45.5	40.1	27.4	499.1
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2
Cntl panel & interlocks - 0.05 KW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	37.2	33.6	37.2	36.0	37.2	36.0	37.2	37.2	36.0	37.2	36.0	37.2	438.0
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<u>Cpl 9: No Cooling [Sum of dsn coil capacities=0 tons]</u>													
<u>Hpl 1: Hot Water Boiler [Sum of dsn coil capacities=10,000 mbh]</u>													
BLR001 [Nominal Capacity/F.L.Rate=5,000 mbh / 54.95 Therms] (Heating Equipment)													
Gas (therms)	18,829.8	14,309.2	11,614.9	4,473.1	1,245.1	116.2	110.8	113.6	192.8	4,035.0	7,336.3	16,619.3	78,996.1
Peak (therms/Hr)	55.0	55.0	49.0	27.5	21.1	0.6	0.4	0.4	6.0	29.3	31.4	42.6	55.0
Heating water circ pump [F.L.Rate=1.49 kW] (Misc Accessory Equipment)													
Electric (kWh)	1,109.6	1,002.2	1,109.6	1,073.8	1,105.1	1,023.1	1,039.5	1,054.4	1,063.4	1,108.1	1,070.8	1,109.6	12,869.3
Peak (kW)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Hpl 1: Hot Water Boiler [Sum of dsn coil capacities=10,000 mbh]</u>													
Boiler forced draft fan [F.L.Rate=5 kW] (Misc Accessory Equipment)													
Electric (kWh)	3,720.0	3,360.0	3,720.0	3,600.0	3,705.0	3,430.0	3,485.0	3,535.0	3,565.0	3,715.0	3,590.0	3,720.0	43,145.0
Peak (kW)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	372.0	336.0	372.0	360.0	370.5	343.0	348.5	353.5	356.5	371.5	359.0	372.0	4,314.5
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
90.1-10 Min Var Vol HW Pump [F.L.Rate=59.66 kW] (Misc Accessory Equipment)													
Electric (kWh)	5,019.0	3,381.9	2,719.5	1,129.0	346.8	55.2	53.9	55.0	77.6	997.3	1,782.2	3,774.6	19,392.1
Peak (kW)	59.5	53.2	11.7	6.1	4.8	0.2	0.2	0.2	1.7	6.4	6.9	9.6	59.5
BLR002 [Nominal Capacity/F.L.Rate=5,000 mbh / 54.95 Therms] (Heating Equipment)													
Gas (therms)	480.7	73.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	554.2
Peak (therms/Hr)	28.2	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2
Heating water circ pump [F.L.Rate=1.49 kW] (Misc Accessory Equipment)													
Electric (kWh)	35.8	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.8
Peak (kW)	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Boiler forced draft fan [F.L.Rate=5 kW] (Misc Accessory Equipment)													
Electric (kWh)	120.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	140.0
Peak (kW)	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	12.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0
Peak (kW)	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
<u>Hpl 2: DHW-Elec [Sum of dsn coil capacities=9.30 mbh]</u>													
DHW-Elec [Nominal Capacity/F.L.Rate=20.48 mbh / 6 kW] (Heating Equipment)													
Electric (kWh)	2,027.8	1,831.6	2,027.8	1,962.4	2,027.8	1,962.4	2,027.8	2,027.8	1,962.4	2,027.8	1,962.4	2,027.8	23,876.1
Peak (kW)	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Water circulating pump [F.L.Rate=0.06 kW] (Misc Accessory Equipment)													
Electric (kWh)	44.6	40.3	44.6	43.2	44.6	43.2	44.6	44.6	43.2	44.6	43.2	44.6	525.6
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<u>Hpl 3: DHW-Gas [Sum of dsn coil capacities=31.91 mbh]</u>													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Hpl 3: DHW-Gas [Sum of dsn coil capacities=31.91 mbh]</u>													
DHW-Gas [Nominal Capacity/F.L.Rate=199 mbh / 2.05 Therms] (Heating Equipment)													
Gas (therms)	244.7	221.1	244.7	236.8	244.7	236.8	244.7	244.7	236.8	244.7	236.8	244.7	2,881.6
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Water circulating pump [F.L.Rate=0.12 kW] (Misc Accessory Equipment)													
Electric (kWh)	93.0	84.0	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	1,095.0
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Boiler forced draft fan [F.L.Rate=0.20 kW] (Misc Accessory Equipment)													
Electric (kWh)	148.1	133.7	148.1	143.3	148.1	143.3	148.1	148.1	143.3	148.1	143.3	148.1	1,743.2
Peak (kW)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	372.0	336.0	372.0	360.0	372.0	360.0	372.0	372.0	360.0	372.0	360.0	372.0	4,380.0
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<u>Hpl 4: Humidifier Steam Gen [Sum of dsn coil capacities=1,911 mbh]</u>													
Humidier Steam Gen [Nominal Capacity/F.L.Rate=1,911 mbh / 560 kW] (Heating Equipment)													
Electric (kWh)	251,977.6	204,148.7	185,046.2	123,053.0	82,257.4	0.0	0.0	0.0	0.0	61,414.0	94,829.8	232,318.2	1,235,044.9
Peak (kW)	560.0	560.0	560.0	560.0	560.0	0.0	0.0	0.0	0.0	527.7	560.0	560.0	560.0
Eq5061 - Condensate return pump [F.L.Rate=0.09 kW] (Misc Accessory Equipment)													
Electric (kWh)	61.4	52.0	42.1	34.0	22.6	0.0	0.0	0.0	0.0	20.5	30.5	57.2	320.4
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Make-up water - 5.18e-006 gal/btu (Misc Accessory Equipment)													
Make Up Water (1000gal)	6.8	5.7	4.6	3.7	2.5	0.0	0.0	0.0	0.0	2.3	3.4	6.3	35.3
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>Hpl 5: RTU-201 HX [Sum of dsn coil capacities=60 mbh]</u>													
RTU-201 HX [Nominal Capacity/F.L.Rate=60 mbh / 0.75 Therms] (Heating Equipment)													
Gas (therms)	75.8	57.3	47.4	19.9	14.2	7.8	5.3	7.6	11.2	19.7	31.0	65.1	362.1
Peak (therms/Hr)	0.5	0.5	0.5	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.4	0.6	0.6
<u>Hpl 6: RTU-202/3 HX [Sum of dsn coil capacities=160 mbh]</u>													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Hpl 6: RTU-202/3 HX [Sum of dsn coil capacities=160 mbh]													
RTU-202 HX [Nominal Capacity/F.L.Rate=160 mbh / 1.97 Therms]	(Heating Equipment)												
Gas (therms)	139.4	103.3	83.1	28.5	12.3	1.7	0.0	0.4	4.6	27.6	46.1	116.3	563.2
Peak (therms/Hr)	0.6	0.6	0.5	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.3	0.5	0.6
Hpl 7: Elec Heat [Sum of dsn coil capacities=29.86 mbh]													
Elec Heat [Nominal Capacity/F.L.Rate=29.86 mbh / 8.75 kW]	(Heating Equipment)												
Electric (kWh)	518.9	349.9	168.1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	18.8	285.1	1,342.4
Peak (kW)	8.8	8.8	6.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	3.1	6.7	8.8
Hpl 8: RTU-401 HX [Sum of dsn coil capacities=130.0 mbh]													
RTU-401 HX [Nominal Capacity/F.L.Rate=130 mbh / 1.61 Therms]	(Heating Equipment)												
Gas (therms)	94.4	70.3	57.2	16.8	2.5	0.0	0.0	0.0	0.0	12.5	31.0	77.0	361.8
Peak (therms/Hr)	1.3	1.2	1.2	1.0	0.9	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3
Hpl 9: RTU-402 HX [Sum of dsn coil capacities=80 mbh]													
RTU-402 HX [Nominal Capacity/F.L.Rate=80 mbh / 0.98 Therms]	(Heating Equipment)												
Gas (therms)	37.4	25.6	18.2	1.5	0.0	0.0	0.0	0.0	0.0	2.6	7.7	28.9	121.9
Peak (therms/Hr)	0.6	0.5	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.6
Hpl 10: MAU-201 HX [Sum of dsn coil capacities=940.0 mbh]													
MAU-201 HX [Nominal Capacity/F.L.Rate=940 mbh / 10.44 Therms]	(Heating Equipment)												
Gas (therms)	474.0	343.6	238.8	32.6	0.0	0.0	0.0	0.0	0.0	33.1	115.7	401.2	1,639.0
Peak (therms/Hr)	1.5	1.4	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.7	0.8	1.2	1.5
Hpl 11: MAU-202 HX [Sum of dsn coil capacities=1,127 mbh]													
MAU-202 HX [Nominal Capacity/F.L.Rate=1,127 mbh / 12.25 Therms]	(Heating Equipment)												
Gas (therms)	279.7	187.7	97.1	0.0	0.0	0.0	0.0	0.0	0.0	6.4	21.9	224.2	817.1
Peak (therms/Hr)	1.4	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	1.0	1.4
Hpl 12: MAU-203 HX [Sum of dsn coil capacities=1,127 mbh]													
MAU-203 HX [Nominal Capacity/F.L.Rate=1,127 mbh / 12.25 Therms]	(Heating Equipment)												
Gas (therms)	480.8	335.4	180.8	2.7	0.0	0.0	0.0	0.0	0.0	0.0	53.2	386.2	1,439.0
Peak (therms/Hr)	1.8	1.6	1.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.3	1.8
Hpl 13: MAU-204 HX [Sum of dsn coil capacities=940.0 mbh]													

Project Name:

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EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Hpl 13: MAU-204 HX [Sum of dsn coil capacities=940.0 mbh]</u>													
MAU-204 HX [Nominal Capacity/F.L.Rate=940 mbh / 10.44 Therms]	(Heating Equipment)												
Gas (therms)	547.1	421.8	345.0	147.8	40.4	3.0	0.0	0.2	4.5	128.7	223.6	487.2	2,349.3
Peak (therms/Hr)	1.6	1.5	1.4	0.8	0.6	0.3	0.0	0.2	0.4	0.9	0.9	1.3	1.6
<u>Hpl 14: MAU-205 HX [Sum of dsn coil capacities=2,348 mbh]</u>													
MAU-205 HX [Nominal Capacity/F.L.Rate=2,348 mbh / 25.52 Therms]	(Heating Equipment)												
Gas (therms)	1,933.2	1,521.0	1,442.0	636.3	202.3	15.3	0.0	1.3	45.0	533.5	816.1	1,728.8	8,874.7
Peak (therms/Hr)	7.7	10.5	7.7	4.1	1.9	1.1	0.0	0.8	1.1	3.5	3.4	6.4	10.5
<u>Hpl 15: MAU-206-211 HX [Sum of dsn coil capacities=4,227 mbh]</u>													
MAU-206-211 HX [Nominal Capacity/F.L.Rate=4,227 mbh / 45.95 Therms]	(Heating Equipment)												
Gas (therms)	898.1	584.2	289.4	0.0	0.0	0.0	0.0	0.0	0.0	14.4	40.7	704.4	2,531.1
Peak (therms/Hr)	5.3	4.8	4.4	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.0	3.7	5.3
<u>Hpl 16: MAU-301 HX [Sum of dsn coil capacities=1,409 mbh]</u>													
MAU-301 HX [Nominal Capacity/F.L.Rate=1,409 mbh / 15.32 Therms]	(Heating Equipment)												
Gas (therms)	373.9	262.3	198.5	14.2	0.0	0.0	0.0	0.0	0.0	21.2	75.2	287.3	1,232.6
Peak (therms/Hr)	2.1	1.9	1.8	0.8	0.0	0.0	0.0	0.0	0.0	0.8	1.1	1.5	2.1
<u>Hpl 17: MAU-302 HX [Sum of dsn coil capacities=1,409 mbh]</u>													
MAU-302 HX [Nominal Capacity/F.L.Rate=1,409 mbh / 15.32 Therms]	(Heating Equipment)												
Gas (therms)	483.2	362.1	332.9	115.8	42.0	4.6	0.0	3.8	9.1	100.3	185.7	394.3	2,033.8
Peak (therms/Hr)	2.2	2.0	1.9	1.0	0.8	0.5	0.0	0.5	0.5	1.0	1.2	1.6	2.2
<u>Hpl 18: MAU-303-305 HX [Sum of dsn coil capacities=3,757 mbh]</u>													
MAU-303-305 HX [Nominal Capacity/F.L.Rate=3,757 mbh / 40.84 Therms]	(Heating Equipment)												
Gas (therms)	13,853.5	10,874.5	10,554.8	4,437.5	2,048.2	247.5	0.0	48.5	712.9	4,108.3	6,403.2	11,987.1	65,275.8
Peak (therms/Hr)	40.8	40.8	40.8	34.3	26.5	11.4	0.0	4.5	16.5	31.8	40.8	40.8	40.8
<u>Hpl 19: MAU-401-404 HX [Sum of dsn coil capacities=4,148 mbh]</u>													
MAU-401-404 HX [Nominal Capacity/F.L.Rate=4,148 mbh / 45.09 Therms]	(Heating Equipment)												
Gas (therms)	9,793.2	7,062.8	4,823.1	622.5	0.0	0.0	0.0	0.0	0.0	826.5	2,305.9	8,283.3	33,717.2
Peak (therms/Hr)	34.1	31.9	30.1	13.6	0.0	0.0	0.0	0.0	0.0	16.2	17.4	26.4	34.1
<u>Hpl 20: No Heat [Sum of dsn coil capacities=0 mbh]</u>													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sys 1: AHU-101													
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=24,000 cfm / 22.37 kW] (Main Clg Fan)													
Electric (kWh)	2,462.9	2,229.8	2,536.8	2,401.1	2,593.6	2,682.5	2,759.9	2,843.3	2,519.7	2,576.2	2,421.3	2,429.4	30,456.6
Peak (kW)	5.1	5.4	5.6	5.6	6.0	7.6	8.5	7.4	6.6	6.0	5.7	5.6	8.5
AF Centrifugal const vol [DsnAirflow/F.L.Rate=1,085 cfm / 0.26 kW] (Room Exhaust Fan)													
Electric (kWh)	118.5	107.1	123.6	112.8	120.9	120.1	116.7	125.4	113.7	120.9	115.6	115.6	1,410.8
Peak (kW)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=24,000 cfm / 14.91 kW] (Main Return Fan)													
Electric (kWh)	1,496.1	1,349.9	1,528.4	1,435.0	1,546.6	1,607.0	1,659.9	1,706.0	1,505.3	1,540.4	1,451.1	1,471.1	18,296.7
Peak (kW)	3.4	3.6	3.4	3.4	3.6	4.6	5.1	4.4	3.9	3.6	3.4	3.3	5.1
Sys 2: RTU-201													
Fan coil supply fan [DsnAirflow/F.L.Rate=1,000 cfm / 0.37 kW] (Main Clg Fan)													
Electric (kWh)	181.1	163.4	187.5	172.1	183.7	184.0	182.2	191.3	173.2	183.2	176.2	176.5	2,154.4
Peak (kW)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
AF Centrifugal const vol [DsnAirflow/F.L.Rate=250 cfm / 0.07 kW] (Room Exhaust Fan)													
Electric (kWh)	35.6	32.1	37.1	33.7	36.2	36.4	35.2	37.8	34.0	36.1	34.7	34.5	423.3
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sys 3: RTU-202													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=1,600 cfm / 0.44 kW] (Main Clg Fan)													
Electric (kWh)	29.4	26.2	29.1	26.0	28.7	46.0	57.6	47.1	28.9	28.0	26.9	28.4	402.3
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.1	0.1	0.1	0.1	0.4
AF Centrifugal const vol [DsnAirflow/F.L.Rate=350 cfm / 0.15 kW] (Room Exhaust Fan)													
Electric (kWh)	67.4	61.0	72.2	65.0	70.9	66.8	59.7	68.9	64.8	70.4	67.0	65.0	799.0
Peak (kW)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sys 4: RTU-203													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=1,400 cfm / 0.35 kW] (Main Clg Fan)													
Electric (kWh)	147.2	133.2	148.5	142.6	148.0	143.6	146.9	148.5	142.6	148.0	143.1	147.0	1,739.1
Peak (kW)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sys 5: RTU-301/2													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sys 5: RTU-301/2													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=12,000 cfm / 7.46 kW] (Main Clg Fan)													
Electric (kWh)	1,443.7	1,317.9	1,518.9	1,448.3	1,550.6	1,543.1	1,546.8	1,605.0	1,479.7	1,538.6	1,459.5	1,435.4	17,887.5
Peak (kW)	4.4	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.5
Sys 6: RTU-401													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=1,900 cfm / 0.57 kW] (Main Clg Fan)													
Electric (kWh)	48.0	42.5	47.4	41.0	42.0	57.4	87.7	64.2	43.9	43.0	43.0	45.9	605.9
Peak (kW)	0.2	0.2	0.2	0.2	0.3	0.6	0.6	0.6	0.5	0.2	0.2	0.2	0.6
AF Centrifugal const vol [DsnAirflow/F.L.Rate=400 cfm / 0.07 kW] (Room Exhaust Fan)													
Electric (kWh)	40.7	37.2	43.7	43.0	46.5	41.5	37.7	41.9	43.2	45.6	42.6	40.7	504.3
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sys 7: RTU-402													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=1,600 cfm / 0.45 kW] (Main Clg Fan)													
Electric (kWh)	39.0	34.2	37.9	33.1	35.6	55.2	74.9	58.2	39.7	35.3	34.7	37.2	514.9
Peak (kW)	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.4	0.2	0.2	0.2	0.4
AF Centrifugal const vol [DsnAirflow/F.L.Rate=250 cfm / 0.15 kW] (Room Exhaust Fan)													
Electric (kWh)	80.0	73.0	88.8	91.4	95.9	84.4	69.6	81.8	86.3	93.3	88.4	80.2	1,013.0
Peak (kW)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sys 9: AHU-201													
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=7,000 cfm / 7.46 kW] (Main Clg Fan)													
Electric (kWh)	1,646.0	1,546.7	1,818.3	1,995.2	2,172.0	2,060.1	2,056.9	2,113.5	2,116.2	2,048.1	1,886.4	1,701.9	23,161.3
Peak (kW)	3.2	3.3	3.3	3.4	3.4	3.2	3.0	3.1	3.2	3.4	3.4	3.3	3.4
AF Centrifugal const vol [DsnAirflow/F.L.Rate=545 cfm / 0.19 kW] (Room Exhaust Fan)													
Electric (kWh)	138.7	125.3	138.7	134.2	138.7	134.2	138.7	138.7	134.2	138.7	134.2	138.7	1,633.1
Peak (kW)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=7,000 cfm / 6 kW] (Main Return Fan)													
Electric (kWh)	1,242.4	1,176.8	1,422.2	1,528.1	1,525.9	1,380.3	1,377.9	1,415.9	1,419.7	1,536.9	1,455.8	1,266.0	16,747.8
Peak (kW)	2.5	2.6	2.6	2.5	2.4	2.2	2.0	2.1	2.3	2.6	2.6	3.0	3.0
Sys 10: AHU-301 to 314													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

Equipment - Utility	----- Monthly Consumption -----												Total
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Sys 10: AHU-301 to 314													
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=280,000 cfm / 208.8 kW]	(Main Clg Fan)												
Electric (kWh)	31,637.0	26,934.7	28,763.1	27,452.4	28,367.5	27,480.6	28,501.3	28,467.6	27,452.4	28,367.5	27,452.4	29,997.0	340,873.5
Peak (kW)	77.9	77.9	75.2	38.1	38.1	42.1	47.3	46.2	38.1	38.1	38.1	67.6	77.9
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=280,000 cfm / 252 kW]	(Main Return Fan)												
Electric (kWh)	37,834.9	32,760.9	34,714.5	33,132.6	34,237.0	33,166.6	34,398.5	34,357.8	33,132.6	34,237.0	33,132.6	36,203.7	411,308.6
Peak (kW)	94.1	94.1	90.7	46.0	46.0	50.8	57.0	55.8	46.0	46.0	46.0	81.6	94.1
Sys 11: AHU202 to 204													
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=45,750 cfm / 22.37 kW]	(Main Clg Fan)												
Electric (kWh)	5,504.6	5,385.8	6,469.1	7,139.5	8,104.4	8,942.7	9,695.2	9,214.7	8,081.9	7,398.1	6,581.2	5,858.7	88,375.7
Peak (kW)	10.0	10.7	12.2	12.8	14.4	16.9	18.6	18.1	15.2	12.9	12.3	11.3	18.6
Direct Drive AF Var Freq Drv [DsnAirflow/F.L.Rate=45,750 cfm / 18 kW]	(Main Return Fan)												
Electric (kWh)	3,995.0	3,908.8	4,695.3	5,179.5	5,874.8	6,472.3	7,012.3	6,669.5	5,856.8	5,366.7	4,776.4	4,251.9	64,059.3
Peak (kW)	7.3	7.8	8.8	9.2	10.4	12.2	13.4	13.1	11.0	9.3	8.9	8.2	13.4
Sys 12: MAU-201													
FC Centrifugal const vol [DsnAirflow/F.L.Rate=10,000 cfm / 3.73 kW]	(Main Clg Fan)												
Electric (kWh)	2,774.0	2,505.6	2,774.0	2,684.5	2,774.0	2,684.5	2,774.0	2,774.0	2,684.5	2,774.0	2,684.5	2,774.0	32,661.8
Peak (kW)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Sys 13: MAU-202													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=12,000 cfm / 5.59 kW]	(Main Clg Fan)												
Electric (kWh)	4,161.0	3,758.3	4,161.0	4,026.8	4,161.0	4,026.8	4,161.0	4,161.0	4,026.8	4,161.0	4,026.8	4,161.0	48,992.7
Peak (kW)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Sys 14: MAU-203													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=12,000 cfm / 5.59 kW]	(Main Clg Fan)												
Electric (kWh)	4,161.0	3,758.3	4,161.0	4,026.8	4,161.0	4,026.8	4,161.0	4,161.0	4,026.8	4,161.0	4,026.8	4,161.0	48,992.7
Peak (kW)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Sys 15: MAU-204													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sys 15: MAU-204													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=10,000 cfm / 3.73 kW] (Main Clg Fan)													
Electric (kWh)	2,774.0	2,505.6	2,774.0	2,684.5	2,774.0	2,684.5	2,774.0	2,774.0	2,684.5	2,774.0	2,684.5	2,774.0	32,661.8
Peak (kW)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Sys 16: MAU-205													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=25,000 cfm / 22.37 kW] (Main Clg Fan)													
Electric (kWh)	16,644.1	15,033.4	16,644.1	16,107.2	16,644.1	16,107.2	16,644.1	16,644.1	16,107.2	16,644.1	16,107.2	16,644.1	195,970.7
Peak (kW)	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=10,000 cfm / 7.46 kW] (Room Exhaust Fan)													
Electric (kWh)	2,741.6	2,485.3	3,332.1	3,387.1	4,083.7	5,118.2	5,548.0	5,496.4	4,396.4	3,573.6	2,843.0	2,752.3	45,757.8
Peak (kW)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Sys 17: MAU-206-211													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=45,000 cfm / 67.11 kW] (Main Clg Fan)													
Electric (kWh)	49,932.3	45,100.1	49,932.3	48,321.6	49,932.3	48,321.6	49,932.3	49,932.3	48,321.6	49,932.3	48,321.6	49,932.3	587,912.3
Peak (kW)	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1
Sys 18: MAU-301													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=15,000 cfm / 11.19 kW] (Main Clg Fan)													
Electric (kWh)	5,637.5	5,100.6	6,174.4	5,369.1	5,906.0	5,906.0	5,369.1	6,174.4	5,369.1	5,906.0	5,637.5	5,369.1	67,918.6
Peak (kW)	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=3,000 cfm / 1.49 kW] (Room Exhaust Fan)													
Electric (kWh)	751.7	680.1	823.3	715.9	787.5	787.5	715.9	823.3	715.9	787.5	751.7	715.9	9,055.8
Peak (kW)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Sys 19: MAU-302													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=15,000 cfm / 11.19 kW] (Main Clg Fan)													
Electric (kWh)	5,637.5	5,100.6	6,174.4	5,369.1	5,906.0	5,906.0	5,369.1	6,174.4	5,369.1	5,906.0	5,637.5	5,369.1	67,918.6
Peak (kW)	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
Sys 20: MAU-303-305													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 Proposed Climate Zone 3A

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Sys 20: MAU-303-305</u>													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=120,000 cfm / 96.94 kW] (Main Clg Fan)													
Electric (kWh)	50,851.9	46,450.1	55,244.0	48,876.6	53,852.1	53,540.9	50,746.7	56,272.8	49,362.1	53,596.9	50,630.5	49,171.3	618,595.8
Peak (kW)	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9	96.9
<u>Sys 21: MAU-401-404</u>													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=48,000 cfm / 22.37 kW] (Main Clg Fan)													
Electric (kWh)	16,644.1	15,033.4	16,644.1	16,107.2	16,644.1	16,107.2	16,644.1	16,644.1	16,107.2	16,644.1	16,107.2	16,644.1	195,970.7
Peak (kW)	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
<u>Sys 22: Elec Unit Heaters</u>													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

		----- Monthly Consumption -----													
Equipment - Utility		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	
Lights															
	Electric (kWh)	478,935.5	432,599.3	479,669.8	463,367.6	479,303.0	464,101.6	478,568.4	479,669.8	463,367.3	479,302.7	463,735.1	478,568.7	5,641,189.0	
	Peak (kW)	661.5	661.5	661.5	661.5	661.5	661.5	661.5	661.5	661.5	661.5	661.5	661.5	661.5	
Misc. Ld															
	Electric (kWh)	4,594.8	4,155.7	4,938.7	4,391.1	4,766.8	4,735.0	4,422.9	4,938.7	4,391.1	4,766.8	4,563.1	4,422.9	55,087.7	
	Peak (kW)	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	
Cooling Coil Condensate															
	Recoverable Water (1000gal)	0.4	4.3	10.5	22.6	70.8	327.9	461.8	435.9	232.3	77.1	53.1	2.8	1,699.4	
	Peak (1000gal/Hr)	0.0	0.3	0.3	0.6	0.7	1.3	1.3	1.5	1.4	0.8	0.9	0.2	1.5	
Humidification Makeup Water															
	Make Up Water (1000gal)	84.5	70.4	72.3	56.9	40.8	2.5	0.0	0.0	0.4	36.0	39.0	78.5	481.2	
	Peak (1000gal/Hr)	0.3	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.1	0.2	0.2	0.3	0.3	
Bsu 1: QRO Motor Loads															
	Electric (kWh)	3,443,976.0	3,110,688.0	3,443,976.0	3,332,880.0	3,443,976.0	3,332,880.0	3,443,976.0	3,443,976.0	3,332,880.0	3,443,976.0	3,332,880.0	3,443,976.0	40,550,040.0	
	Peak (kW)	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	4,629.0	
Bsu 2: Kitchen Gas															
	Gas (therms)	297,672.2	268,865.4	297,672.2	288,069.9	297,672.2	288,069.9	297,672.2	297,672.2	288,069.9	297,672.2	288,069.9	297,672.2	3,504,850.0	
	Peak (therms/Hr)	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	
Bsu 3: HVLS Fans															
	Electric (kWh)	13,392.0	12,096.0	13,392.0	12,960.0	13,392.0	12,960.0	13,392.0	13,392.0	12,960.0	13,392.0	12,960.0	13,392.0	157,680.0	
	Peak (kW)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	
Bsu 4: Parking lot lights															
	Electric (kWh)	16,684.3	15,069.7	16,684.3	16,146.1	16,684.3	16,146.1	16,684.3	16,684.3	16,146.1	16,684.3	16,146.1	16,684.3	196,443.8	
	Peak (kW)	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	
Bsu 5: Air Compressor Load-CS															
	Electric (kWh)	427,202.2	385,860.7	427,202.2	413,421.7	427,202.2	413,421.7	427,202.2	427,202.2	413,421.7	427,202.2	413,421.7	427,202.2	5,029,963.0	
	Peak (kW)	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	574.2	
Bsu 6: Air Compressor Load-VSD															
	Electric (kWh)	116,511.2	105,235.9	116,511.2	112,752.7	116,511.2	112,752.7	116,511.2	116,511.2	112,752.7	116,511.2	112,752.7	116,511.2	1,371,825.1	
	Peak (kW)	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	156.6	

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Bsu 7: QRO Dom Hot Water													
Proc. Hot Water (therms)	69.2	62.5	69.2	67.0	69.2	67.0	69.2	69.2	67.0	69.2	67.0	69.2	814.9
Peak (therms/Hr)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bsu 8: QRO Dom Hot Water													
Proc. Hot Water (therms)	237.4	214.4	237.4	229.7	237.4	229.7	237.4	237.4	229.7	237.4	229.7	237.4	2,795.1
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Cpl 1: Chiller Plant [Sum of dsn coil capacities=2,095 tons]													
CH-001 [Clg Nominal Capacity/F.L.Rate=523.9 tons / 298.6 kW] (Cooling Equipment)													
Electric (kWh)	2,889.3	9,807.5	22,900.6	50,397.6	86,868.4	137,123.8	158,977.0	148,473.3	113,827.9	66,236.1	41,044.0	8,778.5	847,323.8
Peak (kW)	150.9	190.3	255.5	252.5	284.2	294.9	296.2	296.9	291.9	284.8	267.9	258.2	296.9
90.1 Min Cooling Tower [Design Heat Rejection/F.L.Rate=608.8 tons / 38.78 kW]													
Electric (kWh)	1,465.7	2,267.3	4,356.9	8,289.4	14,644.0	26,348.6	28,853.6	28,635.9	23,206.0	12,550.6	7,775.1	2,091.8	160,484.9
Peak (kW)	28.1	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
90.1 Min Cooling Tower													
Make Up Water (1000gal)	13.2	48.9	122.1	274.8	483.7	753.5	854.5	808.3	635.4	366.6	220.8	42.2	4,623.9
Peak (1000gal/Hr)	0.9	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
90.1 Min CV Chilled Water pump [F.L.Rate=15.72 kW] (Misc Accessory Equipment)													
Electric (kWh)	5,233.7	6,223.8	8,204.2	10,860.3	11,457.5	11,316.1	11,693.3	11,693.3	11,316.1	11,001.7	9,571.5	5,972.4	114,543.8
Peak (kW)	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
90.1 Min CV Cond Water Pump [F.L.Rate=27.76 kW] (Misc Accessory Equipment)													
Electric (kWh)	9,244.8	10,993.9	14,492.0	19,183.8	20,238.7	19,988.9	20,655.2	20,655.2	19,988.9	19,433.6	16,907.3	10,549.7	202,331.9
Peak (kW)	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Cntl panel & interlocks - 1 kW [F.L.Rate=1 kW] (Misc Accessory Equipment)													
Electric (kWh)	333.0	396.0	522.0	691.0	729.0	720.0	744.0	744.0	720.0	700.0	609.0	380.0	7,288.0
Peak (kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
90.1-10 Min Var Vol Chilled Water Pump [F.L.Rate=29.34 kW] (Cooling Plant Circulation Pump)													
Electric (kWh)	36.0	117.5	282.0	690.8	1,497.2	4,193.0	5,749.4	5,021.5	2,673.3	1,125.3	662.3	106.5	22,154.8
Peak (kW)	2.0	2.4	3.1	5.0	10.2	22.0	22.2	26.9	20.8	10.0	8.1	3.3	26.9

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Cpl 1: Chiller Plant [Sum of dsn coil capacities=2,095 tons]													
CH-002 [Clg Nominal Capacity/F.L.Rate=523.9 tons / 298.6 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	399.5	7,146.9	33,691.8	92,224.3	130,987.1	115,751.6	67,996.3	25,818.7	12,437.8	411.6	486,865.5
Peak (kW)	0.0	0.0	136.2	211.9	283.1	294.9	296.2	296.9	291.9	284.8	267.9	140.6	296.9
90.1 Min Cooling Tower [Design Heat Rejection/F.L.Rate=608.8 tons / 38.78 kW]													
Electric (kWh)	0.0	0.0	109.5	1,543.9	6,595.8	16,306.0	22,571.0	20,244.1	13,366.0	5,342.6	2,324.3	116.4	88,519.5
Peak (kW)	0.0	0.0	38.7	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8	38.8
90.1 Min Cooling Tower													
Make Up Water (1000gal)	0.0	0.0	2.3	41.7	192.1	502.1	700.8	628.6	380.1	148.1	70.8	2.4	2,669.0
Peak (1000gal/Hr)	0.0	0.0	0.8	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.8	1.5
90.1 Min CV Chilled Water pump [F.L.Rate=15.72 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	47.2	738.7	2,844.7	6,648.2	9,147.2	8,204.2	5,438.0	2,200.3	943.0	47.2	36,258.5
Peak (kW)	0.0	0.0	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
90.1 Min CV Cond Water Pump [F.L.Rate=27.76 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	83.3	1,304.8	5,025.0	11,743.5	16,157.8	14,492.0	9,605.8	3,886.7	1,665.7	83.3	64,047.8
Peak (kW)	0.0	0.0	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Cntl panel & interlocks - 1 KW [F.L.Rate=1 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	3.0	47.0	181.0	423.0	582.0	522.0	346.0	140.0	60.0	3.0	2,307.0
Peak (kW)	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
CH-003 [Clg Nominal Capacity/F.L.Rate=523.9 tons / 298.6 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	3,915.1	53,407.8	77,642.7	71,190.6	22,369.6	1,823.3	1,268.8	0.0	231,617.8
Peak (kW)	0.0	0.0	0.0	0.0	233.0	294.9	296.2	296.9	291.9	229.5	195.4	0.0	296.9
90.1 Min Cooling Tower [Design Heat Rejection/F.L.Rate=608.8 tons / 38.78 kW]													
Electric (kWh)	0.0	0.0	0.0	0.0	775.6	8,687.1	12,526.6	11,906.1	3,955.8	349.0	271.5	0.0	38,471.7
Peak (kW)	0.0	0.0	0.0	0.0	38.8	38.8	38.8	38.8	38.8	38.8	38.8	0.0	38.8
90.1 Min Cooling Tower													
Make Up Water (1000gal)	0.0	0.0	0.0	0.0	21.6	285.8	413.5	383.3	121.6	10.0	7.3	0.0	1,243.0
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	1.3	1.5	1.5	1.5	1.5	1.2	1.1	0.0	1.5

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Cpl 1: Chiller Plant [Sum of dsn coil capacities=2,095 tons]</u>													
90.1 Min CV Chilled Water pump [F.L.Rate=15.72 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	314.3	3,520.6	5,076.5	4,825.0	1,603.1	141.5	110.0	0.0	15,591.0
Peak (kW)	0.0	0.0	0.0	0.0	15.7	15.7	15.7	15.7	15.7	15.7	15.7	0.0	15.7
90.1 Min CV Cond Water Pump [F.L.Rate=27.76 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	555.2	6,218.7	8,967.2	8,523.0	2,831.8	249.9	194.3	0.0	27,540.1
Peak (kW)	0.0	0.0	0.0	0.0	27.8	27.8	27.8	27.8	27.8	27.8	27.8	0.0	27.8
Cntl panel & interlocks - 1 KW [F.L.Rate=1 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	20.0	224.0	323.0	307.0	102.0	9.0	7.0	0.0	992.0
Peak (kW)	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0
CH-004 [Clg Nominal Capacity/F.L.Rate=523.9 tons / 298.6 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	10,658.2	22,257.2	12,924.3	2,799.4	0.0	0.0	0.0	48,639.2
Peak (kW)	0.0	0.0	0.0	0.0	0.0	259.1	260.7	291.5	252.1	0.0	0.0	0.0	291.5
90.1 Min Cooling Tower [Design Heat Rejection/F.L.Rate=608.8 tons / 38.78 kW]													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	1,822.8	3,761.9	2,171.8	465.4	0.0	0.0	0.0	8,221.8
Peak (kW)	0.0	0.0	0.0	0.0	0.0	38.8	38.8	38.8	38.8	0.0	0.0	0.0	38.8
90.1 Min Cooling Tower													
Make Up Water (1000gal)	0.0	0.0	0.0	0.0	0.0	56.5	117.8	68.3	14.8	0.0	0.0	0.0	257.5
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.5	1.3	0.0	0.0	0.0	1.5
90.1 Min CV Chilled Water pump [F.L.Rate=15.72 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	738.7	1,524.5	880.1	188.6	0.0	0.0	0.0	3,331.9
Peak (kW)	0.0	0.0	0.0	0.0	0.0	15.7	15.7	15.7	15.7	0.0	0.0	0.0	15.7
90.1 Min CV Cond Water Pump [F.L.Rate=27.76 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	1,304.8	2,692.9	1,554.7	333.2	0.0	0.0	0.0	5,885.6
Peak (kW)	0.0	0.0	0.0	0.0	0.0	27.8	27.8	27.8	27.8	0.0	0.0	0.0	27.8
Cntl panel & interlocks - 1 KW [F.L.Rate=1 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.0	47.0	97.0	56.0	12.0	0.0	0.0	0.0	212.0
Peak (kW)	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0
<u>Hpl 1: Hot Water Boiler [Sum of dsn coil capacities=17,288 mbh]</u>													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Hpl 1: Hot Water Boiler [Sum of dsn coil capacities=17,288 mbh]													
BLR001 [Nominal Capacity/F.L.Rate=8,644 mbh / 108.1 Therms] (Heating Equipment)													
Gas (therms)	41,349.2	31,854.1	27,157.8	12,695.0	10,731.4	9,275.8	8,394.6	9,561.1	8,738.2	13,891.6	16,886.1	36,797.5	227,332.3
Peak (therms/Hr)	108.1	108.1	108.1	69.3	42.9	26.0	26.0	26.0	26.1	72.6	91.9	108.1	108.1
Make-up water - 5.18e-006 gal/btu (Misc Accessory Equipment)													
Make Up Water (1000gal)	33.3	30.1	33.3	32.2	33.3	32.2	33.2	33.3	32.2	33.3	32.2	33.3	392.1
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	372.0	336.0	372.0	360.0	372.0	360.0	370.5	372.0	360.0	372.0	360.0	372.0	4,378.5
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
90.1-10 Min Var Vol HW Pump [F.L.Rate=13.14 kW] (Misc Accessory Equipment)													
Electric (kWh)	1,452.7	1,006.3	793.5	363.2	313.1	269.1	243.7	276.9	254.9	393.4	463.3	987.1	6,817.2
Peak (kW)	13.1	13.1	13.1	1.7	1.1	0.7	0.7	0.7	0.7	1.8	2.4	5.7	13.1
BLR002 [Nominal Capacity/F.L.Rate=8,644 mbh / 108.1 Therms] (Heating Equipment)													
Gas (therms)	2,447.4	1,100.7	483.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	204.6	4,235.9
Peak (therms/Hr)	79.8	76.9	60.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.7	79.8
Make-up water - 5.18e-006 gal/btu (Misc Accessory Equipment)													
Make Up Water (1000gal)	3.9	2.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	8.4
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	43.5	27.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	94.0
Peak (kW)	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
Hpl 2: DHW-Gas [Sum of dsn coil capacities=41.21 mbh]													
DHW-Gas [Nominal Capacity/F.L.Rate=41.21 mbh / 0.52 Therms] (Heating Equipment)													
Gas (therms)	383.3	346.2	383.3	370.9	383.3	370.9	383.3	383.3	370.9	383.3	370.9	383.3	4,512.6
Peak (therms/Hr)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Water circulating pump [F.L.Rate=0.12 kW] (Misc Accessory Equipment)													
Electric (kWh)	93.0	84.0	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	1,095.0
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

----- Monthly Consumption -----													
Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Hpl 2: DHW-Gas [Sum of dsn coil capacities=41.21 mbh]</u>													
Boiler forced draft fan [F.L.Rate=0.04 kW] (Misc Accessory Equipment)													
Electric (kWh)	30.7	27.7	30.7	29.7	30.7	29.7	30.7	30.7	29.7	30.7	29.7	30.7	361.0
Peak (kW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	372.0	336.0	372.0	360.0	372.0	360.0	372.0	372.0	360.0	372.0	360.0	372.0	4,380.0
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<u>Hpl 3: Humidifier Steam Gen [Sum of dsn coil capacities=1,522 mbh]</u>													
Humidier Steam Gen [Nominal Capacity/F.L.Rate=1,522 mbh / 19.78 Therms] (Heating Equipment)													
Gas (therms)	8,690.1	7,303.1	6,998.4	5,838.1	4,148.3	148.7	0.0	0.0	19.6	3,686.9	4,076.6	8,172.7	49,082.5
Peak (therms/Hr)	19.8	19.8	19.8	19.8	19.8	9.8	0.0	0.0	6.2	19.8	19.8	19.8	19.8
Make-up water - 5.18e-006 gal/btu (Misc Accessory Equipment)													
Make Up Water (1000gal)	5.2	4.5	4.0	3.6	3.1	0.3	0.0	0.0	0.0	2.7	2.9	4.9	31.2
Peak (1000gal/Hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	331.5	282.5	251.5	231.0	196.0	19.0	0.0	0.0	2.0	171.5	183.5	307.5	1,976.0
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.5	0.5	0.5	0.5
Condensate return - 4.7e-008 kW/Btu [F.L.Rate=0.07 kW] (Misc Accessory Equipment)													
Electric (kWh)	47.5	40.4	36.0	33.1	28.1	2.7	0.0	0.0	0.3	24.6	26.3	44.0	282.9
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
<u>Sys 1: Office First</u>													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=4,936 cfm / 3.77 kW (**Orig F.L.Rate=3.02 kW)] (Main Clg Fan)													
Electric (kWh)	701.3	634.8	734.5	668.1	708.2	733.2	730.5	780.6	678.9	728.3	690.8	687.3	8,476.4
Peak (kW)	2.2	2.1	2.2	2.4	2.5	2.8	2.9	3.0	3.0	3.0	2.8	2.5	3.0
90.1-10 Min VAV FC Centrifugal [DsnAirflow/F.L.Rate=4,936 cfm / 2.41 kW (**Orig F.L.Rate=1.93 kW)] (Main Return Fan)													
Electric (kWh)	302.3	273.0	314.6	285.6	302.8	317.7	319.5	340.1	294.4	313.8	296.1	296.2	3,656.1
Peak (kW)	1.0	0.9	1.0	1.1	1.2	1.4	1.4	1.5	1.5	1.5	1.4	1.2	1.5
<u>Sys 2: Office Second</u>													

EQUIPMENT ENERGY CONSUMPTION

Alternative: 2 Baseline ASHRAE 90_1-2010

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sys 2: Office Second													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=5,799 cfm / 4.39 kW (**Orig F.L.Rate=3.54 kW)]	(Main Clg Fan)												
Electric (kWh)	538.4	496.8	617.6	601.7	715.4	820.6	818.9	873.0	710.3	705.0	602.9	541.8	8,042.4
Peak (kW)	3.4	3.4	3.7	3.7	3.6	3.7	3.8	4.0	3.9	3.8	3.7	3.5	4.0
90.1-10 Min VAV FC Centrifugal [DsnAirflow/F.L.Rate=5,799 cfm / 2.80 kW (**Orig F.L.Rate=2.26 kW)]	(Main Return Fan)												
Electric (kWh)	314.8	288.5	357.7	346.6	412.8	474.8	476.3	506.0	410.7	407.7	344.9	315.8	4,656.8
Peak (kW)	2.0	2.0	2.2	2.2	2.1	2.2	2.2	2.4	2.3	2.3	2.2	2.1	2.4
Sys 3: Factory													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=236,964 cfm / 171.7 kW (**Orig F.L.Rate=144.8 kW)]	(Main Clg Fan)												
Electric (kWh)	77,059.3	71,038.0	86,184.1	81,392.3	90,257.3	90,399.8	84,321.3	93,974.2	84,369.4	88,297.2	82,197.2	75,245.7	1,004,735.8
Peak (kW)	156.3	166.2	167.5	167.9	168.6	169.7	169.9	169.7	169.6	168.8	168.7	158.3	169.9
90.1-10 Min VAV FC Centrifugal [DsnAirflow/F.L.Rate=242,061 cfm / 111.9 kW (**Orig F.L.Rate=94.41 kW)]	(Main Return Fan)												
Electric (kWh)	34,253.9	31,740.1	38,961.2	36,606.5	41,100.2	41,647.6	38,308.2	43,316.1	38,348.5	40,050.6	37,072.6	33,364.1	454,769.6
Peak (kW)	73.8	82.1	83.3	83.7	84.1	84.6	84.5	84.5	84.4	84.3	84.2	76.0	84.6
Sys 4: Packaging													
90.1-10 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=83,987 cfm / 60.60 kW (**Orig F.L.Rate=51.33 kW)]	(Main Clg Fan)												
Electric (kWh)	16,550.9	14,949.2	16,550.9	16,934.3	20,021.8	24,504.7	27,374.2	25,240.7	20,374.8	17,829.5	16,210.3	16,550.9	233,092.2
Peak (kW)	22.3	22.3	22.3	46.3	53.7	60.6	60.6	60.6	60.6	47.6	41.3	22.3	60.6
90.1-10 Min VAV FC Centrifugal [DsnAirflow/F.L.Rate=83,987 cfm / 38.67 kW (**Orig F.L.Rate=32.76 kW)]	(Main Return Fan)												
Electric (kWh)	10,562.3	9,540.2	10,562.3	10,807.0	12,777.4	15,638.4	17,469.7	16,108.1	13,002.7	11,378.3	10,345.0	10,562.3	148,753.7
Peak (kW)	14.2	14.2	14.2	29.6	34.3	38.7	38.7	38.7	38.7	30.4	26.4	14.2	38.7

System Checksums

AHU-101

Parallel Fan-Powered VAV, Htg Coil on Plenum Inlet

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK				TEMPERATURES				
Peaked at Time:		Mo/Hr: 7 / 16			Mo/Hr: 9 / 16			Mo/Hr: Heating Design				Cooling			Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 99			OADB: 84			OADB: 20				SADB			55.0	70.8
												Ra Plenum			78.2	68.4
												Return			75.5	70.0
												Ret/OA			79.7	46.8
												Fn MtrTD			0.1	0.0
												Fn BldTD			0.3	0.0
												Fn Frict			0.9	0.0

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb			ft²	(%)	MBh	cfm	°F	°F	
Main Clg	103.7	1,244.0	915.3	24,000	79.7	65.2	71.6	53.7	47.0	38.1	Floor	24,530			Main Htg	-384.0	7,459	68.4	101.2
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	-604.0	6,600	19.5	53.7
											ExFlr	234							
Total	103.7	1,244.0									Roof	12,008	0	0	Humidif	0.0	0	0.0	0.0
											Wall	5,783	1,405	24	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	0	Total	-988.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

AHU-201

Single Zone Variable Air Volume

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 7 / 15					Mo/Hr: 8 / 14			Mo/Hr: Heating Design					
Outside Air: OADB/WB/HR: 91 / 74 / 101					OADB: 89			OADB: 20					
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total		Space Sensible	Percent Of Total		Space Peak	Coil Peak	Percent		Cooling	Heating
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)		Space Sens	Tot Sens	Of Total			
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)		Btu/h	Btu/h	(%)			
Envelope Loads					Envelope Loads								
Skylite Solar	0	0	0	0	0	0	0	0	0	0.00	SADB	53.4	70.0
Skylite Cond	0	0	0	0	0	0	0	0	0	0.00	Ra Plenum	77.4	68.2
Roof Cond	0	6,332	6,332	2	0	0	0	0	-8,892	6.48	Return	75.5	70.0
Glass Solar	0	0	0	0	0	0	0	0	0	0.00	Ret/OA	81.1	51.9
Glass/Door Cond	0	0	0	0	0	0	0	0	0	0.00	Fn MtrTD	0.1	0.0
Wall Cond	0	0	0	0	0	0	0	0	0	0.00	Fn BldTD	0.3	0.0
Partition/Door	0	0	0	0	0	0	0	0	0	0.00	Fn Frict	0.9	0.0
Floor	0	0	0	0	0	0	0	0	0	0.00			
Adjacent Floor	0	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0	0	0.00			
Sub Total ==>	0	6,332	6,332	2	0	0	0	0	-8,892	6.48			
Internal Loads					Internal Loads								
Lights	8,836	2,209	11,044	4	8,836	5	0	8,836	11,044	-8.05			
People	3,000	0	3,000	1	1,500	1	0	1,500	1,500	-1.09			
Misc	77,967	0	77,967	26	77,967	47	0	77,967	77,967	-56.81			
Sub Total ==>	89,802	2,209	92,011	31	88,302	53	0	88,302	90,511	-65.95			
Ceiling Load					Ceiling Load								
Ventilation Load	0	0	120,939	40	0	0	0	-6,683	0	0.00			
Adj Air Trans Heat	0	0	0	0	0	0	0	0	-137,237	100.00			
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0	0			
Ov/Undr Sizing	69,209	0	69,209	23	68,938	42	0	-81,619	0	0.00			
Exhaust Heat	0	-1,147	-1,147	0	0	0	0	0	0	0.00			
Sup. Fan Heat	0	0	10,370	3	0	0	0	0	-81,619	59.47			
Ret. Fan Heat	0	3,825	3,825	1	0	0	0	0	0	0.00			
Duct Heat Pkup	0	0	0	0	0	0	0	0	0	0.00			
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0	0	0.00			
Supply Air Leakage	0	0	0	0	0	0	0	0	0	0.00			
Grand Total ==>	167,552	2,679	301,539	100.00	166,052	100.00	0	0	-137,237	100.00			

TEMPERATURES		
	Cooling	Heating
SADB	53.4	70.0
Ra Plenum	77.4	68.2
Return	75.5	70.0
Ret/OA	81.1	51.9
Fn MtrTD	0.1	0.0
Fn BldTD	0.3	0.0
Fn Frict	0.9	0.0

AIRFLOWS		
	Cooling	Heating
Diffuser	7,000	6,912
Terminal	7,000	6,912
Main Fan	7,000	6,912
Sec Fan	0	0
Nom Vent	2,480	2,480
AHU Vent	2,480	2,480
Infil	0	0
MinStop/Rh	3,456	6,912
Return	6,455	6,367
Exhaust	1,935	1,935
Rm Exh	545	545
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	35.4	35.9
cfm/ft²	0.61	0.61
cfm/ton	288.66	
ft²/ton	471.01	
Btu/hr-ft²	25.48	-23.38
No. People	6	

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	ft² (%)	Capacity	Coil Airflow	Ent °F	Lvg °F	
ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb				MBh	cfm			
Main Clg	24.3	291.0	215.3	7,000	81.1	65.8	72.2	52.0	51.8	58.2	Floor	11,422	-267.0	6,912	51.9	70.0	Main Htg
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0	0.0	0	0.0	0.0	Aux Htg
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0	0.0	0	0.0	0.0	Preheat
											ExFlr	0					
Total	24.3	291.0									Roof	5,711	0.0	0	0.0	0.0	Humidif
											Wall	0	0	0	0.0	0.0	Opt Vent
											Ext Door	0	0	0			Total
													-267.0				

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

AHU202 to 204

Single Zone Variable Air Volume

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: 7 / 15		Mo/Hr: Heating Design			Cooling			Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: 91		OADB: 20			SADB			59.5	70.0
										Ra Plenum			75.0	70.0
										Return			76.4	71.1
										Ret/OA			80.0	50.4
										Fn MtrTD			0.1	0.0
										Fn BldTD			0.3	0.0
										Fn Frict			0.9	0.0
Envelope Loads					Envelope Loads					AIRFLOWS				
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0	0.00		Cooling	Heating	
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0	0.00	Diffuser	45,750	27,450	
Roof Cond	75,060	0	75,060	6	75,060	10	Roof Cond	-105,410	-105,410	17.92	Terminal	45,750	27,450	
Glass Solar	3,623	0	3,623	0	3,623	0	Glass Solar	0	0	0.00	Main Fan	45,750	27,450	
Glass/Door Cond	4,800	0	4,800	0	4,800	1	Glass/Door Cond	-17,989	-17,989	3.06	Sec Fan	0	0	
Wall Cond	19,482	0	19,482	1	19,482	3	Wall Cond	-59,242	-59,242	10.07	Nom Vent	10,980	10,980	
Partition/Door	0	0	0	0	0	0	Partition/Door	0	0	0.00	AHU Vent	10,980	10,980	
Floor	0	0	0	0	0	0	Floor	-19,151	-19,151	3.25	Infil	0	0	
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0	MinStop/Rh	13,725	27,450	
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00	Return	43,750	25,450	
Sub Total ==>	102,964	0	102,964	8	102,964	13	Sub Total ==>	-201,793	-201,793	34.30	Exhaust	8,980	8,980	
Internal Loads					Internal Loads					ENGINEERING CKS				
Lights	118,772	29,693	148,466	11	118,772	15	Lights	118,772	148,466	-25.23	% OA	24.0	40.0	
People	6,000	0	6,000	0	3,000	0	People	3,000	3,000	-0.51	cfm/ft²	0.70	0.42	
Misc	445,253	0	445,253	33	445,253	57	Misc	445,253	445,253	-75.67	cfm/ton	410.31		
Sub Total ==>	570,026	29,693	599,719	44	567,026	73	Sub Total ==>	567,026	596,719	-101.42	ft²/ton	585.01		
Ceiling Load	0	0	0	0	0	0	Ceiling Load	0	0	0.00	Btu/hr-ft²	20.51	-13.20	
Ventilation Load	0	0	461,875	34	0	0	Ventilation Load	0	-607,605	103.27	No. People	12		
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0				
Dehumid. Ov Sizing			0	0			Ov/Undr Sizing	-365,233	0	0.00				
Ov/Undr Sizing	107,179		107,179	8	107,179	14	Exhaust Heat		-10,477	1.78				
Exhaust Heat		-14,077	-14,077	-1			OA Preheat Diff.		0	0.00				
Sup. Fan Heat			67,778	5			RA Preheat Diff.		-365,233	62.07				
Ret. Fan Heat		38,889	38,889	3			Additional Reheat		0	0.00				
Duct Heat Pkup		0	0	0										
Underflr Sup Ht Pkup			0	0			Underflr Sup Ht Pkup		0	0.00				
Supply Air Leakage		0	0	0			Supply Air Leakage		0	0.00				
Grand Total ==>	780,169	54,505	1,364,328	100.00	777,169	100.00	Grand Total ==>	0	-588,389	100.00				

TEMPERATURES		
	Cooling	Heating
SADB	59.5	70.0
Ra Plenum	75.0	70.0
Return	76.4	71.1
Ret/OA	80.0	50.4
Fn MtrTD	0.1	0.0
Fn BldTD	0.3	0.0
Fn Frict	0.9	0.0

AIRFLOWS		
	Cooling	Heating
Diffuser	45,750	27,450
Terminal	45,750	27,450
Main Fan	45,750	27,450
Sec Fan	0	0
Nom Vent	10,980	10,980
AHU Vent	10,980	10,980
Infil	0	0
MinStop/Rh	13,725	27,450
Return	43,750	25,450
Exhaust	8,980	8,980
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	24.0	40.0
cfm/ft²	0.70	0.42
cfm/ton	410.31	
ft³/ton	585.01	
Btu/hr-ft²	20.51	-13.20
No. People	12	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)	MBh	cfm	°F	°F	
Main Clg	111.5	1,338.0	1,073.3	45,750	80.0	65.9	74.4	58.2	56.5	66.8	Floor	65,229		-861.0	27,450	50.4	70.0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		0.0	0	0.0	0.0	
											ExFlr	520						
											Roof	65,229	0	0	0	0.0	0.0	
											Wall	24,229	288	1	0	0.0	0.0	
											Ext Door	1,746	0	0				
Total	111.5	1,338.0												-861.0				

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

AHU-301 to 314

Single Zone Variable Air Volume

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15		Mo/Hr: 8 / 15		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design				
Outside Air:		OADB/WB/HR: 91 / 74 / 101		OADB: 89		OADB: 89		OADB: 20		OADB: 20				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Space Sens	Coil Peak	Percent			
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Tot Sens	Of Total	Btu/h	Btu/h	(%)			
Envelope Loads				Envelope Loads				Envelope Loads						
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	0	0	0.00	SADB	Cooling	Heating
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	0	0	0.00	Ra Plenum	66.6	71.8
Roof Cond	371,945	0	8	386,749	15	Roof Cond	-512,529	13.87	-512,529	0	0.00	Return	75.0	70.0
Glass Solar	10,268	0	0	10,640	0	Glass Solar	0	0.00	0	0	0.00	Ret/OA	75.7	70.4
Glass/Door Cond	4,307	0	0	3,650	0	Glass/Door Cond	-16,174	0.44	-16,174	0	0.00	Fn MtrTD	79.1	51.8
Wall Cond	42,082	0	1	37,793	1	Wall Cond	-114,838	3.11	-114,838	0	0.00	Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	Partition/Door	0	0.00	0	0	0.00	Fn Frict	0.1	0.0
Floor	0	0	0	0	0	Floor	-34,810	0.94	-34,810	0	0.00		0.4	0.0
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0	0	0	0			
Infiltration	0	0	0	0	0	Infiltration	0	0.00	0	0	0.00			
Sub Total ==>	428,602	0	9	438,832	17	Sub Total ==>	-678,351	18.36	-678,351	-678,351	18.36			
Internal Loads				Internal Loads				Internal Loads						
Lights	298,160	74,540	8	298,160	11	Lights	298,160	-10.09	372,700	372,700	-10.09			
People	10,000	0	0	5,000	0	People	5,000	-0.14	5,000	5,000	-0.14			
Misc	35,923	0	1	35,923	1	Misc	35,923	-0.97	35,923	35,923	-0.97			
Sub Total ==>	344,083	74,540	9	339,083	13	Sub Total ==>	339,083	-11.19	413,623	413,623	-11.19			
Ceiling Load	0	0	0	0	0	Ceiling Load	0	0.00	0	0	0.00			
Ventilation Load	0	0	37	0	0	Ventilation Load	0	92.10	-3,403,250	-3,403,250	92.10			
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0	0	0	0			
Dehumid. Ov Sizing		0	0		0	Ov/Undr Sizing	0	0.00	0	0	0.00			
Ov/Undr Sizing	1,825,421	1,825,421	39	1,815,192	70	Exhaust Heat		0.74	-27,287	-27,287	0.74			
Exhaust Heat		-43,706	-1		4	OA Preheat Diff.		0.00	0	0	0.00			
Sup. Fan Heat		165,928	4		4	RA Preheat Diff.		0.00	0	0	0.00			
Ret. Fan Heat		124,446	3		3	Additional Reheat		0.00	0	0	0.00			
Duct Heat Pkup		0	0		0	Underflr Sup Ht Pkup		0.00	0	0	0.00			
Underflr Sup Ht Pkup		0	0		0	Supply Air Leakage		0.00	0	0	0.00			
Supply Air Leakage		0	0		0									
Grand Total ==>	2,598,106	155,280	4,621,682	100.00	2,593,107	100.00	Grand Total ==>	-339,268	-3,695,265	-3,695,265	100.00			

TEMPERATURES		
	Cooling	Heating
SADB	66.6	71.8
Ra Plenum	75.0	70.0
Return	75.7	70.4
Ret/OA	79.1	51.8
Fn MtrTD	0.1	0.0
Fn BldTD	0.1	0.0
Fn Frict	0.4	0.0

AIRFLOWS		
	Cooling	Heating
Diffuser	280,000	168,000
Terminal	280,000	168,000
Main Fan	280,000	168,000
Sec Fan	0	0
Nom Vent	61,500	61,500
AHU Vent	61,500	61,500
Infil	0	0
MinStop/Rh	84,000	168,000
Return	280,000	168,000
Exhaust	61,500	61,500
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	22.0	36.6
cfm/ft²	0.88	0.53
cfm/ton	367.53	
ft²/ton	416.31	
Btu/hr-ft²	28.82	-21.52
No. People	20	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	ft²	(%)	Capacity	Coil Airflow	Ent °F	Lvg °F	
ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb									
Main Clg	761.8	9,142.0	7,924.2	280,000	79.1	68.6	90.0	66.0	58.8	63.8	Floor	317,159		Main Htg	-4,914.0	168,000	51.8	71.8
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	0.0	0	0.0	0.0
											ExFlr	944						
Total	761.8	9,142.0									Roof	317,159	0	Humidif	-1,911.3	61,500	3.0	48.1
											Wall	46,913	504	Opt Vent	0.0	0	0.0	0.0
											Ext Door	300	0	Total	-6,825.3			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

Elec Unit Heaters

Unit Heaters

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 0 / 0			Mo/Hr: 0 / 0		Mo/Hr: Heating Design			Cooling		Heating	
Outside Air:		OADB/WB/HR: 0 / 0 / 0			OADB: 0		OADB: 20			SADB		Ra Plenum	
										Return		Ret/OA	
										Fn MtrTD		Fn BldTD	
										Fn Frict			

AIRFLOWS		
	Cooling	Heating
Diffuser	0	550
Terminal	0	550
Main Fan	0	550
Sec Fan	0	0
Nom Vent	0	0
AHU Vent	0	0
Infil	0	97
MinStop/Rh	0	0
Return	0	647
Exhaust	0	97
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	0.0	0.0
cfm/ft²	0.00	0.49
cfm/ton	0.00	
ft²/ton	0.00	
Btu/hr-ft²	0.00	-26.62
No. People	0	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb			ft²	(%)	MBh	cfm	°F	°F	
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	1,122			Main Htg	-29.9	550	65.6	92.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	0.0	0	0.0	0.0
											ExFlr	89							
											Roof	561	0	0	Humidif	0.0	0	0.0	0.0
											Wall	2,524	56	2	Opt Vent	0.0	0	0.0	0.0
											Ext Door	42	0	0	Total	-29.9			
Total	0.0	0.0																	

System Checksums

MAU-201

Single Zone

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15		Mo/Hr: Sum of		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design				
Outside Air:		OADB/WB/HR: 91 / 74 / 101		OADB: Peaks		OADB: 20		OADB: 20		OADB: 20				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Space Sens	Tot Sens	Of Total			
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)			
Envelope Loads				Envelope Loads				Envelope Loads						
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	0	0	0.00	SADB	Cooling	Heating
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	0	0	0.00	Ra Plenum	102.9	71.1
Roof Cond	806	0	806	-37	4	Roof Cond	-7,120	5.90	-7,120	-7,120	5.90	Return	105.0	70.0
Glass Solar	0	0	0	0	0	Glass Solar	0	0.00	0	0	0.00	Ret/OA	102.4	68.2
Glass/Door Cond	-372	0	-372	17	-2	Glass/Door Cond	-1,183	0.98	-1,183	-1,183	0.98	Fn MtrTD	0.0	0.0
Wall Cond	-6,263	0	-6,263	284	-28	Wall Cond	-24,474	20.29	-24,474	-24,474	20.29	Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	Partition/Door	0	0.00	0	0	0.00	Fn Frict	0.2	0.0
Floor	0	0	0	0	0	Floor	-7,050	5.85	-7,050	-7,050	5.85			
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0	0	0	0			
Infiltration	0	0	0	0	0	Infiltration	0	0.00	0	0	0.00			
Sub Total ==>	-5,829	0	-5,829	264	-26	Sub Total ==>	-39,828	33.02	-39,828	-39,828	33.02			
Internal Loads				Internal Loads				Internal Loads						
Lights	7,640	1,910	9,550	-433	34	Lights	7,640	-7.92	7,640	9,550	-7.92			
People	1,500	0	1,500	-68	3	People	750	-0.62	750	750	-0.62			
Misc	19,965	0	19,965	-904	89	Misc	19,965	-16.55	19,965	19,965	-16.55			
Sub Total ==>	29,105	1,910	31,015	-1,405	126	Sub Total ==>	28,355	-25.09	28,355	30,265	-25.09			
Ceiling Load	0	0	0	0	0	Ceiling Load	0	0.00	0	0	0.00			
Ventilation Load	0	0	-29,975	1,358	0	Ventilation Load	0	18.35	0	-22,135	18.35			
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0	0	0	0			
Dehumid. Ov Sizing	0	0	0	0	0	Ov/Undr Sizing	0	0.00	0	0	0.00			
Ov/Undr Sizing	0	0	0	0	0	Exhaust Heat	0	0.06	0	-76	0.06			
Exhaust Heat	-382	-382	17	0	0	OA Preheat Diff.	-145,826	120.90	-145,826	120.90	120.90			
Sup. Fan Heat	2,963	2,963	-134	0	0	RA Preheat Diff.	56,980	-47.24	56,980	-47.24	-47.24			
Ret. Fan Heat	0	0	0	0	0	Additional Reheat	0	0.00	0	0	0.00			
Duct Heat Pkup	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00	0	0	0.00			
Underflr Sup Ht Pkup	0	0	0	0	0	Supply Air Leakage	0	0.00	0	0	0.00			
Supply Air Leakage	0	0	0	0	0	Grand Total ==>	-11,473	-120,620	100.00	-120,620	100.00			
Grand Total ==>	23,276	1,528	-2,208	100.00	22,526	100.00	Grand Total ==>	-11,473	-120,620	100.00	100.00			

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR		Leave DB/WB/HR		Gross Total		Glass	Capacity		Coil Airflow	Ent	Lvg				
ton	MBh	cfm	°F	°F	°F	°F	°F	°F	ft² (%)	MBh	MBh	cfm	°F	°F				
Main Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	4,406	10,000	60.0	71.1				
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0	0	0.0	0.0				
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0	10,000	60.0	102.7				
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	191	0	0.0	0.0				
										Roof	4,406	0	0.0	0.0				
										Wall	9,891	0	0.0	0.0				
										Ext Door	213	0	0.0	0.0				
										Total	-846.0	0	0.0	0.0				

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-202

Single Zone

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15		Mo/Hr: Sum of		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design				
Outside Air:		OADB/WB/HR: 91 / 74 / 101		OADB: Peaks		OADB: 20		OADB: 20		OADB: 20				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Space Sens	Coil Peak	Percent			
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Tot Sens	Of Total	Btu/h	Btu/h	(%)			
Envelope Loads				Envelope Loads				Envelope Loads						
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	0	0	0.00	SADB	100.7	70.0
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	0	0	0.00	Ra Plenum	105.0	70.0
Roof Cond	995	0	995	3	1,094	Roof Cond	-8,524	6.49	-8,524	-8,524	6.49	Return	105.1	70.1
Glass Solar	0	0	0	0	0	Glass Solar	0	0.00	0	0	0.00	Ret/OA	102.4	68.1
Glass/Door Cond	-419	0	-419	-1	-439	Glass/Door Cond	-1,333	1.02	-1,333	-1,333	1.02	Fn MtrTD	0.0	0.0
Wall Cond	-2,177	0	-2,177	-7	-2,168	Wall Cond	-7,591	5.78	-7,591	-7,591	5.78	Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	Partition/Door	0	0.00	0	0	0.00	Fn Frict	0.2	0.0
Floor	0	0	0	0	0	Floor	-2,258	1.72	-2,258	-2,258	1.72			
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0	0	0	0			
Infiltration	0	0	0	0	0	Infiltration	0	0.00	0	0	0.00			
Sub Total ==>	-1,601	0	-1,601	-5	-1,513	Sub Total ==>	-19,706	15.00	-19,706	-19,706	15.00			
Internal Loads				Internal Loads				Internal Loads						
Lights	7,372	1,843	9,215	31	7,372	Lights	7,372	-7.02	7,372	9,215	-7.02			
People	1,500	0	1,500	5	750	People	750	-0.57	750	750	-0.57			
Misc	50,063	0	50,063	167	50,063	Misc	50,063	-38.12	50,063	50,063	-38.12			
Sub Total ==>	58,935	1,843	60,778	203	58,185	Sub Total ==>	58,185	-45.71	58,185	60,028	-45.71			
Ceiling Load	0	0	0	0	0	Ceiling Load	0	0.00	0	0	0.00			
Ventilation Load	0	0	-32,461	-109	0	Ventilation Load	0	20.22	0	-26,562	20.22			
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0	0	0	0			
Dehumid. Ov Sizing	0	0	0	0	0	Ov/Undr Sizing	0	0.00	0	0	0.00			
Ov/Undr Sizing	0	0	0	0	0	Exhaust Heat	0	0.06	0	-74	0.06			
Exhaust Heat	-369	-369	-1	-1	0	OA Preheat Diff.	-170,248	129.63	-170,248	129.63	129.63			
Sup. Fan Heat	3,556	3,556	12	12	0	RA Preheat Diff.	25,227	-19.21	25,227	-19.21	-19.21			
Ret. Fan Heat	0	0	0	0	0	Additional Reheat	0	0.00	0	0	0.00			
Duct Heat Pkup	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00	0	0	0.00			
Underflr Sup Ht Pkup	0	0	0	0	0	Supply Air Leakage	0	0.00	0	0	0.00			
Supply Air Leakage	0	0	0	0	0	Grand Total ==>	38,479	-131,335	38,479	-131,335	100.00			
Grand Total ==>	57,334	1,474	29,904	100.00	56,673	Grand Total ==>	38,479	-131,335	38,479	-131,335	100.00			

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR		Leave DB/WB/HR		Gross Total		Glass	Capacity		Coil Airflow	Ent	Lvg				
ton	MBh	cfm	°F	°F	°F	°F	°F	°F	ft² (%)	MBh	MBh	cfm	°F	°F				
Main Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	5,275	12,000	60.0	70.0				
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0	0	0.0	0.0				
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0	12,000	60.0	100.4				
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	61	0	0.0	0.0				
										Roof	5,275	0	0.0	0.0				
										Wall	3,068	0	0.0	0.0				
										Ext Door	240	0	0.0	0.0				
										Total	-1,037.0	12,000	60.0	70.0				

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-203

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: Sum of		Mo/Hr: Heating Design			Cooling			Heating
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: Peaks		OADB: 20			SADB			Ra Plenum
	Space	Plenum	Net	Percent	Space	Percent		Space Peak	Coil Peak	Percent	Return	Ret/OA	
	Sens. + Lat.	Sens. + Lat	Total	Of Total	Sensible	Of Total		Space Sens	Tot Sens	Of Total	Fn MtrTD	Fn BldTD	
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)		Btu/h	Btu/h	(%)	Fn Frict		
Envelope Loads					Envelope Loads								
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0	0.00			
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0	0.00			
Roof Cond	1,205	0	1,205	-1	875	2	Roof Cond	-10,648	-10,648	7.60			
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0	0.00			
Glass/Door Cond	0	0	0	0	0	0	Glass/Door Cond	0	0	0.00			
Wall Cond	-11,642	0	-11,642	11	-11,139	-27	Wall Cond	-47,613	-47,613	33.99			
Partition/Door	0	0	0	0	0	0	Partition/Door	0	0	0.00			
Floor	0	0	0	0	0	0	Floor	-2,977	-2,977	2.13			
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0			
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00			
Sub Total ==>	-10,436	0	-10,436	10	-10,264	-24	Sub Total ==>	-61,238	-61,238	43.72			
Internal Loads					Internal Loads								
Lights	8,978	2,244	11,222	-11	8,978	21	Lights	8,978	11,222	-8.01			
People	0	0	0	0	0	0	People	0	0	0.00			
Misc	43,207	0	43,207	-41	43,207	103	Misc	43,207	43,207	-30.85			
Sub Total ==>	52,185	2,244	54,429	-51	52,185	124	Sub Total ==>	52,185	54,429	-38.86			
Ceiling Load	0	0	0	0	0	0	Ceiling Load	0	0	0.00			
Ventilation Load	0	0	-152,956	144	0	0	Ventilation Load	0	-26,562	18.96			
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0			
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00			
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	-90	0.06				
Exhaust Heat	-449	-449	0	0	0	0	OA Preheat Diff.	-172,609	123.23				
Sup. Fan Heat	0	3,556	-3	0	0	0	RA Preheat Diff.	66,002	-47.12				
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0.00				
Duct Heat Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00				
Underflr Sup Ht Pkup	0	0	0	0	0	0	Supply Air Leakage	0	0.00				
Supply Air Leakage	0	0	0	0	0	0							
Grand Total ==>	41,748	1,796	-105,856	100.00	41,920	100.00	Grand Total ==>	-9,053	-140,067	100.00			

AIRFLOWS		
	Cooling	Heating
Diffuser	12,000	12,000
Terminal	12,000	12,000
Main Fan	12,000	12,000
Sec Fan	0	0
Nom Vent	2,400	2,400
AHU Vent	2,400	2,400
Infil	0	0
MinStop/Rh	0	0
Return	12,000	12,000
Exhaust	2,400	480
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	20.0	20.0
cfm/ft²	1.82	1.82
cfm/ton	0.00	
ft²/ton	0.00	
Btu/hr-ft²	0.00	-157.38
No. People	0	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass			Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)		MBh	cfm	°F	°F	
Main Clg	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	6,589			Main Htg	-1,037.0	12,000	60.0	70.7
Aux Clg	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	-1,037.0	12,000	60.0	101.5
										ExFlr	81							
Total	0.0	0.0								Roof	6,589	0	0	Humidif	0.0	0	0.0	0.0
										Wall	19,242	0	0	Opt Vent	0.0	0	0.0	0.0
										Ext Door	0	0	0	Total	-1,037.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-204

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK					HEATING COIL PEAK					TEMPERATURES		
Peaked at Time: Mo/Hr: 7 / 15					Mo/Hr: Sum of					Mo/Hr: Heating Design							
Outside Air: OADB/WB/HR: 91 / 74 / 101					OADB: Peaks					OADB: 20							
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total		Space Sensible	Percent Of Total				Space Peak	Coil Peak	Percent			Cooling	Heating	
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)				Space Sens	Tot Sens	Of Total					
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)				Btu/h	Btu/h	(%)					
Envelope Loads					Envelope Loads												
Skylite Solar	0	0	0	0	0	0	0	Skylite Solar	0	0	0	0.00			SADB	104.3	70.5
Skylite Cond	0	0	0	0	0	0	0	Skylite Cond	0	0	0	0.00			Ra Plenum	105.0	70.0
Roof Cond	532	0	532	-3	588	8	0	Roof Cond	-4,617	-4,617	0	4.02			Return	105.1	70.1
Glass Solar	0	0	0	0	0	0	0	Glass Solar	0	0	0	0.00			Ret/OA	102.3	68.1
Glass/Door Cond	-835	0	-835	5	-873	-11	0	Glass/Door Cond	-2,666	-2,666	0	2.32			Fn MtrTD	0.0	0.0
Wall Cond	-1,548	0	-1,548	10	-1,542	-20	0	Wall Cond	-5,432	-5,432	0	4.73			Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	0	0	Partition/Door	0	0	0	0.00			Fn Frict	0.2	0.0
Floor	0	0	0	0	0	0	0	Floor	-1,972	-1,972	0	1.72					
Adjacent Floor	0	0	0	0	0	0	0	Adjacent Floor	0	0	0	0					
Infiltration	0	0	0	0	0	0	0	Infiltration	0	0	0	0.00					
Sub Total ==>	-1,851	0	-1,851	12	-1,827	-24	0	Sub Total ==>	-14,687	-14,687	0	12.79					
Internal Loads					Internal Loads												
Lights	4,915	1,229	6,143	-39	4,915	64	0	Lights	4,915	6,143	0	-5.35			AIRFLOWS		
People	1,500	0	1,500	-10	750	10	0	People	750	750	0	-0.65			Cooling	Heating	
Misc	3,875	0	3,875	-25	3,875	50	0	Misc	3,875	3,875	0	-3.37			Diffuser	10,000	10,000
Sub Total ==>	10,290	1,229	11,518	-73	9,540	124	0	Sub Total ==>	9,540	10,768	0	-9.38			Terminal	10,000	10,000
Ceiling Load	0	0	0	0	0	0	0	Ceiling Load	0	0	0	0.00			Main Fan	10,000	10,000
Ventilation Load	0	0	-28,079	179	0	0	0	Ventilation Load	0	-22,135	0	19.27			Sec Fan	0	0
Adj Air Trans Heat	0	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0	0			Nom Vent	2,000	2,000
Dehumid. Ov Sizing	0	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0	0.00			AHU Vent	2,000	2,000
Ov/Undr Sizing	0	0	0	0	0	0	0	Exhaust Heat	0	-49	0	0.04			Infil	0	0
Exhaust Heat	-246	-246	2	2	0	0	0	OA Preheat Diff.	-148,196	129.05	0				MinStop/Rh	0	0
Sup. Fan Heat	0	2,963	-19	-19	0	0	0	RA Preheat Diff.	59,460	-51.78	0				Return	10,000	10,000
Ret. Fan Heat	0	0	0	0	0	0	0	Additional Reheat	0	0.00	0				Exhaust	2,000	400
Duct Heat Pkup	0	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00	0				Rm Exh	0	0
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	Supply Air Leakage	0	0.00	0				Auxiliary	0	0
Supply Air Leakage	0	0	0	0	0	0	0								Leakage Dwn	0	0
Grand Total ==>	8,439	983	-15,694	100.00	7,713	100.00	0	Grand Total ==>	-5,147	-114,839	0	100.00			Leakage Ups	0	0

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR		Leave DB/WB/HR		Gross Total			Glass	Capacity		Coil Airflow	Ent	Lvg			
ton	MBh	cfm	°F	°F	°F	°F	ton	MBh	ft²	(%)	MBh	MBh	cfm	°F	°F			
Main Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	2,857	-846.0	10,000	60.0	70.5	Main Htg	-846.0
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0	0.0	0	0.0	0.0	Aux Htg	0.0
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0	-846.0	10,000	60.0	104.0	Preheat	-846.0
											ExFlr	54	0.0	0	0.0	0.0	Humidif	0.0
Total	0.0	0.0									Roof	2,857	0	0	0.0	0.0	Opt Vent	0.0
											Wall	2,195	0	0	0.0	0.0	Total	-846.0
											Ext Door	480	0	0				

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-205

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: Sum of		Mo/Hr: Heating Design			Cooling		Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: Peaks		OADB: 20			SADB		81.4	
	Space	Plenum	Net	Percent	Space	Percent	Space Peak	Coil Peak	Percent	Ra Plenum	70.0		
	Sens. + Lat.	Sens. + Lat	Total	Of Total	Sensible	Of Total	Space Sens	Tot Sens	Of Total	Return	70.1		
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Ret/OA	68.1		
Envelope Loads					Envelope Loads		Envelope Loads			Fn MtrTD			0.0
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0.00	Fn BldTD	0.0		
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0.00	Fn Frict	0.0		
Roof Cond	1,969	0	1,969	0	1,969	4	Roof Cond	-16,882	2.88				
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0.00				
Glass/Door Cond	-1,876	0	-1,876	0	-1,876	-3	Glass/Door Cond	-5,999	1.02				
Wall Cond	-5,430	0	-5,430	1	-5,430	-10	Wall Cond	-19,041	3.24				
Partition/Door	0	0	0	0	0	0	Partition/Door	0	0.00				
Floor	0	0	0	0	0	0	Floor	-6,470	1.10				
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0				
Infiltration	-321,486		-321,486	64	-75,610	-138	Infiltration	-276,687	47.12				
Sub Total ==>	-326,823	0	-326,823	65	-80,947	-148	Sub Total ==>	-325,080	55.36				
Internal Loads					Internal Loads		Internal Loads			AIRFLOWS			
Lights	11,468	2,867	14,335	-3	11,468	21	Lights	11,468	-2.44	Cooling	Heating		
People	1,500	0	1,500	0	750	1	People	750	-0.13	Diffuser	25,000	25,000	
Misc	0	0	0	0	0	0	Misc	0	0.00	Terminal	25,000	25,000	
Sub Total ==>	12,968	2,867	15,835	-3	12,218	22	Sub Total ==>	12,218	-2.57	Main Fan	25,000	25,000	
Ceiling Load	0	0	0	0	0	0	Ceiling Load	0	0.00	Sec Fan	0	0	
Ventilation Load	0	0	-321,486	64	0	0	Ventilation Load	0	9.42	Nom Vent	5,000	5,000	
Adj Air Trans Heat	0		0	0	0	0	Adj Air Trans Heat	0	0	AHU Vent	5,000	5,000	
Dehumid. Ov Sizing			0	0			Ov/Undr Sizing	0	0.00	Infil	5,000	5,000	
Ov/Undr Sizing	123,519		123,519	-25	123,519	225	Exhaust Heat		0.00	MinStop/Rh	0	0	
Exhaust Heat		0	0	0			OA Preheat Diff.	-364,809	62.13	Return	20,000	24,000	
Sup. Fan Heat			7,408	-1			RA Preheat Diff.	142,981	-24.35	Exhaust	0	0	
Ret. Fan Heat		0	0	0			Additional Reheat	0	0.00	Rm Exh	10,000	10,000	
Duct Heat Pkup		0	0	0			Underflr Sup Ht Pkup		0.00	Auxiliary	0	0	
Underflr Sup Ht Pkup		0	0	0			Supply Air Leakage		0.00	Leakage Dwn	0	0	
Supply Air Leakage		0	0	0						Leakage Ups	0	0	
Grand Total ==>	-190,337	2,867	-501,548	100.00	54,790	100.00	Grand Total ==>	-312,862	-587,160	100.00	ENGINEERING CKS		
										Cooling	Heating		
										% OA	20.0	20.0	
										cfm/ft²	2.39	2.39	
										cfm/ton	0.00		
										ft²/ton	0.00		
										Btu/hr·ft²	0.00	-206.76	
										No. People	3		

AIRFLOWS		
	Cooling	Heating
Diffuser	25,000	25,000
Terminal	25,000	25,000
Main Fan	25,000	25,000
Sec Fan	0	0
Nom Vent	5,000	5,000
AHU Vent	5,000	5,000
Infil	5,000	5,000
MinStop/Rh	0	0
Return	20,000	24,000
Exhaust	0	0
Rm Exh	10,000	10,000
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	20.0	20.0
cfm/ft²	2.39	2.39
cfm/ton	0.00	
ft²/ton	0.00	
Btu/hr-ft²	0.00	-206.76
No. People	3	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass			Capacity	Coil Airflow	Ent	Lvg
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)		MBh	cfm	°F	°F
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	10,447		Main Htg	-2,160.0	25,000	60.0	81.4
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-2,160.0	25,000	60.0	102.7
											ExFlr	176						
Total	0.0	0.0									Roof	10,447	0	Humidif	0.0	0	0.0	0.0
											Wall	7,695	0	Opt Vent	0.0	0	0.0	0.0
											Ext Door	1,080	0	Total	-2,160.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-206-211

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: Sum of		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Cooling		Heating
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: Peaks		OADB: 20		OADB: 20		SADB	99.4	70.0
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total		Space Sensible	Percent Of Total		Space Peak	Coil Peak	Percent	Ra Plenum	105.0	70.0
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)		Space Sens	Tot Sens	Of Total	Return	105.2	70.2
								Btu/h	Btu/h	(%)	Ret/OA	102.1	67.8
Envelope Loads					Envelope Loads						Fn MtrTD	0.0	0.0
Skylite Solar	0	0	0	0	0	0	0	0	0	0.00	Fn BldTD	0.1	0.0
Skylite Cond	0	0	0	0	0	0	0	0	0	0.00	Fn Frict	0.2	0.0
Roof Cond	7,015	0	7,015	4	8,688	3	0	-53,535	-53,535	9.99	AIRFLOWS		
Glass Solar	0	0	0	0	0	0	0	0	0	0.00		Cooling	Heating
Glass/Door Cond	-37	0	-37	0	-43	0	0	-117	-117	0.02	Diffuser	45,000	45,000
Wall Cond	-3,536	0	-3,536	-2	-3,618	-1	0	-13,125	-13,125	2.45	Terminal	45,000	45,000
Partition/Door	0	0	0	0	0	0	0	0	0	0.00	Main Fan	45,000	45,000
Floor	0	0	0	0	0	0	0	-3,926	-3,926	0.73	Sec Fan	0	0
Adjacent Floor	0	0	0	0	0	0	0	0	0	0	Nom Vent	9,810	9,810
Infiltration	0	0	0	0	0	0	0	0	0	0.00	AHU Vent	9,810	9,810
Sub Total ==>	3,442	0	3,442	2	5,027	2	0	-70,702	-70,702	13.20	Infil	0	0
Internal Loads					Internal Loads						MinStop/Rh	0	0
Lights	35,473	8,868	44,342	26	35,473	13	0	35,473	44,342	-8.28	Return	43,100	43,100
People	12,500	0	12,500	7	6,250	2	0	6,250	6,250	-1.17	Exhaust	7,910	239
Misc	230,803	0	230,803	135	230,803	83	0	230,803	230,803	-43.09	Rm Exh	0	0
Sub Total ==>	278,776	8,868	287,645	169	272,526	98	0	272,526	281,395	-52.54	Auxiliary	0	0
Ceiling Load	0	0	0	0	0	0	0	0	0	0.00	Leakage Dwn	0	0
Ventilation Load	0	0	-132,210	-78	0	0	0	0	-118,343	22.09	Leakage Ups	0	0
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0	0	ENGINEERING CKS		
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0	0.00		Cooling	Heating
Ov/Undr Sizing	0	0	0	0	0	0	0	0	0	0.00	% OA	21.8	21.8
Exhaust Heat		-1,628	-1,628	-1					-49	0.01	cfm/ft²	1.36	1.36
Sup. Fan Heat			13,334	8					-669,150	124.93	cfm/ton	0.00	0.00
Ret. Fan Heat		0	0	0					41,231	-7.70	ft²/ton	0.00	0.00
Duct Heat Pkup		0	0	0					0	0.00	Btu/hr-ft²	0.00	-117.36
Underflr Sup Ht Pkup		0	0	0					0	0.00	No. People	25	
Supply Air Leakage		0	0	0					0	0.00			
Grand Total ==>	282,219	7,241	170,583	100.00	277,553	100.00		201,824	-535,619	100.00			

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	ft²	(%)	Capacity	Coil Airflow	Ent °F	Lvg °F	
ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb									
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Floor	33,128			Main Htg	-3,888.0	45,000	59.1	70.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	-3,888.0	45,000	59.1	99.1
										ExFlr	107							
Total	0.0	0.0								Roof	33,128	0	0	Humidif	0.0	0	0.0	0.0
										Wall	5,304	0	0	Opt Vent	0.0	0	0.0	0.0
										Ext Door	21	0	0	Total	-3,888.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-301

Single Zone

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15		Mo/Hr: Sum of		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design				
Outside Air:		OADB/WB/HR: 91 / 74 / 101		OADB: Peaks		OADB: 20		OADB: 20		OADB: 20				
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Space Sens	Tot Sens	Of Total			
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)			
Envelope Loads				Envelope Loads				Envelope Loads						
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	0	0	0.00	SADB	Cooling	Heating
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	0	0	0.00	Ra Plenum	102.1	70.0
Roof Cond	718	0	718	-1	-512	Roof Cond	-6,341	3.82	-6,341	-6,341	3.82	Return	105.0	70.0
Glass Solar	3,185	0	3,185	-2	5,729	Glass Solar	0	0.00	0	0	0.00	Ret/OA	102.4	68.0
Glass/Door Cond	-1,680	0	-1,680	1	-1,911	Glass/Door Cond	-5,570	3.36	-5,570	-5,570	3.36	Fn MtrTD	0.0	0.0
Wall Cond	-4,135	0	-4,135	3	-3,743	Wall Cond	-15,172	9.14	-15,172	-15,172	9.14	Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	Partition/Door	0	0.00	0	0	0.00	Fn Frict	0.2	0.0
Floor	0	0	0	0	0	Floor	-4,663	2.81	-4,663	-4,663	2.81			
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0	0	0	0			
Infiltration	0	0	0	0	0	Infiltration	0	0.00	0	0	0.00			
Sub Total ==>	-1,912	0	-1,912	1	-437	Sub Total ==>	-31,747	19.12	-31,747	-31,747	19.12			
Internal Loads				Internal Loads				Internal Loads						
Lights	7,372	1,843	9,215	-7	7,372	Lights	0	0.00	0	0	0.00			
People	0	0	0	0	0	People	0	0.00	0	0	0.00			
Misc	40,178	0	40,178	-29	40,178	Misc	40,178	-24.20	40,178	40,178	-24.20			
Sub Total ==>	47,550	1,843	49,393	-35	47,550	Sub Total ==>	40,178	-24.20	40,178	40,178	-24.20			
Ceiling Load	0	0	0	0	0	Ceiling Load	0	0.00	0	0	0.00			
Ventilation Load	0	0	-191,654	137	0	Ventilation Load	0	20.00	-33,202	-33,202	20.00			
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0	0	0	0			
Dehumid. Ov Sizing	0	0	0	0	0	Ov/Undr Sizing	0	0.00	0	0	0.00			
Ov/Undr Sizing	0	0	0	0	0	Exhaust Heat	0	0.00	0	0	0.00			
Exhaust Heat	0	0	0	0	0	OA Preheat Diff.	-216,607	130.48	-216,607	-216,607	130.48			
Sup. Fan Heat	0	4,445	-3	0	0	RA Preheat Diff.	75,366	-45.40	75,366	75,366	-45.40			
Ret. Fan Heat	0	0	0	0	0	Additional Reheat	0	0.00	0	0	0.00			
Duct Heat Pkup	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00	0	0	0.00			
Underflr Sup Ht Pkup	0	0	0	0	0	Supply Air Leakage	0	0.00	0	0	0.00			
Supply Air Leakage	0	0	0	0	0	Grand Total ==>	8,431	-166,012	8,431	-166,012	100.00			
Grand Total ==>	45,638	1,843	-139,728	100.00	47,113	Grand Total ==>	8,431	-166,012	8,431	-166,012	100.00			

AIRFLOWS		
	Cooling	Heating
Diffuser	15,000	15,000
Terminal	15,000	15,000
Main Fan	15,000	15,000
Sec Fan	0	0
Nom Vent	3,000	3,000
AHU Vent	3,000	3,000
Infil	0	0
MinStop/Rh	0	0
Return	12,000	14,400
Exhaust	0	0
Rm Exh	3,000	3,000
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	20.0	20.0
cfm/ft²	3.82	3.82
cfm/ton	0.00	0.00
ft²/ton	0.00	0.00
Btu/hr-ft²	0.00	-330.28
No. People	0	0

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass			Capacity	Coil Airflow	Ent	Lvg
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)		MBh	cfm	°F	°F
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	3,924		Main Htg	-1,296.0	15,000	59.9	70.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-1,296.0	15,000	59.9	101.9
											ExFlr	127						
Total	0.0	0.0									Roof	3,924	0	Humidif	0.0	0	0.0	0.0
											Wall	6,325	194	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	Total	-1,296.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-302

Single Zone

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15		Mo/Hr: Sum of		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design				
Outside Air:		OADB/WB/HR: 91 / 74 / 101		OADB: Peaks		OADB: 20		OADB: 20		OADB: 20				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Space Sens	Tot Sens	Of Total			
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)			
Envelope Loads				Envelope Loads				Envelope Loads						
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	0	0	0.00	SADB	103.9	70.0
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	0	0	0.00	Ra Plenum	105.0	70.0
Roof Cond	288	0	288	0	381	2	Roof Cond	-2,515	-2,515	1.51	1.51	Return	105.0	70.0
Glass Solar	0	0	0	0	0	Glass Solar	0	0.00	0	0	0.00	Ret/OA	102.3	68.0
Glass/Door Cond	-85	0	-85	0	-98	-1	Glass/Door Cond	-272	-272	0.16	0.16	Fn MtrTD	0.0	0.0
Wall Cond	-819	0	-819	0	-841	-5	Wall Cond	-3,127	-3,127	1.88	1.88	Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	Partition/Door	0	0.00	0	0	0.00	Fn Frict	0.2	0.0
Floor	0	0	0	0	0	Floor	-968	0.58	-968	0.58	0.58			
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0	0	0	0			
Infiltration	0	0	0	0	0	Infiltration	0	0.00	0	0	0.00			
Sub Total ==>	-617	0	-617	0	-559	-3	Sub Total ==>	-6,881	-6,881	4.14	4.14			
Internal Loads				Internal Loads				Internal Loads						
Lights	2,457	614	3,072	-2	2,457	14	Lights	0	0	0.00	0.00			
People	0	0	0	0	0	0	People	0	0	0.00	0.00			
Misc	15,932	0	15,932	-9	15,932	89	Misc	15,932	15,932	-9.60	-9.60			
Sub Total ==>	18,389	614	19,004	-11	18,389	103	Sub Total ==>	15,932	15,932	-9.60	-9.60			
Ceiling Load	0	0	0	0	0	0	Ceiling Load	0	0	0.00	0.00			
Ventilation Load	0	0	-194,204	113	0	0	Ventilation Load	0	-33,202	20.00	20.00			
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0	0			
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00	0.00			
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	0	0	0.00	0.00			
Exhaust Heat	-123	-123	0	0	0	0	OA Preheat Diff.	-221,292	133.30	133.30	133.30			
Sup. Fan Heat	4,445	4,445	-3	0	0	0	RA Preheat Diff.	79,431	-47.85	-47.85	-47.85			
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0.00	0.00	0.00			
Duct Heat Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00	0.00	0.00			
Underflr Sup Ht Pkup	0	0	0	0	0	0	Supply Air Leakage	0	0.00	0.00	0.00			
Supply Air Leakage	0	0	0	0	0	0	Grand Total ==>	9,051	-166,012	100.00	100.00			
Grand Total ==>	17,772	492	-171,495	100.00	17,830	100.00	Grand Total ==>	9,051	-166,012	100.00	100.00			

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass		Capacity	Coil Airflow	Ent	Lv		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)	MBh	cfm	°F	°F		
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	1,556		Main Htg	-1,296.0	15,000	59.9	70.0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-1,296.0	15,000	59.9	103.6	
											ExFlr	26							
Total	0.0	0.0									Roof	1,556	0	0	Humidif	0.0	0	0.0	0.0
											Wall	1,264	0	0	Opt Vent	0.0	0	0.0	0.0
											Ext Door	49	0	0	Total	-1,296.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-303-305

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: Sum of		Mo/Hr: Heating Design				Cooling		Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: Peaks		OADB: 20				SADB		102.8	70.0
	Space	Plenum	Net	Percent	Space	Percent		Space Peak	Coil Peak	Percent				
	Sens. + Lat.	Sens. + Lat	Total	Of Total	Sensible	Of Total		Space Sens	Tot Sens	Of Total				
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)		Btu/h	Btu/h	(%)				
Envelope Loads					Envelope Loads									
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0	0.00				
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0	0.00				
Roof Cond	1,068	0	1,068	0	1,413	0	Roof Cond	-9,392	-9,392	0.14				
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0	0.00				
Glass/Door Cond	-209	0	-209	0	-241	0	Glass/Door Cond	-667	-667	0.01				
Wall Cond	-3,131	0	-3,131	0	-3,214	-1	Wall Cond	-11,952	-11,952	0.18				
Partition/Door	0	0	0	0	0	0	Partition/Door	0	0	0.00				
Floor	0	0	0	0	0	0	Floor	-3,650	-3,650	0.05				
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0				
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00				
Sub Total ==>	-2,272	0	-2,272	0	-2,042	-1	Sub Total ==>	-25,660	-25,660	0.39				
Internal Loads					Internal Loads									
Lights	9,829	2,457	12,287	0	9,829	3	Lights	0	0	0.00				
People	0	0	0	0	0	0	People	0	0	0.00				
Misc	286,700	0	286,700	-4	286,700	97	Misc	286,700	286,700	-4.32				
Sub Total ==>	296,529	2,457	298,987	-4	296,529	101	Sub Total ==>	286,700	286,700	-4.32				
Ceiling Load	0	0	0	0	0	0	Ceiling Load	0	0	0.00				
Ventilation Load	0	0	-7,701,952	104	0	0	Ventilation Load	0	-6,640,489	100.00				
Adj Air Trans Heat	0		0	0	0	0	Adj Air Trans Heat	0	0	0				
Dehumid. Ov Sizing			0	0			Ov/Undr Sizing	0	0	0.00				
Ov/Undr Sizing	0		0	0	0	0	Exhaust Heat		0	0.00				
Exhaust Heat		-2,458	-2,458	0			OA Preheat Diff.		0	0.00				
Sup. Fan Heat			35,556	0			RA Preheat Diff.		-261,040	3.93				
Ret. Fan Heat		1	1	0			Additional Reheat		0	0.00				
Duct Heat Pkup		0	0	0										
Underflr Sup Ht Pkup			0	0			Underflr Sup Ht Pkup		0	0.00				
Supply Air Leakage		0	0	0			Supply Air Leakage		0	0.00				
Grand Total ==>	294,257	0	-7,372,139	100.00	294,487	100.00	Grand Total ==>	261,040	-6,640,488	100.00				

AIRFLOWS		
	Cooling	Heating
Diffuser	120,000	120,000
Terminal	120,000	120,000
Main Fan	120,000	120,000
Sec Fan	0	0
Nom Vent	120,000	120,000
AHU Vent	120,000	120,000
Infil	0	0
MinStop/Rh	0	0
Return	120,000	120,000
Exhaust	120,000	120,000
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	100.0	100.0
cfm/ft²	20.65	20.65
cfm/ton	0.00	
ft²/ton	0.00	
Btu/hr-ft²	0.00	-594.63
No. People	0	

AIRFLOWS		
	Cooling	Heating
Diffuser	120,000	120,000
Terminal	120,000	120,000
Main Fan	120,000	120,000
Sec Fan	0	0
Nom Vent	120,000	120,000
AHU Vent	120,000	120,000
Infil	0	0
MinStop/Rh	0	0
Return	120,000	120,000
Exhaust	120,000	120,000
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	100.0	100.0
cfm/ft²	20.65	20.65
cfm/ton	0.00	
ft²/ton	0.00	
Btu/hr-ft²	0.00	-594.63
No. People	0	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass			Capacity	Coil Airflow	Ent	Lvg
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)		MBh	cfm	°F	°F
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	5,812		Main Htg	-3,456.0	120,000	19.5	70.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-3,456.0	120,000	19.5	102.5
											ExFlr	99						
Total	0.0	0.0									Roof	5,812	0	Humidif	0.0	0	0.0	0.0
											Wall	4,830	0	Opt Vent	0.0	0	0.0	0.0
											Ext Door	120	0	Total	-3,456.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

MAU-401-404

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES							
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: Sum of		Mo/Hr: Heating Design			Cooling			Heating				
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: Peaks		OADB: 20			SADB			89.8	70.0			
Space		Plenum	Net	Percent	Space	Percent	Space Peak	Coil Peak	Percent	Ra Plenum			105.0	70.0			
Sens. + Lat.		Sens. + Lat	Total	Of Total	Sensible	Of Total	Space Sens	Tot Sens	Of Total	Return			105.7	70.7			
Btu/h		Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Ret/OA			91.2	19.5			
Envelope Loads					Envelope Loads					Fn MtrTD					0.0	0.0	
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0	0.00	Fn BldTD			0.1	0.0		
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0	0.00	Fn Frict			0.2	0.0		
Roof Cond	37,078	0	37,078	20	47,134	6	Roof Cond	-305,644	-305,644	11.51							
Glass Solar	11,457	0	11,457	6	14,230	2	Glass Solar	0	0	0.00							
Glass/Door Cond	-10,825	0	-10,825	-6	-12,410	-2	Glass/Door Cond	-34,821	-34,821	1.31							
Wall Cond	-35,411	0	-35,411	-20	-42,357	-5	Wall Cond	-150,275	-150,275	5.66							
Partition/Door	0	0	0	0	0	0	Partition/Door	0	0	0.00							
Floor	0	0	0	0	0	0	Floor	-44,361	-44,361	1.67							
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0							
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00							
Sub Total ==>	2,297	0	2,297	1	6,598	1	Sub Total ==>	-535,101	-535,101	20.15							
Internal Loads					Internal Loads												
Lights	144,984	36,246	181,230	100	144,984	18	Lights	144,984	181,230	-6.82							
People	6,000	0	6,000	3	3,000	0	People	3,000	3,000	-0.11							
Misc	645,521	0	645,521	357	645,521	81	Misc	645,521	645,521	-24.30							
Sub Total ==>	796,505	36,246	832,752	460	793,505	99	Sub Total ==>	793,505	829,752	-31.24							
Ceiling Load	0	0	0	0	0	0	Ceiling Load	0	0	0.00							
Ventilation Load	0	0	-632,034	-349	0	0	Ventilation Load	0	-2,656,195	100.00							
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0							
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00							
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	-36,246	1.36								
Exhaust Heat	-36,247	-36,247	-20	8	0	0	OA Preheat Diff.	0	0.00								
Sup. Fan Heat	0	14,223	8	0	0	0	RA Preheat Diff.	-258,405	9.73								
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0.00								
Duct Heat Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00								
Underflr Sup Ht Pkup	0	0	0	0	0	0	Supply Air Leakage	0	0.00								
Supply Air Leakage	0	0	0	0	0	0	Grand Total ==>	258,405	-2,656,195	100.00							
Grand Total ==>	798,803	0	180,991	100.00	800,103	100.00									AIRFLOWS		
										Cooling		Heating					
										Diffuser		48,000	48,000				
										Terminal		48,000	48,000				
										Main Fan		48,000	48,000				
										Sec Fan		0	0				
										Nom Vent		48,000	48,000				
										AHU Vent		48,000	48,000				
										Infil		0	0				
										MinStop/Rh		0	0				
										Return		47,700	47,700				
										Exhaust		47,700	47,700				
										Rm Exh		0	0				
										Auxiliary		0	0				
										Leakage Dwn		0	0				
										Leakage Ups		0	0				
										ENGINEERING CKS							
										% OA		100.0	100.0				
										cfm/ft²		0.25	0.25				
										cfm/ton		0.00					
										ft²/ton		0.00					
										Btu/hr-ft²		0.00	-21.93				
										No. People		12					

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)	MBh	cfm	°F	°F		
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Floor	189,136		Main Htg	-4,148.0	48,000	19.5	70.0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-4,148.0	48,000	19.5	89.5	
											ExFlr	1,203							
Total	0.0	0.0									Roof	189,136	0	0	Humidif	0.0	0	0.0	0.0
											Wall	61,282	552	1	Opt Vent	0.0	0	0.0	0.0
												Ext Door	3,408	0	0	Total	-4,148.0		

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

RTU-201

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES				
Peaked at Time:		Mo/Hr: 7 / 16			Mo/Hr: Sum of		Mo/Hr: Heating Design			Cooling			Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 99			OADB: Peaks		OADB: 20			SADB			68.5	81.2
										Ra Plenum			80.1	61.9
										Return			75.0	70.0
										Ret/OA			79.3	56.1
										Fn MtrTD			0.0	0.0
										Fn BldTD			0.1	0.0
										Fn Frict			0.3	0.0

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	ft²	(%)	Capacity	Coil Airflow	Ent °F	Lvg °F	
ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb					MBh	cfm			
Main Clg	3.0	35.8	28.2	1,000	79.4	69.3	93.6	68.1	58.7	60.3	Floor	721		Main Htg	-48.0	1,000	56.1	81.2
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-48.0	1,000	56.1	68.1
											ExFlr	60						
Total	3.0	35.8									Roof	721	0	Humidif	0.0	0	0.0	0.0
											Wall	960	70	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	Total	-48.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

RTU-202

Variable Volume Reheat (30% Min Flow Default)

COOLING COIL PEAK					CLG SPACE PEAK					HEATING COIL PEAK					TEMPERATURES		
Peaked at Time: Mo/Hr: 7 / 16					Mo/Hr: 7 / 16					Mo/Hr: Heating Design							
Outside Air: OADB/WB/HR: 91 / 74 / 99					OADB: 91					OADB: 20							
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total		Space Sensible	Percent Of Total				Space Peak	Coil Peak	Percent			Cooling	Heating	
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)				Space Sens	Tot Sens	Of Total					
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)				Btu/h	Btu/h	(%)					
Envelope Loads					Envelope Loads												
Skylite Solar	0	0	0	0	0	0	0	Skylite Solar	0	0	0	0.00			SADB	69.8	79.0
Skylite Cond	0	0	0	0	0	0	0	Skylite Cond	0	0	0	0.00			Ra Plenum	79.1	63.9
Roof Cond	0	466	466	2	0	0	0	Roof Cond	0	-701	2.22				Return	75.0	70.0
Glass Solar	763	0	763	4	763	8	8	Glass Solar	0	0	0.00				Ret/OA	78.8	50.7
Glass/Door Cond	373	0	373	2	373	4	4	Glass/Door Cond	-1,447	-1,447	4.57				Fn MtrTD	0.0	0.0
Wall Cond	515	339	854	4	515	6	6	Wall Cond	-1,515	-2,664	8.42				Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	0	0	Partition/Door	0	0	0.00				Fn Frict	0.3	0.0
Floor	0	0	0	0	0	0	0	Floor	-2,783	-2,783	8.80						
Adjacent Floor	0	0	0	0	0	0	0	Adjacent Floor	0	0	0						
Infiltration	0	0	0	0	0	0	0	Infiltration	0	0	0.00						
Sub Total ==>	1,652	805	2,457	13	1,652	18	18	Sub Total ==>	-5,746	-7,595	24.01						
Internal Loads					Internal Loads												
Lights	1,732	433	2,165	11	1,732	19	19	Lights	0	0	0.00						
People	2,129	0	2,129	11	979	11	11	People	0	0	0.00						
Misc	1,280	0	1,280	7	1,280	14	14	Misc	0	0	0.00						
Sub Total ==>	5,141	433	5,574	28	3,991	43	43	Sub Total ==>	0	0	0.00						
Ceiling Load	1,239	-1,239	0	0	1,239	13	13	Ceiling Load	-1,850	0	0.00						
Ventilation Load	0	0	8,605	44	0	0	0	Ventilation Load	0	-21,305	67.34						
Adj Air Trans Heat	2,301		2,301	12	2,301	25	25	Adj Air Trans Heat	-2,301	-2,301	7						
Dehumid. Ov Sizing			0	0				Ov/Undr Sizing	0	0	0.00						
Ov/Undr Sizing	0		0	0	0	0	0	Exhaust Heat	0	0	0.00						
Exhaust Heat		0	0	0				OA Preheat Diff.	0	0	0.00						
Sup. Fan Heat			711	4				RA Preheat Diff.		-297	0.94						
Ret. Fan Heat		0	0	0				Additional Reheat		-141	0.45						
Duct Heat Pkup		0	0	0													
Underflr Sup Ht Pkup			0	0				Underflr Sup Ht Pkup		0	0.00						
Supply Air Leakage		0	0	0				Supply Air Leakage		0	0.00						
Grand Total ==>	10,332	-1	19,647	100.00	9,182	100.00	100.00	Grand Total ==>	-9,897	-31,640	100.00						

AIRFLOWS		
	Cooling	Heating
Diffuser	1,600	1,007
Terminal	1,600	1,007
Main Fan	1,600	1,007
Sec Fan	0	0
Nom Vent	385	385
AHU Vent	385	385
Infil	0	0
MinStop/Rh	507	1,007
Return	1,250	657
Exhaust	35	35
Rm Exh	350	350
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	24.1	38.2
cfm/ft²	1.68	1.06
cfm/ton	314.50	
ft²/ton	186.73	
Btu/hr-ft²	64.26	-136.84
No. People	5	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	ft²	(%)	Capacity	Coil Airflow	Ent °F	Lvg °F	
ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb					MBh	cfm			
Main Clg	5.1	61.1	51.2	1,600	78.8	69.1	93.7	69.4	57.7	54.0	Floor	950		Main Htg	-65.0	1,007	69.4	79.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-65.0	385	19.5	69.4
											ExFlr	76		Reheat	0.0	0	0.0	0.0
Total	5.1	61.1									Roof	494	0	Humidif	0.0	0	0.0	0.0
											Wall	1,187	46	Opt Vent	0.0	0	0.0	0.0
											Ext Door	21	0	Total	-130.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

RTU-203

Variable Volume Reheat (30% Min Flow Default)

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: 7 / 17		Mo/Hr: Heating Design			Cooling			Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: 89		OADB: 20			SADB			68.2	70.0
										Ra Plenum			75.9	70.7
										Return			75.0	70.0
										Ret/OA			79.5	46.9
										Fn MtrTD			0.0	0.0
										Fn BldTD			0.1	0.0
										Fn Frict			0.3	0.0

	Cooling	Heating
SADB	68.2	70.0
Ra Plenum	75.9	70.7
Return	75.0	70.0
Ret/OA	79.5	46.9
Fn MtrTD	0.0	0.0
Fn BldTD	0.1	0.0
Fn Frict	0.3	0.0

AIRFLOWS		
	Cooling	Heating
Diffuser	1,400	840
Terminal	1,400	840
Main Fan	1,400	840
Sec Fan	0	0
Nom Vent	385	385
AHU Vent	385	385
Infil	0	0
MinStop/Rh	445	840
Return	1,400	840
Exhaust	385	385
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	27.5	45.8
cfm/ft²	0.91	0.55
cfm/ton	372.51	
ft²/ton	410.02	
Btu/hr-ft²	29.27	-84.36
No. People	25	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb			ft²	(%)	MBh	cfm	°F	°F	
Main Clg	3.8	45.1	33.1	1,400	79.5	69.7	95.6	67.8	60.4	67.9	Floor	1,541			Main Htg	-65.0	840	67.8	70.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	-65.0	385	19.5	67.8
											ExFlr	0			Reheat	0.0	0	0.0	0.0
											Roof	0	0	0	Humidif	0.0	0	0.0	0.0
											Wall	0	0	0	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	0	Total	-130.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

RTU-301/2

Single Zone Variable Air Volume

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 8 / 14					Mo/Hr: 8 / 14			Mo/Hr: Heating Design					
Outside Air: OADB/WB/HR: 89 / 73 / 99					OADB: 89			OADB: 20					
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total		Space Sensible	Percent Of Total		Space Peak	Coil Peak	Percent		Cooling	Heating
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)		Space Sens	Tot Sens	Of Total			
Envelope Loads					Envelope Loads								
Skylite Solar	0	0	0	0	0	0	0	0	0	0.00	SADB	55.0	70.0
Skylite Cond	0	0	0	0	0	0	0	0	0	0.00	Ra Plenum	77.7	66.8
Roof Cond	0	1,784	1,784	1	0	0	0	0	-2,376	0.00	Return	75.0	70.0
Glass Solar	0	0	0	0	0	0	0	0	0	0.00	Ret/OA	75.0	70.0
Glass/Door Cond	82	0	82	0	82	0	0	-378	-378	0.00	Fn MtrTD	0.0	0.0
Wall Cond	333	249	582	0	333	0	0	-1,045	-1,929	0.00	Fn BldTD	0.1	0.0
Partition/Door	0	0	0	0	0	0	0	0	0	0.00	Fn Frict	0.3	0.0
Floor	0	0	0	0	0	0	0	-1,005	-1,005	0.00			
Adjacent Floor	0	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0	0	0.00			
Sub Total ==>	415	2,034	2,449	1	415	0	0	-2,428	-5,687	0.00			
Internal Loads					Internal Loads								
Lights	2,900	725	3,625	1	2,900	1	0	0	0	0.00			
People	0	0	0	0	0	0	0	0	0	0.00			
Misc	108,260	0	108,260	40	108,260	41	0	108,260	108,260	0.00			
Sub Total ==>	111,160	725	111,885	42	111,160	42	0	108,260	108,260	0.00			
Ceiling Load	2,759	-2,759	0	0	2,759	1	0	-3,259	0	0.00			
Ventilation Load	0	0	0	0	0	0	0	0	0	0.00			
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0	0			
Dehumid. Ov Sizing			0	0			0	-102,573	0	0.00			
Ov/Undr Sizing	148,656		148,656	55	148,656	57	0	0	0	0.00			
Exhaust Heat		0	0	0			0	0	0	0.00			
Sup. Fan Heat			5,333	2			0	-102,573	0	0.00			
Ret. Fan Heat		0	0	0			0	0	0	0.00			
Duct Heat Pkup		0	0	0			0	0	0	0.00			
Underflr Sup Ht Pkup			0	0			0	0	0	0.00			
Supply Air Leakage		0	0	0			0	0	0	0.00			
Grand Total ==>	262,990	0	268,323	100.00	262,990	100.00	0	0	0	100.00			

	Cooling	Heating
SADB	55.0	70.0
Ra Plenum	77.7	66.8
Return	75.0	70.0
Ret/OA	75.0	70.0
Fn MtrTD	0.0	0.0
Fn BldTD	0.1	0.0
Fn Frict	0.3	0.0

AIRFLOWS		
	Cooling	Heating
Diffuser	12,000	7,200
Terminal	12,000	7,200
Main Fan	12,000	7,200
Sec Fan	0	0
Nom Vent	0	0
AHU Vent	0	0
Infil	0	0
MinStop/Rh	3,600	7,200
Return	12,000	7,200
Exhaust	0	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	0.0	0.0
cfm/ft²	3.78	2.27
cfm/ton	454.83	
ft²/ton	120.23	
Btu/hr-ft²	99.81	0.00
No. People	0	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)	MBh	cfm	°F	°F		
Main Clg	26.4	316.6	316.6	12,000	75.0	56.6	40.3	54.6	46.3	34.3	Floor	3,172		Main Htg	0.0	7,200	70.0	70.0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	0.0	0	0.0	0.0	
											ExFlr	27							
											Roof	1,571	0	0	Humidif	0.0	0	0.0	0.0
											Wall	804	0	0	Opt Vent	0.0	0	0.0	0.0
											Ext Door	68	0	0	Total	0.0			
Total	26.4	316.6																	

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

RTU-401

Single Zone Variable Air Volume

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 7 / 16					Mo/Hr: 8 / 17		Mo/Hr: Heating Design			Cooling Heating		
Outside Air: OADB/WB/HR: 91 / 74 / 99					OADB: 87		OADB: 20			SADB		
Space Sens. + Lat. Btu/h	Plenum Sens. + Lat. Btu/h	Net Total Btu/h	Percent Of Total (%)		Space Sensible Btu/h	Percent Of Total (%)	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)			
Envelope Loads							Envelope Loads					
Skylite Solar	0	0	0	0	0	0	0	0	0.00	Ra Plenum		
Skylite Cond	0	0	0	0	0	0	0	0	0.00	Return		
Roof Cond	0	0	0	0	0	0	0	0	0.00	Ret/OA		
Glass Solar	2,328	0	2,328	4	2,951	8	0	0	0.00	Fn MtrTD		
Glass/Door Cond	688	0	688	1	551	1	-2,610	-2,610	3.35	Fn BldTD		
Wall Cond	719	612	1,331	2	740	2	-2,089	-3,894	5.00	Fn Frict		
Partition/Door	0	0	0	0	0	0	0	0	0.00			
Floor	0	0	0	0	0	0	-3,898	-3,898	5.01			
Adjacent Floor	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0	0.00			
Sub Total ==>	3,734	612	4,347	7	4,242	11	-8,598	-10,403	13.37			
Internal Loads							Internal Loads					
Lights	2,209	552	2,762	5	2,109	6	273	341	-0.44			
People	7,106	0	7,106	12	3,177	8	0	0	0.00			
Misc	16,643	0	16,643	28	16,904	45	0	0	0.00			
Sub Total ==>	25,959	552	26,511	44	22,190	59	273	341	-0.44			
Ceiling Load	1,165	-1,165	0	0	1,159	3	-1,737	0	0.00			
Ventilation Load	0	0	18,083	30	0	0	0	-24,902	32.00			
Adj Air Trans Heat	2,301		2,301	4	2,301	6	-2,301	-2,301	3			
Dehumid. Ov Sizing			0	0			-40,552	-40,552	52.11			
Ov/Undr Sizing	7,996		7,996	13	7,564	20	Exhaust Heat	0	0.00			
Exhaust Heat		0	0	0			OA Preheat Diff.	0	0.00			
Sup. Fan Heat			844	1			RA Preheat Diff.	0	0.00			
Ret. Fan Heat		0	0	0			Additional Reheat	0	0.00			
Duct Heat Pkup		0	0	0			Underflr Sup Ht Pkup	0	0.00			
Underflr Sup Ht Pkup			0	0			Supply Air Leakage	0	0.00			
Supply Air Leakage		0	0	0								
Grand Total ==>	41,155	0	60,083	100.00	37,455	100.00	Grand Total ==>	-52,915	-77,816	100.00		

TEMPERATURES

	Cooling	Heating
SADB	57.0	112.4
Ra Plenum	75.5	69.3
Return	75.0	70.0
Ret/OA	78.7	50.1
Fn MtrTD	0.0	0.0
Fn BldTD	0.1	0.0
Fn Frict	0.3	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	1,900	1,140
Terminal	1,900	1,140
Main Fan	1,900	1,140
Sec Fan	0	0
Nom Vent	450	450
AHU Vent	450	450
Infil	0	0
MinStop/Rh	602	1,140
Return	1,500	740
Exhaust	50	50
Rm Exh	400	400
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	23.7	39.5
cfm/ft²	0.25	0.15
cfm/ton	493.08	
ft²/ton	1,959.34	
Btu/hr-ft²	6.12	-13.91
No. People	20	

COOLING COIL SELECTION

	Total Capacity ton	MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F °F gr/lb			Leave DB/WB/HR °F °F gr/lb		
Main Clg	3.9	46.2	35.4	1,900	78.7	65.3	73.9	56.6	56.6	69.7
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	3.9	46.2								

AREAS

	Gross Total	Glass ft²	(%)
Floor	7,550		
Part	0		
Int Door	0		
ExFlr	106		
Roof	0	0	0
Wall	1,671	87	5
Ext Door	21	0	0

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-105.0	1,140	50.1	112.4
Aux Htg	0.0	0	0.0	0.0
Preheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-105.0			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

RTU-402

Single Zone Variable Air Volume

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES				
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: 7 / 11		Mo/Hr: Heating Design			Cooling			Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: 84		OADB: 20			SADB			57.6	81.0
										Ra Plenum			76.6	69.4
										Return			75.0	70.0
										Ret/OA			78.4	53.4
										Fn MtrTD			0.0	0.0
										Fn BldTD			0.1	0.0
										Fn Frict			0.3	0.0
Space					Percent		Space Peak			Coil Peak			Percent	
Sens. + Lat.					Of Total		Space Sens			Tot Sens			Of Total	
Btu/h					Btu/h (%)		Btu/h			Btu/h			Btu/h (%)	
Envelope Loads							Envelope Loads							
Skylite Solar					0		Skylite Solar			0			0.00	
Skylite Cond					0		Skylite Cond			0			0.00	
Roof Cond					0		Roof Cond			0			0.00	
Glass Solar					846		Glass Solar			0			0.00	
Glass/Door Cond					389		Glass/Door Cond			-1,496			4.92	
Wall Cond					128		Wall Cond			-350			2.36	
Partition/Door					0		Partition/Door			0			0.00	
Floor					0		Floor			-793			2.61	
Adjacent Floor					0		Adjacent Floor			0			0	
Infiltration					0		Infiltration			0			0.00	
Sub Total ==>					1,363		Sub Total ==>			-2,639			9.89	
Internal Loads							Internal Loads							
Lights					2,225		Lights			519			-2.13	
People					5,545		People			1,500			-4.93	
Misc					1,687		Misc			901			-2.96	
Sub Total ==>					9,457		Sub Total ==>			2,920			-10.03	
Ceiling Load					681		Ceiling Load			-239			0.00	
Ventilation Load					0		Ventilation Load			0			60.25	
Adj Air Trans Heat					1,315		Adj Air Trans Heat			-1,315			4	
Dehumid. Ov Sizing					0		Ov/Undr Sizing			-10,814			35.57	
Ov/Undr Sizing					20,549		Exhaust Heat			0			0.00	
Exhaust Heat					0		OA Preheat Diff.			0			0.00	
Sup. Fan Heat					711		RA Preheat Diff.			0			0.00	
Ret. Fan Heat					0		Additional Reheat			0			0.00	
Duct Heat Pkup					0		Underflr Sup Ht Pkup			0			0.00	
Underflr Sup Ht Pkup					0		Supply Air Leakage			0			0.00	
Supply Air Leakage					0		Grand Total ==>			-12,086			-30,403	
Grand Total ==>					33,365		Grand Total ==>			-12,086			-30,403	

AIRFLOWS		
	Cooling	Heating
Diffuser	1,600	1,007
Terminal	1,600	1,007
Main Fan	1,600	1,007
Sec Fan	0	0
Nom Vent	331	331
AHU Vent	331	331
Infil	0	0
MinStop/Rh	529	1,007
Return	1,350	757
Exhaust	81	81
Rm Exh	250	250
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	20.7	32.9
cfm/ft²	1.19	0.75
cfm/ton	536.91	
ft²/ton	451.01	
Btu/hr·ft²	26.61	-48.36
No. People	16	

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

SS-101

Single Zone

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 8 / 14			Mo/Hr: Sum of		Mo/Hr: Heating Design					Cooling	Heating
Outside Air:		OADB/WB/HR: 89 / 73 / 99			OADB: Peaks		OADB: 20					SADB	
Space Sens. + Lat. Btu/h	Plenum Sens. + Lat. Btu/h	Net Total Btu/h	Percent Of Total (%)		Space Sensible Btu/h	Percent Of Total (%)		Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)		Ra Plenum	
Envelope Loads					Envelope Loads							Return	
Skylite Solar	0	0	0	0	0	0	0	0	0	0.00		Ret/OA	
Skylite Cond	0	0	0	0	0	0	0	0	0	0.00		Fn MtrTD	
Roof Cond	0	382	382	3	0	0	0	0	-530	0.00		Fn BldTD	
Glass Solar	0	0	0	0	0	0	0	0	0	0.00		Fn Frict	
Glass/Door Cond	0	0	0	0	0	0	0	0	0	0.00			
Wall Cond	0	0	0	0	0	0	0	0	0	0.00			
Partition/Door	0	0	0	0	0	0	0	0	0	0.00			
Floor	0	0	0	0	0	0	0	0	0	0.00			
Adjacent Floor	0	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0	0	0.00			
Sub Total ==>	0	382	382	3	0	0	0	0	-530	0.00			
Internal Loads					Internal Loads								
Lights	967	242	1,208	9	967	7	0	0	0	0.00			
People	0	0	0	0	0	0	0	0	0	0.00			
Misc	12,321	0	12,321	89	12,321	89	0	12,321	12,321	0.00			
Sub Total ==>	13,287	242	13,529	97	13,287	96	0	12,321	12,321	0.00			
Ceiling Load	624	-624	0	0	624	4	0	-530	0	0.00			
Ventilation Load	0	0	0	0	0	0	0	0	0	0.00			
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0	0			
Dehumid. Ov Sizing			0	0			0	0	0	0.00			
Ov/Undr Sizing	0		0	0	0	0	0	0	0	0.00			
Exhaust Heat		0	0	0			0	0	0	0.00			
Sup. Fan Heat			0	0			0	0	-11,791	0.00			
Ret. Fan Heat		0	0	0			0	0	0	0.00			
Duct Heat Pkup		0	0	0			0	0	0	0.00			
Underflr Sup Ht Pkup			0	0			0	0	0	0.00			
Supply Air Leakage		0	0	0			0	0	0	0.00			
Grand Total ==>	13,912	0	13,912	100.00	13,912	100.00	Grand Total ==>	11,791	0	100.00			

AIRFLOWS		
	Cooling	Heating
Diffuser	800	800
Terminal	800	800
Main Fan	800	800
Sec Fan	0	0
Nom Vent	0	0
AHU Vent	0	0
Infil	0	0
MinStop/Rh	0	0
Return	800	800
Exhaust	0	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	0.0	0.0
cfm/ft²	2.22	2.22
cfm/ton	690.07	
ft²/ton	311.39	
Btu/hr-ft²	38.54	0.00
No. People	0	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lv	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb			ft²	(%)	MBh	cfm	°F	°F	
Main Clg	1.2	13.9	13.9	800	75.0	59.2	51.2	59.1	53.0	51.1	Floor	361			Main Htg	0.0	0	0.0	0.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	0.0	0	0.0	0.0
											ExFlr	0							
Total	1.2	13.9									Roof	361	0	0	Humidif	0.0	0	0.0	0.0
											Wall	0	0	0	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	0	Total	0.0			

Project Name:
Dataset Name:

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System Checksums

Vent Only

Ventilation and Heating

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 0 / 0		Mo/Hr: 0 / 0		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design				
Outside Air:		OADB/WB/HR: 0 / 0 / 0		OADB: 0		OADB: 20		OADB: 20		OADB: 20				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Space Sens	Tot Sens	Of Total			
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)			
Envelope Loads				Envelope Loads				Envelope Loads						
Skylite Solar	0	0	0	0	0	0	0	0.00	0	0	0.00	SADB	0.0	125.0
Skylite Cond	0	0	0	0	0	0	0	0.00	0	0	0.00	Ra Plenum	0.0	59.4
Roof Cond	0	0	0	0	0	0	0	0.00	-7,532	-9,567	28.76	Return	0.0	70.0
Glass Solar	0	0	0	0	0	0	0	0.00	0	0	0.00	Ret/OA	0.0	70.0
Glass/Door Cond	0	0	0	0	0	0	0	0.00	0	0	0.00	Fn MtrTD	0.0	0.0
Wall Cond	0	0	0	0	0	0	0	0.00	0	0	0.00	Fn BldTD	0.0	0.0
Partition/Door	0	0	0	0	0	0	0	0.00	0	0	0.00	Fn Frict	0.0	0.0
Floor	0	0	0	0	0	0	0	0.00	0	0	0.00			
Adjacent Floor	0	0	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0.00	0	0	0.00			
Sub Total ==>	0	0	0	0	0	0	0	28.76	-7,532	-9,567	28.76			
Internal Loads				Internal Loads				Internal Loads						
Lights	0	0	0	0	0	0	0	-11.78	3,134	3,917	-11.78			
People	0	0	0	0	0	0	0	0.00	0	0	0.00			
Misc	0	0	0	0	0	0	0	0.00	0	0	0.00			
Sub Total ==>	0	0	0	0	0	0	0	-11.78	3,134	3,917	-11.78			
Ceiling Load				Ceiling Load				Ceiling Load						
Ventilation Load	0	0	0	0	0	0	0	0.00	-7,204	0	0.00			
Adj Air Trans Heat	0	0	0	0	0	0	0	83	-27,614	-27,614	83			
Dehumid. Ov Sizing			0					0.00	0	0	0.00			
Ov/Undr Sizing	0		0			0		0.00	0	0	0.00			
Exhaust Heat		0	0					0.00	0	0	0.00			
Sup. Fan Heat			0					0.00	0	0	0.00			
Ret. Fan Heat		0	0					0.00	0	0	0.00			
Duct Heat Pkup		0	0					0.00	0	0	0.00			
Underflr Sup Ht Pkup			0					0.00	0	0	0.00			
Supply Air Leakage		0	0					0.00	0	0	0.00			
Grand Total ==>	0	0	0	100.00	0	100.00	0	100.00	-39,216	-33,263	100.00			

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	ft²	(%)	Capacity	Coil Airflow	Ent °F	Lvg °F	
ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb									
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	6,808				Main Htg	-39.2	651	70.0	125.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0				Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0				Preheat	0.0	0	0.0	0.0
										0								
										0								
										0								
										6,254	0	0		Humidif	0.0	0	0.0	0.0
										0	0	0		Opt Vent	0.0	0	0.0	0.0
										0	0	0						
										0	0	0		Total	-39.2			
Total	0.0	0.0																

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

Factory

System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: 8 / 16		Mo/Hr: Heating Design			Cooling			Heating
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: 89		OADB: 20			SADB			72.2
										Ra Plenum			65.7
										Return			70.3
										Ret/OA			24.3
										Fn MtrTD			0.0
										Fn BldTD			0.0
										Fn Frict			0.0

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb			ft²	(%)	MBh	cfm	°F	°F	
Main Clg	1,641.0	19,692.0	13,025.6	236,925	88.6	71.7	92.0	53.7	43.9	27.7	Floor	363,350			Main Htg	-5,104.6	200,996	53.7	72.2
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	-8,504.0	181,812	19.5	53.7
											ExFlr	3,022			Reheat	-4,501.9	200,996	53.7	70.0
											Roof	344,032	0	0	Humidif	0.0	0	0.0	0.0
											Wall	152,812	1,344	1	Opt Vent	0.0	0	0.0	0.0
											Ext Door	7,509	0	0	Total	-13,608.7			
Total	1,641.0	19,692.0																	

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

Office First

System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water

COOLING COIL PEAK					CLG SPACE PEAK		HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 8 / 16					Mo/Hr: 9 / 16		Mo/Hr: Heating Design					
Outside Air: OADB/WB/HR: 89 / 73 / 99					OADB: 84		OADB: 20					
Space Sens. + Lat. Btu/h	Plenum Sens. + Lat. Btu/h	Net Total Btu/h	Percent Of Total (%)		Space Sensible Btu/h	Percent Of Total (%)	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)		Cooling	Heating
Envelope Loads							Envelope Loads					
Skylite Solar	0	0	0	0	0	0	0	0	0.00	SADB	51.5	84.3
Skylite Cond	0	0	0	0	0	0	0	0	0.00	Ra Plenum	76.3	69.0
Roof Cond	0	0	0	0	0	0	0	0	0.00	Return	76.9	69.0
Glass Solar	25,928	0	25,928	10	32,018	25	0	0	0.00	Ret/OA	81.6	34.2
Glass/Door Cond	5,394	0	5,394	2	3,152	2	-23,846	-23,846	14.10	Fn MtrTD	0.1	0.0
Wall Cond	3,755	5,210	8,966	3	3,496	3	-4,223	-10,019	5.92	Fn BldTD	0.3	0.0
Partition/Door	0	0	0	0	0	0	0	0	0.00	Fn Frict	0.9	0.0
Floor	0	0	0	0	0	0	-7,029	-7,029	4.16			
Adjacent Floor	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0	0.00			
Sub Total ==>	35,077	5,210	40,287	16	38,666	30	-35,098	-40,894	24.18			
Internal Loads							Internal Loads					
Lights	22,039	5,510	27,549	11	22,039	17	0	0	0.00			
People	88,916	0	88,916	34	41,416	33	0	0	0.00			
Misc	10,921	0	10,921	4	10,921	9	31	31	-0.02			
Sub Total ==>	121,876	5,510	127,386	49	74,376	58	31	31	-0.02			
Ceiling Load	4,938	-4,938	0	0	4,711	4	-3,633	0	0.00			
Ventilation Load	0	0	74,178	29	0	0	0	-107,742	63.70			
Adj Air Trans Heat	4,767		4,767	2	4,767	4	-4,767	-4,767	3			
Dehumid. Ov Sizing			0	0			0	0	0.00			
Ov/Undr Sizing	5,134		5,134	2	4,903	4		1,294	-0.76			
Exhaust Heat		-2,483	-2,483	-1				0	0.00			
Sup. Fan Heat			7,134	3				-5,581	3.30			
Ret. Fan Heat		2,424	2,424	1				-11,472	6.78			
Duct Heat Pkup		0	0	0								
Underflr Sup Ht Pkup			0	0				0	0.00			
Supply Air Leakage		0	0	0				0	0.00			
Grand Total ==>	171,792	5,724	258,828	100.00	127,422	100.00	-43,467	-169,131	100.00			

AIRFLOWS		
	Cooling	Heating
Diffuser	4,937	2,767
Terminal	4,937	2,767
Main Fan	4,937	2,767
Sec Fan	0	0
Nom Vent	1,947	1,947
AHU Vent	1,947	1,947
Infil	0	0
MinStop/Rh	2,631	2,767
Return	4,212	2,042
Exhaust	1,222	1,222
Rm Exh	725	725
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	39.4	70.4
cfm/ft²	0.42	0.23
cfm/ton	199.55	
ft²/ton	479.66	
Btu/hr-ft²	25.02	-17.82
No. People	241	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)	MBh	cfm	°F	°F	
Main Clg	24.7	296.9	166.3	4,816	81.6	67.3	79.1	50.1	46.0	40.2	Floor	11,867		Main Htg	-129.8	2,767	50.1	84.3
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-81.6	1,947	19.5	50.1
											ExFlr	191		Reheat	-75.5	2,767	50.1	70.0
											Roof	0	0	Humidif	0.0	0	0.0	0.0
											Wall	3,151	787	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	Total	-211.4			
Total	24.7	296.9																

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

Office Second

System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 8 / 16					Mo/Hr: 8 / 17			Mo/Hr: Heating Design					
Outside Air: OADB/WB/HR: 89 / 73 / 99					OADB: 87			OADB: 20					
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total		Space Sensible	Percent Of Total		Space Peak	Coil Peak	Percent		Cooling	Heating
Btu/h	Btu/h	Btu/h	(%)		Btu/h	(%)		Space Sens	Tot Sens	Of Total			
Envelope Loads					Envelope Loads								
Skylite Solar	0	0	0	0	0	0	0	0	0	0.00	SADB	55.0	82.5
Skylite Cond	0	0	0	0	0	0	0	0	0	0.00	Ra Plenum	78.1	65.7
Roof Cond	0	18,980	18,980	8	0	0	0	0	-26,403	15.74	Return	78.6	65.7
Glass Solar	20,854	0	20,854	9	22,903	18	0	0	0	0.00	Ret/OA	81.8	39.6
Glass/Door Cond	4,474	0	4,474	2	4,282	3	0	-19,858	-19,858	11.84	Fn MtrTD	0.1	0.0
Wall Cond	3,068	4,440	7,508	3	3,349	3	0	-3,398	-8,188	4.88	Fn BldTD	0.3	0.0
Partition/Door	0	0	0	0	0	0	0	0	0	0.00	Fn Frict	0.9	0.0
Floor	0	0	0	0	0	0	0	-1,604	-1,604	0.96			
Adjacent Floor	0	0	0	0	0	0	0	0	0	0			
Infiltration	0	0	0	0	0	0	0	0	0	0.00			
Sub Total ==>	28,397	23,420	51,816	21	30,534	24	0	-24,860	-56,053	33.42			
Internal Loads					Internal Loads								
Lights	28,598	7,149	35,747	15	29,667	23	0	0	0	0.00			
People	46,800	0	46,800	19	23,242	18	0	0	0	0.00			
Misc	25,233	0	25,233	10	26,152	21	0	5,324	5,324	-3.17			
Sub Total ==>	100,630	7,149	107,780	44	79,061	62	0	5,324	5,324	-3.17			
Ceiling Load	12,377	-12,377	0	0	11,536	9	0	-17,326	0	0.00			
Ventilation Load	0	0	71,282	29	0	0	0	0	-99,275	59.19			
Adj Air Trans Heat	1,644		1,644	1	1,644	1	0	-1,644	-1,644	1			
Dehumid. Ov Sizing			0	0			0	0	0	0.00			
Ov/Undr Sizing	4,970		4,970	2	4,323	3	0	0	7,306	-4.36			
Exhaust Heat		-6,134	-6,134	-3			0	0	0	0.00			
Sup. Fan Heat			8,396	3			0	-22,309	13.30				
Ret. Fan Heat		3,210	3,210	1			0	-1,087	0.65				
Duct Heat Pkup		0	0	0			0	0	0.00				
Underflr Sup Ht Pkup			0	0			0	0	0.00				
Supply Air Leakage		0	0	0			0	0	0.00				
Grand Total ==>	148,018	15,268	242,964	100.00	127,098	100.00	0	-38,505	-167,737	100.00			

AIRFLOWS		
	Cooling	Heating
Diffuser	5,799	3,181
Terminal	5,799	3,181
Main Fan	5,799	3,181
Sec Fan	0	0
Nom Vent	1,794	1,794
AHU Vent	1,794	1,794
Infil	0	0
MinStop/Rh	2,275	3,181
Return	5,549	2,931
Exhaust	1,544	1,544
Rm Exh	250	250
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	30.9	56.4
cfm/ft²	0.46	0.25
cfm/ton	249.74	
ft²/ton	545.30	
Btu/hr-ft²	22.01	-16.56
No. People	128	

COOLING COIL SELECTION											AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total		Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb			ft²	(%)	MBh	cfm	°F	°F	
Main Clg	23.2	278.7	174.8	5,667	81.8	66.5	74.5	53.7	49.9	48.2	Floor	12,663			Main Htg	-125.8	3,181	53.7	82.5
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			Preheat	-83.9	1,794	19.5	53.7
											ExFlr	44			Reheat	-71.2	3,181	53.7	70.0
											Roof	12,008	0	0	Humidif	0.0	0	0.0	0.0
											Wall	2,632	618	23	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	0	Total	-209.7			
Total	23.2	278.7																	

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 09:19 AM on 06/05/2019
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System Checksums

Packaging

System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK				TEMPERATURES				
Peaked at Time:		Mo/Hr: 7 / 15			Mo/Hr: 8 / 14			Mo/Hr: Heating Design				Cooling			Heating	
Outside Air:		OADB/WB/HR: 91 / 74 / 101			OADB: 89			OADB: 20				SADB			55.0	70.0
												Ra Plenum			75.0	70.0
												Return			78.5	75.2
												Ret/OA			85.8	19.5
												Fn MtrTD			0.1	0.0
												Fn BldTD			0.3	0.0
												Fn Frict			0.9	0.0

	Cooling	Heating
SADB	55.0	70.0
Ra Plenum	75.0	70.0
Return	78.5	75.2
Ret/OA	85.8	19.5
Fn MtrTD	0.1	0.0
Fn BldTD	0.3	0.0
Fn Frict	0.9	0.0

AIRFLOWS		
	Cooling	Heating
Diffuser	83,987	47,117
Terminal	83,987	47,117
Main Fan	83,987	47,117
Sec Fan	0	0
Nom Vent	47,117	47,117
AHU Vent	47,117	47,117
Infil	0	0
MinStop/Rh	47,117	47,117
Return	83,987	47,117
Exhaust	47,117	47,117
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	56.1	100.0
cfm/ft²	0.26	0.15
cfm/ton	206.56	
ft²/ton	780.03	
Btu/hr-ft²	15.38	-15.08
No. People	20	

COOLING COIL SELECTION										AREAS				HEATING COIL SELECTION				
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft²	(%)	MBh	cfm	°F	°F	
Main Clg	406.6	4,879.2	2,879.0	81,617	85.8	69.4	83.5	53.7	49.9	48.4	Floor	317,159		Main Htg	-1,055.3	47,117	53.7	70.0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	-2,203.8	47,117	19.5	53.7
											ExFlr	944		Reheat	-1,055.3	47,117	53.7	70.0
											Roof	317,159	0	Humidif	-1,522.9	47,117	3.0	49.9
											Wall	46,913	504	Opt Vent	0.0	0	0.0	0.0
											Ext Door	300	0	Total	-4,782.1			
Total	406.6	4,879.2																

LEED Energy Performance Summary Report

Section 1.1 - General Information

Simulation Program: TRACE™ 700 v6.3.3
Principle Heating Source: Fossil/Electric Hybrid
Energy Code Used: ASHRAE 90.1-2010
Weather File: 8760 Greenville SC (Full Year - 8760)
Climate Zone: 3A
New Construction Percent: 100 %
Existing Renovation Percent: 0 %
Quantity of Floors: 1
Proposed: Alternative 1 - Proposed Climate Zone 3A
Baseline: Alternative 2 - Baseline ASHRAE 90_1-2010

Section 1.2 - Space Summary

Building Use (Occupancy Type)	Space Area (ft²)	Regularly Occupied Area (ft²)	Unconditioned Area (ft²)
Default	705,039.00	705,039.00	0.00
Total	705,039.00	705,039.00	0.00

Section 1.3 - Advisory Messages

Advisory Messages	Baseline Building (0 deg rotation)	Proposed Building
Number of hours heating load not met:	208	0
Number of hours cooling load not met:	0	0
Total	208	0

LEED Energy Performance Summary Report

Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
Exterior Wall Construction	12" Conc, 4" Ins (int) U-factor: 0.049 Btu/h·ft ² ·°F	90.1-10 Min Wall Nonres Zone 3 U-factor: 0.085 Btu/h·ft ² ·°F
Roof Construction	90.1-10 Min Roof Nonres Zone 2-3 U-factor: 0.032 Btu/h·ft ² ·°F Reflectivity: 0.55	90.1-10 Min Roof Nonres Zone 2-3 U-factor: 0.048 Btu/h·ft ² ·°F Reflectivity: 0.55
Window-to-gross wall ratio	1.5 %	1.5 %
Fenestration Type	90.1 Window Zone 3 Metal All Other U-factor: 0.570 Btu/h·ft ² ·°F SHGC: 0.28 Visible Transmissivity: 0.900	90.1 Window Zone 3 Metal All Other U-factor: 0.650 Btu/h·ft ² ·°F SHGC: 0.25 Visible Transmissivity: 0.900
Fenestration Type	90.1 Window Zone 3 Metal Curtain Wall U-factor: 0.570 Btu/h·ft ² ·°F SHGC: 0.28 Visible Transmissivity: 0.900	90.1 Window Zone 3 Metal Curtain Wall U-factor: 0.600 Btu/h·ft ² ·°F SHGC: 0.25 Visible Transmissivity: 0.900
Interior Light Power Density	Lighting Compliance: Space-By-Space Method Daylighting Controls: No Building: 0.39 W/ft ²	Lighting Compliance: Space-By-Space Method Daylighting Controls: No Building: 0.97 W/ft ²
Interior Light Power Density	Room Type: Default - 0.39 W/ft ²	Room Type: Default - 0.97 W/ft ²
Slab-on-grade or Exposed Floor	Slab-On-Grade F-Factor: 0.730 Btu/hr·ft ² ·°F	Slab-On-Grade F-Factor: 0.730 Btu/hr·ft ² ·°F
Receptacle Equip Power Density	0.03 W/ft ²	0.03 W/ft ²
HVAC System Type	AHU-301 to 314 Single Zone Variable Air Volume Supply vol: 280000 cfm Fan power: 460.80 kW	Factory System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water Supply vol: 236964 cfm Fan power: 283.55 kW

LEED Energy Performance Summary Report

Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
HVAC System Type	AHU-201 Single Zone Variable Air Volume Uses: Enth Econ Supply vol: 7000 cfm Fan power: 13.64 kW	Packaging System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water Supply vol: 83987 cfm Fan power: 99.27 kW
HVAC System Type	MAU-401-404 Single Zone Uses: Enth Econ Supply vol: 48000 cfm Fan power: 26.85 kW	Office Second System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water Supply vol: 5799 cfm Fan power: 7.19 kW
HVAC System Type	RTU-202 Variable Volume Reheat (30% Min Flow Default) Uses: Enth Econ Supply vol: 1600 cfm Fan power: 0.59 kW	Office First System 7 - 2007 - Packaged RTU VAV Reheat Chill Water & Hot Water Supply vol: 4937 cfm Fan power: 6.18 kW
HVAC System Type	Elec Unit Heaters Unit Heaters Supply vol: 550 cfm Fan power: 0.00 kW	
HVAC System Type	RTU-402 Single Zone Variable Air Volume Uses: Enth Econ Supply vol: 1600 cfm Fan power: 0.60 kW	
HVAC System Type	MAU-301 Single Zone Uses: Enth Econ Supply vol: 15000 cfm Fan power: 12.68 kW	
HVAC System Type	SS-101 Single Zone Supply vol: 800 cfm Fan power: 0.00 kW	
HVAC System Type	AHU-101 Parallel Fan-Powered VAV, Htg Coil on Plenum Inlet Uses: Enth Econ Supply vol: 24000 cfm Fan power: 37.55 kW	
HVAC System Type	MAU-303-305 Single Zone Uses: Enth Econ Supply vol: 120000 cfm Fan power: 96.94 kW	
HVAC System Type	MAU-302 Single Zone Uses: Enth Econ Supply vol: 15000 cfm Fan power: 12.30 kW	

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Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
HVAC System Type	MAU-204 Single Zone Uses: Enth Econ Supply vol: 10000 cfm Fan power: 4.47 kW	
HVAC System Type	RTU-401 Single Zone Variable Air Volume Uses: Enth Econ Supply vol: 1900 cfm Fan power: 0.65 kW	
HVAC System Type	AHU202 to 204 Single Zone Variable Air Volume Supply vol: 45750 cfm Fan power: 40.74 kW	
HVAC System Type	RTU-201 Single Zone Uses: Enth Econ Supply vol: 1000 cfm Fan power: 0.45 kW	
HVAC System Type	MAU-206-211 Single Zone Uses: Enth Econ Supply vol: 45000 cfm Fan power: 67.11 kW	
HVAC System Type	MAU-201 Single Zone Uses: Enth Econ Supply vol: 10000 cfm Fan power: 4.47 kW	
HVAC System Type	RTU-203 Variable Volume Reheat (30% Min Flow Default) Uses: Enth Econ Supply vol: 1400 cfm Fan power: 0.35 kW	
HVAC System Type	Vent Only Ventilation and Heating Supply vol: 651 cfm Fan power: 0.00 kW	
HVAC System Type	MAU-205 Single Zone Uses: Enth Econ Supply vol: 25000 cfm Fan power: 29.83 kW	
HVAC System Type	MAU-203 Single Zone Uses: Enth Econ Supply vol: 12000 cfm Fan power: 6.15 kW	

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Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
HVAC System Type	MAU-202 Single Zone Uses: Enth Econ Supply vol: 12000 cfm Fan power: 6.71 kW	
HVAC System Type	RTU-301/2 Single Zone Variable Air Volume Uses: Enth Econ Supply vol: 12000 cfm Fan power: 7.46 kW	
Cooling Equipment	Plant: RTU-202 DX Type: 90.1-10 Min AC SS AllHeat <65 MBh Category: Air-cooled unitary Clg Cap: 64.05 Mbh Engy Rate: 14.2 Packaged EER	Plant: Chiller Plant Type: 90.1-10 Min Cent Chl >600 tons Path A Category: Water-cooled chiller Clg Cap: 25 % Plant Capacity Engy Rate: 0.57 kW/ton Quantity: 4
Cooling Equipment	Plant: Chiller Plant Type: Centrifugal 3-Stage w/ Var Freq Dr Category: Water-cooled chiller Clg Cap: 575 tons Engy Rate: 0.5753 kW/ton Quantity: 3	
Cooling Equipment	Plant: RTU-401 DX Type: 90.1-10 Min AC SS AllHeat <65 MBh Category: Air-cooled unitary Clg Cap: 46.24 Mbh Engy Rate: 14.2 Packaged EER	
Cooling Equipment	Plant: RTU-203 DX Type: 90.1-10 Min AC SS AllHeat <65 MBh Category: Air-cooled unitary Clg Cap: 45.1 Mbh Engy Rate: 15 Packaged EER	
Cooling Equipment	Plant: No Cooling Type: Default air-cooled unitary Category: Air-cooled unitary Clg Cap: 0 tons Engy Rate: 0 kW/ton	
Cooling Equipment	Plant: RTU-402 DX Type: 90.1-10 Min AC SS AllHeat <65 MBh Category: Air-cooled unitary Clg Cap: 35.76 Mbh Engy Rate: 14.2 Packaged EER	
Cooling Equipment	Plant: Split System HP Type: 90.1-10 Min AC SS AllHeat <65 MBh Category: Air-cooled unitary Clg Cap: 34.6 Mbh Engy Rate: 15.1 Packaged EER	
Cooling Equipment	Plant: RTU-301/2 DX Type: 90.1-10 Min AC SS/SP Other 135-240 MBh Category: Air-cooled unitary Clg Cap: 316.6 Mbh Engy Rate: 15 Packaged EER	

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Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
Cooling Equipment	Plant: RTU-201 DX Type: 90.1-10 Min AC SS AllHeat <65 MBh Category: Air-cooled unitary Clg Cap: 35.76 Mbh Engy Rate: 14.4 Packaged EER	
Chilled Water Pump	Type: 90.1-10 Min Var Vol Chilled Water Pump Full load consumption: 15 hp Quantity: 3	Type: 90.1 Min CV Chilled Water pump Full load consumption: 15 Watt/gpm Quantity: 4
Condenser Water Pump	Type: 90.1-10 Min Var Vol Cond Water Pump Full load consumption: 40 hp Quantity: 3	Type: 90.1 Min CV Cond Water Pump Full load consumption: 19 Watt/gpm Quantity: 4
Secondary Distribution Pump	Type: 90.1-10 Min Var Vol Chilled Water Pump Full load consumption: 80 hp	Type: 90.1-10 Min Var Vol Chilled Water Pump Full load consumption: 7 Watt/gpm
Heat Rejection Parameters	Type: Optimized VFD C-tower-10° Range HR Type: Optimized tower (Marley) Energy Consumption: 0.066000 kW/ton Quantity: 3	Type: 90.1 Min Cooling Tower HR Type: Cooling tower (DOE) Energy Consumption: 0.063700 kW/ton Quantity: 4
Heat Rejection Parameters	Type: 90.1 Min Air Cooled Condenser HR Type: Air-cooled condenser Energy Consumption: 0.055290 kW/ton Quantity: 7	
Heat Rejection Parameters	Type: Condenser fan for Heat Pump HR Type: Air-cooled condenser Energy Consumption: 0.120000 kW/ton	
Heating Equipment	Plant: MAU-202 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 1127 Mbh Energy Rate: 92 Percent efficient	Plant: Humidifier Steam Gen Type: 90.1-10 Min Boiler NatD Gas >2500 MBh Category: Boiler Capacity: Design Energy Rate: 77 Percent efficient
Heating Equipment	Plant: RTU-402 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 80 Mbh Energy Rate: 81.3 Percent efficient	Plant: Hot Water Boiler Type: 90.1-10 Min Boiler, HW, Gas >2500 MBh Category: Boiler Capacity: 50 % Plant Capacity Energy Rate: 80 Percent efficient Quantity: 2
Heating Equipment	Plant: Hot Water Boiler Type: Default Boiler Category: Boiler Capacity: 5000 Mbh Energy Rate: 91 Percent efficient Quantity: 2	Plant: DHW-Gas Type: Gas Fired Hot Water Boiler Category: Boiler Capacity: Design Energy Rate: 80 Percent efficient

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Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
Heating Equipment	Plant: MAU-201 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 940 Mbh Energy Rate: 90 Percent efficient	
Heating Equipment	Plant: MAU-303-305 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 3757 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: MAU-206-211 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 4227 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: MAU-204 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 940 Mbh Energy Rate: 90 Percent efficient	
Heating Equipment	Plant: RTU-202/3 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 160 Mbh Energy Rate: 81.3 Percent efficient	
Heating Equipment	Plant: Humidifier Steam Gen Type: Electric Steam Boiler Category: Boiler Capacity: 560 kW Energy Rate: 100 Percent efficient	
Heating Equipment	Plant: MAU-302 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 1409 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: MAU-205 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 2348 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: MAU-203 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 1127 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: RTU-401 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 130 Mbh Energy Rate: 80.8 Percent efficient	

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Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
Heating Equipment	Plant: Elec Heat Type: Default electric resistance Category: Electric resistance Capacity: 8.75 kW Energy Rate: 100 Percent efficient	
Heating Equipment	Plant: DHW-Elec Type: Electric Hot Water Boiler Category: Boiler Capacity: 6 kW Energy Rate: 100 Percent efficient	
Heating Equipment	Plant: RTU-201 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 60 Mbh Energy Rate: 80 Percent efficient	
Heating Equipment	Plant: MAU-301 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 1409 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: No Heat Type: Default Boiler Category: Boiler Capacity: 0 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: MAU-401-404 HX Type: Default gas-fired heat exchanger Category: Gas-fired heat exchanger Capacity: 4148 Mbh Energy Rate: 92 Percent efficient	
Heating Equipment	Plant: DHW-Gas Type: Gas Fired Hot Water Boiler Category: Boiler Capacity: 199 Mbh Energy Rate: 97 Percent efficient	
Hot Water Pump	Type: Water circulating pump Full load consumption: 0.06 kW	Type: Water circulating pump Full load consumption: 0.125 kW
Hot Water Pump	Type: Water circulating pump Full load consumption: 0.125 kW	Type: Heating water circ pump Full load consumption: 0 ft water Quantity: 3
Hot Water Pump	Type: Heating water circ pump Full load consumption: 1.5 hp Quantity: 2	

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Section 1.4 - Comparison of Proposed Design Versus Baseline Design

Input Parameter	Proposed Design Input	Baseline Design Input
Hot Water Pump	Type: Heating water circ pump Full load consumption: 0 ft water Quantity: 2	
Thermal Energy Storage	No	No
Base Utility	Type: QRO Motor Loads Description: HVLS Fans Energy Type: Electricity Hourly Consumption: 18.0 kW Schedule: Available (100%)	Type: Parking lot lights Description: Parking lot lights Energy Type: Electricity Hourly Consumption: 41.4 kW Schedule: Parking lot lights
Base Utility	Type: Parking lot lights Description: Parking lot lights Energy Type: Electricity Hourly Consumption: 20.5 kW Schedule: Parking lot lights	Type: QRO Motor Loads Description: HVLS Fans Energy Type: Electricity Hourly Consumption: 18.0 kW Schedule: Available (100%)
Base Utility	Type: Kitchen Gas Description: Kitchen Gas Energy Type: Gas Hourly Consumption: 400.1 therms Schedule: Available (100%)	Type: Kitchen Gas Description: Kitchen Gas Energy Type: Gas Hourly Consumption: 400.1 therms Schedule: Available (100%)
Base Utility	Type: QRO Motor Loads Description: QRO Motor Loads Energy Type: Electricity Hourly Consumption: 4629.0 kW Schedule: Available (100%)	Type: QRO Motor Loads Description: QRO Motor Loads Energy Type: Electricity Hourly Consumption: 4629.0 kW Schedule: Available (100%)
Base Utility	Type: QRO Motor Loads Description: Air Compressor Load-CS Energy Type: Electricity Hourly Consumption: 574.2 kW Schedule: Available (100%)	Type: QRO Motor Loads Description: Air Compressor Load-CS Energy Type: Electricity Hourly Consumption: 574.2 kW Schedule: Available (100%)
Base Utility	Type: QRO Motor Loads Description: Air Compressor Load-VSD Energy Type: Electricity Hourly Consumption: 156.6 kW Schedule: Available (100%)	Type: QRO Motor Loads Description: Air Compressor Load-VSD Energy Type: Electricity Hourly Consumption: 156.6 kW Schedule: Available (100%)

Section 1.5 - Energy Type Summary (Proposed)

Energy Type	Utility Rate Description	Units
Electric Consumption	DOE S Carolina Apr 2019	kWh
Electric Demand	DOE S Carolina Apr 2019	kW
Gas	DOE S Carolina Apr 2019	therms

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Section 1.6 Baseline Performance - Performance Rating Method Compliance

End Use	Process	Baseline Design Energy Type	Units of Annual Energy & Peak Demand	Baseline (0 deg rotation)	Baseline (90 deg rotation)	Baseline (180 deg rotation)	Baseline (270 deg rotation)	Baseline Design
Space Heating	No	Electricity	Energy Use (kWh)	11,472	0	0	0	11,472
			Demand (kW)	2.1	0.0	0.0	0.0	2.1
Space Cooling	No	Electricity	Energy Use (kWh)	1,625,259	0	0	0	1,625,259
			Demand (kW)	1,186.3	0.0	0.0	0.0	1,186.3
Pumps	No	Electricity	Energy Use (kWh)	499,602	0	0	0	499,602
			Demand (kW)	214.1	0.0	0.0	0.0	214.1
Heat Rejection	No	Electricity	Energy Use (kWh)	295,700	0	0	0	295,700
			Demand (kW)	155.1	0.0	0.0	0.0	155.1
Fans - Interior	No	Electricity	Energy Use (kWh)	1,866,199	0	0	0	1,866,199
			Demand (kW)	364.6	0.0	0.0	0.0	364.6
Receptacle Equipment	Yes	Electricity	Energy Use (kWh)	55,088	0	0	0	55,088
			Demand (kW)	15.6	0.0	0.0	0.0	15.6
Interior Lighting	No	Electricity	Energy Use (kWh)	5,641,237	0	0	0	5,641,237
			Demand (kW)	661.5	0.0	0.0	0.0	661.5
QRO Motor Loads - Base Utility	Yes	Electricity	Energy Use (kWh)	40,550,388	0	0	0	40,550,388
			Demand (kW)	4,629.0	0.0	0.0	0.0	4,629.0
HVLS Fans - Base Utility	Yes	Electricity	Energy Use (kWh)	157,681	0	0	0	157,681
			Demand (kW)	18.0	0.0	0.0	0.0	18.0
Parking lot lights - Base Utility	Yes	Electricity	Energy Use (kWh)	196,445	0	0	0	196,445
			Demand (kW)	41.4	0.0	0.0	0.0	41.4
Air Compressor Load-CS - Base Utility	Yes	Electricity	Energy Use (kWh)	5,030,007	0	0	0	5,030,007
			Demand (kW)	574.2	0.0	0.0	0.0	574.2
Air Compressor Load-VSD - Base Utility	Yes	Electricity	Energy Use (kWh)	1,371,837	0	0	0	1,371,837
			Demand (kW)	156.6	0.0	0.0	0.0	156.6
Space Heating	No	Gas	Energy Use (therms)	285,163	0	0	0	285,163
			Demand (therms)	208.1	0.0	0.0	0.0	208.1
Kitchen Gas - Base Utility	Yes	Gas	Energy Use (therms)	3,504,849	0	0	0	3,504,849
			Demand (therms)	400.1	0.0	0.0	0.0	400.1
Baseline Energy Totals:			Energy Use (MMBtu/yr)	574,567.4	0.0	0.0	0.0	574,567.4
			Process (MMBtu/yr)	512,128.0	0.0	0.0	0.0	512,128.0

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Section 1.6 Proposed Performance - Performance Rating Method Compliance

End Use	Process	Proposed Design Energy Type	Units of Annual Energy & Peak Demand	Proposed Design
Space Heating	No	Electricity	Energy Use (kWh)	1,314,332
			Demand (kW)	583.3
Space Cooling	No	Electricity	Energy Use (kWh)	405,951
			Demand (kW)	285.9
Pumps	No	Electricity	Energy Use (kWh)	81,017
			Demand (kW)	93.7
Heat Rejection	No	Electricity	Energy Use (kWh)	110,751
			Demand (kW)	51.1
Fans - Interior	No	Electricity	Energy Use (kWh)	2,974,803
			Demand (kW)	396.2
Receptacle Equipment	Yes	Electricity	Energy Use (kWh)	55,088
			Demand (kW)	15.6
Interior Lighting	No	Electricity	Energy Use (kWh)	2,167,574
			Demand (kW)	260.1
QRO Motor Loads - Base Utility	Yes	Electricity	Energy Use (kWh)	40,550,388
			Demand (kW)	4,629.0
HVLS Fans - Base Utility	Yes	Electricity	Energy Use (kWh)	157,681
			Demand (kW)	18.0
Parking lot lights - Base Utility	Yes	Electricity	Energy Use (kWh)	97,273
			Demand (kW)	20.5
Air Compressor Load-CS - Base Utility	Yes	Electricity	Energy Use (kWh)	5,030,007
			Demand (kW)	574.2
Air Compressor Load-VSD - Base Utility	Yes	Electricity	Energy Use (kWh)	1,371,837
			Demand (kW)	156.6
Space Heating	No	Gas	Energy Use (therms)	203,750
			Demand (therm)	187.6
Kitchen Gas - Base Utility	Yes	Gas	Energy Use (therms)	3,504,849
			Demand (therm)	400.1
Proposed Energy Totals:			Energy Use (MMBtu/yr)	556,241.14
			Process (MMBtu/yr)	511,789.55

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Table 1.6 Table EAp2-9 Energy Cost Summary (Manual Cost Input) - Baseline Case

Energy Type	Baseline Cost (0° rotation)	Baseline Cost (90° rotation)	Baseline Cost (180° rotation)	Baseline Cost (270° rotation)	Average
Electric Consumption	\$3,552,627	\$0	\$0	\$0	\$3,552,627
Gas	\$2,020,091	\$0	\$0	\$0	\$2,020,091

Table 1.6 Table EAp2-9 Energy Cost Summary (Manual Cost Input) - Proposed Case

Energy Type	Proposed Cost
Electric Consumption	\$3,367,608
Gas	\$1,976,698

Proposed building economic cost improvement over baseline building: 4.09 %