Internal Renovation
HVAC Load Analysis

for

9325 Yonge St.
Richmond Hill, ON

Elite Software

CHVAC COMMERCIAL HVAC LOADS

Prepared By:

Kalgreens Architects Inc.

Tuesday, September 15, 2026



Building Summary Loads

Building peaks in August at 3pm.

Bldg Load Descriptions	Area Quan	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Roof	7,701	31,536	6.26	0	19,735	19,735	5.16
Wall	3,684	13,241	2.63	0	560	560	0.15
Glass	765	17,901	3.55	0	33,029	33,029	8.63
Floor Slab	1,998	77,922	15.46	0	0	0	0.00
Skin Loads		140,599	27.89	0	53,323	53,323	13.93
Lighting	6,089	0	0.00	0	18,871	18,871	4.93
Equipment	3,854	0	0.00	5,000	12,741	17,741	4.64
People	200	0	0.00	32,080	44,603	76,683	20.04
Partition	1,534	3,632	0.72	0	1,090	1,090	0.28
Cool. Pret.	0	0	0.00	0	0	0	0.00
Heat. Pret.	0	0	0.00	0	0	0	0.00
Cool. Vent.	1,935	0	0.00	37,048	27,097	64,145	16.76
Heat. Vent.	1,935	159,626	31.67	0	0	0	0.00
Cool. Infil.	303	0	0.00	5,798	4,242	10,040	2.62
Heat. Infil.	971	80,092	15.89	0	0	0	0.00
Draw-Thru Fan	0	0	0.00	0	0	0	0.00
Blow-Thru Fan	0	0	0.00	0	0	0	0.00
Reserve Cap.	0	0	0.00	0	81,733	81,733	21.36
Reheat Cap.	0	0	0.00	0	0	0	0.00
Supply Duct	0	75,092	14.90	0	45,875	45,875	11.99
Return Duct	0	45,055	8.94	0	13,207	13,207	3.45
Misc. Supply	0	0	0.00	0	0	0	0.00
Misc. Return	0	0	0.00	0	0	0	0.00
Plenum Adj.	0	0	0.00	0	0	0	0.00
Building Totals		504,096	100.00	79,926	302,782	382,708	100.00

Building Summary	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Ventilation	159,626	31.67	37,048	27,097	64,145	16.76
Infiltration	80,092	15.89	5,798	4,242	10,040	2.62
Pretreated Air	0	0.00	0	0	0	0.00
Zone Loads	143,621	28.49	37,080	198,877	235,957	61.65
Plenum Loads	611	0.12	0	13,483	13,483	3.52
Fan/Duct/Misc Loads	120,147	23.83	0	59,083	59,083	15.44
Building Totals	504,096	100.00	79,926	302,782	382,708	100.00

Check Figures

Total Building Supply Air (based on a 16° TD):	14,196	CFM
Total Building Vent. Air (13.63% of Supply):	1,935	CFM
Total Conditioned Air Space:	7,708	Sq.ft
Supply Air Per Unit Area:	1.8417	CFM/Sq.ft
Area Per Cooling Capacity:	241.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0041	Tons/Sq.ft
Heating Capacity Per Area:	65.40	Btuh/Sq.ft
Total Heating Required With Outside Air:	504,096	Btuh
Total Cooling Required With Outside Air:	31.89	Tons

Air Handler #1 - New AHU - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
6	Multi-Purpose Room 8pm August	198 8 1,980	6,607 549 2.77	2,925 597 3.02	1,296 0 0	7.5/P, 0.06/ft² 72 63	7.5/P, 0.06/ft² 72 68
Runout duct size: 10 in. dia, Diffusers: 2, CFM/runout: 275, Velocity: 503.5 ft/min, Pressure drop: 0.041 in.wg./100ft							
16	ADP Room #1 - NW 8pm August	341 10 3,410	9,862 820 2.40	4,010 819 2.40	1,620 0 0	7.5/P, 0.06/ft² 95 93	7.5/P, 0.06/ft² 95 93
Runout duct size: 10 in. dia, Diffusers: 3, CFM/runout: 273, Velocity: 501.0 ft/min, Pressure drop: 0.041 in.wg./100ft							
17	Kitchen 8pm August	260 6 2,600	7,592 631 2.43	2,855 583 2.24	6,692 0 0	7.5/P, 0.06/ft² 61 72	7.5/P, 0.06/ft² 61 66
Runout duct size: 10 in. dia, Diffusers: 2, CFM/runout: 316, Velocity: 578.5 ft/min, Pressure drop: 0.053 in.wg./100ft							
1	Plenum 4pm in August	0 0 0	159 0 0	1,432 0 0	0 0 0	None 0 0	None 0 0
	Zone Peak Totals: Total Zones: 3 Unique Zones: 3	799 24 7,990	24,061 2,000 2.50	11,221 2,000 2.50	9,607 0 0	 228 228	 228 228
Main trunk duct size: 16 in. h x 20in. w, Velocity: 900.0 ft/min, Pressure drop: 0.059 in.wg./100ft							

Air Handler #1 - New AHU - Total Load Summary

Air Handler Description: New AHU Constant Volume - Proportion
Sensible Heat Ratio: 0.79 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 8pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 77° DB, 70° WB, 100.88 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	13,075 Btuh			
Infiltration sensible loss:	10,986 Btuh	133 CFM		
Outside Air sensible loss:	18,804 Btuh	228 CFM		
Supply Duct sensible loss:	10,576 Btuh			
Return Duct sensible loss:	6,346 Btuh			
Return Plenum sensible loss:	159 Btuh			
Total System sensible loss:			59,946	Btuh
Heating Supply Air: 34,637 / (.979 X 1.08 X 16) =		2,000 CFM		
Winter Vent Outside Air (11.4% of supply) =		228 CFM		
Zone space sensible gain:	9,776 Btuh			
Infiltration sensible gain:	13 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	6,462 Btuh			
Reserve sensible gain:	20,367 Btuh			
Total sensible gain on supply side of coil:			36,619	Btuh
Cooling Supply Air: 36,619 / (.979 X 1.1 X 17) =		2,000 CFM		
Summer Vent Outside Air (11.4% of supply) =		228 CFM		
Return duct sensible gain:	1,909 Btuh			
Return plenum sensible gain:	279 Btuh			
Outside air sensible gain:	491 Btuh	228 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			2,679	Btuh
Total sensible gain on air handling system:			39,298	Btuh
Zone space latent gain:	9,440 Btuh			
Infiltration latent gain:	167 Btuh			
Outside air latent gain:	5,356 Btuh			
Total latent gain on air handling system:			14,963	Btuh
Total system sensible and latent gain:			54,261	Btuh

Check Figures

Total Air Handler Supply Air (based on a 17° TD):	2,000	CFM
Total Air Handler Vent. Air (11.40% of Supply):	228	CFM
Total Conditioned Air Space:	799	Sq.ft
Supply Air Per Unit Area:	2.5027	CFM/Sq.ft
Area Per Cooling Capacity:	160.2	Sq.ft/Ton
Cooling Capacity Per Area:	0.0062	Tons/Sq.ft
Heating Capacity Per Area:	75.03	Btuh/Sq.ft
Total Heating Required With Outside Air:	59,946	Btuh
Total Cooling Required With Outside Air:	4.99	Tons

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

Air Handler #2 - Existing AHU 3 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
1	Storage/Staff 5pm August	114 0 1,140	3,928 181 1.59	790 57 0.50	124 0 0	7.5/P, 0.06/ft² 7 30	7.5/P, 0.06/ft² 7 10
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 181, Velocity: 519.9 ft/min, Pressure drop: 0.057 in.wg./100ft							
2	Staff Washroom 8pm August	49 0 490	1,320 61 1.24	245 18 0.36	0 0 0	7.5/P, 0.06/ft² 3 10	7.5/P, 0.06/ft² 3 3
Runout duct size: 4 in. dia, Diffusers: 1, CFM/runout: 61, Velocity: 698.8 ft/min, Pressure drop: 0.231 in.wg./100ft							
3	Washroom 1 8pm August	69 0 688	1,928 89 1.30	375 27 0.39	0 0 0	7.5/P, 0.06/ft² 4 15	7.5/P, 0.06/ft² 4 5
Runout duct size: 6 in. dia, Diffusers: 1, CFM/runout: 89, Velocity: 453.8 ft/min, Pressure drop: 0.064 in.wg./100ft							
4	Universal Washroom 1 8pm August	99 0 990	2,371 110 1.11	540 39 0.39	0 0 0	7.5/P, 0.06/ft² 6 18	7.5/P, 0.06/ft² 6 7
Runout duct size: 6 in. dia, Diffusers: 1, CFM/runout: 110, Velocity: 558.0 ft/min, Pressure drop: 0.093 in.wg./100ft							
14	ADP Room #1 - SE 4pm August	651 25 6,510	11,354 525 0.81	9,555 692 1.06	4,523 0 0	7.5/P, 0.06/ft² 227 88	7.5/P, 0.06/ft² 227 116
Runout duct size: 6 in. dia, Diffusers: 5, CFM/runout: 105, Velocity: 534.4 ft/min, Pressure drop: 0.086 in.wg./100ft							
20	Staff Office 1 3pm August	266 4 2,660	8,450 390 1.47	7,093 514 1.93	875 0 0	7.5/P, 0.06/ft² 46 66	7.5/P, 0.06/ft² 46 86
Runout duct size: 8 in. dia, Diffusers: 2, CFM/runout: 195, Velocity: 559.3 ft/min, Pressure drop: 0.065 in.wg./100ft							
21	South Asian Entrance 3pm August	83 0 825	3,686 170 2.06	1,899 138 1.67	79 0 0	7.5/P, 0.06/ft² 5 29	7.5/P, 0.06/ft² 5 23
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 170, Velocity: 487.9 ft/min, Pressure drop: 0.051 in.wg./100ft							
22	Supervisors Office 3pm August	156 2 1,557	6,262 289 1.86	5,928 429 2.76	459 0 0	7.5/P, 0.06/ft² 24 49	7.5/P, 0.06/ft² 24 72
Runout duct size: 10 in. dia, Diffusers: 1, CFM/runout: 289, Velocity: 530.4 ft/min, Pressure drop: 0.045 in.wg./100ft							
33	Waiting SE 8pm August	237 0 2,370	3,988 184 0.78	1,184 86 0.36	0 0 0	7.5/P, 0.06/ft² 14 31	7.5/P, 0.06/ft² 14 14
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 184, Velocity: 527.9 ft/min, Pressure drop: 0.058 in.wg./100ft							

Air Handler #2 - Existing AHU 3 - Summary Loads (cont'd)

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
2	Plenum	0	574	3,183	0	None	None
	4pm in August	0	0	0	0	0	0
		0	0	0	0	0	0
	Zone Peak Totals:	1,723	43,288	30,790	6,060		
	Total Zones: 9	31	2,000	2,000	0	336	336
	Unique Zones: 9	17,229	1.16	1.16	0	336	336

Main trunk duct size: 16 in. h x 20in. w, Velocity: 900.0 ft/min, Pressure drop: 0.058 in.wg./100ft

Air Handler #2 - Existing AHU 3 - Total Load Summary

Air Handler Description: Existing AHU 3 Constant Volume - Proportion
Sensible Heat Ratio: 0.85 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 3pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 88° DB, 72° WB, 94.78 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	38,053	Btuh		
Infiltration sensible loss:	5,235	Btuh	63	CFM
Outside Air sensible loss:	27,708	Btuh	336	CFM
Supply Duct sensible loss:	10,576	Btuh		
Return Duct sensible loss:	6,346	Btuh		
Return Plenum sensible loss:	574	Btuh		
Total System sensible loss:				88,492 Btuh
Heating Supply Air: 53,864 / (.979 X 1.08 X 25) =			2,000	CFM
Winter Vent Outside Air (16.8% of supply) =			336	CFM
Zone space sensible gain:	26,591	Btuh		
Infiltration sensible gain:	889	Btuh		
Draw-thru fan sensible gain:	0	Btuh		
Supply duct sensible gain:	6,463	Btuh		
Reserve sensible gain:	524	Btuh		
Total sensible gain on supply side of coil:				34,467 Btuh
Cooling Supply Air: 34,467 / (.979 X 1.1 X 16) =			2,000	CFM
Summer Vent Outside Air (16.8% of supply) =			336	CFM
Return duct sensible gain:	1,792	Btuh		
Return plenum sensible gain:	3,055	Btuh		
Outside air sensible gain:	4,704	Btuh	336	CFM
Blow-thru fan sensible gain:	0	Btuh		
Total sensible gain on return side of coil:				9,551 Btuh
Total sensible gain on air handling system:				44,018 Btuh
Zone space latent gain:	4,805	Btuh		
Infiltration latent gain:	1,215	Btuh		
Outside air latent gain:	6,431	Btuh		
Total latent gain on air handling system:				12,450 Btuh
Total system sensible and latent gain:				56,468 Btuh

Check Figures

Total Air Handler Supply Air (based on a 16° TD):	2,000	CFM
Total Air Handler Vent. Air (16.80% of Supply):	336	CFM
Total Conditioned Air Space:	1,723	Sq.ft
Supply Air Per Unit Area:	1.1607	CFM/Sq.ft
Area Per Cooling Capacity:	352.3	Sq.ft/Ton
Cooling Capacity Per Area:	0.0028	Tons/Sq.ft
Heating Capacity Per Area:	51.36	Btuh/Sq.ft
Total Heating Required With Outside Air:	88,492	Btuh
Total Cooling Required With Outside Air:	4.89	Tons

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

Air Handler #3 - Existing AHU 4 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
5	Program Room 1 5pm August	198 8 1,980	6,607 380 1.92	2,970 308 1.56	1,455 0 0	7.5/P, 0.06/ft² 72 63	7.5/P, 0.06/ft² 72 51
Runout duct size: 8 in. dia, Diffusers: 2, CFM/runout: 190, Velocity: 544.8 ft/min, Pressure drop: 0.062 in.wg./100ft							
15	ADP Room #1 - Center 4pm August	614 25 6,140	15,275 879 1.43	9,047 939 1.53	4,486 0 0	7.5/P, 0.06/ft² 224 146	7.5/P, 0.06/ft² 224 156
Runout duct size: 8 in. dia, Diffusers: 5, CFM/runout: 176, Velocity: 503.8 ft/min, Pressure drop: 0.054 in.wg./100ft							
23	CEC Office 3pm August	118 2 1,175	5,779 333 2.83	4,563 473 4.03	422 0 0	7.5/P, 0.06/ft² 22 55	7.5/P, 0.06/ft² 22 79
Runout duct size: 10 in. dia, Diffusers: 1, CFM/runout: 333, Velocity: 610.0 ft/min, Pressure drop: 0.058 in.wg./100ft							
24	Richmond Hill Entrance 3pm August	66 0 656	3,655 210 3.21	1,779 185 2.81	63 0 0	7.5/P, 0.06/ft² 4 35	7.5/P, 0.06/ft² 4 31
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 210, Velocity: 602.8 ft/min, Pressure drop: 0.075 in.wg./100ft							
34	Waiting NW 8pm August	183 0 1,830	3,425 197 1.08	914 95 0.52	0 0 0	7.5/P, 0.06/ft² 11 33	7.5/P, 0.06/ft² 11 16
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 197, Velocity: 564.9 ft/min, Pressure drop: 0.066 in.wg./100ft							
3	Plenum 4pm in August	0 0 0	-24 0 0	2,117 0 0	0 0 0	None 0 0	None 0 0
	Zone Peak Totals: Total Zones: 5 Unique Zones: 5	1,178 35 11,781	34,742 2,000 1.70	21,390 2,000 1.70	6,427 0 0	 333 333	 333 333
Main trunk duct size: 16 in. h x 20in. w, Velocity: 900.0 ft/min, Pressure drop: 0.058 in.wg./100ft							

Air Handler #3 - Existing AHU 4 - Total Load Summary

Air Handler Description: Existing AHU 4 Constant Volume - Proportion
Sensible Heat Ratio: 0.83 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 8pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 77° DB, 70° WB, 100.88 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

Because of the diversity in zone, plenum and ventilation loads, the zone sensible peak time in August at 3pm is different from the total system peak time, hence the air system CFM was computed using a zone sensible load of 19,180.

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

Zone Space sensible loss:	21,059 Btuh			
Infiltration sensible loss:	13,682 Btuh	166 CFM		
Outside Air sensible loss:	27,486 Btuh	333 CFM		
Supply Duct sensible loss:	10,576 Btuh			
Return Duct sensible loss:	6,346 Btuh			
Return Plenum sensible loss:	-24 Btuh			
Total System sensible loss:			79,126	Btuh
Heating Supply Air: 45,318 / (.979 X 1.08 X 21) =		2,000 CFM		
Winter Vent Outside Air (16.7% of supply) =		333 CFM		
Zone space sensible gain:	15,079 Btuh			
Infiltration sensible gain:	92 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	6,462 Btuh			
Reserve sensible gain:	6,667 Btuh			
Total sensible gain on supply side of coil:			28,301	Btuh
Cooling Supply Air: 32,310 / (.979 X 1.1 X 15) =		2,000 CFM		
Summer Vent Outside Air (16.7% of supply) =		333 CFM		
Return duct sensible gain:	1,795 Btuh			
Return plenum sensible gain:	458 Btuh			
Outside air sensible gain:	718 Btuh	333 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			2,971	Btuh
Total sensible gain on air handling system:			31,271	Btuh
Zone space latent gain:	5,425 Btuh			
Infiltration latent gain:	1,155 Btuh			
Outside air latent gain:	7,829 Btuh			
Total latent gain on air handling system:			14,409	Btuh
Total system sensible and latent gain:			45,680	Btuh

Check Figures

Total Air Handler Supply Air (based on a 15° TD):	2,000	CFM
Total Air Handler Vent. Air (16.66% of Supply):	333	CFM
Total Conditioned Air Space:	1,178	Sq.ft
Supply Air Per Unit Area:	1.6973	CFM/Sq.ft
Area Per Cooling Capacity:	245.3	Sq.ft/Ton
Cooling Capacity Per Area:	0.0041	Tons/Sq.ft
Heating Capacity Per Area:	67.16	Btuh/Sq.ft
Total Heating Required With Outside Air:	79,126	Btuh
Total Cooling Required With Outside Air:	4.80	Tons

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

Air Handler #4 - Existing AHU 5 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
7	Medication Room 6pm August	116 8 1,155	4,212 341 2.95	2,488 336 2.90	1,356 0 0	7.5/P, 0.06/ft² 67 62	7.5/P, 0.06/ft² 67 61
Runout duct size: 10 in. dia, Diffusers: 1, CFM/runout: 341, Velocity: 624.8 ft/min, Pressure drop: 0.061 in.wg./100ft							
8	Universal Washroom 2 8pm August	90 0 900	2,252 182 2.02	495 67 0.74	0 0 0	7.5/P, 0.06/ft² 5 33	7.5/P, 0.06/ft² 5 12
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 182, Velocity: 521.9 ft/min, Pressure drop: 0.058 in.wg./100ft							
18	Dining Room 4pm August	1,107 45 11,070	25,672 2,077 1.88	16,295 2,197 1.98	8,077 0 0	7.5/P, 0.06/ft² 404 380	7.5/P, 0.06/ft² 404 403
Runout duct size: 10 in. dia, Diffusers: 6, CFM/runout: 346, Velocity: 634.7 ft/min, Pressure drop: 0.063 in.wg./100ft							
4	Plenum 4pm in August	0 0 0	-285 0 0	2,339 0 0	0 0 0	None 0 0	None 0 0
	Zone Peak Totals: Total Zones: 3 Unique Zones: 3	1,313 53 13,125	32,135 2,600 1.98	21,617 2,600 1.98	9,433 0 0	 476 476	 476 476
Main trunk duct size: 16 in. h x 32in. w, Velocity: 731.3 ft/min, Pressure drop: 0.032 in.wg./100ft							

Air Handler #4 - Existing AHU 5 - Total Load Summary

Air Handler Description: Existing AHU 5 Constant Volume - Proportion
Sensible Heat Ratio: 0.84 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 8pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 77° DB, 70° WB, 100.88 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

Because of the diversity in zone, plenum and ventilation loads, the zone sensible peak time in August at 4pm is different from the total system peak time, hence the air system CFM was computed using a zone sensible load of 19,244.

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

Zone Space sensible loss:	15,327 Btuh			
Infiltration sensible loss:	16,808 Btuh	204 CFM		
Outside Air sensible loss:	39,288 Btuh	476 CFM		
Supply Duct sensible loss:	13,749 Btuh			
Return Duct sensible loss:	8,250 Btuh			
Return Plenum sensible loss:	-285 Btuh			
Total System sensible loss:			93,137	Btuh
Heating Supply Air: 45,884 / (.979 X 1.08 X 17) =		2,600 CFM		
Winter Vent Outside Air (18.3% of supply) =		476 CFM		
Zone space sensible gain:	18,849 Btuh			
Infiltration sensible gain:	113 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	8,401 Btuh			
Reserve sensible gain:	22,760 Btuh			
Total sensible gain on supply side of coil:			50,123	Btuh
Cooling Supply Air: 50,404 / (.979 X 1.1 X 18) =		2,600 CFM		
Summer Vent Outside Air (18.3% of supply) =		476 CFM		
Return duct sensible gain:	2,287 Btuh			
Return plenum sensible gain:	415 Btuh			
Outside air sensible gain:	1,026 Btuh	476 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			3,728	Btuh
Total sensible gain on air handling system:			53,851	Btuh
Zone space latent gain:	8,215 Btuh			
Infiltration latent gain:	1,418 Btuh			
Outside air latent gain:	11,191 Btuh			
Total latent gain on air handling system:			20,824	Btuh
Total system sensible and latent gain:			74,675	Btuh

Check Figures

Total Air Handler Supply Air (based on a 18° TD):	2,600	CFM
Total Air Handler Vent. Air (18.32% of Supply):	476	CFM
Total Conditioned Air Space:	1,313	Sq.ft
Supply Air Per Unit Area:	1.9806	CFM/Sq.ft
Area Per Cooling Capacity:	189.1	Sq.ft/Ton
Cooling Capacity Per Area:	0.0053	Tons/Sq.ft
Heating Capacity Per Area:	70.96	Btuh/Sq.ft
Total Heating Required With Outside Air:	93,137	Btuh
Total Cooling Required With Outside Air:	6.94	Tons

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

Air Handler #5 - Existing AHU 6 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
25	Asst. Living 3pm August	68 2 682	3,897 331 4.85	3,162 294 4.31	375 0 0	7.5/P, 0.06/ft² 19 26	7.5/P, 0.06/ft² 19 23
Runout duct size: 10 in. dia, Diffusers: 1, CFM/runout: 331, Velocity: 606.3 ft/min, Pressure drop: 0.058 in.wg./100ft							
26	Supervisors Office 2 3pm August	141 2 1,414	7,087 601 4.25	5,739 533 3.77	445 0 0	7.5/P, 0.06/ft² 23 48	7.5/P, 0.06/ft² 23 42
Runout duct size: 10 in. dia, Diffusers: 2, CFM/runout: 301, Velocity: 551.3 ft/min, Pressure drop: 0.049 in.wg./100ft							
27	Meeting Room 3pm August	159 10 1,591	7,870 668 4.20	8,306 772 4.85	1,702 0 0	7.5/P, 0.06/ft² 85 53	7.5/P, 0.06/ft² 85 61
Runout duct size: 10 in. dia, Diffusers: 2, CFM/runout: 334, Velocity: 612.3 ft/min, Pressure drop: 0.059 in.wg./100ft							
5	Plenum 4pm in August	0 0 0	238 0 0	684 0 0	0 0 0	None 0 0	None 0 0
	Zone Peak Totals: Total Zones: 3 Unique Zones: 3	369 14 3,687	18,853 1,600 4.34	17,891 1,599 4.34	2,523 0 0	 127 127	 127 127
Main trunk duct size: 16 in. h x 16in. w, Velocity: 900.0 ft/min, Pressure drop: 0.067 in.wg./100ft							

Air Handler #5 - Existing AHU 6 - Total Load Summary

Air Handler Description: Existing AHU 6 Constant Volume - Proportion
Sensible Heat Ratio: 0.92 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 3pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 88° DB, 72° WB, 94.78 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	13,785 Btuh			
Infiltration sensible loss:	5,069 Btuh	61 CFM		
Outside Air sensible loss:	10,487 Btuh	127 CFM		
Supply Duct sensible loss:	8,461 Btuh			
Return Duct sensible loss:	5,077 Btuh			
Return Plenum sensible loss:	238 Btuh			
Total System sensible loss:			43,116 Btuh	
Heating Supply Air: 27,314 / (.979 X 1.08 X 16) =		1,600 CFM		
Winter Vent Outside Air (7.9% of supply) =		127 CFM		
Zone space sensible gain:	16,949 Btuh			
Infiltration sensible gain:	258 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	5,169 Btuh			
Reserve sensible gain:	6,913 Btuh			
Total sensible gain on supply side of coil:			29,288 Btuh	
Cooling Supply Air: 29,288 / (.979 X 1.1 X 17) =		1,599 CFM		
Summer Vent Outside Air (7.9% of supply) =		127 CFM		
Return duct sensible gain:	1,586 Btuh			
Return plenum sensible gain:	642 Btuh			
Outside air sensible gain:	1,780 Btuh	127 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			4,008 Btuh	
Total sensible gain on air handling system:			33,297 Btuh	
Zone space latent gain:	2,170 Btuh			
Infiltration latent gain:	353 Btuh			
Outside air latent gain:	2,434 Btuh			
Total latent gain on air handling system:			4,957 Btuh	
Total system sensible and latent gain:			38,253 Btuh	

Check Figures

Total Air Handler Supply Air (based on a 17° TD):	1,599	CFM
Total Air Handler Vent. Air (7.95% of Supply):	127	CFM
Total Conditioned Air Space:	369	Sq.ft
Supply Air Per Unit Area:	4.3385	CFM/Sq.ft
Area Per Cooling Capacity:	99.6	Sq.ft/Ton
Cooling Capacity Per Area:	0.0100	Tons/Sq.ft
Heating Capacity Per Area:	116.96	Btuh/Sq.ft
Total Heating Required With Outside Air:	43,116	Btuh
Total Cooling Required With Outside Air:	3.70	Tons

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

Air Handler #6 - Existing AHU 7 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
9	Washroom 2 8pm August	63 0 625	1,821 97 1.56	344 45 0.72	0 0 0	7.5/P, 0.06/ft² 4 16	7.5/P, 0.06/ft² 4 7
Runout duct size: 6 in. dia, Diffusers: 1, CFM/runout: 97, Velocity: 496.3 ft/min, Pressure drop: 0.075 in.wg./100ft							
10	Washroom 3 8pm August	90 0 900	2,252 120 1.34	495 65 0.72	0 0 0	7.5/P, 0.06/ft² 5 20	7.5/P, 0.06/ft² 5 10
Runout duct size: 6 in. dia, Diffusers: 1, CFM/runout: 120, Velocity: 613.5 ft/min, Pressure drop: 0.110 in.wg./100ft							
11	Washroom 4 8pm August	70 0 700	1,925 103 1.47	385 50 0.72	0 0 0	7.5/P, 0.06/ft² 4 17	7.5/P, 0.06/ft² 4 8
Runout duct size: 6 in. dia, Diffusers: 1, CFM/runout: 103, Velocity: 524.4 ft/min, Pressure drop: 0.083 in.wg./100ft							
19	ADP Room #2 4pm August	971 25 9,710	23,911 1,279 1.32	11,046 1,440 1.48	4,842 0 0	7.5/P, 0.06/ft² 246 207	7.5/P, 0.06/ft² 246 233
Runout duct size: 8 in. dia, Diffusers: 6, CFM/runout: 213, Velocity: 610.8 ft/min, Pressure drop: 0.076 in.wg./100ft							
6	Plenum 4pm in August	0 0 0	-219 0 0	2,128 0 0	0 0 0	None 0 0	None 0 0
	Zone Peak Totals: Total Zones: 4 Unique Zones: 4	1,194 25 11,935	29,908 1,600 1.34	14,397 1,599 1.34	4,842 0 0	 259 259	 259 259
Main trunk duct size: 16 in. h x 16in. w, Velocity: 900.0 ft/min, Pressure drop: 0.066 in.wg./100ft							

Air Handler #6 - Existing AHU 7 - Total Load Summary

Air Handler Description: Existing AHU 7 Constant Volume - Proportion
Sensible Heat Ratio: 0.84 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 8pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 77° DB, 70° WB, 100.88 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

Because of the diversity in zone, plenum and ventilation loads, the zone sensible peak time in August at 4pm is different from the total system peak time, hence the air system CFM was computed using a zone sensible load of 12,217.

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

Zone Space sensible loss:	16,558 Btuh			
Infiltration sensible loss:	13,351 Btuh	162 CFM		
Outside Air sensible loss:	21,375 Btuh	259 CFM		
Supply Duct sensible loss:	8,461 Btuh			
Return Duct sensible loss:	5,077 Btuh			
Return Plenum sensible loss:	-219 Btuh			
Total System sensible loss:			64,602	Btuh
Heating Supply Air: 38,369 / (.979 X 1.08 X 23) =		1,600 CFM		
Winter Vent Outside Air (16.2% of supply) =		259 CFM		
Zone space sensible gain:	11,826 Btuh			
Infiltration sensible gain:	90 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	5,169 Btuh			
Reserve sensible gain:	8,459 Btuh			
Total sensible gain on supply side of coil:			25,543	Btuh
Cooling Supply Air: 25,844 / (.979 X 1.1 X 15) =		1,599 CFM		
Summer Vent Outside Air (16.2% of supply) =		259 CFM		
Return duct sensible gain:	1,444 Btuh			
Return plenum sensible gain:	380 Btuh			
Outside air sensible gain:	558 Btuh	259 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			2,382	Btuh
Total sensible gain on air handling system:			27,926	Btuh
Zone space latent gain:	3,875 Btuh			
Infiltration latent gain:	1,127 Btuh			
Outside air latent gain:	6,089 Btuh			
Total latent gain on air handling system:			11,090	Btuh
Total system sensible and latent gain:			39,016	Btuh

Check Figures

Total Air Handler Supply Air (based on a 15° TD):	1,599	CFM
Total Air Handler Vent. Air (16.20% of Supply):	259	CFM
Total Conditioned Air Space:	1,194	Sq.ft
Supply Air Per Unit Area:	1.3402	CFM/Sq.ft
Area Per Cooling Capacity:	322.9	Sq.ft/Ton
Cooling Capacity Per Area:	0.0031	Tons/Sq.ft
Heating Capacity Per Area:	54.13	Btuh/Sq.ft
Total Heating Required With Outside Air:	64,602	Btuh
Total Cooling Required With Outside Air:	3.70	Tons

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

Air Handler #7 - Existing AHU 8 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
12	Staff Coats 4pm August	60 0 600	2,586 205 3.42	355 113 1.89	60 0 0	7.5/P, 0.06/ft² 4 11	7.5/P, 0.06/ft² 4 6
Runout duct size: 8 in. dia, Diffusers: 1, CFM/runout: 205, Velocity: 588.0 ft/min, Pressure drop: 0.072 in.wg./100ft							
13	Laundry 4pm August	95 0 945	3,611 287 3.03	558 178 1.88	94 0 0	7.5/P, 0.06/ft² 6 15	7.5/P, 0.06/ft² 6 10
Runout duct size: 10 in. dia, Diffusers: 1, CFM/runout: 287, Velocity: 525.4 ft/min, Pressure drop: 0.045 in.wg./100ft							
30	Storage 3pm August	114 0 1,140	4,118 327 2.87	743 237 2.08	109 0 0	7.5/P, 0.06/ft² 7 18	7.5/P, 0.06/ft² 7 13
Runout duct size: 10 in. dia, Diffusers: 1, CFM/runout: 327, Velocity: 599.2 ft/min, Pressure drop: 0.056 in.wg./100ft							
31	Staff Room 5pm August	244 7 2,440	8,393 666 2.73	3,079 981 4.02	1,350 0 0	7.5/P, 0.06/ft² 67 36	7.5/P, 0.06/ft² 67 53
Runout duct size: 10 in. dia, Diffusers: 2, CFM/runout: 333, Velocity: 610.6 ft/min, Pressure drop: 0.058 in.wg./100ft							
32	Staff Washroom 8pm August	45 0 449	1,453 115 2.57	282 90 2.00	0 0 0	7.5/P, 0.06/ft² 3 6	7.5/P, 0.06/ft² 3 5
Runout duct size: 6 in. dia, Diffusers: 1, CFM/runout: 115, Velocity: 587.5 ft/min, Pressure drop: 0.103 in.wg./100ft							
7	Plenum 4pm in August	0 0 0	256 0 0	999 0 0	0 0 0	None 0 0	None 0 0
	Zone Peak Totals: Total Zones: 5 Unique Zones: 5	557 7 5,574	20,160 1,600 2.87	6,016 1,599 2.87	1,613 0 0	 86 86	 86 86
Main trunk duct size: 16 in. h x 16in. w, Velocity: 900.0 ft/min, Pressure drop: 0.067 in.wg./100ft							

Air Handler #7 - Existing AHU 8 - Total Load Summary

Air Handler Description: Existing AHU 8 Constant Volume - Proportion
Sensible Heat Ratio: 0.94 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 3pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 88° DB, 72° WB, 94.78 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

Because of the diversity in zone, plenum and ventilation loads, the zone sensible peak time in August at 4pm is different from the total system peak time, hence the air system CFM was computed using a zone sensible load of 5,011.

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

Zone Space sensible loss:	13,114 Btuh			
Infiltration sensible loss:	7,046 Btuh	85 CFM		
Outside Air sensible loss:	7,090 Btuh	86 CFM		
Supply Duct sensible loss:	8,461 Btuh			
Return Duct sensible loss:	5,077 Btuh			
Return Plenum sensible loss:	256 Btuh			
Total System sensible loss:			41,044	Btuh
Heating Supply Air: 28,622 / (.979 X 1.08 X 17) =		1,600 CFM		
Winter Vent Outside Air (5.4% of supply) =		86 CFM		
Zone space sensible gain:	4,625 Btuh			
Infiltration sensible gain:	359 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	5,168 Btuh			
Reserve sensible gain:	15,659 Btuh			
Total sensible gain on supply side of coil:			25,810	Btuh
Cooling Supply Air: 25,838 / (.979 X 1.1 X 15) =		1,599 CFM		
Summer Vent Outside Air (5.4% of supply) =		86 CFM		
Return duct sensible gain:	1,630 Btuh			
Return plenum sensible gain:	972 Btuh			
Outside air sensible gain:	1,204 Btuh	86 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			3,805	Btuh
Total sensible gain on air handling system:			29,616	Btuh
Zone space latent gain:	1,085 Btuh			
Infiltration latent gain:	490 Btuh			
Outside air latent gain:	1,646 Btuh			
Total latent gain on air handling system:			3,221	Btuh
Total system sensible and latent gain:			32,837	Btuh

Check Figures

Total Air Handler Supply Air (based on a 15° TD):	1,599	CFM
Total Air Handler Vent. Air (5.37% of Supply):	86	CFM
Total Conditioned Air Space:	557	Sq.ft
Supply Air Per Unit Area:	2.8688	CFM/Sq.ft
Area Per Cooling Capacity:	169.4	Sq.ft/Ton
Cooling Capacity Per Area:	0.0059	Tons/Sq.ft
Heating Capacity Per Area:	73.64	Btuh/Sq.ft
Total Heating Required With Outside Air:	41,044	Btuh
Total Cooling Required With Outside Air:	3.29	Tons

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

Air Handler #8 - Existing AHU 9 - Summary Loads

Zn No	Description Zone Peak Time	Area People Volume	Htg.Loss Htg.CFM CFM/Sqft	Sen.Gain Clg.CFM CFM/Sqft	Lat.Gain S.Exh W.Exh	Htg.O.A. Req.CFM Act.CFM	Clg.O.A. Req.CFM Act.CFM
28	Program Room 2	245	10,815	8,931	1,834	5/P, 0.06/ft²	5/P, 0.06/ft²
	3pm August	8	421	612	0	55	55
		2,449	1.72	2.50	0	47	69
Runout duct size: 8 in. dia, Diffusers: 3, CFM/runout: 140, Velocity: 401.8 ft/min, Pressure drop: 0.036 in.wg./100ft							
29	Staff Office 2	331	9,750	2,735	794	5/P, 0.06/ft²	5/P, 0.06/ft²
	4pm August	3	379	187	0	35	35
		3,308	1.15	0.57	0	42	21
Runout duct size: 8 in. dia, Diffusers: 2, CFM/runout: 190, Velocity: 543.3 ft/min, Pressure drop: 0.061 in.wg./100ft							
8	Plenum	0	-87	1,017	0	None	None
	4pm in August	0	0	0	0	0	0
		0	0	0	0	0	0
	Zone Peak Totals:	576	20,565	12,683	2,629		
	Total Zones: 2	11	800	799	0	90	90
	Unique Zones: 2	5,757	1.39	1.39	0	90	90
Main trunk duct size: 14 in. h x 10in. w, Velocity: 822.9 ft/min, Pressure drop: 0.082 in.wg./100ft							

Air Handler #8 - Existing AHU 9 - Total Load Summary

Air Handler Description: Existing AHU 9 Constant Volume - Proportion
Sensible Heat Ratio: 0.85 --- This system occurs 1 time(s) in the building. ---

Air System Peak Time: 3pm in August. Method for finding peak time: Adjusted (based on percent sensible capacity)
Outdoor Conditions: Clg: 88° DB, 72° WB, 94.78 grains, Htg: -6° DB
Indoor Conditions: Clg: 75° DB, 50% RH, Htg: 72° DB

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

Zone Space sensible loss:	12,650 Btuh			
Infiltration sensible loss:	7,915 Btuh	96 CFM		
Outside Air sensible loss:	7,387 Btuh	90 CFM		
Supply Duct sensible loss:	4,231 Btuh			
Return Duct sensible loss:	2,538 Btuh			
Return Plenum sensible loss:	-87 Btuh			
Total System sensible loss:			34,633	Btuh
Heating Supply Air: 24,795 / (.979 X 1.08 X 29) =		800 CFM		
Winter Vent Outside Air (11.2% of supply) =		90 CFM		
Zone space sensible gain:	11,262 Btuh			
Infiltration sensible gain:	403 Btuh			
Draw-thru fan sensible gain:	0 Btuh			
Supply duct sensible gain:	2,582 Btuh			
Reserve sensible gain:	384 Btuh			
Total sensible gain on supply side of coil:			14,632	Btuh
Cooling Supply Air: 14,632 / (.979 X 1.1 X 17) =		799 CFM		
Summer Vent Outside Air (11.2% of supply) =		90 CFM		
Return duct sensible gain:	764 Btuh			
Return plenum sensible gain:	982 Btuh			
Outside air sensible gain:	1,254 Btuh	90 CFM		
Blow-thru fan sensible gain:	0 Btuh			
Total sensible gain on return side of coil:			3,000	Btuh
Total sensible gain on air handling system:			17,632	Btuh
Zone space latent gain:	2,065 Btuh			
Infiltration latent gain:	551 Btuh			
Outside air latent gain:	1,714 Btuh			
Total latent gain on air handling system:			4,330	Btuh
Total system sensible and latent gain:			21,962	Btuh

Check Figures

Total Air Handler Supply Air (based on a 17° TD):	799	CFM
Total Air Handler Vent. Air (11.21% of Supply):	90	CFM
Total Conditioned Air Space:	576	Sq.ft
Supply Air Per Unit Area:	1.3880	CFM/Sq.ft
Area Per Cooling Capacity:	293.8	Sq.ft/Ton
Cooling Capacity Per Area:	0.0034	Tons/Sq.ft
Heating Capacity Per Area:	60.16	Btuh/Sq.ft
Total Heating Required With Outside Air:	34,633	Btuh
Total Cooling Required With Outside Air:	1.96	Tons

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

Zone Detailed Loads (At Zone Peak Times)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Zone 1-Storage/Staff peaks (sensible) in August at 5pm, Air Handler 2 (Existing AHU 3), Group 0, 114.0 x 1.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	114	0.310			177		4.650	530
Wall-1-NE-Type:13	146	0.050	27	29	56		3.900	567
Door-3-NE-Type:13	25	0.050	5	5	9		3.900	96
Partition-2-1	110	0.286	94	0	94		2.860	315
Lights-Prof=1	90	0.700	88	110	199			
Equipment-Prof=1	57	1.000	156	34	189	0		
Floor slab	50						39.000	1,950
Cool. Infil.AC/hr	6				65	124		
Heat. Infil.AC/hr	6						82.495	470
Sub-total					790	124		3,928
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					790	124		3,928
Zone 2-Staff Washroom peaks (sensible) in August at 8pm, Air Handler 2 (Existing AHU 3), Group 0, 49.0 x 1.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	49	0.310			76		4.650	228
Lights-Prof=1	39	0.700	38	49	87			
Equipment-Prof=1	25	1.000	67	15	82	0		
Floor slab	28						39.000	1,092
Sub-total					245	0		1,320
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					245	0		1,320
Zone 3-Washroom 1 peaks (sensible) in August at 8pm, Air Handler 2 (Existing AHU 3), Group 0, 6.3 x 11.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	69	0.310			107		4.650	320
Wall-1-NE-Type:13	63	0.050	14	18	31		3.900	244
Lights-Prof=1	54	0.700	53	69	122			
Equipment-Prof=1	34	1.000	94	21	115	0		
Floor slab	35						39.000	1,365
Sub-total					375	0		1,928
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					375	0		1,928
Zone 4-Universal Washroom 1 peaks (sensible) in August at 8pm, Air Handler 2 (Existing AHU 3), Group 0, 9.0 x 11.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	99	0.310			153		4.650	460
Wall-1-NE-Type:13	90	0.050	20	25	45		3.900	351
Lights-Prof=1	78	0.700	77	99	176			
Equipment-Prof=1	50	1.000	135	30	165	0		
Floor slab	40						39.000	1,560
Sub-total					540	0		2,371

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					540	0		2,371

Zone 5-Program Room 1 peaks (sensible) in August at 5pm, Air Handler 3 (Existing AHU 4), Group 0, 18.0 x 11.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	198	0.310			307		4.650	921
Wall-1-NE-Type:13	159	0.050	29	32	61		3.900	620
Door-2-NE-Type:13	21	0.050	4	4	8		3.900	82
Lights-Prof=1	156	0.700	153	192	345			
Equipment-Prof=1	99	1.000	270	59	329	0		
People-Prof=1	8.0	1.000	784	1,023	1,807	1,240		
Floor slab	58						39.000	2,262
Cool. Infil.AC/hr	10				113	215		
Heat. Infil.AC/hr	33						82.495	2,722
Sub-total					2,970	1,455		6,607
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,970	1,455		6,607

Zone 6-Multi-Purpose Room peaks (sensible) in August at 8pm, Air Handler 1 (New AHU), Group 0, 18.0 x 11.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	198	0.310			307		4.650	921
Wall-1-NE-Type:13	180	0.050	40	51	91		3.900	702
Lights-Prof=1	156	0.700	153	198	351			
Equipment-Prof=1	99	1.000	270	61	331	0		
People-Prof=1	8.0	1.000	784	1,057	1,841	1,240		
Floor slab	58						39.000	2,262
Cool. Infil.CFM/person	2				4	56		
Heat. Infil.AC/hr	33						82.495	2,722
Sub-total					2,925	1,296		6,607
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,925	1,296		6,607

Zone 7-Medication Room peaks (sensible) in August at 6pm, Air Handler 4 (Existing AHU 5), Group 0, 10.5 x 11.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	116	0.310			179		4.650	537
Wall-1-NE-Type:13	105	0.050	22	25	47		3.900	410
Lights-Prof=1	91	0.700	89	113	202			
Equipment-Prof=1	58	1.000	158	35	192	0		
People-Prof=1	8.0	1.000	784	1,034	1,818	1,240		
Floor slab	43						39.000	1,677
Cool. Infil.AC/hr	6				50	116		
Heat. Infil.AC/hr	19						82.495	1,588
Sub-total					2,488	1,356		4,212
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,488	1,356		4,212

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Zone 8-Universal Washroom 2 peaks (sensible) in August at 8pm, Air Handler 4 (Existing AHU 5), Group 0, 9.0 x 10.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	90	0.310			140		4.650	419
Wall-1-NE-Type:13	90	0.050	20	25	45		3.900	351
Lights-Prof=1	71	0.700	70	90	160			
Equipment-Prof=1	45	1.000	123	28	150	0		
Floor slab	38						39.000	1,482
Sub-total					495	0		2,252
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					495	0		2,252
Zone 9-Washroom 2 peaks (sensible) in August at 8pm, Air Handler 6 (Existing AHU 7), Group 0, 6.3 x 10.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	63	0.310			97		4.650	291
Wall-1-NE-Type:13	63	0.050	14	18	31		3.900	244
Lights-Prof=1	49	0.700	48	63	111			
Equipment-Prof=1	31	1.000	85	19	104	0		
Floor slab	33						39.000	1,287
Sub-total					344	0		1,821
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					344	0		1,821
Zone 10-Washroom 3 peaks (sensible) in August at 8pm, Air Handler 6 (Existing AHU 7), Group 0, 9.0 x 10.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	90	0.310			140		4.650	419
Wall-1-NE-Type:13	90	0.050	20	25	45		3.900	351
Lights-Prof=1	71	0.700	70	90	160			
Equipment-Prof=1	45	1.000	123	28	150	0		
Floor slab	38						39.000	1,482
Sub-total					495	0		2,252
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					495	0		2,252
Zone 11-Washroom 4 peaks (sensible) in August at 8pm, Air Handler 6 (Existing AHU 7), Group 0, 7.0 x 10.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	70	0.310			109		4.650	326
Wall-1-NE-Type:13	70	0.050	16	20	35		3.900	273
Lights-Prof=1	55	0.700	54	70	124			
Equipment-Prof=1	35	1.000	96	21	117	0		
Floor slab	34						39.000	1,326
Sub-total					385	0		1,925
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					385	0		1,925

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Zone 12-Staff Coats peaks (sensible) in August at 4pm, Air Handler 7 (Existing AHU 8), Group 0, 6.0 x 10.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	60	0.310			93		4.650	279
Wall-1-NE-Type:13	60	0.050	9	10	19		3.900	234
Lights-Prof=1	47	0.700	46	57	104			
Equipment-Prof=1	30	1.000	82	18	99	0		
Floor slab	32						39.000	1,248
Cool. Infil.AC/hr	3				40	60		
Heat. Infil.AC/hr	10						82.495	825
Sub-total					355	60		2,586
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					355	60		2,586
Zone 13-Laundry peaks (sensible) in August at 4pm, Air Handler 7 (Existing AHU 8), Group 0, 9.0 x 10.5, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	95	0.310			146		4.650	439
Wall-1-NE-Type:13	90	0.050	14	15	29		3.900	351
Lights-Prof=1	75	0.700	73	90	164			
Equipment-Prof=1	47	1.000	129	28	157	0		
Floor slab	39						39.000	1,521
Cool. Infil.AC/hr	5				63	94		
Heat. Infil.AC/hr	16						82.495	1,299
Sub-total					558	94		3,611
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					558	94		3,611
Zone 14-ADP Room #1 - SE peaks (sensible) in August at 4pm, Air Handler 2 (Existing AHU 3), Group 0, 1.0 x 651.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	651	0.310			1,009		4.650	3,027
Partition-1-1	350	0.286	300	0	300		2.860	1,001
Lights-Prof=1	514	0.700	504	623	1,127			
Equipment-Prof=1	326	1.000	889	191	1,079	0		
People-Prof=1	25.0	1.000	2,450	3,159	5,609	3,875		
Floor slab	119						39.000	4,641
Cool. Infil.AC/hr	33				431	648		
Heat. Infil.AC/hr	33						82.495	2,685
Sub-total					9,555	4,523		11,354
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					9,555	4,523		11,354
Zone 15-ADP Room #1 - Center peaks (sensible) in August at 4pm, Air Handler 3 (Existing AHU 4), Group 0, 1.0 x 614.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	614	0.310			952		4.650	2,855
Lights-Prof=1	485	0.700	475	588	1,063			
Equipment-Prof=1	307	1.000	838	180	1,018	0		

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
People-Prof=1	25.0	1.000	2,450	3,159	5,609	3,875		
Floor slab	102						39.000	3,978
Cool. Infil.AC/hr	31				406	611		
Heat. Infil.AC/hr	102						82.495	8,442
Sub-total					9,047	4,486		15,275
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					9,047	4,486		15,275

Zone 16-ADP Room #1 - NW peaks (sensible) in August at 8pm, Air Handler 1 (New AHU), Group 0, 1.0 x 341.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	341	0.310			529		4.650	1,586
Lights-Prof=1	269	0.700	264	341	605			
Equipment-Prof=1	171	1.000	465	105	570	0		
People-Prof=1	10.0	1.000	980	1,321	2,301	1,550		
Floor slab	92						39.000	3,588
Cool. Infil.CFM/person	3				6	70		
Heat. Infil.AC/hr	57						82.495	4,688
Sub-total					4,010	1,620		9,862
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					4,010	1,620		9,862

Zone 17-Kitchen peaks (sensible) in August at 8pm, Air Handler 1 (New AHU), Group 0, 10.0 x 26.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	260	0.310			403		4.650	1,209
Lights-Prof=1	205	0.700	201	260	461			
Equipment-Prof=1	130	1.000	355	80	435	5,000		
People-Prof=1	6.0	1.000	693	860	1,553	1,650		
Floor slab	72						39.000	2,808
Cool. Infil.CFM/person	2				3	42		
Heat. Infil.AC/hr	43						82.495	3,575
Sub-total					2,855	6,692		7,592
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,855	6,692		7,592

Zone 18-Dining Room peaks (sensible) in August at 4pm, Air Handler 4 (Existing AHU 5), Group 0, 27.0 x 41.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	1,107	0.310			1,716		4.650	5,148
Lights-Prof=1	875	0.700	856	1,059	1,916			
Equipment-Prof=1	554	1.000	1,511	325	1,836	0		
People-Prof=1	45.0	1.000	4,410	5,686	10,096	6,975		
Floor slab	136						39.000	5,304
Cool. Infil.AC/hr	55				732	1,102		
Heat. Infil.AC/hr	185						82.495	15,220
Sub-total					16,295	8,077		25,672

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					16,295	8,077		25,672

Zone 19-ADP Room #2 peaks (sensible) in August at 4pm, Air Handler 6 (Existing AHU 7), Group 0, 1.0 x 971.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	971	0.310			1,505		4.650	4,515
Lights-Prof=1	767	0.700	751	929	1,680			
Equipment-Prof=1	486	1.000	1,325	285	1,610	0		
People-Prof=1	25.0	1.000	2,450	3,159	5,609	3,875		
Floor slab	155						39.000	6,045
Cool. Infil.AC/hr	49				642	967		
Heat. Infil.AC/hr	162						82.495	13,351
Sub-total					11,046	4,842		23,911
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					11,046	4,842		23,911

Zone 20-Staff Office 1 peaks (sensible) in August at 3pm, Air Handler 2 (Existing AHU 3), Group 0, 19.7 x 13.5, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	266	0.310			412		4.650	1,237
Wall-1-SW-Type:13	101	0.050	15	12	28		3.900	394
Door-3-SW-Type:13	25	0.050	4	3	7		3.900	96
Partition-2-1	216.7	0.286	186	0	186		2.860	620
Gls-SW-1-0%S	104.0	0.360	2,160	2,330	4,490		23.400	2,434
Unshaded Beam	104.0		0	0	0			
Lights-Prof=1	210	0.700	206	250	456			
Equipment-Prof=1	133	1.000	363	77	440	0		
People-Prof=1	4.0	1.000	392	497	889	620		
Floor slab	66						39.000	2,574
Cool. Infil.AC/hr	13				186	255		
Heat. Infil.AC/hr	13						82.495	1,097
Sub-total					7,093	875		8,450
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					7,093	875		8,450

Zone 21-South Asian Entrance peaks (sensible) in August at 3pm, Air Handler 2 (Existing AHU 3), Group 0, 11.0 x 7.5, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	83	0.310			128		4.650	384
Wall-1-SW-Type:13	149	0.050	22	18	41		3.900	579
Door-2-SW-Type:13	25	0.050	4	3	7		3.900	96
Door-3-SW-Type:13	25	0.050	4	3	7		3.900	96
Gls-SW-1-0%S	32.0	0.360	665	717	1,382		23.400	749
Unshaded Beam	32.0		0	0	0			
Lights-Prof=1	65	0.700	64	78	141			
Equipment-Prof=1	41	1.000	113	24	136	0		
Floor slab	37						39.000	1,443
Cool. Infil.AC/hr	4				58	79		

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Heat. Infil.AC/hr	4						82.495	340
Sub-total					1,899	79		3,686
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,899	79		3,686

Zone 22-Supervisors Office peaks (sensible) in August at 3pm, Air Handler 2 (Existing AHU 3), Group 0, 11.8 x 13.3, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	156	0.310			241		4.650	724
Wall-1-SW-Type:13	119	0.050	18	15	33		3.900	465
Gls-SW-1-0%S	106.0	0.360	2,202	2,375	4,577		23.400	2,480
Unshaded Beam	106.0		0	0	0			
Lights-Prof=1	123	0.700	120	146	267			
Equipment-Prof=1	78	1.000	212	45	257	0		
People-Prof=1	2.0	1.000	196	248	444	310		
Floor slab	50						39.000	1,950
Cool. Infil.AC/hr	8				109	149		
Heat. Infil.AC/hr	8						82.495	642
Sub-total					5,928	459		6,262
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					5,928	459		6,262

Zone 23-CEC Office peaks (sensible) in August at 3pm, Air Handler 3 (Existing AHU 4), Group 0, 11.8 x 10.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	118	0.310			182		4.650	546
Wall-1-SW-Type:13	18	0.050	3	2	5		3.900	68
Gls-SW-1-0%S	80.0	0.360	1,662	1,792	3,454		23.400	1,872
Unshaded Beam	80.0		0	0	0			
Lights-Prof=1	93	0.700	91	110	201			
Equipment-Prof=1	59	1.000	160	34	194	0		
People-Prof=1	2.0	1.000	196	248	444	310		
Floor slab	43						39.000	1,677
Cool. Infil.AC/hr	6				82	112		
Heat. Infil.AC/hr	20						82.495	1,616
Sub-total					4,563	422		5,779
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					4,563	422		5,779

Zone 24-Richmond Hill Entrance peaks (sensible) in August at 3pm, Air Handler 3 (Existing AHU 4), Group 0, 8.1 x 8.1, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	66	0.310			102		4.650	305
Wall-1-SW-Type:13	64	0.050	10	8	17		3.900	248
Door-2-SW-Type:13	42	0.050	6	5	11		3.900	164
Gls-SW-1-0%S	32.0	0.360	665	717	1,382		23.400	749
Unshaded Beam	32.0		0	0	0			
Lights-Prof=1	52	0.700	51	62	112			
Equipment-Prof=1	33	1.000	90	19	108	0		

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Floor slab	33						39.000	1,287
Cool. Infil.AC/hr	3				46	63		
Heat. Infil.AC/hr	11						82.495	902
Sub-total					1,779	63		3,655
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,779	63		3,655

Zone 25-Asst. Living peaks (sensible) in August at 3pm, Air Handler 5 (Existing AHU 6), Group 0, 10.1 x 6.8, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	68	0.310			106		4.650	317
Wall-1-SW-Type:13	14	0.050	2	2	4		3.900	53
Gls-SW-1-0%S	54.0	0.360	1,122	1,210	2,331		23.400	1,264
Unshaded Beam	54.0		0	0	0			
Lights-Prof=1	54	0.700	53	64	117			
Equipment-Prof=1	34	1.000	93	20	113	0		
People-Prof=1	2.0	1.000	196	248	444	310		
Floor slab	34						39.000	1,326
Cool. Infil.AC/hr	3				48	65		
Heat. Infil.AC/hr	11						82.495	937
Sub-total					3,162	375		3,897
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					3,162	375		3,897

Zone 26-Supervisors Office 2 peaks (sensible) in August at 3pm, Air Handler 5 (Existing AHU 6), Group 0, 10.1 x 14.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	141	0.310			219		4.650	658
Wall-1-SW-Type:13	36	0.050	5	4	10		3.900	140
Gls-SW-1-0%S	104.0	0.360	2,160	2,330	4,490		23.400	2,434
Unshaded Beam	104.0		0	0	0			
Lights-Prof=1	112	0.700	109	133	242			
Equipment-Prof=1	71	1.000	193	41	234	0		
People-Prof=1	2.0	1.000	196	248	444	310		
Floor slab	49						39.000	1,911
Cool. Infil.AC/hr	7				99	135		
Heat. Infil.AC/hr	24						82.495	1,944
Sub-total					5,739	445		7,087
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					5,739	445		7,087

Zone 27-Meeting Room peaks (sensible) in August at 3pm, Air Handler 5 (Existing AHU 6), Group 0, 10.1 x 15.8, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	159	0.310			247		4.650	740
Wall-1-SW-Type:13	38	0.050	6	5	10		3.900	146
Gls-SW-1-0%S	120.0	0.360	2,492	2,689	5,181		23.400	2,808
Unshaded Beam	120.0		0	0	0			
Lights-Prof=1	126	0.700	123	150	273			

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Equipment-Prof=1	80	1.000	217	46	263	0		
People-Prof=1	10.0	1.000	980	1,241	2,221	1,550		
Floor slab	51						39.000	1,989
Cool. Infil.AC/hr	8				111	152		
Heat. Infil.AC/hr	27						82.495	2,187
Sub-total					8,306	1,702		7,870
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					8,306	1,702		7,870

Zone 28-Program Room 2 peaks (sensible) in August at 3pm, Air Handler 8 (Existing AHU 9), Group 0, 10.1 x 24.3, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	245	0.310			380		4.650	1,139
Wall-1-SW-Type:13	110	0.050	16	13	30		3.900	427
Gls-SW-1-0%S	133.0	0.360	2,762	2,980	5,742		23.400	3,112
Unshaded Beam	133.0		0	0	0			
Lights-Prof=1	193	0.700	189	230	420			
Equipment-Prof=1	122	1.000	334	71	405	0		
People-Prof=1	8.0	1.000	823	960	1,783	1,600		
Floor slab	71						39.000	2,769
Cool. Infil.AC/hr	12				171	234		
Heat. Infil.AC/hr	41						82.495	3,368
Sub-total					8,931	1,834		10,815
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					8,931	1,834		10,815

Zone 29-Staff Office 2 peaks (sensible) in August at 4pm, Air Handler 8 (Existing AHU 9), Group 0, 24.5 x 13.5, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	331	0.310			513		4.650	1,538
Partition-1-1	245	0.286	210	0	210		2.860	701
Lights-Prof=1	261	0.700	256	316	572			
Equipment-Prof=1	165	1.000	451	97	548	0		
People-Prof=1	3.0	1.000	294	379	673	465		
Floor slab	76						39.000	2,964
Cool. Infil.AC/hr	17				219	329		
Heat. Infil.AC/hr	55						82.495	4,548
Sub-total					2,735	794		9,750
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,735	794		9,750

Zone 30-Storage peaks (sensible) in August at 3pm, Air Handler 7 (Existing AHU 8), Group 0, 9.5 x 12.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	114	0.310			177		4.650	530
Partition-1-1	120	0.286	103	0	103		2.860	343
Lights-Prof=1	90	0.700	88	107	195			
Equipment-Prof=1	57	1.000	156	33	188	0		
Floor slab	43						39.000	1,677

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Cool. Infil.AC/hr	6				80	109		
Heat. Infil.AC/hr	19						82.495	1,567
Sub-total					743	109		4,118
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					743	109		4,118

Zone 31-Staff Room peaks (sensible) in August at 5pm, Air Handler 7 (Existing AHU 8), Group 0, 1.0 x 244.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	244	0.310			378		4.650	1,135
Wall-1-NE-Type:13	168	0.050	31	34	65		3.900	653
Partition-2-1	100	0.286	86	0	86		2.860	286
Lights-Prof=1	193	0.700	189	236	425			
Equipment-Prof=1	122	1.000	333	72	405	0		
People-Prof=1	7.0	1.000	686	895	1,581	1,085		
Floor slab	76						39.000	2,964
Cool. Infil.AC/hr	12				139	265		
Heat. Infil.AC/hr	41						82.495	3,355
Sub-total					3,079	1,350		8,393
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					3,079	1,350		8,393

Zone 32-Staff Washroom peaks (sensible) in August at 8pm, Air Handler 7 (Existing AHU 8), Group 0, 6.7 x 6.7, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	45	0.310			70		4.650	209
Partition-1-1	67	0.286	57	0	57		2.860	192
Lights-Prof=1	35	0.700	35	45	80			
Equipment-Prof=1	22	1.000	61	14	75	0		
Floor slab	27						39.000	1,053
Sub-total					282	0		1,453
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					282	0		1,453

Zone 33-Waiting SE peaks (sensible) in August at 8pm, Air Handler 2 (Existing AHU 3), Group 0, 1.0 x 237.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Plenum, TD: s:5, w:15	237	0.310			367		4.650	1,102
Lights-Prof=1	187	0.700	183	237	420			
Equipment-Prof=1	119	1.000	323	73	396	0		
Floor slab	74						39.000	2,886
Sub-total					1,184	0		3,988
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,184	0		3,988

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Zone 34-Waiting NW peaks (sensible) in August at 8pm, Air Handler 3 (Existing AHU 4), Group 0, 1.0 x 183.0, Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Plenum, TD: s:5, w:15	183	0.310			284		4.650	851
Lights-Prof=1	145	0.700	142	183	325			
Equipment-Prof=1	92	1.000	250	56	306	0		
Floor slab	66						39.000	2,574
Sub-total					914	0		3,425
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					914	0		3,425
Plenum 1- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Pl.Credit Cool., TD: -5	799	0.310			-1,238			
Pl.Credit Heat., TD:-15	799	0.310					-4.650	-3,715
Roof-1-UP-Type:10	800	0.065	411	1,656	2,067		4.095	3,276
Wall-1-NE-Type:13	190	0.050	12	-1	11		3.150	599
Lighting	631				593			
Sub-total					1,432	0		159
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,432	0		159
Plenum 2- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Pl.Credit Cool., TD: -5	1,723	0.310			-2,670			
Pl.Credit Heat., TD:-15	1,723	0.310					-4.650	-8,011
Roof-1-UP-Type:10	1,723	0.065	885	3,566	4,451		4.095	7,056
Wall-1-NE-Type:13	105	0.050	6	0	6		3.150	331
Wall-2-SW-Type:13	325	0.050	58	8	66		3.150	1,024
Partition-3-2	325	0.054	53	0	53		0.540	176
Lighting	1,361				1,278			
Sub-total					3,183	0		574
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					3,183	0		574
Plenum 3- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)								
Pl.Credit Cool., TD: -5	1,178	0.310			-1,826			
Pl.Credit Heat., TD:-15	1,178	0.310					-4.650	-5,478
Roof-1-UP-Type:10	1,178	0.065	605	2,438	3,043		4.095	4,824
Wall-1-NE-Type:13	100	0.050	6	0	6		3.150	315
Wall-2-SW-Type:13	100	0.050	18	3	20		3.150	315
Lighting	931				874			
Sub-total					2,117	0		-24

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,117	0		-24

Plenum 4- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Pl.Credit Cool., TD: -5	1,313	0.310			-2,034			
Pl.Credit Heat., TD:-15	1,313	0.310					-4.650	-6,103
Roof-1-UP-Type:10	1,313	0.065	675	2,717	3,392		4.095	5,377
Wall-1-NE-Type:13	140	0.050	9	-1	8		3.150	441
Lighting	1,037				973			
Sub-total					2,339	0		-285
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,339	0		-285

Plenum 5- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Pl.Credit Cool., TD: -5	369	0.310			-571			
Pl.Credit Heat., TD:-15	369	0.310					-4.650	-1,714
Roof-1-UP-Type:10	369	0.065	190	764	953		4.095	1,511
Wall-1-SW-Type:13	140	0.050	25	4	28		3.150	441
Lighting	291				273			
Sub-total					684	0		238
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					684	0		238

Plenum 6- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Pl.Credit Cool., TD: -5	1,194	0.310			-1,850			
Pl.Credit Heat., TD:-15	1,194	0.310					-4.650	-5,550
Roof-1-UP-Type:10	1,194	0.065	613	2,471	3,084		4.095	4,889
Wall-1-NE-Type:13	140	0.050	9	-1	8		3.150	441
Lighting	943				885			
Sub-total					2,128	0		-219
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,128	0		-219

Plenum 7- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Pl.Credit Cool., TD: -5	557	0.310			-864			
Pl.Credit Heat., TD:-15	557	0.310					-4.650	-2,592
Roof-1-UP-Type:10	557	0.065	286	1,153	1,439		4.095	2,281
Wall-1-NE-Type:13	180	0.050	11	-1	10		3.150	567
Lighting	440				413			

Zone Detailed Loads (At Zone Peak Times) (cont'd)

Load Description	Unit Quan	U.Fac/ Usage	Conv. S.Gain	Radiant S.Gain	Total S.Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Sub-total					999	0		256
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					999	0		256

Plenum 8- peaks in August at 4pm., Construction Type: 11 (Exterior, Medium Construction, No Carpet, 50% Glass)

Pl.Credit Cool., TD: -5	576	0.310			-892			
Pl.Credit Heat., TD:-15	576	0.310					-4.650	-2,677
Roof-1-UP-Type:10	567	0.065	291	1,173	1,465		4.095	2,322
Wall-1-SW-Type:13	85	0.050	15	2	17		3.150	268
Lighting	455				427			
Sub-total					1,017	0		-87
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,017	0		-87