

CECIS TORREON

Location	TORREON COAHUILA
Building owner	INFONAVIT
Program user	ING MEZA
Company	INGENOR
Comments	CONSTRUCCION EN DOS NIVELES A USAR UGAR

By	Trial
Dataset name	C:\Users\AMH\Documents\TRACE 700 Projects\CECIS-TORREON-01 061217.trc

Calculation time	12:04 PM on 12/26/2017
TRACE® 700 version	6.3.2

Location	Torreón, MÚxico	
Latitude	25.3	deg
Longitude	103.3	deg
Time Zone	6	
Elevation	3,684	ft
Barometric pressure	29.8	in. Hg
Air density	0.0759	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	1.1127	Btu/h·cfm·°F
Latent heat factor	4,898.1	Btu·min/h·cu ft
Enthalpy factor	4.5521	lb·min/hr·cu ft
Summer design dry bulb	101.3	°F
Summer design wet bulb	71.6	°F
Winter design dry bulb	44.0	°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	



System Checksums

By Trial

TORREON CECIS UGAR

Variable Temperature Constant Volume

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: 92 / 80 / 136		OADB: Peaks		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Tot Sens Btu/h	(%)	75.0	76.9	0.1	0.1	0.4	
Envelope Loads				Envelope Loads										
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00						
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00						
Roof Cond	44,425	0	44,425	9	44,911	Roof Cond	-13,346	5.90						
Glass Solar	19,342	0	19,342	4	19,342	Glass Solar	0	0.00						
Glass/Door Cond	7,669	0	7,669	2	7,669	Glass/Door Cond	-14,488	6.40						
Wall Cond	12,233	0	12,233	2	11,773	Wall Cond	-9,404	4.16						
Partition/Door	38,097	0	38,097	8	38,202	Partition/Door	-64,304	28.42						
Floor	0	0	0	0	0	Floor	0	0.00						
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0						
Infiltration	0	0	0	0	0	Infiltration	0	0.00						
Sub Total ==>	121,767	0	121,767	24	121,897	Sub Total ==>	-101,543	44.88						
Internal Loads				Internal Loads										
Lights	44,885	9,008	53,893	11	45,160	Lights	0	0.00						
People	112,420	0	112,420	22	60,334	People	0	0.00						
Misc	120,007	0	120,007	24	120,244	Misc	0	0.00						
Sub Total ==>	277,312	9,008	286,320	57	225,737	Sub Total ==>	0	0.00						
Ceiling Load	0	0	0	0	0	Ceiling Load	0	0.00						
Ventilation Load	0	0	88,676	18	0	Ventilation Load	0	0.00						
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	Ov/Undr Sizing	-87,802	38.81						
Ov/Undr Sizing	0	0	0	0	0	Exhaust Heat	0	0.00						
Exhaust Heat	0	-931	0	0	0	OA Preheat Diff.	-14,852	6.56						
Sup. Fan Heat	0	0	9,257	2	0	RA Preheat Diff.	-22,035	9.74						
Ret. Fan Heat	0	0	0	0	0	Additional Reheat	0	0.00						
Duct Heat Pkup	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00						
Underflr Sup Ht Pkup	0	0	0	0	0	Supply Air Leakage	0	0.00						
Supply Air Leakage	0	0	0	0	0									
Grand Total ==>	399,078	8,077	505,089	100.00	347,634	Grand Total ==>	-189,345	100.00						

AIRFLOWS		
	Cooling	Heating
Diffuser	15,622	15,622
Terminal	15,622	15,622
Main Fan	15,622	15,622
Sec Fan	0	0
Nom Vent	1,275	0
AHU Vent	1,275	0
Infil	0	0
MinStop/Rh	0	0
Return	15,622	15,622
Exhaust	1,275	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	8.2	0.0
cfm/ft²	1.83	1.83
cfm/ton	371.14	
ft²/ton	202.84	
Btu/hr-ft²	59.16	0.00
No. People	255	

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	42.1	505.1	388.5	15,622	76.9	64.4	71.0	54.5	53.7	60.5
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	42.1	505.1								

AREAS			
	Gross Total	Glass	(%)
		ft²	
Floor	8,538		
Part	6,375		
Int Door	0		
ExFlr	0		
Roof	4,115	0	0
Wall	1,316	540	41
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	15,622	67.9	80.9
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	0.0			

Zone Checksums

By Trial

PLANTA ALTA

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 7 / 16		Mo/Hr: 6 / 16		Mo/Hr: Heating Design			Cooling			Heating		
Outside Air:		OADB/WB/HR: 92 / 80 / 136		OADB: 92		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
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	0.00						
Skylite Cond	0	0	0	0	0	0	0	0.00						
Roof Cond	44,425	0	44,425	17	44,911	24	-13,346	12.63						
Glass Solar	8,582	0	8,582	3	8,582	5	0	0.00						
Glass/Door Cond	3,410	0	3,410	1	3,410	2	-6,447	6.10						
Wall Cond	3,279	0	3,279	1	3,279	2	-2,912	2.76						
Partition/Door	18,362	0	18,362	7	18,183	10	-30,996	29.33						
Floor	0	0	0	0	0	0	0	0.00						
Adjacent Floor	0	0	0	0	0	0	0	0.00						
Infiltration	0	0	0	0	0	0	0	0.00						
Sub Total ==>	78,058	0	78,058	30	78,365	41	-53,700	50.81						
Internal Loads				Internal Loads										
Lights	21,318	4,394	25,711	10	21,318	11	0	0.00						
People	51,447	0	51,447	20	27,462	15	0	0.00						
Misc	62,176	0	62,176	24	62,176	33	0	0.00						
Sub Total ==>	134,940	4,394	139,334	53	110,955	59	0	0.00						
Ceiling Load	0	0	0	0	0	0	0	0.00						
Ventilation Load	0	0	40,816	16	0	0	0	0.00						
Adj Air Trans Heat	0	0	0	0	0	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	-35,059	33.17						
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00						
Exhaust Heat	0	-380	-380	0	0	0	0	0.00						
Sup. Fan Heat	0	0	5,042	2	0	0	-6,814	6.45						
Ret. Fan Heat	0	0	0	0	0	0	-10,110	9.57						
Duct Heat Pkup	0	0	0	0	0	0	0	0.00						
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00						
Supply Air Leakage	0	0	0	0	0	0	0	0.00						
Grand Total ==>	212,999	4,014	262,870	100.00	189,320	100.00	-88,759	-105,684	100.00					

AIRFLOWS		
	Cooling	Heating
Diffuser	8,508	8,508
Terminal	8,508	8,508
Main Fan	8,508	8,508
Sec Fan	0	0
Nom Vent	585	0
AHU Vent	585	0
Infil	0	0
MinStop/Rh	0	0
Return	8,508	8,508
Exhaust	585	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	6.9	0.0
cfm/ft²	2.07	2.07
cfm/ton	388.37	
ft²/ton	187.85	
Btu/hr-ft²	63.88	0.00
No. People	117	

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	21.9	262.9	209.3	8,508	76.6	64.2	70.0	54.5	53.9	61.2
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	21.9	262.9								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	4,115		
Part	3,073		
Int Door	0		
ExFlr	0		
Roof	4,115	0	0
Wall	481	240	50
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
Main Htg	0.0	8,508	68.2	79.4
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	0.0			

Room Checksums

By Trial

PA TORREON ATENCION PUBLICO ET

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES				
Peaked at Time:		Mo/Hr: 8 / 16		Mo/Hr: 7 / 16		Mo/Hr: Heating Design			Cooling			Heating			
Outside Air:		OADB/WB/HR: 92 / 80 / 138		OADB: 92		OADB: 44			SADB			Ra Plenum			
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict		
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	0.00							
Skylite Cond	0	0	0	0	0	0	0	0.00							
Roof Cond	8,336	0	8,336	17	8,465	22	-2,492	12.23							
Glass Solar	0	0	0	0	0	0	0	0.00							
Glass/Door Cond	0	0	0	0	0	0	0	0.00							
Wall Cond	0	0	0	0	0	0	0	0.00							
Partition/Door	5,786	0	5,786	12	5,674	15	-9,732	47.77							
Floor	0	0	0	0	0	0	0	0.00							
Adjacent Floor	0	0	0	0	0	0	0	0.00							
Infiltration	0	0	0	0	0	0	0	0.00							
Sub Total ==>	14,122	0	14,122	29	14,138	37	-12,224	60.00							
Internal Loads				Internal Loads											
Lights	3,756	939	4,695	10	3,756	10	0	0.00							
People	6,997	0	6,997	14	3,717	10	0	0.00							
Misc	16,907	0	16,907	34	16,907	44	0	0.00							
Sub Total ==>	27,660	939	28,599	58	24,380	63	0	0.00							
Ceiling Load	0	0	0	0	0	0	0	0.00							
Ventilation Load	0	0	5,615	11	0	0	0	0.00							
Adj Air Trans Heat	0	0	0	0	0	0	0	0							
Dehumid. Ov Sizing	0	0	0	0	0	0	-5,835	28.64							
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00							
Exhaust Heat	0	-43	-43	0	0	0	-932	4.57							
Sup. Fan Heat	0	0	1,026	2	0	0	-1,383	6.79							
Ret. Fan Heat	0	0	0	0	0	0	0	0.00							
Duct Heat Pkup	0	0	0	0	0	0	0	0.00							
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00							
Supply Air Leakage	0	0	0	0	0	0	0	0.00							
Grand Total ==>	41,781	896	49,318	100.00	38,518	100.00	-18,059	-20,373	100.00						

AIRFLOWS		
	Cooling	Heating
Diffuser	1,731	1,731
Terminal	1,731	1,731
Main Fan	1,731	1,731
Sec Fan	0	0
Nom Vent	80	0
AHU Vent	80	0
Infil	0	0
MinStop/Rh	0	0
Return	1,731	1,731
Exhaust	80	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	4.6	0.0
cfm/ft²	2.25	2.25
cfm/ton	421.16	
ft²/ton	186.93	
Btu/hr-ft²	64.20	0.00
No. People	16.0	20.8/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	4.1	49.3	42.0	1,731	76.3	63.7	68.4	54.5	54.2	62.4
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	4.1	49.3								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	768		
Part	965		
Int Door	0		
ExFlr	0		
Roof	768	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	1,731	68.8	79.4
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	0.0			

Design Cooling Load Summary

By Trial
CECIS TORREON
TORREON COAHUILA

System - TORREON CECIS UGAR

Zone - PLANTA ALTA

Coil Location - Zone

Coil Peak Calculation Time: July, hour 16

Ambient DB/WB/HR: 92 / 80 / 136

COOLING COIL LOAD INFORMATION

COOLING COIL SELECTION

Load Component	Sensible Btu/h	Latent Btu/h	Total Btu/h	Percent of Total
Solar Gain	8,582		8,582	3.3%
Glass Transmission	3,410		3,410	1.3%
Wall Transmission	3,279		3,279	1.2%
Roof Transmission	44,425		44,425	16.9%
Floor Transmission	0		0	0.0%
Adj Floor Transmission	0		0.00	0.0%
Partition Transmission	18,362		18,362	7.0%
Net Ceiling Load	0		0	0.0%
Lighting	21,318		21,318	8.1%
People	27,462	23,985	51,447	19.6%
Misc. Equipment Loads	62,176	0	62,176	23.7%
Cooling Infiltration	0	0	0	0.0%
Sub-Total ==>	189,014	23,985	212,999	81.0%
Ventilation Load	11,226	29,591	40,816	15.5%
Exhaust Heat	-380	0	-380	-0.1%
Supply Fan Load	5,042		5,042	1.9%
Return Fan Load	0		0	0.0%
Net Duct Heat Pickup	0		0	0.0%
Wall Load to Plenum	0		0	0.0%
Roof Load to Plenum	0		0	0.0%
Adj Floor to Plenum	0		0	0.0%
Lighting Load to Plenum	4,394		4,394	1.7%
Misc. Equip. Load to Plenum	0	0	0	0.0%
Glass Transmission to Plenum	0		0	0.0%
Glass Solar to Plenum	0		0	0.0%
Over/Under Sizing	0		0	0.0%
Reheat at Design	0	0	0	0.0%
Underfloor Sup Heat Pickup	0		0	0.0%
Supply Air Leakage	0	0	0	0.0%
Total Cooling Loads	209,295	53,576	262,870	100.0 %

Coil Selection Parameters	
Coil Entering Air (DB / WB)	76.6 / 64.2 °F
Coil Entering Humidity Ratio	70.04 gr/lb
Coil Leaving Air (DB / WB)	54.5 / 53.9 °F
Coil Leaving Humidity Ratio	61.17 gr/lb
Coil Sensible Load	209.29 MBh
Coil Total Load	262.87 MBh
Cooling Supply Air Temperature	55.00 °F
Total Cooling Airflow	8,507.50 cfm
Resulting Room Relative Humidity	50.00 %

General Engineering Checks

Total Cooling Load	21.9 ton
Area / Load	187.85 ft²/ton
Total Floor Area	4,115 ft²
Cooling Airflow	2.07 cfm/ft²
Airflow / Load	388.37 cfm/ton
Percent Outdoor Air	6.9 %
Cooling Load Methodology	CLTD-CLF (ASHRAE TFM)

System Component Selection Summary

By Trial

Alternative 1

System Description: TORREON CECIS UGAR

System Type: Variable Temperature Constant Volume

Number of Zones: 2

Number of Rooms: 12

Component	Sizing Method	Location	Quantity
Cooling			
Main Clg Coil	Peak	Zone	2
Primary Clg Fan	Peak	Zone	2
Heating			
Main Htg Coil	Peak	Zone	2
Miscellaneous			
System Exhaust Fan	Vent+Inf-RmExh	System	1
Return Fan	Return Airflow	System	1

Coil Location			Cooling Coil Selection											
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity ton MBh		Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ WB/ HR °F °F gr/lb			Leave DB/ WB/ HR °F °F gr/lb		
		PLANTA ALTA	Main Clg Coil	7/16	21.9	262.9	209.3	8,508	76.6	64.2	70.0	54.5	53.9	61.2
		PLANTA BAJA	Main Clg Coil	7/17	20.2	242.2	179.2	7,114	77.2	64.8	72.1	54.5	53.5	59.6

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
		PLANTA ALTA	Main Htg Coil	0.0	8,508	68.2	79.4
		PLANTA BAJA	Main Htg Coil	0.0	7,114	67.5	82.7

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow cfm Ach/hr		Outside Air %	SADB Clg Htg °F °F		Clg VAV Minimum cfm	Htg VAV Maximum cfm
TORREON CECIS UGAR			Optional Vent Fan	1,275		100				
TORREON CECIS UGAR			Return Fan	15,622						
TORREON CECIS UGAR			System Exhaust Fan	1,275						
		PLANTA ALTA	Primary Fan	8,508		6.9	55.0			
		PA TORREON ATENCION PUBLICO ET	Diffuser	1,731	11.0	4.6	55.0	79.0		
		PA TORREON ATENCION PUBLICO SE	Diffuser	3,044	7.0	10.7	55.0	79.0		
		PA TORREON ATENCION PUBLICO SJ	Diffuser	1,936	15.6	6.2	55.0	79.0		
		PA TORREON PR 1	Diffuser	474	15.3	3.2	55.0	79.0		
		PA TORREON PR 2	Diffuser	425	13.7	3.5	55.0	79.0		
		PA TORREON PR 3	Diffuser	425	13.7	3.5	55.0	79.0		

Project Name: CECIS TORREON
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ZONE PSYCHROMETRIC STATE POINTS

By Trial

PLANTA ALTA

	Dry Bulb °F	Wet Bulb °F	Relative Humidity %	Humidity Ratio gr/lb	Enthalpy Btu/lb	Temperature Difference °F
Space	75.0	62.5	50.0	65.1	28.2	
Main System						
Return Fan						0.0
Return Air	75.5	62.7	49.2	65.1	28.3	
Return Air Heat Pickup						0.5
Outdoor Air	91.7	79.6	59.4	134.6	43.2	
Entering OA preconditioning	91.7	79.6	59.4	134.6	43.2	
Leaving OA preconditioning	91.7	79.6	59.4	134.6	43.2	
Return/Outdoor Air Mix	76.6	64.1	50.9	69.9	29.3	
Blow Through Fan						0.0
Entering Coil	76.6	64.1	50.9	69.9	29.3	
Leaving Coil	54.5	53.0	91.2	57.8	22.0	
Draw Through Fan						0.2
Fan Frictional Heat						0.4
Supply Duct Heat Gain						0.0
Reheat Device						0.0
Cold Deck Supply Air	55.0	53.2	89.4	57.8	22.2	
Supply Air	55.0	53.2	89.4	57.8	22.2	
Percent Outside Air	6.88					
Sensible Heat Ratio (SHR)	0.89	%				
Coil Airflow	8,508	cfm				

ZONE PSYCHROMETRIC STATE POINTS

By Trial

PLANTA BAJA

	Dry Bulb °F	Wet Bulb °F	Relative Humidity %	Humidity Ratio gr/lb	Enthalpy Btu/lb	Temperature Difference °F
Space	75.0	62.5	50.0	65.1	28.2	
Main System						
Return Fan						0.0
Return Air	75.6	62.8	49.0	65.1	28.3	
Return Air Heat Pickup						0.6
Outdoor Air	90.6	79.4	61.5	134.7	42.9	
Entering OA preconditioning	90.6	79.4	61.5	134.7	42.9	
Leaving OA preconditioning	90.6	79.4	61.5	134.7	42.9	
Return/Outdoor Air Mix	77.1	64.7	51.5	71.8	29.7	
Blow Through Fan						0.0
Entering Coil	77.1	64.7	51.5	71.8	29.7	
Leaving Coil	54.5	53.1	91.9	58.3	22.1	
Draw Through Fan						0.2
Fan Frictional Heat						0.4
Supply Duct Heat Gain						0.0
Reheat Device						0.0
Cold Deck Supply Air	55.0	53.3	90.1	58.3	22.2	
Supply Air	55.0	53.3	90.1	58.3	22.2	
Percent Outside Air	9.70					
Sensible Heat Ratio (SHR)	0.85	%				
Coil Airflow	7,114	cfm				

System Component Selection Summary

By Trial

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
		PA TORREON PR 4	Diffuser	474	15.3	3.2	55.0	79.0		
		PLANTA BAJA	Primary Fan	7,114		9.7	55.0			
		PB TORREON AVI	Diffuser	4,605	6.2	11.9	55.0	83.0		
		PB TORREON CGE	Diffuser	402	13.1	3.7	55.0	83.0		
		PB TORREON CO	Diffuser	428	9.6	9.4	55.0	83.0		
		PB TORREON PR	Diffuser	402	13.1	3.7	55.0	83.0		
		PB TORREON SJ	Diffuser	1,278	20.4	5.5	55.0	83.0		

Design Cooling Load Summary

By Trial
CECIS TORREON
TORREON COAHUILA

System - TORREON CECIS UGAR

Zone - PLANTA BAJA

Coil Location - Zone

Coil Peak Calculation Time: July, hour 17
Ambient DB/WB/HR: 91 / 80 / 136

COOLING COIL LOAD INFORMATION

COOLING COIL SELECTION

Load Component	Sensible Btu/h	Latent Btu/h	Total Btu/h	Percent of Total
Solar Gain	10,760		10,760	4.4%
Glass Transmission	4,259		4,259	1.8%
Wall Transmission	8,954		8,954	3.7%
Roof Transmission	0		0	0.0%
Floor Transmission	0		0	0.0%
Adj Floor Transmission	0		0.00	0.0%
Partition Transmission	19,735		19,735	8.1%
Net Ceiling Load	0		0	0.0%
Lighting	23,568		23,568	9.7%
People	32,683	28,290	60,973	25.2%
Misc. Equipment Loads	57,831	0	57,831	23.9%
Cooling Infiltration	0	0	0	0.0%
Sub-Total ==>	157,790	28,290	186,080	76.8%
Ventilation Load	13,102	34,758	47,860	19.8%
Exhaust Heat	-551	0	-551	-0.2%
Supply Fan Load	4,216		4,216	1.7%
Return Fan Load	0		0	0.0%
Net Duct Heat Pickup	0		0	0.0%
Wall Load to Plenum	0		0	0.0%
Roof Load to Plenum	0		0	0.0%
Adj Floor to Plenum	0		0	0.0%
Lighting Load to Plenum	4,614		4,614	1.9%
Misc. Equip. Load to Plenum	0	0	0	0.0%
Glass Transmission to Plenum	0		0	0.0%
Glass Solar to Plenum	0		0	0.0%
Over/Under Sizing	0		0	0.0%
Reheat at Design	0	0	0	0.0%
Underfloor Sup Heat Pickup	0		0	0.0%
Supply Air Leakage	0	0	0	0.0%
Total Cooling Loads	179,171	63,048	242,218	100.0 %

Coil Selection Parameters	
Coil Entering Air (DB / WB)	77.2 / 64.8 °F
Coil Entering Humidity Ratio	72.05 gr/lb
Coil Leaving Air (DB / WB)	54.5 / 53.5 °F
Coil Leaving Humidity Ratio	59.61 gr/lb
Coil Sensible Load	179.17 MBh
Coil Total Load	242.22 MBh
Cooling Supply Air Temperature	55.00 °F
Total Cooling Airflow	7,114.18 cfm
Resulting Room Relative Humidity	50.00 %

General Engineering Checks

Total Cooling Load	20.2 ton
Area / Load	219.11 ft ² /ton
Total Floor Area	4,423 ft ²
Cooling Airflow	1.61 cfm/ft ²
Airflow / Load	352.45 cfm/ton
Percent Outdoor Air	9.7 %
Cooling Load Methodology	CLTD-CLF (ASHRAE TFM)

Room Checksums

By Trial

PA TORREON ATENCION PUBLICO SE

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 8 / 16		Mo/Hr: 7 / 16		Mo/Hr: Heating Design			Cooling			Heating		
Outside Air:		OADB/WB/HR: 92 / 80 / 138		OADB: 92		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
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	0.00						
Skylite Cond	0	0	0	0	0	0	0	0.00						
Roof Cond	23,357	0	23,357	22	23,715	35	-6,932	16.84						
Glass Solar	0	0	0	0	0	0	0	0.00						
Glass/Door Cond	0	0	0	0	0	0	0	0.00						
Wall Cond	0	0	0	0	0	0	0	0.00						
Partition/Door	3,479	0	3,479	3	3,412	5	-5,831	14.17						
Floor	0	0	0	0	0	0	0	0.00						
Adjacent Floor	0	0	0	0	0	0	0	0.00						
Infiltration	0	0	0	0	0	0	0	0.00						
<i>Sub Total ==></i>	26,836	0	26,836	25	27,126	40	-12,764	31.01						
Internal Loads				Internal Loads										
Lights	10,896	2,724	13,620	13	10,896	16	0	0.00						
People	28,720	0	28,720	27	15,395	23	0	0.00						
Misc	14,319	0	14,319	13	14,319	21	0	0.00						
<i>Sub Total ==></i>	53,935	2,724	56,659	53	40,610	60	0	0.00						
Ceiling Load	0	0	0	0	0	0	0	0.00						
Ventilation Load	0	0	22,812	21	0	0	0	0.00						
Adj Air Trans Heat	0	0	0	0	0	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	-18,993	46.15						
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00						
Exhaust Heat	0	-291	-291	0	0	0	-3,786	9.20						
Sup. Fan Heat	0	0	1,804	2	0	0	-5,617	13.65						
Ret. Fan Heat	0	0	0	0	0	0	0	0.00						
Duct Heat Pkup	0	0	0	0	0	0	0	0.00						
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00						
Supply Air Leakage	0	0	0	0	0	0	0	0.00						
Grand Total ==>	80,771	2,433	107,820	100.00	67,736	100.00	-31,757	41.159						

AIRFLOWS		
	Cooling	Heating
Diffuser	3,044	3,044
Terminal	3,044	3,044
Main Fan	3,044	3,044
Sec Fan	0	0
Nom Vent	325	0
AHU Vent	325	0
Infil	0	0
MinStop/Rh	0	0
Return	3,044	3,044
Exhaust	325	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	10.7	0.0
cfm/ft²	1.42	1.42
cfm/ton	338.77	
ft²/ton	237.89	
Btu/hr-ft²	50.44	0.00
No. People	65.0	30.4/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	9.0	107.8	78.0	3,044	77.6	65.0	72.8	54.5	53.3	59.1
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	9.0	107.8								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	2,137		
Part	578		
Int Door	0		
ExFlr	0		
Roof	2,137	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	3,044	67.2	79.4
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	0.0			

Room Checksums

By Trial

PA TORREON ATENCION PUBLICO SJ

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 8 / 16		Mo/Hr: 8 / 16		Mo/Hr: Heating Design			Cooling			Heating		
Outside Air:		OADB/WB/HR: 92 / 80 / 138		OADB: 92		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h							
Envelope Loads				Envelope Loads										
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00						
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00						
Roof Cond	6,532	0	6,532	11	6,532	Roof Cond	-1,962	8.29						
Glass Solar	0	0	0	0	0	Glass Solar	0	0.00						
Glass/Door Cond	0	0	0	0	0	Glass/Door Cond	0	0.00						
Wall Cond	0	0	0	0	0	Wall Cond	0	0.00						
Partition/Door	6,649	0	6,649	11	6,649	Partition/Door	-11,210	47.36						
Floor	0	0	0	0	0	Floor	0	0.00						
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0.00						
Infiltration	0	0	0	0	0	Infiltration	0	0.00						
<i>Sub Total ==></i>	13,181	0	13,181	23	13,181	<i>Sub Total ==></i>	-13,172	55.65						
Internal Loads				Internal Loads										
Lights	2,923	731	3,653	6	2,923	Lights	0	0.00						
People	10,465	0	10,465	18	5,545	People	0	0.00						
Misc	21,433	0	21,433	37	21,433	Misc	0	0.00						
<i>Sub Total ==></i>	34,820	731	35,551	61	29,900	<i>Sub Total ==></i>	0	0.00						
Ceiling Load	0	0	0	0	0	Ceiling Load	0	0.00						
Ventilation Load	0	0	8,423	14	0	Ventilation Load	0	0.00						
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	Ov/Undr Sizing	-7,026	29.68						
Ov/Undr Sizing	0	0	0	0	0	Exhaust Heat	0	0.00						
Exhaust Heat	0	-45	-45	0	0	OA Preheat Diff.	-1,398	5.91						
Sup. Fan Heat	0	0	1,147	2	0	RA Preheat Diff.	-2,074	8.76						
Ret. Fan Heat	0	0	0	0	0	Additional Reheat	0	0.00						
Duct Heat Pkup	0	0	0	0	0	System Plenum Heat	0	0.00						
Underflr Sup Ht Pkup	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00						
Supply Air Leakage	0	0	0	0	0	Supply Air Leakage	0	0.00						
Grand Total ==>	48,001	685	58,256	100.00	43,081	Grand Total ==>	-20,198	100.00						

AIRFLOWS		
	Cooling	Heating
Diffuser	1,936	1,936
Terminal	1,936	1,936
Main Fan	1,936	1,936
Sec Fan	0	0
Nom Vent	120	0
AHU Vent	120	0
Infil	0	0
MinStop/Rh	0	0
Return	1,936	1,936
Exhaust	120	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	6.2	0.0
cfm/ft²	3.20	3.20
cfm/ton	398.78	
ft²/ton	124.63	
Btu/hr-ft²	96.28	0.00
No. People	24.0	39.7/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	4.9	58.3	47.2	1,936	76.4	64.0	69.6	54.5	54.0	61.5
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	4.9	58.3								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	605		
Part	1,111		
Int Door	0		
ExFlr	0		
Roof	605	0	0
Wall	0	0	0
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	1,936	68.4	79.4
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	0.0			

Room Checksums

By Trial

PA TORREON PR 1

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design			Cooling			Heating		
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	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	0.00	0	0	0	0	0	
Skylite Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	
Roof Cond	1,540	0	1,540	12	1,540	15	-490	9.11	-490	-490	0.1	0.0	0.0	
Glass Solar	2,118	0	2,118	17	2,118	20	0	0.00	0	0	0.1	0.0	0.0	
Glass/Door Cond	849	0	849	7	849	8	-1,612	29.98	-1,612	-1,612	0.1	0.0	0.0	
Wall Cond	817	0	817	7	817	8	-728	13.54	-728	-728	0.4	0.0	0.0	
Partition/Door	1,224	0	1,224	10	1,224	12	-2,112	39.29	-2,112	-2,112				
Floor	0	0	0	0	0	0	0	0.00	0	0				
Adjacent Floor	0	0	0	0	0	0	0	0.00	0	0				
Infiltration	0	0	0	0	0	0	0	0.00	0	0				
Sub Total ==>	6,549	0	6,549	53	6,549	62	-4,941	91.93	-4,941	-4,941				
Internal Loads				Internal Loads										
Lights	925	0	925	7	925	9	0	0.00	0	0				
People	1,313	0	1,313	11	698	7	0	0.00	0	0				
Misc	2,368	0	2,368	19	2,368	22	0	0.00	0	0				
Sub Total ==>	4,605	0	4,605	37	3,990	38	0	0.00	0	0				
Ceiling Load	0	0	0	0	0	0	0	0.00	0	0				
Ventilation Load	0	0	992	8	0	0	0	0.00	0	0				
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0	0				
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00	0	0				
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	0	0				
Exhaust Heat	0	0	0	0	0	0	0	0.00	0	0				
Sup. Fan Heat	0	0	281	2	0	0	-175	3.25	-175	-175				
Ret. Fan Heat	0	0	0	0	0	0	-259	4.82	-259	-259				
Duct Heat Pkup	0	0	0	0	0	0	0	0.00	0	0				
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00	0	0				
Supply Air Leakage	0	0	0	0	0	0	0	0.00	0	0				
Grand Total ==>	11,154	0	12,427	100.00	10,539	100.00	-4,941	100.00	-5,375	-5,375				

AIRFLOWS		
	Cooling	Heating
Diffuser	474	474
Terminal	474	474
Main Fan	474	474
Sec Fan	0	0
Nom Vent	15	0
AHU Vent	15	0
Infil	0	0
MinStop/Rh	0	0
Return	474	474
Exhaust	15	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	3.2	0.0
cfm/ft²	3.14	3.14
cfm/ton	457.35	
ft²/ton	145.86	
Btu/hr-ft²	82.27	0.00
No. People	3.0	19.9/1000 ft²

COOLING COIL SELECTION										
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			
	ton	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb	
Main Clg	1.0	12.4	11.1	474	75.5	63.2	67.3	54.5	54.4	63.2
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	1.0	12.4								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	151		
Part	209		
Int Door	0		
ExFlr	0		
Roof	151	0	0
Wall	120	60	50
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	474	69.2	79.4
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	0.0			

Room Checksums

By Trial

PA TORREON PR 2

COOLING COIL PEAK					CLG SPACE PEAK					HEATING COIL PEAK					TEMPERATURES				
Peaked at Time:		Mo/Hr: 6 / 17			Mo/Hr: 6 / 17		Mo/Hr: Heating Design						Cooling			Heating			
Outside Air:		OADB/WB/HR: 91 / 79 / 135			OADB: 91		OADB: 44						SADB	55.0	79.4	Ra Plenum	75.0	70.0	
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Space Sens	Tot Sens	Percent Of Total	Return	75.0	70.0	Ret/OA	75.6	70.0		
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)	Fn MtrTD	0.1	0.0	Fn BldTD	0.1	0.0		
Envelope Loads					Envelope Loads										AIRFLOWS				
Skylite Solar	0	0	0	0	0	0	0	0.00	0	0	0.00	Diffuser	425	425	Terminal	425	425		
Skylite Cond	0	0	0	0	0	0	0	0.00	0	0	0.00	Main Fan	425	425	Sec Fan	0	0		
Roof Cond	1,559	0	1,559	14	1,559	16	-490	10.07	-490	-490	10.07	Nom Vent	15	0	AHU Vent	15	0		
Glass Solar	2,173	0	2,173	19	2,173	23	0	0.00	0	0	0.00	Infil	0	0	MinStop/Rh	0	0		
Glass/Door Cond	856	0	856	8	856	9	-1,612	33.12	-1,612	-1,612	33.12	Return	425	425	Exhaust	15	0		
Wall Cond	822	0	822	7	822	9	-728	14.96	-728	-728	14.96	Rm Exh	0	0	Auxiliary	0	0		
Partition/Door	0	0	0	0	0	0	0	0.00	0	0	0.00	Leakage Dwn	0	0	Leakage Ups	0	0		
Floor	0	0	0	0	0	0	0	0.00	0	0	0.00	ENGINEERING CKS							
Adjacent Floor	0	0	0	0	0	0	0	0.00	0	0	0.00	% OA	3.5	0.0	cfm/ft²	2.81	2.81		
Infiltration	0	0	0	0	0	0	0	0.00	0	0	0.00	cfm/ton	450.65		ft²/ton	160.24			
Sub Total ==>	5,411	0	5,411	48	5,411	57	-2,830	58.15	-2,830	-2,830	58.15	Btu/hr-ft²	74.89	0.00	No. People				
Internal Loads					Internal Loads										3.0	19.9/1000 ft²			
Lights	947	0	947	8	947	10	0	0.00	0	0	0.00								
People	1,320	0	1,320	12	705	7	0	0.00	0	0	0.00								
Misc	2,390	0	2,390	21	2,390	25	0	0.00	0	0	0.00								
Sub Total ==>	4,658	0	4,658	41	4,043	43	0	0.00	0	0	0.00								
Ceiling Load					Ceiling Load														
Ventilation Load	0	0	992	9	0	0	0	0.00	0	0	0.00								
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0	0	0								
Dehumid. Ov Sizing	0	0	0	0	0	0	-1,603	32.93	-1,603	-1,603	32.93								
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	0	0	0.00								
Exhaust Heat	0	0	0	0	0	0	0	0.00	0	0	0.00								
Sup. Fan Heat	0	0	252	2	0	0	-175	3.59	-175	-175	3.59								
Ret. Fan Heat	0	0	0	0	0	0	-259	5.33	-259	-259	5.33								
Duct Heat Pkup	0	0	0	0	0	0	0	0.00	0	0	0.00								
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00	0	0	0.00								
Supply Air Leakage	0	0	0	0	0	0	0	0.00	0	0	0.00								
Grand Total ==>	10,068	0	11,312	100.00	9,453	100.00	-4,432		-4,866	-4,866	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	gr/lb	°F	°F	gr/lb		ft² (%)	MBh	cfm	°F	°F			
Main Clg	0.9	11.3	10.0	425	75.6	63.3	67.5	54.5	54.3	63.0	Floor	151	0.0	425	69.1	79.4	
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	0	0.0	0	0.0	0.0	
Total	0.9	11.3									Roof	151	0	0	0.0	0.0	
											Wall	120	60	50	0.0	0.0	
											Ext Door	0	0	0	0.0	0.0	
											Total	0.0					

Room Checksums

By Trial

PA TORREON PR 3

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design						Cooling	Heating	
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44						SADB	55.0	79.4
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Space Sens	Tot Sens	Percent Of Total	Ra Plenum	75.0	70.0
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		Btu/h	Btu/h		Return	75.0	70.0
Envelope Loads				Envelope Loads				Envelope Loads				Fn MtrTD	0.1	0.0
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	Skylite Solar	0	0.00	Fn BldTD	0.1	0.0
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	Skylite Cond	0	0.00	Fn Frict	0.4	0.0
Roof Cond	1,559	0	1,559	14	1,559	16	Roof Cond	10.07	Roof Cond	-490	-490	AIRFLOWS		
Glass Solar	2,173	0	2,173	19	2,173	23	Glass Solar	0.00	Glass Solar	0	0.00	Diffuser	425	425
Glass/Door Cond	856	0	856	8	856	9	Glass/Door Cond	33.12	Glass/Door Cond	-1,612	-1,612	Terminal	425	425
Wall Cond	822	0	822	7	822	9	Wall Cond	14.96	Wall Cond	-728	-728	Main Fan	425	425
Partition/Door	0	0	0	0	0	0	Partition/Door	0.00	Partition/Door	0	0.00	Sec Fan	0	0
Floor	0	0	0	0	0	0	Floor	0.00	Floor	0	0.00	Nom Vent	15	0
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0.00	Adjacent Floor	0	0.00	AHU Vent	15	0
Infiltration	0	0	0	0	0	0	Infiltration	0.00	Infiltration	0	0.00	Infil	0	0
Sub Total ==>	5,411	0	5,411	48	5,411	57	Sub Total ==>	58.15	Sub Total ==>	-2,830	-2,830	MinStop/Rh	0	0
Internal Loads				Internal Loads				Internal Loads				Return	425	425
Lights	947	0	947	8	947	10	Lights	0.00	Lights	0	0.00	Exhaust	15	0
People	1,320	0	1,320	12	705	7	People	0.00	People	0	0.00	Rm Exh	0	0
Misc	2,390	0	2,390	21	2,390	25	Misc	0.00	Misc	0	0.00	Auxiliary	0	0
Sub Total ==>	4,658	0	4,658	41	4,043	43	Sub Total ==>	0.00	Sub Total ==>	0	0.00	Leakage Dwn	0	0
Ceiling Load				Ceiling Load				Ceiling Load				Leakage Ups	0	0
Ventilation Load	0	0	992	9	0	0	Ventilation Load	0.00	Ventilation Load	0	0.00	ENGINEERING CKS		
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	Adj Air Trans Heat	0	0	% OA	3.5	0.0
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	32.93	Ov/Undr Sizing	-1,603	-1,603	cfm/ft²	2.81	2.81
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	0.00	OA Preheat Diff.	-175	3.59	cfm/ton	450.65	
Exhaust Heat	0	0	0	0	0	0	OA Preheat Diff.	5.33	RA Preheat Diff.	-259	5.33	ft²/ton	160.24	
Sup. Fan Heat	0	252	2	0	0	0	Additional Reheat	0.00	System Plenum Heat	0	0.00	Btu/hr-ft²	74.89	0.00
Ret. Fan Heat	0	0	0	0	0	0	Underflr Sup Ht Pkup	0.00	Supply Air Leakage	0	0.00	No. People	3.0	19.9/1000 ft²
Duct Heat Pkup	0	0	0	0	0	0	Supply Air Leakage	0.00						
Underflr Sup Ht Pkup	0	0	0	0	0	0	Grand Total ==>	100.00	Grand Total ==>	-4,432	-4,866			
Supply Air Leakage	0	0	0	0	0	0	Grand Total ==>	100.00	Grand Total ==>	-4,432	-4,866			
Grand Total ==>	10,068	0	11,312	100.00	9,453	100.00	Grand Total ==>	100.00	Grand Total ==>	-4,432	-4,866			

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION					
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	Lvg	Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh			MBh	cfm	°F	°F	gr/lb	°F								°F
Main Clg	0.9	11.3	10.0	425	75.6	63.3	67.5	54.5	54.3	63.0	Floor	151		Main Htg	0.0	425	69.1	79.4
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	0.0	0	0.0	0.0
											ExFlr	0						
Total	0.9	11.3									Roof	151	0	Humidif	0.0	0	0.0	0.0
											Wall	120	60	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	Total	0.0			

Room Checksums

By Trial

PA TORREON PR 4

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES					
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design			Cooling		Heating	SADB	55.0	79.4		
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44			Ra Plenum		75.0	70.0	Return	75.0	70.0	
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Ret/OA <td colspan="1">75.5</td> <td colspan="1">70.0</td> <th>Fn MtrTD <td colspan="1">0.1</td> <td colspan="1">0.0</td> </th>	75.5	70.0	Fn MtrTD <td colspan="1">0.1</td> <td colspan="1">0.0</td>	0.1	0.0		
Btu/h	Btu/h	Btu/h		Btu/h		Space Sens	Tot Sens		Fn BldTD	0.1	0.0	Fn Frict	0.4	0.0		
Envelope Loads				Envelope Loads							AIRFLOWS					
Skylite Solar	0	0	0	0	0	Skylite Solar	0	0.00	Cooling		Heating	Diffuser	474	474		
Skylite Cond	0	0	0	0	0	Skylite Cond	0	0.00	Terminal		474	474	Main Fan	474	474	
Roof Cond	1,540	0	1,540	12	15	Roof Cond	-490	9.11	Sec Fan		0	0	Nom Vent		15	0
Glass Solar	2,118	0	2,118	17	20	Glass Solar	0	0.00	AHU Vent		15	0	Infil		0	0
Glass/Door Cond	849	0	849	7	8	Glass/Door Cond	-1,612	29.98	MinStop/Rh		0	0	Return		474	474
Wall Cond	817	0	817	7	8	Wall Cond	-728	13.54	Exhaust		15	0	Rm Exh		0	0
Partition/Door	1,224	0	1,224	10	12	Partition/Door	-2,112	39.29	Auxiliary		0	0	Leakage Dwn		0	0
Floor	0	0	0	0	0	Floor	0	0.00	Leakage Ups		0	0				
Adjacent Floor	0	0	0	0	0	Adjacent Floor	0	0.00	ENGINEERING CKS			% OA	3.2	0.0		
Infiltration	0	0	0	0	0	Infiltration	0	0.00	cfm/ft²		3.14	3.14	cfm/ton	457.35		
Sub Total ==>	6,549	0	6,549	53	62	Sub Total ==>	-4,941	91.93	ft²/ton		145.86		Btu/hr-ft²	82.27	0.00	
Internal Loads				Internal Loads							No. People			3.0	19.9/1000 ft²	
Lights	925	0	925	7	9	Lights	0	0.00								
People	1,313	0	1,313	11	7	People	0	0.00								
Misc	2,368	0	2,368	19	22	Misc	0	0.00								
Sub Total ==>	4,605	0	4,605	37	38	Sub Total ==>	0	0.00								
Ceiling Load				Ceiling Load												
Ventilation Load	0	0	992	8	0	Ventilation Load	0	0.00								
Adj Air Trans Heat	0	0	0	0	0	Adj Air Trans Heat	0	0								
Dehumid. Ov Sizing	0	0	0	0	0	Ov/Undr Sizing	0	0.00								
Ov/Undr Sizing	0	0	0	0	0	Exhaust Heat	0	0.00								
Exhaust Heat	0	0	0	0	0	OA Preheat Diff.	-175	3.25								
Sup. Fan Heat	0	281	281	2	2	RA Preheat Diff.	-259	4.82								
Ret. Fan Heat	0	0	0	0	0	Additional Reheat	0	0.00								
Duct Heat Pkup	0	0	0	0	0	System Plenum Heat	0	0.00								
Underflr Sup Ht Pkup	0	0	0	0	0	Underflr Sup Ht Pkup	0	0.00								
Supply Air Leakage	0	0	0	0	0	Supply Air Leakage	0	0.00								
Grand Total ==>	11,154	0	12,427	100.00	10,539	Grand Total ==>	-4,941	-5,375	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	Ent	Lvg					
	ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb					ft²	(%)	MBh	cfm	°F
Main Clg	1.0	12.4	11.1	474	75.5	63.2	67.3	54.5	54.4	63.2	Floor	151		Main Htg	0.0	474	69.2	79.4	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	209		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	1.0	12.4									Roof	151	0	0	Humidif	0.0	0	0.0	0.0
											Wall	120	60	50	Opt Vent	0.0	0	0.0	0.0
											Ext Door	0	0	0	Total	0.0			

Room Checksums

By Trial

PB TORREON AVI

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			Cooling	Heating			
Outside Air:		OADB/WB/HR: 92 / 80 / 138		OADB: 91		OADB: 44			SADB	55.0	82.7		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ra Plenum	75.0	70.0	
Btu/h	Btu/h	Btu/h		Btu/h		Space Sens	Tot Sens		Ret/OA	Fn MtrTD	0.1	0.0	
						Btu/h	Btu/h		Fn BldTD	Fn Frict	0.4	0.0	
Envelope Loads				Envelope Loads									
Skylite Solar	0	0	0	0	0	0	0	0.00					
Skylite Cond	0	0	0	0	0	0	0	0.00					
Roof Cond	0	0	0	0	0	0	0	0.00					
Glass Solar	0	0	0	0	0	0	0	0.00					
Glass/Door Cond	0	0	0	0	0	0	0	0.00					
Wall Cond	4,859	0	4,859	3	4,399	4	-2,860	-2,860	3.53				
Partition/Door	14,122		14,122	8	14,406	14	-23,662	-23,662	29.21				
Floor	0		0	0	0	0	0	0	0.00				
Adjacent Floor	0	0	0	0	0	0	0	0.00					
Infiltration	0		0	0	0	0	0	0.00					
<i>Sub Total ==></i>	18,981	0	18,981	11	18,805	18	-26,522	-26,522	32.74				
Internal Loads				Internal Loads									
Lights	18,457	4,614	23,072	14	18,732	18	0	0	0.00				
People	48,671	0	48,671	29	26,310	26	0	0	0.00				
Misc	38,382	0	38,382	23	38,619	38	0	0	0.00				
<i>Sub Total ==></i>	105,510	4,614	110,125	65	83,661	82	0	0	0.00				
Ceiling Load	0	0	0	0	0	0	0	0.00					
Ventilation Load	0	0	38,604	23	0	0	0	0.00					
Adj Air Trans Heat	0		0	0	0	0	0	0					
Dehumid. Ov Sizing			0	0			-38,580	-38,580	47.62				
Ov/Undr Sizing	0		0	0	0	0	0	0	0.00				
Exhaust Heat		-551	-551	0			0	0	0.00				
Sup. Fan Heat			2,729	2			-6,407	-6,407	7.91				
Ret. Fan Heat		0	0	0			-9,505	-9,505	11.73				
Duct Heat Pkup		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	0.00				
<i>Grand Total ==></i>	124,491	4,063	169,888	100.00	102,466	100.00	-65,102	-81,014	100.00				

AIRFLOWS		
	Cooling	Heating
Diffuser	4,605	4,605
Terminal	4,605	4,605
Main Fan	4,605	4,605
Sec Fan	0	0
Nom Vent	550	0
AHU Vent	550	0
Infil	0	0
MinStop/Rh	0	0
Return	4,605	4,605
Exhaust	550	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	11.9	0.0
cfm/ft²	1.28	1.28
cfm/ton	325.24	
ft²/ton	254.33	
Btu/hr-ft²	47.18	0.00
No. People	110.0	30.6/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	14.2	169.9	119.4	4,605	77.9	65.3	73.7	54.5	53.2	58.4
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	14.2	169.9								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	3,601		
Part	2,346		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	236	0	0
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	4,605	66.9	82.7
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	0.0			

Room Checksums

By Trial

PB TORREON CGE

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design			Cooling		Heating		
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44			SADB	55.0	82.7		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	75.0	70.0		
Btu/h	Btu/h	Btu/h		Btu/h		Space Sens	Tot Sens		Ret/OA	75.6	70.0		
Envelope Loads				Envelope Loads				Fn MtrTD		0.1	0.0		
Skylite Solar	0	0	0	0	0	0	0	0.00	Fn BldTD		0.1	0.0	
Skylite Cond	0	0	0	0	0	0	0	0.00	Fn Frict		0.4	0.0	
Roof Cond	0	0	0	0	0	0	0	0.00	AIRFLOWS				
Glass Solar	2,133	0	2,133	20	2,133	24	0	0.00	Diffuser	Cooling	402	Heating	402
Glass/Door Cond	847	0	847	8	847	9	-1,602	26.19	Terminal	402	402		
Wall Cond	815	0	815	8	815	9	-724	11.83	Main Fan	402	402		
Partition/Door	1,148	0	1,148	11	1,148	13	-1,974	32.27	Sec Fan	0	0		
Floor	0	0	0	0	0	0	0	0.00	Nom Vent	15	0		
Adjacent Floor	0	0	0	0	0	0	0	0.00	AHU Vent	15	0		
Infiltration	0	0	0	0	0	0	0	0.00	Infil	0	0		
Sub Total ==>	4,943	0	4,943	46	4,943	55	-4,299	70.28	MinStop/Rh	0	0		
Internal Loads				Internal Loads				Return		402	402		
Lights	925	0	925	9	925	10	0	0.00	Exhaust	15	0		
People	1,316	0	1,316	12	701	8	0	0.00	Rm Exh	0	0		
Misc	2,376	0	2,376	22	2,376	27	0	0.00	Auxiliary	0	0		
Sub Total ==>	4,617	0	4,617	43	4,002	45	0	0.00	Leakage Dwn	0	0		
Ceiling Load				Ceiling Load				Leakage Ups		0	0		
Ventilation Load	0	0	992	9	0	0	0	0.00	ENGINEERING CKS				
Adj Air Trans Heat	0	0	0	0	0	0	0	0	% OA	Cooling	3.7	Heating	0.0
Dehumid. Ov Sizing	0	0	0	0	0	0	-1,384	22.62	cfm/ft²	2.69	2.69		
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	cfm/ton	447.04			
Exhaust Heat	0	0	0	0	0	0	-175	2.86	ft²/ton	166.25			
Sup. Fan Heat	0	0	238	2	0	0	-259	4.24	Btu/hr-ft²	72.18	0.00		
Ret. Fan Heat	0	0	0	0	0	0	0	0.00	No. People	3.0	20.1/1000 ft²		
Duct Heat Pkup	0	0	0	0	0	0	0	0.00					
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00					
Supply Air Leakage	0	0	0	0	0	0	0	0.00					
Grand Total ==>	9,560	0	10,789	100.00	8,945	100.00	-5,683	-6,117	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	Ent	Lvg		
	ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb					ft²	(%)
Main Clg	0.9	10.8	9.4	402	75.6	63.3	67.7	54.5	54.3	62.9	Floor	149	0.0	402	69.0	82.7
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	196	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	0	0.0	0	0.0	0.0
Total	0.9	10.8									Roof	0	0	0	0.0	0.0
											Wall	119	60	50	0.0	0.0
											Ext Door	0	0	0	0.0	0.0

Room Checksums

By Trial

PB TORREON CO

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design			Cooling			Heating		
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Tot Sens Btu/h							
Envelope Loads				Envelope Loads										
Skylite Solar	0	0	0	0	0	0	0	0.00						
Skylite Cond	0	0	0	0	0	0	0	0.00						
Roof Cond	0	0	0	0	0	0	0	0.00						
Glass Solar	2,130	0	2,130	15	2,130	22	0	0.00						
Glass/Door Cond	847	0	847	6	847	9	-1,602	22.22						
Wall Cond	814	0	814	6	814	9	-724	10.04						
Partition/Door	2,165	0	2,165	15	2,165	23	-3,725	51.68						
Floor	0	0	0	0	0	0	0	0.00						
Adjacent Floor	0	0	0	0	0	0	0	0.00						
Infiltration	0	0	0	0	0	0	0	0.00						
<i>Sub Total ==></i>	5,956	0	5,956	42	5,956	63	-6,050	83.94						
Internal Loads				Internal Loads										
Lights	1,342	0	1,342	10	1,342	14	0	0.00						
People	3,508	0	3,508	25	1,868	20	0	0.00						
Misc	356	0	356	3	356	4	0	0.00						
<i>Sub Total ==></i>	5,206	0	5,206	37	3,566	37	0	0.00						
Ceiling Load	0	0	0	0	0	0	0	0.00						
Ventilation Load	0	0	2,644	19	0	0	0	0.00						
Adj Air Trans Heat	0	0	0	0	0	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00						
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00						
Exhaust Heat	0	0	0	0	0	0	0	0.00						
Sup. Fan Heat	0	0	254	2	0	0	-466	6.47						
Ret. Fan Heat	0	0	0	0	0	0	-691	9.59						
Duct Heat Pkup	0	0	0	0	0	0	0	0.00						
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00						
Supply Air Leakage	0	0	0	0	0	0	0	0.00						
Grand Total ==>	11,162	0	14,060	100.00	9,522	100.00	-6,050	-7,207	100.00					

AIRFLOWS		
	Cooling	Heating
Diffuser	428	428
Terminal	428	428
Main Fan	428	428
Sec Fan	0	0
Nom Vent	40	0
AHU Vent	40	0
Infil	0	0
MinStop/Rh	0	0
Return	428	428
Exhaust	40	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	9.3	0.0
cfm/ft²	1.97	1.97
cfm/ton	365.20	
ft²/ton	185.31	
Btu/hr-ft²	64.76	0.00
No. People	8.0	36.8/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	1.2	14.1	10.5	428	76.5	64.4	71.6	54.5	53.5	59.7
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	1.2	14.1								

AREAS			
	Gross Total	Glass ft²	(%)
Floor	217		
Part	369		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	119	60	50
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	0.0	428	67.6	82.7
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	0.0			

Room Checksums

By Trial

PB TORREON PR

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design			Cooling		Heating		
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44			SADB		Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Tot Sens Btu/h						
Envelope Loads				Envelope Loads									
Skylite Solar	0	0	0	0	0	0	0	0.00					
Skylite Cond	0	0	0	0	0	0	0	0.00					
Roof Cond	0	0	0	0	0	0	0	0.00					
Glass Solar	2,133	0	2,133	20	2,133	24	0	0.00					
Glass/Door Cond	847	0	847	8	847	9	-1,602	26.19					
Wall Cond	815	0	815	8	815	9	-724	11.83					
Partition/Door	1,148	0	1,148	11	1,148	13	-1,974	32.27					
Floor	0	0	0	0	0	0	0	0.00					
Adjacent Floor	0	0	0	0	0	0	0	0.00					
Infiltration	0	0	0	0	0	0	0	0.00					
<i>Sub Total ==></i>	4,943	0	4,943	46	4,943	55	-4,299	70.28					
Internal Loads				Internal Loads									
Lights	925	0	925	9	925	10	0	0.00					
People	1,316	0	1,316	12	701	8	0	0.00					
Misc	2,376	0	2,376	22	2,376	27	0	0.00					
<i>Sub Total ==></i>	4,617	0	4,617	43	4,002	45	0	0.00					
Ceiling Load	0	0	0	0	0	0	0	0.00					
Ventilation Load	0	0	992	9	0	0	0	0.00					
Adj Air Trans Heat	0	0	0	0	0	0	0	0					
Dehumid. Ov Sizing	0	0	0	0	0	0	-1,384	22.62					
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00					
Exhaust Heat	0	0	0	0	0	0	-175	2.86					
Sup. Fan Heat	0	0	238	2	0	0	-259	4.24					
Ret. Fan Heat	0	0	0	0	0	0	0	0.00					
Duct Heat Pkup	0	0	0	0	0	0	0	0.00					
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00					
Supply Air Leakage	0	0	0	0	0	0	0	0.00					
Grand Total ==>	9,560	0	10,789	100.00	8,945	100.00	-5,683	-6,117	100.00				

AIRFLOWS		
	Cooling	Heating
Diffuser	402	402
Terminal	402	402
Main Fan	402	402
Sec Fan	0	0
Nom Vent	15	0
AHU Vent	15	0
Infil	0	0
MinStop/Rh	0	0
Return	402	402
Exhaust	15	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	3.7	0.0
cfm/ft²	2.69	2.69
cfm/ton	447.04	
ft²/ton	166.25	
Btu/hr-ft²	72.18	0.00
No. People	3.0	20.1/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	0.9	10.8	9.4	402	75.6	63.3	67.7	54.5	54.3	62.9
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	0.9	10.8								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	149		
Part	196		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	119	60	50
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	402	69.0	82.7
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	0.0			

Room Checksums

By Trial

PB TORREON SJ

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES			
Peaked at Time:		Mo/Hr: 6 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design			Cooling			Heating		
Outside Air:		OADB/WB/HR: 91 / 79 / 135		OADB: 91		OADB: 44			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Tot Sens Btu/h							
Envelope Loads				Envelope Loads										
Skylite Solar	0	0	0	0	0	0	0	0.00						
Skylite Cond	0	0	0	0	0	0	0	0.00						
Roof Cond	0	0	0	0	0	0	0	0.00						
Glass Solar	4,364	0	4,364	12	4,364	15	0	0.00						
Glass/Door Cond	1,719	0	1,719	5	1,719	6	-3,236	16.11						
Wall Cond	1,651	0	1,651	4	1,651	6	-1,462	7.28						
Partition/Door	1,152	0	1,152	3	1,152	4	-1,974	9.82						
Floor	0	0	0	0	0	0	0	0.00						
Adjacent Floor	0	0	0	0	0	0	0	0.00						
Infiltration	0	0	0	0	0	0	0	0.00						
<i>Sub Total ==></i>	8,886	0	8,886	24	8,886	31	-6,672	33.21						
Internal Loads				Internal Loads										
Lights	1,918	0	1,918	5	1,918	7	0	0.00						
People	6,161	0	6,161	17	3,291	12	0	0.00						
Misc	14,342	0	14,342	39	14,342	50	0	0.00						
<i>Sub Total ==></i>	22,421	0	22,421	61	19,551	69	0	0.00						
Ceiling Load	0	0	0	0	0	0	0	0.00						
Ventilation Load	0	0	4,628	13	0	0	0	0.00						
Adj Air Trans Heat	0	0	0	0	0	0	0	0						
Dehumid. Ov Sizing			0	0			-11,395	56.71						
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00						
Exhaust Heat		0	0	0			-815	4.06						
Sup. Fan Heat			757	2			-1,210	6.02						
Ret. Fan Heat		0	0	0			0	0.00						
Duct Heat Pkup		0	0	0			0	0.00						
Underflr Sup Ht Pkup			0	0			0	0.00						
Supply Air Leakage		0	0	0			0	0.00						
<i>Grand Total ==></i>	31,307	0	36,692	100.00	28,437	100.00	-18,068	20.00						

AIRFLOWS		
	Cooling	Heating
Diffuser	1,278	1,278
Terminal	1,278	1,278
Main Fan	1,278	1,278
Sec Fan	0	0
Nom Vent	70	0
AHU Vent	70	0
Infil	0	0
MinStop/Rh	0	0
Return	1,278	1,278
Exhaust	70	0
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	5.5	0.0
cfm/ft²	4.18	4.18
cfm/ton	417.93	
ft²/ton	100.07	
Btu/hr-ft²	119.92	0.00
No. People	14.0	45.8/1000 ft²

COOLING COIL SELECTION										
	Total Capacity		Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR		
	ton	MBh	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb
Main Clg	3.1	36.7	30.4	1,278	75.9	63.7	68.9	54.5	54.1	61.9
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	3.1	36.7								

AREAS			
	Gross Total	Glass	
		ft²	(%)
Floor	306		
Part	196		
Int Door	0		
ExFlr	0		
Roof	0	0	0
Wall	241	121	50
Ext Door	0	0	0

HEATING COIL SELECTION				
	Capacity	Coil Airflow	Ent	Lvg
	MBh	cfm	°F	°F
Main Htg	0.0	1,278	68.6	82.7
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	0.0			

Zone Checksums

By Trial

PLANTA BAJA

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 7 / 17		Mo/Hr: 6 / 17		Mo/Hr: Heating Design						Cooling	Heating	
Outside Air:		OADB/WB/HR: 91 / 80 / 136		OADB: 91		OADB: 44						SADB	55.0	82.7
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total	Space Sens	Tot Sens	Percent Of Total	Ra Plenum	75.0	70.0
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		Btu/h	Btu/h		Return	75.6	70.0
Envelope Loads				Envelope Loads								Ret/OA	77.1	70.0
Skylite Solar	0	0	0	0	0	0	0	0.00	0	0	0.00	Fn MtrTD	0.1	0.0
Skylite Cond	0	0	0	0	0	0	0	0.00	0	0	0.00	Fn BldTD	0.1	0.0
Roof Cond	0	0	0	0	0	0	0	0.00	0	0	0.00	Fn Frict	0.4	0.0
Glass Solar	10,760	0	10,760	4	10,760	7	0	0.00	0	0	0.00	AIRFLOWS		
Glass/Door Cond	4,259	0	4,259	2	4,259	3	-8,042	6.67	-8,042	-8,042	6.67	Diffuser	7,114	7,114
Wall Cond	8,954	0	8,954	4	8,493	5	-6,492	5.39	-6,492	-6,492	5.39	Terminal	7,114	7,114
Partition/Door	19,735	0	19,735	8	20,019	13	-33,309	27.63	-33,309	-33,309	27.63	Main Fan	7,114	7,114
Floor	0	0	0	0	0	0	0	0.00	0	0	0.00	Sec Fan	0	0
Adjacent Floor	0	0	0	0	0	0	0	0.00	0	0	0.00	Nom Vent	690	0
Infiltration	0	0	0	0	0	0	0	0.00	0	0	0.00	AHU Vent	690	0
Sub Total ==>	43,708	0	43,708	18	43,532	27	-47,843	39.69	-47,843	-47,843	39.69	Infil	0	0
Internal Loads				Internal Loads								MinStop/Rh	0	0
Lights	23,568	4,614	28,182	12	23,842	15	0	0.00	0	0	0.00	Return	7,114	7,114
People	60,973	0	60,973	25	32,872	21	0	0.00	0	0	0.00	Exhaust	690	0
Misc	57,831	0	57,831	24	58,068	37	0	0.00	0	0	0.00	Rm Exh	0	0
Sub Total ==>	142,371	4,614	146,985	61	114,782	73	0	0.00	0	0	0.00	Auxiliary	0	0
Ceiling Load				Ceiling Load								Leakage Dwn	0	0
Ventilation Load	0	0	47,860	20	0	0	0	0.00	0	0	0.00	Leakage Ups	0	0
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0	0	0	ENGINEERING CKS		
Dehumid. Ov Sizing	0	0	0	0	0	0	-52,743	43.75	-52,743	-52,743	43.75	% OA	9.7	0.0
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	0	0	0.00	cfm/ft²	1.61	1.61
Exhaust Heat	0	-551	-551	0	0	0	0	0.00	0	0	0.00	cfm/ton	352.45	
Sup. Fan Heat	0	0	4,216	2	0	0	-8,037	6.67	-8,037	-8,037	6.67	ft²/ton	219.11	
Ret. Fan Heat	0	0	0	0	0	0	-11,925	9.89	-11,925	-11,925	9.89	Btu/hr-ft²	54.77	0.00
Duct Heat Pkup	0	0	0	0	0	0	0	0.00	0	0	0.00	No. People	138	
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00	0	0	0.00			
Supply Air Leakage	0	0	0	0	0	0	0	0.00	0	0	0.00			
Grand Total ==>	186,080	4,063	242,218	100.00	158,314	100.00	-100,585	100.00	-100,585	-120,548	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	Lvg	Capacity	Coil Airflow	Ent	Lvg	
	ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb								ft²
Main Clg	20.2	242.2	179.2	7,114	77.2	64.8	72.1	54.5	53.5	59.6	Floor	4,423	0.0	7,114	67.5	82.7		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	3,302	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		
Total	20.2	242.2									ExFlr	0	0.0	0	0.0	0.0		
											Roof	0	0	0	0.0	0.0		
											Wall	836	300	36	0.0	0.0		
											Ext Door	0	0	0	0.0	0.0		
											Total	0.0	0.0	0.0	0.0	0.0		