



Ministerio Público Fiscal de la Ciudad de Buenos Aires
Fiscalía General
Departamento de Infraestructura y Apoyo Operativo

Air System Design Load Summary for Zona 9

Project Name: Av. Cabildo 3067, 4° piso
 Prepared by: SS

02/13/2011
 12:40

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1400			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 34.5 °C / 23.7 °C			HEATING OA DB / WB -0.6 °C / -3.2 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	20 m²	2458	-	20 m²	-	-
Wall Transmission	28 m²	742	-	28 m²	922	-
Roof Transmission	36 m²	356	-	36 m²	447	-
Window Transmission	20 m²	790	-	20 m²	2019	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	36 m²	0	-	36 m²	0	-
Partitions	48 m²	0	-	48 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	778 W	720	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	800 W	774	-	0	0	-
People	6	391	360	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	312	18	5%	169	0
>> Total Zone Loads	-	6542	379	-	3558	0
Zone Conditioning	-	6112	379	-	3556	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	601 L/s	0	-	601 L/s	0	-
Ventilation Load	42 L/s	503	403	42 L/s	1114	0
Supply Fan Load	608 L/s	11	-	608 L/s	-11	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	5%	327	-	5%	178	-
>> Total System Loads	-	6954	782	-	4837	0
Central Cooling Coil	-	6954	782	-	0	0
Central Heating Coil	-	0	-	-	4837	-
>> Total Conditioning	-	6954	782	-	4837	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

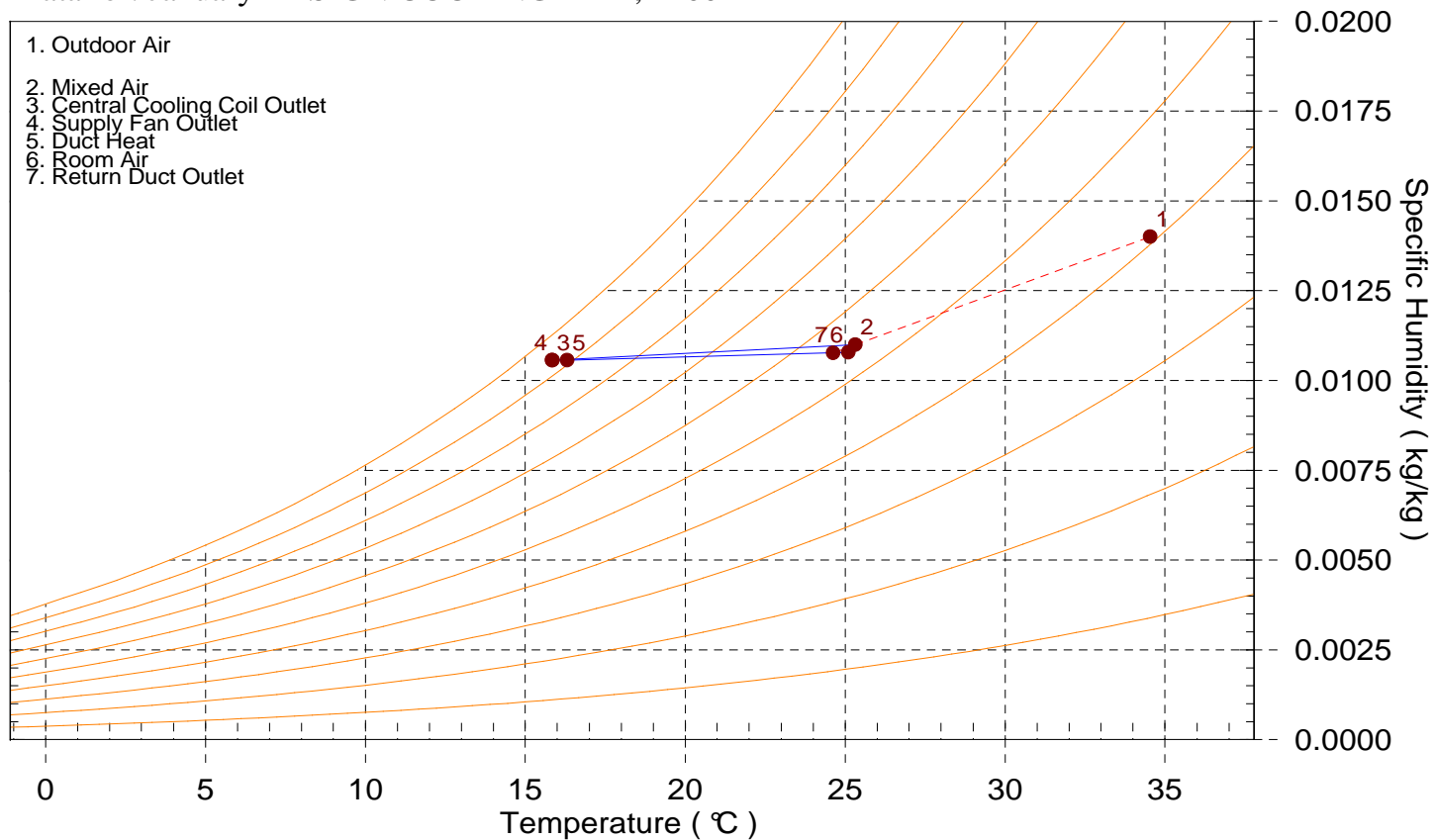


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Psychrometric Analysis for Zona 9

Project Name: Av. Cabildo 3067, 4° piso
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Location: Buenos Aires, Argentina
Altitude: 19.8 m.
Data for: January DESIGN COOLING DAY, 1400





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System Psychrometrics for Zona 9

Project Name: Av. Cabildo 3067, 4° piso
 Prepared by: SS

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January DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	34.5	0.01400	42	503	403
Vent - Return Mixing	Outlet	25.3	0.01100	608	-	-
Central Cooling Coil	Outlet	15.8	0.01056	608	6954	782
Central Heating Coil	Outlet	15.8	0.01056	608	0	-
Supply Fan	Outlet	15.8	0.01056	608	11	-
Cold Supply Duct	Outlet	16.3	0.01056	578	327	-
Zone Air	-	25.1	0.01078	571	6112	379
Zone Direct Exhaust	Outlet	25.1	0.01078	7	-	-
Return Plenum	Outlet	25.1	0.01078	571	0	-
Duct Leakage Air	Outlet	15.8	0.01056	30	-	-
Return Duct	Outlet	24.6	0.01077	601	-	-
Return Fan	Outlet	24.6	0.01077	601	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.204 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2940.6 W/(L/s)

Site Altitude = 19.8 m

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (W)	T-stat Mode	Zone Cond (W)	Zone Temp (°C)	Zone Airflow (L/s)	Terminal Heating Coil (W)	Zone Heating Unit (W)
Zone 9	6542	Cooling	6112	25.1	578	0	0



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WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°C)	Specific Humidity (kg/kg)	Airflow (L/s)	Sensible Heat (W)	Latent Heat (W)
Ventilation Air	Inlet	-0.6	0.00182	42	-1114	0
Vent - Return Mixing	Outlet	19.7	0.00182	608	-	-
Central Cooling Coil	Outlet	19.7	0.00182	608	0	0
Central Heating Coil	Outlet	26.3	0.00182	608	4837	-
Supply Fan	Outlet	26.4	0.00182	608	11	-
Cold Supply Duct	Outlet	26.1	0.00182	578	-178	-
Zone Air	-	21.0	0.00182	571	-3556	0
Zone Direct Exhaust	Outlet	21.0	0.00182	7	-	-
Return Plenum	Outlet	21.0	0.00182	571	0	-
Duct Leakage Air	Outlet	26.4	0.00182	30	-	-
Return Duct	Outlet	21.3	0.00182	601	-	-
Return Fan	Outlet	21.3	0.00182	601	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.207; At site altitude = 1.204 W/(L/s-K)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 2947.6; At site altitude = 2940.6 W/(L/s)

Site Altitude = 19.8 m

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (W)	T-stat Mode	Zone Cond (W)	Zone Temp (°C)	Zone Airflow (L/s)	Terminal Heating Coil (W)	Zone Heating Unit (W)
Zone 9	-3558	Heating	-3556	21.0	578	0	0



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Air System Sizing Summary for Zona 9

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Air System Information

Air System Name	Zona 9	Number of zones	1
Equipment Class	SPLT AHU	Floor Area	36.0 m²
Air System Type	SZCAV		

Sizing Calculation Information

Zone and Space Sizing Method:

Zone L/s	Sum of space airflow rates	Calculation Months	Jan to Dec
Space L/s	Individual peak space loads	Sizing Data	Calculated

Central Cooling Coil Sizing Data

Total coil load	7.7 kW	Load occurs at	Jan 1400
Sensible coil load	7.0 kW	OA DB / WB	34.5 / 23.7 °C
Coil L/s at Jan 1400	608 L/s	Entering DB / WB	25.3 / 18.9 °C
Max block L/s	608 L/s	Leaving DB / WB	15.8 / 15.2 °C
Sum of peak zone L/s	578 L/s	Coil ADP	14.8 °C
Sensible heat ratio	0.899	Bypass Factor	0.100
m ² /kW	4.7	Resulting RH	54 %
W/m ²	214.9	Design supply temp.	14.4 °C
Water flow @ 5.6 K rise	N/A	Zone T-stat Check	1 of 1 OK
		Max zone temperature deviation	0.0 K

Central Heating Coil Sizing Data

Max coil load	4.8 kW	Load occurs at	Des Htg
Coil L/s at Des Htg	608 L/s	W/m ²	134.4
Max coil L/s	608 L/s	Ent. DB / Lvg DB	19.7 / 26.3 °C
Water flow @ 11.1 K drop	N/A		

Supply Fan Sizing Data

Actual max L/s	608 L/s	Fan motor BHP	0.02 BHP
Standard L/s	607 L/s	Fan motor kW	0.01 kW
Actual max L/(s-m ²)	16.90 L/(s-m²)	Fan static	10 Pa

Outdoor Ventilation Air Data

Design airflow L/s	42 L/s	l/s/person	7.08 l/s/person
L/(s-m ²)	1.18 L/(s-m²)		



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Zone Design Load Summary for Zona 9

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Zone 9	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1500 COOLING OA DB / WB 34.9 °C / 23.8 °C			HEATING DATA AT DES HTG HEATING OA DB / WB -0.6 °C / -3.2 °C		
	OCCUPIED T-STAT 23.9 °C			OCCUPIED T-STAT 21.1 °C		
ZONE LOADS	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	20 m²	2352	-	20 m²	-	-
Wall Transmission	28 m²	772	-	28 m²	922	-
Roof Transmission	36 m²	418	-	36 m²	447	-
Window Transmission	20 m²	826	-	20 m²	2019	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	36 m²	0	-	36 m²	0	-
Partitions	48 m²	0	-	48 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	778 W	724	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	800 W	775	-	0	0	-
People	6	394	360	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	313	18	5%	169	0
>> Total Zone Loads	-	6574	379	-	3558	0