



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

**Air System Design Load Summary for Zona 1**

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

02/13/2011  
 11:12

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jan 1700			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 33.7 °C / 23.5 °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	0 m²	0	-	0 m²	-	-
Wall Transmission	76 m²	1488	-	76 m²	2517	-
Roof Transmission	142 m²	2026	-	142 m²	1763	-
Window Transmission	0 m²	0	-	0 m²	0	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	142 m²	0	-	142 m²	0	-
Partitions	106 m²	0	-	106 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	3084 W	2899	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4500 W	4379	-	0	0	-
People	36	2391	2163	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	659	108	5%	214	0
<b>&gt;&gt; Total Zone Loads</b>	-	<b>13843</b>	<b>2271</b>	-	<b>4494</b>	<b>0</b>
Zone Conditioning	-	13177	2271	-	4606	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	1286 L/s	0	-	1286 L/s	0	-
Ventilation Load	255 L/s	2792	2125	255 L/s	6676	0
Supply Fan Load	1328 L/s	25	-	1328 L/s	-25	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	5%	692	-	5%	225	-
<b>&gt;&gt; Total System Loads</b>	-	<b>16686</b>	<b>4396</b>	-	<b>11482</b>	<b>0</b>
Central Cooling Coil	-	16686	4397	-	0	0
Central Heating Coil	-	0	-	-	11482	-
<b>&gt;&gt; Total Conditioning</b>	-	<b>16686</b>	<b>4397</b>	-	<b>11482</b>	<b>0</b>
<b>Key:</b>	<b>Positive values are cig loads Negative values are htg loads</b>			<b>Positive values are htg loads Negative values are cig loads</b>		

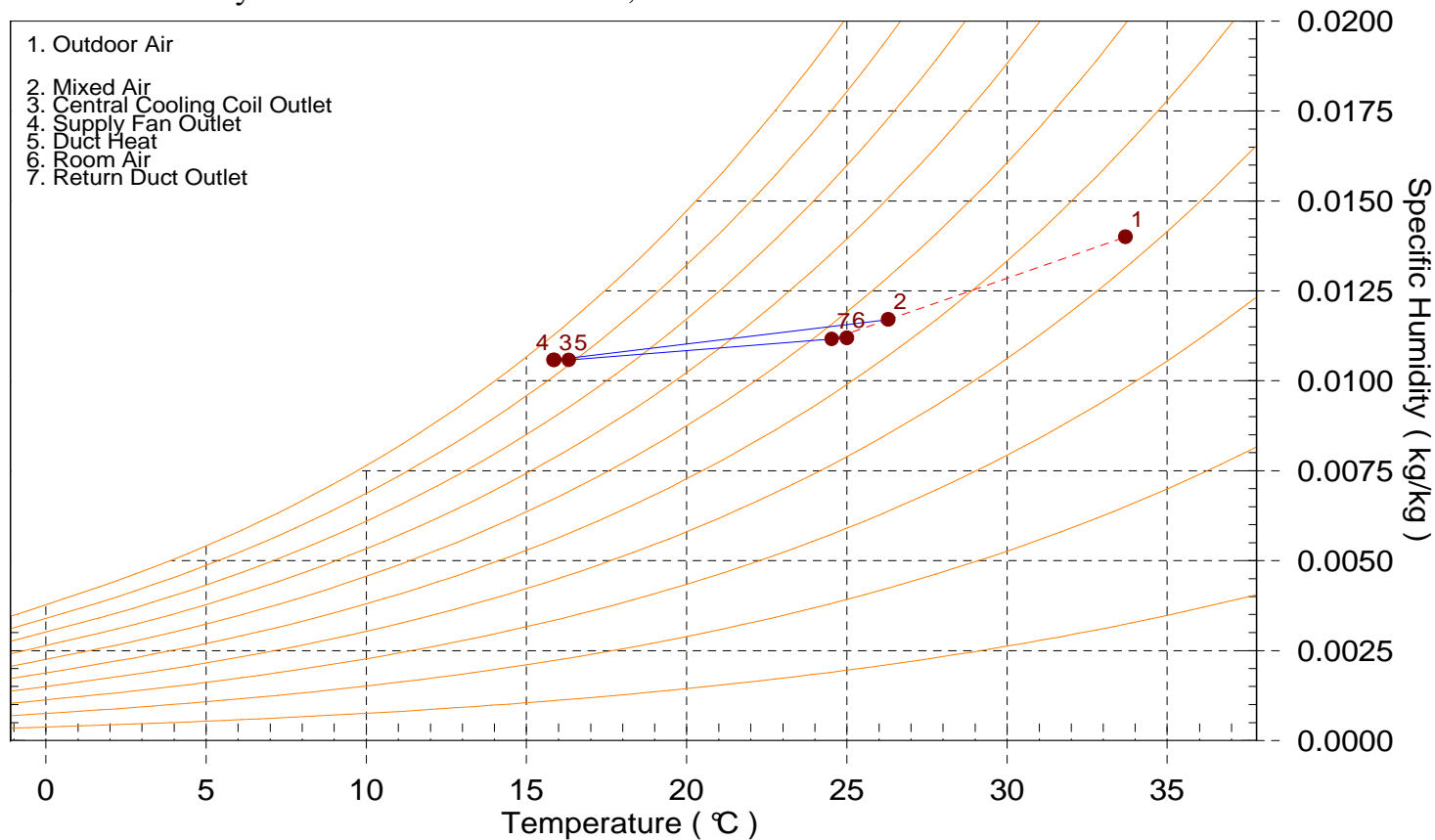


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Fiscalía General  
Departamento de Infraestructura y Apoyo Operativo  
**Psychrometric Analysis for Zona 1**

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

02/13/2011  
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Location: Buenos Aires, Argentina  
Altitude: 19.8 m.  
Data for: January DESIGN COOLING DAY, 1700





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**System Psychrometrics for Zona 1**

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

02/13/2011  
 11:12

**January DESIGN COOLING DAY, 1700**

**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	33.7	0.01400	255	2792	2125
Vent - Return Mixing	Outlet	26.3	0.01171	1328	-	-
Central Cooling Coil	Outlet	15.9	0.01058	1328	16686	4397
Central Heating Coil	Outlet	15.9	0.01058	1328	0	-
Supply Fan	Outlet	15.9	0.01058	1328	25	-
Cold Supply Duct	Outlet	16.3	0.01058	1261	692	-
Zone Air	-	25.0	0.01119	1219	13177	2271
Zone Direct Exhaust	Outlet	25.0	0.01119	42	-	-
Return Plenum	Outlet	25.0	0.01119	1219	0	-
Duct Leakage Air	Outlet	15.9	0.01058	66	-	-
Return Duct	Outlet	24.5	0.01116	1286	-	-
Return Fan	Outlet	24.5	0.01116	1286	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 1	13843	Cooling	13177	25.0	1261	0	0



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**System Psychrometrics for Zona 1**

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 Prepared by: SS

02/13/2011  
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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	255	-6676	0
Vent - Return Mixing	Outlet	17.0	0.00182	1328	-	-
Central Cooling Coil	Outlet	17.0	0.00182	1328	0	0
Central Heating Coil	Outlet	24.2	0.00182	1328	11482	-
Supply Fan	Outlet	24.2	0.00182	1328	25	-
Cold Supply Duct	Outlet	24.1	0.00182	1261	-225	-
Zone Air	-	21.1	0.00182	1219	-4606	0
Zone Direct Exhaust	Outlet	21.1	0.00182	42	-	-
Return Plenum	Outlet	21.1	0.00182	1219	0	-
Duct Leakage Air	Outlet	24.2	0.00182	66	-	-
Return Duct	Outlet	21.2	0.00182	1286	-	-
Return Fan	Outlet	21.2	0.00182	1286	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 1	-4494	Heating	-4606	21.1	1261	0	0



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**Air System Sizing Summary for Zona 1**

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**Air System Information**

Air System Name .....	<b>Zona 1</b>	Number of zones .....	<b>1</b>
Equipment Class .....	<b>SPLT AHU</b>	Floor Area .....	<b>142.8</b> m <sup>2</sup>
Air System Type .....	<b>SZCAV</b>		

**Sizing Calculation Information**

**Zone and Space Sizing Method:**

Zone L/s .....	<b>Peak zone sensible load</b>	Calculation Months .....	<b>Jan to Dec</b>
Space L/s .....	<b>Individual peak space loads</b>	Sizing Data .....	<b>Calculated</b>

**Central Cooling Coil Sizing Data**

Total coil load .....	<b>21.1</b> kW	Load occurs at .....	<b>Jan 1700</b>
Sensible coil load .....	<b>16.7</b> kW	OA DB / WB .....	<b>33.7 / 23.5</b> °C
Coil L/s at Jan 1700 .....	<b>1328</b> L/s	Entering DB / WB .....	<b>26.3 / 19.7</b> °C
Max block L/s at Feb 1900 .....	<b>1328</b> L/s	Leaving DB / WB .....	<b>15.9 / 15.2</b> °C
Sum of peak zone L/s .....	<b>1261</b> L/s	Coil ADP .....	<b>14.7</b> °C
Sensible heat ratio .....	<b>0.791</b>	Bypass Factor .....	<b>0.100</b>
m <sup>2</sup> /kW .....	<b>6.8</b>	Resulting RH .....	<b>56</b> %
W/m <sup>2</sup> .....	<b>147.6</b>	Design supply temp. ....	<b>14.4</b> °C
Water flow @ 5.6 °K rise .....	<b>N/A</b>	Zone T-stat Check .....	<b>1 of 1</b> OK
		Max zone temperature deviation .....	<b>0.0</b> °K

**Central Heating Coil Sizing Data**

Max coil load .....	<b>11.5</b> kW	Load occurs at .....	<b>Des Htg</b>
Coil L/s at Des Htg .....	<b>1328</b> L/s	W/m <sup>2</sup> .....	<b>80.4</b>
Max coil L/s .....	<b>1328</b> L/s	Ent. DB / Lvg DB .....	<b>17.0 / 24.2</b> °C
Water flow @ 11.1 °K drop .....	<b>N/A</b>		

**Supply Fan Sizing Data**

Actual max L/s at Feb 1900 .....	<b>1328</b> L/s	Fan motor BHP .....	<b>0.03</b> BHP
Standard L/s .....	<b>1325</b> L/s	Fan motor kW .....	<b>0.02</b> kW
Actual max L/(s-m <sup>2</sup> ) .....	<b>9.30</b> L/(s-m <sup>2</sup> )	Fan static .....	<b>10</b> Pa

**Outdoor Ventilation Air Data**

Design airflow L/s .....	<b>255</b> L/s	l/s/person .....	<b>7.08</b> l/s/person
L/(s-m <sup>2</sup> ) .....	<b>1.78</b> L/(s-m <sup>2</sup> )		



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**Zone Design Load Summary for Zona 1**

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Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1900 COOLING OA DB / WB 30.8 °C / 22.7 °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	0 m <sup>2</sup>	0	-	0 m <sup>2</sup>	-	-
Wall Transmission	76 m <sup>2</sup>	2032	-	76 m <sup>2</sup>	2517	-
Roof Transmission	142 m <sup>2</sup>	1898	-	142 m <sup>2</sup>	1763	-
Window Transmission	0 m <sup>2</sup>	0	-	0 m <sup>2</sup>	0	-
Skylight Transmission	0 m <sup>2</sup>	0	-	0 m <sup>2</sup>	0	-
Door Loads	0 m <sup>2</sup>	0	-	0 m <sup>2</sup>	0	-
Floor Transmission	142 m <sup>2</sup>	0	-	142 m <sup>2</sup>	0	-
Partitions	106 m <sup>2</sup>	0	-	106 m <sup>2</sup>	0	-
Ceiling	0 m <sup>2</sup>	0	-	0 m <sup>2</sup>	0	-
Overhead Lighting	3084 W	2923	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4500 W	4395	-	0	0	-
People	36	2416	2163	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	683	108	5%	214	0
<b>&gt;&gt; Total Zone Loads</b>	-	<b>14347</b>	<b>2271</b>	-	<b>4494</b>	<b>0</b>



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**Zone Sizing Summary for Zona 1**

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**Sizing Calculation Information**

**Zone and Space Sizing Method:**

Zone L/s ..... **Peak zone sensible load**  
 Space L/s ..... **Individual peak space loads**

Calculation Months ..... **Jan to Dec**  
 Sizing Data ..... **Calculated**

**Zone Sizing Data**

Zone Name	Maximum Cooling Sensible (kW)	Design Air Flow (L/s)	Minimum Air Flow (L/s)	Time of Peak Load	Maximum Heating Load (kW)	Zone Floor Area (m²)	Zone L/(s-m²)
Zone 1	14.3	1261	1261	Feb 1900	4.5	142.8	8.83

**Zone Terminal Sizing Data**

No Zone Terminal Sizing Data required for this system.

**Space Loads and Airflows**

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s-m²)
<b>Zone 1</b>							
Zona 1	1	14.3	Feb 1900	1261	4.5	142.8	8.83