



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

Air System Design Load Summary for Zona 7

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

02/13/2011
 12:30

ZONE LOADS	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 1600			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		
	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
Window & Skylight Solar Loads	5 m²	866	-	5 m²	-	-
Wall Transmission	25 m²	615	-	25 m²	827	-
Roof Transmission	45 m²	523	-	45 m²	559	-
Window Transmission	5 m²	204	-	5 m²	505	-
Skylight Transmission	0 m²	0	-	0 m²	0	-
Door Loads	0 m²	0	-	0 m²	0	-
Floor Transmission	45 m²	0	-	45 m²	0	-
Partitions	54 m²	0	-	54 m²	0	-
Ceiling	0 m²	0	-	0 m²	0	-
Overhead Lighting	972 W	910	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	3600 W	3497	-	0	0	-
People	12	792	721	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	370	36	5%	95	0
>> Total Zone Loads	-	7777	757	-	1985	0
Zone Conditioning	-	7411	757	-	1951	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	637 L/s	0	-	637 L/s	0	-
Ventilation Load	85 L/s	961	794	85 L/s	2207	0
Supply Fan Load	721 L/s	13	-	721 L/s	-13	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	5%	389	-	5%	99	-
>> Total System Loads	-	8774	1551	-	4244	0
Central Cooling Coil	-	8774	1551	-	0	0
Central Heating Coil	-	0	-	-	4244	-
>> Total Conditioning	-	8774	1551	-	4244	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

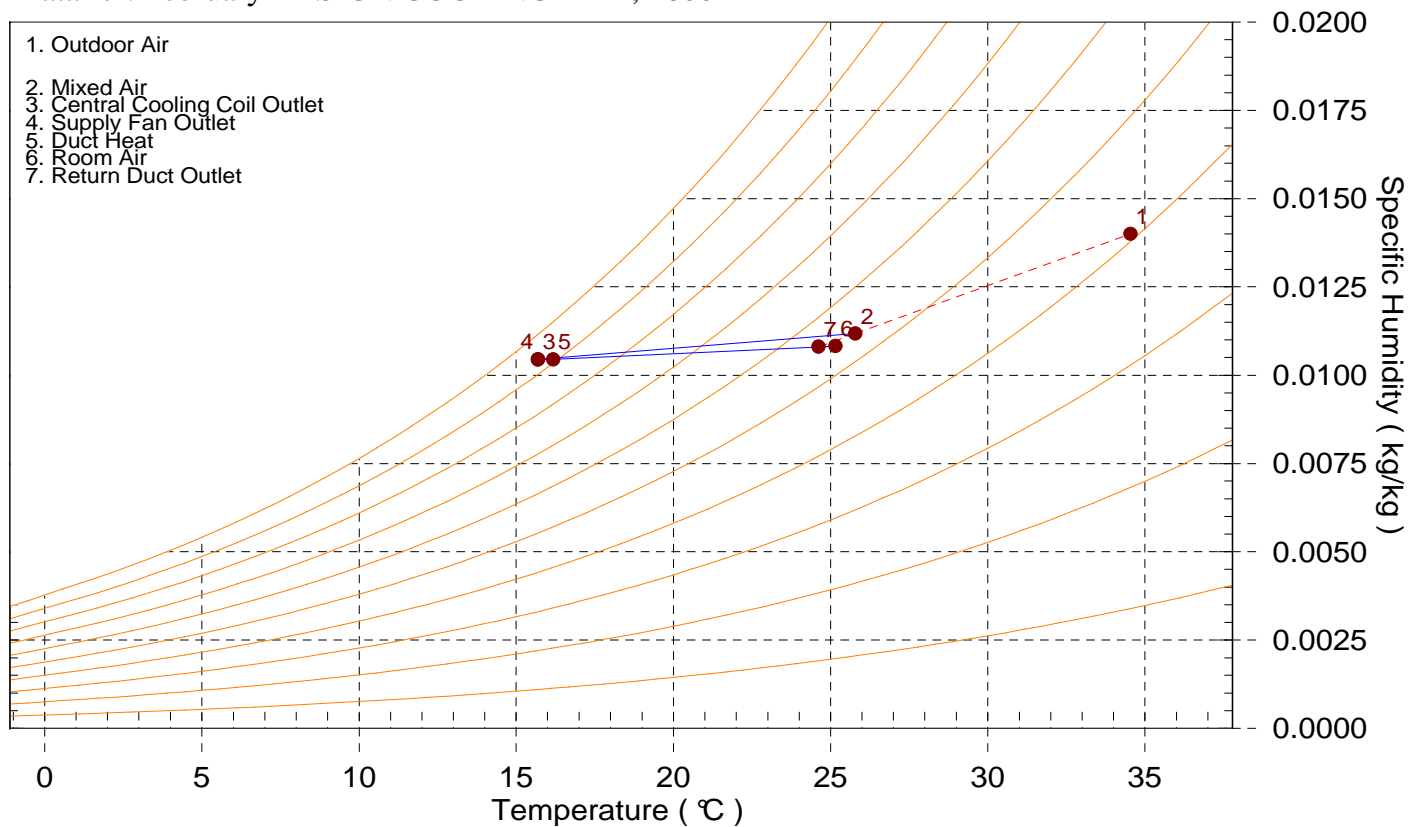


Ministerio Público Fiscal de la Ciudad de Buenos Aires
Fiscalía General
Departamento de Infraestructura y Apoyo Operativo
Psychrometric Analysis for Zona 7

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

02/13/2011
12:30

Location: Buenos Aires, Argentina
Altitude: 19.8 m.
Data for: February DESIGN COOLING DAY, 1600





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

System Psychrometrics for Zona 7

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

02/13/2011
 12:30

February DESIGN COOLING DAY, 1600

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	85	961	794
Vent - Return Mixing	Outlet	25.8	0.01118	721	-	-
Central Cooling Coil	Outlet	15.7	0.01045	721	8774	1551
Central Heating Coil	Outlet	15.7	0.01045	721	0	-
Supply Fan	Outlet	15.7	0.01045	721	13	-
Cold Supply Duct	Outlet	16.2	0.01045	685	389	-
Zone Air	-	25.2	0.01082	601	7411	757
Zone Direct Exhaust	Outlet	25.2	0.01082	84	-	-
Return Plenum	Outlet	25.2	0.01082	601	0	-
Duct Leakage Air	Outlet	15.7	0.01045	36	-	-
Return Duct	Outlet	24.6	0.01080	637	-	-
Return Fan	Outlet	24.6	0.01080	637	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 7	7777	Cooling	7411	25.2	685	0	0



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

System Psychrometrics for Zona 7

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

02/13/2011
 12:30

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	85	-2207	0
Vent - Return Mixing	Outlet	18.6	0.00182	721	-	-
Central Cooling Coil	Outlet	18.6	0.00182	721	0	0
Central Heating Coil	Outlet	23.5	0.00182	721	4244	-
Supply Fan	Outlet	23.5	0.00182	721	13	-
Cold Supply Duct	Outlet	23.4	0.00182	685	-99	-
Zone Air	-	21.0	0.00182	601	-1951	0
Zone Direct Exhaust	Outlet	21.0	0.00182	84	-	-
Return Plenum	Outlet	21.0	0.00182	601	0	-
Duct Leakage Air	Outlet	23.5	0.00182	36	-	-
Return Duct	Outlet	21.2	0.00182	637	-	-
Return Fan	Outlet	21.2	0.00182	637	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 7	-1985	Heating	-1951	21.0	685	0	0



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

Air System Sizing Summary for Zona 7

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

02/13/2011
 12:30

Air System Information

Air System Name	Zona 7	Number of zones	1
Equipment Class	SPLT AHU	Floor Area	45.0 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	10.3 kW	Load occurs at	Feb 1600
Sensible coil load	8.8 kW	OA DB / WB	34.5 / 23.7 °C
Coil L/s at Feb 1600	721 L/s	Entering DB / WB	25.8 / 19.2 °C
Max block L/s	721 L/s	Leaving DB / WB	15.7 / 15.1 °C
Sum of peak zone L/s	685 L/s	Coil ADP	14.6 °C
Sensible heat ratio	0.850	Bypass Factor	0.100
m ² /kW	4.4	Resulting RH	54 %
W/m ²	229.4	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	4.2 kW	Load occurs at	Des Htg
Coil L/s at Des Htg	721 L/s	W/m ²	94.3
Max coil L/s	721 L/s	Ent. DB / Lvg DB	18.6 / 23.5 °C
Water flow @ 11.1 K drop	N/A		

Supply Fan Sizing Data

Actual max L/s	721 L/s	Fan motor BHP	0.02 BHP
Standard L/s	720 L/s	Fan motor kW	0.01 kW
Actual max L/(s-m ²)	16.03 L/(s-m²)	Fan static	10 Pa

Outdoor Ventilation Air Data

Design airflow L/s	85 L/s	l/s/person	7.08 l/s/person
L/(s-m ²)	1.89 L/(s-m²)		



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

Zone Design Load Summary for Zona 7

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

02/13/2011
 12:30

Zone 7	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Feb 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		
	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	5 m ²	790	-	5 m ²	-	-
Wall Transmission	25 m ²	653	-	25 m ²	827	-
Roof Transmission	45 m ²	572	-	45 m ²	559	-
Window Transmission	5 m ²	194	-	5 m ²	505	-
Skylight Transmission	0 m ²	0	-	0 m ²	0	-
Door Loads	0 m ²	0	-	0 m ²	0	-
Floor Transmission	45 m ²	0	-	45 m ²	0	-
Partitions	54 m ²	0	-	54 m ²	0	-
Ceiling	0 m ²	0	-	0 m ²	0	-
Overhead Lighting	972 W	914	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	3600 W	3503	-	0	0	-
People	12	797	721	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	371	36	5%	95	0
>> Total Zone Loads	-	7793	757	-	1985	0



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

Zone Sizing Summary for Zona 7

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

02/13/2011
 12:30

Sizing Calculation Information

Zone and Space Sizing Method:

Zone L/s **Sum of space airflow rates**
 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 7	7.8	685	685	Feb 1700	2.0	45.0	15.23

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)
Zone 7							
Zona 7	1	7.8	Feb 1700	685	2.0	45.0	15.23