

System Design Load Summary for Apt 824

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2760	-	77 sqft	-	-
Wall Transmission	86 sqft	255	-	86 sqft	174	-
Roof Transmission	421 sqft	406	-	421 sqft	329	-
Window Transmission	77 sqft	158	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	211 W	718	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1593	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7299	410	-	3054	0
Thermostat and Pulldown Adjustment	-	-22	0	-	108	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	406 CFM	0	-	406 CFM	0	-
>> Total System Loads	-	7277	410	-	3162	0
Central Cooling Coil	-	7277	410	-	0	0
Central Heating Coil	-	0	-	-	3162	-
>> Total Coil Loads	-	7277	410	-	3162	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 112

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 112**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **647.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.0** MBH
Sensible coil load: **6.6** MBH
Coil airflow: **371** CFM
Sensible heat ratio: **0.940**
Area per unit load: **1105.3** sqft/Ton
Load per unit area: **10.9** BTU/(hr-sqft)

Load occurs at: **Jun 900**
OA DB / WB: **72.0/62.7** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.8** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **3.2** MBH
Coil airflow: **371** CFM
Load per unit area: **5.0** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.0/78.2** F

Supply Fan Sizing Data

Actual max airflow: **371** CFM
Standard airflow: **365** CFM
Actual max airflow per unit area: **0.57** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 112	6.7	371	Jul 900	3.1	647.0	0.57

System Design Load Summary for Apt 112

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 0900 OA DB / WB 72 F / 62.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2747	-	77 sqft	-	-
Wall Transmission	78 sqft	183	-	78 sqft	158	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	-75	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	647 sqft	-265	-	647 sqft	501	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	324 W	1104	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1516	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	6695	410	-	3133	0
Thermostat and Pulldown Adjustment	-	-93	0	-	97	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	371 CFM	0	-	371 CFM	0	-
>> Total System Loads	-	6602	410	-	3230	0
Central Cooling Coil	-	6602	422	-	0	0
Central Heating Coil	-	0	-	-	3230	-
>> Total Coil Loads	-	6602	422	-	3230	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 118 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 118 Bed**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **103.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.3** Tons
Total coil load: **3.9** MBH
Sensible coil load: **3.7** MBH
Coil airflow: **205** CFM
Sensible heat ratio: **0.946**
Area per unit load: **319.6** sqft/Ton
Load per unit area: **37.5** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.5/63.9** F
Leaving DB / WB: **58.7/57.6** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.1** MBH
Coil airflow: **205** CFM
Load per unit area: **20.4** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.6/79.2** F

Supply Fan Sizing Data

Actual max airflow: **205** CFM
Standard airflow: **202** CFM
Actual max airflow per unit area: **1.99** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 118 Bed	3.7	205	Jun 1700	2.2	103.0	1.99

System Design Load Summary for Apt 118 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2811	-	77 sqft	-	-
Wall Transmission	17 sqft	50	-	17 sqft	34	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	138	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	103 sqft	0	-	103 sqft	244	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	52 W	176	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	919	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	3703	205	-	2155	0
Thermostat and Pulldown Adjustment	-	-44	0	-	-55	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	205 CFM	0	-	205 CFM	0	-
>> Total System Loads	-	3659	205	-	2099	0
Central Cooling Coil	-	3659	208	-	0	0
Central Heating Coil	-	0	-	-	2099	-
>> Total Coil Loads	-	3659	208	-	2099	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 118 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 118 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **715.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.5** Tons
Total coil load: **6.0** MBH
Sensible coil load: **5.5** MBH
Coil airflow: **308** CFM
Sensible heat ratio: **0.931**
Area per unit load: **1442.0** sqft/Ton
Load per unit area: **8.3** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.5/63.9** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.7** MBH
Coil airflow: **308** CFM
Load per unit area: **3.8** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.1/78.4** F

Supply Fan Sizing Data

Actual max airflow: **308** CFM
Standard airflow: **303** CFM
Actual max airflow per unit area: **0.43** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 118 Living	5.6	308	Jun 1700	2.5	715.0	0.43

System Design Load Summary for Apt 118 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1016	-	28 sqft	-	-
Wall Transmission	97 sqft	289	-	97 sqft	196	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	28 sqft	51	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	650 sqft	0	-	650 sqft	680	-
Partitions/Ceilings	50 sqft	-4	-	50 sqft	39	-
Overhead Lighting	358 W	1220	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1222	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	5572	410	-	2485	0
Thermostat and Pulldown Adjustment	-	-32	0	-	256	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	308 CFM	0	-	308 CFM	0	-
>> Total System Loads	-	5540	410	-	2741	0
Central Cooling Coil	-	5540	410	-	0	0
Central Heating Coil	-	0	-	-	2741	-
>> Total Coil Loads	-	5540	410	-	2741	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 119

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: Apt 119
Air System Type: Single Zone CAV

Number of zones: 1
Floor Area: 720.0 sqft
Location: Seattle IAP, Washington

Sizing Calculation Information

Calculation Months: Jan to Dec

Calculation method: Radiant Time Series

Central Cooling Coil Sizing Data

Total coil load: 0.6 Tons
Total coil load: 7.7 MBH
Sensible coil load: 7.3 MBH
Coil airflow: 407 CFM
Sensible heat ratio: 0.946
Area per unit load: 1127.2 sqft/Ton
Load per unit area: 10.6 BTU/(hr-sqft)

Load occurs at: May 1700
OA DB / WB: 80.8/64.4 F
Entering DB / WB: 75.4/63.8 F
Leaving DB / WB: 58.6/57.5 F
Coil ADP: 56.7 F
Bypass Factor: 0.100
Resulting RH: 54 %
Design supply temp: 58.0 F

Central Heating Coil Sizing Data

Max coil load: 3.4 MBH
Coil airflow: 407 CFM
Load per unit area: 4.7 BTU/(hr-sqft)

Load occurs at: Des Htg
Ent DB / Lvg DB: 70.0/77.9 F

Supply Fan Sizing Data

Actual max airflow: 407 CFM
Standard airflow: 400 CFM
Actual max airflow per unit area: 0.56 CFM/sqft

Fan motor BHP: 0.00 BHP
Fan motor kW: 0.00 kW
Fan static: 0.00 in wg

Outdoor Ventilation Air Data

Design airflow: 0 CFM
Airflow per unit floor area: 0.00 CFM/sqft

Airflow per person: 0.00 CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 119	7.3	407	Jun 1700	3.2	720.0	0.56

System Design Load Summary for Apt 119

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	May 1700 OA DB / WB 80.8 F / 64.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2796	-	77 sqft	-	-
Wall Transmission	70 sqft	202	-	70 sqft	143	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	87	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	250 sqft	0	-	250 sqft	330	-
Partitions/Ceilings	470 sqft	-76	-	470 sqft	364	-
Overhead Lighting	360 W	1228	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1443	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7239	410	-	3237	0
Thermostat and Pulldown Adjustment	-	15	0	-	174	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	407 CFM	0	-	407 CFM	0	-
>> Total System Loads	-	7254	410	-	3411	0
Central Cooling Coil	-	7254	411	-	0	0
Central Heating Coil	-	0	-	-	3411	-
>> Total Coil Loads	-	7254	411	-	3411	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 124

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 124**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **421.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.2** MBH
Sensible coil load: **6.8** MBH
Coil airflow: **380** CFM
Sensible heat ratio: **0.943**
Area per unit load: **701.4** sqft/Ton
Load per unit area: **17.1** BTU/(hr-sqft)

Load occurs at: **Jul 1700**
OA DB / WB: **84.2/66.4** F
Entering DB / WB: **75.4/63.8** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.8** MBH
Coil airflow: **380** CFM
Load per unit area: **6.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/76.5** F

Supply Fan Sizing Data

Actual max airflow: **380** CFM
Standard airflow: **373** CFM
Actual max airflow per unit area: **0.90** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 124	6.9	380	Jun 1700	3.0	421.0	0.90

System Design Load Summary for Apt 124

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2760	-	77 sqft	-	-
Wall Transmission	76 sqft	226	-	76 sqft	154	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	158	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	29 sqft	0	-	29 sqft	87	-
Partitions/Ceilings	392 sqft	-21	-	392 sqft	304	-
Overhead Lighting	211 W	718	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1487	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	6843	410	-	2989	0
Thermostat and Pulldown Adjustment	-	-53	0	-	-229	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	380 CFM	0	-	380 CFM	0	-
>> Total System Loads	-	6790	410	-	2761	0
Central Cooling Coil	-	6790	413	-	0	0
Central Heating Coil	-	0	-	-	2761	-
>> Total Coil Loads	-	6790	413	-	2761	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 301 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 301 Bed 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **139.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.1** Tons
Total coil load: **1.6** MBH
Sensible coil load: **1.6** MBH
Coil airflow: **92** CFM
Sensible heat ratio: **1.000**
Area per unit load: **1017.2** sqft/Ton
Load per unit area: **11.8** BTU/(hr-sqft)

Load occurs at: **Jun 900**
OA DB / WB: **72.0/62.7** F
Entering DB / WB: **75.4/75.4** F
Leaving DB / WB: **58.6/58.6** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.6** MBH
Coil airflow: **92** CFM
Load per unit area: **11.3** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/85.9** F

Supply Fan Sizing Data

Actual max airflow: **92** CFM
Standard airflow: **90** CFM
Actual max airflow per unit area: **0.66** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 301 Bed 1	1.7	92	Jun 900	1.6	139.0	0.66

System Design Load Summary for Apt 301 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 0900 OA DB / WB 72 F / 62.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	983	-	28 sqft	-	-
Wall Transmission	80 sqft	186	-	80 sqft	163	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	28 sqft	-30	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	70 W	237	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	1060	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1660	0	-	1571	0
Thermostat and Pulldown Adjustment	-	-20	0	-	1	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	92 CFM	0	-	92 CFM	0	-
>> Total System Loads	-	1640	0	-	1572	0
Central Cooling Coil	-	1640	0	-	0	0
Central Heating Coil	-	0	-	-	1572	-
>> Total Coil Loads	-	1640	0	-	1572	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 301 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 301 Bed 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **156.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.7** MBH
Sensible coil load: **2.5** MBH
Coil airflow: **138** CFM
Sensible heat ratio: **0.922**
Area per unit load: **698.9** sqft/Ton
Load per unit area: **17.2** BTU/(hr-sqft)

Load occurs at: **Jun 1000**
OA DB / WB: **74.8/63.7** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **3.9** MBH
Coil airflow: **138** CFM
Load per unit area: **24.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.6/95.9** F

Supply Fan Sizing Data

Actual max airflow: **138** CFM
Standard airflow: **136** CFM
Actual max airflow per unit area: **0.89** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 301 Bed 2	2.5	138	Jun 1000	3.9	156.0	0.89

System Design Load Summary for Apt 301 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1000 OA DB / WB 74.8 F / 63.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	106 sqft	1582	-	106 sqft	-	-
Wall Transmission	131 sqft	169	-	131 sqft	266	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	106 sqft	-50	-	106 sqft	1314	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	78 W	266	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	2318	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2495	205	-	3898	0
Thermostat and Pulldown Adjustment	-	-25	0	-	-43	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	138 CFM	0	-	138 CFM	0	-
>> Total System Loads	-	2470	205	-	3855	0
Central Cooling Coil	-	2470	208	-	0	0
Central Heating Coil	-	0	-	-	3855	-
>> Total Coil Loads	-	2470	208	-	3855	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 301 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 301 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **652.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.5** Tons
Total coil load: **5.5** MBH
Sensible coil load: **5.1** MBH
Coil airflow: **274** CFM
Sensible heat ratio: **0.925**
Area per unit load: **1430.9** sqft/Ton
Load per unit area: **8.4** BTU/(hr-sqft)

Load occurs at: **Jun 1500**
OA DB / WB: **85.0/67.0** F
Entering DB / WB: **75.4/63.6** F
Leaving DB / WB: **58.0/56.9** F
Coil ADP: **56.1** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.2** MBH
Coil airflow: **274** CFM
Load per unit area: **3.4** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/77.5** F

Supply Fan Sizing Data

Actual max airflow: **274** CFM
Standard airflow: **270** CFM
Actual max airflow per unit area: **0.42** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 301 Living	5.0	274	Jun 1400	2.2	652.0	0.42

System Design Load Summary for Apt 301 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1500 OA DB / WB 85 F / 67 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	78 sqft	635	-	78 sqft	-	-
Wall Transmission	42 sqft	35	-	42 sqft	85	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	78 sqft	146	-	78 sqft	966	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	326 W	1112	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1173	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	4929	410	-	2225	0
Thermostat and Pulldown Adjustment	-	129	0	-	3	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	274 CFM	0	-	274 CFM	0	-
>> Total System Loads	-	5058	410	-	2228	0
Central Cooling Coil	-	5058	410	-	0	0
Central Heating Coil	-	0	-	-	2228	-
>> Total Coil Loads	-	5058	410	-	2228	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 302

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 302**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **695.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.4** MBH
Sensible coil load: **7.0** MBH
Coil airflow: **390** CFM
Sensible heat ratio: **0.944**
Area per unit load: **1127.5** sqft/Ton
Load per unit area: **10.6** BTU/(hr-sqft)

Load occurs at: **May 900**
OA DB / WB: **69.6/60.5** F
Entering DB / WB: **75.4/63.8** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.7** MBH
Coil airflow: **390** CFM
Load per unit area: **3.8** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/76.3** F

Supply Fan Sizing Data

Actual max airflow: **390** CFM
Standard airflow: **384** CFM
Actual max airflow per unit area: **0.56** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 302	7.0	390	Jun 900	2.6	695.0	0.56

System Design Load Summary for Apt 302

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	May 0900 OA DB / WB 69.6 F / 60.5 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2730	-	77 sqft	-	-
Wall Transmission	79 sqft	177	-	79 sqft	161	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	-125	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	348 W	1186	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1530	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	6969	410	-	2648	0
Thermostat and Pulldown Adjustment	-	17	0	-	21	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	390 CFM	0	-	390 CFM	0	-
>> Total System Loads	-	6986	410	-	2669	0
Central Cooling Coil	-	6986	411	-	0	0
Central Heating Coil	-	0	-	-	2669	-
>> Total Coil Loads	-	6986	411	-	2669	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 313 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 313 Bed 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **195.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.4** MBH
Sensible coil load: **2.2** MBH
Coil airflow: **124** CFM
Sensible heat ratio: **0.914**
Area per unit load: **977.9** sqft/Ton
Load per unit area: **12.3** BTU/(hr-sqft)

Load occurs at: **Feb 1400**
OA DB / WB: **71.3/58.0** F
Entering DB / WB: **75.4/64.1** F
Leaving DB / WB: **58.7/57.6** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **55** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.3** MBH
Coil airflow: **124** CFM
Load per unit area: **6.9** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/80.0** F

Supply Fan Sizing Data

Actual max airflow: **124** CFM
Standard airflow: **122** CFM
Actual max airflow per unit area: **0.64** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 313 Bed 1	2.2	124	Oct 1300	1.4	195.0	0.64

System Design Load Summary for Apt 313 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Feb 1400 OA DB / WB 71.3 F / 58 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1216	-	28 sqft	-	-
Wall Transmission	62 sqft	167	-	62 sqft	126	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	28 sqft	-54	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	98 W	333	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	882	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2191	205	-	1356	0
Thermostat and Pulldown Adjustment	-	-3	0	-	-9	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	124 CFM	0	-	124 CFM	0	-
>> Total System Loads	-	2188	205	-	1346	0
Central Cooling Coil	-	2188	205	-	0	0
Central Heating Coil	-	0	-	-	1346	-
>> Total Coil Loads	-	2188	205	-	1346	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 313 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 313 Bed 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **131.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **1.8** MBH
Sensible coil load: **1.8** MBH
Coil airflow: **104** CFM
Sensible heat ratio: **1.000**
Area per unit load: **868.7** sqft/Ton
Load per unit area: **13.8** BTU/(hr-sqft)

Load occurs at: **Oct 1400**
OA DB / WB: **80.1/63.8** F
Entering DB / WB: **75.4/75.4** F
Leaving DB / WB: **58.9/58.9** F
Coil ADP: **57.1** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.3** MBH
Coil airflow: **104** CFM
Load per unit area: **10.0** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/81.8** F

Supply Fan Sizing Data

Actual max airflow: **104** CFM
Standard airflow: **102** CFM
Actual max airflow per unit area: **0.79** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 313 Bed 2	1.9	104	Oct 1300	1.3	131.0	0.79

System Design Load Summary for Apt 313 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Oct 1400 OA DB / WB 80.1 F / 63.8 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1133	-	28 sqft	-	-
Wall Transmission	58 sqft	168	-	58 sqft	118	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	28 sqft	13	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	66 W	223	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	845	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1820	0	-	1311	0
Thermostat and Pulldown Adjustment	-	-11	0	-	3	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	104 CFM	0	-	104 CFM	0	-
>> Total System Loads	-	1810	0	-	1314	0
Central Cooling Coil	-	1810	0	-	0	0
Central Heating Coil	-	0	-	-	1314	-
>> Total Coil Loads	-	1810	0	-	1314	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 313 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 313 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **498.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.8** Tons
Total coil load: **9.3** MBH
Sensible coil load: **8.9** MBH
Coil airflow: **499** CFM
Sensible heat ratio: **0.956**
Area per unit load: **644.7** sqft/Ton
Load per unit area: **18.6** BTU/(hr-sqft)

Load occurs at: **Jul 1000**
OA DB / WB: **75.8/63.7** F
Entering DB / WB: **75.3/63.7** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.8** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **6.6** MBH
Coil airflow: **499** CFM
Load per unit area: **13.2** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/82.2** F

Supply Fan Sizing Data

Actual max airflow: **499** CFM
Standard airflow: **491** CFM
Actual max airflow per unit area: **1.00** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 313 Living	9.0	499	Aug 1000	6.7	498.0	1.00

System Design Load Summary for Apt 313 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1000 OA DB / WB 75.8 F / 63.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	177 sqft	4595	-	177 sqft	-	-
Wall Transmission	234 sqft	436	-	234 sqft	473	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	177 sqft	-36	-	177 sqft	2202	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	249 W	850	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	4017	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	8847	410	-	6692	0
Thermostat and Pulldown Adjustment	-	12	0	-	-102	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	499 CFM	0	-	499 CFM	0	-
>> Total System Loads	-	8859	410	-	6590	0
Central Cooling Coil	-	8859	411	-	0	0
Central Heating Coil	-	0	-	-	6590	-
>> Total Coil Loads	-	8859	411	-	6590	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 314

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 314**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **342.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.4** MBH
Sensible coil load: **7.0** MBH
Coil airflow: **396** CFM
Sensible heat ratio: **0.945**
Area per unit load: **551.2** sqft/Ton
Load per unit area: **21.8** BTU/(hr-sqft)

Load occurs at: **Oct 1300**
OA DB / WB: **78.6/63.3** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.7/57.6** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **3.0** MBH
Coil airflow: **396** CFM
Load per unit area: **8.9** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.2/77.4** F

Supply Fan Sizing Data

Actual max airflow: **396** CFM
Standard airflow: **389** CFM
Actual max airflow per unit area: **1.16** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 314	7.2	396	Oct 1300	2.8	342.0	1.16

System Design Load Summary for Apt 314

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Oct 1300 OA DB / WB 78.6 F / 63.3 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	3281	-	77 sqft	-	-
Wall Transmission	96 sqft	281	-	96 sqft	194	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	4	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	171 W	583	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1689	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7151	410	-	2841	0
Thermostat and Pulldown Adjustment	-	-116	0	-	207	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	396 CFM	0	-	396 CFM	0	-
>> Total System Loads	-	7035	410	-	3048	0
Central Cooling Coil	-	7035	411	-	0	0
Central Heating Coil	-	0	-	-	3048	-
>> Total Coil Loads	-	7035	411	-	3048	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 317 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 317 Bed**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **195.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **1.8** MBH
Sensible coil load: **1.8** MBH
Coil airflow: **105** CFM
Sensible heat ratio: **1.000**
Area per unit load: **1268.8** sqft/Ton
Load per unit area: **9.5** BTU/(hr-sqft)

Load occurs at: **May 1700**
OA DB / WB: **80.8/64.4** F
Entering DB / WB: **75.3/75.3** F
Leaving DB / WB: **58.8/58.8** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.5** MBH
Coil airflow: **105** CFM
Load per unit area: **7.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/83.4** F

Supply Fan Sizing Data

Actual max airflow: **105** CFM
Standard airflow: **103** CFM
Actual max airflow per unit area: **0.54** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 317 Bed	1.9	105	Jun 1700	1.5	195.0	0.54

System Design Load Summary for Apt 317 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	May 1700 OA DB / WB 80.8 F / 64.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1011	-	28 sqft	-	-
Wall Transmission	71 sqft	204	-	71 sqft	143	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	28 sqft	33	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	98 W	333	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	967	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1864	0	-	1458	0
Thermostat and Pulldown Adjustment	-	-20	0	-	42	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	105 CFM	0	-	105 CFM	0	-
>> Total System Loads	-	1844	0	-	1500	0
Central Cooling Coil	-	1844	0	-	0	0
Central Heating Coil	-	0	-	-	1500	-
>> Total Coil Loads	-	1844	0	-	1500	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 317 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 317 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **402.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.8** Tons
Total coil load: **9.9** MBH
Sensible coil load: **9.5** MBH
Coil airflow: **538** CFM
Sensible heat ratio: **0.959**
Area per unit load: **485.6** sqft/Ton
Load per unit area: **24.7** BTU/(hr-sqft)

Load occurs at: **Sep 1500**
OA DB / WB: **84.0/66.0** F
Entering DB / WB: **75.5/63.9** F
Leaving DB / WB: **58.9/57.7** F
Coil ADP: **57.0** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **6.3** MBH
Coil airflow: **538** CFM
Load per unit area: **15.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/80.8** F

Supply Fan Sizing Data

Actual max airflow: **538** CFM
Standard airflow: **530** CFM
Actual max airflow per unit area: **1.34** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 317 Living	9.7	538	Sep 1500	6.3	402.0	1.34

System Design Load Summary for Apt 317 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Sep 1500 OA DB / WB 84 F / 66 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	177 sqft	5283	-	177 sqft	-	-
Wall Transmission	203 sqft	469	-	203 sqft	411	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	177 sqft	284	-	177 sqft	2202	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	201 W	686	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	3716	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	9723	410	-	6329	0
Thermostat and Pulldown Adjustment	-	-200	0	-	-43	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	538 CFM	0	-	538 CFM	0	-
>> Total System Loads	-	9523	410	-	6286	0
Central Cooling Coil	-	9523	411	-	0	0
Central Heating Coil	-	0	-	-	6286	-
>> Total Coil Loads	-	9523	411	-	6286	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 324

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: Apt 324
Air System Type: Single Zone CAV

Number of zones: 1
Floor Area: 421.0 sqft
Location: Seattle IAP, Washington

Sizing Calculation Information

Calculation Months: Jan to Dec

Calculation method: Radiant Time Series

Central Cooling Coil Sizing Data

Total coil load: 0.6 Tons
Total coil load: 7.2 MBH
Sensible coil load: 6.8 MBH
Coil airflow: 382 CFM
Sensible heat ratio: 0.943
Area per unit load: 699.5 sqft/Ton
Load per unit area: 17.2 BTU/(hr-sqft)

Load occurs at: Jul 1700
OA DB / WB: 84.2/66.4 F
Entering DB / WB: 75.4/63.9 F
Leaving DB / WB: 58.6/57.5 F
Coil ADP: 56.8 F
Bypass Factor: 0.100
Resulting RH: 54 %
Design supply temp: 58.0 F

Central Heating Coil Sizing Data

Max coil load: 2.5 MBH
Coil airflow: 382 CFM
Load per unit area: 5.8 BTU/(hr-sqft)

Load occurs at: Des Htg
Ent DB / Lvg DB: 69.7/75.7 F

Supply Fan Sizing Data

Actual max airflow: 382 CFM
Standard airflow: 376 CFM
Actual max airflow per unit area: 0.91 CFM/sqft

Fan motor BHP: 0.00 BHP
Fan motor kW: 0.00 kW
Fan static: 0.00 in wg

Outdoor Ventilation Air Data

Design airflow: 0 CFM
Airflow per unit floor area: 0.00 CFM/sqft

Airflow per person: 0.00 CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 324	6.9	382	Jun 1700	2.6	421.0	0.91

System Design Load Summary for Apt 324

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2760	-	77 sqft	-	-
Wall Transmission	79 sqft	236	-	79 sqft	161	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	77 sqft	158	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	211 W	718	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1530	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	6873	410	-	2648	0
Thermostat and Pulldown Adjustment	-	-61	0	-	-194	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	382 CFM	0	-	382 CFM	0	-
>> Total System Loads	-	6812	410	-	2454	0
Central Cooling Coil	-	6812	411	-	0	0
Central Heating Coil	-	0	-	-	2454	-
>> Total Coil Loads	-	6812	411	-	2454	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 327 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 327 Bed 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **110.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.1** Tons
Total coil load: **1.8** MBH
Sensible coil load: **1.8** MBH
Coil airflow: **101** CFM
Sensible heat ratio: **1.000**
Area per unit load: **735.0** sqft/Ton
Load per unit area: **16.3** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.4/75.4** F
Leaving DB / WB: **58.7/58.7** F
Coil ADP: **56.8** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.7** MBH
Coil airflow: **101** CFM
Load per unit area: **15.8** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/85.9** F

Supply Fan Sizing Data

Actual max airflow: **101** CFM
Standard airflow: **100** CFM
Actual max airflow per unit area: **0.92** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 327 Bed 1	1.8	101	Jun 1700	1.8	110.0	0.92

System Design Load Summary for Apt 327 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1016	-	28 sqft	-	-
Wall Transmission	98 sqft	291	-	98 sqft	198	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	28 sqft	51	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	55 W	188	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	1229	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1828	0	-	1775	0
Thermostat and Pulldown Adjustment	-	-32	0	-	-35	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	101 CFM	0	-	101 CFM	0	-
>> Total System Loads	-	1796	0	-	1740	0
Central Cooling Coil	-	1796	0	-	0	0
Central Heating Coil	-	0	-	-	1740	-
>> Total Coil Loads	-	1796	0	-	1740	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 327 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 327 Bed 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **214.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.4** Tons
Total coil load: **5.0** MBH
Sensible coil load: **4.8** MBH
Coil airflow: **269** CFM
Sensible heat ratio: **0.959**
Area per unit load: **512.7** sqft/Ton
Load per unit area: **23.4** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.4/63.7** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.6** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **5.5** MBH
Coil airflow: **269** CFM
Load per unit area: **25.8** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.6/88.9** F

Supply Fan Sizing Data

Actual max airflow: **269** CFM
Standard airflow: **264** CFM
Actual max airflow per unit area: **1.25** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 327 Bed 2	4.9	269	Jun 1700	5.6	214.0	1.25

System Design Load Summary for Apt 327 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	155 sqft	3409	-	155 sqft	-	-
Wall Transmission	184 sqft	272	-	184 sqft	372	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	155 sqft	276	-	155 sqft	1924	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	107 W	365	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	3313	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	4850	205	-	5609	0
Thermostat and Pulldown Adjustment	-	-47	0	-	-85	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	269 CFM	0	-	269 CFM	0	-
>> Total System Loads	-	4804	205	-	5524	0
Central Cooling Coil	-	4804	205	-	0	0
Central Heating Coil	-	0	-	-	5524	-
>> Total Coil Loads	-	4804	205	-	5524	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 327 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 327 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **466.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.4** Tons
Total coil load: **5.1** MBH
Sensible coil load: **4.7** MBH
Coil airflow: **258** CFM
Sensible heat ratio: **0.920**
Area per unit load: **1092.2** sqft/Ton
Load per unit area: **11.0** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.3/63.7** F
Leaving DB / WB: **58.1/57.0** F
Coil ADP: **56.2** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.7** MBH
Coil airflow: **258** CFM
Load per unit area: **5.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/79.6** F

Supply Fan Sizing Data

Actual max airflow: **258** CFM
Standard airflow: **254** CFM
Actual max airflow per unit area: **0.55** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 327 Living	4.7	258	Jun 1400	2.7	466.0	0.55

System Design Load Summary for Apt 327 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	78 sqft	601	-	78 sqft	-	-
Wall Transmission	79 sqft	68	-	79 sqft	159	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	78 sqft	139	-	78 sqft	966	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	233 W	795	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1530	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	4604	410	-	2655	0
Thermostat and Pulldown Adjustment	-	105	0	-	8	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	258 CFM	0	-	258 CFM	0	-
>> Total System Loads	-	4710	410	-	2663	0
Central Cooling Coil	-	4710	410	-	0	0
Central Heating Coil	-	0	-	-	2663	-
>> Total Coil Loads	-	4710	410	-	2663	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 801 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 801 Bed 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **181.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.3** MBH
Sensible coil load: **2.1** MBH
Coil airflow: **118** CFM
Sensible heat ratio: **0.911**
Area per unit load: **936.4** sqft/Ton
Load per unit area: **12.8** BTU/(hr-sqft)

Load occurs at: **Jun 900**
OA DB / WB: **72.0/62.7** F
Entering DB / WB: **75.4/64.0** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.2** MBH
Coil airflow: **118** CFM
Load per unit area: **12.0** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/87.0** F

Supply Fan Sizing Data

Actual max airflow: **118** CFM
Standard airflow: **116** CFM
Actual max airflow per unit area: **0.65** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible Load MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 801 Bed 1(1)	2.1	118	Jun 900	2.2	181.0	0.65

System Design Load Summary for Apt 801 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 0900 OA DB / WB 72 F / 62.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	983	-	28 sqft	-	-
Wall Transmission	123 sqft	285	-	123 sqft	249	-
Roof Transmission	181 sqft	61	-	181 sqft	142	-
Window Transmission	28 sqft	-30	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	91 W	309	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	1476	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2136	205	-	2214	0
Thermostat and Pulldown Adjustment	-	-22	0	-	-36	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	118 CFM	0	-	118 CFM	0	-
>> Total System Loads	-	2114	205	-	2178	0
Central Cooling Coil	-	2114	205	-	0	0
Central Heating Coil	-	0	-	-	2178	-
>> Total Coil Loads	-	2114	205	-	2178	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 801 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 801 Bed 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **145.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.7** MBH
Sensible coil load: **2.5** MBH
Coil airflow: **143** CFM
Sensible heat ratio: **0.925**
Area per unit load: **635.0** sqft/Ton
Load per unit area: **18.9** BTU/(hr-sqft)

Load occurs at: **Jun 1000**
OA DB / WB: **74.8/63.7** F
Entering DB / WB: **75.4/64.0** F
Leaving DB / WB: **58.7/57.6** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **4.1** MBH
Coil airflow: **143** CFM
Load per unit area: **28.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.6/96.9** F

Supply Fan Sizing Data

Actual max airflow: **143** CFM
Standard airflow: **140** CFM
Actual max airflow per unit area: **0.98** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 801 Bed 2(1)	2.6	143	Jun 1000	4.2	145.0	0.98

System Design Load Summary for Apt 801 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1000 OA DB / WB 74.8 F / 63.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	106 sqft	1582	-	106 sqft	-	-
Wall Transmission	145 sqft	185	-	145 sqft	294	-
Roof Transmission	145 sqft	84	-	145 sqft	113	-
Window Transmission	106 sqft	-50	-	106 sqft	1314	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	73 W	247	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	2454	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2577	205	-	4175	0
Thermostat and Pulldown Adjustment	-	-42	0	-	-33	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	143 CFM	0	-	143 CFM	0	-
>> Total System Loads	-	2535	205	-	4142	0
Central Cooling Coil	-	2535	205	-	0	0
Central Heating Coil	-	0	-	-	4142	-
>> Total Coil Loads	-	2535	205	-	4142	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 801 Bed 3

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 801 Bed 3**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **137.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.1** Tons
Total coil load: **1.7** MBH
Sensible coil load: **1.7** MBH
Coil airflow: **93** CFM
Sensible heat ratio: **1.000**
Area per unit load: **988.6** sqft/Ton
Load per unit area: **12.1** BTU/(hr-sqft)

Load occurs at: **Jun 900**
OA DB / WB: **72.0/62.7** F
Entering DB / WB: **75.3/75.3** F
Leaving DB / WB: **58.5/58.5** F
Coil ADP: **56.6** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.6** MBH
Coil airflow: **93** CFM
Load per unit area: **11.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/86.1** F

Supply Fan Sizing Data

Actual max airflow: **93** CFM
Standard airflow: **92** CFM
Actual max airflow per unit area: **0.68** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible Load MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 801 Bed 3(1)	1.7	93	Jun 900	1.6	137.0	0.68

System Design Load Summary for Apt 801 Bed 3

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 0900 OA DB / WB 72 F / 62.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	983	-	28 sqft	-	-
Wall Transmission	71 sqft	164	-	71 sqft	144	-
Roof Transmission	137 sqft	46	-	137 sqft	107	-
Window Transmission	28 sqft	-30	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	69 W	234	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	968	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1681	0	-	1566	0
Thermostat and Pulldown Adjustment	-	-18	0	-	29	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	93 CFM	0	-	93 CFM	0	-
>> Total System Loads	-	1663	0	-	1595	0
Central Cooling Coil	-	1663	0	-	0	0
Central Heating Coil	-	0	-	-	1595	-
>> Total Coil Loads	-	1663	0	-	1595	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 801 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 801 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **710.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.5** Tons
Total coil load: **5.9** MBH
Sensible coil load: **5.5** MBH
Coil airflow: **308** CFM
Sensible heat ratio: **0.930**
Area per unit load: **1432.9** sqft/Ton
Load per unit area: **8.4** BTU/(hr-sqft)

Load occurs at: **Jun 1400**
OA DB / WB: **84.5/66.8** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.5** MBH
Coil airflow: **308** CFM
Load per unit area: **3.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/77.6** F

Supply Fan Sizing Data

Actual max airflow: **308** CFM
Standard airflow: **303** CFM
Actual max airflow per unit area: **0.43** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 801 Living(1)	5.6	308	Jun 1400	2.6	710.0	0.43

System Design Load Summary for Apt 801 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1400 OA DB / WB 84.5 F / 66.8 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	78 sqft	677	-	78 sqft	-	-
Wall Transmission	42 sqft	33	-	42 sqft	85	-
Roof Transmission	466 sqft	510	-	466 sqft	364	-
Window Transmission	78 sqft	127	-	78 sqft	966	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	355 W	1211	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1173	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	5560	410	-	2589	0
Thermostat and Pulldown Adjustment	-	-31	0	-	-60	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	308 CFM	0	-	308 CFM	0	-
>> Total System Loads	-	5529	410	-	2529	0
Central Cooling Coil	-	5529	417	-	0	0
Central Heating Coil	-	0	-	-	2529	-
>> Total Coil Loads	-	5529	417	-	2529	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 802

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: Apt 802
Air System Type: Single Zone CAV

Number of zones: 1
Floor Area: 695.0 sqft
Location: Seattle IAP, Washington

Sizing Calculation Information

Calculation Months: Jan to Dec

Calculation method: Radiant Time Series

Central Cooling Coil Sizing Data

Total coil load: 0.6 Tons
Total coil load: 7.6 MBH
Sensible coil load: 7.2 MBH
Coil airflow: 406 CFM
Sensible heat ratio: 0.946
Area per unit load: 1093.6 sqft/Ton
Load per unit area: 11.0 BTU/(hr-sqft)

Load occurs at: Jul 900
OA DB / WB: 73.0/62.7 F
Entering DB / WB: 75.4/63.8 F
Leaving DB / WB: 58.7/57.5 F
Coil ADP: 56.8 F
Bypass Factor: 0.100
Resulting RH: 54 %
Design supply temp: 58.0 F

Central Heating Coil Sizing Data

Max coil load: 3.2 MBH
Coil airflow: 406 CFM
Load per unit area: 4.6 BTU/(hr-sqft)

Load occurs at: Des Htg
Ent DB / Lvg DB: 69.9/77.3 F

Supply Fan Sizing Data

Actual max airflow: 406 CFM
Standard airflow: 400 CFM
Actual max airflow per unit area: 0.58 CFM/sqft

Fan motor BHP: 0.00 BHP
Fan motor kW: 0.00 kW
Fan static: 0.00 in wg

Outdoor Ventilation Air Data

Design airflow: 0 CFM
Airflow per unit floor area: 0.00 CFM/sqft

Airflow per person: 0.00 CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 802(1)	7.3	406	Jun 900	3.3	695.0	0.58

System Design Load Summary for Apt 802

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 0900 OA DB / WB 73 F / 62.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2706	-	77 sqft	-	-
Wall Transmission	86 sqft	202	-	86 sqft	174	-
Roof Transmission	695 sqft	249	-	695 sqft	543	-
Window Transmission	77 sqft	-54	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	348 W	1186	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1593	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7289	410	-	3268	0
Thermostat and Pulldown Adjustment	-	-77	0	-	-66	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	406 CFM	0	-	406 CFM	0	-
>> Total System Loads	-	7212	410	-	3202	0
Central Cooling Coil	-	7212	414	-	0	0
Central Heating Coil	-	0	-	-	3202	-
>> Total Coil Loads	-	7212	414	-	3202	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 813 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 813 Bed 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **195.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.5** MBH
Sensible coil load: **2.3** MBH
Coil airflow: **128** CFM
Sensible heat ratio: **0.919**
Area per unit load: **925.0** sqft/Ton
Load per unit area: **13.0** BTU/(hr-sqft)

Load occurs at: **Oct 1300**
OA DB / WB: **78.6/63.3** F
Entering DB / WB: **75.2/63.7** F
Leaving DB / WB: **58.1/57.0** F
Coil ADP: **56.2** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.5** MBH
Coil airflow: **128** CFM
Load per unit area: **7.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/80.8** F

Supply Fan Sizing Data

Actual max airflow: **128** CFM
Standard airflow: **126** CFM
Actual max airflow per unit area: **0.66** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 813 Bed 1(1)	2.3	128	Oct 1300	1.6	195.0	0.66

System Design Load Summary for Apt 813 Bed 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Oct 1300 OA DB / WB 78.6 F / 63.3 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1180	-	28 sqft	-	-
Wall Transmission	66 sqft	193	-	66 sqft	134	-
Roof Transmission	195 sqft	79	-	195 sqft	152	-
Window Transmission	28 sqft	-1	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	98 W	333	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	919	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2312	205	-	1553	0
Thermostat and Pulldown Adjustment	-	12	0	-	-44	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	128 CFM	0	-	128 CFM	0	-
>> Total System Loads	-	2324	205	-	1509	0
Central Cooling Coil	-	2324	205	-	0	0
Central Heating Coil	-	0	-	-	1509	-
>> Total Coil Loads	-	2324	205	-	1509	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 813 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 813 Bed 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **131.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.8** MBH
Sensible coil load: **2.4** MBH
Coil airflow: **134** CFM
Sensible heat ratio: **0.853**
Area per unit load: **562.2** sqft/Ton
Load per unit area: **21.3** BTU/(hr-sqft)

Load occurs at: **Oct 1300**
OA DB / WB: **78.6/63.3** F
Entering DB / WB: **75.4/64.6** F
Leaving DB / WB: **58.6/57.6** F
Coil ADP: **56.8** F
Bypass Factor: **0.100**
Resulting RH: **56** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.4** MBH
Coil airflow: **134** CFM
Load per unit area: **10.4** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/79.3** F

Supply Fan Sizing Data

Actual max airflow: **134** CFM
Standard airflow: **132** CFM
Actual max airflow per unit area: **1.02** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 813 Bed 2(1)	2.4	134	Oct 1300	1.4	131.0	1.02

System Design Load Summary for Apt 813 Bed 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Oct 1300 OA DB / WB 78.6 F / 63.3 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	1191	-	28 sqft	-	-
Wall Transmission	58 sqft	172	-	58 sqft	118	-
Roof Transmission	131 sqft	55	-	131 sqft	102	-
Window Transmission	28 sqft	2	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	66 W	223	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	845	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2417	410	-	1413	0
Thermostat and Pulldown Adjustment	-	-31	0	-	-49	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	134 CFM	0	-	134 CFM	0	-
>> Total System Loads	-	2386	410	-	1364	0
Central Cooling Coil	-	2386	410	-	0	0
Central Heating Coil	-	0	-	-	1364	-
>> Total Coil Loads	-	2386	410	-	1364	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 813 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 813 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **498.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.8** Tons
Total coil load: **9.6** MBH
Sensible coil load: **9.2** MBH
Coil airflow: **514** CFM
Sensible heat ratio: **0.957**
Area per unit load: **622.8** sqft/Ton
Load per unit area: **19.3** BTU/(hr-sqft)

Load occurs at: **Aug 1200**
OA DB / WB: **81.8/65.7** F
Entering DB / WB: **75.4/63.7** F
Leaving DB / WB: **58.6/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **7.3** MBH
Coil airflow: **514** CFM
Load per unit area: **14.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/83.2** F

Supply Fan Sizing Data

Actual max airflow: **514** CFM
Standard airflow: **505** CFM
Actual max airflow per unit area: **1.03** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 813 Living(1)	9.3	514	Aug 1100	7.3	498.0	1.03

System Design Load Summary for Apt 813 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Aug 1200 OA DB / WB 81.8 F / 65.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	177 sqft	4373	-	177 sqft	-	-
Wall Transmission	251 sqft	451	-	251 sqft	507	-
Roof Transmission	498 sqft	382	-	498 sqft	389	-
Window Transmission	177 sqft	177	-	177 sqft	2202	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	249 W	850	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	4184	1
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	9234	410	-	7283	1
Thermostat and Pulldown Adjustment	-	-51	0	-	21	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	514 CFM	0	-	514 CFM	0	-
>> Total System Loads	-	9183	410	-	7304	1
Central Cooling Coil	-	9183	413	-	0	0
Central Heating Coil	-	0	-	-	7304	-
>> Total Coil Loads	-	9183	413	-	7304	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 814 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 814 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **342.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.7** MBH
Sensible coil load: **7.3** MBH
Coil airflow: **405** CFM
Sensible heat ratio: **0.946**
Area per unit load: **534.0** sqft/Ton
Load per unit area: **22.5** BTU/(hr-sqft)

Load occurs at: **Oct 1300**
OA DB / WB: **78.6/63.3** F
Entering DB / WB: **75.4/63.8** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.6** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **3.0** MBH
Coil airflow: **405** CFM
Load per unit area: **8.8** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/76.7** F

Supply Fan Sizing Data

Actual max airflow: **405** CFM
Standard airflow: **399** CFM
Actual max airflow per unit area: **1.18** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 814 Living(1)	7.3	405	Oct 1300	3.2	342.0	1.18

System Design Load Summary for Apt 814 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Oct 1300 OA DB / WB 78.6 F / 63.3 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	3281	-	77 sqft	-	-
Wall Transmission	103 sqft	303	-	103 sqft	208	-
Roof Transmission	342 sqft	144	-	342 sqft	267	-
Window Transmission	77 sqft	4	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	171 W	583	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1760	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7317	410	-	3193	0
Thermostat and Pulldown Adjustment	-	-44	0	-	-182	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	405 CFM	0	-	405 CFM	0	-
>> Total System Loads	-	7272	410	-	3011	0
Central Cooling Coil	-	7272	414	-	0	0
Central Heating Coil	-	0	-	-	3011	-
>> Total Coil Loads	-	7272	414	-	3011	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 817 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 817 Bed**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **195.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.0** MBH
Sensible coil load: **2.0** MBH
Coil airflow: **117** CFM
Sensible heat ratio: **1.000**
Area per unit load: **1146.4** sqft/Ton
Load per unit area: **10.5** BTU/(hr-sqft)

Load occurs at: **Jul 1700**
OA DB / WB: **84.2/66.4** F
Entering DB / WB: **75.4/75.4** F
Leaving DB / WB: **58.9/58.9** F
Coil ADP: **57.1** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.6** MBH
Coil airflow: **117** CFM
Load per unit area: **8.4** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/83.1** F

Supply Fan Sizing Data

Actual max airflow: **117** CFM
Standard airflow: **115** CFM
Actual max airflow per unit area: **0.60** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 817 Bed(1)	2.1	117	Jun 1700	1.7	195.0	0.60

System Design Load Summary for Apt 817 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	999	-	28 sqft	-	-
Wall Transmission	75 sqft	224	-	75 sqft	152	-
Roof Transmission	195 sqft	196	-	195 sqft	152	-
Window Transmission	28 sqft	58	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	98 W	333	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	1007	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2092	0	-	1659	0
Thermostat and Pulldown Adjustment	-	-51	0	-	-12	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	117 CFM	0	-	117 CFM	0	-
>> Total System Loads	-	2041	0	-	1647	0
Central Cooling Coil	-	2041	0	-	0	0
Central Heating Coil	-	0	-	-	1647	-
>> Total Coil Loads	-	2041	0	-	1647	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 817 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 817 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **402.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.9** Tons
Total coil load: **10.4** MBH
Sensible coil load: **9.9** MBH
Coil airflow: **554** CFM
Sensible heat ratio: **0.960**
Area per unit load: **466.1** sqft/Ton
Load per unit area: **25.7** BTU/(hr-sqft)

Load occurs at: **Sep 1500**
OA DB / WB: **84.0/66.0** F
Entering DB / WB: **75.4/63.7** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **6.7** MBH
Coil airflow: **554** CFM
Load per unit area: **16.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.1/81.4** F

Supply Fan Sizing Data

Actual max airflow: **554** CFM
Standard airflow: **546** CFM
Actual max airflow per unit area: **1.38** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 817 Living(1)	10.0	554	Sep 1500	6.6	402.0	1.38

System Design Load Summary for Apt 817 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Sep 1500 OA DB / WB 84 F / 66 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	177 sqft	5283	-	177 sqft	-	-
Wall Transmission	203 sqft	469	-	203 sqft	411	-
Roof Transmission	402 sqft	293	-	402 sqft	314	-
Window Transmission	177 sqft	284	-	177 sqft	2202	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	201 W	686	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	3716	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	10016	410	-	6643	0
Thermostat and Pulldown Adjustment	-	-78	0	-	27	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	554 CFM	0	-	554 CFM	0	-
>> Total System Loads	-	9938	410	-	6670	0
Central Cooling Coil	-	9938	412	-	0	0
Central Heating Coil	-	0	-	-	6670	-
>> Total Coil Loads	-	9938	412	-	6670	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 822 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 822 Bed**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **140.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **1.9** MBH
Sensible coil load: **1.9** MBH
Coil airflow: **109** CFM
Sensible heat ratio: **1.000**
Area per unit load: **867.3** sqft/Ton
Load per unit area: **13.8** BTU/(hr-sqft)

Load occurs at: **Jul 1700**
OA DB / WB: **84.2/66.4** F
Entering DB / WB: **75.3/75.3** F
Leaving DB / WB: **58.6/58.6** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **1.6** MBH
Coil airflow: **109** CFM
Load per unit area: **11.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/83.9** F

Supply Fan Sizing Data

Actual max airflow: **109** CFM
Standard airflow: **107** CFM
Actual max airflow per unit area: **0.78** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 822 Bed(1)	2.0	109	Jun 1700	1.6	140.0	0.78

System Design Load Summary for Apt 822 Bed

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	28 sqft	999	-	28 sqft	-	-
Wall Transmission	77 sqft	230	-	77 sqft	156	-
Roof Transmission	140 sqft	141	-	140 sqft	109	-
Window Transmission	28 sqft	58	-	28 sqft	348	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	70 W	239	-	0 W	0	-
Electric Equipment	83 W	283	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	1026	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1949	0	-	1640	0
Thermostat and Pulldown Adjustment	-	-12	0	-	-12	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	109 CFM	0	-	109 CFM	0	-
>> Total System Loads	-	1937	0	-	1628	0
Central Cooling Coil	-	1937	0	-	0	0
Central Heating Coil	-	0	-	-	1628	-
>> Total Coil Loads	-	1937	0	-	1628	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 822 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 822 Living**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **667.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.7** Tons
Total coil load: **8.3** MBH
Sensible coil load: **7.9** MBH
Coil airflow: **439** CFM
Sensible heat ratio: **0.950**
Area per unit load: **968.5** sqft/Ton
Load per unit area: **12.4** BTU/(hr-sqft)

Load occurs at: **Jul 1700**
OA DB / WB: **84.2/66.4** F
Entering DB / WB: **75.4/63.8** F
Leaving DB / WB: **58.6/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **3.0** MBH
Coil airflow: **439** CFM
Load per unit area: **4.5** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.0/76.5** F

Supply Fan Sizing Data

Actual max airflow: **439** CFM
Standard airflow: **432** CFM
Actual max airflow per unit area: **0.66** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 822 Living(1)	7.9	439	Jun 1700	3.0	667.0	0.66

System Design Load Summary for Apt 822 Living

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2760	-	77 sqft	-	-
Wall Transmission	63 sqft	187	-	63 sqft	127	-
Roof Transmission	667 sqft	643	-	667 sqft	522	-
Window Transmission	77 sqft	158	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	334 W	1138	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1369	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7888	410	-	2975	0
Thermostat and Pulldown Adjustment	-	-34	0	-	47	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	439 CFM	0	-	439 CFM	0	-
>> Total System Loads	-	7853	410	-	3022	0
Central Cooling Coil	-	7853	411	-	0	0
Central Heating Coil	-	0	-	-	3022	-
>> Total Coil Loads	-	7853	411	-	3022	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Apt 824

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Apt 824**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **421.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.7** MBH
Sensible coil load: **7.3** MBH
Coil airflow: **406** CFM
Sensible heat ratio: **0.947**
Area per unit load: **657.2** sqft/Ton
Load per unit area: **18.3** BTU/(hr-sqft)

Load occurs at: **Jul 1700**
OA DB / WB: **84.2/66.4** F
Entering DB / WB: **75.4/63.8** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.6** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **3.2** MBH
Coil airflow: **406** CFM
Load per unit area: **7.5** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.2/77.5** F

Supply Fan Sizing Data

Actual max airflow: **406** CFM
Standard airflow: **399** CFM
Actual max airflow per unit area: **0.96** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 824(1)	7.3	406	Jun 1700	3.1	421.0	0.96

System Design Load Summary for Apt 824

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	77 sqft	2760	-	77 sqft	-	-
Wall Transmission	86 sqft	255	-	86 sqft	174	-
Roof Transmission	421 sqft	406	-	421 sqft	329	-
Window Transmission	77 sqft	158	-	77 sqft	958	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	211 W	718	-	0 W	0	-
Electric Equipment	736 W	2511	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	1593	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	7299	410	-	3054	0
Thermostat and Pulldown Adjustment	-	-22	0	-	108	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	406 CFM	0	-	406 CFM	0	-
>> Total System Loads	-	7277	410	-	3162	0
Central Cooling Coil	-	7277	410	-	0	0
Central Heating Coil	-	0	-	-	3162	-
>> Total Coil Loads	-	7277	410	-	3162	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LEVEL 1 ZONE 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LEVEL 1 ZONE 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **494.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **7.6** MBH
Sensible coil load: **6.6** MBH
Coil airflow: **371** CFM
Sensible heat ratio: **0.869**
Area per unit load: **777.0** sqft/Ton
Load per unit area: **15.4** BTU/(hr-sqft)

Load occurs at: **Jun 900**
OA DB / WB: **72.0/62.7** F
Entering DB / WB: **75.4/64.4** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **56** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **8.0** MBH
Coil airflow: **371** CFM
Load per unit area: **16.2** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.7/90.1** F

Supply Fan Sizing Data

Actual max airflow: **371** CFM
Standard airflow: **365** CFM
Actual max airflow per unit area: **0.75** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible Load MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
DOG(2)	4.8	264	Jun 900	3.3	250.0	1.06
Office(2)	2.2	123	Jul 1400	3.2	150.0	0.82
STORAGE(2)	0.4	36	Jul 1600	1.5	94.0	0.38
Zone	6.7	371	Jun 900	8.0	494.0	0.75

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**

Zone sizing basis: **Peak zone load**

System Design Load Summary for LEVEL 1 ZONE 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 0900 OA DB / WB 72 F / 62.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	157 sqft	3521	-	157 sqft	-	-
Wall Transmission	229 sqft	210	-	229 sqft	464	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	157 sqft	-153	-	157 sqft	1946	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	494 sqft	-392	-	494 sqft	804	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	345 W	1176	-	0 W	0	-
Electric Equipment	200 W	682	-	0 W	0	-
People	4	1050	950	0	0	0
Infiltration	-	0	0	-	3773	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	610	48	15%	1048	0
>>Total Zone Loads	-	6705	998	-	8036	1
Thermostat and Pulldown Adjustment	-	-73	0	-	-19	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	371 CFM	0	-	371 CFM	0	-
>> Total System Loads	-	6631	998	-	8017	1
Central Cooling Coil	-	6631	998	-	0	0
Central Heating Coil	-	0	-	-	8017	-
>> Total Coil Loads	-	6631	998	-	8017	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LEVEL 1 ZONE 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LEVEL 1 ZONE 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **8131.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **9.5** Tons
Total coil load: **114.6** MBH
Sensible coil load: **100.6** MBH
Coil airflow: **5482** CFM
Sensible heat ratio: **0.878**
Area per unit load: **851.6** sqft/Ton
Load per unit area: **14.1** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.3/64.0** F
Leaving DB / WB: **58.0/56.9** F
Coil ADP: **56.1** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **58.8** MBH
Coil airflow: **5482** CFM
Load per unit area: **7.2** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/80.0** F

Supply Fan Sizing Data

Actual max airflow: **5482** CFM
Standard airflow: **5394** CFM
Actual max airflow per unit area: **0.67** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 108	7.0	387	Jul 900	4.6	549.0	0.70
Apt 109	7.0	386	Jul 900	4.5	522.0	0.74
Apt 110	7.0	387	Jul 900	4.6	542.0	0.71
Apt 111	7.0	388	Jul 900	4.8	600.0	0.65
Apt 112(1)	7.4	408	Jul 900	3.6	647.0	0.63
Apt 118 Bed(1)	4.1	226	Jun 1700	2.5	103.0	2.19
Apt 118 Living(1)	6.1	339	Jun 1700	2.9	715.0	0.47
Apt 119(1)	8.1	447	Jun 1700	3.7	720.0	0.62
Apt 120	8.0	445	Jun 1700	4.1	680.0	0.65
Apt 121	7.9	438	Jun 1700	3.8	615.0	0.71
Apt 122 Bed	1.8	100	Jun 1700	1.9	143.0	0.70
Apt 122 Living	7.0	390	Jun 1700	3.2	675.0	0.58
Apt 123	7.6	423	Jun 1700	3.8	475.0	0.89
Apt 124(1)	7.5	418	Jun 1700	3.4	421.0	0.99
FITNESS(1)	17.4	963	Jun 900	6.9	724.0	1.33
Zone	99.0	5482	Jul 1600	58.2	8131.0	0.67

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**
Zone sizing basis: **Peak zone load**

System Design Load Summary for LEVEL 1 ZONE 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1187 sqft	27778	-	1187 sqft	-	-
Wall Transmission	1068 sqft	2333	-	1068 sqft	2163	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	1187 sqft	2119	-	1187 sqft	14745	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	5482 sqft	-736	-	5482 sqft	9470	-
Partitions/Ceilings	2634 sqft	-223	-	2634 sqft	2041	-
Overhead Lighting	4080 W	13921	-	0 W	0	-
Electric Equipment	9722 W	33171	-	0 W	0	-
People	37	11305	13345	0	0	0
Infiltration	-	0	0	-	22220	3
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	8967	667	15%	7596	0
>>Total Zone Loads	-	98634	14012	-	58235	3
Thermostat and Pulldown Adjustment	-	1923	0	-	554	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	5482 CFM	0	-	5482 CFM	0	-
>> Total System Loads	-	100557	14012	-	58789	3
Central Cooling Coil	-	100557	14019	-	0	0
Central Heating Coil	-	0	-	-	58789	-
>> Total Coil Loads	-	100557	14019	-	58789	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LEVEL 2 ZONE 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LEVEL 2 ZONE 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **7904.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **10.7** Tons
Total coil load: **128.1** MBH
Sensible coil load: **120.3** MBH
Coil airflow: **6786** CFM
Sensible heat ratio: **0.939**
Area per unit load: **740.4** sqft/Ton
Load per unit area: **16.2** BTU/(hr-sqft)

Load occurs at: **Jul 1700**
OA DB / WB: **84.2/66.4** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.7/57.6** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **79.7** MBH
Coil airflow: **6786** CFM
Load per unit area: **10.1** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/80.9** F

Supply Fan Sizing Data

Actual max airflow: **6786** CFM
Standard airflow: **6676** CFM
Actual max airflow per unit area: **0.86** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 201 Bed 1	1.8	101	Jun 900	1.8	139.0	0.73
Apt 201 Bed 2	2.7	152	Jun 1000	4.5	156.0	0.97
Apt 201 Living	5.4	302	Jun 1400	2.6	652.0	0.46
Apt 202	7.7	429	Jun 900	3.0	695.0	0.62
Apt 203	8.0	442	Jun 900	3.0	675.0	0.65
Apt 204	7.9	440	Jun 900	3.0	655.0	0.67
Apt 205	7.9	438	Jun 900	3.0	640.0	0.68
Apt 224	7.6	420	Jun 1700	3.0	421.0	1.00
Apt 228 Bed	0.9	50	Jun 1800	1.7	122.0	0.41
Apt 228 Living	5.0	275	Jun 1400	3.1	375.0	0.73
Apt 229 Bed	0.9	50	Jun 1800	1.5	135.0	0.37
Apt 229 Living	5.0	276	Jun 1400	2.5	412.0	0.67
LOBBY(1)	65.4	3618	Jun 1700	47.4	2014.0	1.80
MEZZANINE(1)	5.5	305	Jan 000	0.0	813.0	0.38
Zone	122.6	6786	Jun 1700	80.3	7904.0	0.86

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**

Zone sizing basis: **Peak zone load**

System Design Load Summary for LEVEL 2 ZONE 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1700 OA DB / WB 84.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	2563 sqft	56394	-	2563 sqft	-	-
Wall Transmission	973 sqft	1174	-	973 sqft	1969	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	2563 sqft	5270	-	2563 sqft	31829	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	954 sqft	0	-	954 sqft	1154	-
Partitions/Ceilings	1100 sqft	-19	-	1100 sqft	275	-
Overhead Lighting	4335 W	14792	-	0 W	0	-
Electric Equipment	7029 W	23984	-	0 W	0	-
People	36	8820	7380	0	0	0
Infiltration	-	0	0	-	34564	4
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	11042	369	15%	10469	1
>>Total Zone Loads	-	121457	7749	-	80259	5
Thermostat and Pulldown Adjustment	-	-1120	0	-	-564	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	6786 CFM	0	-	6786 CFM	0	-
>> Total System Loads	-	120337	7749	-	79695	5
Central Cooling Coil	-	120337	7762	-	0	0
Central Heating Coil	-	0	-	-	79695	-
>> Total Coil Loads	-	120337	7762	-	79695	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LEVEL 2 ZONE 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LEVEL 2 ZONE 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **8219.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **8.1** Tons
Total coil load: **97.0** MBH
Sensible coil load: **90.0** MBH
Coil airflow: **5011** CFM
Sensible heat ratio: **0.928**
Area per unit load: **1017.0** sqft/Ton
Load per unit area: **11.8** BTU/(hr-sqft)

Load occurs at: **Jul 1600**
OA DB / WB: **85.5/66.8** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **42.4** MBH
Coil airflow: **5011** CFM
Load per unit area: **5.2** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.0/77.9** F

Supply Fan Sizing Data

Actual max airflow: **5011** CFM
Standard airflow: **4930** CFM
Actual max airflow per unit area: **0.61** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible Load MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 206	7.8	434	Jun 900	3.0	600.0	0.72
Apt 207	7.8	432	Jun 900	3.0	579.0	0.75
Apt 208	7.7	429	Jun 900	3.0	549.0	0.78
Apt 209	7.7	426	Jun 900	3.0	522.0	0.82
Apt 210	7.7	428	Jun 900	3.0	542.0	0.79
Apt 211	7.8	434	Jun 900	3.0	600.0	0.72
Apt 212	7.7	425	Jun 900	3.0	656.0	0.65
Apt 218 Bed	1.9	106	Jun 1700	1.6	202.0	0.52
Apt 218 Living	7.0	390	Jun 1700	2.4	646.0	0.60
Apt 219	8.2	453	Jun 1700	3.0	735.0	0.62
Apt 220	8.1	447	Jun 1700	3.0	680.0	0.66
Apt 221	8.0	440	Jun 1700	3.0	615.0	0.72
Apt 222 Bed	1.8	100	Jun 1700	1.6	143.0	0.70
Apt 222 Living	7.1	393	Jun 1700	2.4	675.0	0.58
Apt 223	7.7	426	Jun 1700	3.0	475.0	0.90
Zone	90.5	5011	Jun 1600	41.7	8219.0	0.61

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**
Zone sizing basis: **Peak zone load**

System Design Load Summary for LEVEL 2 ZONE 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1600 OA DB / WB 85.5 F / 66.8 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1002 sqft	22645	-	1002 sqft	-	-
Wall Transmission	1186 sqft	2339	-	1186 sqft	2400	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	1002 sqft	2183	-	1002 sqft	12449	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	4110 W	14022	-	0 W	0	-
Electric Equipment	9734 W	33212	-	0 W	0	-
People	32	7840	6560	0	0	0
Infiltration	-	0	0	-	21388	3
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	8224	328	15%	5435	0
>>Total Zone Loads	-	90465	6888	-	41671	3
Thermostat and Pulldown Adjustment	-	-512	0	-	774	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	5011 CFM	0	-	5011 CFM	0	-
>> Total System Loads	-	89953	6888	-	42446	3
Central Cooling Coil	-	89952	7029	-	0	0
Central Heating Coil	-	0	-	-	42446	-
>> Total Coil Loads	-	89952	7029	-	42446	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LEVEL 3 ZONE 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LEVEL 3 ZONE 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **10616.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **10.7** Tons
Total coil load: **127.8** MBH
Sensible coil load: **119.2** MBH
Coil airflow: **6662** CFM
Sensible heat ratio: **0.933**
Area per unit load: **996.7** sqft/Ton
Load per unit area: **12.0** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **71.1** MBH
Coil airflow: **6662** CFM
Load per unit area: **6.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/79.9** F

Supply Fan Sizing Data

Actual max airflow: **6662** CFM
Standard airflow: **6555** CFM
Actual max airflow per unit area: **0.63** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 301 Bed 1(1)	1.8	101	Jun 900	1.8	139.0	0.73
Apt 301 Bed 2(1)	2.7	152	Jun 1000	4.5	156.0	0.97
Apt 301 Living(1)	5.4	302	Jun 1400	2.6	652.0	0.46
Apt 302(1)	7.7	429	Jun 900	3.0	695.0	0.62
Apt 303	8.0	442	Jun 900	3.0	675.0	0.65
Apt 304	7.9	440	Jun 900	3.0	655.0	0.67
Apt 305	7.9	438	Jun 900	3.0	640.0	0.68
Apt 306	7.8	434	Jun 900	3.0	600.0	0.72
Apt 307	7.8	432	Jun 900	3.0	579.0	0.75
Apt 321	8.0	440	Jun 1700	3.0	615.0	0.72
Apt 322 Bed	1.8	100	Jun 1700	1.6	143.0	0.70
Apt 322 Living	7.1	393	Jun 1700	2.4	675.0	0.58
Apt 323	7.7	426	Jun 1700	3.0	475.0	0.90
Apt 324(1)	7.6	420	Jun 1700	3.0	421.0	1.00
Apt 325 Bed	1.9	106	Jun 1700	2.0	154.0	0.69
Apt 325 Living	8.0	443	Jun 1700	3.0	645.0	0.69
Apt 326 Bed	1.8	98	Jun 1700	1.6	130.0	0.76
Apt 326 Living	8.2	455	Jun 1700	3.2	733.0	0.62
Apt 327 Bed 1(1)	2.0	111	Jun 1700	2.0	110.0	1.01
Apt 327 Bed 2(1)	5.3	295	Jun 1700	6.5	214.0	1.38
Apt 327 Living(1)	5.1	284	Jun 1400	3.1	466.0	0.61
Apt 328 Bed	0.9	50	Jun 1800	1.7	122.0	0.41
Apt 328 Living	5.0	275	Jun 1400	3.1	375.0	0.73
Apt 329 Bed	0.9	50	Jun 1800	1.5	135.0	0.37
Apt 329 Living	5.0	276	Jun 1400	2.5	412.0	0.67
Zone	120.3	6662	Jun 1700	70.6	10616.0	0.63

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**
Zone sizing basis: **Peak zone load**

System Design Load Summary for LEVEL 3 ZONE 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1647 sqft	32289	-	1647 sqft	-	-
Wall Transmission	2108 sqft	3780	-	2108 sqft	4266	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	1647 sqft	2940	-	1647 sqft	20455	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	5308 W	18111	-	0 W	0	-
Electric Equipment	12523 W	42728	-	0 W	0	-
People	39	9555	7995	0	0	0
Infiltration	-	0	0	-	36704	4
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	10940	400	15%	9214	1
>>Total Zone Loads	-	120343	8395	-	70638	5
Thermostat and Pulldown Adjustment	-	-1111	0	-	482	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	6662 CFM	0	-	6662 CFM	0	-
>> Total System Loads	-	119232	8395	-	71120	5
Central Cooling Coil	-	119232	8586	-	0	0
Central Heating Coil	-	0	-	-	71120	-
>> Total Coil Loads	-	119232	8586	-	71120	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LEVEL 3 ZONE 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LEVEL 3 ZONE 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **7579.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **8.7** Tons
Total coil load: **104.5** MBH
Sensible coil load: **97.5** MBH
Coil airflow: **5434** CFM
Sensible heat ratio: **0.933**
Area per unit load: **870.3** sqft/Ton
Load per unit area: **13.8** BTU/(hr-sqft)

Load occurs at: **Sep 1500**
OA DB / WB: **84.0/66.0** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.5/57.4** F
Coil ADP: **56.6** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **53.6** MBH
Coil airflow: **5434** CFM
Load per unit area: **7.1** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.8/79.1** F

Supply Fan Sizing Data

Actual max airflow: **5434** CFM
Standard airflow: **5347** CFM
Actual max airflow per unit area: **0.72** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 308	7.7	429	Jun 900	3.0	549.0	0.78
Apt 309	7.7	426	Jun 900	3.0	522.0	0.82
Apt 310	7.7	428	Jun 900	3.0	542.0	0.79
Apt 311	7.8	434	Jun 900	3.0	600.0	0.72
Apt 312	7.7	425	Jun 900	3.0	656.0	0.65
Apt 313 Bed 1(1)	2.5	136	Oct 1300	1.6	195.0	0.70
Apt 313 Bed 2(1)	2.1	114	Oct 1300	1.5	131.0	0.87
Apt 313 Living(1)	9.9	548	Aug 1000	7.7	498.0	1.10
Apt 314(1)	7.9	435	Oct 1300	3.3	342.0	1.27
Apt 315	7.9	435	Oct 1300	3.3	342.0	1.27
Apt 316	7.9	435	Oct 1300	3.3	342.0	1.27
Apt 317 Bed(1)	2.4	130	Jun 1700	1.7	195.0	0.67
Apt 317 Living(1)	10.7	592	Sep 1500	7.3	402.0	1.47
Apt 318 Bed	1.9	106	Jun 1700	1.6	202.0	0.52
Apt 318 Living	7.0	390	Jun 1700	2.4	646.0	0.60
Apt 319	8.2	453	Jun 1700	3.0	735.0	0.62
Apt 320	8.1	447	Jun 1700	3.0	680.0	0.66
Zone	98.2	5434	Sep 1400	54.9	7579.0	0.72

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**

Zone sizing basis: **Peak zone load**

System Design Load Summary for LEVEL 3 ZONE 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Sep 1500 OA DB / WB 84 F / 66 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1287 sqft	29454	-	1287 sqft	-	-
Wall Transmission	1627 sqft	3043	-	1627 sqft	3293	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	1287 sqft	2062	-	1287 sqft	15981	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	3790 W	12930	-	0 W	0	-
Electric Equipment	9900 W	33779	-	0 W	0	-
People	32	7840	6560	0	0	0
Infiltration	-	0	0	-	28483	3
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	8911	328	15%	7163	1
>>Total Zone Loads	-	98018	6888	-	54920	4
Thermostat and Pulldown Adjustment	-	-506	0	-	-1277	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	5434 CFM	0	-	5434 CFM	0	-
>> Total System Loads	-	97511	6888	-	53643	4
Central Cooling Coil	-	97511	6993	-	0	0
Central Heating Coil	-	0	-	-	53643	-
>> Total Coil Loads	-	97511	6993	-	53643	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Level 8 Zone 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Level 8 Zone 1**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **8507.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **10.0** Tons
Total coil load: **120.5** MBH
Sensible coil load: **111.9** MBH
Coil airflow: **6245** CFM
Sensible heat ratio: **0.928**
Area per unit load: **847.4** sqft/Ton
Load per unit area: **14.2** BTU/(hr-sqft)

Load occurs at: **Jun 1600**
OA DB / WB: **84.5/66.8** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **67.3** MBH
Coil airflow: **6245** CFM
Load per unit area: **7.9** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/80.1** F

Supply Fan Sizing Data

Actual max airflow: **6245** CFM
Standard airflow: **6144** CFM
Actual max airflow per unit area: **0.73** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 801 Bed 1	2.3	130	Jun 900	2.5	181.0	0.72
Apt 801 Bed 2	2.8	157	Jun 1000	4.8	145.0	1.08
Apt 801 Bed 3	1.8	102	Jun 900	1.8	137.0	0.75
Apt 801 Living	6.1	339	Jun 1400	3.0	710.0	0.48
Apt 802	8.1	447	Jun 900	3.8	695.0	0.64
Apt 803	8.3	458	Jun 900	3.7	675.0	0.68
Apt 804	8.2	456	Jun 900	3.6	655.0	0.70
Apt 805	8.2	454	Jun 900	3.6	640.0	0.71
Apt 806	8.1	449	Jun 900	3.6	600.0	0.75
Apt 807	8.1	446	Jun 900	3.6	579.0	0.77
Apt 808	8.0	442	Jun 900	3.5	549.0	0.81
Apt 822 Bed	2.2	119	Jun 1700	1.9	140.0	0.85
Apt 822 Living	8.7	483	Jun 1700	3.4	667.0	0.72
Apt 823	8.2	454	Jun 1700	3.5	475.0	0.96
Apt 824	8.1	447	Jun 1700	3.5	421.0	1.06
Apt 829 Bed	1.1	59	Jun 1500	1.7	135.0	0.43
Apt 829 Living	5.5	304	Jun 1400	2.9	412.0	0.74
CLUB ROOM	21.0	1165	Jun 1700	11.8	691.0	1.69
Zone	112.8	6245	Jun 1600	66.2	8507.0	0.73

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**
Zone sizing basis: **Peak zone load**

System Design Load Summary for Level 8 Zone 1

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1600 OA DB / WB 84.5 F / 66.8 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1474 sqft	30562	-	1474 sqft	-	-
Wall Transmission	1554 sqft	2343	-	1554 sqft	3146	-
Roof Transmission	8263 sqft	8900	-	8263 sqft	6462	-
Window Transmission	1474 sqft	2812	-	1474 sqft	18310	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	4516 W	15409	-	0 W	0	-
Electric Equipment	9593 W	32730	-	0 W	0	-
People	40	9800	8200	0	0	0
Infiltration	-	0	0	-	29607	4
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	10256	410	15%	8629	1
>>Total Zone Loads	-	112812	8610	-	66153	4
Thermostat and Pulldown Adjustment	-	-961	0	-	1098	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	6245 CFM	0	-	6245 CFM	0	-
>> Total System Loads	-	111851	8610	-	67251	4
Central Cooling Coil	-	111851	8622	-	0	0
Central Heating Coil	-	0	-	-	67250	-
>> Total Coil Loads	-	111851	8622	-	67250	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for Level 8 Zone 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **Level 8 Zone 2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **7645.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **9.4** Tons
Total coil load: **112.8** MBH
Sensible coil load: **105.7** MBH
Coil airflow: **5899** CFM
Sensible heat ratio: **0.937**
Area per unit load: **813.0** sqft/Ton
Load per unit area: **14.8** BTU/(hr-sqft)

Load occurs at: **Aug 1500**
OA DB / WB: **86.0/67.0** F
Entering DB / WB: **75.4/63.9** F
Leaving DB / WB: **58.6/57.5** F
Coil ADP: **56.7** F
Bypass Factor: **0.100**
Resulting RH: **54** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **63.4** MBH
Coil airflow: **5899** CFM
Load per unit area: **8.3** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **70.0/80.1** F

Supply Fan Sizing Data

Actual max airflow: **5899** CFM
Standard airflow: **5804** CFM
Actual max airflow per unit area: **0.77** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Apt 809	7.9	439	Jun 900	3.5	522.0	0.84
Apt 810	8.0	441	Jun 900	3.5	542.0	0.81
Apt 811	8.1	449	Jun 900	3.6	600.0	0.75
Apt 812	8.0	441	Jun 900	3.6	656.0	0.67
Apt 813 Bed 1	2.5	141	Oct 1300	1.8	195.0	0.72
Apt 813 Bed 2	2.7	147	Oct 1300	1.6	131.0	1.12
Apt 813 Living	10.2	565	Aug 1100	8.4	498.0	1.13
Apt 814	8.0	446	Oct 1300	3.7	342.0	1.30
Apt 815	8.0	446	Oct 1300	3.7	342.0	1.30
Apt 816	8.0	446	Oct 1300	3.7	342.0	1.30
Apt 817 Bed	2.3	128	Jun 1700	1.9	195.0	0.66
Apt 817 Living	11.0	610	Sep 1500	7.6	402.0	1.52
Apt 818 Bed	1.9	106	Jun 1700	1.6	202.0	0.52
Apt 818 Living	7.0	390	Jun 1700	2.4	646.0	0.60
Apt 819	9.0	497	Jun 1700	3.7	735.0	0.68
Apt 820	8.8	488	Jun 1700	3.7	680.0	0.72
Apt 821	8.6	477	Jun 1700	3.6	615.0	0.78
Zone	106.6	5899	Aug 1500	61.7	7645.0	0.77

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**

Zone sizing basis: **Peak zone load**

System Design Load Summary for Level 8 Zone 2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Aug 1500 OA DB / WB 86 F / 67 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1287 sqft	29563	-	1287 sqft	-	-
Wall Transmission	1674 sqft	3292	-	1674 sqft	3387	-
Roof Transmission	6797 sqft	6605	-	6797 sqft	5315	-
Window Transmission	1287 sqft	2755	-	1287 sqft	15981	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	3823 W	13042	-	0 W	0	-
Electric Equipment	9900 W	33779	-	0 W	0	-
People	32	7840	6560	0	0	0
Infiltration	-	0	0	-	28938	4
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 5%	9688	328	15%	8043	1
>>Total Zone Loads	-	106565	6888	-	61665	4
Thermostat and Pulldown Adjustment	-	-876	0	-	1738	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	5899 CFM	0	-	5899 CFM	0	-
>> Total System Loads	-	105689	6888	-	63403	4
Central Cooling Coil	-	105689	7156	-	0	0
Central Heating Coil	-	0	-	-	63403	-
>> Total Coil Loads	-	105689	7156	-	63403	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LOBBY

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LOBBY**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **2014.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **5.1** Tons
Total coil load: **60.6** MBH
Sensible coil load: **59.0** MBH
Coil airflow: **3289** CFM
Sensible heat ratio: **0.973**
Area per unit load: **398.7** sqft/Ton
Load per unit area: **30.1** BTU/(hr-sqft)

Load occurs at: **Jun 1700**
OA DB / WB: **83.2/66.4** F
Entering DB / WB: **75.3/63.5** F
Leaving DB / WB: **58.4/57.2** F
Coil ADP: **56.5** F
Bypass Factor: **0.100**
Resulting RH: **53** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **41.5** MBH
Coil airflow: **3289** CFM
Load per unit area: **20.6** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/81.8** F

Supply Fan Sizing Data

Actual max airflow: **3289** CFM
Standard airflow: **3236** CFM
Actual max airflow per unit area: **1.63** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
LOBBY	59.4	3289	Jun 1700	41.2	2014.0	1.63

System Design Load Summary for LOBBY

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jun 1700 OA DB / WB 83.2 F / 66.4 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	1762 sqft	48342	-	1762 sqft	-	-
Wall Transmission	54 sqft	154	-	54 sqft	109	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	1762 sqft	3150	-	1762 sqft	21889	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	954 sqft	0	-	954 sqft	1154	-
Partitions/Ceilings	1100 sqft	-30	-	1100 sqft	275	-
Overhead Lighting	1309 W	4467	-	0 W	0	-
Electric Equipment	403 W	1374	-	0 W	0	-
People	8	1960	1640	0	0	0
Infiltration	-	0	0	-	17756	2
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	59417	1640	-	41182	2
Thermostat and Pulldown Adjustment	-	-450	0	-	340	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	3289 CFM	0	-	3289 CFM	0	-
>> Total System Loads	-	58967	1640	-	41523	2
Central Cooling Coil	-	58967	1655	-	0	0
Central Heating Coil	-	0	-	-	41523	-
>> Total Coil Loads	-	58967	1655	-	41523	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for LOBBY P2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **LOBBY P2**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **450.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **1.9** MBH
Sensible coil load: **1.5** MBH
Coil airflow: **88** CFM
Sensible heat ratio: **0.781**
Area per unit load: **2876.3** sqft/Ton
Load per unit area: **4.2** BTU/(hr-sqft)

Load occurs at: **Jul 1600**
OA DB / WB: **85.5/66.8** F
Entering DB / WB: **75.4/65.7** F
Leaving DB / WB: **59.8/58.9** F
Coil ADP: **58.0** F
Bypass Factor: **0.100**
Resulting RH: **61** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **2.8** MBH
Coil airflow: **88** CFM
Load per unit area: **6.2** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.6/99.3** F

Supply Fan Sizing Data

Actual max airflow: **88** CFM
Standard airflow: **87** CFM
Actual max airflow per unit area: **0.20** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
LOBBY P2	1.6	88	Jul 1600	2.9	450.0	0.20

System Design Load Summary for LOBBY P2

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1600 OA DB / WB 85.5 F / 66.8 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	0 sqft	0	-	0 sqft	-	-
Wall Transmission	0 sqft	0	-	0 sqft	0	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	0 sqft	0	-	0 sqft	0	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	450 sqft	70	-	450 sqft	1125	-
Partitions/Ceilings	700 sqft	-1083	-	700 sqft	1750	-
Overhead Lighting	396 W	1351	-	0 W	0	-
Electric Equipment	225 W	768	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	1596	410	-	2875	0
Thermostat and Pulldown Adjustment	-	-130	0	-	-87	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	88 CFM	0	-	88 CFM	0	-
>> Total System Loads	-	1466	410	-	2788	0
Central Cooling Coil	-	1466	411	-	0	0
Central Heating Coil	-	0	-	-	2788	-
>> Total Coil Loads	-	1466	411	-	2788	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for MAIL ROOM

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **MAIL ROOM**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **160.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.0** Tons
Total coil load: **0.5** MBH
Sensible coil load: **0.5** MBH
Coil airflow: **28** CFM
Sensible heat ratio: **1.000**
Area per unit load: **4006.0** sqft/Ton
Load per unit area: **3.0** BTU/(hr-sqft)

Load occurs at: **Jul 1500**
OA DB / WB: **86.0/67.0** F
Entering DB / WB: **75.4/75.4** F
Leaving DB / WB: **59.3/59.3** F
Coil ADP: **57.5** F
Bypass Factor: **0.100**
Resulting RH: **0** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **0.4** MBH
Coil airflow: **28** CFM
Load per unit area: **2.5** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.9/83.1** F

Supply Fan Sizing Data

Actual max airflow: **28** CFM
Standard airflow: **28** CFM
Actual max airflow per unit area: **0.17** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
MAIL ROOM	0.5	28	Jul 1600	0.4	160.0	0.17

System Design Load Summary for MAIL ROOM

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1500 OA DB / WB 86 F / 67 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	0 sqft	0	-	0 sqft	-	-
Wall Transmission	0 sqft	0	-	0 sqft	0	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	0 sqft	0	-	0 sqft	0	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	160 sqft	20	-	160 sqft	400	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	141 W	480	-	0 W	0	-
Electric Equipment	0 W	0	-	0 W	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	501	0	-	400	0
Thermostat and Pulldown Adjustment	-	-21	0	-	-7	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	28 CFM	0	-	28 CFM	0	-
>> Total System Loads	-	479	0	-	393	0
Central Cooling Coil	-	479	0	-	0	0
Central Heating Coil	-	0	-	-	393	-
>> Total Coil Loads	-	479	0	-	393	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for MEZZANINE

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **MEZZANINE**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **813.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.6** Tons
Total coil load: **6.7** MBH
Sensible coil load: **5.0** MBH
Coil airflow: **277** CFM
Sensible heat ratio: **0.753**
Area per unit load: **1466.8** sqft/Ton
Load per unit area: **8.2** BTU/(hr-sqft)

Load occurs at: **Jan 000**
OA DB / WB: **54.8/50.7** F
Entering DB / WB: **75.5/65.5** F
Leaving DB / WB: **58.5/57.6** F
Coil ADP: **56.6** F
Bypass Factor: **0.100**
Resulting RH: **59** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **0.0** MBH
Coil airflow: **0** CFM
Load per unit area: **0.0** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **0.0/0.0** F

Supply Fan Sizing Data

Actual max airflow: **277** CFM
Standard airflow: **273** CFM
Actual max airflow per unit area: **0.34** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
MEZZANINE	5.0	277	Jan 000	0.0	813.0	0.34

System Design Load Summary for MEZZANINE

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jan 0000 OA DB / WB 54.8 F / 50.7 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	0 sqft	0	-	0 sqft	-	-
Wall Transmission	0 sqft	0	-	0 sqft	0	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	0 sqft	0	-	0 sqft	0	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	0 sqft	0	-	0 sqft	0	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	488 W	1664	-	0 W	0	-
Electric Equipment	407 W	1387	-	0 W	0	-
People	8	1960	1640	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	5011	1640	-	0	0
Thermostat and Pulldown Adjustment	-	0	0	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	277 CFM	0	-	277 CFM	0	-
>> Total System Loads	-	5011	1640	-	0	0
Central Cooling Coil	-	5011	1640	-	0	0
Central Heating Coil	-	0	-	-	0	-
>> Total Coil Loads	-	5011	1640	-	0	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Air System Sizing Summary for OFFICE

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

Air System Information

Air System Name: **OFFICE**
Air System Type: **Single Zone CAV**

Number of zones: **1**
Floor Area: **244.0** sqft
Location: **Seattle IAP, Washington**

Sizing Calculation Information

Calculation Months: **Jan to Dec**

Calculation method: **Radiant Time Series**

Central Cooling Coil Sizing Data

Total coil load: **0.2** Tons
Total coil load: **2.7** MBH
Sensible coil load: **2.3** MBH
Coil airflow: **132** CFM
Sensible heat ratio: **0.851**
Area per unit load: **1066.1** sqft/Ton
Load per unit area: **11.3** BTU/(hr-sqft)

Load occurs at: **Jul 1400**
OA DB / WB: **85.5/66.8** F
Entering DB / WB: **75.4/64.6** F
Leaving DB / WB: **58.7/57.7** F
Coil ADP: **56.9** F
Bypass Factor: **0.100**
Resulting RH: **56** %
Design supply temp: **58.0** F

Central Heating Coil Sizing Data

Max coil load: **4.1** MBH
Coil airflow: **132** CFM
Load per unit area: **16.7** BTU/(hr-sqft)

Load occurs at: **Des Htg**
Ent DB / Lvg DB: **69.6/98.7** F

Supply Fan Sizing Data

Actual max airflow: **132** CFM
Standard airflow: **130** CFM
Actual max airflow per unit area: **0.54** CFM/sqft

Fan motor BHP: **0.00** BHP
Fan motor kW: **0.00** kW
Fan static: **0.00** in wg

Outdoor Ventilation Air Data

Design airflow: **0** CFM
Airflow per unit floor area: **0.00** CFM/sqft

Airflow per person: **0.00** CFM/person

Space Sizing Data

Space Name	Maximum Cooling Sensible Load MBH	Design Airflow CFM	Time of Peak Load	Maximum Heating Load MBH	Space Floor Area sqft	Space CFM/sqft
Office	2.0	112	Jul 1400	2.8	150.0	0.75
STORAGE	0.4	31	Jul 1600	1.3	94.0	0.33
Zone	2.4	132	Jul 1500	4.1	244.0	0.54

Note: Table contains data for all spaces controlled by a single thermostat:

Space sizing basis: **Peak space load**

Zone sizing basis: **Peak zone load**

System Design Load Summary for OFFICE

Project Name: The Fir
Prepared by: Rushing

03/22/2022
04:43PM

	DESIGN COOLING			DESIGN HEATING		
	Jul 1400 OA DB / WB 85.5 F / 66.8 F			Design Heating Day OA DB / WB 24 F / 22 F		
Zone Loads based on RTS	Details	Sensible BTU/hr	Latent BTU/hr	Details	Sensible BTU/hr	Latent BTU/hr
Window and Skylight Solar Loads	75 sqft	623	-	75 sqft	-	-
Wall Transmission	158 sqft	126	-	158 sqft	320	-
Roof Transmission	0 sqft	0	-	0 sqft	0	-
Window Transmission	75 sqft	142	-	75 sqft	928	-
Skylight Transmission	0 sqft	0	-	0 sqft	0	-
Door Loads	0 sqft	0	-	0 sqft	0	-
Floor Transmission	244 sqft	8	-	244 sqft	610	-
Partitions/Ceilings	0 sqft	0	-	0 sqft	0	-
Overhead Lighting	215 W	733	-	0 W	0	-
Electric Equipment	75 W	256	-	0 W	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	2278	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>>Total Zone Loads	-	2378	410	-	4136	0
Thermostat and Pulldown Adjustment	-	-42	0	-	-51	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	132 CFM	0	-	132 CFM	0	-
>> Total System Loads	-	2336	410	-	4085	0
Central Cooling Coil	-	2336	410	-	0	0
Central Heating Coil	-	0	-	-	4085	-
>> Total Coil Loads	-	2336	410	-	4085	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		