

Project Name: MEP House HAP	03/13/2024
Prepared by: AsunElectric	10:51AM

Air System Name **Fu-1/Cu-1**
Equipment Class **SPLT AHU**
Air System Type **SZCAV**

Number of zones	1
Floor Area	1334.7 ft ²
Location	Santo Domingo, Dominican Republic

Calculation Months	Jan to Dec
Sizing Data	Calculated

Zone CFM Sizing	Sum of space airflow rates
Space CFM Sizing	Individual peak space loads

Total coil load	2.0	Tons
Total coil load	23.8	MBH
Sensible coil load	18.2	MBH
Coil CFM at Jul 1900	846	CFM
Max block CFM	846	CFM
Sum of peak zone CFM	846	CFM
Sensible heat ratio	0.764	
CFM/Ton	427.1	
ft ³ /Ton	674.1	
BTU/(hr·ft ²)	17.8	
Water flow @ 10.0 °F rise	N/A	

Load occurs at	Jul 1900	
OA DB / WB	86.4 / 79.8	*F
Entering DB / WB	77.9 / 66.1	*F
Leaving DB / WB	58.0 / 56.9	*F
Coil ADP	55.8	*F
Bypass Factor	0.100	
Resulting RH	50	%
Design supply temp.	58.0	*F
Zone T-stat Check	0 of 1	OK
Max zone temperature deviation	0.3	*F

Max coil load	0.5	MBH
Coil CFM at Des Htg	846	CFM
Max coil CFM	846	CFM
Water flow @ 20.0 °F drop	N/A	

Load occurs at	Des Htg	
BTU/(hr-ft ²)	0.3	
Ent. DB / Lvg DB	69.5 / 70.0	°F

Actual max CFM	846	CFM
Standard CFM	844	CFM
Actual max CFM/ft ²	0.63	CFM/ft ²

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

Design airflow CFM	100	CFM
CFM/ft ²	0.07	CFM/ft ²

CFM/person 25.00 CFM/person

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Equipment Class	SPLT AHU
Air System Type	SZCAV

Number of zones 1
Floor Area 1334.7 ft²
Location Santo Domingo, Dominican Republic

Calculation Months	Jan to Dec
Sizing Data	Calculated

Zone CFM Sizing Sum of space airflow rates
Space CFM Sizing Individual peak space loads

Zone Name	Design Supply Airflow (CFM)	Minimum Supply (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan (CFM)
Zone 1	846	846	0.63	0.0	-	0.0	-	0

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	15.5	Jul 1400	0.5	1334.7

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
<i>Zone 1</i>							
House Spaces	1	15.5	Jul 1400	846	0.5	1334.7	0.63

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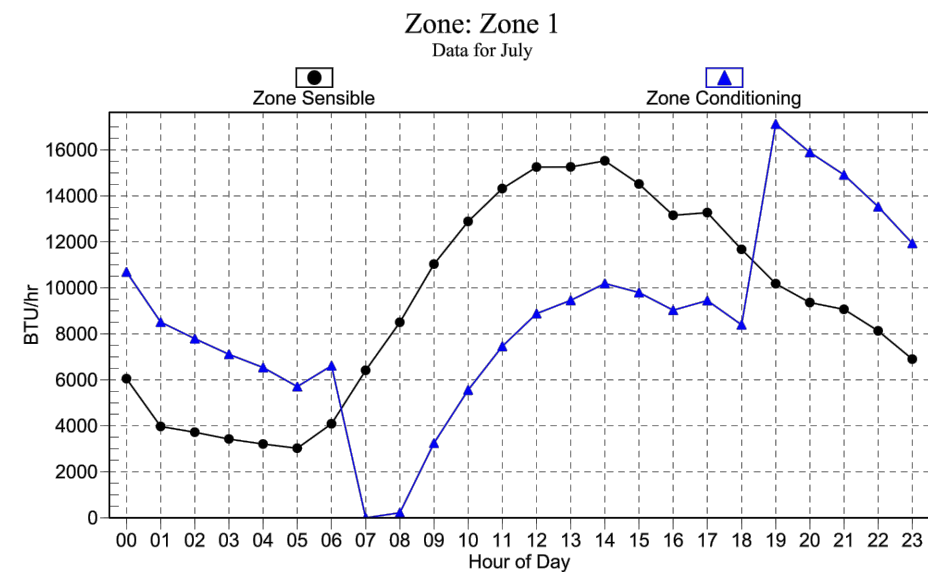
Ventilation Sizing Method	Sum of Space OA Airflows
Design Ventilation Airflow Rate	100 CFM

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
House Spaces	1	1334.7	4.0	845.7	5.30	0.06	0.0	0.0	100.0
Totals (incl. Space Multipliers)				845.7					100.0

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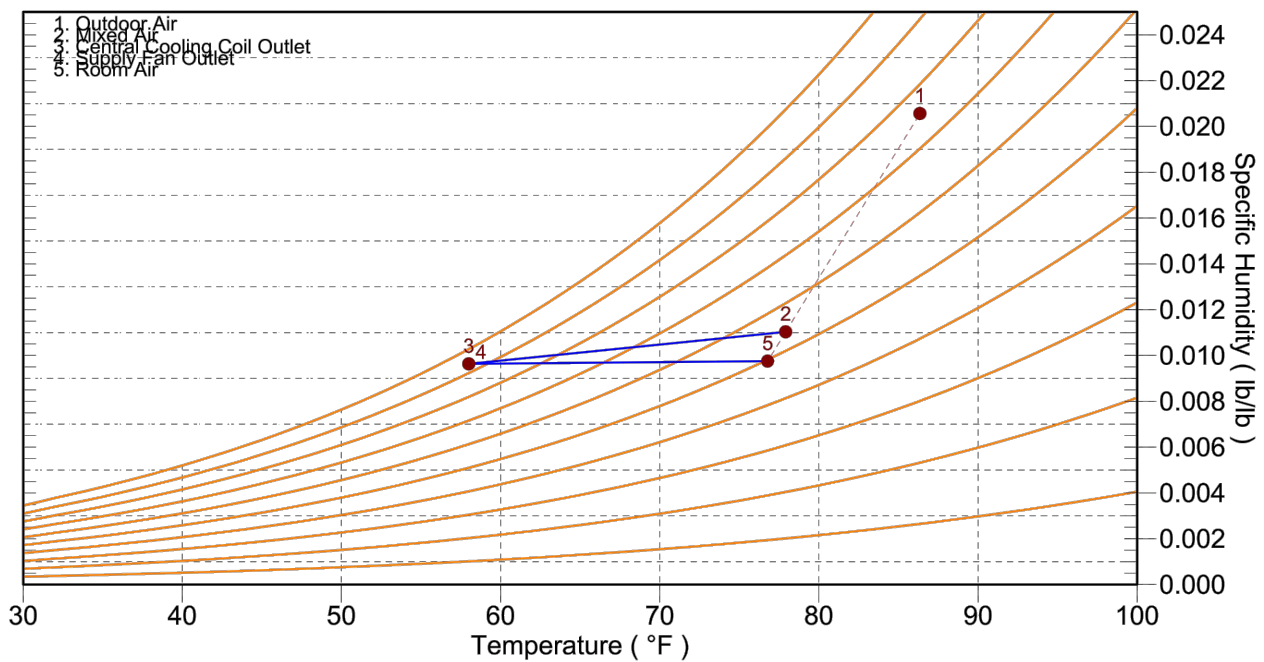
ZONE LOADS	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 2000			HEATING DATA AT DES HTG		
	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	343 ft²	619	-	28 ft²	-	-
Wall Transmission	43 ft²	363	-	343 ft²	47	-
Roof Transmission	1335 ft²	3522	-	1335 ft²	418	-
Window Transmission	28 ft²	183	-	28 ft²	44	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	51 W	126	-	0	0	-
Task Lighting	966 W	2784	-	0	0	-
Electric Equipment	621 W	1854	-	0	0	-
People	4	728	480	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	-	10178	480	-	5107	0
Zone Conditioning	-	17124	480	-	207	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	845 CFM	-	-	845 CFM	-	-
Ventilation Load	100 CFM	1032	5123	100 CFM	257	0
Supply Fan Load	846 CFM	0	-	846 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	18156	5604	-	464	0
Central Cooling Coil	-	18156	5604	-	0	0
Central Heating Coil	-	-	-	-	464	-
>> Total Conditioning	-	18156	5604	-	464	0
Key:	Positive values are ckg loads Negative values are htg loads			Positive values are htg loads Negative values are ckg loads		

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Location: Santo Domingo, Dominican Republic
Altitude: 46.0 ft.
Data for: July DESIGN COOLING DAY, 1900



MECHANICAL HEAT LOAD CALCULATION