

Air System Sizing Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

07/05/2023
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Air System Information

Air System Name HVAC
Equipment Class SPLT AHU
Air System Type 2DMZ

Number of zones 4
Floor Area 3248.4 ft²
Location Teaneca, New Jersey

Sizing Calculation Information

Calculation Months Jan to Dec
Sizing Data Calculated

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

Central Cooling Coil Sizing Data

Total coil load 21.7 Tons
Total coil load 259.9 MBH
Sensible coil load 236.4 MBH
Coil CFM at Jul 1600 10295 CFM
Max block CFM 10613 CFM
Sum of peak zone CFM 10613 CFM
Sensible heat ratio 0.910
ft²/Ton 150.0
BTU/(hr-ft²) 80.0
Water flow @ 10.0 °F rise N/A

Load occurs at Jul 1600
OA DB / WB 92.4 / 74.8 °F
Entering DB / WB 77.0 / 62.9 °F
Leaving DB / WB 55.6 / 54.1 °F
Coil ADP 52.7 °F
Bypass Factor 0.120
Resulting RH 45 %
Design supply temp. 55.0 °F
Zone T-stat Check 4 of 4 OK
Max zone temperature deviation 0.0 °F

Central Heating Coil Sizing Data

Max coil load 90.3 MBH
Coil CFM at Des Htg 3052 CFM
Max coil CFM 3052 CFM
Water flow @ 20.0 °F drop 9.04 gpm

Load occurs at Des Htg
BTU/(hr-ft²) 27.8
Ent. DB / Lvg DB 67.5 / 95.0 °F

Supply Fan Sizing Data

Actual max CFM 10613 CFM
Standard CFM 10561 CFM
Actual max CFM/ft² 3.27 CFM/ft²

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

Outdoor Ventilation Air Data

Design airflow CFM 399 CFM
CFM/ft² 0.12 CFM/ft²

CFM/person 8.50 CFM/person

Zone Sizing Summary for HVAC

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Sizing Data Calculated

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

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	27.5	1279	1279	Jul 1500	9.3	684.2	1.87
Zone 2	87.3	4119	4119	Jul 1600	21.3	974.4	4.23
Zone 3	78.8	3709	3709	Jul 1600	23.0	1061.0	3.50
Zone 4	32.3	1505	1505	Jul 1500	11.9	528.8	2.85

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
EEC Room	1	12.4	Jul 1500	576	5.3	478.9	1.20
Office	1	5.8	Jul 1600	270	1.6	99.3	2.72
Washroom B	1	2.2	Jul 1500	101	1.0	35.8	2.83
MECH Room	1	7.1	Jul 1500	332	1.4	70.2	4.73
Zone 2							
Family Room	1	13.3	Jul 1600	619	4.8	152.8	4.05
Dining Room	1	10.8	Jul 1700	503	3.5	128.4	3.92
Living Room	1	17.7	Aug 1600	823	5.3	264.2	3.12
Washroom & MUD Room	1	11.8	Jul 0900	547	2.6	71.1	7.70
Kichen	1	35.0	Sep 1500	1627	5.2	357.9	4.54
Zone 3							
Master Bedroom	1	12.9	Jul 1600	600	3.8	195.8	3.07
Master Bathroom	1	4.9	Jul 1700	230	1.6	69.4	3.31
WIC	1	4.4	Jul 1700	203	1.8	65.2	3.11
Laundry	1	10.7	Jul 1400	496	2.2	66.0	7.52
Bedroom 1	1	13.0	Sep 1500	603	4.3	195.8	3.08
Bathroom	1	11.7	Jul 1400	542	1.7	87.0	6.23
Bedroom 2	1	18.1	Aug 1600	842	5.2	273.7	3.08
Lobby-1	1	4.2	Jul 1500	193	2.5	108.1	1.79
Zone 4							
Bedroom 3	1	6.6	Jul 1500	305	2.0	114.5	2.66
Chosen Bedroom 3	1	3.1	Jul 1500	143	1.6	83.6	1.71
Bedroom 4	1	8.4	Jul 1500	392	2.9	139.0	2.82
Chosen Bedroom 4	1	1.4	Jul 1600	65	0.9	23.8	2.73
Bathroom-2	1	6.4	Jul 1600	300	1.4	57.1	5.25
Lobby-2	1	6.4	Jul 1500	300	3.1	110.8	2.71

Ventilation Sizing Summary for HVAC

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1. Summary

Ventilation Sizing Method **Sum of Space OA Airflows**
Design Ventilation Airflow Rate **399** CFM

2. Space Ventilation Analysis Table

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)
Zone 1									
EEC Room	1	478.9	2.0	575.9	10.00	0.06	0.0	0.0	48.7
Office	1	99.3	3.0	270.1	5.00	0.06	0.0	0.0	21.0
Washroom B	1	35.8	1.0	101.2	0.00	0.00	0.0	0.0	0.0
MECH Room	1	70.2	2.0	332.1	0.00	0.00	0.0	0.0	0.0
Zone 2									
Family Room	1	152.8	2.0	619.1	5.00	0.06	0.0	0.0	19.2
Dining Room	1	128.4	5.0	503.1	7.50	0.18	0.0	0.0	60.6
Living Room	1	264.2	2.0	823.2	5.00	0.06	0.0	0.0	25.9
Washroom & MUD Room	1	71.1	2.0	547.4	0.00	0.00	0.0	0.0	0.0
Kichen	1	357.9	2.0	1626.5	7.50	0.12	0.0	0.0	57.9
Zone 3									
Master Bedroom	1	195.8	2.0	600.2	5.00	0.06	0.0	0.0	21.7
Master Bathroom	1	69.4	2.0	229.7	0.00	0.00	0.0	0.0	0.0
WIC	1	65.2	2.0	202.6	0.00	0.00	0.0	0.0	0.0
Laundry	1	66.0	2.0	496.1	5.00	0.12	0.0	0.0	17.9
Bedroom 1	1	195.8	2.0	603.4	5.00	0.06	0.0	0.0	21.7
Bathroom	1	87.0	1.0	542.1	0.00	0.00	0.0	0.0	0.0
Bedroom 2	1	273.7	2.0	842.0	5.00	0.06	0.0	0.0	26.4
Lobby-1	1	108.1	2.0	193.5	7.50	0.06	0.0	0.0	21.5
Zone 4									
Bedroom 3	1	114.5	2.0	304.9	5.00	0.06	0.0	0.0	16.9
Chosen Bedroom 3	1	83.6	1.0	143.3	0.00	0.00	0.0	0.0	0.0
Bedroom 4	1	139.0	2.0	391.8	5.00	0.06	0.0	0.0	18.3
Chosen Bedroom 4	1	23.8	2.0	64.9	0.00	0.00	0.0	0.0	0.0
Bathroom-2	1	57.1	2.0	299.9	0.00	0.00	0.0	0.0	0.0
Lobby-2	1	110.8	2.0	299.9	7.50	0.06	0.0	0.0	21.6
Totals (incl. Space Multipliers)				10612.8					399.5

Air System Design Load Summary for HVAC

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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	497 ft²	24166	-	497 ft²	-	-
Wall Transmission	8296 ft²	8139	-	8296 ft²	24390	-
Roof Transmission	3248 ft²	7407	-	3248 ft²	8603	-
Window Transmission	497 ft²	4224	-	497 ft²	17233	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	865 ft²	3752	-	865 ft²	15302	-
Floor Transmission	1659 ft²	0	-	1659 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	4709 W	15714	-	0	0	-
Task Lighting	3055 W	9951	-	0	0	-
Electric Equipment	33747 W	111488	-	0	0	-
People	47	11518	11890	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	29454	595	0%	0	0
>> Total Zone Loads	-	225811	12485	-	65528	0
Zone Conditioning	-	223403	12485	-	65121	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	10613 CFM	0	-	10613 CFM	0	-
Ventilation Load	399 CFM	6879	10932	399 CFM	25191	0
Supply Fan Load	10613 CFM	0	-	10613 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	230283	23417	-	90312	0
Central Cooling Coil	-	236429	23437	-	0	0
Central Heating Coil	-	-6146	-	-	90312	-
>> Total Conditioning	-	230283	23437	-	90312	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Zone Design Load Summary for HVAC

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Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.0 °F / 75.0 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	49 ft²	2561	-	49 ft²	-	-
Wall Transmission	1545 ft²	1491	-	1545 ft²	4542	-
Roof Transmission	684 ft²	1701	-	684 ft²	1812	-
Window Transmission	49 ft²	423	-	49 ft²	1709	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	70 ft²	306	-	70 ft²	1239	-
Floor Transmission	684 ft²	0	-	684 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	344 W	1122	-	0	0	-
Task Lighting	648 W	2107	-	0	0	-
Electric Equipment	3713 W	12383	-	0	0	-
People	8	1813	1640	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	3586	82	0%	0	0
>> Total Zone Loads	-	27496	1722	-	9302	0

Zone 2	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 92.4 °F / 74.8 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	249 ft²	12049	-	249 ft²	-	-
Wall Transmission	2138 ft²	2100	-	2138 ft²	6285	-
Roof Transmission	974 ft²	2222	-	974 ft²	2581	-
Window Transmission	249 ft²	2116	-	249 ft²	8630	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	217 ft²	942	-	217 ft²	3841	-
Floor Transmission	974 ft²	0	-	974 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1874 W	6265	-	0	0	-
Task Lighting	903 W	2929	-	0	0	-
Electric Equipment	13323 W	43740	-	0	0	-
People	13	3520	4845	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	11382	242	0%	0	0
>> Total Zone Loads	-	87266	5087	-	21336	0

Zone Design Load Summary for HVAC

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Zone 3	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 92.4 °F / 74.8 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	170 ft²	8265	-	170 ft²	-	-
Wall Transmission	2876 ft²	2819	-	2876 ft²	8457	-
Roof Transmission	1061 ft²	2419	-	1061 ft²	2810	-
Window Transmission	170 ft²	1441	-	170 ft²	5880	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	333 ft²	1442	-	333 ft²	5885	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2227 W	7480	-	0	0	-
Task Lighting	974 W	3169	-	0	0	-
Electric Equipment	11390 W	37699	-	0	0	-
People	15	3824	3915	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	10284	196	0%	0	0
>> Total Zone Loads	-	78842	4111	-	23032	0

Zone 4	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.0 °F / 75.0 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	29 ft²	1244	-	29 ft²	-	-
Wall Transmission	1737 ft²	1662	-	1737 ft²	5106	-
Roof Transmission	529 ft²	1322	-	529 ft²	1400	-
Window Transmission	29 ft²	252	-	29 ft²	1015	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	245 ft²	1076	-	245 ft²	4337	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	264 W	839	-	0	0	-
Task Lighting	529 W	1734	-	0	0	-
Electric Equipment	5322 W	17610	-	0	0	-
People	11	2336	1490	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	4211	75	0%	0	0
>> Total Zone Loads	-	32285	1565	-	11858	0

Space Design Load Summary for HVAC

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TABLE 1.1.A. COMPONENT LOADS FOR SPACE "EEC Room" IN ZONE "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 93.0 °F / 75.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	49 ft²	2561	-	49 ft²	-	-
Wall Transmission	669 ft²	630	-	669 ft²	1966	-
Roof Transmission	479 ft²	1193	-	479 ft²	1268	-
Window Transmission	49 ft²	423	-	49 ft²	1709	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	77	-	18 ft²	310	-
Floor Transmission	479 ft²	0	-	479 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	239 W	774	-	0	0	-
Task Lighting	479 W	1547	-	0	0	-
Electric Equipment	958 W	3128	-	0	0	-
People	2	431	410	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1615	21	0%	0	0
>> Total Zone Loads	-	12378	431	-	5253	0

TABLE 1.1.B. ENVELOPE LOADS FOR SPACE "EEC Room" IN ZONE "Zone 1"

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	166	0.050	-	110	-	489
DOOR	18	0.300	-	77	-	310
S EXPOSURE						
WALL	184	0.050	-	156	-	541
E EXPOSURE						
WALL	149	0.050	-	187	-	438
WINDOW 2	35	0.588	0.811	301	1622	1214
W EXPOSURE						
WALL	170	0.050	-	177	-	499
WINDOW 1	14	0.588	0.811	122	939	494
H EXPOSURE						
ROOF	479	0.045	-	1193	-	1268

Space Design Load Summary for HVAC

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TABLE 1.2.A. COMPONENT LOADS FOR SPACE " Office " IN ZONE " Zone 1 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	362 ft²	359	-	362 ft²	1065	-
Roof Transmission	99 ft²	226	-	99 ft²	263	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	76	-	18 ft²	310	-
Floor Transmission	99 ft²	0	-	99 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	50 W	161	-	0	0	-
Task Lighting	99 W	322	-	0	0	-
Electric Equipment	993 W	3253	-	0	0	-
People	3	653	615	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	757	31	0%	0	0
>> Total Zone Loads	-	5807	646	-	1637	0

TABLE 1.2.B. ENVELOPE LOADS FOR SPACE " Office " IN ZONE " Zone 1 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	88	0.050	-	59	-	260
S EXPOSURE						
WALL	71	0.050	-	63	-	208
DOOR	18	0.300	-	76	-	310
E EXPOSURE						
WALL	102	0.050	-	131	-	298
W EXPOSURE						
WALL	102	0.050	-	106	-	298
H EXPOSURE						
ROOF	99	0.045	-	226	-	263

Space Design Load Summary for HVAC

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TABLE 1.3.A. COMPONENT LOADS FOR SPACE " Washroom B " IN ZONE " Zone 1 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 93.0 °F / 75.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	199 ft²	191	-	199 ft²	584	-
Roof Transmission	36 ft²	89	-	36 ft²	95	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	77	-	18 ft²	310	-
Floor Transmission	36 ft²	0	-	36 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	20 W	68	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	358 W	1221	-	0	0	-
People	1	245	205	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	284	10	0%	0	0
>> Total Zone Loads	-	2175	215	-	988	0

TABLE 1.3.B. ENVELOPE LOADS FOR SPACE " Washroom B " IN ZONE " Zone 1 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	50	0.050	-	33	-	146
S EXPOSURE						
WALL	50	0.050	-	42	-	146
E EXPOSURE						
WALL	59	0.050	-	73	-	172
W EXPOSURE						
WALL	41	0.050	-	43	-	121
DOOR	18	0.300	-	77	-	310
H EXPOSURE						
ROOF	36	0.045	-	89	-	95

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 1.4.A. COMPONENT LOADS FOR SPACE " MECH Room " IN ZONE " Zone 1 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 93.0 °F / 75.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	316 ft²	319	-	316 ft²	928	-
Roof Transmission	70 ft²	172	-	70 ft²	186	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	76	-	18 ft²	310	-
Floor Transmission	70 ft²	0	-	70 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	35 W	120	-	0	0	-
Task Lighting	70 W	239	-	0	0	-
Electric Equipment	1404 W	4790	-	0	0	-
People	2	490	410	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	931	21	0%	0	0
>> Total Zone Loads	-	7138	431	-	1423	0

TABLE 1.4.B. ENVELOPE LOADS FOR SPACE " MECH Room " IN ZONE " Zone 1 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
E EXPOSURE						
WALL	108	0.050	-	135	-	316
W EXPOSURE						
WALL	90	0.050	-	94	-	265
DOOR	18	0.300	-	76	-	310
N EXPOSURE						
WALL	59	0.050	-	39	-	173
S EXPOSURE						
WALL	59	0.050	-	50	-	173
H EXPOSURE						
ROOF	70	0.045	-	172	-	186

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 2.1.A. COMPONENT LOADS FOR SPACE " Family Room " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	86 ft²	3918	-	86 ft²	-	-
Wall Transmission	380 ft²	346	-	380 ft²	1117	-
Roof Transmission	153 ft²	348	-	153 ft²	405	-
Window Transmission	86 ft²	726	-	86 ft²	2966	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	76	-	18 ft²	310	-
Floor Transmission	153 ft²	0	-	153 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	76 W	248	-	0	0	-
Task Lighting	153 W	495	-	0	0	-
Electric Equipment	1528 W	5005	-	0	0	-
People	2	409	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1736	12	0%	0	0
>> Total Zone Loads	-	13307	252	-	4797	0

TABLE 2.1.B. ENVELOPE LOADS FOR SPACE " Family Room " IN ZONE " Zone 2 "

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
E EXPOSURE						
WALL	64	0.050	-	83	-	188
WINDOW 2	29	0.588	0.811	242	1251	989
W EXPOSURE						
WALL	64	0.050	-	67	-	188
WINDOW 2	29	0.588	0.811	242	2108	989
N EXPOSURE						
WALL	120	0.050	-	80	-	354
WINDOW 1	29	0.588	0.811	242	558	989
S EXPOSURE						
WALL	131	0.050	-	116	-	386
DOOR	18	0.300	-	76	-	310
H EXPOSURE						
ROOF	153	0.045	-	348	-	405

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 2.2.A. COMPONENT LOADS FOR SPACE " Dining Room " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 91.1 °F / 74.5 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	29 ft²	2146	-	29 ft²	-	-
Wall Transmission	344 ft²	361	-	344 ft²	1011	-
Roof Transmission	128 ft²	250	-	128 ft²	340	-
Window Transmission	29 ft²	230	-	29 ft²	989	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	63 ft²	260	-	63 ft²	1115	-
Floor Transmission	128 ft²	0	-	128 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	64 W	201	-	0	0	-
Task Lighting	128 W	418	-	0	0	-
Electric Equipment	1284 W	4218	-	0	0	-
People	5	1321	2275	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1411	114	0%	0	0
>> Total Zone Loads	-	10815	2389	-	3455	0

TABLE 2.2.B. ENVELOPE LOADS FOR SPACE " Dining Room " IN ZONE " Zone 2 "

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
E EXPOSURE				(BTU/hr)	(BTU/hr)	(BTU/hr)
WALL	104	0.050	-	138	-	306
DOOR	21	0.300	-	87	-	372
W EXPOSURE						
WALL	97	0.050	-	102	-	284
WINDOW 1	29	0.588	0.811	230	2146	989
N EXPOSURE						
WALL	51	0.050	-	35	-	149
DOOR	42	0.300	-	173	-	743
S EXPOSURE						
WALL	93	0.050	-	86	-	272
H EXPOSURE						
ROOF	128	0.045	-	250	-	340

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 2.3.A. COMPONENT LOADS FOR SPACE " Living Room " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	57 ft²	3256	-	57 ft²	-	-
Wall Transmission	515 ft²	497	-	515 ft²	1514	-
Roof Transmission	264 ft²	547	-	264 ft²	700	-
Window Transmission	57 ft²	484	-	57 ft²	1977	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	63 ft²	273	-	63 ft²	1115	-
Floor Transmission	264 ft²	0	-	264 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	132 W	410	-	0	0	-
Task Lighting	264 W	857	-	0	0	-
Electric Equipment	2642 W	8655	-	0	0	-
People	2	409	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	2308	12	0%	0	0
>> Total Zone Loads	-	17695	252	-	5306	0

TABLE 2.3.B. ENVELOPE LOADS FOR SPACE " Living Room " IN ZONE " Zone 2 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	101	0.050	-	56	-	297
DOOR	21	0.300	-	91	-	372
S EXPOSURE						
WALL	93	0.050	-	97	-	275
WINDOW 1	29	0.588	0.811	242	1210	989
E EXPOSURE						
WALL	154	0.050	-	184	-	451
DOOR	42	0.300	-	182	-	743
W EXPOSURE						
WALL	167	0.050	-	160	-	491
WINDOW 1	29	0.588	0.811	242	2046	989
H EXPOSURE						
ROOF	264	0.045	-	547	-	700

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 2.4.A. COMPONENT LOADS FOR SPACE " Washroom & MUD Room " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 0900 COOLING OA DB / WB 79.6 °F / 71.3 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	29 ft²	2027	-	29 ft²	-	-
Wall Transmission	262 ft²	253	-	262 ft²	770	-
Roof Transmission	71 ft²	90	-	71 ft²	188	-
Window Transmission	29 ft²	77	-	29 ft²	989	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	35 ft²	48	-	35 ft²	620	-
Floor Transmission	71 ft²	0	-	71 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1422 W	4852	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	711 W	2426	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1535	12	0%	0	0
>> Total Zone Loads	-	11766	252	-	2567	0

TABLE 2.4.B. ENVELOPE LOADS FOR SPACE " Washroom & MUD Room " IN ZONE " Zone 2 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
E EXPOSURE						
WALL	39	0.050	-	42	-	114
WINDOW 1	29	0.588	0.811	77	2027	989
W EXPOSURE						
WALL	67	0.050	-	84	-	198
N EXPOSURE						
WALL	78	0.050	-	55	-	229
DOOR	18	0.300	-	24	-	310
S EXPOSURE						
WALL	78	0.050	-	71	-	229
DOOR	18	0.300	-	24	-	310
H EXPOSURE						
ROOF	71	0.045	-	90	-	188

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 2.5.A. COMPONENT LOADS FOR SPACE " Kichen " IN ZONE " Zone 2 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Sep 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 88.6 °F / 72.6 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	49 ft²	2922	-	49 ft²	-	-
Wall Transmission	637 ft²	428	-	637 ft²	1874	-
Roof Transmission	358 ft²	625	-	358 ft²	948	-
Window Transmission	49 ft²	296	-	49 ft²	1709	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	39 ft²	118	-	39 ft²	681	-
Floor Transmission	358 ft²	0	-	358 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	179 W	552	-	0	0	-
Task Lighting	358 W	1156	-	0	0	-
Electric Equipment	7158 W	23380	-	0	0	-
People	2	924	1850	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	4560	93	0%	0	0
>> Total Zone Loads	-	34961	1943	-	5211	0

TABLE 2.5.B. ENVELOPE LOADS FOR SPACE " Kichen " IN ZONE " Zone 2 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING	COOLING	HEATING
				TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	140	0.050	-	35	-	412
DOOR	18	0.300	-	54	-	310
S EXPOSURE						
WALL	123	0.050	-	123	-	360
WINDOW 2	35	0.588	0.811	210	2409	1214
E EXPOSURE						
WALL	191	0.050	-	156	-	561
WINDOW 1	14	0.588	0.811	86	513	494
W EXPOSURE						
WALL	184	0.050	-	115	-	541
DOOR	21	0.300	-	64	-	372
H EXPOSURE						
ROOF	358	0.045	-	625	-	948

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.1.A. COMPONENT LOADS FOR SPACE " Master Bedroom " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	29 ft²	2108	-	29 ft²	-	-
Wall Transmission	454 ft²	433	-	454 ft²	1335	-
Roof Transmission	196 ft²	446	-	196 ft²	519	-
Window Transmission	29 ft²	242	-	29 ft²	989	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	53 ft²	228	-	53 ft²	929	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	98 W	304	-	0	0	-
Task Lighting	196 W	635	-	0	0	-
Electric Equipment	1958 W	6414	-	0	0	-
People	2	409	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1683	12	0%	0	0
>> Total Zone Loads	-	12901	252	-	3772	0

TABLE 3.1.B. ENVELOPE LOADS FOR SPACE " Master Bedroom " IN ZONE " Zone 3 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
E EXPOSURE						
WALL	101	0.050	-	131	-	298
DOOR	18	0.300	-	76	-	310
W EXPOSURE						
WALL	90	0.050	-	94	-	265
WINDOW 1	29	0.588	0.811	242	2108	989
N EXPOSURE						
WALL	114	0.050	-	76	-	335
DOOR	35	0.300	-	152	-	620
S EXPOSURE						
WALL	149	0.050	-	132	-	437
H EXPOSURE						
ROOF	196	0.045	-	446	-	519

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.2.A. COMPONENT LOADS FOR SPACE " Master Bathroom " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 91.1 °F / 74.5 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	9 ft²	708	-	9 ft²	-	-
Wall Transmission	274 ft²	273	-	274 ft²	805	-
Roof Transmission	69 ft²	137	-	69 ft²	184	-
Window Transmission	9 ft²	73	-	9 ft²	312	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	73	-	18 ft²	310	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	35 W	109	-	0	0	-
Task Lighting	69 W	226	-	0	0	-
Electric Equipment	694 W	2281	-	0	0	-
People	2	413	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	644	12	0%	0	0
>> Total Zone Loads	-	4937	252	-	1610	0

TABLE 3.2.B. ENVELOPE LOADS FOR SPACE " Master Bathroom " IN ZONE " Zone 3 "

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	76	0.050	-	52	-	223
S EXPOSURE						
WALL	58	0.050	-	54	-	171
DOOR	18	0.300	-	73	-	310
E EXPOSURE						
WALL	74	0.050	-	99	-	218
W EXPOSURE						
WALL	65	0.050	-	69	-	192
WINDOW 1	9	0.588	0.811	73	708	312
H EXPOSURE						
ROOF	69	0.045	-	137	-	184

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.3.A. COMPONENT LOADS FOR SPACE " WIC " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1700 COOLING OA DB / WB 91.1 °F / 74.5 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	14 ft²	302	-	14 ft²	-	-
Wall Transmission	283 ft²	303	-	283 ft²	833	-
Roof Transmission	65 ft²	127	-	65 ft²	173	-
Window Transmission	14 ft²	115	-	14 ft²	494	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	72	-	18 ft²	310	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	33 W	102	-	0	0	-
Task Lighting	65 W	212	-	0	0	-
Electric Equipment	652 W	2142	-	0	0	-
People	2	412	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	568	12	0%	0	0
>> Total Zone Loads	-	4354	252	-	1810	0

TABLE 3.3.B. ENVELOPE LOADS FOR SPACE " WIC " IN ZONE " Zone 3 "

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	47	0.050	-	32	-	137
WINDOW 1	14	0.588	0.811	115	302	494
S EXPOSURE						
WALL	44	0.050	-	40	-	128
DOOR	18	0.300	-	72	-	310
E EXPOSURE						
WALL	97	0.050	-	128	-	284
W EXPOSURE						
WALL	97	0.050	-	102	-	284
H EXPOSURE						
ROOF	65	0.045	-	127	-	173

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.4.A. COMPONENT LOADS FOR SPACE " Laundry " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	12 ft²	410	-	12 ft²	-	-
Wall Transmission	246 ft²	230	-	246 ft²	723	-
Roof Transmission	66 ft²	170	-	66 ft²	175	-
Window Transmission	12 ft²	99	-	12 ft²	416	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	53 ft²	221	-	53 ft²	929	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	33 W	113	-	0	0	-
Task Lighting	66 W	225	-	0	0	-
Electric Equipment	1980 W	6756	-	0	0	-
People	2	1050	1850	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1391	93	0%	0	0
>> Total Zone Loads	-	10664	1943	-	2243	0

TABLE 3.4.B. ENVELOPE LOADS FOR SPACE " Laundry " IN ZONE " Zone 3 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
E EXPOSURE						
WALL	64	0.050	-	77	-	187
WINDOW 1	6	0.588	0.811	49	291	208
W EXPOSURE						
WALL	70	0.050	-	74	-	205
N EXPOSURE						
WALL	80	0.050	-	52	-	234
WINDOW 1	6	0.588	0.811	49	119	208
S EXPOSURE						
WALL	33	0.050	-	27	-	97
DOOR	53	0.300	-	221	-	929
H EXPOSURE						
ROOF	66	0.045	-	170	-	175

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.5.A. COMPONENT LOADS FOR SPACE " Bedroom 1 " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Sep 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 88.6 °F / 72.6 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	43 ft²	2474	-	43 ft²	-	-
Wall Transmission	449 ft²	295	-	449 ft²	1321	-
Roof Transmission	196 ft²	342	-	196 ft²	519	-
Window Transmission	43 ft²	257	-	43 ft²	1483	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	53 ft²	161	-	53 ft²	929	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	98 W	316	-	0	0	-
Task Lighting	196 W	633	-	0	0	-
Electric Equipment	1958 W	6395	-	0	0	-
People	2	405	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1692	12	0%	0	0
>> Total Zone Loads	-	12969	252	-	4252	0

TABLE 3.5.B. ENVELOPE LOADS FOR SPACE " Bedroom 1 " IN ZONE " Zone 3 "

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
E EXPOSURE						
WALL	93	0.050	-	76	-	272
WINDOW 1	14	0.588	0.811	86	513	494
W EXPOSURE						
WALL	72	0.050	-	45	-	211
DOOR	35	0.300	-	107	-	620
N EXPOSURE						
WALL	148	0.050	-	37	-	435
DOOR	18	0.300	-	54	-	310
S EXPOSURE						
WALL	137	0.050	-	137	-	402
WINDOW 1	29	0.588	0.811	171	1962	989
H EXPOSURE						
ROOF	196	0.045	-	342	-	519

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.6.A. COMPONENT LOADS FOR SPACE " Bathroom " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	6 ft²	291	-	6 ft²	-	-
Wall Transmission	313 ft²	294	-	313 ft²	921	-
Roof Transmission	87 ft²	224	-	87 ft²	230	-
Window Transmission	6 ft²	49	-	6 ft²	208	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	74	-	18 ft²	310	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1740 W	5937	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	870 W	2968	-	0	0	-
People	1	295	455	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1520	23	0%	0	0
>> Total Zone Loads	-	11652	478	-	1669	0

TABLE 3.6.B. ENVELOPE LOADS FOR SPACE " Bathroom " IN ZONE " Zone 3 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	78	0.050	-	51	-	230
S EXPOSURE						
WALL	78	0.050	-	65	-	230
E EXPOSURE						
WALL	84	0.050	-	101	-	247
WINDOW 1	6	0.588	0.811	49	291	208
W EXPOSURE						
WALL	73	0.050	-	77	-	213
DOOR	18	0.300	-	74	-	310
H EXPOSURE						
ROOF	87	0.045	-	224	-	230

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.7.A. COMPONENT LOADS FOR SPACE " Bedroom 2 " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	57 ft²	3256	-	57 ft²	-	-
Wall Transmission	530 ft²	518	-	530 ft²	1557	-
Roof Transmission	274 ft²	566	-	274 ft²	725	-
Window Transmission	57 ft²	484	-	57 ft²	1977	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	53 ft²	228	-	53 ft²	929	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	137 W	425	-	0	0	-
Task Lighting	274 W	887	-	0	0	-
Electric Equipment	2737 W	8966	-	0	0	-
People	2	409	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	2361	12	0%	0	0
>> Total Zone Loads	-	18100	252	-	5188	0

TABLE 3.7.B. ENVELOPE LOADS FOR SPACE " Bedroom 2 " IN ZONE " Zone 3 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	96	0.050	-	53	-	283
DOOR	35	0.300	-	152	-	620
S EXPOSURE						
WALL	103	0.050	-	107	-	302
WINDOW 1	29	0.588	0.811	242	1210	989
E EXPOSURE						
WALL	171	0.050	-	205	-	502
DOOR	18	0.300	-	76	-	310
W EXPOSURE						
WALL	160	0.050	-	153	-	470
WINDOW 1	29	0.588	0.811	242	2046	989
H EXPOSURE						
ROOF	274	0.045	-	566	-	725

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 3.8.A. COMPONENT LOADS FOR SPACE " Lobby-1 " IN ZONE " Zone 3 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.0 °F / 75.0 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	327 ft²	319	-	327 ft²	962	-
Roof Transmission	108 ft²	269	-	108 ft²	286	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	70 ft²	307	-	70 ft²	1239	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	54 W	175	-	0	0	-
Task Lighting	108 W	349	-	0	0	-
Electric Equipment	541 W	1765	-	0	0	-
People	2	431	410	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	542	21	0%	0	0
>> Total Zone Loads	-	4158	431	-	2487	0

TABLE 3.8.B. ENVELOPE LOADS FOR SPACE " Lobby-1 " IN ZONE " Zone 3 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING	COOLING	HEATING
				TRANS (BTU/hr)	SOLAR (BTU/hr)	TRANS (BTU/hr)
N EXPOSURE						
WALL	72	0.050	-	47	-	211
DOOR	18	0.300	-	77	-	310
S EXPOSURE						
WALL	72	0.050	-	61	-	211
DOOR	18	0.300	-	77	-	310
E EXPOSURE						
WALL	92	0.050	-	115	-	270
DOOR	18	0.300	-	77	-	310
W EXPOSURE						
WALL	92	0.050	-	96	-	270
DOOR	18	0.300	-	77	-	310
H EXPOSURE						
ROOF	108	0.045	-	269	-	286

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 4.1.A. COMPONENT LOADS FOR SPACE " Bedroom 3 " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 93.0 °F / 75.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	9 ft²	179	-	9 ft²	-	-
Wall Transmission	381 ft²	362	-	381 ft²	1119	-
Roof Transmission	115 ft²	285	-	115 ft²	303	-
Window Transmission	9 ft²	77	-	9 ft²	312	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	77	-	18 ft²	310	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	57 W	177	-	0	0	-
Task Lighting	115 W	370	-	0	0	-
Electric Equipment	1145 W	3740	-	0	0	-
People	2	431	410	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	855	21	0%	0	0
>> Total Zone Loads	-	6553	431	-	2044	0

TABLE 4.1.B. ENVELOPE LOADS FOR SPACE " Bedroom 3 " IN ZONE " Zone 4 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
N EXPOSURE						
WALL	98	0.050	-	65	-	288
WINDOW 1	9	0.588	0.811	77	179	312
S EXPOSURE						
WALL	90	0.050	-	76	-	263
DOOR	18	0.300	-	77	-	310
E EXPOSURE						
WALL	97	0.050	-	121	-	284
W EXPOSURE						
WALL	97	0.050	-	101	-	284
H EXPOSURE						
ROOF	115	0.045	-	285	-	303

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 4.2.A. COMPONENT LOADS FOR SPACE " Chosen Bedroom 3 " IN ZONE " Zone 4 "						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 93.0 °F / 75.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	246 ft²	230	-	246 ft²	724	-
Roof Transmission	84 ft²	211	-	84 ft²	221	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	35 ft²	154	-	35 ft²	620	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	42 W	143	-	0	0	-
Task Lighting	84 W	285	-	0	0	-
Electric Equipment	418 W	1426	-	0	0	-
People	1	230	120	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	402	6	0%	0	0
>> Total Zone Loads	-	3081	126	-	1565	0

TABLE 4.2.B. ENVELOPE LOADS FOR SPACE " Chosen Bedroom 3 " IN ZONE " Zone 4 "						
	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
E EXPOSURE						
WALL	57	0.050	-	71	-	168
W EXPOSURE						
WALL	57	0.050	-	59	-	168
N EXPOSURE						
WALL	66	0.050	-	43	-	194
DOOR	18	0.300	-	77	-	310
S EXPOSURE						
WALL	66	0.050	-	56	-	194
DOOR	18	0.300	-	77	-	310
H EXPOSURE						
ROOF	84	0.045	-	211	-	221

Space Design Load Summary for HVAC

Project Name: New 4 Floor
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TABLE 4.3.A. COMPONENT LOADS FOR SPACE " Bedroom 4 " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 93.0 °F / 75.0 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	14 ft²	660	-	14 ft²	-	-
Wall Transmission	386 ft²	356	-	386 ft²	1134	-
Roof Transmission	139 ft²	346	-	139 ft²	368	-
Window Transmission	14 ft²	122	-	14 ft²	494	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	53 ft²	230	-	53 ft²	929	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	70 W	214	-	0	0	-
Task Lighting	139 W	449	-	0	0	-
Electric Equipment	1390 W	4540	-	0	0	-
People	2	405	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	1098	12	0%	0	0
>> Total Zone Loads	-	8422	252	-	2926	0

TABLE 4.3.B. ENVELOPE LOADS FOR SPACE " Bedroom 4 " IN ZONE " Zone 4 "

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	111	0.050	-	73	-	327
DOOR	18	0.300	-	77	-	310
S EXPOSURE						
WALL	111	0.050	-	95	-	327
DOOR	18	0.300	-	77	-	310
E EXPOSURE						
WALL	83	0.050	-	104	-	244
WINDOW 1	14	0.588	0.811	122	660	494
W EXPOSURE						
WALL	80	0.050	-	83	-	235
DOOR	18	0.300	-	77	-	310
H EXPOSURE						
ROOF	139	0.045	-	346	-	368

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 4.4.A. COMPONENT LOADS FOR SPACE " Chosen Bedroom 4 " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible (BTU/hr)	Latent (BTU/hr)		Sensible (BTU/hr)	Latent (BTU/hr)
SPACE LOADS	Details			Details		
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	168 ft²	168	-	168 ft²	493	-
Roof Transmission	24 ft²	55	-	24 ft²	63	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	77	-	18 ft²	310	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	12 W	37	-	0	0	-
Task Lighting	24 W	77	-	0	0	-
Electric Equipment	119 W	390	-	0	0	-
People	2	409	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	182	12	0%	0	0
>> Total Zone Loads	-	1395	252	-	866	0

TABLE 4.4.B. ENVELOPE LOADS FOR SPACE " Chosen Bedroom 4 " IN ZONE " Zone 4 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING TRANS (BTU/hr)	COOLING SOLAR (BTU/hr)	HEATING TRANS (BTU/hr)
E EXPOSURE						
WALL	47	0.050	-	60	-	137
W EXPOSURE						
WALL	47	0.050	-	48	-	137
N EXPOSURE						
WALL	28	0.050	-	19	-	83
DOOR	18	0.300	-	77	-	310
S EXPOSURE						
WALL	46	0.050	-	40	-	135
H EXPOSURE						
ROOF	24	0.045	-	55	-	63

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 4.5.A. COMPONENT LOADS FOR SPACE " Bathroom-2 " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 92.4 °F / 74.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 11.0 °F / 8.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	6 ft²	459	-	6 ft²	-	-
Wall Transmission	249 ft²	238	-	249 ft²	732	-
Roof Transmission	57 ft²	132	-	57 ft²	151	-
Window Transmission	6 ft²	51	-	6 ft²	208	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	18 ft²	77	-	18 ft²	310	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	29 W	97	-	0	0	-
Task Lighting	57 W	195	-	0	0	-
Electric Equipment	1142 W	3896	-	0	0	-
People	2	460	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	841	12	0%	0	0
>> Total Zone Loads	-	6447	252	-	1401	0

TABLE 4.5.B. ENVELOPE LOADS FOR SPACE " Bathroom-2 " IN ZONE " Zone 4 "

	Area	U-Value	Shade	COOLING	COOLING	HEATING
	(ft²)	(BTU/(hr-ft²-°F))	Coeff.	TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	64	0.050	-	43	-	188
S EXPOSURE						
WALL	64	0.050	-	56	-	188
E EXPOSURE						
WALL	55	0.050	-	71	-	161
DOOR	18	0.300	-	77	-	310
W EXPOSURE						
WALL	66	0.050	-	68	-	194
WINDOW 1	6	0.588	0.811	51	459	208
H EXPOSURE						
ROOF	57	0.045	-	132	-	151

Space Design Load Summary for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

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TABLE 4.6.A. COMPONENT LOADS FOR SPACE " Lobby-2 " IN ZONE " Zone 4 "

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 93.0 °F / 75.0 °F			HEATING OA DB / WB 11.0 °F / 8.6 °F		
	OCCUPIED T-STAT 75.0 °F			OCCUPIED T-STAT 70.0 °F		
SPACE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	308 ft²	316	-	308 ft²	904	-
Roof Transmission	111 ft²	276	-	111 ft²	293	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	105 ft²	460	-	105 ft²	1859	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	55 W	171	-	0	0	-
Task Lighting	111 W	358	-	0	0	-
Electric Equipment	1108 W	3619	-	0	0	-
People	2	405	240	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	15% / 5%	841	12	0%	0	0
>> Total Zone Loads	-	6446	252	-	3056	0

TABLE 4.6.B. ENVELOPE LOADS FOR SPACE " Lobby-2 " IN ZONE " Zone 4 "

	Area (ft²)	U-Value (BTU/(hr-ft²-°F))	Shade Coeff.	COOLING	COOLING	HEATING
				TRANS	SOLAR	TRANS
				(BTU/hr)	(BTU/hr)	(BTU/hr)
N EXPOSURE						
WALL	43	0.050	-	28	-	126
DOOR	35	0.300	-	153	-	620
S EXPOSURE						
WALL	61	0.050	-	51	-	178
DOOR	18	0.300	-	77	-	310
E EXPOSURE						
WALL	111	0.050	-	139	-	326
DOOR	18	0.300	-	77	-	310
W EXPOSURE						
WALL	93	0.050	-	97	-	274
DOOR	35	0.300	-	153	-	620
H EXPOSURE						
ROOF	111	0.045	-	276	-	293

System Psychrometrics for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

07/05/2023
01:11PM

July DESIGN COOLING DAY, 1600

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	92.4	0.01461	399	400	6879	10932
Vent - Return Mixing	Outlet	77.0	0.00904	10613	1427	-	-
Supply Fan	Outlet	77.0	0.00904	10613	1427	0	-
Central Cooling Coil	Outlet	55.6	0.00855	10295	1427	236429	23437
Central Heating Coil	Outlet	95.0	0.00904	318	1427	6146	-
Cold Supply Duct	Outlet	55.6	0.00855	10295	1427	-	-
Hot Supply Duct	Outlet	95.0	0.00855	318	1427	0	-
Zone Air	-	76.4	0.00882	10613	1467	223403	12485
Return Plenum	Outlet	76.4	0.00882	10613	1467	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.075 BTU/(hr-CFM-F)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4723.5 BTU/(hr-CFM)

Site Altitude = 135.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	27433	Cooling	27110	76.4	1279	1481	0	0
Zone 2	87266	Cooling	86341	76.4	4119	1462	0	0
Zone 3	78842	Cooling	78058	76.4	3709	1464	0	0
Zone 4	32270	Cooling	31895	76.4	1505	1478	0	0

System Psychrometrics for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

07/05/2023
01:11PM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	11.0	0.00070	399	400	-25191	0
Vent - Return Mixing	Outlet	67.5	0.00070	10613	652	-	-
Supply Fan	Outlet	67.5	0.00070	10613	652	0	-
Central Cooling Coil	Outlet	67.5	0.00070	7561	652	0	0
Central Heating Coil	Outlet	95.0	0.00070	3052	652	90312	-
Cold Supply Duct	Outlet	67.5	0.00070	7561	652	-	-
Hot Supply Duct	Outlet	95.0	0.00070	3052	652	0	-
Zone Air	-	69.7	0.00070	10613	662	-65121	0
Return Plenum	Outlet	69.7	0.00070	10613	662	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.075 BTU/(hr-CFM-F)

Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4723.5 BTU/(hr-CFM)

Site Altitude = 135.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-9302	Heating	-9239	69.6	1279	662	0	0
Zone 2	-21336	Heating	-21209	69.7	4119	662	0	0
Zone 3	-23032	Heating	-22901	69.7	3709	662	0	0
Zone 4	-11858	Heating	-11773	69.6	1505	662	0	0

Psychrometric Analysis for HVAC

Project Name: New 4 Floor
Prepared by: Mega Marketplace

07/05/2023
01:11PM

Location: Teaneca, New Jersey

Altitude: 135.0 ft.

Data for: July DESIGN COOLING DAY, 1600

