

***STERN0002***  
***HVAC Load Analysis***

for

Mike Sterner  
815 8th Ave West  
Washburn, WI 54891

Prepared By:

Friday, April 30, 2021



## General Project Data Input

### General Project Information

Project file name: 2021.04.30 STERN Load Calcs\_Lown.CH8  
 Project title: STERN0002  
 Project address: 28470 Rustic Road  
 Project city, state, ZIP: Washburn, WI, 54891  
 Designed by: Lucas Mason  
 Project date: Wednesday, March 24, 2021  
 Weather reference city: EAU CLAIRE, WISCONSIN, USA  
 Client name: Mike Sterner  
 Client address: 815 8th Ave West  
 Client city: Washburn, WI 54891

Barometric pressure: 28.893 in.Hg.  
 Altitude: 964 feet  
 Latitude: 46 Degrees  
 Mean daily temperature range: 20.6 Degrees  
 Starting & ending time for HVAC load calculations: 1am - 12am  
 Number of unique rooms in this project: 20

### Building Default Values

Calculations performed: Both heating and cooling loads  
 Lighting requirements: 0.75 Watts per square foot  
 Equipment requirements: 0.00 Watts per square foot  
 People sensible load multiplier: 200 Btuh per person  
 People latent load multiplier: 180 Btuh per person  
 Room sensible safety factor: 0 %  
 Room latent safety factor: 0 %  
 Room heating safety factor: 0 %  
 People diversity factor: 100 %  
 Lighting profile number: 2  
 Equipment profile number: 3  
 People profile number: 1  
 Building default ceiling height: 9.00 feet  
 Building default wall height: 10.58 feet

### Internal Operating Load Profiles (C = 100)

	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr	hr
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	10	10	10	10	10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	10	10
3	30	30	30	30	30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	50	50	30	30
4	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	C	C	C	0	0	0
5	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	0	0	0
6	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	C	C	C	C	C	C	0	0	0
7	0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	0	0	0
8	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C



## General Project Data Input (cont'd)

### Building-Level Design Conditions

Design Month	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Diff	In/Outdoor Correction
August	89	75	50%	72	52.62	0
Winter	-25			70		

### Master Roofs

Roof No.	ASHRAE Roof#	Roof U-Fac	Dark Color	Susp. Ceil
1	13	0.018	Yes	No
Roof #1 Description: Attic Roof R55				
2	13	0.020	Yes	No
Roof #2 Description: Roof Sloped R50				
3	13	0.026	Yes	No
Roof #3 Description: Garage Roof				

### Master Walls

Wall No.	ASHRAE Group	Wall U-Fac	Wall Color
1	B	0.040	L
Wall #1 Description: Basement Wall Below Grade R25			
2	G	0.027	M
Wall #2 Description: Frame Wall Above Grade R37			
3	B	0.040	M
Wall #3 Description: Basement Wall Above Grade R25			
4	G	0.026	M
Wall #4 Description: Rim Joist Level 1&2 R38			
5	G	0.053	M
Wall #5 Description: Attic Wall R19			
6	G	0.200	M
Wall #6 Description: Exterior Door R5			
7	G	0.100	M
Wall #7 Description: Garage door R10			
8	C	0.067	M
Wall #8 Description: Basement Floor R15			
9	G	0.048	M
Wall #9 Description: Garage Wall R21			

### Master Partitions

Partition No.	Partition U-Factor	Cool T-D	Heat T-D
1	0.040	-15	35
Partition #1 Description: Basement Wall Below Grade			
2	0.027	18	45
Partition #2 Description: House wall to garage			
3	0.026	18	45
Partition #3 Description: Rim Joist to Garage			
4	0.143	18	45
Partition #4 Description: Door to garage			
5	0.053	60	95
Partition #5 Description: Attic Wall			
6	0.026	60	95
Partition #6 Description: Rim Joist Second Flr to Attic R38			
7	0.041	-15	35
Partition #7 Description: Basement Floor R24.5			



## General Project Data Input (cont'd)

### Master Partitions

8	0.018	2	6
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Partition #8 Description: Attic Storage Wall R55

### Master Glass

Glass No.	Summer U-Factor	Winter U-Factor	Glass Shd.Coef.	Interior Shading	Interior Shd.Coef
1	0.160	0.160	0.460	4	0.000
Glass #1 Description: Zola Fixed					
2	0.166	0.166	0.402	4	0.000
Glass #2 Description: Zola Operable					
3	0.200	0.200	0.250	4	0.000
Glass #3 Description: Loewen Operable					
4	0.180	0.180	0.252	4	0.000
Glass #4 Description: Loewen Operable					
5	0.200	0.200	0.575	4	0.000
Glass #5 Description: Glass door R5					
6	0.500	0.500	0.805	2	0.000
Glass #6 Description: Barn Sash Window R2					

### Master Shading Devices

Shade No.	Dist Horiz Overh Projects	Dist Beyond Right W.Edge	Dist Beyond Left W.Edge	Dist Overh Above Wind	Dist Right Fin Proj	Dist R-Fin Beyond W.Edge	Ht Of Right Fin	Dist Left Fin Proj	Dist L-Fin Beyond W.Edge	Ht Of Left Fin
1	1.75	7.50	1.50	1.70	0.00	0.00	0.00	0.00	0.00	0.00
2	1.75	19.00	4.20	2.73	0.00	0.00	0.00	0.00	0.00	0.00
3	1.75	4.44	20.00	2.73	0.00	0.00	0.00	0.00	0.00	0.00
4	1.75	18.80	3.62	1.70	0.00	0.00	0.00	0.00	0.00	0.00
5	1.75	12.60	12.60	1.70	0.00	0.00	0.00	0.00	0.00	0.00
6	1.75	3.66	18.80	1.70	0.00	0.00	0.00	0.00	0.00	0.00
7	4.41	6.40	1.52	1.30	4.41	6.40	8.00	4.41	1.52	8.00
8	1.60	6.68	2.92	1.57	25.00	7.50	8.90	7.00	2.90	8.90
9	1.60	18.80	3.70	3.31	0.00	0.00	0.00	13.50	3.70	8.80
10	1.60	4.70	17.80	1.45	0.00	0.00	0.00	13.50	17.80	8.90
11	1.60	14.28	1.66	1.45	0.00	0.00	0.00	13.50	14.33	8.90
13	1.60	1.00	2.00	2.48	42.00	0.80	9.00	0.00	0.00	0.00



## Room Input

### Room 1: Entry 100 (104.9 sq.ft) (Zone 1)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	104.90
Lighting Watts:	52	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	8	Equipment profile number:	8
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	105	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	14.00	5.59	78.3	No
2	1	13	0.018	Yes	14.00	1.90	26.6	No

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	2	0.027	18.000	45.000	9.00	8.04	72.4
5	3	0.0263	18.000	45.000	1.13	8.04	9.1
6(D)	4	0.1429	18.000	45.000	7.00	3.00	21.0

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
2	2	G	0.027	M	9.00	14.00	126.0	E
3(D)	6	G	0.200	M	7.00	3.45	24.2	E
4	4	G	0.026	M	1.13	14.00	15.8	E

### Room 2: Laundry 101 (54.7 sq.ft) (Zone 1)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	54.70
Lighting Watts:	27	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	8	Equipment profile number:	8
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	55	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	6.50	9.75	63.4	No

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	2	0.027	18.000	45.000	9.00	6.50	58.5
3	3	0.0263	18.000	45.000	1.13	6.50	7.3



### Room Input (cont'd)

#### Room 2: Laundry 101 (54.7 sq.ft) (Zone 1)

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
2	2	G	0.027	M	9.00	9.75	87.8	W
4	4	G	0.026	M	1.13	9.75	11.0	W

  

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	4.00	3.00	1	12.0	8	90	2

#### Room 3: Pantry 102 (26.9 sq.ft) (Zone 1)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	26.90
Lighting Watts:	13	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	8	Equipment profile number:	8
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	27	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	4.30	6.50	28.0	No

  

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	4.30	38.7	W
2	4	G	0.026	M	1.13	4.30	4.9	W

#### Room 4: Hallway 103, Back Entry 104 2 Closets (121.3 sq.ft) (Zone 2)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	121.30
Lighting Watts:	50	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	8	Equipment profile number:	3
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	121	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	40.00	40.0	No



### Room Input (cont'd)

#### Room 4: Hallway 103, Back Entry 104 2 Closets (121.3 sq.ft) (Zone 2)

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	12.90	116.1	N
2	4	G	0.026	M	1.13	12.90	14.6	N

  

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	3.30	2.50	1	8.3	9	90	1
2	5	0.200	0.575	7.00	3.00	1	21.0	11	90	1

#### Room 5: Bath 105 (62.1 sq.ft) (Zone 2)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	62.10
Lighting Watts:	47	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	2	Equipment profile number:	3
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	20	Summer exhaust air CFM:	20
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	62	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	62.10	62.1	No

  

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	12.00	108.0	N
2	4	G	0.026	M	1.13	12.00	13.6	N
3	2	G	0.027	M	9.00	6.29	56.6	W
4	4	G	0.026	M	1.13	6.29	7.1	W

  

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	3.30	2.50	1	8.3	10	90	1
2	3	0.200	0.250	2.00	2.00	1	4.0	0	90	3

#### Room 6: M. Bed 106 Closet (181 sq.ft) (Zone 3)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	181.00
Lighting Watts:	136	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	4	Equipment profile number:	3
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	15.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	15.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0



## Room Input (cont'd)

### Room 6: M. Bed 106 Closet (181 sq.ft) (Zone 3)

Ceil. exposed to plenum (sq.ft): 181 Exposed floor slab perimeter (ft): 0  
 Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	181.00	181.0	No

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	11.25	101.3	W
2	4	G	0.026	M	1.13	11.25	12.7	W
3	2	G	0.027	M	9.00	18.00	162.0	S
4	4	G	0.026	M	1.13	18.00	20.3	S

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	4.50	3.00	1	13.5	0	90	1
2	4	0.180	0.252	5.00	8.85	1	44.3	1	90	3

### Room 7: Living 107 (254.4 sq.ft) (Zone 4)

Air Handler number: 1 Room occurrences: 1  
 Room length: (feet) 15.90 Room width (feet): 16.00  
 Lighting Watts: 254 Equipment Watts: 0  
 Number of people in room: 2 People profile number: 1  
 Lighting profile number: 2 Equipment profile number: 3  
 Ceiling height (feet): 9.00 Heating safety factor (%): 0  
 Sensible safety factor (%): 0 Latent safety factor (%): 0  
 Sensible heat per person (Btuh): 200 Latent heat per person (Btuh): 180  
 Cooling ventilation method: Direct Cooling ventilation value: 25.000  
 Cooling infiltration method: AC/Hr Cooling infiltration value: 0.073  
 Heating ventilation method: Direct Heating ventilation value: 25.000  
 Heating infiltration method: AC/Hr Heating infiltration value: 0.073  
 Winter exhaust air CFM: 0 Summer exhaust air CFM: 0  
 Minimum supply CFM: 0 Latent Btuh equipment load: 0  
 Ceil. exposed to plenum (sq.ft): 254 Exposed floor slab perimeter (ft): 0  
 Both heating and cooling loads are calculated for this room.

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	10.00	90.0	W
2	4	G	0.026	M	1.13	10.00	11.3	W
3	2	G	0.027	M	9.00	16.00	144.0	S
4	4	G	0.026	M	1.13	16.00	18.1	S

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	6.00	3.36	1	20.2	0	90	1
2	3	0.200	0.250	5.90	10.31	1	60.8	2	90	3

### Room 8: Dining 108 (186.66 sq.ft) (Zone 4)

Air Handler number: 1 Room occurrences: 1  
 Room length: (feet) 15.30 Room width (feet): 12.20  
 Lighting Watts: 186 Equipment Watts: 0  
 Number of people in room: 1 People profile number: 1  
 Lighting profile number: 7 Equipment profile number: 3  
 Ceiling height (feet): 9.00 Heating safety factor (%): 0  
 Sensible safety factor (%): 0 Latent safety factor (%): 0  
 Sensible heat per person (Btuh): 200 Latent heat per person (Btuh): 180  
 Cooling ventilation method: Direct Cooling ventilation value: 25.000





### Room Input (cont'd)

#### Room 8: Dining 108 (186.66 sq.ft) (Zone 4)

Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	25.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	187	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	15.30	137.7	S
2	4	G	0.026	M	1.13	15.30	17.3	S
3	2	G	0.027	M	9.00	12.20	109.8	E
4	4	G	0.026	M	1.13	12.20	13.8	E
5(D)	6	G	0.200	M	7.00	6.50	45.5	E

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	5.00	8.86	1	44.3	3	90	1

#### Room 9: Kitchen 110 (236.8 sq.ft) (Zone 4)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	236.80
Lighting Watts:	236	Equipment Watts:	700
Number of people in room:	1	People profile number:	1
Lighting profile number:	2	Equipment profile number:	6
Ceiling height (feet):	9.00	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	200
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	40	Summer exhaust air CFM:	40
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	237	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	9.00	14.80	133.2	E
2	4	G	0.026	M	1.13	14.80	16.7	E
3	2	G	0.027	M	9.00	10.20	91.8	N
4	4	G	0.026	M	1.13	10.20	11.5	N

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	4.00	8.89	1	35.6	12	90	1
2	4	0.180	0.252	4.00	3.00	1	12.0	13	90	3

#### Room 11: Mech 001 (215.5 sq.ft) (Zone 6)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	215.50
Lighting Watts:	107	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	9	Equipment profile number:	3
Ceiling height (feet):	8.40	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180



## Room Input (cont'd)

### Room 11: Mech 001 (215.5 sq.ft) (Zone 6)

Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.016
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.016
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	216	Exposed floor slab perimeter (ft):	0

Heating loads only are calculated for this room.

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	1	0.04	-15.000	35.000	8.40	9.90	83.2
2	1	0.04	-15.000	35.000	8.40	13.70	115.1
3	7	0.0408	-15.000	35.000	1.00	215.50	215.5

### Room 12: Bath 002 (56.7 sq.ft) (Zone 6)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	56.70
Lighting Watts:	43	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	2	Equipment profile number:	3
Ceiling height (feet):	8.40	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.016
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.016
Winter exhaust air CFM:	20	Summer exhaust air CFM:	20
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	57	Exposed floor slab perimeter (ft):	0

Heating loads only are calculated for this room.

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	1	0.04	-15.000	35.000	8.40	7.50	63.0
2	7	0.0408	-15.000	35.000	1.00	56.70	56.7

### Room 13: Bed 003 (193.44 sq.ft) (Zone 6)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	12.40	Room width (feet):	15.60
Lighting Watts:	145	Equipment Watts:	300
Number of people in room:	1	People profile number:	1
Lighting profile number:	5	Equipment profile number:	7
Ceiling height (feet):	8.40	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	15.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.016
Heating ventilation method:	Direct	Heating ventilation value:	15.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.016
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	193	Exposed floor slab perimeter (ft):	0

Heating loads only are calculated for this room.

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
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**Room Input (cont'd)**

**Room 13: Bed 003 (193.44 sq.ft) (Zone 6)**

1	1	0.04	-15.000	35.000	8.40	12.50	105.0
2	1	0.04	-15.000	35.000	5.50	18.00	99.0
4	1	0.04	-15.000	35.000	5.50	18.00	99.0
6	7	0.0408	-15.000	35.000	13.00	12.40	161.2

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
3	3	B	0.040	M	2.90	18.00	52.2	W
5	3	B	0.040	M	2.90	18.00	52.2	S

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	5.00	3.00	1	15.0	0	90	3
2	4	0.180	0.252	5.00	3.00	1	15.0	0	90	5

**Room 14: Basement 004 (545 sq.ft) (Zone 6)**

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width: (feet):	545.00
Lighting Watts:	409	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	2	Equipment profile number:	3
Ceiling height (feet):	8.40	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	20.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.016
Heating ventilation method:	Direct	Heating ventilation value:	20.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.016
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	545	Exposed floor slab perimeter (ft):	0

Heating loads only are calculated for this room.

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	1	0.04	-15.000	35.000	5.50	62.00	341.0
5	1	0.04	-15.000	35.000	5.50	10.00	55.0
6	1	0.04	-15.000	35.000	5.50	16.00	88.0
7	7	0.0408	-15.000	35.000	1.00	545.00	545.0

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
2	3	B	0.040	M	2.90	36.40	105.6	S
3	3	B	0.040	M	2.90	10.00	29.0	W
4	3	B	0.040	M	2.90	16.00	46.4	E

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	2.00	6.50	1	13.0	0	90	2

**Room 15: Hall 200 (81.9 sq.ft) (Zone 2)**

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	1.00	Room width: (feet):	81.90
Lighting Watts:	61	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	2	Equipment profile number:	3
Ceiling height (feet):	8.10	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180



## Room Input (cont'd)

### Room 15: Hall 200 (81.9 sq.ft) (Zone 2)

Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	82	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	81.90	81.9	No

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	5	0.0526	60.000	95.000	8.10	6.50	52.7
2	6	0.0263	60.000	95.000	1.40	6.50	9.1

### Room 16: Bath 201 (80.1 sq.ft) (Zone 7)

Air Handler number:	3	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	80.10
Lighting Watts:	60	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	2	Equipment profile number:	3
Ceiling height (feet):	8.10	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	20	Summer exhaust air CFM:	20
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	80	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	80.10	80.1	No

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	8.10	6.40	51.8	E
2	4	G	0.026	M	1.40	6.40	9.0	E

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	4.00	2.60	1	10.4	0	90	1

### Room 17: Bed 202 (214.8 sq.ft) (Zone 7)

Air Handler number:	3	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	214.80
Lighting Watts:	161	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	4	Equipment profile number:	3
Ceiling height (feet):	8.10	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	10.000



## Room Input (cont'd)

### Room 17: Bed 202 (214.8 sq.ft) (Zone 7)

Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	10.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	215	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	233.60	233.6	No

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	8.10	13.40	108.5	E
2	4	G	0.026	M	1.40	13.40	18.8	E
3	2	G	0.027	M	8.10	15.00	121.5	S
4	4	G	0.026	M	1.40	15.00	21.0	S

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	4.00	2.60	1	10.4	0	90	1
2	4	0.180	0.252	4.00	5.30	1	21.2	6	90	3
3	4	0.180	0.252	4.00	2.60	1	10.4	5	90	3

### Room 18: Bed 203 (190.5 sq.ft) (Zone 7)

Air Handler number:	3	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	190.50
Lighting Watts:	143	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	4	Equipment profile number:	3
Ceiling height (feet):	8.10	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	10.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	10.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	191	Exposed floor slab perimeter (ft):	0

Both heating and cooling loads are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	210.30	210.3	No

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
5	5	0.0526	60.000	95.000	1.00	14.00	14.0
6	6	0.0263	60.000	95.000	1.00	9.00	9.0

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	8.10	10.00	81.0	S
2	4	G	0.026	M	1.40	10.00	14.0	S
3	2	G	0.027	M	1.00	81.00	81.0	W
4	4	G	0.026	M	1.00	13.00	13.0	W

Glass	Type	S.U-F.	Shd C.	Height	Width	Occur.	Area	Shade	Tilt	Ref
1	4	0.180	0.252	2.60	2.60	1	6.8	0	90	3



## Room Input (cont'd)

### Room 18: Bed 203 (190.5 sq.ft) (Zone 7)

### Room 19: Crawl Space (189 sq.ft) (Zone 6)

Air Handler number:	1	Room occurrences:	1
Room length: (feet)	14.00	Room width (feet):	13.50
Lighting Watts:	142	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	9	Equipment profile number:	3
Ceiling height (feet):	5.50	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.016
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.016
Winter exhaust air CFM:	20	Summer exhaust air CFM:	20
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	189	Exposed floor slab perimeter (ft):	0

Heating loads only are calculated for this room.

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
1	1	0.04	-15.000	35.000	5.50	41.50	228.3
2	7	0.0408	-15.000	35.000	14.00	13.50	189.0

### Room 20: Storage Attic 204 (202.4 sq.ft) (Zone 8)

Air Handler number:	3	Room occurrences:	1
Room length: (feet)	1.00	Room width (feet):	202.40
Lighting Watts:	152	Equipment Watts:	0
Number of people in room:	0	People profile number:	1
Lighting profile number:	9	Equipment profile number:	3
Ceiling height (feet):	4.30	Heating safety factor (%):	0
Sensible safety factor (%):	0	Latent safety factor (%):	0
Sensible heat per person (Btuh):	200	Latent heat per person (Btuh):	180
Cooling ventilation method:	Direct	Cooling ventilation value:	0.000
Cooling infiltration method:	AC/Hr	Cooling infiltration value:	0.073
Heating ventilation method:	Direct	Heating ventilation value:	0.000
Heating infiltration method:	AC/Hr	Heating infiltration value:	0.073
Winter exhaust air CFM:	0	Summer exhaust air CFM:	0
Minimum supply CFM:	0	Latent Btuh equipment load:	0
Ceil. exposed to plenum (sq.ft):	202	Exposed floor slab perimeter (ft):	0

Heating loads only are calculated for this room.

Roof	Type	ASHRAE#	U-Factor	Dark	Length	Width	Area	Susp.Ceil
1	1	13	0.018	Yes	1.00	356.50	356.5	No

Part	Type	U-Factor	Cool TD	Heat TD	Height	Width	Area
3	5	0.0526	60.000	95.000	1.00	31.00	31.0
4	6	0.0263	60.000	95.000	1.00	11.00	11.0

Wall	Type	ASHRAE#	U-Factor	Color	Height	Width	Area	Direction
1	2	G	0.027	M	4.30	6.80	29.2	E
2	2	G	0.027	M	1.00	6.00	6.0	W

Design Month	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Diff	In/Outdoor Correction
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**Room Input (cont'd)**

**Room 20: Storage Attic 204 (202.4 sq.ft) (Zone 8)**

August	89	75	50%	74	48.34	-2
Winter	-25			64		



## Building Summary Loads

Building peaks in August at 3pm.

Bldg Load Descriptions	Area Quan	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Roof	1,442	2,454	9.17	0	379	379	1.57
Wall	2,146	6,917	25.86	0	1,951	1,951	8.10
Glass	386	6,768	25.30	0	7,932	7,932	32.92
Floor Slab	0	0	0.00	0	0	0	0.00
<b>Skin Loads</b>		<b>16,138</b>	<b>60.33</b>	<b>0</b>	<b>10,263</b>	<b>10,263</b>	<b>42.60</b>
Lighting	1,426	0	0.00	0	3,365	3,365	13.97
Equipment	700	0	0.00	0	2,388	2,388	9.91
Pool Latent	0	0	0.00	0	0	0	0.00
People	5	0	0.00	740	800	1,540	6.39
Partition	2,718	4,303	16.09	0	354	354	1.47
Cool. Pret.	0	0	0.00	0	0	0	0.00
Heat. Pret.	0	0	0.00	0	0	0	0.00
Cool. Vent.	85	0	0.00	2,937	573	3,511	14.57
Heat. Vent.	120	4,071	15.22	0	0	0	0.00
Cool. Infil.	19	0	0.00	658	344	1,002	4.16
Heat. Infil.	23	2,237	8.36	0	0	0	0.00
Draw-Thru Fan	0	0	0.00	0	0	0	0.00
Blow-Thru Fan	0	0	0.00	0	0	0	0.00
Reserve Cap.	0	0	0.00	0	1,670	1,670	6.93
Reheat Cap.	0	0	0.00	0	0	0	0.00
Supply Duct	0	0	0.00	0	0	0	0.00
Return Duct	0	0	0.00	0	0	0	0.00
Misc. Supply	0	0	0.00	0	0	0	0.00
Misc. Return	0	0	0.00	0	0	0	0.00
<b>Building Totals</b>		<b>26,749</b>	<b>100.00</b>	<b>4,335</b>	<b>19,757</b>	<b>24,093</b>	<b>100.00</b>

Building Summary	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Ventilation	4,071	15.22	2,937	573	3,511	14.57
Infiltration	2,237	8.36	658	344	1,002	4.16
Pretreated Air	0	0.00	0	0	0	0.00
Room Loads	20,441	76.42	740	18,840	19,580	81.27
Plenum Loads	0	0.00	0	0	0	0.00
Fan/Duct/Misc Loads	0	0.00	0	0	0	0.00
<b>Building Totals</b>	<b>26,749</b>	<b>100.00</b>	<b>4,335</b>	<b>19,757</b>	<b>24,093</b>	<b>100.00</b>

## Check Figures

Total Building Supply Air (based on a 20° TD):	941 CFM
Total Building Vent. Air (9.03% of Supply):	85 CFM
Total Conditioned Air Space:	3,198 Sq.ft
Supply Air Per Unit Area:	0.2944 CFM/Sq.ft
Area Per Cooling Capacity:	1,592.9 Sq.ft/Ton
Cooling Capacity Per Area:	0.0006 Tons/Sq.ft
Heating Capacity Per Area:	8.36 Btuh/Sq.ft
Total Heating Required With Outside Air:	26,749 Btuh
Total Cooling Required With Outside Air:	2.01 Tons





### Room Detailed Loads (At Room Peak Times)

Load Description	Unit Quan	-SC- CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
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Room 1-Entry 100 peaks (sensible) in August at 10am, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 1, 1.0 x 104.9, Construction Type: 10 (Medium)

Roof-1-13-No.Clg-D	78	1.00	12.2	0.018	17		1.729	135
Roof-2-13-No.Clg-D	27	1.00	12.2	0.018	6		1.729	46
Wall-2-E-G-M	102	0.83	44.7	0.027	123		2.565	261
Door-3-E-G-M	24	0.83	44.7	0.200	216		19.000	459
Wall-4-E-G-M	16	0.83	44.7	0.026	18		2.470	39
Partition-1-2	51.36		18/45	0.027	25		1.215	62
Partition-5-3	9.0852		18/45	0.026	4		1.184	11
Partition door-6-4	21		18/45	0.143	54		6.431	135
Lights-Prof=8	52	1.000			177			
Cool. Infil.AC/hr	1				7	42		
Heat. Infil.AC/hr	1						99.076	114
Sub-total					648	42		1,262
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					648	42		1,262

Room 2-Laundry 101 peaks (sensible) in August at 5pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 1, Floor Number 1, 1.0 x 54.7, Construction Type: 10 (Medium)

Roof-1-13-No.Clg-D	63	1.00	27.2	0.018	31		1.729	110
Wall-2-W-G-M	76	0.83	58.8	0.027	120		2.565	194
Wall-4-W-G-M	11	0.83	58.8	0.026	17		2.470	27
Partition-1-2	58.5		18/45	0.027	28		1.215	71
Partition-3-3	7.345		18/45	0.026	3		1.184	9
Gls-W-4-90-Tran	12.0	1.000	13	0.180	27		17.100	205
0%S-8-UNS-Solar	12.0	0.252	212	0.710	455			
Lights-Prof=8	27	1.000			92			
Cool. Infil.AC/hr	1				10	22		
Heat. Infil.AC/hr	1						99.076	59
Sub-total					785	22		675
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					785	22		675

Room 3-Pantry 102 peaks (sensible) in August at 5pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 1, Floor Number 1, 1.0 x 26.9, Construction Type: 10 (Medium)

Roof-1-13-No.Clg-D	28	1.00	27.2	0.018	14		1.729	48
Wall-1-W-G-M	39	0.83	58.8	0.027	61		2.565	99
Wall-2-W-G-M	5	0.83	58.8	0.026	7		2.470	12
Lights-Prof=8	13	1.000			44			
Cool. Infil.AC/hr	0				5	11		
Heat. Infil.AC/hr	0						99.076	29
Sub-total					132	11		189
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					132	11		189



**Room Detailed Loads (At Room Peak Times) (cont'd)**

Load Description	Unit Quan	-SC- CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
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**Room 4-Hallway 103, Back Entry 104\_2 Closets peaks (sensible) in August at 3pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 2, Floor Number 1, 1.0 x 121.3, Construction Type: 10 (Medium)**

Roof-1-13-No.Clg-D	40	1.00	19.2	0.018	14		1.729	69
Wall-1-N-G-M	87	0.83	17.3	0.027	41		2.565	223
Wall-2-N-G-M	15	0.83	17.3	0.026	7		2.470	36
Gls-N-4-90-Tran	8.3	1.000	14	0.180	20		17.100	141
0%S-9-UNS-Solar	8.3	0.252	34	0.850	60			
Gls-N-5-90-Tran	21.0	1.000	14	0.200	58		19.000	399
0%S-11-UNS-Solar	21.0	0.575	34	0.850	349			
Lights-Prof=8	50	1.000			171			
Cool. Infil.AC/hr	1				24	46		
Heat. Infil.AC/hr	1						99.076	132

Sub-total					743	46		1,000
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					743	46		1,000

**Room 5-Bath 105 peaks (sensible) in August at 5pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 2, Floor Number 1, 1.0 x 62.1, Construction Type: 10 (Medium)**

Roof-1-13-No.Clg-D	62	1.00	27.2	0.018	31		1.729	107
Wall-1-N-G-M	100	0.83	18.2	0.027	49		2.565	256
Wall-2-N-G-M	14	0.83	18.2	0.026	6		2.470	33
Wall-3-W-G-M	53	0.83	58.8	0.027	84		2.565	135
Wall-4-W-G-M	7	0.83	58.8	0.026	11		2.470	18
Gls-N-4-90-Tran	8.3	1.000	13	0.180	19		17.100	141
0%S-10-UNS-Solar	8.3	0.252	34	0.800	57			
Gls-W-3-90-Tran	4.0	1.000	13	0.200	10		19.000	76
0%S-0-UNS-Solar	4.0	0.250	212	0.710	151			
Lights-Prof=2	47	1.000			159			
Cool. Infil.AC/hr	1				11	25		
Heat. Infil.AC/hr	1						99.076	67

Sub-total					586	25		834
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					586	25		834

**Room 6-M. Bed 106\_Closet peaks (sensible) in August at 3pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 3, Floor Number 1, 1.0 x 181.0, Construction Type: 11 (Medium)**

Roof-1-13-No.Clg-D	181	1.00	19.2	0.018	63		1.729	313
Wall-1-W-G-M	88	0.83	45.6	0.027	108		2.565	225
Wall-2-W-G-M	13	0.83	45.6	0.026	15		2.470	31
Wall-3-S-G-M	118	0.83	40.6	0.027	129		2.565	302
Wall-4-S-G-M	20	0.83	40.6	0.026	21		2.470	50
Gls-W-4-90-Tran	13.5	1.000	14	0.180	33		17.100	231
0%S-0-UNS-Solar	13.5	0.252	212	0.500	361			
Gls-S-4-90-Tran	31.9	1.000	14	0.180	79		17.100	545
28%S-1-UNS-Solar	31.9	0.252	173	0.630	875			
SGls-S-4-90-Tran	12.4	1.000	14	0.180	31		17.100	212
28%S-1-UNS-Solar	12.4	0.252	34	0.850	90			
Cool. Infil.AC/hr	2				36	68		



**Room Detailed Loads (At Room Peak Times) (cont'd)**

Load Description	Unit Quan	-SC- CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Heat. Infil.AC/hr	2						99.076	196
Sub-total					1,841	68		2,106
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,841	68		2,106

**Room 7-Living 107 peaks (sensible) in August at 2pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 4, Floor Number 1, 15.9 x 16.0, Construction Type: 11 (Medium)**

Wall-1-W-G-M	70	0.83	33.1	0.027	62		2.565	179
Wall-2-W-G-M	11	0.83	33.1	0.026	10		2.470	28
Wall-3-S-G-M	83	0.83	43.1	0.027	97		2.565	213
Wall-4-S-G-M	18	0.83	43.1	0.026	20		2.470	45
Gls-W-4-90-Tran	20.2	1.000	13	0.180	46		17.100	345
0%S-0-UNS-Solar	20.2	0.252	212	0.350	377			
Gls-S-3-90-Tran	59.0	1.000	13	0.200	150		19.000	1,121
3%S-2-UNS-Solar	59.0	0.250	173	0.710	1,812			
SGls-S-3-90-Tran	1.8	1.000	13	0.200	5		19.000	35
3%S-2-UNS-Solar	1.8	0.250	34	0.860	13			
Lights-Prof=2	254	1.000			867			
People-Prof=1	2.0	1.000			400	360		
Cool. Infil.AC/hr	3				48	98		
Heat. Infil.AC/hr	3						99.076	276
Sub-total					3,907	458		2,242
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					3,907	458		2,242

**Room 8-Dining 108 peaks (sensible) in August at 1pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 4, Floor Number 8, 15.3 x 12.2, Construction Type: 11 (Medium)**

Wall-1-S-G-M	93	0.83	42.2	0.027	107		2.565	240
Wall-2-S-G-M	17	0.83	42.2	0.026	19		2.470	43
Wall-3-E-G-M	64	0.83	26.5	0.027	46		2.565	165
Wall-4-E-G-M	14	0.83	26.5	0.026	9		2.470	34
Door-5-E-G-M	46	0.83	26.5	0.200	241		19.000	865
Gls-S-4-90-Tran	44.3	1.000	12	0.180	93		17.100	758
0%S-3-UNS-Solar	44.3	0.252	173	0.720	1,391			
Lights-Prof=7	186	1.000			635			
People-Prof=1	1.0	1.000			200	180		
Cool. Infil.AC/hr	2				32	76		
Heat. Infil.AC/hr	2						99.076	203
Sub-total					2,772	256		2,306
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					2,772	256		2,306

**Room 9-Kitchen 110 peaks (sensible) in August at 9am, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 4, Floor Number 1, 1.0 x 236.8, Construction Type: 11 (Medium)**

Wall-1-E-G-M	98	0.83	43.9	0.027	116		2.565	250
Wall-2-E-G-M	17	0.83	43.9	0.026	19		2.470	41



**Room Detailed Loads (At Room Peak Times) (cont'd)**

Load Description	Unit Quan	-SC-CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Wall-3-N-G-M	80	0.83	4.9	0.027	11		2.565	205
Wall-4-N-G-M	12	0.83	4.9	0.026	1		2.470	28
Gls-E-4-90-Tran	35.6	1.000	2	0.180	11		17.100	608
0%S-12-UNS-Solar	35.6	0.252	212	0.650	1,235			
Gls-N-4-90-Tran	12.0	1.000	2	0.180	4		17.100	205
0%S-13-UNS-Solar	12.0	0.252	34	0.610	63			
Lights-Prof=2	236	1.000			805			
Equipment-Prof=6	700	1.000			2,388	0		
People-Prof=1	1.0	1.000			200	200		
Cool. Infil.AC/hr	3				7	96		
Heat. Infil.AC/hr	3						99.076	257
Sub-total					4,859	296		1,595
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					4,859	296		1,595

**Room 11-Mech 001, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 6, 1.0 x 215.5, Construction Type: 16 (Heavy)**

Partition-1-1	83.16		-15/35	0.040	0		1.400	116
Partition-2-1	115.08		-15/35	0.040	0		1.400	161
Partition-3-7	215.5		-15/35	0.041	0		1.428	308
Cool. Infil.AC/hr	0				0	0		
Heat. Infil.AC/hr	0						99.076	48
Sub-total					0	0		633
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					0	0		633

**Room 12-Bath 002, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 6, 1.0 x 56.7, Construction Type: 16 (Heavy)**

Partition-1-1	63		-15/35	0.040	0		1.400	88
Partition-2-7	56.7		-15/35	0.041	0		1.428	81
Cool. Infil.AC/hr	0				0	0		
Heat. Infil.AC/hr	0						99.076	13
Sub-total					0	0		182
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					0	0		182

**Room 13-Bed 003, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 6, 12.4 x 15.6, Construction Type: 16 (Heavy)**

Wall-3-W-B-M	37	0.83	24.0	0.040	0		3.800	141
Wall-5-S-B-M	37	0.83	22.3	0.040	0		3.800	141
Partition-1-1	105		-15/35	0.040	0		1.400	147
Partition-2-1	99		-15/35	0.040	0		1.400	139
Partition-4-1	99		-15/35	0.040	0		1.400	139
Partition-6-7	161.2		-15/35	0.041	0		1.428	230
Gls-W-4-90-Tran	15.0	1.000	2	0.180	0		17.100	257
0%S-0-UNS-Solar	15.0	0.252	212	0.160	0			



**Room Detailed Loads (At Room Peak Times) (cont'd)**

Load Description	Unit Quan	-SC-CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Gls-S-4-90-Tran	15.0	1.000	2	0.180	0		17.100	257
0%S-0-UNS-Solar	15.0	0.252	173	0.140	0			
Cool. Infil.AC/hr	0				0	0		
Heat. Infil.AC/hr	0						99.076	43
Sub-total					0	0		1,493
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					0	0		1,493

**Room 14-Basement 004, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 6, 1.0 x 545.0, Construction Type: 16 (Heavy)**

Wall-2-S-B-M	93	0.83	22.3	0.040	0		3.800	352
Wall-3-W-B-M	29	0.83	24.0	0.040	0		3.800	110
Wall-4-E-B-M	46	0.83	19.0	0.040	0		3.800	176
Partition-1-1	341		-15/35	0.040	0		1.400	477
Partition-5-1	55		-15/35	0.040	0		1.400	77
Partition-6-1	88		-15/35	0.040	0		1.400	123
Partition-7-7	545		-15/35	0.041	0		1.428	778
Gls-S-4-90-Tran	13.0	1.000	2	0.180	0		17.100	222
0%S-0-UNS-Solar	13.0	0.252	173	0.140	0			
Cool. Infil.AC/hr	0				0	0		
Heat. Infil.AC/hr	1						99.076	121
Sub-total					0	0		2,437
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					0	0		2,437

**Room 15-Hall 200 peaks (sensible) in August at 9pm, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 2, Floor Number 2, 1.0 x 81.9, Construction Type: 20 (Light)**

Roof-1-13-No.Clg-D	82	1.00	38.2	0.018	57		1.729	142
Partition-1-5	52.65		60/95	0.053	166		4.997	263
Partition-2-6	9.099999		60/95	0.026	14		2.499	23
Lights-Prof=2	61	1.000			210			
Cool. Infil.AC/hr	1				4	30		
Heat. Infil.AC/hr	1						99.076	80
Sub-total					451	30		507
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					451	30		507

**Room 16-Bath 201 peaks (sensible) in August at 10am, Air Handler 3 (AHU 3 2nd Flr), Zone 7, Floor Number 2, 1.0 x 80.1, Construction Type: 11 (Medium)**

Roof-1-13-No.Clg-D	80	1.00	12.2	0.018	18		1.729	138
Wall-1-E-G-M	41	0.83	44.7	0.027	50		2.565	106
Wall-2-E-G-M	9	0.83	44.7	0.026	10		2.470	22
Gls-E-4-90-Tran	10.4	1.000	4	0.180	7		17.100	178
0%S-0-UNS-Solar	10.4	0.252	212	0.640	356			
Lights-Prof=2	60	1.000			205			
Cool. Infil.AC/hr	1				5	29		



**Room Detailed Loads (At Room Peak Times) (cont'd)**

Load Description	Unit Quan	-SC- CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
Heat. Infil.AC/hr	1						99.076	78
Sub-total					650	29		523
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					650	29		523

**Room 17-Bed 202 peaks (sensible) in August at 10am, Air Handler 3 (AHU 3 2nd Flr), Zone 7, Floor Number 2, 1.0 x 214.8, Construction Type: 11 (Medium)**

Roof-1-13-No.Clg-D	234	1.00	12.2	0.018	52		1.729	404
Wall-1-E-G-M	98	0.83	44.7	0.027	119		2.565	252
Wall-2-E-G-M	19	0.83	44.7	0.026	22		2.470	46
Wall-3-S-G-M	90	0.83	23.1	0.027	56		2.565	231
Wall-4-S-G-M	21	0.83	23.1	0.026	13		2.470	52
Gls-E-4-90-Tran	10.4	1.000	4	0.180	7		17.100	178
0%S-0-UNS-Solar	10.4	0.252	212	0.640	356			
Gls-S-4-90-Tran	14.8	1.000	4	0.180	10		17.100	254
30%S-6-UNS-Solar	14.8	0.252	173	0.380	246			
SGls-S-4-90-Tran	6.4	1.000	4	0.180	4		17.100	109
30%S-6-UNS-Solar	6.4	0.252	34	0.690	38			
Gls-S-4-90-Tran	7.3	1.000	4	0.180	5		17.100	124
30%S-5-UNS-Solar	7.3	0.252	173	0.380	121			
SGls-S-4-90-Tran	3.1	1.000	4	0.180	2		17.100	53
30%S-5-UNS-Solar	3.1	0.252	34	0.690	18			
Lights-Prof=4	161	1.000			550			
Cool. Infil.AC/hr	2				12	77		
Heat. Infil.AC/hr	2						99.076	210
Sub-total					1,629	77		1,912
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,629	77		1,912

**Room 18-Bed 203 peaks (sensible) in August at 7pm, Air Handler 3 (AHU 3 2nd Flr), Zone 7, Floor Number 2, 1.0 x 190.5, Construction Type: 11 (Medium)**

Roof-1-13-No.Clg-D	210	1.00	34.2	0.018	131		1.729	364
Wall-1-S-G-M	81	0.83	21.5	0.027	47		2.565	208
Wall-2-S-G-M	14	0.83	21.5	0.026	8		2.470	35
Wall-3-W-G-M	74	0.83	38.9	0.027	78		2.565	190
Wall-4-W-G-M	13	0.83	38.9	0.026	13		2.470	32
Partition-5-5	14		60/95	0.053	44		4.997	70
Partition-6-6	9		60/95	0.026	14		2.499	22
Gls-W-4-90-Tran	6.8	1.000	10	0.180	12		17.100	116
0%S-0-UNS-Solar	6.8	0.252	212	0.460	166			
Lights-Prof=4	143	1.000			488			
Cool. Infil.AC/hr	2				20	68		
Heat. Infil.AC/hr	2						99.076	186
Sub-total					1,021	68		1,223
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					1,021	68		1,223



### Room Detailed Loads (At Room Peak Times) (cont'd)

Load Description	Unit Quan	-SC- CFAC	CLTD SHGF	U.Fac -CLF-	Sen. Gain	Lat. Gain	Htg. Mult.	Htg. Loss
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#### Room 19-Crawl Space, Air Handler 1 (AHU 1 Bsmt + 1st Flr), Zone 6, 14.0 x 13.5, Construction Type: 16 (Heavy)

Partition-1-1	228.25		-15/35	0.040	0		1.400	320
Partition-2-7	189		-15/35	0.041	0		1.428	270
Cool. Infil.AC/hr	0				0	0		
Heat. Infil.AC/hr	0						99.076	27

Sub-total					0	0		617
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					0	0		617

#### Room 20-Storage Attic 204, Air Handler 3 (AHU 3 2nd Flr), Zone 8, Floor Number 2, 1.0 x 202.4, Construction Type: 1 (Light), WIDB: 64°F

Roof-1-13-No.Clg-D	357	1.00	33.2	0.018	0		1.620	577
Wall-1-E-G-M	29	0.83	2.1	0.027	0		2.403	70
Wall-2-W-G-M	6	0.83	3.7	0.027	0		2.403	14
Partition-3-5	31		60/95	0.053	0		4.997	155
Partition-4-6	11		60/95	0.026	0		2.499	27
Cool. Infil.AC/hr	0				0	0		
Heat. Infil.AC/hr	1						92.819	98

Sub-total					0	0		943
Safety factors:					+0%	+0%		+0%
Total w/ safety factors:					0	0		943