

Address of Independent HVAC Company

**Project Information**

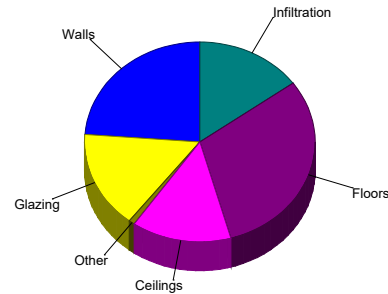
For: Customer, Property Address

**Design Conditions**

<b>Location:</b> Wilmington, DE, US Elevation: 79 ft Latitude: 40°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 75 65 30 31.5	<b>Cooling</b> 70 25 50 38.6
<b>Outdoor:</b> Drybulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> <b>10</b> - - 15.0	<b>Cooling</b> <b>95</b> 17 ( M ) 74 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Average 0	

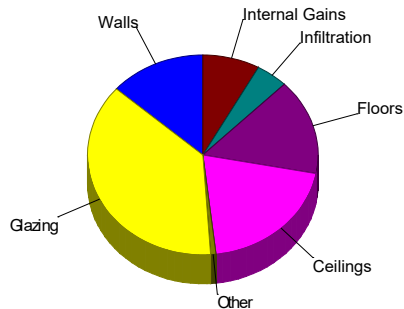
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	6.3	15113	23.8
Glazing	37.0	10004	15.7
Doors	25.3	532	0.8
Ceilings	7.3	8882	14.0
Floors	16.0	19508	30.7
Infiltration	3.5	9510	15.0
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>63548</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	2.3	5603	13.5
Glazing	57.8	15599	37.6
Doors	14.8	310	0.7
Ceilings	6.9	8390	20.2
Floors	5.3	6423	15.5
Infiltration	0.7	1873	4.5
Ducts		0	0
Ventilation		0	0
Internal gains		3320	8.0
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>41519</b>	<b>100.0</b>



Latent Cooling Load = 2586 Btuh  
Overall U-value = 0.162 Btuh/ft²-°F, Window / Floor Area = 11.1 %

Data entries checked.

*Bold/italic values have been manually overridden*

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Notes:

### Design Information

Weather: Wilmington, DE, US

#### Winter Design Conditions

Outside db **10** °F  
Inside db 75 °F  
Design TD 65 °F

Ventilation Method MJ8

#### Heating Summary

Structure 63548 Btuh  
Ducts 0 Btuh  
Central vent (0 cfm) 0 Btuh  
  
Humidification 0 Btuh  
Piping 0 Btuh  
Equipment load 63548 Btuh

#### Infiltration

Method Simplified  
Construction quality Average  
Fireplaces 0

	Heating	Cooling
Area (ft <sup>2</sup> )	2440	2440
Volume (ft <sup>3</sup> )	19520	19520
Air changes/hour	0.41	0.21
Equiv. AVF (cfm)	133	68

#### Heating Equipment Summary

Make  
Trade  
Model  
AHRI ref  
  
Efficiency 0 AFUE  
Heating input 0 Btuh  
Heating output 0 Btuh  
Temperature rise 0 °F  
Actual air flow 2523 cfm  
Air flow factor 0.040 cfm/Btuh  
Static pressure 0 in H2O  
Space thermostat

#### Summer Design Conditions

Outside db **95** °F  
Inside db 70 °F  
Design TD 25 °F  
Daily range M  
Relative humidity 50 %  
Moisture difference 39 gr/lb

#### Sensible Cooling Equipment Load Sizing

Structure 41519 Btuh  
Ducts 0 Btuh  
Central vent (0 cfm) 0 Btuh  
  
Blower 0 Btuh  
  
Use manufacturer's data y  
Rate/swing multiplier 1.00  
Equipment sensible load 41519 Btuh

#### Latent Cooling Equipment Load Sizing

Structure 2586 Btuh  
Ducts 0 Btuh  
Central vent (0 cfm) 0 Btuh  
  
Equipment latent load 2586 Btuh  
  
**Equipment Total Load (Sen+Lat)** 44105 Btuh  
Req. total capacity at 0.70 SHR 4.9 ton

#### Cooling Equipment Summary

Make  
Trade  
Cond  
Coil  
AHRI ref  
Efficiency 0 SEER  
Sensible cooling 0 Btuh  
Latent cooling 0 Btuh  
Total cooling 0 Btuh  
Actual air flow 2523 cfm  
Air flow factor 0.061 cfm/Btuh  
Static pressure 0 in H2O  
Load sensible heat ratio 0.94

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1 Room name		Entire House						First Floor						
2 Exposed wall		336.0 ft						168.0 ft						
3 Room height		8.0 ft						8.0 ft						
4 Room dimensions		d						1.0 x 1220.0 ft						
5 Room area		2440.0 ft²						1220.0 ft²						
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12B-0bw	0.097	n	6.31	2.34	352	317	1999	741	176	159	999	371
	G	1D-c2ow	0.570	n	37.05	25.10	35	0	1297	878	18	0	648	439
	W	12B-0bw	0.097	e	6.31	2.34	992	871	5492	2036	496	425	2680	994
	G	1D-c2ow	0.570	e	37.05	67.12	100	0	3705	6712	50	0	1852	3356
11	D	11D0	0.390	e	25.35	14.78	21	21	532	310	21	21	532	310
	W	12B-0bw	0.097	s	6.31	2.34	352	317	1999	741	176	159	999	371
	G	1D-c2ow	0.570	s	37.05	37.03	35	0	1297	1296	18	0	648	648
	W	12B-0bw	0.097	w	6.31	2.34	992	892	5624	2085	496	446	2812	1043
	G	1D-c2ow	0.570	w	37.05	67.12	100	0	3705	6712	50	0	1852	3356
	C	16B-7ad	0.112	-	7.28	6.88	1220	1220	8882	8390	0	0	0	0
	F	20P-2t	0.246	-	15.99	5.26	1220	1220	19508	6423	1220	1220	19508	6423
6	c) AED excursion													0
	Envelope loss/gain								54038	36325			32532	17310
12	a) Infiltration								9510	1873			4755	937
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			4			920	4			920
			Appliances/other							2400				2400
	Subtotal (lines 6 to 13)								63548	41519			37287	21566
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								63548	41519			37287	21566
15	Duct loads								0	0	-0%	0%	0	0
	Total room load								63548	41519			37287	21566
	Air required (cfm)								2523	2523			1481	1311

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						Second Floor								
1	Room name					168.0 ft								
2	Exposed wall					8.0 ft				heat/cool				
3	Room height					1.0				x 1220.0 ft				
4	Room dimensions					1220.0 ft <sup>2</sup>								
5	Room area													
	Ty	Construction number	U-value (Btuh/ft <sup>2</sup> -°F)	Or	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12B-0bw	0.097	n	6.31	2.34	176	159	999	371				
	G	1D-c2ow	0.570	n	37.05	25.10	18	0	648	439				
	W	12B-0bw	0.097	e	6.31	2.34	496	446	2812	1043				
	G	1D-c2ow	0.570	e	37.05	67.12	50	0	1852	3356				
11	D	11D0	0.390	e	25.35	14.78	0	0	0	0				
	W	12B-0bw	0.097	s	6.31	2.34	176	159	999	371				
	G	1D-c2ow	0.570	s	37.05	37.03	17	0	648	648				
	W	12B-0bw	0.097	w	6.31	2.34	496	446	2812	1043				
	G	1D-c2ow	0.570	w	37.05	67.12	50	0	1852	3356				
	C	16B-7ad	0.112	-	7.28	6.88	1220	1220	8882	8390				
	F	20P-2t	0.246	-	15.99	5.26	0	0	0	0				
6	c) AED excursion									0				
	Envelope loss/gain								21506	19016				
12	a) Infiltration								4755	937				
	b) Room ventilation								0	0				
13	Internal gains:		Occupants @	230			0			0				
			Appliances/other							0				
	Subtotal (lines 6 to 13)								26261	19952				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								26261	19952				
15	Duct loads								-0%	0%	0	0		
	Total room load								26261	19952				
	Air required (cfm)								1043	1213				

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### Design Conditions

<b>Location:</b>	Wilmington, DE, US	<b>Indoor:</b>	Indoor temperature (°F)	75	<b>Heating</b>	70
	Elevation: 79 ft		Design TD (°F)	65		25
	Latitude: 40°N		Relative humidity (%)	30		50
<b>Outdoor:</b>			Moisture difference (gr/lb)	31.5		38.6
	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
	Drybulb (°F)	10	95	Method	Simplified	
	Daily range (°F)	-	17 ( M )	Construction quality	Average	
	Wet bulb (°F)	-	74	Fireplaces	0	
	Wind speed (mph)	15.0	7.5			

### Construction descriptions

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh
<b>Walls</b>								
12B-0bw: Frm wall, brk 4" ext, r-11 cav ins, 1/2" gypsum board int fnsh,	n	317	0.097	11.0	6.31	1999	2.34	741
2"x4" wood frm, 16" o.c. stud	e	871	0.097	11.0	6.31	5492	2.34	2036
	s	317	0.097	11.0	6.31	1999	2.34	741
	w	892	0.097	11.0	6.30	5624	2.34	2085
	all	2397	0.097	11.0	6.31	15113	2.34	5603
<b>Partitions</b>								
(none)								
<b>Windows</b>								
1D-c2ow: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8"	n	35	0.570	0	37.0	1297	25.1	878
thk; 6.67 ft head ht	e	100	0.570	0	37.0	3705	67.1	6712
	s	35	0.570	0	37.0	1297	37.0	1296
	w	100	0.570	0	37.0	3705	67.1	6712
	all	270	0.570	0	37.0	10004	57.8	15599
<b>Doors</b>								
11D0: Door, wd sc type	e	21	0.390	0	25.3	532	14.8	310
<b>Ceilings</b>								
16B-7ad: Attic ceiling, asphalt shingles roof mat, r-7 ceil ins, 1/2"		1220	0.112	7.0	7.28	8882	6.88	8390
gypsum board int fnsh								
<b>Floors</b>								
20P-2t: Flr floor, wd flr, 1" thkns, tile flr fnsh, r-2 ext ins, amb ovr		1220	0.246	2.0	16.0	19508	5.26	6423

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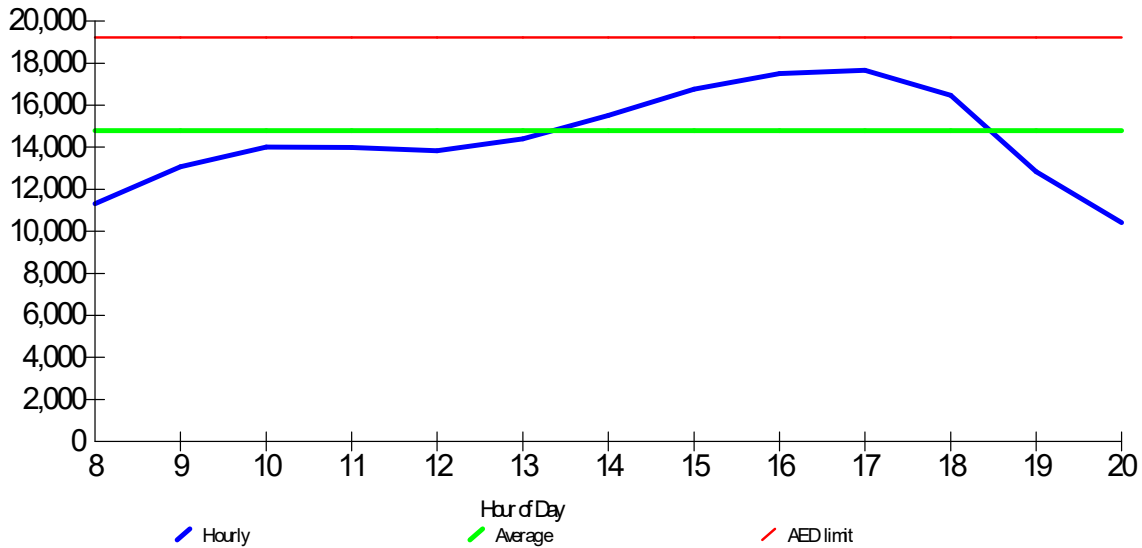
For: Customer, Property Address

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Wilmington, DE, US		Indoor temperature (°F)	75	70
Elevation: 79 ft		Design TD (°F)	65	25
Latitude: 40°N		Relative humidity (%)	30	50
		Moisture difference (gr/lb)	31.5	38.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>		
Drybulb (°F)	<b>10</b>	<b>95</b>		
Daily range (°F)	-	17 ( M )		
Wet bulb (°F)	-	74		
Wind speed (mph)	15.0	7.5		
		<b>Infiltration:</b>		

**Test for Adequate Exposure Diversity**

**Hourly Glazing Load**



**Maximum hourly glazing load exceeds average by 19.5%.**

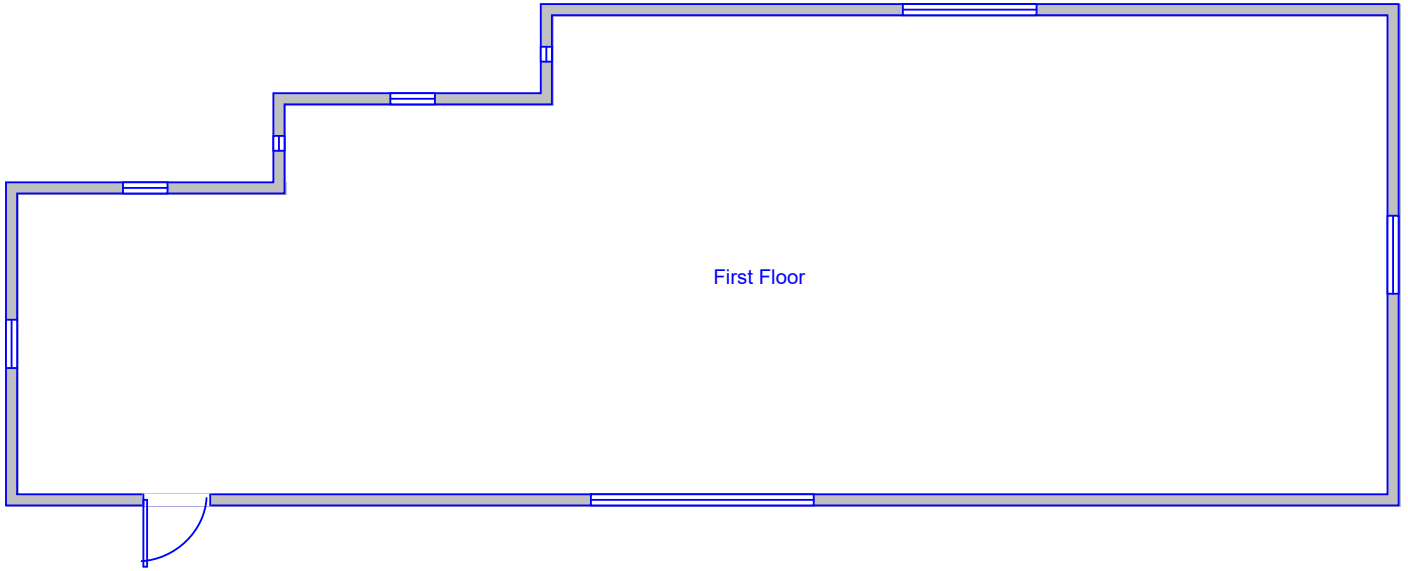
**House has adequate exposure diversity (AED), based on AED limit of 30%.**

**AED excursion: 0 Btuh**

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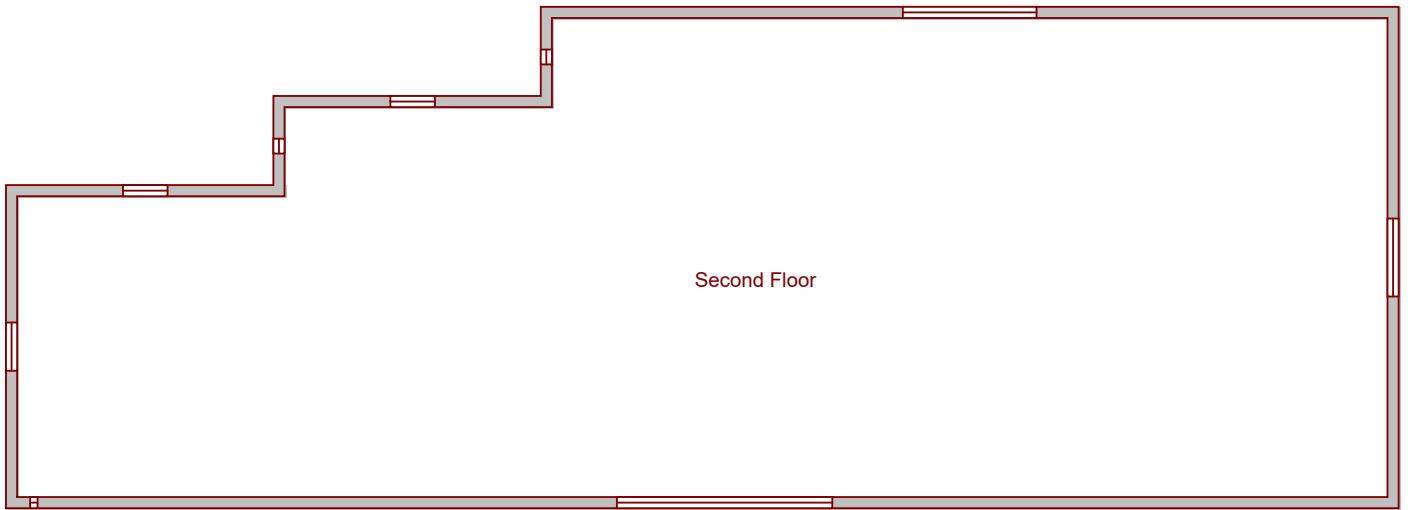


**First Floor**



First Floor

**Second Floor**



Second Floor

Company and HVAC Technition

Customer

HVAC Company  
and Address

Scale: 1 : 103

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