

## Project Information

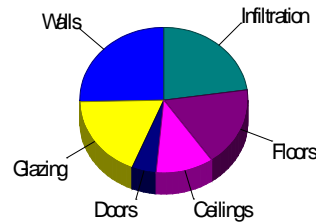
For: Jane Doe  
 99 Main Street, Anywhere, AL 01529  
 Phone: 508-555-1234  
 Email: jane.doe@email.com

## Design Conditions

<p><b>Location:</b>                  Boston, MA, US                  Elevation: 16 ft                  Latitude: 42°N</p> <p><b>Outdoor:</b>                  Drybulb (°F) 12                  Daily range (°F) -                  Wet bulb (°F) -                  Wind speed (mph) 15.0</p>	<p><b>Heating</b></p> <p>12</p> <p>-</p> <p>-</p> <p>15.0</p>	<p><b>Cooling</b></p> <p>88</p> <p>15 ( L )</p> <p>72</p> <p>7.5</p>	<p><b>Indoor:</b>                  Indoor temperature (°F)                  Design TD (°F)                  Relative humidity (%)                  Moisture difference (gr/lb)</p> <p><b>Infiltration:</b>                  Method                  Construction quality                  Fireplaces</p>	<p><b>Heating</b></p> <p>70 58 30 24.5</p> <p>Simplified Average 0</p>	<p><b>Cooling</b></p> <p>75 13 50 26.6</p>
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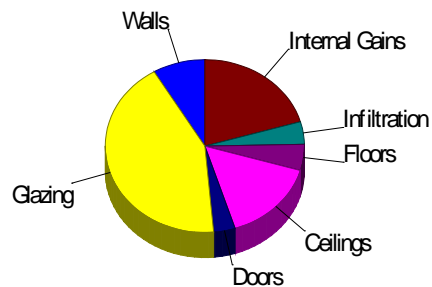
## Heating

Component	Btuh/ft²	Btuh	% of load
Walls	5.3	3799	25.3
Glazing	32.9	2768	18.5
Doors	22.5	709	4.7
Ceilings	2.8	1661	11.1
Floors	4.5	2644	17.6
Infiltration	4.1	3410	22.7
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>14991</b>	<b>100.0</b>



## Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	784	8.5
Glazing	47.2	3970	42.9
Doors	10.3	324	3.5
Ceilings	2.4	1436	15.5
Floors	0.8	454	4.9
Infiltration	0.5	391	4.2
Ducts		0	0
Ventilation		0	0
Internal gains		1890	20.4
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>9249</b>	<b>100.0</b>



Latent Cooling Load = 1110 Btuh  
 Overall U-value = 0.100 Btuh/ft²-°F

Data entries checked.

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**Notes:**

## Design Information

**Weather:** Boston, MA, US

### Winter Design Conditions

Outside db 12 °F  
 Inside db 70 °F  
 Design TD 58 °F

### Summer Design Conditions

Outside db 88 °F  
 Inside db 75 °F  
 Design TD 13 °F  
 Daily range L  
 Relative humidity 50 %  
 Moisture difference 27 gr/lb

### Heating Summary

Structure 14991 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 14991 Btuh

### Sensible Cooling Equipment Load Sizing

Structure 9249 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 9249 Btuh

### Infiltration

Method	Simplified	
Construction quality	Average	
Fireplaces	0	
	<b>Heating</b>	<b>Cooling</b>
Area (ft <sup>2</sup> )	588	588
Volume (ft <sup>3</sup> )	5288	5288
Air changes/hour	0.61	0.32
Equiv. AVF (cfm)	54	28

### Latent Cooling Equipment Load Sizing

Structure 1110 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Equipment latent load 1110 Btuh

Equipment total load 10359 Btuh  
 Req. total capacity at 0.70 SHR 1.1 ton

### Heating Equipment Summary

Make  
 Trade  
 Model  
 AHRI ref no.

Efficiency 80 AFUE  
 Heating input 0 Btuh  
 Heating output 0 Btuh  
 Temperature rise 0 °F  
 Actual air flow 421 cfm  
 Air flow factor 0.028 cfm/Btuh  
 Static pressure 0 in H2O  
 Space thermostat

### Cooling Equipment Summary

Make  
 Trade  
 Cond  
 Coil  
 AHRI ref no.  
 Efficiency 13 SEER  
 Sensible cooling 0 Btuh  
 Latent cooling 0 Btuh  
 Total cooling 0 Btuh  
 Actual air flow 421 cfm  
 Air flow factor 0.045 cfm/Btuh  
 Static pressure 0 in H2O  
 Load sensible heat ratio 0.89

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

131 Hartwell Ave, Lexington, MA 02421 Phone: 800-225-8697 Email: sales@email.com Web: www.wrightsoft.com License: 54628-HD

1 Room name		Entire House							First Floor					
2 Exposed wall		93.3 ft							93.3 ft					
3 Ceiling height		9.0 ft							9.0 ft					
4 Room dimensions		d							1.0 x 587.5 ft					
5 Room area		587.5 ft²							587.5 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	12C-0bw	0.091	n	5.25	1.08	64	58	304	63	64	58	304	63
	G	1D-c2ow	0.570	n	32.89	17.87	6	0	192	104	6	0	192	104
	W	12C-0bw	0.091	ne	5.25	1.08	90	81	424	88	90	81	424	88
	G	1D-c2ow	0.570	ne	32.89	41.43	9	0	301	380	9	0	301	380
11	W	12C-0bw	0.091	e	5.25	1.08	101	91	476	98	101	91	476	98
	G	1D-c2ow	0.570	e	32.89	59.73	10	0	329	597	10	0	329	597
	W	12C-0bw	0.091	se	5.25	1.08	180	162	849	175	180	162	849	175
	G	1D-c2ow	0.570	se	32.89	52.14	18	0	603	956	18	0	603	956
	W	12C-0bw	0.091	sw	5.25	1.08	225	203	1063	219	225	203	1063	219
	G	1D-c2ow	0.570	sw	32.89	52.14	23	0	740	1173	23	0	740	1173
	W	12C-0bw	0.091	nw	5.25	1.08	180	130	683	141	180	130	683	141
	G	1D-c2ow	0.570	nw	32.89	41.43	18	0	603	760	18	0	603	760
	D	11D0	0.390	nw	22.50	10.30	32	32	709	324	32	32	709	324
	C	16B-19ad	0.049	-	2.83	2.45	588	588	1661	1436	588	588	1661	1436
	F	20P-11t	0.078	-	4.50	0.77	588	588	2644	454	588	588	2644	454
6	c) AED excursion									0				0
	Envelope loss/gain								11582	6968			11582	6968
12	a) Infiltration								3410	391			3410	391
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			3			690	3		690	
			Appliances/other							1200			1200	
	Subtotal (lines 6 to 13)								14991	9249			14991	9249
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								14991	9249			14991	9249
15	Duct loads						0%	0%	0	0	-0%	0%	0	0
	Total room load								14991	9249			14991	9249
	Air required (cfm)								421	421			421	421

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## Design Conditions

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Boston, MA, US			Indoor temperature (°F)	70	75
Elevation: 16 ft			Design TD (°F)	58	13
Latitude: 42°N			Relative humidity (%)	30	50
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	24.5	26.6
Drybulb (°F)	12	88	<b>Infiltration:</b>		
Daily range (°F)	-	15 ( L )	Method	Simplified	
Wet bulb (°F)	-	72	Construction quality	Average	
Wind speed (mph)	15.0	7.5	Fireplaces	0	

### Construction descriptions

#### Walls

12C-0bw: Frm wall, brk 4" ext, r-13 cav ins, 1/2" gypsum board int  
 fnsh, 2"x4" wood frm

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
n		58	0.091	13.0	5.25	304	1.08	63
ne		81	0.091	13.0	5.25	424	1.08	88
e		91	0.091	13.0	5.25	476	1.08	98
se		162	0.091	13.0	5.25	849	1.08	175
sw		203	0.091	13.0	5.25	1063	1.08	219
nw		130	0.091	13.0	5.25	683	1.08	141
all		724	0.091	13.0	5.25	3799	1.08	784

#### Partitions

(none)

#### Windows

1D-c2ow: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap,  
 1/8" thk

n		6	0.570	0	32.9	192	17.9	104
ne		9	0.570	0	32.9	301	41.4	380
e		10	0.570	0	32.9	329	59.7	597
se		18	0.570	0	32.9	603	52.1	956
sw		23	0.570	0	32.9	740	52.1	1173
nw		18	0.570	0	32.9	603	41.4	760
all		84	0.570	0	32.9	2768	47.2	3970

#### Doors

11D0: Door, wd sc type

nw		32	0.390	0	22.5	709	10.3	324
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#### Ceilings

16B-19ad: Attic ceiling, asphalt shingles roof mat, r-19 ceil ins, 1/2"  
 gypsum board int fnsh

		588	0.049	19.0	2.83	1661	2.45	1436
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#### Floors

20P-11t: Flr floor, wd flr, 1" thkns, tile flr fnsh, r-11 ext ins, amb ovr

		588	0.078	11.0	4.50	2644	0.77	454
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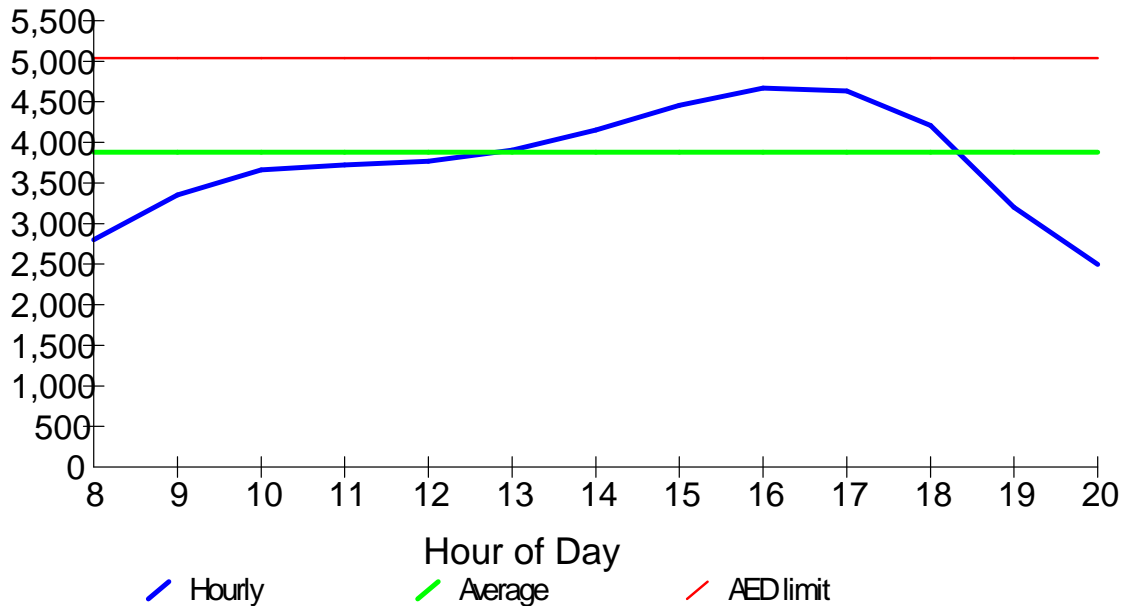
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**Design Conditions**

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Boston, MA, US		Indoor temperature (°F)	70	75
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Latitude: 42°N		Relative humidity (%)	30	50
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Moisture difference (gr/lb)</b>	
Drybulb (°F)	12	88	24.5	26.6
Daily range (°F)	-	15 ( L )		
Wet bulb (°F)	-	72		
Wind speed (mph)	15.0	7.5		
		<b>Infiltration:</b>		

**Test for Adequate Exposure Diversity**

# Hourly Glazing Load



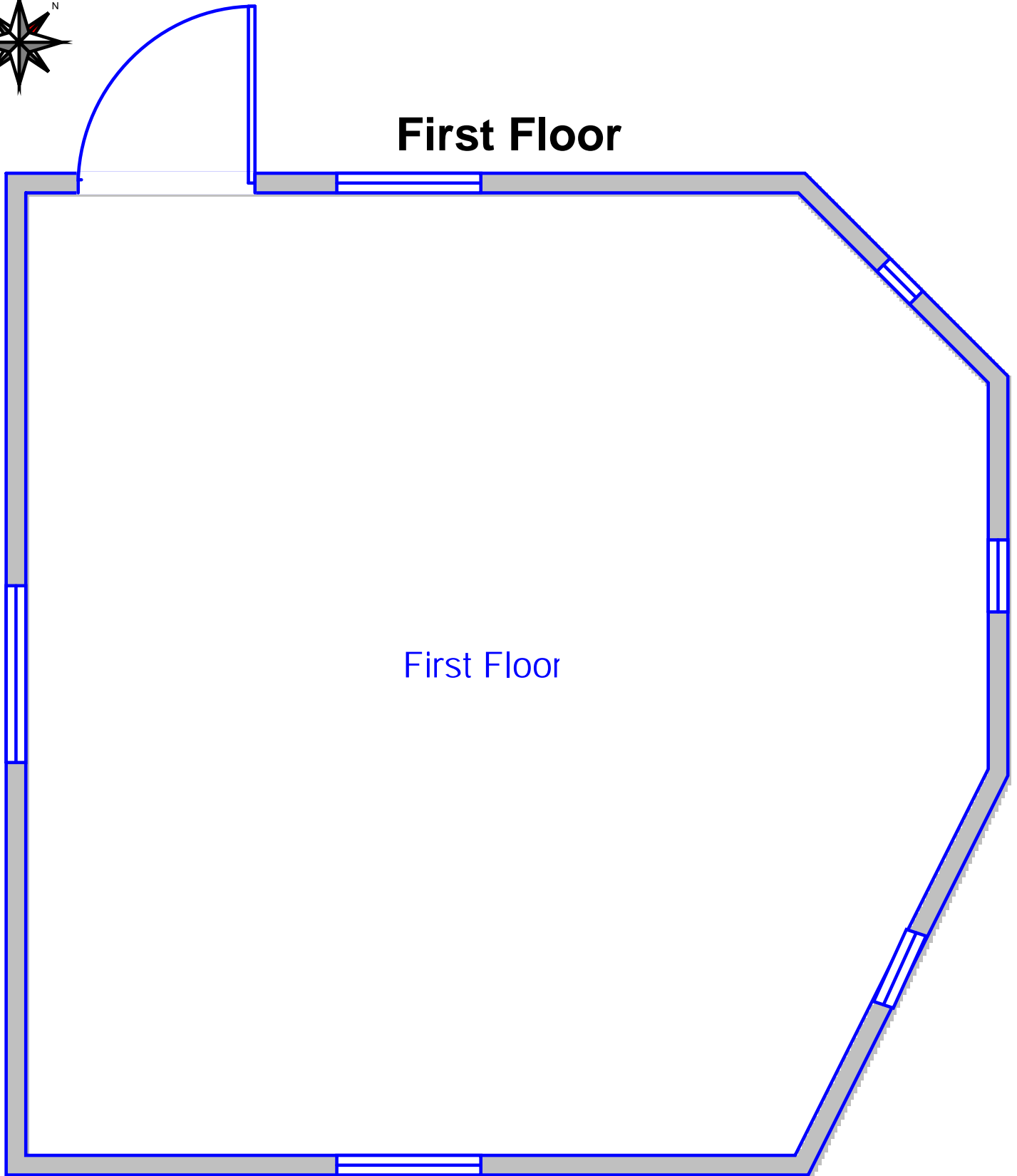
**Maximum hourly glazing load exceeds average by 20.4%.**

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

**AED excursion: 0 Btuh**



# First Floor



First Floor

**Job #: JD20110413**  
**Performed by Joe HVAC for:**

Jane Doe  
99 Main Street  
Anywhere, AL 01529  
Phone: 508-555-1234  
jane.doe@email.com

**Perfect Comfort Inc.**

131 Hartwell Ave  
Lexington, MA 02421  
Phone: 800-225-8697  
www.wrightsoft.com sales@email.com

Scale: 1 : 42

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