



Project Report

General Project Information

Project Title: 2000 Level Hill Road
 Project Date: Sunday, August 12, 2018
 Company Name: October Engineering LLC

Design Data

Reference City: Augusta, Maine
 Building Orientation: Front door faces South
 Daily Temperature Range: Medium
 Latitude: 44 Degrees
 Elevation: 353 ft.
 Altitude Factor: 0.987

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	-3	-3.6	n/a	n/a	72	n/a
Summer:	85	70	48%	50%	76	20

Check Figures

Total Building Supply CFM:	714	CFM Per Square ft.:	0.182
Square ft. of Room Area:	3,924	Square ft. Per Ton:	2,212
Volume (ft ³):	35,524		

Building Loads

Total Heating Required Including Ventilation Air:	43,270 Btuh	43.270 MBH
Total Sensible Gain:	15,968 Btuh	82 %
Total Latent Gain:	3,574 Btuh	18 %
Total Cooling Required Including Ventilation Air:	19,541 Btuh	1.63 Tons (Based On Sensible + Latent)
		1.77 Tons (Based On 75% Sensible Capacity)

Notes

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Load Preview Report

Scope	Net Ton	ft. ² /Ton	Area	Sen Gain	Lat Gain	Net Gain	Sen Loss	Sys Htg CFM	Sys Clg CFM	Sys Act CFM	Duct Size
Building	1.63	2,410	3,924	15,968	3,574	19,541	43,270	518	714	714	
System 1	0.98	3,136	3,069	9,840	1,903	11,744	34,854	433	442	442	0*
Ventilation				235	791	1,026	1,955				
Zone 1 - Clg.: 14%, Htg.: 5%			255	1,677	241	1,918	1,662	22	77	77	
3-Lower Level Bedroom 1-1 Bath			255	1,677	241	1,918	1,662	22	77	77	1-0*
Zone 2 - Clg.: 25%, Htg.: 11%			255	3,065	244	3,309	3,457	45	141	141	
4-Lower Level Living Room And Kitchen			255	3,065	244	3,309	3,457	45	141	141	2-0*
Zone 3 - Clg.: 29%, Htg.: 40%			1,040	3,474	322	3,796	13,291	175	160	160	
2-Garage Bath 4			50	177	8	185	328	4	8	8	1-0*
5-Garage			990	3,297	314	3,611	12,963	171	152	152	2-0*
Zone 4 - Clg.: 29%, Htg.: 19%			815	3,572	82	3,654	6,414	84	164	164	
6-Entry Stairwell			95	323	6	329	962	13	15	15	1-0*
11-Storage And Landing			720	3,249	76	3,325	5,452	72	150	150	2-0*
Zone 5 - Clg.: 3%, Htg.: 25%			704	327	223	550	8,075	106	15	15	
1-Basement			704	327	223	550	8,075	106	15	15	1-0*
System 2	0.65	1,316	855	6,127	1,670	7,798	8,416	85	271	271	0*
Ventilation				235	791	1,026	1,955				
Zone 1 - Clg.: 30%, Htg.: 36%			345	2,325	240	2,565	2,340	31	107	107	
7-Upper Bedroom 2-1 And Bath			215	1,874	232	2,106	1,809	24	86	86	1-0*
9-Upper Hall Bath			130	451	8	459	531	7	21	21	1-0*
Zone 2 - Clg.: 59%, Htg.: 53%			365	4,658	436	5,094	3,424	45	214	214	
10-Upper Living Room And Kitchen			365	4,658	436	5,094	3,424	45	214	214	2-0*
Zone 3 - Clg.: 11%, Htg.: 11%			145	870	203	1,073	697	9	40	40	
8-Upper Bedroom 2-2			145	870	203	1,073	697	9	40	40	1-0*
Sum of room airflows may be greater than system airflow because system has multiple zones.											



Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
LvlHillDHW: Glazing-Matthews Clara Starett, triple pane, foam filled vinyl, double hung, u-value 0.19, SHGC 0.3	342.6	4,873	0	5,804	5,804
11G: Door-Wood - Panel	147	5,956	0	1,589	1,589
11P: Door-Metal - Polyurethane Core	90	1,958	0	522	522
LvlHillAG-1: Wall-Frame, Custom, an inner and outer stud wall with 4" between	1157.4	2,295	0	349	349
LvlHillAG-2: Wall-Frame, Custom, an inner and outer stud wall with 2" between	1227.7	2,968	0	451	451
15B0-10sf-6: Wall-Basement, , R-10 board insulation to floor, no interior finish, 6' floor depth	703.1	2,744	0	83	83
16A-56: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Unvented Attic, No Radiant Barrier, Any Roofing Material, Any Roof Color, R-56 insulation	1575	2,126	0	1,814	1,814
LevelHillRoad: Floor-Basement, Custom, 4" slab with 2" XPS and vapor barrier beneath	1549	11,618	0	0	0
Subtotals for structure:		34,538	0	10,612	10,612
People:	8		1,600	1,840	3,440
Equipment:			0	0	0
Lighting:	750			2,558	2,558
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 59, Summer CFM: 30		4,822	391	290	681
Ventilation: Winter CFM: 120, Summer CFM: 120		3,910	1,583	469	2,052
Exhaust: Winter CFM: 120, Summer CFM: 120					
AED Excursion:		0	0	199	199
Total Building Load Totals:		43,270	3,574	15,968	19,541

Check Figures

Total Building Supply CFM:	714	CFM Per Square ft.:	0.182
Square ft. of Room Area:	3,924	Square ft. Per Ton:	2,410
Volume (ft ³):	35,524		

Building Loads

Total Heating Required Including Ventilation Air:	43,270 Btuh	43.270 MBH
Total Sensible Gain:	15,968 Btuh	82 %
Total Latent Gain:	3,574 Btuh	18 %
Total Cooling Required Including Ventilation Air:	19,541 Btuh	1.63 Tons (Based On Sensible + Latent)

Notes

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System 1 Apartment 1, Basement, Garage, Storage Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
LvlHillDHW: Glazing-Matthews Clara Starett, triple pane, foam filled vinyl, double hung, u-value 0.19, SHGC 0.3	191.3	2,721	0	3,408	3,408
11G: Door-Wood - Panel	126	5,105	0	1,362	1,362
11P: Door-Metal - Polyurethane Core	90	1,958	0	522	522
LvlHillAG-1: Wall-Frame, Custom, an inner and outer stud wall with 4" between	601.7	1,193	0	182	182
LvlHillAG-2: Wall-Frame, Custom, an inner and outer stud wall with 2" between	1227.7	2,968	0	451	451
15B0-10sf-6: Wall-Basement, , R-10 board insulation to floor, no interior finish, 6' floor depth	634.6	2,511	0	80	80
16A-56: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Unvented Attic, No Radiant Barrier, Any Roofing Material, Any Roof Color, R-56 insulation	720	972	0	829	829
LevelHillRoad: Floor-Basement, Custom, 4" slab with 2" XPS and vapor barrier beneath	1549	11,618	0	0	0
Subtotals for structure:		29,046	0	6,834	6,834
People:	4		800	920	1,720
Equipment:			0	0	0
Lighting:	475			1,620	1,620
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 47, Summer CFM: 24		3,853	312	232	544
Ventilation: Winter CFM: 60, Summer CFM: 60		1,955	791	235	1,026
Exhaust: Winter CFM: 60, Summer CFM: 60					
System 1 Apartment 1, Basement, Garage, Storage Load Totals:		34,854	1,903	9,840	11,744

Check Figures

Supply CFM:	442	CFM Per Square ft.:	0.144
Square ft. of Room Area:	3,069	Square ft. Per Ton:	3,136
Volume (ft ³):	28,385		

System Loads

Total Heating Required Including Ventilation Air:	34,854 Btuh	34.854 MBH
Total Sensible Gain:	9,840 Btuh	84 %
Total Latent Gain:	1,903 Btuh	16 %
Total Cooling Required Including Ventilation Air:	11,744 Btuh	0.98 Tons (Based On Sensible + Latent)

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System 2 Apartment Upper Level Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
LvlHillDHW: Glazing-Matthews Clara Starett, triple pane, foam filled vinyl, doube hung, u-value 0.19, SHGC 0.3	151.3	2,152	0	2,396	2,396
11G: Door-Wood - Panel	21	851	0	227	227
LvlHillAG-1: Wall-Frame, Custom, an inner and outer stud wall with 4" between	555.8	1,102	0	167	167
15B0-10sf-6: Wall-Basement, , R-10 board insulation to floor, no interior finish, 6' floor depth	68.5	233	0	3	3
16A-56: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Unvented Attic, No Radiant Barrier, Any Roofing Material, Any Roof Color, R-56 insulation	855	1,154	0	985	985
Subtotals for structure:		5,492	0	3,778	3,778
People:	4		800	920	1,720
Equipment:			0	0	0
Lighting:	275			938	938
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 12, Summer CFM: 6		969	79	58	137
Ventilation: Winter CFM: 60, Summer CFM: 60		1,955	791	235	1,026
Exhaust: Winter CFM: 60, Summer CFM: 60					
AED Excursion:		0	0	199	199
System 2 Apartment Upper Level Load Totals:		8,416	1,670	6,127	7,798

Check Figures

Supply CFM:	271	CFM Per Square ft.:	0.317
Square ft. of Room Area:	855	Square ft. Per Ton:	1,316
Volume (ft ³):	7,139		

System Loads

Total Heating Required Including Ventilation Air:	8,416 Btuh	8.416 MBH
Total Sensible Gain:	6,127 Btuh	79 %
Total Latent Gain:	1,670 Btuh	21 %
Total Cooling Required Including Ventilation Air:	7,798 Btuh	0.65 Tons (Based On Sensible + Latent)

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