Load Short Form
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018
[redacted]

[redacted]

Project Information

For: [redacted]

Design Information

	Htg	Clg
Outside db (°F)	0	93
Inside db (°F)	68	75
Design TD (°F)	68	18
Daily range	-	H
Inside humidity (%)	30	50
Moisture difference (gr/lb)	33	-33

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	2 (Average)

HEATING EQUIPMENT

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

COOLING EQUIPMENT

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

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Bmnt radiant only	1646	28889	14502	645	845
Main Floor	2615	53379	37162	2000	2000
(Unconditioned)	1094	0	0	0	0
Entire House	5355	82268	51664	2645	2931
Other equip loads		0	0		
Equip. @ 0.98 RSM			50579		
Latent cooling			0		
TOTALS	5355	82268	50579	2645	2931

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

Building Analysis
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018
[redacted]

[redacted]

Project Information

For: [redacted]

Design Conditions

Location:
Park City, UT, US
Elevation: 6700 ft
Latitude: 40°N

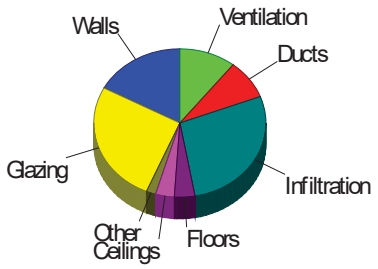
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	0	93
Daily range (°F)	-	31 (H)
Wet bulb (°F)	-	61
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	68	18
Relative humidity (%)	30	50
Moisture difference (gr/lb)	33.5	-33.3

Infiltration:	
Method	Simplified
Construction quality	Tight
Fireplaces	2 (Average)

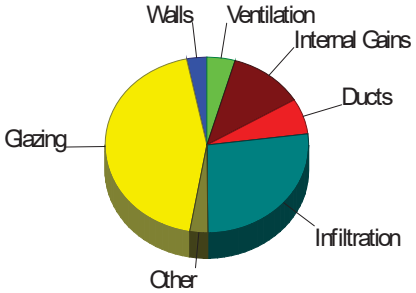
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.3	14121	17.2
Glazing	20.8	21785	26.5
Doors	6.6	1485	1.8
Ceilings	1.0	2904	3.5
Floors	0.8	3154	3.8
Infiltration	3.4	23026	28.0
Ducts		7036	8.6
Piping		0	0
Humidification		0	0
Ventilation		8757	10.6
Adjustments		0	
Total		**82268**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.3	1656	3.2
Glazing	21.8	22789	44.1
Doors	2.3	520	1.0
Ceilings	0.3	824	1.6
Floors	0.0	125	0.2
Infiltration	2.0	13878	26.9
Ducts		3387	6.6
Ventilation		2305	4.5
Internal gains		6180	12.0
Blower		0	0
Adjustments		0	
Total		**51664**	**100.0**



Latent Cooling Load = 0 Btuh
Overall U-value = 0.056 Btuh/ft²-°F

Data entries checked.

Component Constructions
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018

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[redacted]

Project Information

For: [redacted]

Design Conditions

Location:
Park City, UT, US
Elevation: 6700 ft
Latitude: 40°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	0	93
Daily range (°F)	-	31 (H)
Wet bulb (°F)	-	61
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	68	18
Relative humidity (%)	30	50
Moisture difference (gr/lb)	33.5	-33.3

Infiltration:	
Method	Simplified
Construction quality	Tight
Fireplaces	2 (Average)

Construction descriptions	**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
Walls								
Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board int fnsh: Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board int fnsh	n	654	0.053	19.0	1.22	798	0.14	93
	e	525	0.053	19.0	2.06	1083	0.24	126
	s	645	0.053	19.0	3.30	2126	0.38	247
	w	836	0.053	19.0	2.54	2121	0.29	246
	all	2660	0.053	19.0	2.30	6129	0.27	712
Frm wall, cmnt brd ext, 3/8" wood shth, r-30 ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud: Frm wall, cmnt brd ext, 3/8" wood shth, r-30 ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	814	0.033	30.0	2.24	1826	0.29	234
	e	574	0.033	30.0	2.24	1288	0.29	165
	s	860	0.033	30.0	2.24	1930	0.29	247
	w	633	0.033	30.0	2.24	1420	0.29	182
	all	2881	0.033	30.0	2.24	6465	0.29	827
Partitions								
Frm wall, r-23 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud: Frm wall, r-23 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud		523	0.043	23.0	2.92	1528	0.22	117

Windows

2 glazing, clr low-e outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk:	n	24	0.320	0	21.8	522	9.58	230
2 glazing, clr low-e outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk;	n	55	0.310	0	21.1	1159	9.98	549
6.67 ft head ht	n	57	0.320	0	21.8	1240	9.58	546
	e	36	0.300	0	20.4	734	27.0	974
	e	15	0.310	0	21.1	316	24.4	366
	e	84	0.320	0	21.8	1828	24.6	2065
	e	90	0.300	0	20.4	1836	27.0	2434
	e	27	0.310	0	21.1	569	24.4	659
	e	25	0.310	0	21.1	527	27.2	681
	e	66	0.320	0	21.8	1436	24.6	1622
	e	132	0.320	0	21.8	2872	26.5	3493
	e	57	0.330	0	22.4	1279	23.8	1357
	s	36	0.300	0	20.4	734	13.7	493
	s	25	0.310	0	21.1	527	13.9	347
	s	20	0.340	0	23.1	462	14.4	288
	s	54	0.300	0	20.4	1102	14.9	807
	s	24	0.310	0	21.1	506	13.9	333
	s	8	0.310	0	21.1	169	15.1	121
	w	132	0.250	0	17.0	2244	25.2	3328
	w	45	0.310	0	21.1	949	27.2	1225
	w	36	0.320	0	21.8	772	24.6	873
	all	1048	0.320	0	20.8	21785	21.8	22789

Doors

11D0: Door, wd sc type	n	48	0.390	0	13.3	636	4.64	223
	e	176	0.390	0	4.82	849	1.69	297
	all	224	0.390	0	6.63	1485	2.32	520

Ceilings

Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 12" thkns, r-63 raftr ins: Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 12" thkns, r-63 raftr ins		2984	0.016	63.0	0.97	2904	0.28	824

Floors

21A-32c: Bg floor, light dry soil, 8' depth, carpet flr fnsh		2739	0.020	0	0.82	2238	0	0
		245	0.020	0	1.36	333	0	0
	all	2984	0.020	0	0.86	2571	0	0
Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-45 cav ins, amb ovr: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-45 cav ins, amb ovr		69	0.022	45.0	0.75	51	0.16	11
Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-45 cav ins, gar ovr: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-45 cav ins, gar ovr		453	0.022	45.0	0.75	339	0.16	73
Flr floor, frm flr, 12" thkns, tile flr fnsh, r-45 cav ins, gar ovr: Flr floor, frm flr, 12" thkns, tile flr fnsh, r-45 cav ins, gar ovr		257	0.022	45.0	0.75	192	0.16	41

Project Summary
Entire House
Perfect Home Hvac Design

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890[redacted]

Project Information

For: [redacted]

[redacted]

Notes: Residence requires 87.61 cfm of outside ventilation air to meet ASHRAE 62.2 requirements, if needed in your area. We recommend a 200 cfm HRV be installed cycling in 15 minute increments - 15 on/15 off. See HRV schematic.

Design Information

Weather: Park City, UT, US

Winter Design Conditions

Outside db	0	°F
Inside db	68	°F
Design TD	68	°F

Summer Design Conditions

Outside db	93	°F
Inside db	75	°F
Design TD	18	°F
Daily range	H	
Relative humidity	50	%
Moisture difference	-33	gr/lb

Heating Summary

Structure	75232	Btuh
Ducts	7036	Btuh
Central vent (0 cfm)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	82268	Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	2 (Average)

	Heating	Cooling
Area (ft²)	4261	4261
Volume (ft³)	52298	52298
Air changes/hour	0.35	0.35
Equiv. AVF (cfm)	394	903

Sensible Cooling Equipment Load Sizing

Structure	48277	Btuh
Ducts	3387	Btuh
Central vent (0 cfm)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.98	
Equipment sensible load	50579	Btuh

Latent Cooling Equipment Load Sizing

Structure	-17423	Btuh
Ducts	-166	Btuh
Central vent (0 cfm)	0	Btuh
Equipment latent load	0	Btuh
Equipment Total Load (Sen+Lat)	50579	Btuh
Req. total capacity at 0.97 SHR	4.3	ton

Heating Equipment Summary

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

Cooling Equipment Summary

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

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

AED Assessment
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018
[redacted]

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Project Information

For: [redacted]

Design Conditions

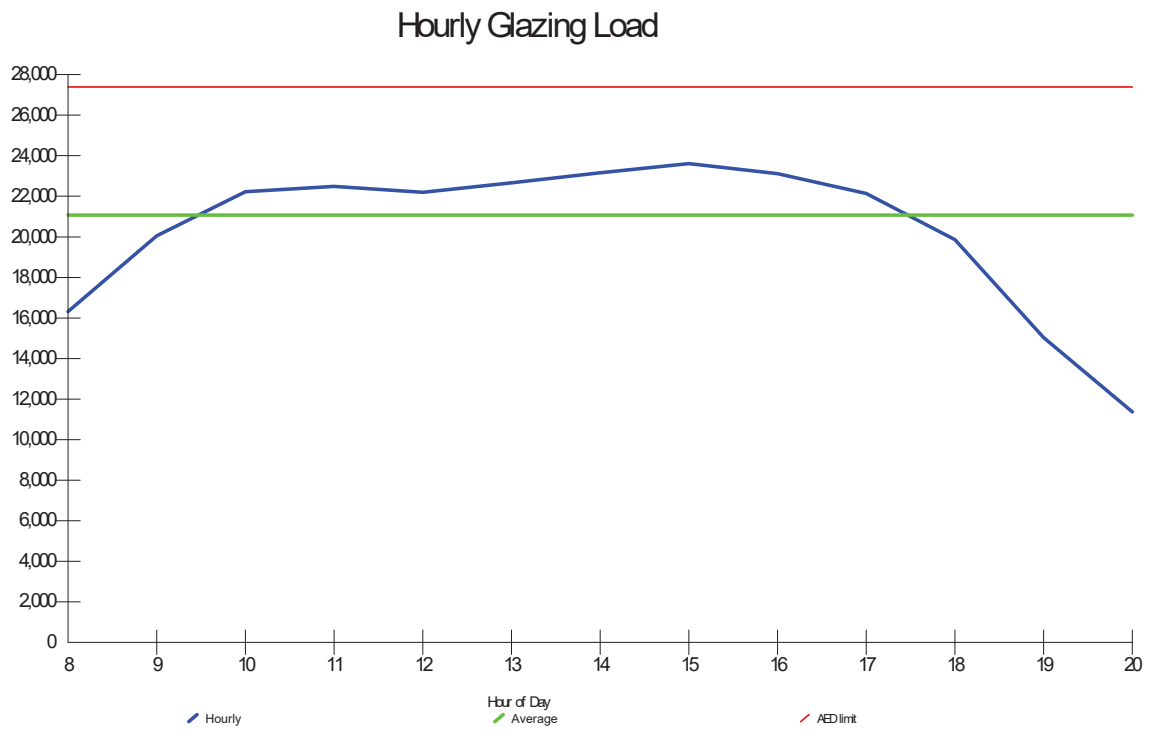
Location:
Park City, UT, US
Elevation: 6700 ft
Latitude: 40°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	0	93
Daily range (°F)	-	31 (H)
Wet bulb (°F)	-	61
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	68	18
Relative humidity (%)	30	50
Moisture difference (gr/lb)	33.5	-33.3

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 12.0%.

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

AED excursion: 0 Btuh

wrightsoft

Right-J® Worksheet
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018

[redacted]

[redacted]

1	Room name	Entire House	Bmnt radiant only
2	Exposed wall	558.9 ft	181.5 ft
3	Room height	12.0 ft	11.6 ft
4	Room dimensions		
5	Room area	5354.5 ft²	1645.5 ft²

	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²) Heat	HTM (Btuh/ft²) Cool	Area (ft²) or perimeter (ft) Gross	N/P/S	Load (Btuh) Heat	Load (Btuh) Cool	Area (ft²) or perimeter (ft) Gross	N/P/S	Load (Btuh) Heat	Load (Btuh) Cool
6	W	Bg wall, light dry s	0.053	n	1.22	0.14	726	654	798	93	270	222	798	93
.	G	2 glazing, clr low-e	0.320	n	21.76	9.58	24	0	522	230	24	0	522	230
.	D	11D0	0.390	n	13.26	4.64	48	48	636	223	24	24	636	223
.	W	Frm wall, cmnt brd e	0.033	n	2.24	0.29	926	814	1826	234	0	0	0	0
11	G	2 glazing, clr low-e	0.310	n	21.08	9.98	55	0	1159	549	0	0	0	0
	G	2 glazing, clr low-e	0.320	n	21.76	9.58	57	0	1240	546	0	0	0	0
	W	Bg wall, light dry s	0.053	e	2.06	0.24	836	525	1083	126	468	301	1083	126
	G	2 glazing, clr low-e	0.300	e	20.40	27.05	36	0	734	974	36	0	734	974
	G	2 glazing, clr low-e	0.310	e	21.08	24.40	15	0	316	366	15	0	316	366
	G	2 glazing, clr low-e	0.320	e	21.76	24.58	84	0	1828	2065	84	0	1828	2065
	D	11D0	0.390	e	4.82	1.69	176	176	849	297	32	32	849	297
	W	Frm wall, cmnt brd e	0.033	e	2.24	0.29	971	574	1288	165	162	146	328	42
	G	2 glazing, clr low-e	0.300	e	20.40	27.05	90	0	1836	2434	0	0	0	0
	G	2 glazing, clr low-e	0.310	e	21.08	24.40	27	0	569	659	0	0	0	0
	G	2 glazing, clr low-e	0.310	e	21.08	27.23	25	0	527	681	16	0	337	436
	G	2 glazing, clr low-e	0.320	e	21.76	24.58	66	0	1436	1622	0	0	0	0
	G	2 glazing, clr low-e	0.320	e	21.76	26.46	132	0	2872	3493	0	0	0	0
	G	2 glazing, clr low-e	0.330	e	22.44	23.81	57	0	1279	1357	0	0	0	0
	W	Bg wall, light dry s	0.053	s	3.30	0.38	726	645	2126	247	671	590	2126	247
	G	2 glazing, clr low-e	0.300	s	20.40	13.69	36	0	734	493	36	0	734	493
	G	2 glazing, clr low-e	0.310	s	21.08	13.87	25	0	527	347	25	0	527	347
	G	2 glazing, clr low-e	0.340	s	23.12	14.40	20	0	462	288	20	0	462	288
	W	Frm wall, cmnt brd e	0.033	s	2.24	0.29	946	860	1930	247	0	0	0	0
	G	2 glazing, clr low-e	0.300	s	20.40	14.94	54	0	1102	807	0	0	0	0
	G	2 glazing, clr low-e	0.310	s	21.08	13.87	24	0	506	333	0	0	0	0
	G	2 glazing, clr low-e	0.310	s	21.08	15.11	8	0	169	121	0	0	0	0
	W	Bg wall, light dry s	0.053	w	2.54	0.29	836	836	2121	246	589	589	2121	246
	W	Frm wall, cmnt brd e	0.033	w	2.24	0.29	846	633	1420	182	0	0	0	0
	G	2 glazing, clr low-e	0.250	w	17.00	25.21	132	0	2244	3328	0	0	0	0
	G	2 glazing, clr low-e	0.310	w	21.08	27.23	45	0	949	1225	0	0	0	0
	G	2 glazing, clr low-e	0.320	w	21.76	24.58	36	0	772	873	0	0	0	0
	P	Frm wall, r-23 cav i	0.043	-	2.92	0.22	523	523	1528	117	523	523	1528	117
	C	Rf/clg ceiling, asph	0.016	-	0.97	0.28	2984	2984	2904	824	54	54	59	17
	F	21A-32c	0.020	-	0.82	0.00	2739	2739	2238	0	1646	1646	2238	0
	F	21A-32c	0.020	-	1.36	0.00	245	245	333	0	0	0	0	0
	F	Flr floor, frm flr,	0.022	-	0.75	0.16	69	69	51	11	0	0	0	0
	F	Flr floor, frm flr,	0.022	-	0.75	0.16	453	453	339	73	0	0	0	0
	F	Flr floor, frm flr,	0.022	-	0.75	0.16	257	257	192	41	0	0	0	0

6	c) AED excursion									0				0
	Envelope loss/gain								43449	25914			17228	6605
12	a) Infiltration								23026	13878			8743	5269
	b) Room ventilation								8757	2305			2919	768
13	Internal gains:	Occupants @	230				6			1380	2			460
		Appliances/other								4800				1400
	Subtotal (lines 6 to 13)								75232	48277			28889	14502
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								75232	48277			28889	14502
15	Duct loads						9%	7%	7036	3387	0%	0%	0	0
	Total room load								82268	51664			28889	14502
	Air required (cfm)								2645	2931			645	845

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

Right-J® Worksheet
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018

[redacted]

[redacted]

1	Room name						Main Floor				(Unconditioned)			
2	Exposed wall						274.9 ft				102.5 ft			
3	Room height						12.7 ft				11.0 ft			
4	Room dimensions													
5	Room area						2615.3 ft²				1093.8 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	Bg wall, light dry s	0.053	n	1.22	0.14	0	0	0	0	457	433	0	0
.	G	2 glazing, clr low-e	0.320	n	21.76	9.58	0	0	0	0	0	0	0	0
.	D	11D0	0.390	n	13.26	4.64	0	0	0	0	24	24	0	0
.	W	Frm wall, cmnt brd e	0.033	n	2.24	0.29	926	814	1826	234	0	0	0	0
11	G	2 glazing, clr low-e	0.310	n	21.08	9.98	55	0	1159	549	0	0	0	0
	G	2 glazing, clr low-e	0.320	n	21.76	9.58	57	0	1240	546	0	0	0	0
	W	Bg wall, light dry s	0.053	e	2.06	0.24	0	0	0	0	369	225	0	0
	G	2 glazing, clr low-e	0.300	e	20.40	27.05	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.310	e	21.08	24.40	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.320	e	21.76	24.58	0	0	0	0	0	0	0	0
	D	11D0	0.390	e	4.82	1.69	0	0	0	0	144	144	0	0
	W	Frm wall, cmnt brd e	0.033	e	2.24	0.29	809	428	961	123	0	0	0	0
	G	2 glazing, clr low-e	0.300	e	20.40	27.05	90	0	1836	2434	0	0	0	0
	G	2 glazing, clr low-e	0.310	e	21.08	24.40	27	0	569	659	0	0	0	0
	G	2 glazing, clr low-e	0.310	e	21.08	27.23	9	0	190	245	0	0	0	0
	G	2 glazing, clr low-e	0.320	e	21.76	24.58	66	0	1436	1622	0	0	0	0
	G	2 glazing, clr low-e	0.320	e	21.76	26.46	132	0	2872	3493	0	0	0	0
	G	2 glazing, clr low-e	0.330	e	22.44	23.81	57	0	1279	1357	0	0	0	0
	W	Bg wall, light dry s	0.053	s	3.30	0.38	0	0	0	0	55	55	0	0
	G	2 glazing, clr low-e	0.300	s	20.40	13.69	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.310	s	21.08	13.87	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.340	s	23.12	14.40	0	0	0	0	0	0	0	0
	W	Frm wall, cmnt brd e	0.033	s	2.24	0.29	946	860	1930	247	0	0	0	0
	G	2 glazing, clr low-e	0.300	s	20.40	14.94	54	0	1102	807	0	0	0	0
	G	2 glazing, clr low-e	0.310	s	21.08	13.87	24	0	506	333	0	0	0	0
	G	2 glazing, clr low-e	0.310	s	21.08	15.11	8	0	169	121	0	0	0	0
	W	Bg wall, light dry s	0.053	w	2.54	0.29	0	0	0	0	248	248	0	0
	W	Frm wall, cmnt brd e	0.033	w	2.24	0.29	846	633	1420	182	0	0	0	0
	G	2 glazing, clr low-e	0.250	w	17.00	25.21	132	0	2244	3328	0	0	0	0
	G	2 glazing, clr low-e	0.310	w	21.08	27.23	45	0	949	1225	0	0	0	0
	G	2 glazing, clr low-e	0.320	w	21.76	24.58	36	0	772	873	0	0	0	0
	P	Frm wall, r-23 cav i	0.043	-	2.92	0.22	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.016	-	0.97	0.28	2615	2615	2845	808	315	315	0	0
	F	21A-32c	0.020	-	0.82	0.00	0	0	0	0	1094	1094	0	0
	F	21A-32c	0.020	-	1.36	0.00	245	245	333	0	0	0	0	0
	F	Flr floor, frm flr,	0.022	-	0.75	0.16	69	69	51	11	0	0	0	0
	F	Flr floor, frm flr,	0.022	-	0.75	0.16	453	453	339	73	0	0	0	0
	F	Flr floor, frm flr,	0.022	-	0.75	0.16	257	257	192	41	0	0	0	0
6	c) AED excursion									0				0
	Envelope loss/gain								26222	19309			0	0
12	a) Infiltration								14283	8609			0	0
	b) Room ventilation								5838	1537			0	0
13	Internal gains:	Occupants @	230				4			920	0			0
		Appliances/other								3400				0
	Subtotal (lines 6 to 13)								46343	33775			0	0
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								46343	33775			0	0
15	Duct loads						15%	10%	7036	3387	0%	0%	0	0
	Total room load								53379	37162			0	0
	Air required (cfm)								2000	2000			0	0

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

Loads for Multiple Orientations
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018

Project Information

For: Canyon Drive Project, Steve Mackay
6980 Canyon Drive, Park City, UT

Email: stevemackay@comcast.net

Design Conditions

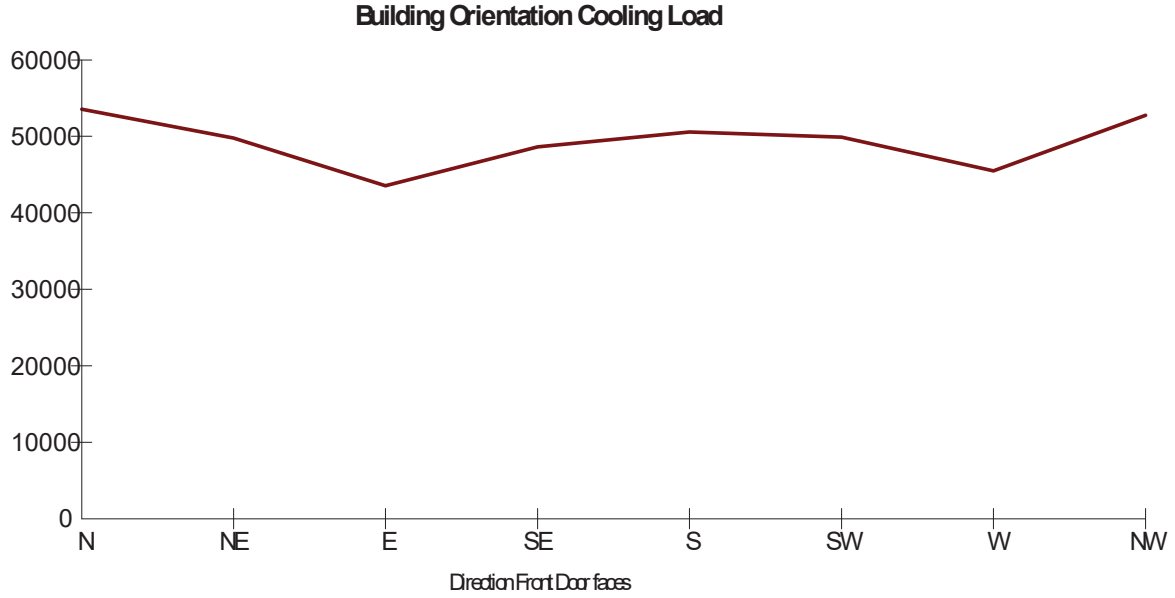
Location:
Park City, UT, US
Elevation: 6700 ft
Latitude: 40°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	0	93
Daily range (°F)	-	31 (H)
Wet bulb (°F)	-	61
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	68	18
Relative humidity (%)	30	50
Moisture difference (gr/lb)	33.5	-33.3

Infiltration:

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	53558	49776	43560	48636	50579	49893	45490	52760
Latent Load (Btuh)	0	0	0	0	0	0	0	0
Total Load (Btuh)	53558	49776	43560	48636	50579	49893	45490	52760
Heating AVF (cfm)	2645	2645	2645	2645	2645	2645	2645	2645
Cooling AVF (cfm)	3057	2932	3039	2921	2931	3001	3229	3135



Current Orientation: Front Door faces South
Highest Cooling Load: Front Door faces North

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

J1 Form - Worksheet A
Entire House
Perfect Home Hvac Design

Job: 3378 rev 4
Date: 11/09/2018

[redacted]

[redacted]

Supporting Detail			
Project Name:	Mackay, Steve rev 4	Date:	11/09/2018
Address:	6980 Canyon Drive, Park City, UT		
Phone:		Job ID:	3378 rev 4

Worksheet A Location and Design Conditions		
Weather Location: Park City, UT, US	Elevation = 6700	Latitude = 40
Indoor Conditions, Heating: DB = 68 °F RH = 30 %	Indoor Conditions, Cooling: DB = 75 °F RH = 50 %	
Table 1 Conditions 99% DB = 0 °F 1% DB = 93 °F	Grains Difference = -33 gr/lb	Daily Range = H
Design Temperature Differences	HTD = 68 °F	CTD = 18 °F

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

Load Multizone Summary Report

Job: 3378 rev 4
Date: 11/09/2018

Perfect Home Hvac Design

89[redacted]

Infiltration Summary

ZONE NAME	Heating Volume ft³	Heating ACH	Heating AVF cfm	Heating HTM Btuh/ft²	Cooling Volume ft³	Cooling ACH	Cooling AVF cfm	Cooling HTM Btuh/ft²
Bmnt radiant only	19073	0.47	150	4.1	19073	1.08	343	2.4
(Unconditioned)	0	0	0	0	0	0	0	0
Master 1 zone	8848	0.52	77	4.1	8848	1.20	176	2.4
Master 2 zone	6978	0.63	73	4.1	6978	1.44	167	2.4
Great/Kitch zone	17399	0.33	95	4.1	17399	0.75	217	2.4
Entire House	52298	0.35	394	3.1	52298	0.35	903	0.8

Load and AVF Summary

ROOM NAME	Area ft²	Htg load Btuh	Clg load Btuh	Htg AVF cfm	Clg AVF cfm
Bar/Living	396	8456	5266	189	307
Foyer	353	7683	3870	172	225
Mud	184	1958	693	44	40
B bath	49	66	0	1	0
B WIC 1	55	75	0	2	0
fut elev	30	41	0	1	0
B bed 1	163	2795	1313	62	76
Mech	140	1496	973	33	57
B bath 2	60	1597	558	36	32
Exercise/bed	216	4722	1829	105	107
Bmnt radiant only	1646	28889	14502	645	845
Garage	1094	0	0	0	0
(Unconditioned)	1094	0	0	0	0
Master bed 1	210	9533	6477	357	349
wc	23	0	0	0	0
M bath 1	153	1787	620	67	33
Bath	67	165	34	6	2
Office/bed	187	4526	2449	170	132
M WIC 1	139	3299	1355	124	73
Master 1 zone	778	19310	10936	724	589
M WIC 2	33	728	287	27	15
M bath 2	110	1377	809	52	44
Master bed 2	260	6977	4569	261	246
wc 2	23	0	0	0	0
pantry	78	1866	1103	70	59
laundry	86	93	487	3	26
Master 2 zone	590	11040	7255	414	390
Dining	230	6283	6663	235	359
Great room	423	7971	7218	299	388
Kitchen	439	3568	3833	134	206
Stairs	125	5206	2861	195	154
elev	30	0	0	0	0

Great/Kitch zone	1248	23028	20574	863	1107
Entire House	5355	82268	51664	2645	2931