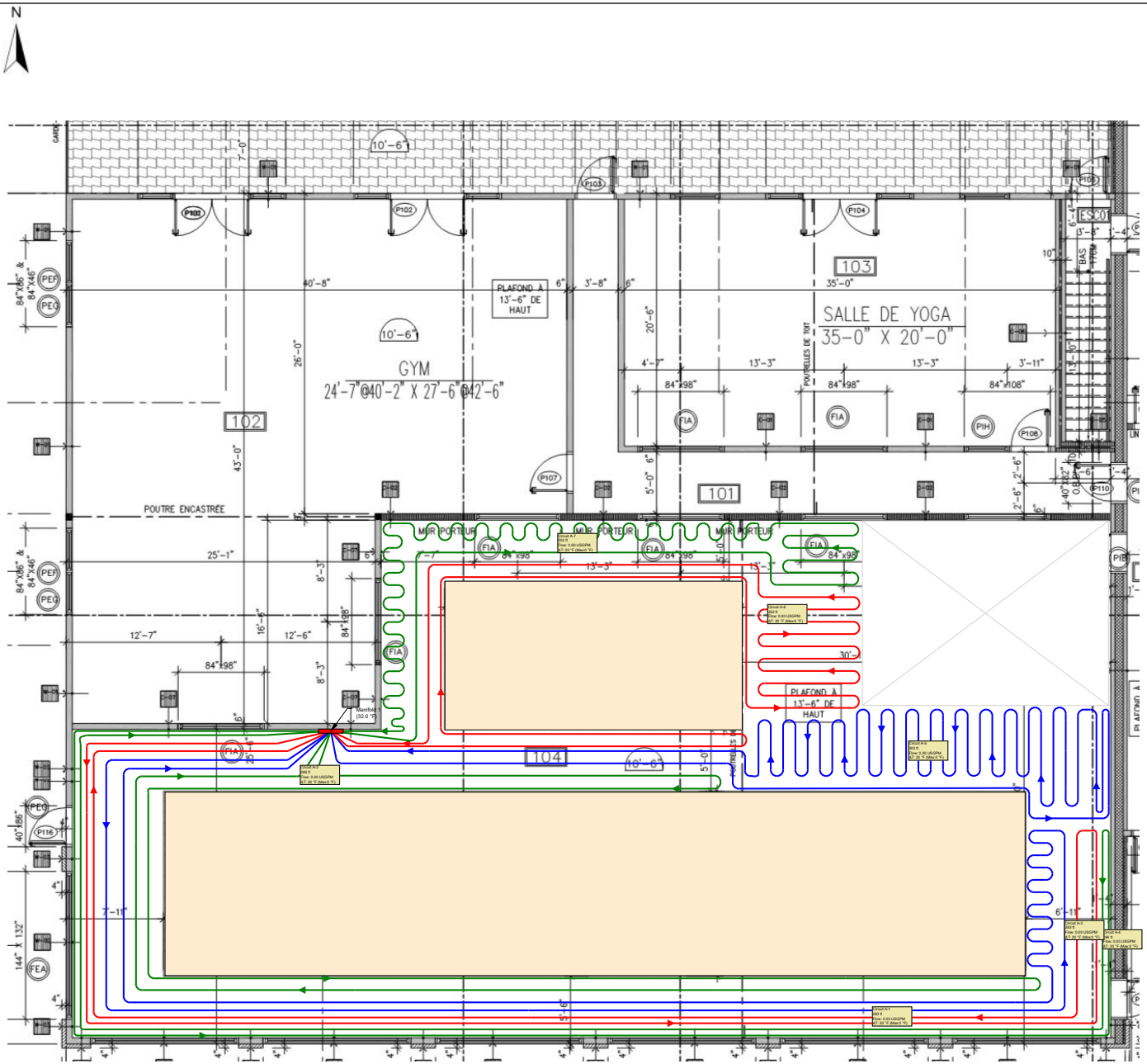

Project Number: MICRO-CLIMAT

Project Name:

Location:

Date: March 03, 2017

Prepared By:

Floor Plan: Basement

Circuit Information:

Total Length: 1,905 ft - Barrier PEX 1/2"

Circuit	Length	Manifold	Tube Type
A-1	283	Manifold 1	1/2"
A-2	286	Manifold 1	1/2"
A-3	283	Manifold 1	1/2"
A-4	296	Manifold 1	1/2"
A-5	303	Manifold 1	1/2"
A-6	252	Manifold 1	1/2"
A-7	202	Manifold 1	1/2"

Load Short Form
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Design Information

	Htg	Clg
Outside db (°F)	63	88
Inside db (°F)	68	75
Design TD (°F)	5	13
Daily range	-	L
Inside humidity (%)	-	50
Moisture difference (gr/lb)	-	33

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

HEATING EQUIPMENT

Make		
Trade		
Model		
Efficiency	80 AFUE	
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	505	cfm
Air flow factor	0.175	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

COOLING EQUIPMENT

Make		
Trade		
Cond		
Coil		
Efficiency	0 EER	
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	505	cfm
Air flow factor	0.042	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.87	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Living room	150	297	2263	52	95
Dining	140	261	892	46	37
Kitchen	165	345	2086	60	88
Bedroom 1	180	376	1307	66	55
Hall	130	121	423	21	18
Master	240	310	854	54	36
Laundry	77	163	365	29	15
Bedroom 2	168	251	646	44	27
Master Bath	60	142	306	25	13
Office	100	106	323	19	14
Room28	230	212	698	37	29
Mudroom	110	298	1867	52	78

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Entire House	1750	2882	12031	505	505
Other equip loads		296	384		
Equip. @ 0.93 RSM			11583		
Latent cooling			1874		
TOTALS	1750	3178	13457	505	505

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Building Analysis
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Design Conditions

Location:
Honolulu, HI, US
Elevation: 16 ft
Latitude: 21 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	63	88
Daily range (°F)	-	12 (L)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

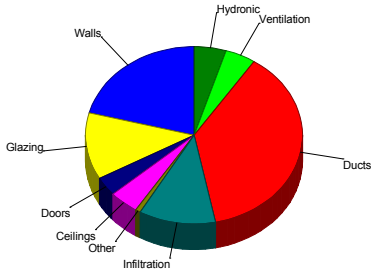
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	5	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	-18.0	32.5

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

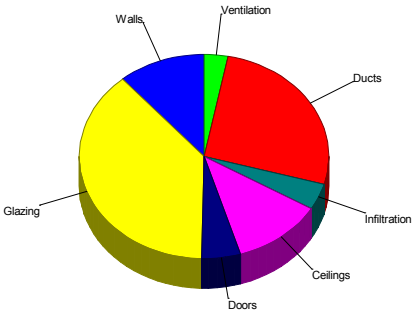
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	0.4	664	20.9
Glazing	2.8	388	12.2
Doors	1.9	109	3.4
Ceilings	0.2	140	4.4
Floors	0.0	24	0.8
Infiltration	0.3	366	11.5
Ducts		1191	37.5
Piping		152	4.8
Humidification		0	0.0
Ventilation		144	4.5
Adjustments		0	
Total		**3178**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.8	1409	11.3
Glazing	35.0	4758	38.3
Doors	11.2	627	5.0
Ceilings	1.7	1462	11.8
Floors	0.0	0	0.0
Infiltration	0.4	512	4.1
Ducts		3263	26.3
Ventilation		384	3.1
Internal gains		0	0.0
Blower		0	0.0
Adjustments		0	
Total		**12414**	**100.0**



Overall U-value = 0.065 Btuh/ft²-°F

Data entries checked.

Component Constructions
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Design Conditions

Location:
Honolulu, HI, US
Elevation: 16 ft
Latitude: 21 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	63	88
Daily range (°F)	-	12 (L)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	5	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	-18.0	32.5

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

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								
15B-10sfc-2: Basement - 8" concrete, no framing or interior finish, R-10 foam bd to floor, 2'	n	492	0.061	10.0	0.38	189	0.81	397
	e	368	0.061	10.0	0.39	142	0.82	303
	s	484	0.061	10.0	0.38	185	0.80	388
	w	384	0.061	10.0	0.39	148	0.83	321
	all	1728	0.061	10.0	0.38	664	0.82	1409
Partitions								
(none)								
Windows								
1D-c2ow: Operable, clear glass, wood frame, 2 pane	n	40	0.570	0.0	2.85	114	19.3	773
	e	32	0.570	0.0	2.85	91	61.4	1965
	s	48	0.570	0.0	2.85	137	21.6	1039
	w	16	0.570	0.0	2.85	46	61.4	982
	all	136	0.570	0.0	2.85	388	35.0	4758
Doors								
11D0: Wood door, solid core, no storm	n	28	0.390	0.0	1.95	55	11.2	313
	s	28	0.390	0.0	1.95	55	11.2	313
	all	56	0.390	0.0	1.95	109	11.2	627
Ceilings								
16B-30ad: Ceiling under vented attic, no radiant barrier, dark shingles, R-30 insulation		875	0.032	30.0	0.16	140	1.67	1462
Floors								
41B0: Radiant panel over basement, 3/4" ply subflr, Omega heat xfer plates		555	0.000	0.0	0.00	0	0.00	0
21B-28t: Tile covered basement floor, R-3 or higher insul, 28' wide		320	0.015	3.0	0.07	24	0.00	0

Project Summary
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com
Notes: Location known for high winds.

Design Information

Weather: Honolulu, HI, US

Winter Design Conditions

Outside db	63	°F
Inside db	68	°F
Design TD	5	°F

Summer Design Conditions

Outside db	88	°F
Inside db	75	°F
Design TD	13	°F
Daily range	L	
Relative humidity	50	%
Moisture difference	33	gr/lb

Heating Summary

Structure	1691	Btuh
Ducts	1191	Btuh
Central vent (26 cfm)	144	Btuh
Humidification	0	Btuh
Piping	152	Btuh
Equipment load	3178	Btuh

Sensible Cooling Equipment Load Sizing

Structure	8767	Btuh
Ducts	3263	Btuh
Central vent (26 cfm)	384	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.93	
Equipment sensible load	11583	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1750	1750
Volume (ft³)	10500	10500
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	67	35

Latent Cooling Equipment Load Sizing

Structure	773	Btuh
Ducts	521	Btuh
Central vent (26 cfm)	580	Btuh
Equipment latent load	1874	Btuh
Equipment total load	13457	Btuh
Req. total capacity at 0.70 SHR	1.4	ton

Heating Equipment Summary

Make		
Trade		
Model		
Efficiency	80	AFUE
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	505	cfm
Air flow factor	0.175	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Cooling Equipment Summary

Make		
Trade		
Cond		
Coil		
Efficiency	0	EER
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	505	cfm
Air flow factor	0.042	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.87	

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AED Assessment
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Design Conditions

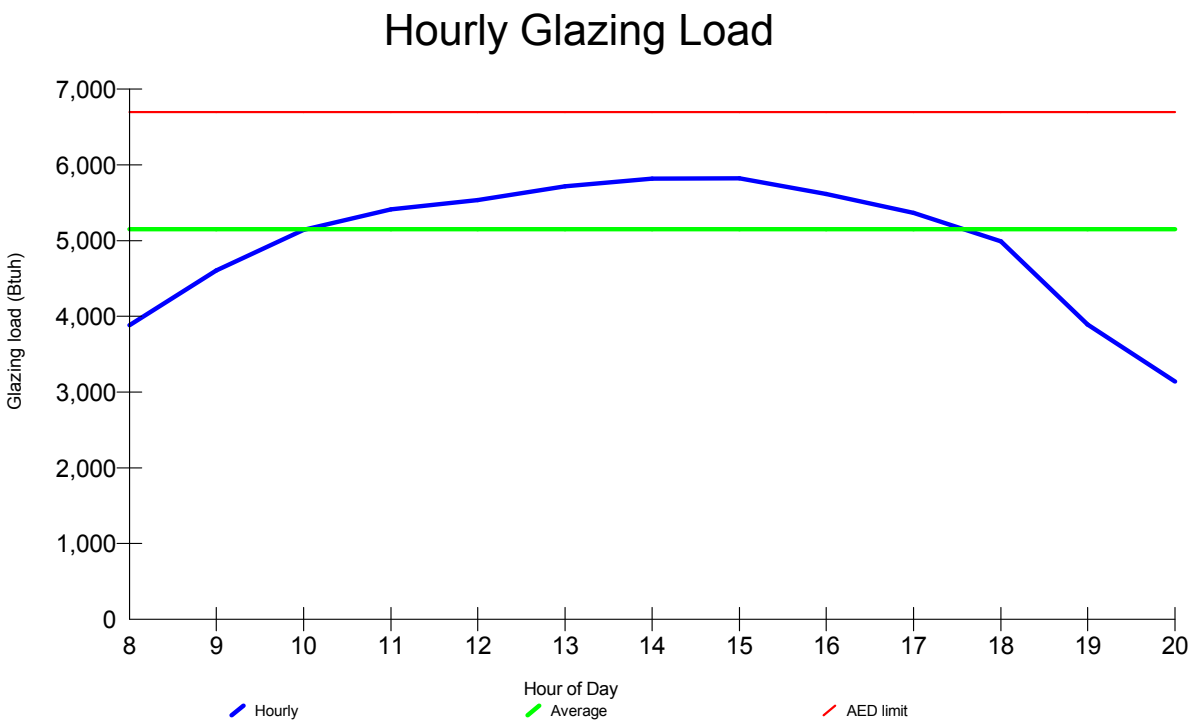
Location:
Honolulu, HI, US
Elevation: 16 ft
Latitude: 21 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	63	88
Daily range (°F)	-	12 (L)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	5	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	-18.0	32.5

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 13.1%.

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

AED excursion: 0 Btuh

Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name						Entire House				Living room			
2	Exposed wall						240.0 ft				25.0 ft			
3	Ceiling height						8.0 ft				8.0 ft		heat/cool	
4	Room dimensions										10.0 x 15.0 ft			
5	Room area						1750.0 ft²				150.0 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	15B-10sfc-2	0.083	n	0.31	1.13	560	492	189	397	80	72	28	59
.	├──G	1D-c2ow	0.570	n	2.85	19.32	40	0	114	773	8	0	23	155
.	└──D	11D0	0.390	n	1.95	11.19	28	28	55	313	0	0	0	0
.	W	15B-10sfc-2	0.083	e	0.31	1.13	400	368	142	303	0	0	0	0
11	└──G	1D-c2ow	0.570	e	2.85	61.39	32	0	91	1965	0	0	0	0
	W	15B-10sfc-2	0.083	s	0.31	1.13	560	484	185	388	0	0	0	0
	├──G	1D-c2ow	0.570	s	2.85	21.64	48	0	137	1039	0	0	0	0
	└──D	11D0	0.390	s	1.95	11.19	28	28	55	313	0	0	0	0
	W	15B-10sfc-2	0.083	w	0.31	1.13	400	384	148	321	120	104	40	84
	└──G	1D-c2ow	0.570	w	2.85	61.39	16	0	46	982	16	0	46	982
	C	16B-30ad	0.032	-	0.16	1.67	875	875	140	1462	0	0	0	0
	F	41B0	0.047	-	0.00	0.00	555	78	0	0	150	25	0	0
	F	21B-28t	0.015	-	0.07	0.00	320	42	24	0	0	0	0	0
6	c) AED excursion									0				317
	Envelope loss/gain								1325	8256			136	1596
12	a) Infiltration								366	512			38	53
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	0			0
		Appliances @	1200				0			0	0			0
	Subtotal (lines 6 to 13)								1691	8767			174	1649
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1691	8767			174	1649
15	Duct loads						70%	37%	1191	3263	70%	37%	123	614
	Total room load								2882	12031			297	2263
	Air required (cfm)								505	505			52	95

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Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name						Dining					Kitchen			
2	Exposed wall						14.0 ft					26.0 ft			
3	Ceiling height						8.0 ft			heat/cool		8.0 ft			heat/cool
4	Room dimensions						14.0 x 10.0 ft					11.0 x 15.0 ft			
5	Room area						140.0 ft²					165.0 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	15B-10sfc-2	0.083	n	0.31	1.13	112	80	30	59	88	60	22	43
.	├──G	1D-c2ow	0.570	n	2.85	19.32	32	0	91	618	0	0	0	0
.	└──D	11D0	0.390	n	1.95	11.19	0	0	0	0	28	28	55	313
.	W	15B-10sfc-2	0.083	e	0.31	1.13	0	0	0	0	120	104	40	84
11	└──G	1D-c2ow	0.570	e	2.85	61.39	0	0	0	0	16	0	46	982
	W	15B-10sfc-2	0.083	s	0.31	1.13	0	0	0	0	0	0	0	0
	├──G	1D-c2ow	0.570	s	2.85	21.64	0	0	0	0	0	0	0	0
	└──D	11D0	0.390	s	1.95	11.19	0	0	0	0	0	0	0	0
	W	15B-10sfc-2	0.083	w	0.31	1.13	0	0	0	0	0	0	0	0
	└──G	1D-c2ow	0.570	w	2.85	61.39	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	0.16	1.67	0	0	0	0	0	0	0	0
	F	41B0	0.047	-	0.00	0.00	0	0	0	0	165	26	0	0
	F	21B-28t	0.015	-	0.07	0.00	140	14	10	0	0	0	0	0
6	c) AED excursion									-57				43
	Envelope loss/gain								132	620			163	1465
12	a) Infiltration								21	30			40	55
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	0			0
		Appliances @	1200				0			0	0			0
	Subtotal (lines 6 to 13)								153	650			202	1520
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								153	650			202	1520
15	Duct loads						70%	37%	108	242	70%	37%	142	566
	Total room load								261	892			345	2086
	Air required (cfm)								46	37			60	88

Printout certified by ACCA to meet all requirements of Manual J 8th Ed.

Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name						Bedroom 1				Hall			
2	Exposed wall						28.0 ft				6.0 ft			
3	Ceiling height						8.0 ft		heat/cool		8.0 ft		heat/cool	
4	Room dimensions						18.0 x 10.0 ft				1.0 x 130.0 ft			
5	Room area						180.0 ft²				130.0 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	15B-10sfc-2	0.083	n	0.31	1.13	0	0	0	0	0	0	0	0
.	├──G	1D-c2ow	0.570	n	2.85	19.32	0	0	0	0	0	0	0	0
.	└──D	11D0	0.390	n	1.95	11.19	0	0	0	0	0	0	0	0
.	W	15B-10sfc-2	0.083	e	0.31	1.13	0	0	0	0	0	0	0	0
11	└──G	1D-c2ow	0.570	e	2.85	61.39	0	0	0	0	0	0	0	0
	W	15B-10sfc-2	0.083	s	0.31	1.13	144	112	43	86	48	20	7	9
	├──G	1D-c2ow	0.570	s	2.85	21.64	32	0	91	692	0	0	0	0
	└──D	11D0	0.390	s	1.95	11.19	0	0	0	0	28	28	55	313
	W	15B-10sfc-2	0.083	w	0.31	1.13	80	80	31	68	0	0	0	0
	└──G	1D-c2ow	0.570	w	2.85	61.39	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	0.16	1.67	0	0	0	0	0	0	0	0
	F	41B0	0.047	-	0.00	0.00	0	0	0	0	130	6	0	0
	F	21B-28t	0.015	-	0.07	0.00	180	28	13	0	0	0	0	0
6	c) AED excursion									47				-27
	Envelope loss/gain								178	893			62	295
12	a) Infiltration								43	60			9	13
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	0			0
		Appliances @ 1200					0			0	0			0
	Subtotal (lines 6 to 13)								221	953			71	308
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								221	953			71	308
15	Duct loads						70%	37%	156	355	70%	37%	50	115
	Total room load								376	1307			121	423
	Air required (cfm)								66	55			21	18

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Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name						Master					Laundry			
2	Exposed wall						31.0 ft					18.0 ft			
3	Ceiling height						8.0 ft			heat/cool		8.0 ft			heat/cool
4	Room dimensions						16.0 x 15.0 ft					7.0 x 11.0 ft			
5	Room area						240.0 ft²					77.0 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	15B-10sfc-2	0.083	n	0.31	1.13	128	128	50	108		56	56	22	47
.	├──G	1D-c2ow	0.570	n	2.85	19.32	0	0	0	0		0	0	0	0
.	└──D	11D0	0.390	n	1.95	11.19	0	0	0	0		0	0	0	0
.	W	15B-10sfc-2	0.083	e	0.31	1.13	0	0	0	0		88	88	34	75
11	└──G	1D-c2ow	0.570	e	2.85	61.39	0	0	0	0		0	0	0	0
	W	15B-10sfc-2	0.083	s	0.31	1.13	0	0	0	0		0	0	0	0
	├──G	1D-c2ow	0.570	s	2.85	21.64	0	0	0	0		0	0	0	0
	└──D	11D0	0.390	s	1.95	11.19	0	0	0	0		0	0	0	0
	W	15B-10sfc-2	0.083	w	0.31	1.13	120	120	46	102		0	0	0	0
	└──G	1D-c2ow	0.570	w	2.85	61.39	0	0	0	0		0	0	0	0
	C	16B-30ad	0.032	-	0.16	1.67	240	240	38	401		77	77	12	129
	F	41B0	0.047	-	0.00	0.00	0	0	0	0		0	0	0	0
	F	21B-28t	0.015	-	0.07	0.00	0	0	0	0		0	0	0	0
6	c) AED excursion									-54					-23
	Envelope loss/gain								135	556				68	227
12	a) Infiltration								47	66				27	38
	b) Room ventilation								0	0				0	0
13	Internal gains:	Occupants @	230				0			0		0			0
		Appliances @	1200				0			0		0			0
	Subtotal (lines 6 to 13)								182	623				96	266
	Less external load								0	0				0	0
	Less transfer								0	0				0	0
	Redistribution								0	0				0	0
14	Subtotal								182	623				96	266
15	Duct loads						70%	37%	128	232		70%	37%	67	99
	Total room load								310	854				163	365
	Air required (cfm)								54	36				29	15

Printout certified by ACCA to meet all requirements of Manual J 8th Ed.

Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name						Bedroom 2				Master Bath			
2	Exposed wall						26.0 ft				16.0 ft			
3	Ceiling height						8.0 ft		heat/cool		8.0 ft		heat/cool	
4	Room dimensions						12.0 x 14.0 ft				6.0 x 10.0 ft			
5	Room area						168.0 ft²				60.0 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	15B-10sfc-2	0.083	n	0.31	1.13	0	0	0	0	0	0	0	0
.	├──G	1D-c2ow	0.570	n	2.85	19.32	0	0	0	0	0	0	0	0
.	└──D	11D0	0.390	n	1.95	11.19	0	0	0	0	0	0	0	0
.	W	15B-10sfc-2	0.083	e	0.31	1.13	112	112	43	95	0	0	0	0
11	└──G	1D-c2ow	0.570	e	2.85	61.39	0	0	0	0	0	0	0	0
	W	15B-10sfc-2	0.083	s	0.31	1.13	96	96	37	81	48	48	19	41
	├──G	1D-c2ow	0.570	s	2.85	21.64	0	0	0	0	0	0	0	0
	└──D	11D0	0.390	s	1.95	11.19	0	0	0	0	0	0	0	0
	W	15B-10sfc-2	0.083	w	0.31	1.13	0	0	0	0	80	80	31	68
	└──G	1D-c2ow	0.570	w	2.85	61.39	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	0.16	1.67	168	168	27	281	60	60	10	100
	F	41B0	0.047	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	21B-28t	0.015	-	0.07	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									-41				-20
	Envelope loss/gain								107	416			59	189
12	a) Infiltration								40	55			24	34
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	0			0
		Appliances @	1200				0			0	0			0
	Subtotal (lines 6 to 13)								147	471			84	223
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								147	471			84	223
15	Duct loads						70%	37%	104	175	70%	37%	59	83
	Total room load								251	646			142	306
	Air required (cfm)								44	27			25	13

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Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name						Office					Room28			
2	Exposed wall						10.0 ft					19.0 ft			
3	Ceiling height						8.0 ft		heat/cool			8.0 ft		heat/cool	
4	Room dimensions						10.0 x 10.0 ft					1.0 x 230.0 ft			
5	Room area						100.0 ft²					230.0 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	15B-10sfc-2	0.083	n	0.31	1.13	0	0	0	0		96	96	37	81
.	├──G	1D-c2ow	0.570	n	2.85	19.32	0	0	0	0		0	0	0	0
.	└──D	11D0	0.390	n	1.95	11.19	0	0	0	0		0	0	0	0
.	W	15B-10sfc-2	0.083	e	0.31	1.13	0	0	0	0		0	0	0	0
11	└──G	1D-c2ow	0.570	e	2.85	61.39	0	0	0	0		0	0	0	0
	W	15B-10sfc-2	0.083	s	0.31	1.13	80	80	31	68		56	56	22	47
	├──G	1D-c2ow	0.570	s	2.85	21.64	0	0	0	0		0	0	0	0
	└──D	11D0	0.390	s	1.95	11.19	0	0	0	0		0	0	0	0
	W	15B-10sfc-2	0.083	w	0.31	1.13	0	0	0	0		0	0	0	0
	└──G	1D-c2ow	0.570	w	2.85	61.39	0	0	0	0		0	0	0	0
	C	16B-30ad	0.032	-	0.16	1.67	100	100	16	167		230	230	37	384
	F	41B0	0.047	-	0.00	0.00	0	0	0	0		0	0	0	0
	F	21B-28t	0.015	-	0.07	0.00	0	0	0	0		0	0	0	0
6	c) AED excursion									-21					-44
	Envelope loss/gain								47	214				96	468
12	a) Infiltration								15	21				29	41
	b) Room ventilation								0	0				0	0
13	Internal gains:	Occupants @	230				0			0		0			0
		Appliances @	1200				0			0		0			0
	Subtotal (lines 6 to 13)								62	236				125	509
	Less external load								0	0				0	0
	Less transfer								0	0				0	0
	Redistribution								0	0				0	0
14	Subtotal								62	236				125	509
15	Duct loads						70%	37%	44	88		70%	37%	88	189
	Total room load								106	323				212	698
	Air required (cfm)								19	14				37	29

Printout certified by ACCA to meet all requirements of Manual J 8th Ed.

Right-J Worksheet
Entire House
Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

1	Room name					Mudroom									
2	Exposed wall					21.0 ft									
3	Ceiling height					8.0 ft		heat/cool							
4	Room dimensions					11.0 x 10.0 ft									
5	Room area					110.0 ft²									
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) 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	15B-10sfc-2	0.083	n	0.31	1.13	0	0	0	0				
.	├──G	1D-c2ow	0.570	n	2.85	19.32	0	0	0	0				
.	└──D	11D0	0.390	n	1.95	11.19	0	0	0	0				
.	W	15B-10sfc-2	0.083	e	0.31	1.13	80	64	24	50				
11	└──G	1D-c2ow	0.570	e	2.85	61.39	16	0	46	982				
	W	15B-10sfc-2	0.083	s	0.31	1.13	88	72	27	56				
	├──G	1D-c2ow	0.570	s	2.85	21.64	16	0	46	346				
	└──D	11D0	0.390	s	1.95	11.19	0	0	0	0				
	W	15B-10sfc-2	0.083	w	0.31	1.13	0	0	0	0				
	└──G	1D-c2ow	0.570	w	2.85	61.39	0	0	0	0				
	C	16B-30ad	0.032	-	0.16	1.67	0	0	0	0				
	F	41B0	0.047	-	0.00	0.00	110	21	0	0				
	F	21B-28t	0.015	-	0.07	0.00	0	0	0	0				
6	c) AED excursion									-119				
	Envelope loss/gain								143	1316				
12	a) Infiltration								32	45				
	b) Room ventilation								0	0				
13	Internal gains:	Occupants @ 230					0			0				
		Appliances @ 1200					0			0				
	Subtotal (lines 6 to 13)								175	1361				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								175	1361				
15	Duct loads						70%	37%	123	506				
	Total room load								298	1867				
	Air required (cfm)								52	78				

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Radiant Heating Tubing Requirements

Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Tubing Requirements

Roll 1: 600 ft 3/8" BPEX (Part # WX-BP3-600) 4 lengths 113 ft waste

Living room-A: 127 ft	Living room-B: 141 ft	Hall-A: 116 ft
Hall-B: 104 ft		

Roll 2: 600 ft 3/8" BPEX (Part # WX-BP3-600) 3 lengths 118 ft waste

Mudroom: 191 ft	Kitchen-A: 148 ft	Kitchen-B: 144 ft

Radiant Heating Design Summary

Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Design Information

Total floor area:	1750	ft²	Design temperature:	63	°F
Radiantly heated area:	555	ft²	Maximum supply temperature:	76	°F
Total panel area:	555	ft²	Total flow rate:	0.57	gpm
Total tubing area:	547	ft²	Maximum head loss:	1.60	ft H2O
Total room load:	1691	Btuh	Total tubing required:	970	ft
Total panel output:	622	Btuh	Number of loops:	7	
Total supplemental heat:	1069	Btuh	Number of zones:	1	
Total back loss:	152	Btuh	Number of manifolds:	2	
Boiler output required:	1842	Btuh			

Space Heating Information

Room name	Room area (ft²)	Air temp (°F)	Room load (Btuh)	Supp. heat (Btuh)	F/C	Panel area (ft²)	Tubing area (ft²)	Surf. temp. (°F)	Deliv. temp. (°F)	Panel output (Btuh /ft²)	Back loss (Btuh /ft²)
Living room	150	68	174	0	F	150	148	68	72	1.2	0.3
Dining	140	68	153	153							
Kitchen	165	68	202	0	F	165	163	68	76	1.2	0.3
Bedroom 1	180	68	221	221							
Hall	130	68	71	0	F	130	128	68	72	0.5	0.2
Master	240	68	182	182							
Laundry	77	68	96	96							
Bedroom 2	168	68	147	147							
Master Bath	60	68	84	84							
Office	100	68	62	62							
Room28	230	68	125	125							
Mudroom	110	68	175	0	F	110	108	69	76	1.6	0.3
Totals	1750		1691	1069		555	547				

Radiant Heating Piping Report

Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Piping

Name	Tube size / type	Fluid	Num ftgs	1 Ftg EqLen	Ftg Cv	PipeLen (ft)	TotLen (ft)	Temp (°F)	Flow (gpm)	Head (ft H2O)
Living room-B	3/8" BPEX	Water	1	0	0.00	141	141	71.6	0.2	1.55

Pump Information

Make
Model
Number of pumps 1 (serial) + 0 (parallel) = 1 (total)

Flow (gpm) 0.6
Head (ft H2O) 1.5

NOTE: All pipe sections assumed to be connected in series

Radiant Heating Manifold Summary

Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

Manifold name: Manifold1
Manifold location:

	Loop number				
	1	2	3	4	
Name	Living room-A	Living room-B	Hall-A	Hall-B	
Heating zone	Entire House	Entire House	Entire House	Entire House	
Heated area (ft²)	71	79	69	61	
Room temperature (°F)	68	68	68	68	
Cover R (ft²-°F/Btuh)	0.80	0.80	0.80	0.80	
Surface temperature (°F)	68	68	68	68	
Radiant panel CST	41B0	41B0	41B0	41B0	
Radiant panel type	Omega plates	Omega plates	Omega plates	Omega plates	
Tube spacing (in)	6.0	6.0	6.0	6.0	
Tube type/size	3/8" BPEX	3/8" BPEX	3/8" BPEX	3/8" BPEX	
Distance to manifold (ft)	1	1	1	1	
Loop length (ft)	127	141	116	104	
Temperature drop (°F)	1.1	1.1	4.2	4.2	
Flow (gpm)	0.19	0.20	0.02	0.02	
Head loss (ft H2O)	1.28	1.60	0.03	0.03	
Supply temperature (°F)	72	72	72	72	
Balance valve (turns from closed)					

Totals for Manifold1

Max. head loss (ft H2O)	1.60	Total flow (gpm)	0.43
Valves head in worst loop (ft H2O)		Total panel output (Btuh)	245
Max. supply temp. (°F)	72.2	Total tubing required (ft)	487

continued...

Radiant Heating Manifold Summary

Fresh Air Corporation

Job: 456
Date: October 1, 2006
By: John Contractor

Project Information

For: Mr. and Ms. Smith
1 Easy Lane, Perfect, ST 12345
Phone: 555-555-5555 Fax: 555-555-5556
Email: smiths@email.com

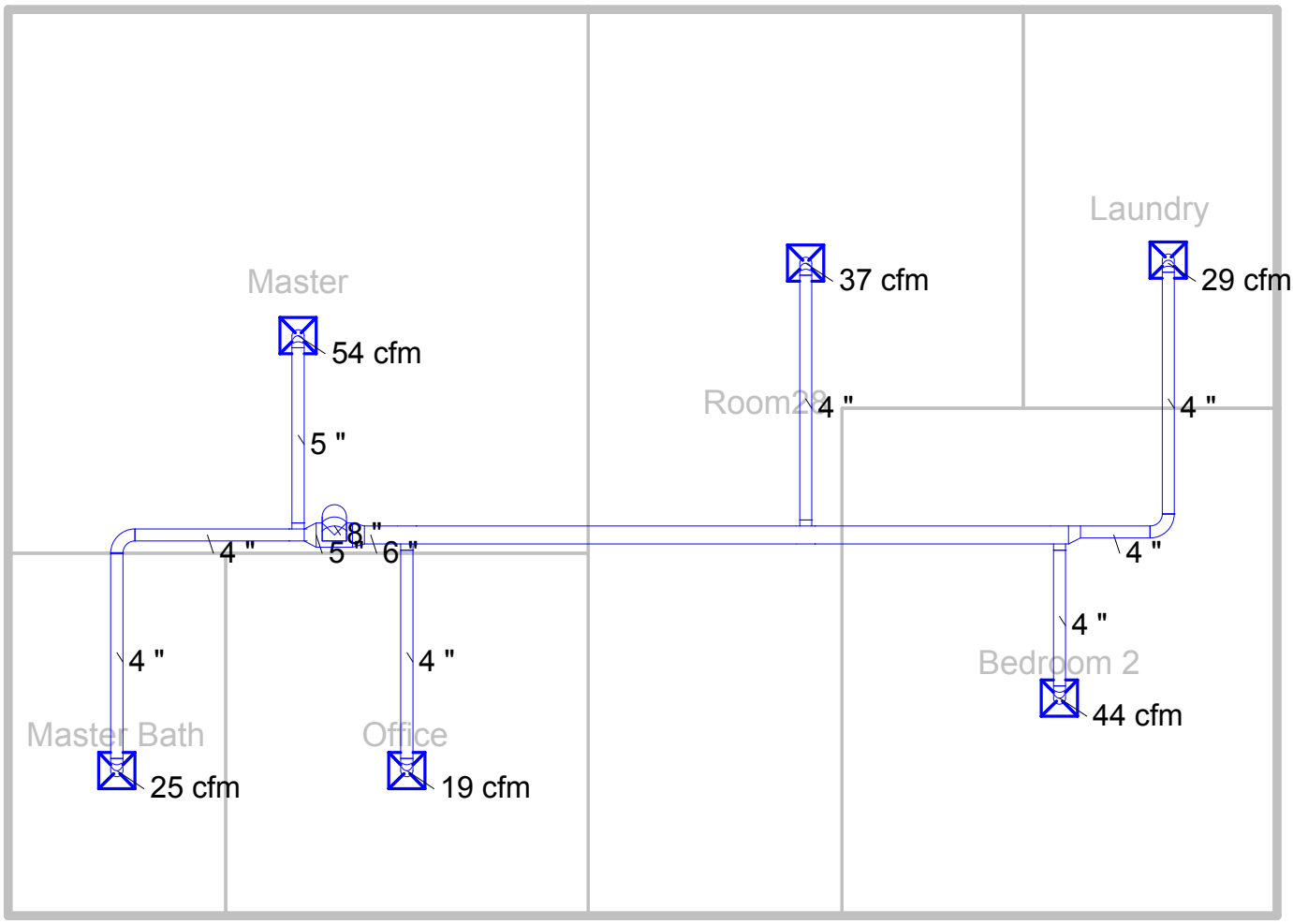
Manifold name: Manifold2
Manifold location:

	Loop number				
	1	2	3		
Name	Mudroom	Kitchen-A	Kitchen-B		
Heating zone	Entire House	Entire House	Entire House		
Heated area (ft²)	110	84	81		
Room temperature (°F)	68	68	68		
Cover R (ft²-°F/Btuh)	0.80	0.80	0.80		
Surface temperature (°F)	69	68	68		
Radiant panel CST	41B0	41B0	41B0		
Radiant panel type	Omega plates	Omega plates	Omega plates		
Tube spacing (in)	6.0	6.0	6.0		
Tube type/size	3/8" BPEX	3/8" BPEX	3/8" BPEX		
Distance to manifold (ft)	1	1	1		
Loop length (ft)	191	148	144		
Temperature drop (°F)	5.8	7.6	7.6		
Flow (gpm)	0.07	0.03	0.03		
Head loss (ft H2O)	0.37	0.07	0.07		
Supply temperature (°F)	76	76	76		
Balance valve (turns from closed)					

Totals for Manifold2

Max. head loss (ft H2O)	0.37	Total flow (gpm)	0.14
Valves head in worst loop (ft H2O)		Total panel output (Btuh)	377
Max. supply temp. (°F)	75.6	Total tubing required (ft)	482

Level 2



Job #: 456
Performed by John Contractor for:
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Perfect, ST 12345
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smiths@email.com

Fresh Air Corporation
1 Cool Lane
Perfect, ST 12345
Phone: 555-123-4567 Fax: 555-765-4321
www.freshair.com freshair@freshair.com

Scale: 1 : 60

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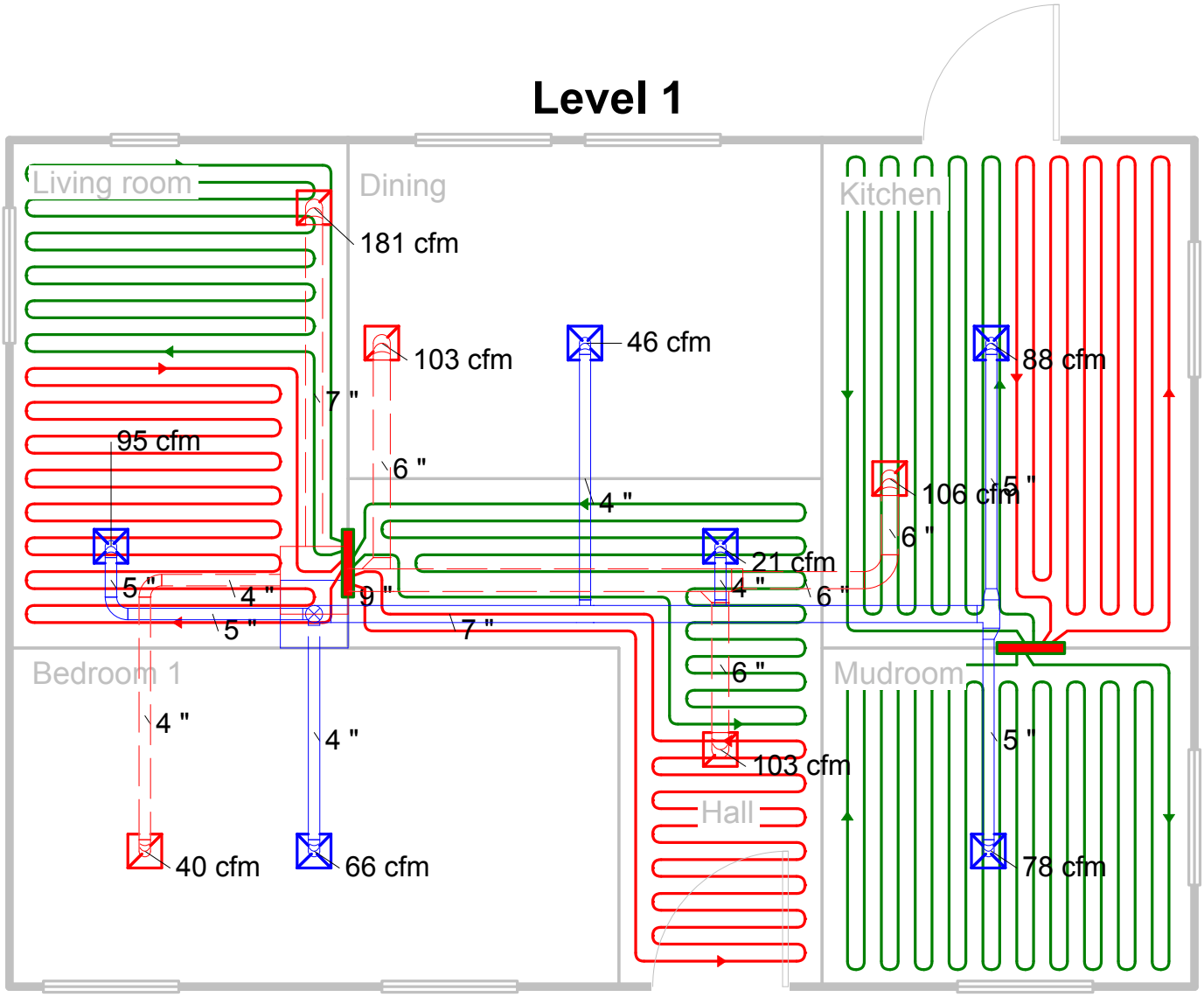
Level 1



Job #: 456
Performed by John Contractor for:
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www.freshair.com freshair@freshair.com

Scale: 1 : 60

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Gilles Legault
CB Supplies
2594 Le Corbusier
Laval, QC H7S 2K8
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Fax: 450-687-5463
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Circuit Schedule

Project #:Sous-sol Mario
February 27, 2017

Project Information

Project #: Sous-sol Mario
Name: Laval Sylvain
Location:

Notes: Empire Mario

Circuit Stock Summary

Part Number	Description	Quantity
793005250	1/2 X 250 VIPERT OXY BARRIER	3
7930051000	1/2 X 1000 VIPERT OXY BARRIER	1

Coil Summary

Coil	Part Number	Coil Length (ft)	Tube Type	Length Used (ft)
Coil 1	793005250	250	1/2" VIPERT OXY BARRIER	205
Coil 2	7930051000	1,000	1/2" VIPERT OXY BARRIER	972
Coil 3	793005250	250	1/2" VIPERT OXY BARRIER	219
Coil 4	793005250	250	1/2" VIPERT OXY BARRIER	186

Circuits Cut Schedule

Basement

Circuit	Length (ft)	Location	Coil
A-1	286	Basement;Manifold 1;Salle de jeux	Coil 2
A-2	186	Basement;Manifold 1;Salle de jeux	Coil 4
A-3	205	Basement;Manifold 1;Ch. Maîtres	Coil 1
A-4	271	Basement;Manifold 1;Ch. Maîtres	Coil 2
A-5	219	Basement;Manifold 1;Salle de bain	Coil 3
A-6	130	Basement;Manifold 1;Chambre 4	Coil 2
A-7	284	Basement;Manifold 1;Chambre 4	Coil 2

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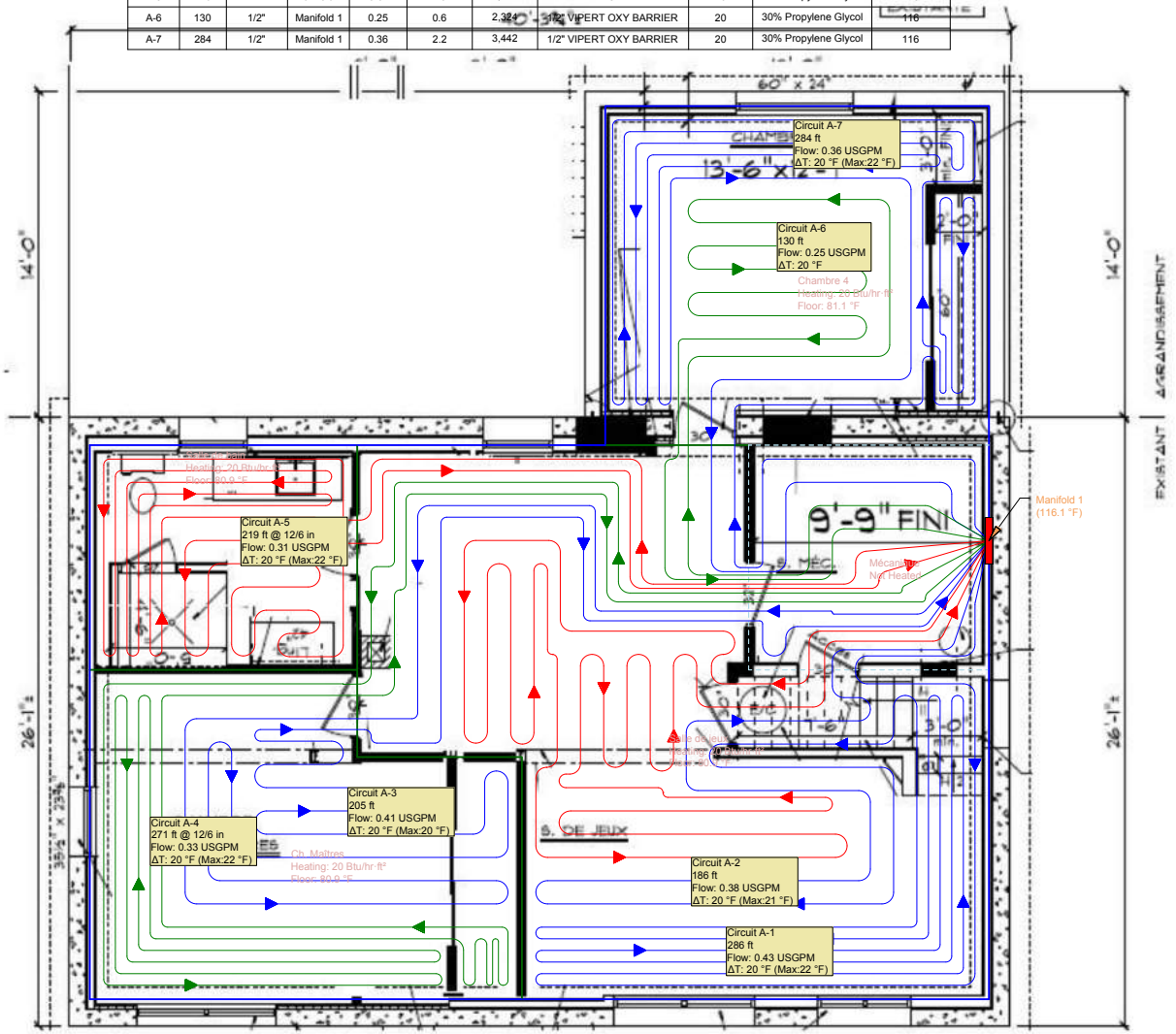
Disclaimers

The calculated values shown in this report are based on the data input by the user of the software. Inaccurate or erroneous data input will result in inaccurate or erroneous results. You are strongly advised to review all input data carefully, and to have the calculated results reviewed by an experienced heating professional to ensure reasonableness and suitability for your application.

Circuit Information										
Number	Length (ft)	Tube Size	Manifold	Flow (USGPM)	Head Loss (ft water)	Total Load (Btu/hr)	Tube Type	Design ΔT (°F)	Fluid	Supply Temp (°F)
A-1	286	1/2"	Manifold 1	0.43	3.1	4,112	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116
A-2	186	1/2"	Manifold 1	0.38	1.6	3,575	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116
A-3	205	1/2"	Manifold 1	0.41	2.0	3,815	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116
A-4	271	1/2"	Manifold 1	0.33	1.8	3,092	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116
A-5	219	1/2"	Manifold 1	0.31	1.3	2,896	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116
A-6	130	1/2"	Manifold 1	0.25	0.6	2,324	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116
A-7	284	1/2"	Manifold 1	0.36	2.2	3,442	1/2" VIPERT OXY BARRIER	20	30% Propylene Glycol	116



SUPPLIES

DISCLAIMER:
Note: Details of the tubing bend radius have been simplified for clarity. Consult tubing manufacturer for specific bend radius recommendations.

PROJECT: Laval Sylvain

CUSTOMER:

PROJECT NO.:
Sous-sol Mario

SCALE:
1/8"=1'

DRAWING NAME:
P1 (Basement)

DRAWN BY:
Gilles Legault
Created Using LoopCAD 2016 16.0.0582 (2/27/2017)

DATE:
2/27/2017

REVISIONS

No	Desc	Date

N

Gilles Legault
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Fax: 450-687-5463
Email:gilles.legault@cbsupplies.ca

Heat Loss Summary

User Entered (Manual) Load Calculation

Project #:Sous-sol Mario

February 27, 2017

Project Information

Project #: Sous-sol Mario
Name: Laval Sylvain
Location:

Notes: Empire Mario

Load Calculation Summary

Load Calculation Method:	User Entered (Manual)	Component Losses:	19,381 Btu/hr
Floorplans / Levels:		Radiant Back Losses:	3,876 Btu/hr
Basement	1,113 ft²	Total Heating Load:	23,257 Btu/hr
Total Area:	1,113 ft²		
		Radiant Heating:	19,381 Btu/hr
		Radiant Back Losses:	3,876 Btu/hr
		Total Heating Load:	23,257 Btu/hr

Load Calculation Results

Total Project

Room	Area	Heating Type	Room Temp	Walls	Windows	Doors	Skylights	Floor	Ceiling	Infiltration	Additional	Recovered Panel Loss	Design Load	Unit Loss
Total For Project	1,113	RH	70.0	0	0	0	0	3,876	0	0	0	0	23,257	24

Basement

Slab Below Grade Construction

Room	Area	Heating Type	Room Temp	Walls	Windows	Doors	Skylights	Floor	Ceiling	Infiltration	Additional	Recovered Panel Loss	Design Load	Unit Loss
Ch. Maîtres	248	RH (M)	70.0	0	0	0	0	857	0	0	0	0	5,142	24
Chambre 4	257	RH (M)	70.0	0	0	0	0	877	0	0	0	0	5,265	24
Mécanique	103	NH	70.0	0	0	0	0	0	0	0	0	0	0	0
Salle de bain	119	RH (M)	70.0	0	0	0	0	387	0	0	0	0	2,324	24
Salle de jeux	490	RH (M)	70.0	0	0	0	0	1,754	0	0	0	0	10,526	24
Sub Total	1,113	RH (M)	70.0	0	0	0	0	3,876	0	0	0	0	23,257	24

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Heat Loss = Btu/hr Unit Heat Loss = Btu/hr·ft² Rv = hr·ft²·°F/btu
Head Loss = ft water RH = Radiant Floor Heating BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

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Heating System Detail

Project #:Sous-sol Mario
February 27, 2017

Project Information

Project #: Sous-sol Mario
Name: Laval Sylvain
Location:

Notes: Empire Mario

Design Conditions and Summary

Load Calculation Method:	User Entered (Manual)
Floorplans / Levels:	
Basement	1,113 ft²
Total Area:	1,113 ft²

Total Tubing Lengths:	
1/2" VIPERT OXY BARRIER	1,582 ft
Total RH Circuits:	7
Total Manifolds:	1
Total Zones:	2
Fluid Type:	30% Propylene Glycol
Total Tubing Volume:	15.18 USG
Glycol Volume (30%):	4.55 USG

Component Losses:	19,381 Btu/hr
Radiant Back Losses:	3,876 Btu/hr
Total Heating Load:	23,257 Btu/hr
Radiant Heating:	19,381 Btu/hr
Radiant Back Losses:	3,876 Btu/hr
Total Heating Load:	23,257 Btu/hr

Zone Heating Summary

Zone #	Area	Heating Types	RH Circuits	Flowrate	Head Loss	Supplemental	Rooms
101	1,113	RH (M)	7	2.47	4.1	0	Salle de jeux, Chambre 4, Ch. Maîtres, Salle de bain
Total	1,113	RH (M)	7	2.47	4.1	0	

*RH Loads include internal panel back loss that may not be included in the project total.

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Heat Loss = Btu/hr Unit Heat Loss = Btu/hr·ft² Rv = hr·ft²·°F/btu
Head Loss = ft water RH = Radiant Floor Heating BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

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Room Heating Summary

Basement

Ch. Maîtres

Total Area:	248	ft²	Radiant Heating:			Load/Loss Summary:	
Heated by:	RH (M)		Heated Area:	214	ft²	**Room Design Load:**	4,285 Btu/hr
Room Temperature:	70	°F	Tubing in Floor:	476	ft		
Floor Covering (Rv):	0.5		Circuits in Room:	2		Radiant Load:	5,142 Btu/hr
			Tube Spacing:	6/12		Baseboard Load:	0 Btu/hr
			Required Surface Temp:	81	°F	Forced Air Load	0 Btu/hr
			Required Water Temp:	116	°F	Other Load:	0 Btu/hr
			Est. Peak Output:	4,582	Btu/hr		
						Radiant Back Loss:	857 Btu/hr
						Recovered Back Loss:	0 Btu/hr
						Total Heat Loss:	5,142 Btu/hr

Chambre 4

Total Area:	257	ft²	Radiant Heating:			Load/Loss Summary:	
Heated by:	RH (M)		Heated Area:	215	ft²	**Room Design Load:**	4,387 Btu/hr
Room Temperature:	70	°F	Tubing in Floor:	415	ft		
Floor Covering (Rv):	0.5		Circuits in Room:	2		Radiant Load:	5,265 Btu/hr
			Tube Spacing:	9		Baseboard Load:	0 Btu/hr
			Required Surface Temp:	81	°F	Forced Air Load	0 Btu/hr
			Required Water Temp:	116	°F	Other Load:	0 Btu/hr
			Est. Peak Output:	4,684	Btu/hr		
						Radiant Back Loss:	877 Btu/hr
						Recovered Back Loss:	0 Btu/hr
						Total Heat Loss:	5,265 Btu/hr

Mécanique

Total Area:	103 ft²	Radiant Heating:		Load/Loss Summary:	
Heated by:	NH	Heated Area:	86 ft²	**Room Design Load:**	0 Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	0 ft		
Floor Covering (Rv):	0.5	Circuits in Room:	0	Radiant Load:	0 Btu/hr
		Tube Spacing:	12	Baseboard Load:	0 Btu/hr
		Required Surface Temp:	70 °F	Forced Air Load	0 Btu/hr
		Required Water Temp:	115 °F	Other Load:	0 Btu/hr
		Est. Peak Output:	0 Btu/hr		
				Radiant Back Loss:	0 Btu/hr
				Recovered Back Loss:	0 Btu/hr
				Total Heat Loss:	0 Btu/hr

Salle de bain

Total Area:	119 ft²	Radiant Heating:		Load/Loss Summary:	
Heated by:	RH (M)	Heated Area:	97 ft²	**Room Design Load:**	1,937 Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	219 ft		
Floor Covering (Rv):	0.5	Circuits in Room:	1	Radiant Load:	2,324 Btu/hr
		Tube Spacing:	6/12	Baseboard Load:	0 Btu/hr
		Required Surface Temp:	81 °F	Forced Air Load	0 Btu/hr
		Required Water Temp:	112 °F	Other Load:	0 Btu/hr
		Est. Peak Output:	2,141 Btu/hr		
				Radiant Back Loss:	387 Btu/hr
				Recovered Back Loss:	0 Btu/hr
				Total Heat Loss:	2,324 Btu/hr

Salle de jeux

Total Area:	490 ft²	Radiant Heating:		Load/Loss Summary:	
Heated by:	RH (M)	Heated Area:	439 ft²	**Room Design Load:**	8,772 Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	472 ft		
Floor Covering (Rv):	0.5	Circuits in Room:	2	Radiant Load:	10,526 Btu/hr
		Tube Spacing:	9	Baseboard Load:	0 Btu/hr
		Required Surface Temp:	81 °F	Forced Air Load	0 Btu/hr
		Required Water Temp:	115 °F	Other Load:	0 Btu/hr
		Est. Peak Output:	9,581 Btu/hr		
				Radiant Back Loss:	1,754 Btu/hr
				Recovered Back Loss:	0 Btu/hr
				Total Heat Loss:	10,526 Btu/hr

Radiant Heating Details

Manifold Summary

Manifold Name	Zones	Circuits	Flowrate	Head Loss[1]	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	Actuators
Manifold 1	1	7	2.47	4.1	116	116	20 (22)	CB Supplies 1" Pre-Assembled Manifold	Manifold	0
Total	1	7	2.47	4.1	116	-	-	-	-	0

[1]Total Head loss includes manifold and circuit head loss

Tubing Circuit Details

Manifold 1

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss**	Temp Drop	Load	Actuator
A-1	Salle de jeux	286	8	178	1/2" VIPERT OXY BARRIER	0.43	3.1	20 (22)	4,112	No
A-2	Salle de jeux	186	11	156	1/2" VIPERT OXY BARRIER	0.38	1.6	20 (21)	3,575	No
A-3	Ch. Maîtres	205	10	169	1/2" VIPERT OXY BARRIER	0.41	2.0	20 (20)	3,815	No
A-4	Ch. Maîtres	271	12/6	139	1/2" VIPERT OXY BARRIER	0.33	1.8	20 (22)	3,092	No
A-5	Salle de bain	219	12/6	130	1/2" VIPERT OXY BARRIER	0.31	1.3	20 (22)	2,896	No
A-6	Chambre 4	130	11	114	1/2" VIPERT OXY BARRIER	0.25	0.6	20 (20)	2,324	No
A-7	Chambre 4	284	7	165	1/2" VIPERT OXY BARRIER	0.36	2.2	20 (22)	3,442	No
Total	-	1,582		1,051	-	2.47	3.1		23,257	0

** Head loss for circuit tubing only

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Quotation

Project #:Sous-sol Mario
February 27, 2017

Project Information

Project #:	Sous-sol Mario	Notes:	Empire Mario
Name:	Laval Sylvain		
Location:			

Quotation For

Project Summary

Load Calculation Method:	User Entered (Manual)	Total Heating Load:	23,257 Btu/hr
Floorplans / Levels:	1		
Total Area:	1,113 ft²	Total RH Circuits:	7
		Total Manifolds:	1
		Total Zones:	2

Comments

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Goods & Services Supplied

Tubing

Part Number	Description	Quantity	Unit
793005250	1/2 X 250 VIPERT OXY BARRIER	3	Ea
7930051000	1/2 X 1000 VIPERT OXY BARRIER	1	Ea

Manifolds/Fittings

Part Number	Description	Quantity	Unit
762910007	7 Loop Manif. x 1 w/Vlvs+Meter VGMC347S	1	Ea

Tools/Accessories

Part Number	Description	Quantity	Unit
760000005	R2012CP 1/2 COMP X MANIFOLD 220E000403	14	Ea
767010114AF	TH114-AF-24T NON-PROG AMB/FLR THERMOSTAT	1	Ea
763006005	1/2 PLASTIC BEND SUPPORT HRSL3 15107	14	Ea

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Water Supply Summary

Project #:Sous-sol Mario
February 27, 2017

Project Information

Project #: Sous-sol Mario
Name: Laval Sylvain
Location:

Notes: Empire Mario

Supply Summary

Name	Temp	Total Flow	Head Loss[1]	Load	# Circuits	# Zones
Water Temperature	116.1	2.47	4.1	23,257	7	1

(1) Head loss includes manifolds, circuits, and supply/return piping if specified, may also contain control valve losses.

Manifold Summary

Manifold Name	Circuits	Flowrate	Required Temp.	Supplied Temp.	Manifold Type	Manifold Head Loss	Circuit Head Loss	Total Head Loss[2]
Manifold 1	7	2.47	116	116	CB Supplies 1" Pre-Assembled Manifold	1.0	3.1	4.1
Total	7	2.47	116	-	-			4.1

, (2) Total Head loss includes manifold and circuit head loss.

Water Temperature (116 °F)

Manifold 1 (116 °F, CB Supplies 1" Pre-Assembled Manifold, 7 Circuits)

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss[1]	Temp Drop[2]	Load[3]	Actuator
A-1	Salle de jeux	286		171	1/2" VIPERT OXY BARRIER	0.43	3.1	20 (22)	4,112	No
A-2	Salle de jeux	186		149	1/2" VIPERT OXY BARRIER	0.38	1.6	20 (21)	3,575	No
A-3	Ch. Maîtres	205		159	1/2" VIPERT OXY BARRIER	0.41	2.0	20 (20)	3,815	No
A-4	Ch. Maîtres	271	6 - 12	129	1/2" VIPERT OXY BARRIER	0.33	1.8	20 (22)	3,092	No
A-5	Salle de bain	219	6 - 12	121	1/2" VIPERT OXY BARRIER	0.31	1.3	20 (22)	2,896	No
A-6	Chambre 4	130		95	1/2" VIPERT OXY BARRIER	0.25	0.6	20 (20)	2,324	No
A-7	Chambre 4	284		141	1/2" VIPERT OXY BARRIER	0.36	2.2	20 (22)	3,442	No
Total	-	1,582		965	-	2.47	3.1		23,257	0

(1) Head loss for circuit tubing only. (2) Design Temp Drop (Estimated Actual Drop). (3) Load includes circuit back loss.

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