



Heating System Summary

Project #: Old Residence House
 Name: Old Residence House
 Location: Oshawa, ON, Canada

Notes:

Project #: Old Residence House

Project Information

Project Summary

Load Calculation Method:	CSA F280-12	Total Circuit Lengths:		Component Losses:	39,247 Btu/hr
Design Location:	Oshawa, Ontario	Barrier PEX 1/2"	2,603 ft	Infiltration/Ventilation:	36,185 Btu/hr
Outdoor Temperature:	-3.0 °F			Radiant Back Losses:	8,270 Btu/hr
Floorplans / Levels:		Total RH Circuits:	16	Total Heating Load:	83,703 Btu/hr
Basement	1,098 ft²	Total Manifolds:	4		
Main Floor	898 ft²	Total Zones:	2	Radiant Heating:	41,074 Btu/hr
Second Floor	0 ft²			Radiant Back Losses:	8,270 Btu/hr
Total Area:	1,997 ft²	Fluid Type:	100% Water	Other:	34,358 Btu/hr
		Total Tubing Volume:	23.96 USG	Total Heating Load:	83,703 Btu/hr

Zone Heating Summary

Zone #	Gross Area	Construction	Heating Types	RH ¹ Circuits	Total Tubing	Manifolds	Flowrate	Head Loss (Circuit Only)	RH Load ²	Supplemental	Zone Load ³
Zone 101	1,098	Embedded Slab	RH,FC	6	1,111	2	2.18	1.9	25,717	22,746	48,463
Zone 201	898	Concrete Thin Slab	RH,FC	10	1,491	2	2.55	1.9	27,665	11,612	39,276

(1) Complete circuits assigned to this zone. (2) Total Radiant heating load for rooms in zone, including all panel back loss. (3) Total load for zone including all panel back loss. Does not account for reclaimed loss within building envelope.

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Air Flow = cfm 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

Created Using LoopCAD 2018 (4/16/2019)
 Version: 18.0.0280 R

Room Heating Summary (By Construction Type)

Embedded Slab

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits ¹	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load ²	Supplemental	Total Load ³
Zone 101	Room 1	RH, FC	187	187	Manifold 1	1/2"	2	6	352	0.5	124	35.9	6,696	231	6,927
Zone 101	Room 2	RH, FC	183	147	Manifold 1	1/2"	1	9	236	0.5	125	32.1	4,738	2,591	7,329
Zone 101	Room 3	RH, FC	340	338	n/a	n/a	0	6	0	0.5	0	8.5	2,860	13,989	16,849
Zone 101	Room 7	RH, FC	118	101	Manifold 2	1/2"	1	6	176	0.5	124	40.3	4,087	2,087	6,174
Zone 101	Room 8	RH	27	0	n/a	n/a	0	0	0	0.5	0		617	0	617
Zone 101	Room 9	RH, FC	164	164	Manifold 1	1/2"	2	6	306	0.5	123	41	6,719	3,849	10,568

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel back loss. (3) Total load including panel back loss. Does not account for reclaimed loss within building envelope.

Concrete Thin Slab

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits ¹	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load ²	Supplemental	Total Load ³
Zone 201	Room 1	RH, FC	234	234	Manifold 4	1/2"	2	6	446	0.5	120	36.9	8,617	953	9,570
Zone 201	Room 2	RH, FC	164	164	Manifold 3	1/2"	2	6	323	0.5	120	36.5	5,976	2,671	8,647
Zone 201	Room 3	RH, FC	135	135	Manifold 3	1/2"	2	6	271	0.5	120	36.5	4,941	3,195	8,136
Zone 201	Room 4	RH, FC	151	114	Manifold 3	1/2"	1	6	177	0.5	122	37	4,204	28	4,233
Zone 201	Room 5	RH, FC	38	20	Manifold 3	1/2"	1	6	31	0.5	121	46.5	908	1,814	2,723
Zone 201	Room 6	RH, FC	59	51	Manifold 4	1/2"	1	6	94	0.5	120	37.1	1,900	703	2,603
Zone 201	Room 7	RH, FC	45	29	Manifold 4	1/2"	1	6	47	0.5	121	39.1	1,117	2,246	3,364

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel back loss. (3) Total load including panel back loss. Does not account for reclaimed loss within building envelope.

Manifold Summary

Manifold Name	# Zones	# Circuits	Flowrate	Head Loss ¹	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	# Actuators	S/R Length ²	S/R Pipe
Manifold 1	1	5	1.75	2.8	125	125	20	None Selected	Manifold	0	-	-
Manifold 2	1	1	0.43	2.9	124	125	20	None Selected	Manifold	0	-	-
Manifold 3	1	6	1.48	2.3	122	125	20	None Selected	Manifold	0	-	-
Manifold 4	1	4	1.07	2.9	121	125	20	None Selected	Manifold	0	-	-
Total	2	16	4.73	2.9	125	-	20	-	-	0	-	-

(1) Total Head loss includes manifold, circuits and supply/return piping if specified. (2) S/R Length = one way

Disclaimers

With the permission of the Air Conditioning Contractors of America ("ACCA"), material is reproduced from Manual J Residential Load Calculation (8th Edition) which is copyrighted by ACCA. The program and data are provided "as is" without warranty of any kind either expressed or implied. The entire risk as the quality and performance of the program and data is with you. In no event will ACCA be liable to you for any damages, including without limitation any lost profits, lost savings, or other incidental or consequential damages arising out of the use or inability to use this program or the data. © 2015 Air Conditioning Contractors of America. All Rights Reserved. www.acca.org

ACCA, Manual J and Powered by ACCA Manual J are registered trademarks of the Air Conditioning Contractors of America. All rights reserved.

Cold weather humidification, or some lifestyles that produce excessive moisture, may cause condensation to occur if the absolute humidity of the indoor air is too high for the momentary circumstances. Condensation can occur on surfaces or concealed within the structure, and can lead to mold, mildew, frost damage, and moisture damage. The software does not perform calculations for the estimation or detection of possible condensation problems, and it is the designers (i.e. software users) responsibility to do so independently if required. For guidance and additional cautions refer to ACCA Manual J 8th Edition, including Section 1-11 and Section 27.

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.

IN NO EVENT WILL AVENIR SOFTWARE INC. ("AVENIR") OR ITS AFFILIATES BE LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SPECIAL OR PUNITIVE DAMAGES WHATSOEVER (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION OR DATA AND THE LIKE), EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. AVENIR'S CUMULATIVE LIABILITY FROM ANY CAUSE RELATED TO OR ARISING FROM THE USE THIS REPORT, AND REGARDLESS OF THE FORM OF THE ACTION, SHALL BE LIMITED TO NO GREATER THAN THE AMOUNT OF FEES PAID TO AVENIR UNDER THE SOFTWARE LICENSE AGREEMENT.