


## Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>				
Building number, street name			Unit no.	Lot/con.
Municipality VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>				
Name <b>MICHAEL O'ROURKE</b>		Firm <b>HVAC DESIGNS LTD.</b>		
Street address <b>375 FINLEY AVE</b>		Unit no. <b>202</b>	Lot/con. <b>N/A</b>	
Municipality <b>AJAX</b>	Postal code <b>L1S 2E2</b>	Province <b>ONTARIO</b>	E-mail <b>info@hvacdesigns.ca</b>	
Telephone number <b>(905) 619-2300</b>	Fax number <b>(905) 619-2375</b>	Cell number ( )		
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]</b>				
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection <input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems				
Description of designer's work <b>HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>		<b>Model:</b> 5002 - THE ROSEVIEW OPT 5-BED <b>Project:</b> PINE VALLEY & TESTON		
<b>D. Declaration of Designer</b>				
I, <u><b>MICHAEL O'ROURKE</b></u> (print name) declare that (choose one as appropriate):				
<input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____				
<input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>				
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____				
I certify that:				
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
October 5, 2018				
Date		Signature of Designer		

**NOTE:**

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

**Application for a Permit Construct or Demolish – Effective January 1, 2015**

SITE NAME: PINE VALLEY & TESTON OPT 5-BED DATE: Oct-18 HEAT LOSS AT °F. 76 CSA-P280-12  
BUILDER: GOLD PARK HOMES TYPE: 5002 - THE ROSEVIEW LO# 77474 HEAT GAIN AT °F. 13 SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3	BED-5	ENS-4	LAUN	
EXP. WALL	44	27	8	34	32	16	17	11	5	0	
CLG. HT.	10	9	9	9	9	9	9	9	9	9	
GRS.WALL AREA	440	243	72	306	288	144	163	99	46	0	
GLAZING	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	
NORTH	383	0	0	0	0	0	0	0	0	0	
EAST	21.3	0	0	0	0	0	0	0	0	0	
SOUTH	21.3	0	0	0	0	0	0	0	0	0	
WEST	21.3	0	0	0	0	0	0	0	0	0	
SKYL.T.	37.2	0	0	0	0	0	0	0	0	0	
DOORS	25.2	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.6	0	0	0	0	0	0	0	0	0	
NET EXPOSED BMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	2.7	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR	2.6	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS	3364	2033	527	3443	3332	1486	1119	899	438	128	
SUB TOTAL HT GAIN	2427	1907	148	2926	2955	982	245	465	274	44	
LEVEL FACTOR / MULTIPLE	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27	
AIR CHANGE HEAT LOSS	891	540	140	916	785	398	297	285	116	34	
AIR CHANGE HEAT GAIN	175	138	11	211	374	0	142	0	0	16	
DUCT LOSS	0	0	0	438	374	0	73	0	0	51	
HEAT GAIN PEOPLE	240	0	0	384	427	0	0	1	0	0	
HEAT GAIN APPLIANCES/LIGHTS	463	463	0	240	240	1	0	240	0	0	
TOTAL HT LOSS BTU/H	4245	2574	667	4793	4114	1894	1556	1284	554	463	
TOTAL HT GAIN x 1.3 BTU/H	4808	3260	206	6113	6113	2297	1038	1651	382	729	

ROOM USE	LIBR	DIN	KIT	LIV	BATH	FOY	MUD	LOD	BAS	
EXP. WALL	37	29	63	12	8	31	27	52	186	
CLG. HT.	10	10	10	10	9	10	12	9	9	
GRS.WALL AREA	370	290	630	120	72	310	324	488	1488	
GLAZING	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	
NORTH	21.3	0	0	0	0	0	0	0	0	
EAST	21.3	0	0	0	0	0	0	0	0	
SOUTH	21.3	0	0	0	0	0	0	0	0	
WEST	21.3	0	0	0	0	0	0	0	0	
SKYL.T.	37.2	0	0	0	0	0	0	0	0	
DOORS	25.2	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.6	0	0	0	0	0	0	0	0	
NET EXPOSED BMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	2.7	0	0	0	0	0	0	0	0	
EXPOSED FLOOR	2.6	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS	2660	2202	4527	939	665	2689	1852	1441	8388	
SUB TOTAL HT GAIN	2626	2421	4635	670	169	436	314	926	450	
LEVEL FACTOR / MULTIPLE	0.30	0.46	0.30	0.46	0.20	0.30	0.46	0.50	1.16	
AIR CHANGE HEAT LOSS	1232	1020	2097	435	182	1199	882	11410	11410	
AIR CHANGE HEAT GAIN	182	175	335	48	12	31	23	0	99	
DUCT LOSS	0	0	0	0	87	0	0	0	0	
HEAT GAIN PEOPLE	240	0	0	0	18	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS	463	463	463	463	0	0	0	0	0	
TOTAL HT LOSS BTU/H	3892	3222	6624	1374	953	3788	2724	1441	19797	
TOTAL HT GAIN x 1.3 BTU/H	4123	3976	7062	1636	259	1209	1038	1204	1316	

TOTAL HEAT GAIN BTU/H: 47941

TONS: 4.00

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 6667

TOTAL COMBINED HEAT LOSS BTU/H: 68838

*Michael O'Rourke*

SITE NAME: PINE VALLEY & TESTON  
BUILDER: GOLD PARK HOMES

TYPE: 5002 - THE ROSEVIEW  
DATE: Oct-18

GFA: 3764 LO# 77474

HEATING CFM 1525 COOLING CFM 1525  
TOTAL HEAT LOSS 65,657 TOTAL HEAT GAIN 47,406  
AIR FLOW RATE CFM 23.23 AIR FLOW RATE CFM 32.17

EL296UH090XE48C  
FAN SPEED  
LOW 0  
MEDIUM 1105  
HIGH 1255

AFUE = 96 %  
INPUT (BTU/H) = 88,000  
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	16	10	5
R/A	0	0	5	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5'Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	ENS	BED-2	BED-3	BED-4	ENS-3	BED-2	BED-3	MBR	WIC	LIBR	DIN	KIT	KIT	LIV	BED-5	ENS-4	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.12	1.29	1.29	2.40	2.06	1.89	1.56	2.40	2.06	2.12	0.67	1.95	1.61	2.21	2.21	2.21	1.37	1.26	0.55	2.72	4.25	4.25	4.25	4.25
CFM PER RUN HEAT	49	30	30	56	48	44	36	56	48	49	15	45	37	51	51	32	29	13	88	63	99	99	99	99
RM GAIN MBH	2.30	1.63	1.63	2.75	3.06	2.30	1.04	2.75	3.06	2.30	0.21	2.06	1.99	2.35	2.35	1.53	1.56	0.38	1.21	1.04	0.50	0.50	0.50	0.50
CFM PER RUN COOLING	74	52	52	88	98	74	33	88	98	74	7	66	64	76	76	49	50	12	39	33	16	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	200	205	195	130	170	140	220	140	205	190	150	100	110	110	110	110	120	190	190	130	120	160	100	180
TOTAL EFFECTIVE LENGTH	248	267	246	176	242	185	279	183	271	232	0.71	185	154	138	173	155	142	237	234	146	153	181	119	227
ADJUSTED PRESSURE	0.07	0.06	0.07	0.09	0.07	0.09	0.06	0.09	0.06	0.07	0.1	0.1	0.11	0.12	0.1	0.11	0.12	0.07	0.07	0.12	0.11	0.09	0.14	0.07
ROUND DUCT SIZE	5	5	5	5	6	5	4	5	6	5	4	5	5	5	5	4	4	4	6	4	5	6	5	6
HEATING VELOCITY (ft/min)	360	220	220	411	245	323	413	411	245	360	172	330	272	374	374	374	367	333	149	449	723	505	727	505
COOLING VELOCITY (ft/min)	543	382	382	646	500	543	379	646	500	543	80	485	470	558	558	562	574	138	199	379	117	82	117	82
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10
TRUNK	D	A	A	D	B	A	B	D	B	D	C	B	A	C	D	A	A	D	B	C	A	D	C	B

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	LIBR	DIN	KIT	BATH	BATH	BATH
RM LOSS MBH	4.25	1.95	1.61	2.21	0.48	0.18	0.18
CFM PER RUN HEAT	99	45	37	51	11	4	11
RM GAIN MBH	0.50	2.06	1.99	2.35	0.13	0.73	0.13
CFM PER RUN COOLING	16	66	64	76	4	23	4
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	55	56	36	25	41	31	40
TOTAL EFFECTIVE LENGTH	110	120	130	90	170	145	160
ADJUSTED PRESSURE	0.1	0.1	0.1	0.15	0.08	0.1	0.09
ROUND DUCT SIZE	6	5	5	5	4	4	4
HEATING VELOCITY (ft/min)	505	330	272	374	126	46	126
COOLING VELOCITY (ft/min)	82	485	470	558	46	264	46
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	B	A	C	D	C	D

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)		
TRUNK A	322	0.06	9.9	12	8	TRUNK G	0	0.00	0	0	8	TRUNK O	0	0.06	0	0	8		
TRUNK B	508	0.06	11.7	16	8	TRUNK H	0	0.00	0	0	8	TRUNK P	0	0.06	0	0	8		
TRUNK C	1113	0.06	15.7	28	8	TRUNK I	0	0.00	0	0	8	TRUNK Q	0	0.06	0	0	8		
TRUNK D	411	0.07	10.4	12	8	TRUNK J	0	0.00	0	0	8	TRUNK R	0	0.06	0	0	8		
TRUNK E	0	0.00	0	0	8	TRUNK K	0	0.00	0	0	8	TRUNK S	0	0.06	0	0	8		
TRUNK F	0	0.00	0	0	8	TRUNK L	0	0.00	0	0	8	TRUNK T	0	0.06	0	0	8		

RETURN AIR #	1	2	3	4	5	6	7	8	2@6"	BR														
AIR VOLUME	130	130	130	130	155	365	85	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	59	59	53	66	35	33	54	39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	175	165	165	195	195	195	185	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	234	224	218	261	230	228	239	204	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.06	0.06	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7	6.8	6.8	7	7.5	10.3	6	7.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
INLET GRILL SIZE	14	14	14	14	14	30	14	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5002 - THE ROSEVIEW  
SITE NAME: PINE VALLEY & TESTON

LO # 77474  
OPT 5-BED

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

COMBUSTION APPLIANCES		9.32.3.1(1)
a) <input checked="" type="checkbox"/>	Direct vent (sealed combustion) only	
b) <input type="checkbox"/>	Positive venting induced draft (except fireplaces)	
c) <input type="checkbox"/>	Natural draft, B-vent or induced draft gas fireplace	
d) <input type="checkbox"/>	Solid Fuel (including fireplaces)	
e) <input type="checkbox"/>	No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/>	Forced Air
<input type="checkbox"/>	Non Forced Air
<input type="checkbox"/>	Electric Space Heat

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/>	I Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/>	II Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/>	III Any Type c) appliance	
<input type="checkbox"/>	IV Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/>	1 Exhaust only/Forced Air System	
<input type="checkbox"/>	2 HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/>	3 HRV Simplified/connected to forced air system	
<input type="checkbox"/>	4 HRV with Ducting/non forced air system	
<input type="checkbox"/>	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	6 @ 10.6 cfm	63.6 cfm
Other Rooms	7 @ 10.6 cfm	74.2 cfm
Table 9.32.3.A.	TOTAL	222.6 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	222.6	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	67.6	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
Location:	BSMT
155.0 cfm	3.0 sones
<input checked="" type="checkbox"/>	HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	X 76 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-3	QTXEN050C	50	<input checked="" type="checkbox"/>
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-4	QTXEN050C	50	<input checked="" type="checkbox"/>

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/>	
@ 32 deg F ( 0 deg C)	HVI Approved	

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:	
GOLD PARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	October-18

<b>CSA F280-12 Residential Heat Loss and Heat Gain Calculations</b>																																																																			
<b>Formula Sheet (For Air Leakage / Ventilation Calculation)</b>																																																																			
LO#: 77474	Model: 5002 - THE ROSEVIEW	Builder: GOLD PARK HOMES	Date: 10/5/2018																																																																
<b>Volume Calculation</b>		<b>Air Change &amp; Delta T Data</b>																																																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>House Volume Level</th> <th>Floor Area (ft<sup>2</sup>)</th> <th>Floor Height (ft)</th> <th>Volume (ft<sup>3</sup>)</th> </tr> <tr> <td>Bsmt</td> <td>1700</td> <td>9</td> <td>15300</td> </tr> <tr> <td>First</td> <td>1700</td> <td>10</td> <td>17000</td> </tr> <tr> <td>Second</td> <td>2064</td> <td>9</td> <td>18576</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>50,876.0 ft<sup>3</sup></td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1440.6 m<sup>3</sup></td> </tr> </table>		House Volume Level	Floor Area (ft <sup>2</sup> )	Floor Height (ft)	Volume (ft <sup>3</sup> )	Bsmt	1700	9	15300	First	1700	10	17000	Second	2064	9	18576	Third	0	9	0	Fourth	0	9	0	Total:			50,876.0 ft <sup>3</sup>	Total:			1440.6 m <sup>3</sup>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width:50%;">0.330</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.111</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-20</td> <td>42</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>31</td> <td>7</td> </tr> <tr> <td></td> <td></td> <td></td> <td>ΔT °F</td> </tr> <tr> <td></td> <td></td> <td></td> <td>76</td> </tr> <tr> <td></td> <td></td> <td></td> <td>13</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.330	SUMMER NATURAL AIR CHANGE RATE	0.111	Design Temperature Difference					Tin °C	Tout °C	ΔT °C	Winter DTDh	22	-20	42	Summer DTDc	24	31	7				ΔT °F				76				13
House Volume Level	Floor Area (ft <sup>2</sup> )	Floor Height (ft)	Volume (ft <sup>3</sup> )																																																																
Bsmt	1700	9	15300																																																																
First	1700	10	17000																																																																
Second	2064	9	18576																																																																
Third	0	9	0																																																																
Fourth	0	9	0																																																																
Total:			50,876.0 ft <sup>3</sup>																																																																
Total:			1440.6 m <sup>3</sup>																																																																
WINTER NATURAL AIR CHANGE RATE	0.330																																																																		
SUMMER NATURAL AIR CHANGE RATE	0.111																																																																		
Design Temperature Difference																																																																			
	Tin °C	Tout °C	ΔT °C																																																																
Winter DTDh	22	-20	42																																																																
Summer DTDc	24	31	7																																																																
			ΔT °F																																																																
			76																																																																
			13																																																																
<b>5.2.3.1 Heat Loss due to Air Leakage</b>																																																																			
$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																			
0.330	x	400.18	x																																																																
		42 °C	x																																																																
		1.2	=																																																																
		6688 W																																																																	
			=																																																																
		22820 Btu/h																																																																	
<b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b>																																																																			
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																			
155 CFM	x	76 °F	x																																																																
		1.08	x																																																																
		0.25	=																																																																
		3181 Btu/h																																																																	
<b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>																																																																			
$HL_{qirr} = Level Factor \times HL_{airbv} \times \{ (HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel}) \}$																																																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL<sub>clevel</sub>)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">22,820</td> <td>9,829</td> <td>1.161</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>14,779</td> <td>0.463</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>17,175</td> <td>0.266</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </table>				Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>clevel</sub> )	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	22,820	9,829	1.161	2	0.3	14,779	0.463	3	0.2	17,175	0.266	4	0	0	0.000	5	0	0	0.000																																						
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<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																																																			

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> 5002 - THE ROSEVIEW	<b>OPT</b> 5-BED	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 3764	<b>LO#</b> 77474	<b>SITE:</b> PINE VALLEY & TESTON

**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

**BUILDING DATA**

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	50876.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 56.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	196.0 ft

**2012 OBC - COMPLIANCE PACKAGE****Component****Compliance Package  
A1****Nominal Min. Eff.**

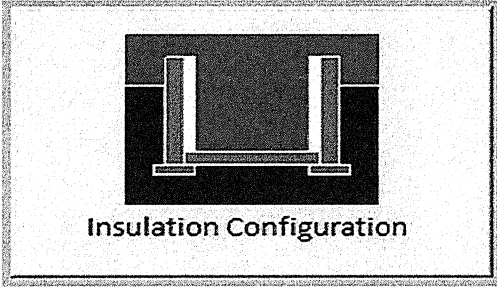
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669  
MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	17.1	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m <sup>2</sup> ):	2.5	
Door Area (m <sup>2</sup> ):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1962

TYPE: 5002 - THE ROSEVIEW  
LO# 77474

OPT 5-BED

# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

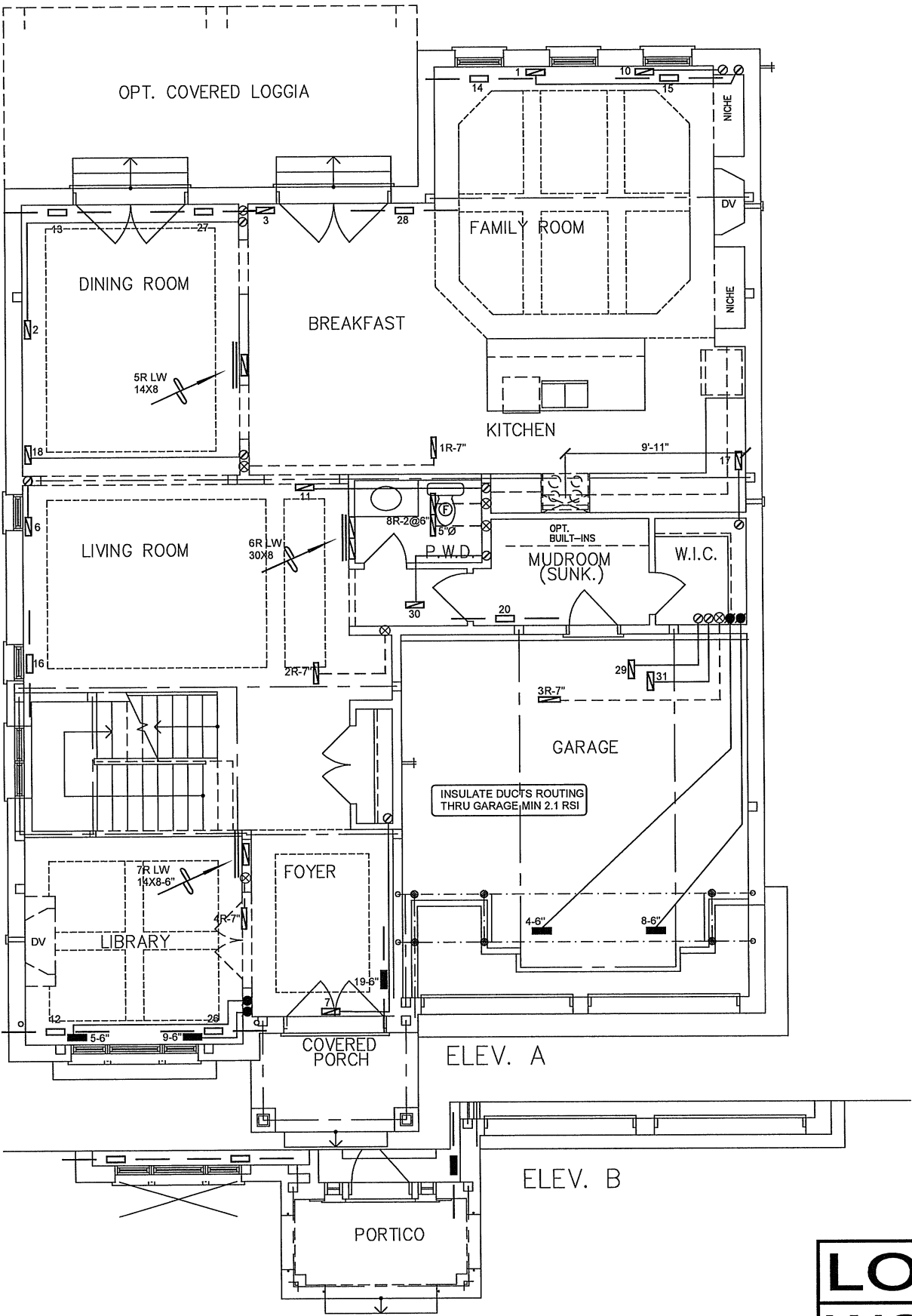
Weather Station Description			
Province:	Ontario		
Region:	Vaughan (Woodbridge)		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	6.71		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m <sup>3</sup> ):	1440.6		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1920.4 cm <sup>2</sup>	
	3.57	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	73.2	73.2	
Flue Size			
Flue #:	#1	#2	#3 #4
Diameter (mm):	0	0	0 0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.330		
Cooling Air Leakage Rate (ACH/H):	0.111		

TYPE: 5002 - THE ROSEVIEW  
LO# 77474

OPT 5-BED







I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

*Michael O'Rourke*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

LOD	CSA-F280-12
WOD	PACKAGE A1

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.</div>	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
OPT 5-BED 5002 - ROSEVIEW 3764 sqft			BCIN# 19669	
			LO#	77474

