


Schedule 1: Designer Information

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

A. Project Information				
Building number, street name			Unit no.	Lot/con.
Municipality VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.		
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A	
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdesigns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
<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 HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 5003 - THE OAKGROVE OPT 5-BED Project: PINE VALLEY & TESTON		
D. Declaration of Designer				
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)				
<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 BUILDER: GOLD PARK HOMES										DATE: Oct-18 LO# 77476		WINTER NATURAL AIR CHANGE RATE 0.340 SUMMER NATURAL AIR CHANGE RATE 0.124		HEAT LOSS AT °F. 76 HEAT GAIN AT °F. 16		CSA-F280-12 SB-12 PACKAGE A1	
TYPE: 5003 - THE OAK GROVE										OPT 5-BED		GFA: 3852		BATH-2		BATH-2	
ROOM USE EXP. WALL CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-5	LAUN	BATH-2		BATH-2		BATH-2		BATH-2	
FACTORS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
GRS.WALL AREA	600	117	108	90	288	288	81	226	0	0	0	0	0	0	0	0	0
GLAZING	19	404	319	17	382	286	44	936	1866	0	0	0	0	0	0	0	0
NORTH	21.3	16.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3	42.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	25.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.3	42.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	103.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	5.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.9	420	1874	390	94	419	87	108	482	100	73	326	68	196	879	183
NET EXPOSED BMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	424	544	271	182	234	116	168	216	107	260	321	180	198	264	126
NO A T T I C EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.8	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	4121	1143	795	207	3913	2510	1252	1675	282	140	647	282	140	282	140	282	140
SUB TOTAL HT GAIN	3566	1143	795	207	3913	2510	1252	1675	282	140	647	282	140	282	140	282	140
LEVEL FACTOR / MULTIPLIER	0.20	0.29	0.20	0.29	0.20	0.29	0.20	0.29	0.20	0.29	0.20	0.29	0.20	0.29	0.20	0.29	0.20
AIR CHANGE HEAT LOSS	1180	327	64	49	1061	719	388	480	81	11	52	81	11	52	81	11	52
AIR CHANGE HEAT GAIN	288	0	0	0	316	196	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	477	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	524	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	240	1	240	1	240	1	240	1	240	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS	480	0	0	0	770	770	770	770	770	770	770	770	770	770	770	770	770
TOTAL HT LOSS BTU/H	5301	1470	1118	897	5244	3229	1610	2165	363	1198	1659	363	1198	363	1198	363	1198
TOTAL HT GAIN x 1.3 BTU/H	6635	1470	1118	897	7482	4728	2774	3377	1188	909	1659	1188	909	1188	909	1188	909

TYPE: 5003 - THE OAK GROVE										DATE: Oct-18 LO# 77476		WINTER NATURAL AIR CHANGE RATE 0.340 SUMMER NATURAL AIR CHANGE RATE 0.124		HEAT LOSS AT °F. 76 HEAT GAIN AT °F. 16		CSA-F280-12 SB-12 PACKAGE A1	
TYPE: 5003 - THE OAK GROVE										OPT 5-BED		GFA: 3852		BATH-2		BATH-2	
ROOM USE EXP. WALL CLG. HT.	DIN	LIV	KT/IGT	BED-2	BED-3	BED-4	BATH	BED-5	LAUN	BATH-2		BATH-2		BATH-2		BATH-2	
FACTORS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
GRS.WALL AREA	176	341	1034	90	288	288	81	226	0	0	0	0	0	0	0	0	0
GLAZING	19	404	319	17	382	286	44	936	1866	0	0	0	0	0	0	0	0
NORTH	21.3	16.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3	42.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	25.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.3	42.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	103.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	5.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.9	420	1874	390	94	419	87	108	482	100	73	326	68	196	879	183
NET EXPOSED BMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	424	544	271	182	234	116	168	216	107	260	321	180	198	264	126
NO A T T I C EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.8	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0
SUB TOTAL HT LOSS	1223	808	2745	207	3913	2510	1252	1675	282	140	647	282	140	282	140	282	140
SUB TOTAL HT GAIN	3566	1143	795	207	3913	2510	1252	1675	282	140	647	282	140	282	140	282	140
LEVEL FACTOR / MULTIPLIER	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.30
AIR CHANGE HEAT LOSS	634	1165	222	49	1061	719	388	480	81	11	52	81	11	52	81	11	52
AIR CHANGE HEAT GAIN	0	0	0	0	316	196	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	477	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	524	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	240	1	240	1	240	1	240	1	240	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS	480	0	0	0	770	770	770	770	770	770	770	770	770	770	770	770	770
TOTAL HT LOSS BTU/H	1766	3803	4857	12884	5244	3229	1610	2165	363	1198	1659	363	1198	363	1198	363	1198
TOTAL HT GAIN x 1.3 BTU/H	2137	4857	15546	12884	7482	4728	2774	3377	1188	909	1659	1188	909	1188	909	1188	909

TOTAL HEAT GAIN BTU/H: 60132 TONS: 5.01 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 72739 TOTAL COMBINED HEAT LOSS BTU/H: 76919

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

TYPE: 5003 - THE OAK GROVE

GFA: 3882 LO# 77476

DATE: Oct-18

HEATING CFM 1955 COOLING CFM 1955
TOTAL HEAT LOSS 72,739
AIR FLOW RATE CFM 26.88

AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000

DESIGN CFM = 1955
CFM @ 8" E.S.P.

TEMPERATURE RISE 50 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	17	10	7
R/A	0	0	5	3	1

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

All S/A runs 5/2" 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	WIC	BED-2	BED-3	BED-4	BATH	BED-5	BATH-2	DIN	LIV	KIT/GT	KIT/GT	KIT/GT	KIT/GT	KIT/GT	KIT/GT	KIT/GT	KIT/GT	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.77	0.73	0.90	2.04	1.75	1.61	2.15	0.83	1.76	1.90	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	3.97	3.20	3.31	3.31	3.31	3.31
CFM PER RUN HEAT	47	20	24	55	47	43	58	22	47	51	69	69	69	69	69	69	69	69	107	86	89	89	89	89
RM GAIN MBH	2.21	0.56	0.29	2.38	2.50	2.36	3.38	0.45	2.14	2.43	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	0.81	1.81	0.49	0.49	0.49	0.49
CFM PER RUN COOLING	73	18	10	78	82	78	91	15	70	80	102	102	102	102	102	102	102	102	27	59	16	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.15	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.16
EQUVALENT LENGTH	48	26	36	48	45	54	63	45	41	39	26	39	36	27	31	38	45	35	35	40	30	22	42	41
TOTAL EFFECTIVE LENGTH	185	205	120	165	140	195	150	130	185	110	170	110	110	110	110	110	110	110	120	150	110	150	130	120
ADJUSTED PRESSURE	0.07	0.07	0.11	0.08	0.09	0.07	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.11	0.12	0.08	0.08	0.11	0.09	0.12	0.09	0.12	0.09	0.1
ROUND DUCT SIZE	5	4	4	5	6	6	6	6	4	5	4	4	5	6	6	6	6	6	6	5	5	6	6	5
HEATING VELOCITY (ft/min)	345	229	275	404	240	219	219	296	252	374	352	352	352	352	352	352	352	352	546	631	653	454	454	653
COOLING VELOCITY (ft/min)	536	207	115	573	418	398	484	566	172	536	520	520	520	520	520	520	520	520	138	433	117	82	82	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10
TRUNK	A	E	C	E	E	D	D	F	B	E	A	A	A	A	A	B	B	F	D	B	A	A	F	F

RUN #	25	26	27	28	29	30	31	32	33	34
ROOM NAME	BAS	BAS	BAS	MBR	BED-3	BED-3	BED-4	LIV	ENS	LAUN
RM LOSS MBH	3.31	3.31	3.31	4.77	1.75	1.75	1.61	1.90	0.73	0.36
CFM PER RUN HEAT	89	89	89	2.21	2.50	2.50	2.36	2.43	0.56	1.20
CFM PER RUN COOLING	16	16	16	73	82	82	78	80	18	39
ADJUSTED PRESSURE	0.16	0.16	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17
EQUVALENT LENGTH	21	23	36	38	58	58	43	34	37	48
TOTAL EFFECTIVE LENGTH	180	100	130	160	145	155	190	100	195	190
ADJUSTED PRESSURE	0.08	0.13	0.1	0.09	0.08	0.08	0.07	0.13	0.07	0.07
ROUND DUCT SIZE	6	5	5	5	5	5	6	5	4	4
HEATING VELOCITY (ft/min)	454	653	653	345	345	345	219	374	229	115
COOLING VELOCITY (ft/min)	82	117	117	536	602	602	398	587	207	447
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10
TRUNK	E	E	D	A	E	E	D	D	E	B

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	457	0.07	10.8	14	588	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK B	583	0.07	11.8	16	656	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK C	1064	0.07	14.8	26	873	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK D	427	0.07	10.5	14	549	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK E	888	0.07	13.9	22	727	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK F	327	0.07	9.5	10	589	0	0.00	0	0	0	0	0.00	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	120	360	135	135	120	170	320	320	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
EQUVALENT LENGTH	175	135	185	190	185	160	135	145	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL EFFECTIVE LH	225	161	229	239	238	177	154	177	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.09	0.06	0.06	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ROUND DUCT SIZE	6.6	9.3	7.1	7.1	6.8	7.2	8.7	9.2	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	30	14	14	14	14	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5003 - THE OAKGROVE
SITE NAME: PINE VALLEY & TESTON

LO # 77476
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	5 @ 10.6 cfm	53 cfm
Other Rooms	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	201.4 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	201.4	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	46.4	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	✓
BATH	QTXEN050C	50	✓
BATH-2	QTXEN050C	50	✓
PWD	QTXEN050C	50	✓

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

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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																													
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																													
LO#: 77476		Model: 5003 - THE OAK GROVE		Builder: GOLD PARK HOMES		Date: 10/5/2018																																																							
Volume Calculation					Air Change & Delta T Data																																																								
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6.2.6 Sensible Gain due to Air Leakage																																																													
$HC_{satb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																													
0.340		x	441.15	x	9 °C	x	1.2	=	576 W																																																				
								=	1966 Btu/h																																																				
6.2.7 Sensible heat Gain due to Ventilation																																																													
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																													
155 CFM		x	76 °F	x	1.08	x	0.25	=	661 Btu/h																																																				
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																													
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{ugcr} + HL_{bgcr}) \div (HL_{uglevel} + HL_{bglevel})\}$																																																													
		HL _{airbv} = Air leakage heat loss + ventilation heat loss				HL _{airbv} = Air leakage heat loss + ventilation heat loss																																																							
		*For a balanced or supply only ventilation system HL _{airve} = 0				*For a balanced or supply only ventilation system HL _{airve} = 0																																																							

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5003 - THE OAKGROVE	OPT 5-BED	BUILDER: GOLD PARK HOMES
SFQT: 3862	LO# 77476	SITE: 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)	72

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):	56085.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 61.0 ft	WIDTH: 40.0 ft	EXPOSED PERIMETER:	202.0 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	-

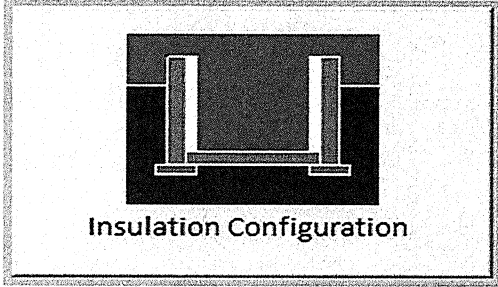
INDIVIDUAL BCIN: 19669

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):	18.6	 Insulation Configuration
Floor Width (m):	12.2	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.0	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		2025

TYPE: 5003 - THE OAKGROVE
LO# 77476

OPT 5-BED

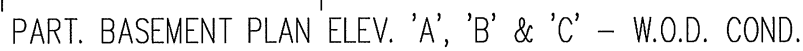
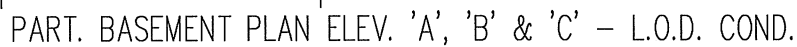
Air Infiltration Residential Load Calculator

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):	7.01			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1588.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2117.1 cm ²		
	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):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.124			













TYPE: 5003 - THE OAKGROVE
LO# 77476

OPT 5-BED



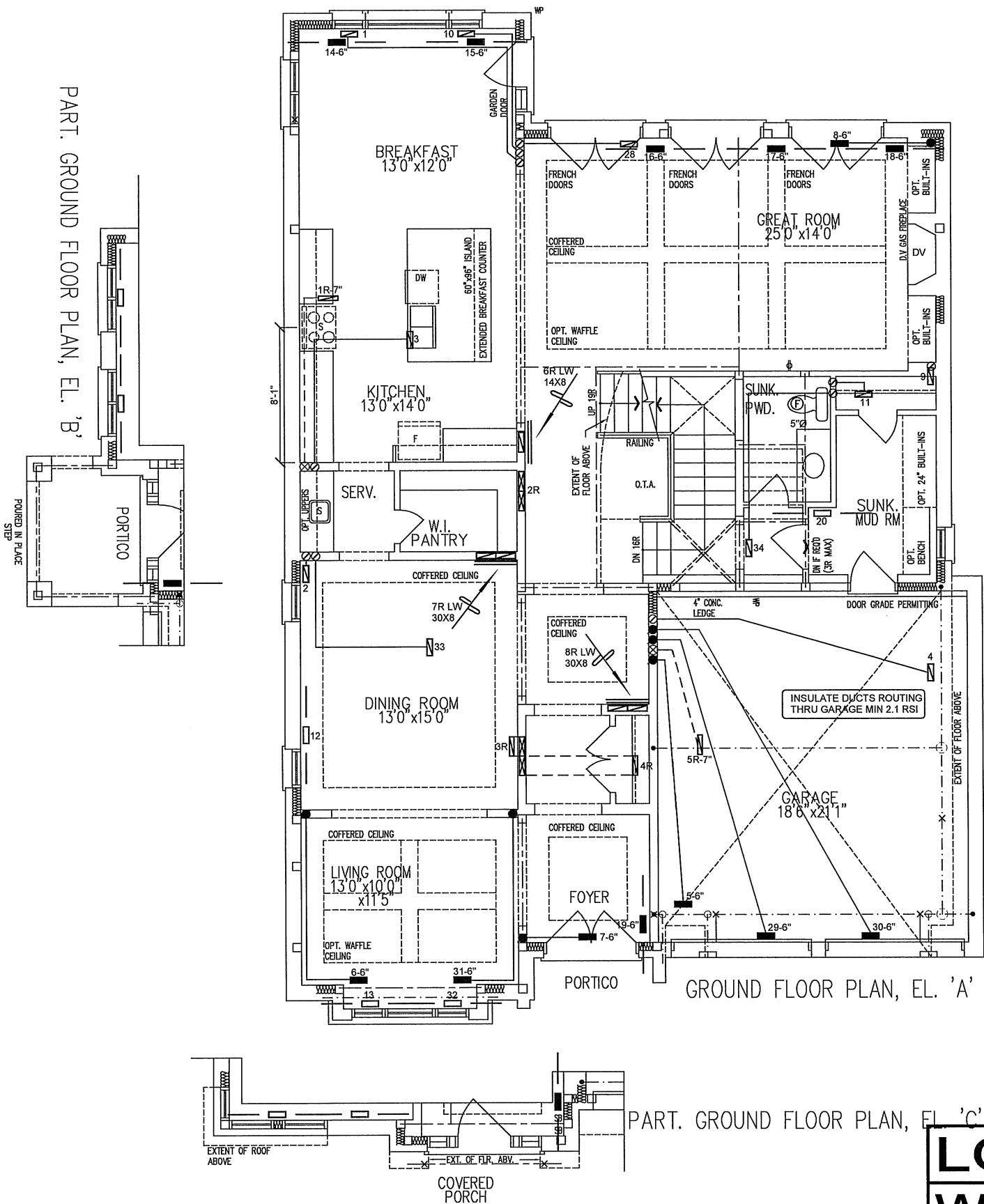
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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	OCT/2018
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	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>	HEAT LOSS 75919 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title			
GOLD PARK HOMES			MAKE	LENNOX	3RD FLOOR					BASEMENT HEATING LAYOUT		
Project Name			MODEL	EL296UH110XE60C	2ND FLOOR		17	5	6	Date		
PINE VALLEY & TESTON VAUGHAN, ONTARIO			INPUT	110 MBTU/H	1ST FLOOR		10	3	2	JAN/2018		
OPT 5-BED			OUTPUT	106 MBTU/H	BASEMENT		7	1	0	Scale		
THE OAKGROVE			COOLING	5.0 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				1/8" = 1'-0"		BCIN# 19669	
5003 3862 sqft			FAN SPEED	1955 cfm @ 0.6" w.c.							LO# 77476	
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.												



I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.3 OF THE BUILDING CODE.

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

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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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			BCIN# 19669	
THE OAKGROVE				
5003	3862 sqft	LO# 77476		

