

SITE NAME: TRINAR HALL HOMES				DATE: Feb-19				WINTER NATURAL AIR CHANGE RATE 0.227				HEAT LOSS ΔT °F. 81				CSA-F280-12			
BUILDER: GREENPARK HOMES				TYPE: BRENTWOOD 2				LO# 81518				SUMMER NATURAL AIR CHANGE RATE 0.063				HEAT GAIN ΔT °F. 11			
ROOM USE				MBR				ENS				WIC				BED-2			
EXP. WALL				33				23				7				29			
CLG. HT.				9				9				9				9			
FACTORS																			
GRS.WALL AREA				297				207				63				261			
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
NORTH				20.4 15.1				0 0 0				0 0 0				0 0 0			
EAST				20.4 40.7				0 0 0				0 0 0				36 733 1466			
SOUTH				20.4 24.1				0 0 0				0 0 0				0 0 0			
WEST				20.4 40.7				30 611 1222				22 448 896				0 0 0			
SKYLT.				34.2 99.9				0 0 0				0 0 0				0 0 0			
DOORS				27.0 3.7				0 0 0				0 0 0				0 0 0			
NET EXPOSED WALL				3.9 0.5				267 1030 139				185 714 96				63 243 33			
NET EXPOSED BSMT WALL ABOVE GR				3.9 0.5				0 0 0				0 0 0				0 0 0			
EXPOSED CLG				1.4 0.6				333 458 186				144 198 80				100 138 56			
NO ATTIC EXPOSED CLG				2.9 1.2				0 0 0				0 0 0				30 88 36			
EXPOSED FLOOR				2.7 0.4				0 0 0				0 0 0				225 615 83			
BASEMENT/CRAWL HEAT LOSS								0				0				0			
SLAB ON GRADE HEAT LOSS								0				0				0			
SUBTOTAL HT LOSS				2098				1359				381				2571			
SUB TOTAL HT GAIN				1546				1073				89				1811			
LEVEL FACTOR / MULTIPLIER				0.20 0.22				0.20 0.22				0.20 0.22				0.20 0.22			
AIR CHANGE HEAT LOSS				453				293				82				555			
AIR CHANGE HEAT GAIN				78				54				4				91			
DUCT LOSS				0				0				0				313			
DUCT GAIN				0				0				0				282			
HEAT GAIN PEOPLE				240				2				480				1			
HEAT GAIN APPLIANCES/LIGHTS				682				0				0				682			
TOTAL HT LOSS BTU/H				2551				1653				463				3439			
TOTAL HT GAIN x 1.3 BTU/H				3622				1464				121				4038			

ROOM USE			LV/DN			KT/FM			LAUN			PWD			FOY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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SITE NAME: TRINAR HALL HOMES
BUILDER: GREENPARK HOMES

TYPE: BRENTWOOD 2

DATE: Feb-19

GFA: 2793

LO# 81518

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 43,130 TOTAL HEAT GAIN 28,620
AIR FLOW RATE CFM 26.22 AIR FLOW RATE CFM 39.52

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

#GOODMAN

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	4
R/A	0	0	4	2	1

plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

FAN SPEED 60
LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131

DESIGN CFM = 1131
CFM @ .6" E.S.P.

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	WIC	BED-2	BED-3	BED-4	BATH	ENS-3	BED-2	MBR	ENS-4	BED-3	LV/DN	KT/FM	KT/FM	KT/FM	LAUN	PWD	FOY	ENS	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.28	0.83	0.46	1.72	1.48	1.39	0.70	0.97	1.72	1.28	0.62	1.48	2.03	1.97	1.97	1.97	2.08	0.59	2.88	0.83	3.73	3.73	3.73	3.73
CFM PER RUN HEAT	33	22	12	45	39	36	18	25	45	33	16	39	53	52	52	52	55	15	76	22	98	98	98	98
RM GAIN MBH.	1.81	0.73	0.12	2.02	2.16	1.98	0.15	0.99	2.02	1.81	0.33	2.16	1.92	2.01	2.01	2.01	1.16	0.28	0.38	0.73	0.46	0.46	0.46	0.46
CFM PER RUN COOLING	72	29	5	80	85	78	6	39	80	72	13	85	76	80	80	80	46	11	15	29	18	18	18	18
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	39	49	56	59	64	34	47	55	60	47	33	58	21	35	26	37	31	36	41	25	30	31	24	45
EQUIVALENT LENGTH	140	200	210	160	200	180	190	140	150	160	190	200	160	160	150	150	170	180	120	160	100	100	120	130
TOTAL EFFECTIVE LENGTH	179	249	266	219	264	214	237	195	210	207	223	258	181	195	176	187	201	216	161	185	130	131	144	175
ADJUSTED PRESSURE	0.1	0.07	0.06	0.08	0.06	0.08	0.07	0.09	0.08	0.08	0.08	0.06	0.1	0.09	0.1	0.09	0.09	0.08	0.11	0.09	0.12	0.12	0.11	0.09
ROUND DUCT SIZE	5	4	4	6	6	6	4	4	6	5	4	6	6	5	5	5	5	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	242	252	138	229	199	184	207	287	229	242	184	199	270	382	382	382	404	172	558	252	500	500	500	500
COOLING VELOCITY (ft/min)	529	333	57	408	433	398	69	447	408	529	149	433	388	587	587	587	338	126	110	333	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	D	C	B	D	D	D	A	B	C	D	A	A	A	D	C	C	A	B	B	D	C

RUN #
ROOM NAME
RM LOSS MBH.
CFM PER RUN HEAT
RM GAIN MBH.
CFM PER RUN COOLING
ADJUSTED PRESSURE
ACTUAL DUCT LGH.
EQUIVALENT LENGTH
TOTAL EFFECTIVE LENGTH
ADJUSTED PRESSURE
ROUND DUCT SIZE
HEATING VELOCITY (ft/min)
COOLING VELOCITY (ft/min)
OUTLET GRILL SIZE
TRUNK


These plans have been reviewed for use with the corrections as noted. No other changes may be made without written approval of the Building Standards Branch. All work must comply with Zoning By-Law 2018-043, as amended, and the Ontario Building Code, as amended. These approved documents must be kept on site at all times. The building permit must be clearly posted on site at all times.

Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-04
Sewage System			
Zoning			

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	244	0.08	8.3	12	x 8 366
TRUNK B	514	0.07	11.3	16	x 8 578
TRUNK C	267	0.06	9.2	10	x 8 481
TRUNK D	618	0.06	12.6	18	x 8 618
TRUNK E	1131	0.06	15.8	28	x 8 727
TRUNK F	0	0.00	0	0	x 8 0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x 8 0
TRUNK P	0	0.05	0	0	x 8 0
TRUNK Q	0	0.05	0	0	x 8 0
TRUNK R	0	0.05	0	0	x 8 0
TRUNK S	0	0.05	0	0	x 8 0
TRUNK T	0	0.05	0	0	x 8 0
TRUNK U	0	0.05	0	0	x 8 0
TRUNK V	0	0.05	0	0	x 8 0
TRUNK W	0	0.05	0	0	x 8 0
TRUNK X	1131	0.05	16.5	32	x 8 636
TRUNK Y	465	0.05	11.8	16	x 8 523
TRUNK Z	0	0.05	0	0	x 8 0
DROP	1131	0.05	16.5	24	x 10 679

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	200	75	85	75	200	305	0	0	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.	38	54	50	81	21	41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	135	225	215	225	140	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	173	279	265	306	161	251	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.09	0.05	0.06	0.05	0.09	0.06	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	14.80	14.80
ROUND DUCT SIZE	7.5	6	6	6	7.5	9.7	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: BRENTWOOD 2
SITE NAME: TRINAR HALL HOMES

LO # 81518

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A. TOTAL		<u>180.2</u> 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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>100.7</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
<u>79.5</u> cfm	<u>3.0</u> sones
<input checked="" type="checkbox"/> HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	ΔT °F
79.5 CFM	81 F
X	X
FACTOR	% LOSS
1.08	X
	0.25

SUPPLEMENTAL FANS		PANASONIC	
Location	Model	cfm	HVI
ENS	FV-05-11VK1	50	<input checked="" type="checkbox"/>
BATH	FV-05-11VK1	50	<input checked="" type="checkbox"/>
ENS-4	FV-05-11VK1	50	<input checked="" type="checkbox"/>
PWD	FV-05-11VK1	50	<input checked="" type="checkbox"/>

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % 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:		GREENPARK HOMES
Name:		
Address:		
City:		
Telephone #:	Fax #:	



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

Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-04
Sewage System			
Zoning			

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:	February-19

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																							
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																							
LO#: 81518		Model: BRENTWOOD 2		Builder: GREENPARK HOMES																																																			
				Date: 2/21/2019																																																			
Volume Calculation			Air Change & Delta T Data																																																				
<table border="1" style="width:100%; border-collapse: collapse;"> <caption>House Volume</caption> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>1251</td><td>9</td><td>11259</td></tr> <tr><td>First</td><td>1251</td><td>10</td><td>12510</td></tr> <tr><td>Second</td><td>1542</td><td>9</td><td>13878</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="3" style="text-align: right;">Total:</td><td>37,647.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>1066.0 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1251	9	11259	First	1251	10	12510	Second	1542	9	13878	Third	0	9	0	Fourth	0	9	0	Total:			37,647.0 ft³	Total:			1066.0 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%;">0.227</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.063</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <caption>Design Temperature Difference</caption> <thead> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> </thead> <tbody> <tr> <td>Winter DTDh</td> <td>22</td> <td>-23</td> <td>45</td> <td>81</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </tbody> </table>		WINTER NATURAL AIR CHANGE RATE	0.227	SUMMER NATURAL AIR CHANGE RATE	0.063		Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-23	45	81	Summer DTDc	24	30	6	11
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																				
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																				
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.227 x 296.12 x 45 °C x 1.2 = 3645 W</p> <p>= 12437 Btu/h</p>			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.063 x 296.12 x 6 °C x 1.2 = 137 W</p> <p>= 467 Btu/h</p>																																																				
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																				
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 81 °F x 1.08 x 0.25 = 1747 Btu/h</p>			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h</p>																																																				
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																							
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																							
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																			
1	0.5	12,437	8,684	0.716																																																			
2	0.3		9,754	0.383																																																			
3	0.2		11,521	0.216																																																			
4	0		0	0.000																																																			
5	0		0	0.000																																																			
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																																							



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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-04
Sewage System			
Zoning			

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BRENTWOOD 2	BUILDER: GREENPARK HOMES
SFQT: 2793	SITE: TRINAR HALL HOMES
LO# 81518	

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-9	OUTDOOR DESIGN TEMP.	86
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:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	37647.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.35	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 54.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	168.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component

Compliance Package ENERGYSTAR

Nominal	Min. Eff.
---------	-----------

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	R22+R5	21.10
Basement Walls Minimum RSI (R)-Value	20	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	ZONE 2	-
Skylights Maximum U-Value	ZONE 2	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.9	-



**Town of
East Gwillimbury**
Building Standards Branch BCIN #16487

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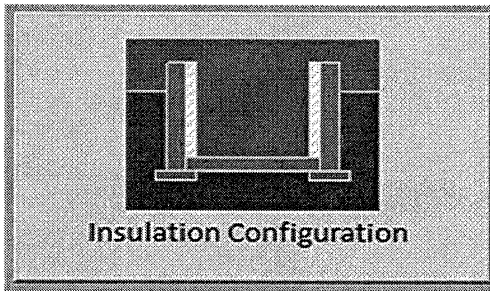
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-04
Sewage System			
Zoning			

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Bradford	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.5	 <p>Insulation Configuration</p>
Floor Width (m):	9.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.0	
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):	1751	



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Discipline	Reviewer	BCIN	Date
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Sewage System			
Zoning			

TYPE: BRENTWOOD 2
LO# 81518

Air Infiltration Residential Load Calculator

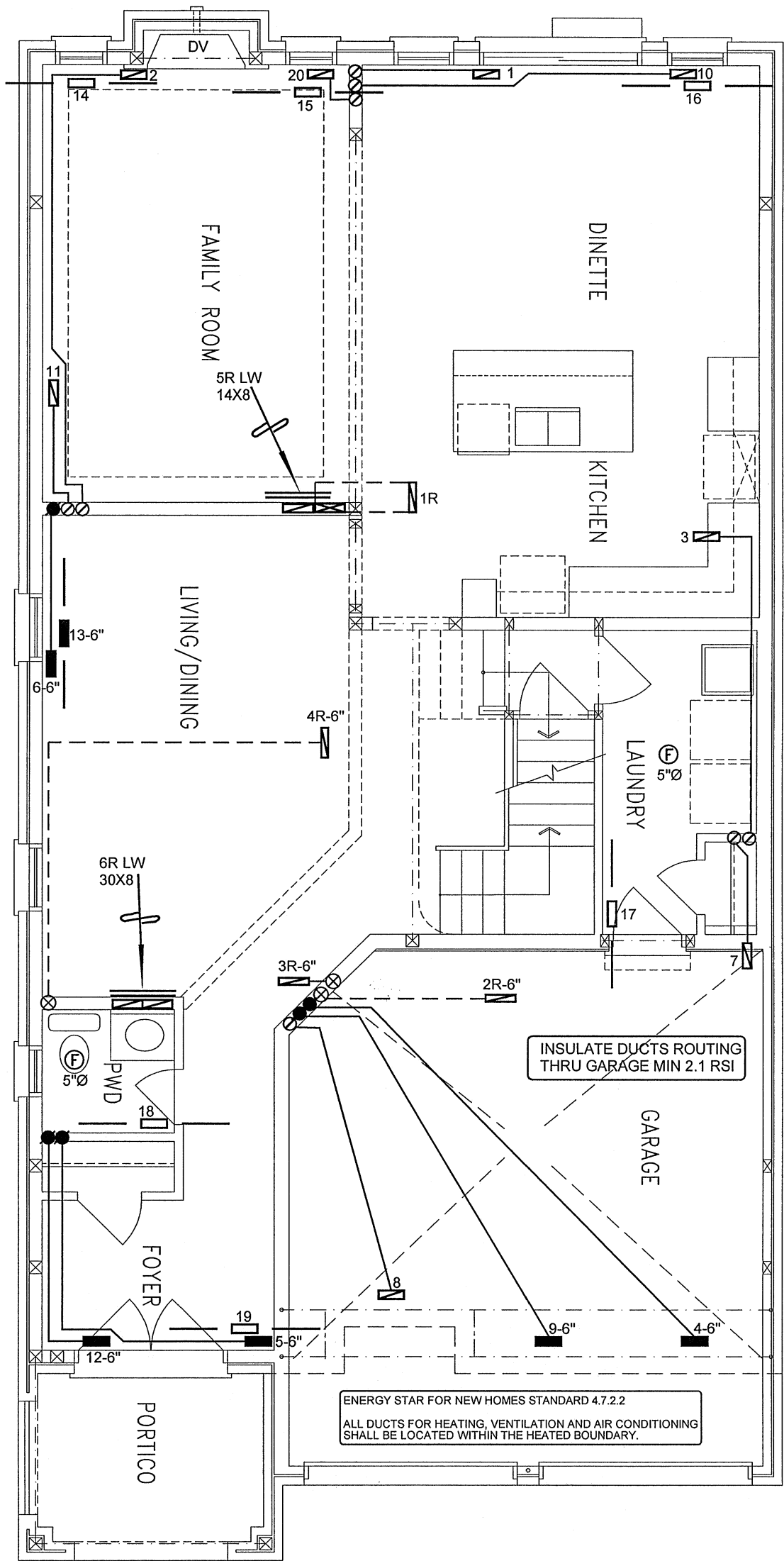
Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Bradford			
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 ³):	1066.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	995.1 cm ²		
	2.50	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.063			

TYPE: BRENTWOOD 2
LO# 81518

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Zoning			



5'-11"



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Sewage System			
Zoning			

CSA-F280-12



ENERGY STAR

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.

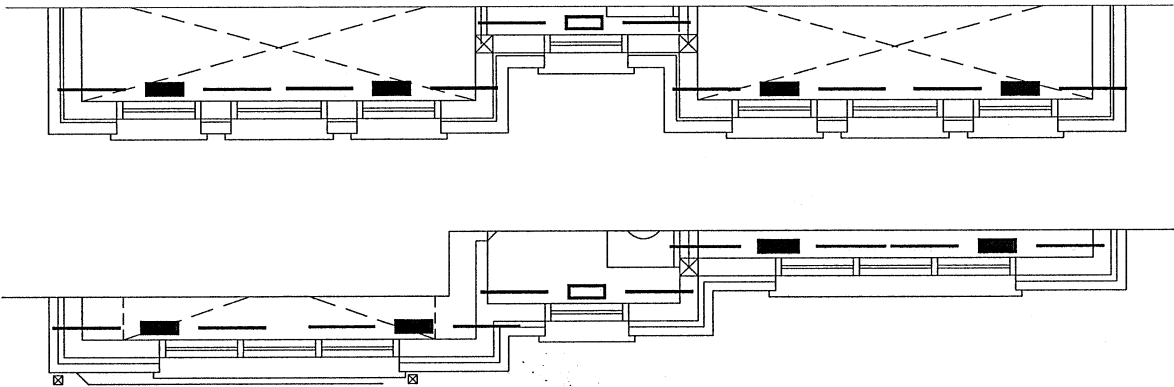
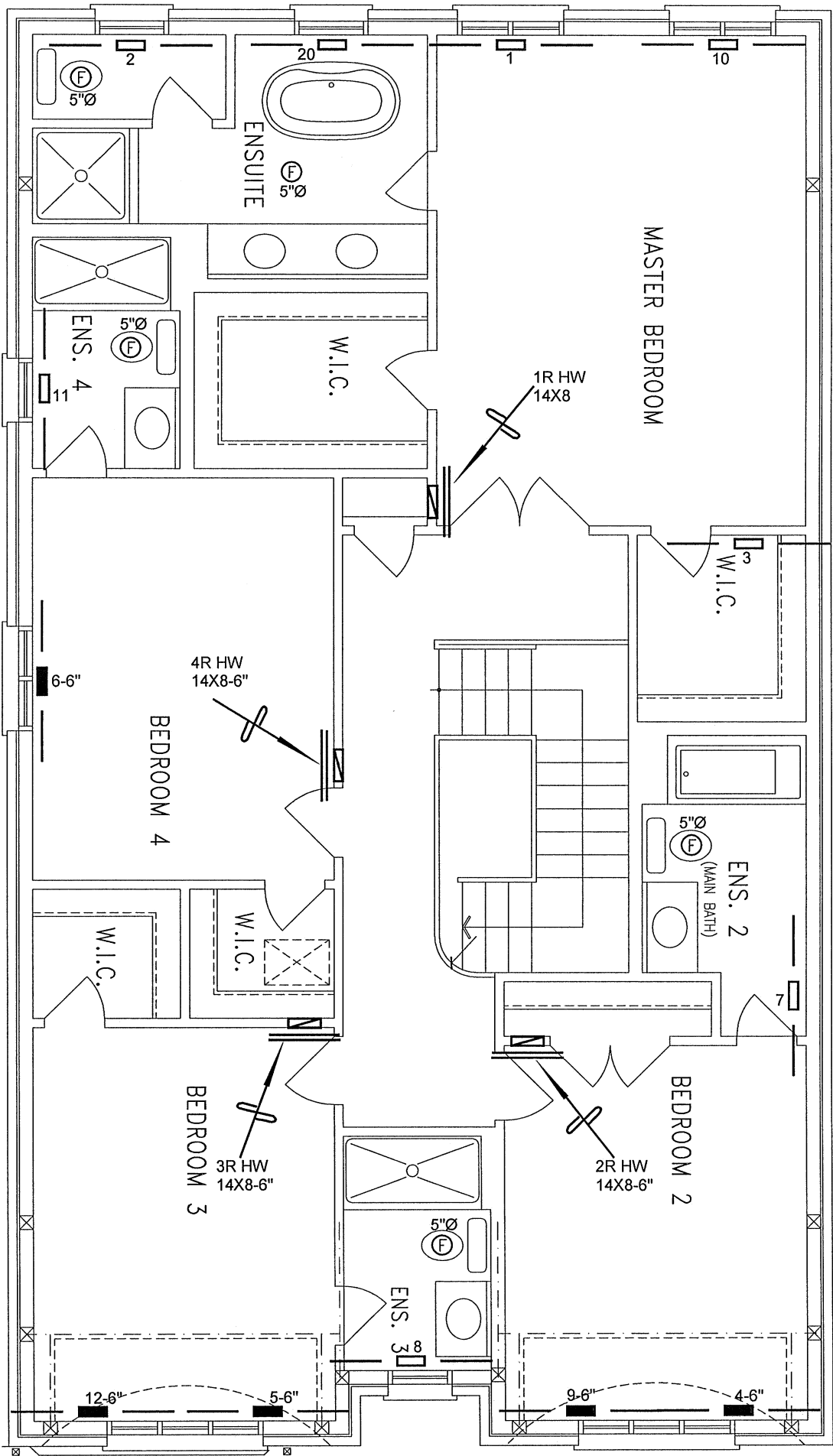
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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.	
	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		Date

REVISIONS

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client	GREENPARK HOMES			HVAC DESIGNS LTD.			Sheet Title
Project Name	TRINAR HALL HOMES EAST GWILLIMBURY, ONT.			375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services			FIRST FLOOR HEATING LAYOUT
BRENTWOOD 2 2793 sqft			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.			Date	FEB/2019
						Scale	3/16" = 1'-0"
						BCIN# 19669	
						LO#	81518



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Discipline	Reviewer	BCIN	Date
Building Code	H. Authier	43236	2021-02-04
Sewage System			
Zoning			

CSA-F280-12



ENERGY STAR

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.

HVAC LEGEND								3.		
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Client GREENPARK HOMES		<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 SECOND FLOOR HEATING LAYOUT	
Project Name TRINAR HALL HOMES EAST GWILLIMBURY, ONT.			Date FEB/2019	
BRENTWOOD 2 2793 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	81518