

SITE NAME: TRINIGROUP		WOB		GFA: 3175		DATE: Sep-23		WINTER NATURAL AIR CHANGE RATE 0.377		HEAT LOSS ΔT °F. 78		CSA-F280-12	
BUILDER: GREENPARK HOMES		TYPE: ROSE 6				LO# 102627		SUMMER NATURAL AIR CHANGE RATE 0.118		HEAT GAIN ΔT °F. 13		SB-12 PACKAGE A1	
ROOM USE		MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	ENS-3	FLEX	ENS-4	WIC-2	
EXP. WALL		35	27	5	25	36	17	9	8	5	8	12	
CLG. HT.		9	9	9	9	9	9	9	9	9	9	10	
FACTORS													
GRS.WALL AREA	LOSS GAIN	319	246	46	228	328	155	82	73	46	73	121	
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	
NORTH	21.8 13.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	8 174 107	0 0 0	0 0 0	
EAST	21.8 33.4	0 0 0	0 0 0	0 0 0	44 958 1470	47 1024 1571	0 0 0	0 0 0	0 0 0	13 283 434	0 0 0	16 349 535	
SOUTH	21.8 20.3	0 0 0	0 0 0	0 0 0	0 0 0	8 174 163	24 523 488	0 0 0	0 0 0	0 0 0	7 152 142	0 0 0	
WEST	21.8 33.4	22 479 735	26 566 869	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
SKYLT.	38.1 101.5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
DOORS	20.5 3.4	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
NET EXPOSED WALL	4.6 0.8	297 1355 223	220 1004 165	46 208 34	184 838 138	273 1245 205	131 597 98	82 374 62	60 273 45	38 171 28	66 301 49	105 481 79	
NET EXPOSED BSMT WALL ABOVE GR	3.7 0.6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
EXPOSED CLG	1.3 0.6	350 460 206	202 265 119	50 66 29	210 276 123	237 311 139	290 381 170	59 78 35	61 80 36	173 227 102	56 74 33	0 0 0	
NO ATTIC EXPOSED CLG	2.8 1.3	0 0 0	0 0 0	0 0 0	0 0 0	22 62 28	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
EXPOSED FLOOR	2.6 0.4	0 0 0	0 0 0	0 0 0	210 548 90	8 21 3	0 0 0	59 154 25	61 159 26	56 146 24	0 0 0	0 0 0	
BASEMENT/CRAWL HEAT LOSS		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	
SUBTOTAL HT LOSS		2294	1835	274	2621	2838	1501	606	796	719	527	829	
SUB TOTAL HT GAIN			1164		1822	2108	757		541	260	225	614	
LEVEL FACTOR / MULTIPLIER	0.20 0.31		0.20 0.31	0.20 0.31	0.20 0.31	0.20 0.31	0.20 0.31	0.20 0.31	0.20 0.31	0.20 0.31	0.20 0.31	0.30 0.54	
AIR CHANGE HEAT LOSS		703	562	84	803	869	460	186	244	220	161	446	
AIR CHANGE HEAT GAIN			97	5	153	177	64	10	46	22	19	52	
DUCT LOSS		0	0	0	342	371	0	79	104	94	0	0	
DUCT GAIN		0	0	0	295	326	0	13	59	28	0	0	
HEAT GAIN PEOPLE	240	2	480	0	1	240	1	240	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS		734	0	0	734	734	734	0	0	0	0	0	
TOTAL HT LOSS BTU/H		2996	2398	357	3766	4077	1961	870	1143	1033	688	1275	
TOTAL HT GAIN x 1.3 BTU/H			3218	1625	90	4217	4662	188	839	404	317	865	

ROOM USE		DN/LV	H-OFF	KT/BF	FAM	LAUN	PWD	FOY	MUD			WOB	BAS
EXP. WALL		21	24	40	31	6	11	35	5			41	137
CLG. HT.		10	10	10	10	9	10	10	10			9	9
FACTORS													
GRS.WALL AREA	LOSS GAIN	212	242	404	313	55	111	354	51			349	754
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN			LOSS GAIN	LOSS GAIN
NORTH	21.8 13.3	0 0 0	22 479 293	11 240 147	0 0 0	9 196 120	0 0 0	0 0 0	0 0 0			66 1438 879	0 0 0
EAST	21.8 33.4	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	22 479 735	0 0 0			0 0 0	0 0 0
SOUTH	21.8 20.3	30 654 610	0 0 0	0 0 0	0 0 0	0 0 0	7 152 142	0 0 0	0 0 0			0 0 0	6 131 122
WEST	21.8 33.4	0 0 0	0 0 0	62 1351 2072	30 654 1002	0 0 0	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
SKYLT.	38.1 101.5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
DOORS	20.5 3.4	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	22 452 74	21 431 74			0 0 0	21 431 71
NET EXPOSED WALL	4.6 0.8	182 832 137	220 1007 166	331 1512 249	283 1293 213	46 208 34	104 476 78	310 1414 233	66 293 174			1291 212	0 0 0
NET EXPOSED BSMT WALL ABOVE GR	3.7 0.6	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0			0 0 0	411 1514 249
EXPOSED CLG	1.3 0.6	0 0 0	0 0 0	0 0 0	0 0 0	66 87 39	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
NO ATTIC EXPOSED CLG	2.8 1.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0			0 0 0	0 0 0
EXPOSED FLOOR	2.6 0.4	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	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	2378
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0	0			518	
SUBTOTAL HT LOSS		1485	1486	3102	1947	491	628	2345	566			3247	4454
SUB TOTAL HT GAIN			747	459	2467	1215	193	221	98			1091	442
LEVEL FACTOR / MULTIPLIER	0.30 0.54		0.30 0.54	0.30 0.54	0.30 0.54	0.20 0.31	0.30 0.54	0.30 0.54	0.30 0.54				0.50 1.44
AIR CHANGE HEAT LOSS		799	799	1668	1047	150	338	1261	304				11104
AIR CHANGE HEAT GAIN			63	39	208	102	16	19	8				129
DUCT LOSS		0	0	0	0	0	0	0	0				0
DUCT GAIN		0	0	0	0	0	0	0	0				0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0				0
HEAT GAIN APPLIANCES/LIGHTS		734	734	734	734	734	734	0	0				734
TOTAL HT LOSS BTU/H		2284	2285	4771	2994	642	966	3606	870			3247	15557
TOTAL HT GAIN x 1.3 BTU/H			2007	1601	4431	2667	1226	1469	131			1419	1696

TOTAL HEAT GAIN BTU/H:

35989

TONS: 3.00

LOSS DUE TO VENTILATION LOAD BTU/H: 1670

STRUCTURAL HEAT LOSS: 57786

TOTAL COMBINED HEAT LOSS BTU/H: 59456

Michael O'Rourke

05/01/2024

CITY OF RICHMOND HILL
BUILDING DIVISION

Richmond Hill
City of Richmond Hill
Building Division
HVAC REVIEWED
PXV
Initials

SITE NAME: TRINIGROUP
BUILDER: GREENPARK HOMESWOB
TYPE: ROSE 6

DATE: Sep-23

GFA: 3175 LO# 102627

HEATING CFM 1142 COOLING CFM 1142
TOTAL HEAT LOSS 57,786 TOTAL HEAT GAIN 35,714
AIR FLOW RATE CFM 19.76 AIR FLOW RATE CFM 31.98furnace pressure 0.7
furnace filter 0.14
a/c coil pressure 0.26
available pressure
for s/a & r/a 0.30#GOODMAN
GMEC960803BNA 80AFUE = 96 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 76,800

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	15	10	6
R/A	0	0	5	2	1

plenum pressure s/a 0.16 r/a pressure 0.14
max s/a dif press. loss 0.01 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.15 adjusted pressure r/a 0.12FAN SPEED LOW
MEDLOW
MEDIUM 885
MEDIUM HIGH 1005
HIGH 1142DESIGN CFM = 1142
CFM @ .7" E.S.P.

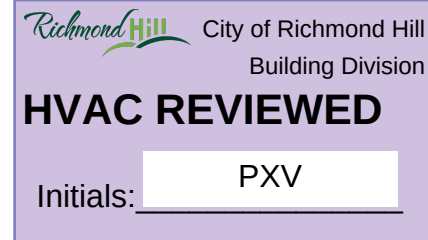
TEMPERATURE RISE 62 °F

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	ENS-2	ENS-3	FLEX	MBR	ENS-4	DN/LV	H-OFF	KT/BF	KT/BF	FAM	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.50	1.20	0.36	1.88	2.04	1.96	0.87	1.14	1.03	1.50	0.69	2.28	2.29	2.39	2.39	1.50	0.64	0.97	3.61	0.87	3.13	3.13	3.13	3.13
CFM PER RUN HEAT	30	24	7	37	40	39	17	23	20	30	14	45	45	47	47	30	13	19	71	17	62	62	62	62
RM GAIN MBH.	1.61	0.81	0.09	2.11	2.33	2.33	0.19	0.84	0.40	1.61	0.32	2.01	1.60	2.22	2.22	1.33	1.23	0.31	1.47	0.13	0.52	0.52	0.52	0.52
CFM PER RUN COOLING	51	26	3	67	75	75	6	27	13	51	10	64	51	71	71	43	39	10	47	4	17	17	17	17
ADJUSTED 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.	35	55	25	46	61	44	44	46	33	46	34	19	17	24	32	35	29	39	38	21	23	38	41	5
EQUIVALENT LENGTH	150	190	180	130	160	200	150	120	190	180	200	100	170	120	140	100	180	150	100	130	150	120	140	80
TOTAL EFFECTIVE LENGTH	185	245	205	176	221	244	194	166	223	226	234	119	187	144	172	135	209	189	138	151	173	158	181	85
ADJUSTED PRESSURE	0.08	0.06	0.07	0.08	0.07	0.06	0.08	0.09	0.07	0.06	0.06	0.12	0.08	0.1	0.08	0.11	0.07	0.08	0.11	0.1	0.08	0.09	0.08	0.17
ROUND DUCT SIZE	5	4	4	6	6	6	4	4	4	5	4	6	5	6	6	4	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	220	275	80	189	204	199	195	264	229	220	161	229	330	240	240	344	95	218	521	195	455	455	455	455
COOLING VELOCITY (ft/min)	374	298	34	342	382	382	69	310	149	374	115	326	374	362	362	493	286	115	345	46	125	125	125	125
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	C	E	D	B	E	E	C	A	B	C	C	A	A	B	C	D	D	E	A	B	B	C

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	BED-2	BED-3	ENS	FAM	WIC-2	BAS
RM LOSS MBH.	3.13	1.88	2.04	1.20	1.50	1.28	3.13
CFM PER RUN HEAT	62	37	40	24	30	25	62
RM GAIN MBH.	0.52	2.11	2.33	0.81	1.33	0.86	0.52
CFM PER RUN COOLING	17	67	75	26	43	28	17
ADJUSTED PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	15	50	55	49	26	46	40
EQUIVALENT LENGTH	90	140	180	160	130	140	140
TOTAL EFFECTIVE LENGTH	105	190	235	209	186	176	180
ADJUSTED PRESSURE	0.14	0.08	0.06	0.07	0.08	0.08	0.08
ROUND DUCT SIZE	5	6	6	4	5	4	5
HEATING VELOCITY (ft/min)	455	189	204	275	220	287	455
COOLING VELOCITY (ft/min)	125	342	382	298	316	321	125
OUTLET GRILL SIZE	3X10	4X10	4X10	3X10	3X10	3X10	3X10
TRUNK	C	E	D	B	A	D	D



SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	246	0.06	8.9	10	x	8	443	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	501	0.06	11.6	16	x	8	564	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	755	0.06	13.6	22	x	8	618	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	257	0.06	9.1	10	x	8	463	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	388	0.06	10.6	14	x	8	499	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT		VELOCITY	
	CFM	PRESS.	DUCT	DUCT		(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	1142	0.05	16.6	32	x	8	642
TRUNK Y	618	0.05	13.2	20	x	8	556
TRUNK Z	255	0.05	9.5	10	x	8	459
DROP	1142	0.05	16.6	24	x	10	685

RETURN AIR #	1	2	3	4	5	6	7									BR
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203
PLENUM PRESSURE	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
ACTUAL DUCT LGH.	28	54	75	48	48	30	14	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	175	220	200	195	215	185	135	0	0	0	0	0	0	0	0	220
TOTAL EFFECTIVE LH	203	274	275	243	263	215	149	1	1	1	1	1	1	1	1	234
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05	0.06	0.08	12.40	12.40	12.40	12.40	12.40	12.40	12.40	12.40	0.05
ROUND DUCT SIZE	6.7	6	6	6	6.8	10.3	5.9	0	0	0	0	0	0	0	0	8.7
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	8
	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	14	0	0	0	0	0	0	0	0	30

CITY OF RICHMOND HILL
BUILDING DIVISION

05/01/2024

RECEIVED
Per: joshua.nabua

TYPE: ROSE 6
SITE NAME: TRINIGROUPLO # 102627
WOB

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES	9.32.3.1(1)
a) ☒ Direct vent (sealed combustion) only	
b) ☐ Positive venting induced draft (except fireplaces)	
c) ☐ Natural draft, B-vent or induced draft gas fireplace	
d) ☐ Solid Fuel (including fireplaces)	
e) ☐ No Combustion Appliances	

HEATING SYSTEM
☒ Forced Air ☐ Non Forced Air
☐ Electric Space Heat

HOUSE TYPE	9.32.1(2)
☒ I Type a) or b) appliance only, no solid fuel	
☐ II Type I except with solid fuel (including fireplaces)	
☐ III Any Type c) appliance	
☐ IV Type I, or II with electric space heat	
☐ Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS	O.N.H.W.P.
☐ 1 Exhaust only/Forced Air System	
☐ 2 HRV with Ducting/Forced Air System	
☒ 3 HRV Simplified/connected to forced air system	
☐ 4 HRV with Ducting/non forced air system	
☐ 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>6</u> @ 10.6 cfm <u>63.6</u> cfm
Table 9.32.3.A.	TOTAL <u>201.4</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	79.5 cfm

SUPPLEMENTAL VENTILATION CAPACITY	9.32.3.5.
Total Ventilation Capacity	<u>201.4</u> cfm
Less Principal Ventil. Capacity	<u>79.5</u> cfm
Required Supplemental Capacity	<u>121.9</u> cfm

PRINCIPAL EXHAUST FAN CAPACITY
Model: VANEE V150H Location: BSMT
<u>79.5</u> cfm ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION
CFM ΔT °F FACTOR % LOSS
79.5 CFM X 78 F X 1.08 X 0.25

SUPPLEMENTAL FANS	BY INSTALLING CONTRACTOR
Location Model cfm HVI Sones	
ENS BY INSTALLING CONTRACTOR 50 ☒ 3.5	
ENS-2 BY INSTALLING CONTRACTOR 50 ☒ 3.5	
ENS-4 BY INSTALLING CONTRACTOR 50 ☒ 3.5	
PWD BY INSTALLING CONTRACTOR 50 ☒ 3.5	

HEAT RECOVERY VENTILATOR	9.32.3.11.
Model: VANEE V150H	
<u>150</u> cfm high <u>35</u> cfm low	
<u>75</u> % Sensible Efficiency ☒ HVI Approved	
@ 32 deg F (0 deg C)	

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

BUILDER:	GREENPARK HOMES Richmond Hill City of Richmond Hill
Name:	Building Division
Address:	HVAC REVIEWED
City:	
Telephone #:	Initials: PXV

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

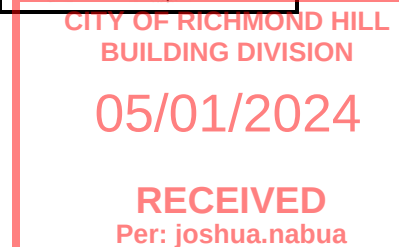
DESIGNER CERTIFICATION
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.
Name: HVAC Designs Ltd.
Signature: <i>Michael O'Rourke</i>
HRAI # 001820
Date: September-23

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19669 *Michael O'Rourke* MICHAEL O'ROURKE

05/01/2024

RECEIVED
Per: joshua.nabua

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 102627	Model: ROSE 6	Builder: GREENPARK HOMES	Date: 9/25/2023																																																									
Volume Calculation			Air Change & Delta T Data																																																									
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$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.377 x 332.73 x 43 °C x 1.2 = 6509 W = 22207 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.118 x 332.73 x 7 °C x 1.2 = 334 W = 1139 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 78 °F x 1.08 x 0.25 = 1670 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
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Michael O'Rourke
BCIN# 19669


HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: ROSE 6	WOB	BUILDER: GREENPARK HOMES
SFQT: 3175	LO# 102627	SITE: TRINIGROUP

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-6	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.60

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):	42301.3	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.60	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.5 ft
LENGTH: 58.0 ft	WIDTH: 31.0 ft	EXPOSED PERIMETER:	137.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	41.0 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	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



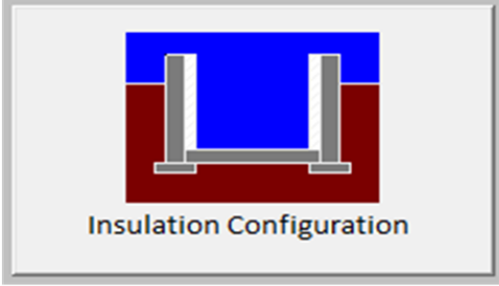
CITY OF RICHMOND HILL
BUILDING DIVISION

05/01/2024

RECEIVED
Per: joshua.nabua

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.4	
Exposed Perimeter (m):	41.8	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.40	
Window Area (m ²):	0.6	
Door Area (m ²):	2.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		697

TYPE: ROSE 6
LO# 102627

WOB

Michael O'Rourke BCIN #19669

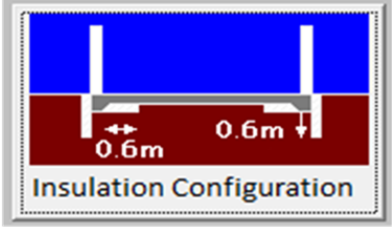
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BUILDING DIVISION

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Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	1.5	
Width (m):	9.4	
Exposed Perimeter (m):	12.5	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		152

TYPE: ROSE 6
LO# 102627

WOB

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Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
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):	8.44			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1197.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1596.8 cm ²		
	3.57	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):	0.377			
Cooling Air Leakage Rate (ACH/H):	0.118			

TYPE: ROSE 6
LO# 102627

WOB

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BUILDING DIVISION

05/01/2024

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Sheet Title	HVAC	HEATING LAYOUT
Drawn By	YV	Checked By
Scale	3/16"=1'-0"	Sheet No.
Date	SEPTEMBER 2023	05/01/2023
I/O #	102627	1

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