

## **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				Lot:				
TH-	5			Lot/con.				
Municipality Bradford	Postal code	Plan number/ description	other					
B. Individual who reviews and takes responsibility for design	gn activities	_						
Name David DaCosta		Firm		gtaDesigns Inc.				
Street address 2985 Drew Roa	nd, Suite 202			Unit no.	Lot/con.			
Municipality	Postal code	Province		E-mail				
Mississauga	L4T 0A4	Ontari	io	dave@gtades	<u>igns.ca</u>			
Telephone number   Fax number   Cell number								
Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]								
☐ House ☒ HVAC – H	louse			☐ Building Structural				
☐ Small Buildings ☐ Building S	ervices			☐ Plumbing – House				
☐ Large Buildings ☐ Detection,	Lighting and Po	wer		☐ Plumbing – All Buildings	3			
☐ Complex Buildings ☐ Fire Protein	ction			☐ On-site Sewage System	ns			
Description of designer's work Mo	del Certification	n		Project #:	PJ-00204			
				Layout #:	JB-04867			
Heating and Cooling Load Calculations Main		Builder		Bayview Wellingto				
Air System Design Alternate Residential mechanical ventilation Design Summary Area Sq ft:		Project		Green Valley Eas	t			
Residential System Design per CAN/CSA-F280-12	1034	Model		TH-5				
Residential New Construction - Forced Air		SB-12		Package A1				
D. Declaration of Designer								
David DaCosta (print name)	declare that (	choose one a	ıs appro <sub>l</sub>	oriate):				
☐ I review and take responsibility for 3.2.4 Division C of the Building Coclasses/categories.  Individual BCIN	de. I am qualifie	on behalf of a d, and the firm	BUILD	OF BRADFORD WEST (ING DEPARTMENT STEERS WITH THE STEERS AND THE STEERS AP 2018-12-11				
Firm BCIN:			INSPE	CTOR: BG				
☑ I review and take responsibility for "other designer" under subsection	3.2.5 of Division	C, of the Build		. 0,				
Individual BCIN								
Basis for exemp	otion from registr	ation:	D	ivision C 3.2.4.1. (4)	ı			
☐ The design work is exempt from th	e registration an	d qualification	requirem	ents of the Building Code.				
Basis for exemp	otion from registr	ation and qual	ification:					
I certify that:								
1. The information contained in this schedule is true to the best of r	ny knowledge.							
2. I have submitted this application with the knowledge and consen	t of the firm.							
June 20, 2018		Hans	160	260				
Date		Signat	ture of Des	signer				

NOTE:

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1. 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 qualifications under Subsections 3.2.4. and 3.2.5.of Division C.

2. Schedule 1 does not require to be completed a holder of a license, temporay license, or a certificate of authorization, issed 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.





2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca

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Heat loss and gain calcul	ation summary sheet CSA-F280-M12 Standard Form No. 1							
These documents issued for the use of	yview Wellington Layout No.							
and may not be used by any other persons without authorization. Documents	s for permit and/or construction are signed in red.  JB-04867							
Building L	ocation							
Address (Model): TH-5	Site: Green Valley East							
Model:	Lot:							
City and Province: Bradford	Postal code:							
Calculations	s based on							
Dimensional information based on:	VA3 DESIGN22/May/2018							
Attachment: Townhome	Front facing: East/West Assumed? Yes							
No. of Levels: 3 Ventilated? Included	Air tightness: 1961-Present (ACH=3.57) Assumed? Yes							
Weather location: Bradford	Wind exposure: Sheltered							
HRV? LifeBreath RNC155	Internal shading: Light-translucent Occupants: 4							
Sensible Eff. at -25C 71% Apparent Effect. at -0C 84%	Units: Imperial Area Sq ft: 1894							
Sensible Eff. at -0C 75%								
Heating design conditions	Cooling design conditions							
Outdoor temp -9.4 Indoor temp: 72 Mean soil tem; 48	Outdoor temp 86 Indoor temp: 75 Latitude: 44							
Above grade walls	Below grade walls							
Style A: As per OBC SB12 Package A1 R 22	Style A: As per OBC SB12 Package A1 R 20ci							
Style B: Existing Walls (When Applicable) R 12	Style B:							
Style C:	Style C:							
Style D:	Style D:							
Floors on soil	Ceilings							
Style A: As per Selected OBC SB12 Package A1	Style A: As per Selected OBC SB12 Package A1 R 60							
Style B:	Style B: As per Selected OBC SB12 Package A1 R 31							
Exposed floors	Style C:							
Style A: As per Selected OBC SB12 Package A1 R 31	Doors							
Style B:	Style A: As per Selected OBC SB12 Package A1 R 4.00							
Windows	Style B:							
Style A: As per Selected OBC SB12 Package A1 R 3.55	Style C:							
Style B: Existing Windows (When Applicable) R 1.99	Skylights							
Style C:	Style A: As per Selected OBC SB12 Package A1 R 2.03							
Style D:	Style B:							
Attached documents: As per Shedule 1 Heat Loss/Ga	in Caculations based on CSA-F280-12 Effective R-Values							
Notes: Residential New C	onstruction - Forced Air							
Calculations p	erformed by							
Name: David DaCosta	Postal code: L4T 0A4							
Company: gtaDesigns Inc.	Telephone: (905) 671-9800							
Address: 2985 Drew Road, Suite 202	Fax: (416) 268-6820							
<u> </u>								



Builder:

Trunk

**Bayview Wellington** 

Date:

### Air System Design

SB-12 Package A1 June 20, 2018

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca

I review and take responsibility for the design work and am qualified in the

appropriate category as an "other designer" under Division C subsection 3.2.5.

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of the Building Code. Project # System 1 Mane Alex TH-5 David DaCosta JB-04867 Project: **Green Valley East** Model: Individual BCIN: Layout # DESIGN LOAD SPECIFICATIONS AIR DISTRIBUTION & PRESSURE FURNACE/AIR HANDLER DATA: BOILER/WATER HEATER DATA: A/C UNIT DATA: Level 1 Net Load 10,605 btu/h **Equipment External Static Pressure** 0.5 "w.c. 1.5 Ton Make Туре Amana AMEC960403ANA Level 2 Net Load 8,953 btu/h **Additional Equipment Pressure Drop** 0.225 "w.c. Model Model Cond.--1.5 Level 3 Net Load 7.547 btu/h **Available Design Pressure** 0.275 "w.c. Input Btu/h 40000 Input Btu/h Coil -1.5 Return Branch Longest Effective Length 38400 Level 4 Net Load 0 btu/h 300 ft Output Btu/h Output Btu/h Total Heat Loss 27 106 htu/h " W C Min.Output Btu/h ΔWH R/A Plenum Pressure 0 138 "w c 0.50 E.s.p. Blower DATA: **Total Heat Gain** 15,863 btu/h S/A Plenum Pressure 0.14 "w.c. Water Temp deg. F. W2 29,816 Btuh. Heating Air Flow Proportioning Factor 0.0285 cfm/btuh AFUE Blower Speed Selected: Blower Type ECM Combo System HL + 10% 96% 22196 ft<sup>3</sup> (Brushless DC OBC 12.3.1.5.(2)) **Building Volume Vb** Cooling Air Flow Proportioning Factor 0.0487 cfm/btuh Aux. Heat Ventilation Load 895 Btuh. R/A Temp SB-12 Package Package A1 Heating Check Cooling Check 70 dea. F. 772 cfm 772 cfm Ventilation PVC 63.6 cfm S/A Temp 116 deg. F. Supply Branch and Grill Sizing Diffuser loss Cooling Air Flow Rate 772 cfm 0.01 "w.c. Temp. Rise>>> 46 deg. F. Selected cfm> 772 cfm Level 1 Level 2 S/A Outlet No. 2 5 6 Room Use BASE BASE BASE BASE FAM/KIT FAM/KIT MUD FOY Btu/Outlet 2651 2651 2651 2651 2788 2788 1190 2188 **Heating Airflow Rate CFM** 76 76 76 76 79 79 34 62 Cooling Airflow Rate CFM 40 40 40 40 114 38 114 **Duct Design Pressure** 0.13 **Actual Duct Length** 25 16 11 25 34 24 19 36 **Equivalent Length** 110 140 130 110 70 70 70 70 70 70 70 70 70 70 100 80 140 100 70 70 70 70 70 70 70 70 70 70 Total Effective Length 135 156 141 135 70 70 70 70 70 70 70 70 70 70 134 104 159 136 70 70 70 70 70 70 70 70 70 70 Adjusted Pressure 0.10 0.08 0.09 0.10 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.10 0.13 0.08 0.10 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 **Duct Size Round** 6 6 **Outlet Size** 4x10 4x10 4x10 4x10 4x10 4x10 4x10 4x10 4x10 3x10 3x10 4x10 Trunk Level 3 Level 4 S/A Outlet No. 10 13 14 15 9 11 12 Room Use MAST MAST I AUN RFD 2 BFD 3 BATH FNS Btu/Outlet 1483 1483 238 1241 1289 128 1686 **Heating Airflow Rate CFM** 42 42 35 37 48 Cooling Airflow Rate CFM 60 60 46 56 57 57 3 **Duct Design Pressure** 0.13 37 **Actual Duct Length** 57 51 30 38 51 41 **Equivalent Length** 120 130 150 90 130 160 120 70 177 157 70 70 70 70 70 Total Effective Length 181 180 128 181 201 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 Adjusted Pressure 0.07 0.07 0.07 0.10 0.07 0.06 0.08 0.19 **Duct Size Round** 5 5 2 5 Outlet Size 3x10 3x10 3x10 3x10 3x10 3x10 3x10 4x10 Trunk R R R Return Branch And Grill Sizing Grill Pressure Loss 0.02 "w.c **Return Trunk Duct Sizing** Supply Trunk Duct Sizing R/A Inlet No. 1R 2R 3R 4R 5R 6R 7R 8R 9R 10R 11R Trunk CFM Press. Round Rect. Size Trunk CFM Press. Round Rect. Size Inlet Air Volume CFM 155 362 105 150 **Duct Design Pressure** 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 772 0.06 14.0 24x10 392 0.06 11.0 14x8 10x10 Drop 52 772 380 0.07 5 18 32 z 0.06 14.0 22x8 R 10.5 12x8 10v10 **Actual Duct Length** 18x10 **Equivalent Length** 155 165 105 140 50 50 50 50 50 50 50 Υ c 50 50 50 **Total Effective Length** 160 183 157 172 50 50 50 50 Х 0.07 w Adjusted Pressure 0.06 0.07 0.07 0.24 0.24 0.24 0.24 0.24 0.24 0.24 **Duct Size Round** 7.0 10.5 6.0 7.5 v Inlet Size FLC 6 U SITE COPY Inlet Size 30 14 s R

Q



#### Heatloss/Gain Calculations CSA-F280-12

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643

e-mail dave@gtadesigns.ca

	E	Builder:	Bayvie	w Wellin	gton	_	Date:		June 20	, 2018				Wea	ather Data	Bradford	44	-9.4 86 2	22 48.2				Page 4
2012 OBC		Project:	Green	Valley E	ast	N	lodel:		тн	-5		_	System 1	He	at Loss ^T	81.4 deg. F	Ht gain ^T	11 deg. F	GTA:	1894	Proje Layo		PJ-00204 JB-04867
	Level 1				BASE																		
Run ft. expos					63 A		Α		Α		Α		Α	Α		Α	Α	,	A	Α		Α	
Run ft. expos					В		В		В		В		В	В		В	В		В	В		В	
	ing height				3.5 AG		3.5 AG		3.5 AG		3.5 AG		3.5 AG	3.5 AG		3.5 AG	3.5 AG	3.5	AG	3.5 AG		3.5 AG	
	Floor area				775 Area		Are	a	Area		Area		Area	Area		Area	Area		Area	Area		Area	
Exposed C	Ceilings A				Α		Α		Α		Α		Α	Α		Α	Α		A	Α		Α	
Exposed C	Ceilings B				В		В		В		В		В	В		В	В		В	В		В	
Expose	sed Floors				Flr		Flr		Flr		Flr		Flr	Flr		Flr	Flr		Flr	Flr		Fir	
Gross Ex	xp Wall A				221																		
	xp Wall B																						
	mponents R				Loss	Gain	Los	s Gain	Loss	Gain	Loss	Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
	th Shaded	3.55		10.91																			
E	East/West	3.55		27.35	23 527	629															4		
	South	3.55		20.89																			
WOB	Windows	3.15		28.32																	4		
	Skylight	2.03		88.23																			
	Doors	4.00	20.35		21 427															_			
Net expose		21.13	3.85		177	92																	
Net expose		14.49	5.62	0.76																4	4		
Exposed C		59.22	1.37	0.64																			
Exposed C		22.86	3.56	1.66																4	4		
Foundation Conductive He	sed Floors	29.80 On Grade (	2.73	0.17	4094																		
	Heat Loss	on Grade (	) OF ADO		5049															1			
	Heat Gain				3043	779																	
	Loss/Gain		1.0427 0	.0505	5265																		
All Leakage   Heat L	Case 1			0.11	3203	, 39																	
Ventilation	Case 2			11.88																			
	Case 3	х		0.11	291	86																	
Heat Gai	ain People		0.00	239																			
		1 =.25 pe	ercent	3216	2.0	1608																	
Duct and I				10%																			
Level 1 HL Total 10,	0,605	Tot	al HL for per	room	10605																		
Level 1 HG Total 3,2	,265	Total	HG per room	x 1.3		3265														<b>」 └</b>			
	Level 2				FAM/K	ίΤ		<b>IUD</b>	F	ΟY													
Run ft. expos					41 A		7 A	100	15 A		Α		Α	Α		Α	Α		A	Α		Α	
Run ft. expos					R		В.		В		B		В	В		B	B	,	В	В		B	
	ing height			1	10.0		12.0		11.0		10.0		10.0	10.0		10.0	10.0	10.0	-	10.0		10.0	
	Floor area				664 Area		35 Are	a	77 Area		Area		Area	Area		Area	Area		Area	Area		Area	
Exposed C					Α		Α		A		A		A	A		A	A		A	A		A	
Exposed C					В		В		В		В		В	В		В	В		В	В		В	
	sed Floors				Flr		Flr		Flr		Fir		Flr	Flr		Fir	Flr		Flr	Flr		Flr	
	xp Wall A				410		84		165														
Gross Ex	xp Wall B																						
Con	mponents R	-Values L	oss Gair																				
Norti	th Shaded		oss Gail	1	Loss	Gain	Los	s Gain	Loss	Gain	Loss	Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
		3.55		10.91	Loss	Gain	Los	s Gain	Loss	Gain	Loss	Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
E	East/West	3.55 3.55	22.93		Loss 80 1834		Los	ss Gain		Gain 383		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
	South		22.93 22.93	10.91			Los	ss Gain				Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing 1	South Windows	3.55 3.55 1.99	22.93 22.93 22.93 40.90	10.91 27.35 20.89 22.15			Los	ss Gain				Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
	South	3.55 3.55 1.99 2.03	22.93 22.93 22.93 40.90 40.10	10.91 27.35 20.89 22.15 88.23					14 3	383	1	Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing \	South Windows Skylight Doors	3.55 3.55 1.99 2.03 4.00	22.93 22.93 22.93 40.90 40.10 20.35	10.91 27.35 20.89 22.15 88.23 2.75	80 1834	2188	21	427 5	14 3	383 387 52		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing I	South Windows Skylight Doors ed walls A	3.55 3.55 1.99 2.03 4.00 17.03	22.93 22.93 22.93 40.90 40.10 20.35 4.78	10.91 27.35 20.89 22.15 88.23 2.75 0.65		2188	21	427 5	14 3	383		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing I	South Windows Skylight Doors ed walls A ed walls B	3.55 3.55 1.99 2.03 4.00 17.03 8.50	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29	80 1834	2188	21	427 5	14 3	383 387 52		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing 1  Net expose  Net exposed C  Exposed C	South Windows Skylight Doors ed walls A ed walls B Ceilings A	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64	80 1834	2188	21	427 5	14 3	383 387 52		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing I  Net expose Net expose Exposed C  Exposed C	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66	80 1834	2188	21	427 5	14 3	383 387 52		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Existing I  Net expose Net exposed C  Exposed C  Exposed C	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	80 1834	2188	21	427 5	14 3	383 387 52		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net expose Exposed C Exposed C Exposed C Foundation Conductive He	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss O	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66	80 1834 330 1577	2188	21 63	427 5	14 3 88 19 3 1 132 6	383 387 52 331 85		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net expose Exposed C Exposed C Exposed C Foundation Conductive He Total Conductive	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss OHeat Loss	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	80 1834	2188	21 63	427 5 301 4	14 3 8 19 3 1 132 6	383 887 52 331 85		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net exposed C Exposed C Exposed C Exposed T Total Conductive He	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss Heat Cos Heat Cain	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	80 1834 330 1577 3412	2188	21 63	427 5 301 4	14 3 88 19 3 1 132 6	383 387 52 331 85		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net exposed C Exposed C Exposed C Exposed T Total Conductive He	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eathers Heat Los Heat Gain Loss/Gain	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 x	80 1834 330 1577	2188	21 63	427 5 301 4	14 3 88 19 3 1 132 6	383 887 52 331 85		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net exposed C Exposed C Exposed C Exposed C Foundation Conductive H Total Conductive H Air Leakage Heat L	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss Heat Loss Heat Gain Loss/Gain Case 1	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 x	80 1834 330 1577 3412	2188	21 63	427 5 301 4	14 3 88 19 3 1 132 6	383 387 52 331 85		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net exposed C Exposed C Exposed C Exposed T Total Conductive	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings A Ceilings B sed Floors eatloss Heat Loss Heat Gain Loss/Gain Case 1 Case 2	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 On Grade (	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 x	330 1577 3412 1967	2188 7 213 2 2401 7 121	21 63	728 420	14 3 8 19 3 1 132 6 1 132 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	383 387 523 331 85 339 520 772 26		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net exposed C Exposed C Exposed C Exposed C  Exposed C	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss Heat Casi Heat Gain Loss/Gain Case 1 Case 2 Case 3	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 x	80 1834 330 1577 3412	2188 7 213 2 2401 7 121	21 63	728 420	14 3 18 19 3 1 132 6 18 5 7	383 387 52 331 85		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net expose Exposed C Exposed C Exposed C  Foundation Conductive H Total Conductive H Air Leakage Heat L Ventilation Heat Gai	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss Heat Coss Heat Gain Loss/Gain Case 1 Case 2 Case 3 ain People	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 on Grade (	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo  0.5766 0 0.05 14.07 0.06	10.91 27.35 20.89 22.15 0.65 1.29 0.64 1.66 0.17 x 0.505 0.11 11.88 0.11 239	80 1834 3330 1577 3412 1967	2188 2 213 2 2401 7 121 6 264	21 63	728 420	14 3 8 19 3 1 132 6 1 132 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	383 387 523 331 85 339 520 772 26		Gain	Loss Gair	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Net expose Net exposed C Exposed C Exposed C Exposed C Total Conductive He Total Conductive He Air Leakage Heat L Ventilation Heat Gal Applianc	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss O Heat Loss Heat Gain Loss/Gain Case 1 Case 2 Case 3 ain People ces Loads	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 On Grade (	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo  0.5766 0 0.05 14.07 0.06	10.91 27.35 20.89 22.15 20.65 1.29 0.64 1.66 0.17 x 0.505 0.11 11.88 0.11 1239 3216	330 1577 3412 1967	2188 7 213 2 2401 7 121	21 63	728 420	14 3 8 19 3 1 132 6 1 132 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	383 387 523 331 85 339 520 772 26		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Resisting I  Net expose Net exposed C Exposed C Exposed C Exposed C  Exposed	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss Heat Loss Heat Gain Loss/Gain Case 1 Case 2 Case 3 ain People cess Loads Pipe loss	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 On Grade (	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo  0.5766 0.05 14.07 0.06	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 0.17 x 0.505 0.11 11.88 0.11 239 3216 10%	330 1577 3412 1967 196	2188 2133 22 2401 121 3 264 804	21 63	728 420 42 1	14 3 8 19 3 11 132 6 11 132 6 11 132 11 11 11 11 11 11 11 11 11 11 11 11 11	383 387 52 331 85 339 520 77 57		Gain	Loss Gain	Loss	Gain	Loss Gain	Loss	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Resisting  Net expose Net exposed C Exposed C Exposed C Exposed C Exposed C Foundation Conductive H Total Conductive H Air Leakage Heat L Ventilation Heat Gal Applianc Duct and L Level 2 HL Total 8,5	South Windows Skylight Doors ed walls A ed walls A ed walls B Ceilings A Ceilings B Ceilings A Ceilings B Heat Loss Heat Gain Loss/Gain Case 1 Case 2 Case 3 an People ces Loads   Pipe loss   953	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 On Grade (	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 3.66 0.5766 0.05 14.07 0.06	10.91 27.35 20.89 22.15 22.15 0.65 1.29 0.66 0.17 x 0.505 0.11 11.88 0.11 239 2.15 0.10 0.17	80 1834 3330 1577 3412 1967	2138 2 2401 2 121 3 264 804	21 63	728 420 42 1	14 3 8 19 3 1 1 132 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	383 387 522 331 85 339 520 77 57		Gain	Loss Gair	Loss	Gain	Loss Gain	SI	Gain I	Loss Gain	Loss	Gain	Loss	Gain
Resisting  Net expose Net exposed C	South Windows Skylight Doors ed walls A ed walls B Ceilings A Ceilings B sed Floors eatloss Heat Loss Heat Gain Loss/Gain Case 1 Case 2 Case 3 ain People cess Loads Pipe loss	3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 On Grade (	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 ) or Abo  0.5766 0.05 14.07 0.06	10.91 27.35 20.89 22.15 22.15 0.65 1.29 0.66 0.17 x 0.505 0.11 11.88 0.11 239 2.15 0.10 0.17	330 1577 3412 1967 196	2188 2133 22 2401 121 3 264 804	21 63	728 420 42 1	14 3 8 19 3 1 1 132 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	383 387 52 331 85 339 520 77 57		Gain	Loss Gair	Loss	Gain	Loss Gain	SI	Gain I	Loss Gain	Loss	Gain	Loss	Gain

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

27,106 btu/h Total Heat Loss Division C subsection 3.2.5. of the Building Code. Individual BCIN: Total Heat Gain 15,863 btu/h

Man 16Cot 2

David DaCosta

SB-12 Package Package A1



#### Heatloss/Gain Calculations CSA-F280-12

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643

e-mail dave@gtadesigns.ca

	Builder: Bay	yview Wellington	Date:		June 2	, 2018			Weather Dat	a Bradford	44	-9.4 86 22	48.2		Page 5
2012 OBC	Project: Gr	reen Valley East	Model:		TH	-5		System 1	Heat Loss	^T 81.4 deg. F	Ht gain ^T	11 deg. F	GTA: 1894	Project Layou	# PJ-00204 # JB-04867
Level 3		MAST		LAUN		D 2	BED 3	BATH	ENS	<u></u>	<b>3-</b>				
Run ft. exposed wall A		16 A		A	9 A	10 Å		A	7 A	Α	Α	Α	А		Α
Run ft. exposed wall B		В		В	В			В	В	В	В	В	В		В
Ceiling height		8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	8.0	8	3.0
Floor area		394 Area		Area	149 Area	145 A	Area	63 Area	113 Area	Area	Area	Area		ea	Area
Exposed Ceilings A		394 A	117	Α	149 A	145 A	A	63 A	113 A	Α	Α	Α	Α		Α
Exposed Ceilings B		В		В	В			В	В	В	В	В	В		В
Exposed Floors		93 Fir		Flr	Flr		Flr	Flr	113 Flr	Flr	Flr	Flr	FI	r	Flr
Gross Exp Wall A		128			72	80			56						
Gross Exp Wall B	R-Values Loss		Gain	Loss Gain		s Gain L				Loss Gain	Loss	Gain Loss			
North Shaded	3.55 22.93		Gain	Loss Gair	Los	Gain L	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss	Gain Loss	Gain Lo	oss Gain	Loss Gain
East/West	3.55 22.93		903		16	867 438 16	367 438		17 390 4	85					
South	3.55 22.93		303		10	430 10	307 430		17 550 4						
Existing Windows	1.99 40.90														
Skylight	2.03 40.10														
Doors	4.00 20.35														
Net exposed walls A	17.03 4.78		61		56	268 36 64	306 41		39 186	25					
Net exposed walls B	8.50 9.58														
Exposed Ceilings A	59.22 1.37		253 117	161	75 149	96 145	199 93	63 87	40 113 155	73					
Exposed Ceilings B	22.86 3.56	1.66													
Exposed Floors	29.80 2.73	0.17 93 254	16						113 309	19					
Foundation Conductive Heatloss  Total Conductive Heat Loss		2006		161		339	872	87	1040						
Total Conductive Heat Coss		2006	1232		75	569	572			B2					
Air Leakage Heat Loss/Gain	0.4207	0.0505 844	62	68		353 29	367 29			29					
Case 1	0.04		02		7	23	307 23	, 30	400						
Ventilation Case 2	14.07														
Case 3	x 0.06		136	9	8	48 63	50 63	5	4 60	64					
Heat Gain People		239 2	478		1	239 1	239								
Appliances Loads	1 =.25 percent	3216	1.0	8	804										
Duct and Pipe loss		10%								58					
Level 3 HL Total 7,547  Level 3 HG Total 6,997	Total HL for Total HG per ro		2481	238	58	1170	1289 1174	128	1686	53					
Level 4															
Run ft. exposed wall A		A		A B	Α	,		Α	Α	Α	A B	Α	Α		Α
Run ft. exposed wall B					В	E	В	В	В	В		В			_
Ceiling height		В		_								_	В		В
					Ara		A	Aron		Arno					
Floor area		Area		Area	Are:		Area A	Area A	Area	Area A	Area	Area	A	rea	Area
Floor area Exposed Ceilings A		Area A		Area A	Α		A	Α	Area A	Α	Area A	Area A	A A		Area A
Floor area Exposed Ceilings A Exposed Ceilings B		Area A B		Area A B	A B	E	A B	A B	Area A B	A B	Area A B	Area A B	A A B		Area A B
Floor area Exposed Ceilings A		Area A		Area A	Α	E	A	Α	Area A	Α	Area A	Area A	A A		Area A
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors		Area A B		Area A B	A B	E	A B	A B	Area A B	A B	Area A B	Area A B	A A B		Area A B
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components		Area A B Fir	Gain	Area A B	A B Fir	, E F	A B	A B	Area A B Fir	A B	Area A B Fir	Area A B	Ai A B FI		Area A B
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded	3.55 22.93	Area A B Fir Cain Loss	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West	3.55 22.93 3.55 22.93	Area A B Fir Coss 10.91 27.35	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South	3.55 22.93 3.55 22.93 3.55 22.93	Area A B Fir Cain Loss 10.91 27.35 20.89	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90	Area A B Fir Cain 10.91 27.35 20.89 22.15	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Cellings A Exposed Cellings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10	Gain Loss  10.91 27.35 20.99 22.15 88.23	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed walls B Exposed Ceilings A	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35	Gain Loss  10.91 27.35 20.99 22.15 88.23 2.75 0.65 1.29	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Net exposed ceilings A Exposed Ceilings B Exposed Floors	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors Foundation Conductive Heatloss	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Food Ceilings A Exposed Ceilings A	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Net exposed ceilings A Exposed Ceilings B Exposed Floors Foundation Conductive Heat Coss Total Conductive Heat Coss Heat Gain	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73	Gain Loss  10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Exposed Floors South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors Foundation Conductive Heat Loss Total Conductive Heat Loss Heat Gain Air Leakage Heat Loss/Gain	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Net exposed ceilings A Exposed Ceilings B Exposed Floors Foundation Conductive Heat Coss Total Conductive Heat Coss Heat Gain	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings B Exposed Ceilings B Exposed Ceilings A Total Conductive Heat Loss Total Conductive Heat Loss Heat Gain Air Leakage Heat Loss/Gain	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73	Gain Loss 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.03 20.35 17.03 4.78 8.50 9.58 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73  0.0000 0.000 14.07 x 0.06	Gain Loss  10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17  0.0505 0.11 11.88 0.11 239	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors Foundation Conductive Heatloss Total Conductive Heat Cas Heat Gain Air Leakage Heat Loss/Gain Case 1 Ventilation Case 2 Case 3 Heat Gain People Appliances Loads	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73	Gain Loss  10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17  0.0505 0.11 11.88 0.11 239 3216	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings A Exposed Ceilin	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73  0.0000 0.00 14.07 x 0.06	Gain Loss  10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17  0.0505 0.11 11.88 0.11 239 3216 10%	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir
Floor area Exposed Ceilings A Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors Foundation Conductive Heatloss Total Conductive Heat Casi Air Leakage Heat Loss/Gain Ventilation Case 2 Case 3 Heat Gain People Appliances Loads	3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.03 20.35 17.03 4.78 8.50 9.58 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73  0.0000 0.000 14.07 x 0.06	Gain Loss  10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0505 0.11 11.88 0.11 239 3216 10% per room	Gain	Area A B Fir	A B Fir	, E F	A B Flr	A B Flr	Area A B Fir	A B Fir	Area A B Fir	Area A B Fir	Ai A B FI	•	Area A B Fir

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

27,106 Total Heat Loss btu/h Total Heat Gain 15,863 btu/h Division C subsection 3.2.5. of the Building Code. Individual BCIN:

Mane Maleta

David DaCosta

SB-12 Package Package A1



Page 6 PJ-00204

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 Project # e-mail dave@gtadesigns.ca Layout # JB-04867 I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code. Individual BCIN: 32964 David DaCosta Package: Package A1 Project: **Bradford** Model: TH-5 RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY For systems serving one dwelling unit & conforming to the Ontario Building Code, O.reg 332/12

	Location of Installation	
Lot #	Plan #	
Township	Bradford	
Roll #	Permit #	
Address		
	Builder	
Name		
	Bayview Wellington	
Address		
City		
Tel	Fax	

	Installing Contractor	
Name		
Address		
City		
Tel	Fax	

	Combustion Appliances 9.32.3.1(1)								
a)	Х	Direct vent (sealed combustion) only							
b)		Positive venting induced draft (except fireplaces)							
c)		Natural draft, B-vent or induced draft fireplaces							
d)		Solid fuel (including fireplaces)							
e)		No combustion Appliances							
<b>'</b>		• •							

Heating System								
Х	Forced air							
Non forced air								
	Electric space heat (if over 10% of heat load)							

	House Type 9.32.3.1(2)						
ı	Х	Type a) or b) appliances only, no solid fuel					
Ш		Type I except with solid fuel (including fireplace)					
Ш		Any type c) appliance					
IV		Type I or II either electric space heat					
Other		Type I, II or IV no forced air					

	System Design Option						
1		Exhaust only / forced air system					
2		HRV WITH DUCTING / forced air system					
3	Х	HRV simplified connection to forced air system					
4		HRV full ducting/not coupled to forced air system					
		Part 6 design					

Total Ventilat	Total Ventilation Capacity 9.32.3.3(1)										
Bsmt & Master Bdrm Other Bedrooms Bathrooms & Kitchen Other rooms	2 2 4 3	0 0 0	21.2 10.6 10.6 10.6 Total	cfm cfm	42.4 21.2 42.4 31.8 137.8	cfm					

Principal Ventilation Capacity 9.32.3.4(1)									
Master bedroom Other bedrooms	1 2	_	31.8 15.9 Total		31.8 31.8 63.6				

Principal Exhaust Fan Capacity							
Make	Model	Location					
LifeBreath	RNC155	Base					
132 cfm		Sones	or Equiv.				

	Heat Recovery Ventilator				
Make	LifeBreath				
Model	RNC155				
	132 cfm high	80 cfm low			
Sensible efficiency @ -25 deg C 71%					
Sensible effic	ciency @ 0 deg C	<u>75%</u>			

Note: Installer to balance HRV/ERV to within 10 percent of PVC

Supplemental Ventilation Capacity				
Total ventilation capacity Less principal exhaust capacity REQUIRED supplemental vent. Capacity	137.8 63.6 74.2 cfm			

Supplemental Fans 9.32.3.5.						
Location	cfm	Model	Sones			
Ens	50	XB50	0.3			
Bath	50	XB50	0.3			
all fans HVI listed	Make	Broan	or Equiv.			

, ,	Designer Certification  that this ventilation system has been designed with the Ontario Building Code.
Name	David DaCosta
Signature	Mana Aleta
HRAI#	5/190 BCIN# \$2964
Date	June 20, 2018

# ♦GTADESIGNS

## **Energy Efficiency Design Summary: Prescriptive Method**

(Building Code Part 9, Residential)

Page 7

Project # PJ-00204 Layout # JB-04867

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

			For use by F	Princip	oal Author	ity				
Application No:				Model/Certification Number						
A. Project Information					ı					
Building number, street name							Unit numb	er	Lot/Con	
			TH-5							
Municipality Bradford			Postal code		Reg. Plan	number / otl	ner descrip	tion	•	
B. Prescriptive Compliance [indica	ite the bu	ilding cod	e compliance p	oacka	ge being e	employed in	the house	design]		
SB-12 Prescriptive (input design pa	ckage):		<u> </u>	Pack	age A1			Table	3.1.1.2.	<u>A</u>
C. Project Design Conditions										
Climatic Zone (SB-1):		Heat. E	quip. Efficie	ncy			Spac	e Heating F	uel Sour	e
✓ Zone 1 (< 5000 degree days)		√ ≥ 9:	2% AFUE		<b>V</b>	Gas		Propane		Solid Fuel
☐ Zone 2 (≥ 5000 degree days)		□ ≥8	34% < 92% AF	UE		Oil		Electric		Earth Energy
Ratio of Windows, Skylights & Glas	s (W, S	& G) to	Wall Area				Other	Building Ch	aracteris	tics
Assa of Walls 204.00 m2 on 2474.0	42				☐ Log/F	Post&Beam		ICF Above	Grade	☐ ICF Basement
Area of Walls = <u>294.68</u> m <sup>2</sup> or <u>3171.9</u>	ft²	W,S &	.G % = <u>6</u>	<u>%</u>	☐ Slab	on-ground	П	Walkout Ba	sement	
					☑ Air C	onditioning	П	Combo Uni	t	
Area of W, S & G = <u>18.487</u> m <sup>2</sup> or <u>199.0</u>	ft²	Utilize \	Nindow □	Yes	☐ Air S	ourced Hea	t Pump (A	SHP)		
		Aver	aging 🔽	No	☐ Grou	ind Source I	Heat Pum	o (GSHP)		
D. Building Specifications [provide	values a	nd ratings	s of the energy	effici	ency comp	onents prop	posed]			
Energy Efficiency Substitutions										
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5))										
☐ Combined space heating and domestic	water he	ating sys	tems (3.1.1.2(7	7) / 3.′	1.1.3.(7))					
☐ Airtightness substitution(s)		Table 3.	1.1.4.B Requ	uired:				Permitted S	Substitution	1:
Airtightness test required		Table 3.	Requ	uired:				Permitted S	Substitution	1:
(Refer to Design Guide Attached)		i able 3.		uired:				Permitted S	Substitution	n:
Building Component			SI/R-Values on U-Value¹	r		Buile	ding Cor	nponent		Efficiency Ratings
Thermal Insulation	Non	ninal	Effective	е	Windov	vs & Doo	rs Provid	e U-Value <sup>(1)</sup> c	r ER rating	l
Ceiling with Attic Space	6	0			Window	s/Sliding G	lass Doo	rs		1.6
Ceiling without Attic Space	3	1			Skylights	5				2.8
Exposed Floor	3	51			Mechai	nicals				
Walls Above Grade	22				Heating	Equip.(AFL	JE)			96%
Basement Walls		20.0ci			HRV Efficiency (SRE% at 0°C)			75%		
Slab (all >600mm below grade)	1	x DHW Heater (EF)						0.80		
Slab (edge only ≤600mm below grade)	1	10		DWHR (CSA B55.1 (min. 42% efficiency))		#Showers 2				
Slab (all ≤600mm below grade, or heated)	1	0			Combine	ed Heating	System			
(1) U value to be provided in either W/(m²·K) or Bt	u/(h·ft·F) b	out not bo	th.							
E. Designer(s) [name(s) & BCIN(s), if	applicable	e, of perso	on(s) providing	inforr	mation her	ein to subst	antiate tha	at design mee	ts building	code]
Name			BCII	N		Signature				
David DaCosta				329	964			Mane	14C=	₹ 7
Form authorized by OHRA OROA IMCRO Revised December 1, 20						<u> </u>				

Form authorized by OHBA, OBOA, LMCBO. Revised December 1, 2016.





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Page PJ-00204

Project # Layout # JB-04867

Package: Package A1 System 1 System: **Bradford** Model: **TH-5** 

#### Project: Air Leakage Calculations **Building Air Leakage Heat Loss Building Air Leakage Heat Gain** В LRairh Vb **HLleak** В LRairh Vb HG^T **HG** Leak 0.018 0.324 22196 81.4 10530 0.018 0.079 22196 11 347 Levels Air Leakage Heat Loss/Gain Multiplier Table (Section 11) 1 2 3 4 Level Building Level Conductive Air Leakage Heat Loss (LF) (LF) (LF) (LF) Level Factor (LF) Air **Heat Loss** Multiplier 1.0427 1.0 0.5 0.4 Level 1 0.5 5049 0.6 Level 2 0.5766 5479 0.3 0.3 0.4 0.3 10530 Level 3 5005 0.4207 0.2 0 0.0000 Level 4 0 0.1 Air Leakage Heat Gain Levels this Dwelling **HG LEAK** 347 0.0505 3 **BUILDING CONDUCTIVE HEAT GAIN** 6870 **Ventilation Calculations Ventilation Heat Loss** Ventilation Heat Gain /ent Vent Ventilation Heat Loss **Ventilation Heat Gain** PVC (1-E) HRV **HLbvent** PVC HG^T **HGbvent** 1.08 895 756 63.6 81.4 0.16 1.1 63.6 11 Case 1 Case 1 Ventilation Heat Loss (Exhaust only Systems) Ventilation Heat Gain (Exhaust Only Systems) Case 1 - Exhaust Only Case 1 - Exhaust Only Multiplier Case Case Level LF HLbvent LVL Cond. HL Multiplier **HGbvent** 756 0.11 Building 6870 5049 Level 1 0.5 0.09 Level 2 0.3 5479 0.05 895 5005 Level 3 0.2 0.04 Level 4 0 0.00 Case 2 Case 2 **Ventilation Heat Loss (Direct Ducted Systems) Ventilation Heat Gain (Direct Ducted Systems)** Case Case Multiplier Multiplier HL^T (1-E) HRV HG^T С 14.07 11.88 1.08 1.08 81.4 0.16 Case 3 Case 3 Ventilation Heat Loss (Forced Air Systems) Ventilation Heat Gain (Forced Air Systems) ase **HLbvent** Multiplier Vent Heat Gain Multiplier **HGbvent** HG\*1.3 **Total Ventilation Load** 0.06 756 0.11 756

Foundation Conductive Heatloss Level 1 1200 Watts 4094 Btu/h **Foundation Conductive Heatloss Level 2** Watts Btu/h

# **Envelope Air Leakage 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 Shiel	ding
Building Site:	Suburban, forest ▼
Walls:	Heavy ▼
Flue:	Heavy ▼
Highest Ceiling Height (m):	6.55
Building Confi	guration
Type:	Semi-Detached
Number of Stories:	Two
Foundation:	Shallow
House Volume (m³):	628.58
Air Leakage/Ve	entilation
Air Tightness Type:	Present (1961-) (ACH=3.57)
	ELA @ 10 Pa. 322.44 cm <sup>2</sup>
Custom BDT Data:	3.57 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply: Total Exhaust:
	31.8
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Heating Air Leakage Rate (ACH/H):	0.324
Cooling Air Leakage Rate (ACH/H):	0.079

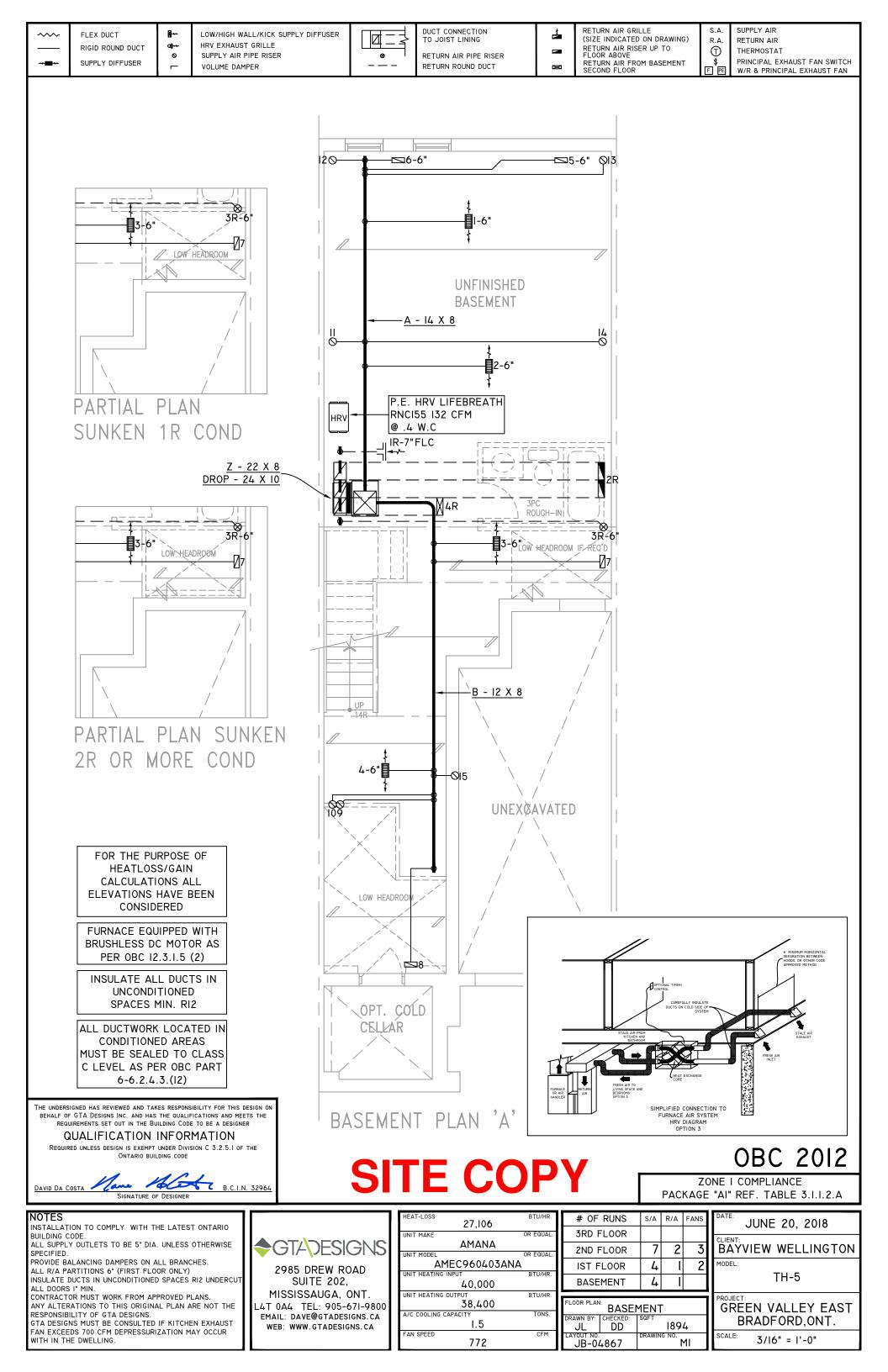


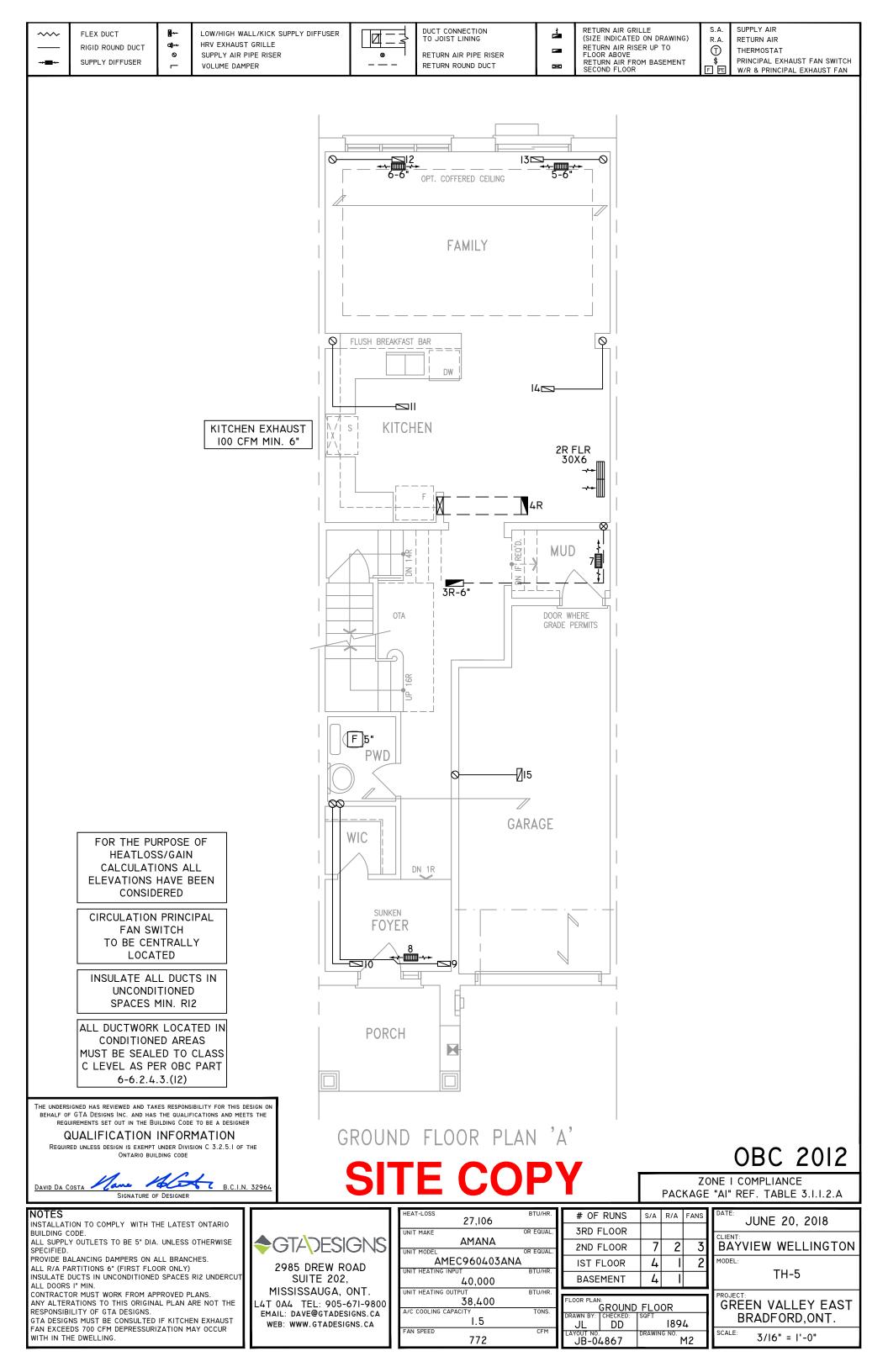
# **Residential Foundation Thermal Load Calculator**

Supplemental tool for CAN/CSA-F280

Weather Station Description							
Province:		Ontario					
Region:		Bradford					
Site Description							
Soil Conductivity:	Soil Conductivity: High conductivity: moist soil						
Water Table:		Normal (7-10 m, 23-33 Ft)					
Fou	ındatio	on Dimensions					
Floor Length (m):	18.51						
Floor Width (m):	3.89						
Exposed Perimeter (m):	19.20						
Wall Height (m):	2.59						
Depth Below Grade (m):	1.52	Insulation Configuration					
Window Area (m²):	2.14						
Door Area (m²):	1.95						
	Radi	ant Slab					
Heated Fraction of the Slab:	0						
Fluid Temperature (°C):	33						
	Desig	n Months					
Heating Month	1						
	Founda	ation Loads					
Heating Load (Watts):		1200					







DUCT CONNECTION TO JOIST LINING RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) SUPPLY AIR LOW/HIGH WALL/KICK SUPPLY DIFFUSER 4 FLEX DUCT RETURN AIR R.A. HRV EXHAUST GRILLE **a**]⊶ ⊘ RETURN AIR RISER UP TO FLOOR ABOVE RIGID ROUND DUCT 1 THERMOSTAT SUPPLY AIR PIPE RISER RETURN AIR PIPE RISER 8 RETURN AIR FROM BASEMENT SECOND FLOOR PRINCIPAL EXHAUST FAN SWITCH SUPPLY DIFFUSER RETURN ROUND DUCT **VOLUME DAMPER -**^-**□□□**-^ BEDROOM 2 BEDROOM 3 LINEN BATH .AUNDR\ F 5" (F |5)" F.D. REFER TO 4R HW GRAB BAR 14X8 WIC 3R LW 14,X8 OTB SHOWER

> MASTER **BEDROOM**

UNCONDITIONED SPACES MIN. RI2

CONDITIONED AREAS MUST BE SEALED TO CLASS C LEVEL AS PER OBC PART 6-6.2.4.3.(12)

THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN ON BEHALF OF GTA DESIGNS INC. AND HAS THE QUALIFICATIONS AND MEETS THE REQUIREMENTS SET OUT IN THE BUILDING CODE TO BE A DESIGNER

QUALIFICATION INFORMATION

Required unless design is exempt under Division C 3.2.5.I of the ONTARIO BUILDING CODE

SIGNATURE OF DESIGNER

B.C.I.N. 32964

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE. ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

PROVIDE BALANCING DAMPERS ON ALL BRANCHES. ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY) INSULATE DUCTS IN UNCONDITIONED SPACES RIZ UNDERCUT ALL DOORS I\* MIN.

CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE

RESPONSIBILITY OF GTA DESIGNS. GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



2985 DREW ROAD SUITE 202,

MISSISSAUGA, ONT. L4T 0A4 TEL: 905-671-9800 EMAIL: DAVE@GTADESIGNS.CA WEB: WWW.GTADESIGNS.CA

HEAT-LOSS BTU/HR.	
27,106	
UNIT MAKE OR EQUAL.	
AMANA	
UNIT MODEL OR EQUAL.	
AMEC960403ANA	
UNIT HEATING INPUT BTU/HR.	╙
40,000	
UNIT HEATING OUTPUT BTU/HR.	
38,400	FLO
A/C COOLING CAPACITY TONS.	DRA
1.5	DRA
FAN SPEED CFM	LAY
772	

**1**5

**ENSUITE** 

5'-0" OVAL TUB

(F |5)"

ROOF BELOW

# OF RUNS	S/A	R/A	FANS	Ī	D
3RD FLOOR					L
2ND FLOOR	7	2	3		
IST FLOOR	4	I	2		٢
BASEMENT	4	ı			
ELOOD DI ANI.				il	Р
FLOOR PLAN: SECOND	FL0	OR		ı	

OOR PLAN:						
SECOND FLOOR						
AWN BY:	CHECKED:	SQFT				
. II	ממ	1894				
YOUT NO.		DRAWING NO.				
JB-04		M3				
JD-04	4007	113				

PACKAGE "AI" REF. TABLE 3.1.1.2.A JUNE 20, 2018 **BAYVIEW WELLINGTON** TH-5 GREEN VALLEY EAST

3/16" = 1'-0"

BRADFORD, ONT.

FOR THE PURPOSE OF HEATLOSS/GAIN CALCULATIONS ALL **ELEVATIONS HAVE BEEN** CONSIDERED

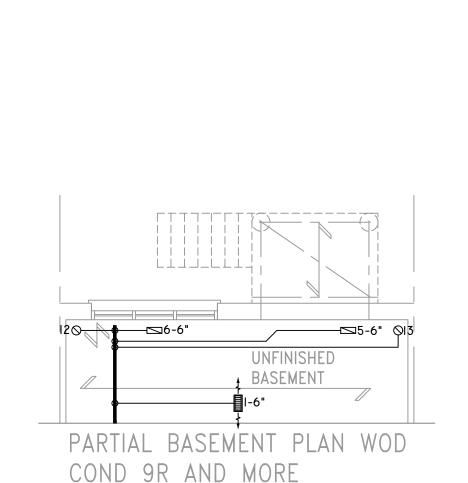
INSULATE ALL DUCTS IN

ALL DUCTWORK LOCATED IN

SECOND FLOOR PLAN 'A'

ROOF BELOW

OBC 2012 ZONE I COMPLIANCE



LOW/HIGH WALL/KICK SUPPLY DIFFUSER

HRV EXHAUST GRILLE

VOLUME DAMPER

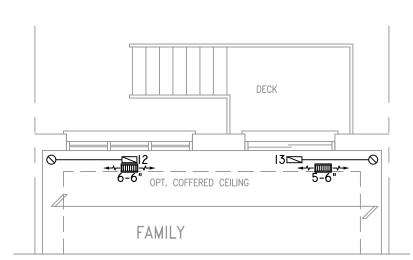
SUPPLY AIR PIPE RISER

**a|**→ 0

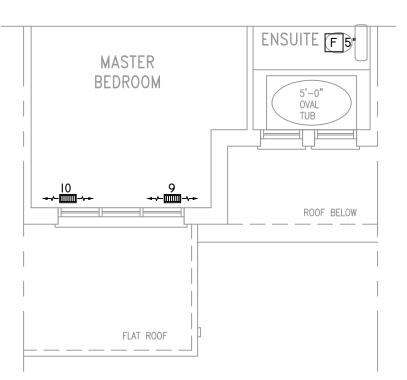
FLEX DUCT

RIGID ROUND DUCT

SUPPLY DIFFUSER



PARTIAL GROUND FLOOR PLAN WOD COND 9R AND MORE



RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)

RETURN AIR FROM BASEMENT SECOND FLOOR

RETURN AIR RISER UP TO FLOOR ABOVE

À

DUCT CONNECTION

RETURN AIR PIPE RISER

RETURN ROUND DUCT

TO JOIST LINING

SUPPLY AIR

RETURN AIR

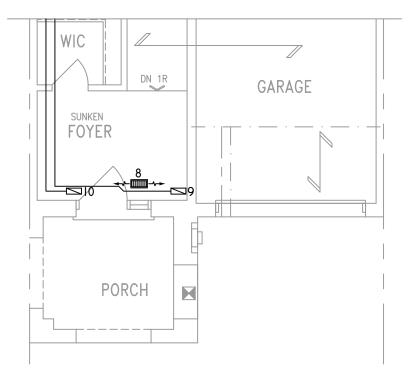
THERMOSTAT

PRINCIPAL EXHAUST FAN SWITCH

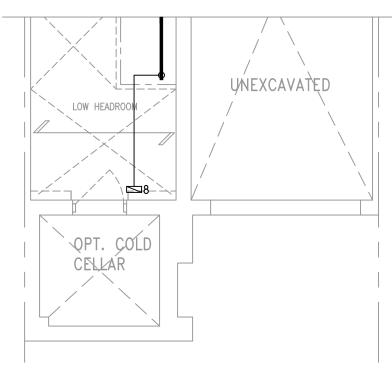
R.A

1

PARTIAL SECOND FLOOR PLAN 'B'



PARTIAL GROUND FLOOR PLAN 'B'



PARTIAL BASEMENT PLAN 'B'

# THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN ON BEHALF OF GTA DESIGNS INC. AND HAS THE QUALIFICATIONS AND MEETS THE REQUIREMENTS SET OUT IN THE BUILDING CODE TO BE A DESIGNER QUALIFICATION INFORMATION REQUIRED UNLESS DESIGN IS EXEMPT UNDER DIVISION C 3.2.5.1 OF THE ONTARIO BUILDING CODE DAVID DA COSTA B.C.I.N. 32964

# SITE COPY

OBC 2012

ZONE I COMPLIANCE PACKAGE "AI" REF. TABLE 3.1.1.2.A

# NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.
ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT
ALL DOORS I" MIN.

CONTRACTOR MUST WORK FROM APPROVED PLANS. ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.

RESPONSIBILITY OF GTA DESIGNS.
GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST
FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR
WITH IN THE DWELLING.



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27,106	BIU/HK.
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
AMEC960403AN	
UNIT HEATING INPUT	BTU/HR.
40,000	
UNIT HEATING OUTPUT	BTU/HR.
38,400	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
772	

# OF RUNS		S/A	R/A	FANS	Γ
3RD FLOOR					ŀ
2ND FLOOR		7	2	3	
IST FLOOR		4	I	2	Ī
BASEMENT		4	-		
FLOOR PLAN: PARTIAL PLAN(S)					Ī
DRAWN BY: CHECKED: SQFT  JL DD 1894			L		

M4

JB-04867

AI NEI: TABLE GIIIILLIA		
JUNE 20, 2018		
BAYVIEW WELLINGTON		
MODEL: TH-5		
PROJECT: GREEN VALLEY EAST BRADFORD,ONT.		

3/16" = 1'-0"