

## **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:	68-B
Model 1750 -	Lot 68-B			Lot/con.	
Municipality Richmond Hill	Postal code	Plan number/ other description	er		
B. Individual who reviews and takes responsibility for desig	n activities				
Name David DaCosta		Firm		gtaDesigns Inc.	
Street address 2985 Drew Road	d, Suite 202		U	nit no.	Lot/con.
Municipality	Postal code	Province	E	-mail	
Mississauga	L4T 0A4	Ontario		hvac@gtades	igns.ca
Telephone number (905) 671-9800	Fax number		С	ell number	
C. Design activities undertaken by individual identified in Se	ection B. [Buil	ding Code Tabl	le 3.5.	2.1 of Division C]	
☐ House ☒ HVAC – Ho	ouse			Building Structural	
☐ Small Buildings ☐ Building Se	rvices			Plumbing – House	
☐ Large Buildings ☐ Detection, L	ighting and Pow	er		☐ Plumbing – All Buildings	S
☐ Complex Buildings ☐ Fire Protect	ion			On-site Sewage System	ns
Description of designer's work Mod	lel Certification			Project #:	PJ-00267
				Layout #:	JB-09509
Heating and Cooling Load Calculations Main		Builder		EM Air	
Air System Design Alternate Residential mechanical ventilation Design Summary O.D. GFA	1742	Project		King East Developme	ents
Residential System Design per CAN/CSA-F280-12	11-42	Model		Model 1750 - Lot 68	3-B
Residential New Construction - Forced Air		SB-12		Energy Star	
D. Declaration of Designer					
l David DaCosta	declare that (c	choose one as ap	ppropr	iate):	
(print name)	•				
(					
☐ I review and take responsibility for the	ne desian work o	n behalf of a firm re	reaister	ed under subsection 3.2.4	
Division C of the Building Code. I an					
classes/categories.					
Individual BCIN:					
Firm BCIN:					
☑ I review and take responsibility for designer" under subsection 3.2.5 of	•	•	appropi	riate category as an "other	
Individual BCIN:	3296	64			
Basis for exempt	ion from registra	tion:	Div	ision C 3.2.4.1. (4)	
☐ The design work is exempt from the	registration and	qualification requir	rement	s of the Building Code.	
Basis for exempt	ion from registra	tion and qualification	on:		
I certify that:					
The information contained in this schedule is true to the best of my	y knowledge.				
I have submitted this application with the knowledge and consent	of the firm.				
June 24, 2024		Mana 1	46	26	
Date		Signature o	of Desig	ner	'

NOTE:

Page 1

- 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, temporary 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 licence 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 e-mail hvac@gtadesigns.ca

Page 2

Heat loss and gain calcula	tion summary sheet CSA-F280-M12 Standard
These documents issued for the use of	EM Air Layout No.
and may not be used by any other persons without authorization. Documents	for permit and/or construction are signed in red. JB-09509
Building L	ocation
Address (Model): Model 1750 - Lot 68-B	Site: King East Developments
Model:	Lot: 68-B
City and Province: Richmond Hill	Postal code:
Calculations	based on
Dimensional information based on:	chitectural Design Inc. May/2024
Attachment: Semi	Front facing: East/West Assumed? Yes
No. of Levels: 3 Ventilated? Included	Air tightness: 1961-Present (ACH=3.57) Assumed? Yes
Weather location: Richmond Hill	Wind exposure: Sheltered
HRV? VanEE V150E75NS	Internal shading: Light-translucent Occupants: 4
Sensible Eff. at -25C 60% Apparent Effect. at -0C 80%	Units: Imperial Area Sq ft: 1742
Sensible Eff. at -0C 75%	
Heating design conditions	Cooling design conditions
Outdoor temp -5.8 Indoor temp: 72 Mean soil temp: 50	Outdoor temp 88 Indoor temp: 75 Latitude: 44
Above grade walls	Below grade walls
Style A: As per OBC SB12 Energy Star R 22 + 5ci	Style A: As per OBC SB12 Energy Star R 20ci
Style B:	Style B:
Style C:	Style C:
Style D:	Style D:
Floors on soil	Ceilings
Style A: As per Selected OBC SB12 Energy Star	Style A: As per Selected OBC SB12 Energy Star R 60
Style B:	Style B: As per Selected OBC SB12 Energy Star R 31
Exposed floors	Style C:
Style A: As per Selected OBC SB12 Energy Star R 31	Doors
Style B:	Style A: As per Selected OBC SB12 Energy Star R 4.00
Windows	Style B:
Style A: As per Selected OBC SB12 Energy Star R 4.00	Style C:
Style B:	Skylights
Style C:	Style A: As per Selected OBC SB12 Energy Star R 2.03
Style D:	Style B:
Attached documents: As per Shedule 1 Heat Loss/G	ain 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:
City: Mississauga	E-mail hvac@gtadesigns.ca



EM Air

Date:

Builder:

## Air System Design

**Energy Star** SB-12

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

June 24, 2024

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.

Page 3 Project # PJ-00267

Project: King East	Developn	nents		Model:		Mod	lel 1750 ·	Lot 68-	В			Sy	stem 1			Building C ndividual		32964	Man	. 1h	GH-c		David DaCo	sta		ject # yout #		·00267 ·09509
DESIGN LOAD SPECIFICATION	NS		A	AIR DISTR	IBUTION 8	& PRESSU	RE				F	URNACE/	AIR HAND	LER DAT	A:		E	OILER/W	ATER HEA	TER DAT	Γ <b>A</b> :			Δ	VC UNIT D	ATA:		
Level 1 Net Load Level 2 Net Load Level 3 Net Load Level 4 Net Load Total Heat Loss	10,462 i 8,878 i 8,798 i 0 i 28,138 i	otu/h otu/h otu/h	<i>A</i> <i>A</i> F	Additional Available D Return Bra	Equipmer Design Pre	est Effecti	e Drop		0.5 "1 0.225 "1 0.275 "1 300 ft 0.138 "1	w.c. w.c.	N H	Make Model High Input High Outpu E.s.p.		Carri 9SC5B040 4000 3900 0.50	)E1410 )O B	BTU/h BTU/h W.C.	M II	Make Model nput Btu/l Dutput Btu Min.Outpu	ı/h			уре		N C	Carrier - AS Model: Cond		1.5 T 1.5 1.5	on
Total Heat Gain	16,745 I	otu/h	s	S/A Plenur	n Pressur	e			0.14 "	w.c.		Vater Temp	0		d	leg. F.							wer DATA:					
Building Volume Vb Ventilation Load Ventilation PVC Supply Branch and Grill Sizing	20732 f 1,069 l 63.6 d	Btuh.	C	Cooling Ai	r Flow Pro		g Facter //A Temp //A Temp		0.0197 c 0.0331 c 70 d 135 d	fm/btuh eg. F.	E	Thermal Eff	at	es d	98%		C	heck	555 cf	m C	Blue		555 cf	m		ess DC OI	ECM BC 12.3.1.9 555 c	
Supply Branch and Grill Sizing			L	Diffuser lo	ss =	0.01	w.c.				'	Temp. Rise	··· =	65 0	leg. F.		Г	leat.	<u> </u>	m c	Cooling	=	<u> </u>	m L	esign Airf	iow =	<u> </u>	ım
							Level	1													Level	2						
S/A Outlet No.	1	2	3												4	5	6	7	8									
Room Use Btu/Outlet	BASE 3487	BASE 3487	BASE 3487												KIT 2035	GRT 3102	WR 888	FOY 2286	LAUN 567									
Heating Airflow Rate CFM	3467 69	3467 69	3467 69												40	61	18	45	11									
Cooling Airflow Rate CFM	12	12	12												116	89	22	26	34									
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Actual Duct Length	27	20	25	00	00	00	0.10	00	00	00	00		00	00	30	24	32	29	12	00	00	00	00	00	00	00	00	00
Equivalent Length	110	120	100	70	70	70	70	70	70	70	70	70	70	70	90	80	80	90	130	70	70	70	70	70	70	70	70	70
Total Effective Length	137	140	125	70	70	70	70	70	70	70	70	70	70	70	120	104	112	119	142	70	70	70	70	70	70	70	70	70
Adjusted Pressure	0.09	0.09	0.10	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.11	0.13	0.12	0.11	0.09	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Duct Size Round	5	5	5	00	00	00	0.10	00	00	00	00		01.10	00	6	6	3	5	4	00	00	00	00	00	00	00	00	00
Outlet Size	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	В	В	С												В	В	С	С	С									
							Level	3													Level	4						
S/A Outlet No.	9	10	11	12	13	14																						
Room Use	P.BED	P.BED	ENS	BED 3	BED 2	BATH																						
Btu/Outlet	1451	1451	1455	2002	2171	268																						
Heating Airflow Rate CFM	29	29	29	39	43	5																						
Cooling Airflow Rate CFM	48	48	33	48	56	3																						
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Actual Duct Length	48	53	32	45	43	27																						
Equivalent Length	130	140	150	90	140	150	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Total Effective Length	178	193	182	135	183	177	70	70	70	70	70	70	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	0.07	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Duct Size Round	5	5	4	6	6	2																						
Outlet Size	3x10	3x10	3x10	4x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	В	В	В	С	С	С																						
Return Branch And Grill Sizing	q		Grill Press	ure Loss		0.02 "	w.c					R	eturn Tru	nk Duct S	izing					s	Supply Tru	nk Duct S	Sizing					
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R	_	runk			ress. F	Round	Rect.	Size					ess. R	Round	Rect.	Size	
Inlet Air Volume CFM	103	242	105	105	-	-		-	-	-		-				•				-	_	-		-				
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	D	rop		555	0.06	12.5	24x10		Δ	4	555	555	0.07	12.0	16x8	12x10	
Actual Duct Length	5	9	39	49								z	-		555	0.06	12.5	18x8	14x10	Е		356	325	0.07	10.5	12x8	10x10	
Equivalent Length		165	140	160	50	50	50	50	50	50	50	Υ								c	:	199	230	0.07	9.0	8x8	10x7	
Equivalent Length	155				50	50	50	50	50	50	50	х									)							
Total Effective Length	155 160	174	179	209	30																							
		174 0.07	179 0.07	0.06	0.24	0.24	0.24	0.24	0.24	0.24	0.24	W	ı							Е	•							
Total Effective Length	160							0.24	0.24	0.24	0.24	w v	1							F	:							
Total Effective Length Adjusted Pressure	160 0.07	0.07	0.07	0.06				0.24	0.24	0.24	0.24									E F								
Total Effective Length Adjusted Pressure Duct Size Round	160 0.07 6.0	0.07 9.0	0.07 6.0	0.06 6.0				0.24 x	0.24 x	0.24 x	0.24 x	V								F	3							
Total Effective Length Adjusted Pressure Duct Size Round Inlet Size	160 0.07 6.0 FLC	0.07 9.0 8	0.07 6.0 8	0.06 6.0 8		0.24	0.24	0.24 x	0.24 x			v u								F	3							
Total Effective Length Adjusted Pressure Duct Size Round Inlet Size	160 0.07 6.0 FLC	0.07 9.0 8 x	0.07 6.0 8 x	0.06 6.0 8 x		0.24	0.24	0.24 x	0.24 x			V U T								F	: 3 1							



Total Heat Loss

Total Heat Gain

28,138 btu/h

16,745 btu/h

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

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

e-mail hvac@gtadesigns.ca

Name Alexa

David DaCosta

**Energy Star** 

32964

		Builder:	EM	Air		,	Date:		•	June 24, 2	2024						Weat	her Data	Rich	mond Hill	44	-5.8	88 20	50					Pag
2012 OBC		Project:	King East De	velopmer	nts	м	lodel:		Mode	el 1750 - L	Lot 68-B		_	Sy	stem 1		Heat	t Loss ^T	77.8 deg.	F	Ht gain ^T	12.8	deg. F					ect # out #	PJ-00 JB-09
	Level 1  Ift. exposed wall A  Ift. exposed wall B  Ceiling height			4.0	B AG		A B 4.0 AG	3	4.	A B .0 AG		A B 4.0 AG		A B 4.0 A		4.0	A B D AG		A B 4.0 AG		A B 4.0 AG		A B 4.0 AG		4.0			A B 4.0 AG	
_	Floor area			676			Ar			Area		Area			ea		Area		Area		Area		Area	1		Area		Area	a
	Exposed Ceilings A Exposed Ceilings B				A B		A B			A B		A B		A B			A B		A B		A B		A B			A B		A B	
-	Exposed Floors				Fir		Fli			Fir		Fir		FI			Flr		Flr		Flr		Fir			Fir		Flr	
	Gross Exp Wall A			440																									
	Gross Exp Wall B			_																									
	Components				Loss	Gain	Lo	ss Ga	ain	Loss	Gain	Loss	Gain	Lo	ss Gair	n	Loss	Gain	Loss	Gain	Loss	Gain	Loss	s Gain		Loss	Gain	Loss	s Gai
	North Shaded	4.00 4.00	19.45 11. 19.45 29.		07	440																							
	East/West South	4.00	19.45 29.		97 195																								
WOB Windows	ws Including Doors	4.00	19.45 27.																										
	Skylight	2.03	38.33 89.																										
	Doors	4.00		0 21	408																								
	et exposed walls A	21.12	3.68 0.			245																							
	et exposed walls B Exposed Ceilings A	21.40 59.22	3.64 0. 1.31 0.																										
	Exposed Ceilings B	27.65	2.81 1.																										
	Exposed Floors	29.80	2.61 0.																										
oundation Condu	luctive Heatloss				4701																								
al Conductive	Heat Loss				5402																								
	Heat Gain				4=00	686																							
ir Leakage	Heat Loss/Gain Case 1		0.8753 0.05 0.10 0.		4728	39																							
entilation	Case 2		16.80 13.																										
	Case 3	х	0.06 0.		332	79																							
	Heat Gain People		2	9																									
,	ricat Canti Copic																												
	Appliances Loads	1 =.25 pe	ercent 28	1																									
D	Appliances Loads Duct and Pipe loss		10	%	40400																								
D evel HL Total evel HG Total	Appliances Loads Duct and Pipe loss 10,462 1,045 Level 2	Tot	ercent 28 10 ial HL for per roo HG per room x '	% n 3	10462 KIT	1045		GRT	1	WR O A		FO 29 A	Y		LAUN											Δ			
Run 1 Ex	Appliances Loads Duct and Pipe loss 10,462 1,045  Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors	Tot	10 tal HL for per roo	15 10.0 222	KIT A B Area A B	1045	46 A B 10.0 258 Ar A B	ea	10. 2	0 A B .0 7 Area A B Fir		29 A B 10.0 104 Area A B Flr	Y	10 A B 10.0 60 A A B	ea	10.6	A B ) Area A B		A B 10.0 Area A B Fir		A B 10.0 Area A B Fir		A B 10.0 Area A B Fir	1	10.0	A B Area A B Fir		A B 10.0 Area A B Fir	a
Run 1	Appliances Loads Duct and Pipe loss 10,462 1,045 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A	Tot	10 tal HL for per roo	15 10.0 222	KIT A B Area A B	1045	46 A B 10.0 258 Ar A B	ea	10.	0 A B .0 7 Area A B Fir		29 A B 10.0 104 Area A B	Y	10 A B 10.0 60 A A B	ea	10.0	B O Area A B		B 10.0 Area A B		B 10.0 Area A B		B 10.0 Area A B	1	10.0	B Area A B		B 10.0 Area A B	a
Run f	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall A If. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Gross Exp Wall B Gross Exp Wall B	Total	al HL for per roc	15 10.0 222	KIT A B Area A B Fir		46 A B 10.0 258 An A B Fli	ea	10. 2	0 A B .0 P7 Area A B FIr		29 A B 10.0 104 Area A B Fir 290		10 A B 10.0 60 Ai A B FI 100	ea r		B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run f	Appliances Loads Duct and Pipe loss 10,462 1,045  Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components	Total Total	al HL for per room x*	15 10.0 222	KIT A B Area A B Fir	1045	46 A B 10.0 258 An A B Fli	ea	10. 2	0 A B .0 P7 Area A B FIr	Gain	29 A B 10.0 104 Area A B Flr		10 A B 10.0 60 Ai A B FI 100	ea		B O Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B		10.0	B Area A B Fir	Gain	B 10.0 Area A B	
Run f	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall A If. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Gross Exp Wall B Gross Exp Wall B	Total	al HL for per roc	15 10.0 222 150	KIT A B Area A B Fir	Gain	46 A B 10.0 258 An A B Fli	ea Oss Ga	10. 2	O A B O O O O O O O O O O O O O O O O O O	Gain	29 A B 10.0 104 Area A B Fir 290	Gain	10 A B 10.0 60 Ai A B FI 100	ea r		B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South	Total   R-Values L 4.00 4.00 4.00	oss Gain 19.45 21. 19.45 22.	150 150 3 3 66 35 0 13	KIT A B Area A B Fir	Gain 1038	46 A B 10.0 258 Ar A B Fli 460	ea Oss Ga	10. 2 10	O A B O O O O O O O O O O O O O O O O O O	Gain	29 A B 10.0 104 Area A B Fir 290 Loss	Gain	10 A B 10.0 60 Ai A B FI 100	ea r		B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run (	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall A ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows	R-Values L 4.00 4.00 4.00 1.99	oss Gain 19.45 11. 19.45 29. 19.45 22. 39.10 24.	150 150 33 150 33 366 35 66	KIT A B Area A B FIr Loss	Gain 1038	46 A B 10.0 258 Ar A B Fli 460	ea Oss Ga	10. 2 10	O A B O O O O O O O O O O O O O O O O O O	Gain	29 A B 10.0 104 Area A B Fir 290 Loss	Gain	10 A B 10.0 60 Ai A B FI 100	ea r		B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run (	Appliances Loads Duct and Pipe loss 10,462 1,045  If. exposed wall A If. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight	R-Values L 4.00 4.00 4.00 1.99 2.03	oss Gain 19.45 11. 19.45 29. 19.45 22. 39.10 24.	150 150 3 3 6 35 6 35 6 13	KIT A B Area A B FIr Loss	Gain 1038	46 A B 10.0 258 Ar A B Fli 460	ea Oss Ga	10. 2 10	O A B O O O O O O O O O O O O O O O O O O	Gain	29 A B 10.0 104 Area A B Fir 290 Loss	Gain 15 297	10 A B 10.0 60 Ai A B FI 100	ea r		B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall A 1ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors	R-Values L 4.00 4.00 4.00 1.99	oss Gain 19.45 22. 39.10 24. 38.33 89. 19.45 3.	150 150 150 150 150 150 150	KIT A B Area A B FIr Loss	Gain 1038	46 A B 10.0 258 Ar A B Fli 460 Lo	ea ss Ga 389	10. 2 10 ain 593 1	O A B O O O O O O O O O O O O O O O O O O	Gain 3 386	29 A B 10.0 104 Area A B Fir 290 Loss 10 19	Gain 15 297	10 A B 10.0 60 Ai A B F1 100	ea r		B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  If. exposed wall A If. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight	R-Values L 4.00 4.00 4.00 1.99 2.03	oss Gain 19.45 22. 39.10 24. 38.33 89. 19.45 3.	150 222 150 3 3 6 35 0 13 6 2 0 0 102	KIT A B Area A B Fir Loss 681 253	Gain 1038 294	46 A B 10.0 258 Ar A B Fli 460 Lo	ea ss Ga 389	10. 2 10 ain 593 1	0 A B 0 P 27 Area A B Fir 100 Loss 253	Gain 3 386	29 A B 10.0 104 Area A B Fir 290 Loss 10 19	Gain 15 297	10 A B 10.0 60 Ai A B F1 100	r Gain	n	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i Ex	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall A 1ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls B et exposed walls B et exposed walls A	R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22	oss Gain 19.45 11. 19.45 22. 39.10 24. 38.33 89. 19.45 3. 3.64 0. 9.15 1. 1.31 0.	150 222 150 3 3 66 3 3 66 3 3 66 9 13 9 102 11 102 17	KIT A B Area A B Fir Loss 681 253	Gain 1038 294	46 A B 10.0 258 Ar A B Fli 460 Lo	ea ss Ga 389	10. 2 10 ain 593 1	0 A B 0 P 27 Area A B Fir 100 Loss 253	Gain 3 386	29 A B 10.0 104 Area A B Fir 290 Loss 10 19	Gain 15 297	10 A B 10.0 60 Ai A B F1 100	r Gain	n	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
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Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall a It. exposed wall a It. exposed ceilings a Exposed Ceilings B Components North Shaded East/West South Existing Windows Skylight Doors Exposed walls Exposed Walls Existing Windows Skylight Doors Exposed walls Exposed Walls Existing Windows Skylight Doors Exposed walls Exposed Ceilings A Exposed Ceilings B Exposed Floors	R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22	oss Gain 19.45 11. 19.45 29. 19.45 22. 39.10 24. 33.33 89. 19.45 3. 3.64 0. 9.15 1. 1.31 0. 2.81 1.	150 150 222 150 3 36 6 35 16 2 2 10 10 102	KIT A B Area A B Fir Loss 681 253	Gain 1038 294	46 A B 10.0 258 Ar A B Fit 460 Lo	ea ss Ga 389	10. 2 10 ain 593 1	0 A B 0 P 27 Area A B Fir 100 Loss 253	Gain 3 386	29 A B 10.0 104 Area A B Fir 290 Loss 10 19	Gain 15 297	10 A B 10.0 60 Ai A B F1 100	r Gain	n	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall A off. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed Walls A et exposed Walls A et exposed Walls A et exposed Ceilings A Exposed Floors	R-Values L 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 11. 19.45 29. 19.45 22. 38.10 22. 38.10 3.64 0. 9.15 1. 1.31 0. 2.81 1.	150 150 222 150 3 36 6 35 16 2 2 10 10 102	KIT A B Area A B B Flir Loss 681 253	Gain 1038 294	46 A B 10.0 258 Ar A B Fit 460  20	ea	10. 2 10 ain 593 1	0 A B 0 0 17 Area A B Fir 10 10 Loss 17 316	Gain 3 386 6 52	29 A B 10.0 104 Area A B Fir 290 Loss 10 115 16 3 96	Gain 15 297 1 51 10 158	10 A B 10.0 60 Ai A B F1 100	r SS Gain	n	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall a It. exposed wall a It. exposed ceilings a Exposed Ceilings B Components North Shaded East/West South Existing Windows Skylight Doors Exposed walls Exposed Walls Existing Windows Skylight Doors Exposed walls Exposed Walls Existing Windows Skylight Doors Exposed walls Exposed Ceilings A Exposed Ceilings B Exposed Floors	R-Values L 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 11. 19.45 29. 19.45 22. 39.10 24. 33.33 89. 19.45 3. 3.64 0. 9.15 1. 1.31 0. 2.81 1.	150 150 222 150 3 36 6 35 16 2 2 10 10 102	KIT A B Area A B Fir Loss 681 253	Gain 1038 294	46 A B 10.0 258 Ar A B Fit 460  20	ea ss Ga 389	10. 2 10 ain 593 1	0 A B 0 P 27 Area A B Fir 100 Loss 253	Gain 3 386 6 52	29 A B 10.0 104 Area A B Fir 290 Loss 10 19	Gain 15 297 1 51 10 158	10 A B 10.0 60 Ai A B Fi 100 Lc	r Gain	n	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall a ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B exposed Ceilings A et exposed walls B Exposed Floors Letter before a component of the comp	R-Values L 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 11. 19.45 29. 19.45 3. 3.64 0. 9.15 1. 12.81 1. 2.61 0.  0.4985 0.055	150 10.0 222 150 150 10.0 10.0 10.0 10.0 10.0 10.0 1	KIT A B Area A B B Flir Loss 681 253	Gain 1038 294 61	46 A B 10.0 258 Ar A B Fit 460  20	ea	10. 2 10 ain 593 1	0 A B 0 0 17 Area A B Fir 10 10 Loss 17 316	Gain 3 386 5 52	29 A B 10.0 104 Area A B Fir 290 Loss 10 115 16 3 96	Gain 15 297 1 51 1 51 158 55 506	10 A B 10.0 60 Ai A B Fi 100 Lc	r SS Gain	60	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Net HL Total Run i	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall a 1ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B Exposed Ceilings A Exposed Floors It was a service of the servic	R-Values L 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 11. 19.45 29. 19.45 29. 19.45 29. 19.45 29. 19.45 3. 3.64 0. 9.15 1. 2.61 0.  0.4985 0.05	150 150 150 150 150 150 150 150 150 150	KIT A B Area A B B Fir Loss 681 253 371	Gain 1038 294 61	46 A B 10.0 258 Ar A B Fit 460  20	ea	10. 2 10 ain 593 1 263 8	0 A B 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Gain 3 386 5 52 9 438	29 A B 10.0 104 Area A B Fir 290 Loss 10 11 16 3: 264 96	Gain 15 297 1 51 1 51 158 55 506	10 A B 10.0 60 Ai A B Fi 100 Lc	r Gain	60 60	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Run I	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed wall a It. exposed wall a It. exposed ceilings a Exposed Ceilings B Exposed Floors Gross Exp Wall a Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls a Exposed Ceilings a Exposed Ceilings a Exposed Floors It was a components It was a component a components It was a component a	R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	oss Gain 19.45 11. 19.45 22. 39.10 24. 38.33 89. 19.45 3. 3.64 0. 2.81 1. 1.31 0. 2.81 1. 2.81 1. 1.31 0. 2.81 1. 1.31 0. 3.64 0. 3.69 0. 3.69 0. 3.69 0.	150 150 150 150 150 150 150 150 150 150	KIT A B Area A B Fir Loss 681 253 371 1304 650	Gain 1038 294 61 1393 79	46 A B 10.0 258 Ar A B Fit 460  20	988 Ga 389 11600 11989 991	10. 2 10 ain 593 1 263 8	0 A B B 10 17 Area A B Fir 10 10 10 10 10 10 10 10 10 10 10 10 10	Gain 3 386 5 52 4 438 4 25	29 A B 10.0 104 Area A B Fir 290 Loss 10 15 264 96	Gain 15 297 1 51 510 158 15 506 11 29	10 A B 10.0 60 Ai A B FI 100 Lt	sea	60 60 3	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
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Net HL Total el HG	Appliances Loads Duct and Pipe loss 10,462 1,045  It exposed wall a fit exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B exposed Ceilings B Exposed Floors It was been been been been been been been bee	R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.85 29.80	oss Gain 19.45 11. 19.45 11. 19.45 29. 19.45 29. 19.45 29. 19.45 29. 19.45 3. 3.64 0. 2.81 1. 2.61 0. 2.81 1. 2.61 0. 0.4985 0.05 0.06 0. 16.80 13.	150 150 150 150 150 150 150 150 150 150	KIT A B Area A B Fir Loss 681 253 371 1304 650	Gain  1038 294  61  1393 79	46 A B 110.0 258 Ar A B File 460 Lo	991 122	10. 2 10 ain 593 1 263 8 856 49 98	0 A B B 10 17 Area A B Fir 10 10 10 10 10 10 10 10 10 10 10 10 10	Gain 3 386 5 52 4 438 4 25	29 A B 10.0 104 Area A B Fir 290 Loss 10 15 16 3:7 264 96	Gain 15 297 1 51 510 158 15 506 11 29	10 A B 10.0 60 A A B B FI 100	364 384 384 22	60 60 3	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Net Net Spanned al Conductive in Leakage /entilation	Appliances Loads Duct and Pipe loss 10,462 1,045  It. exposed vall A If. exposed wall A If. exposed vall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A et exposed walls A et exposed walls A et exposed lings B Exposed Floors Universed walls A et exposed walls A et exposed walls A et exposed ceilings A et exposed Floors Universed walls A et exposed Ceilings A ex	R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	oss Gain 19.45 11. 19.45 11. 19.45 29. 19.45 29. 19.45 29. 19.45 3. 3.64 0. 2.61 0. 2.61 0. 2.61 0. 0.4985 0.055 0.06 0. 16.80 13.	150 150 150 150 150 150 150 150 150 150	KIT A B Area A B Fir Loss 681 253 371 1304 650	Gain 1038 294 61 1393 79	46 A B 10.0 258 Ar A B Fit 460  20	991 122	10. 2 10 ain 593 1 263 8	0 A B B 10 17 Area A B Fir 10 10 10 10 10 10 10 10 10 10 10 10 10	Gain 3 386 5 52 4 438 4 25	29 A B 10.0 104 Area A B Fir 290 Loss 10 15 16 3:7 264 96	Gain 15 297 1 51 510 158 15 506 11 29	10 A B 10.0 60 Ai A B FI 100 Lt	364 384 384 22	60 60 3	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	
Net Net Spanned al Conductive in Leakage /entilation	Appliances Loads Duct and Pipe loss 10,462 1,045  It exposed wall a fit exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B exposed Ceilings B Exposed Floors It was been been been been been been been bee	R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	oss Gain 19.45 11. 19.45 22. 39.10 24. 38.33 89. 19.45 3. 3.64 0. 19.45 3. 3.64 0. 2.81 1. 1.11 0. 2.81 1. 1.13 0. 3.64 0. 0.06 0. 1.006 0. 1.006 0. 2.006 0.	150 150 150 150 150 150 150 150 150 150	KIT A B Area A B Fir Loss 681 253 371 1304 650	Gain  1038 294  61  1393 79	46 A B 10.0 258 Ar A A B FII 460 Lo	988 Ga 389 11600 11989 991 122 13102	10. 2 10 ain 593 1 263 8 856 49 98	0 A B B 10 17 Area A B Fir 10 10 Loss 17 316 569 284	Gain 3 386 5 52 9 438 4 25 5 50	29 A B 10.0 104 Area A B Fir 290 Loss 10 118 146 37 264 96 146 77 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Gain 15 297 1 51 10 158 15 506 11 29 10 58	10 A B 10.0 60 A A B B FI 100 100 1100 1100 11.0	364 364 181 22	60 60 3	B Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B Fir	Gain	B 10.0 Area A B Fir	

Division C subsection 3.2.5. of the Building Code. Individual BCIN:



28,138

16,745

btu/h

Total Heat Loss

Total Heat Gain

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

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

e-mail hvac@gtadesigns.ca

Figure 1, supposed cellings A 1			Builder:		EM Air			D	ate:		June	e 24, 20	24						Weat	ther Data	Richmond I	Hill 44	-5.8	88 20	50				Page 5
Runth Capacid and   23 A   21 A   23 A   15 A   A   A   A   A   A   A   A   A   A	2012 OBC		Project:	King E	East Devel	opments		Мо	del:		Model 1	750 - Lo	t 68-B				System	1	Hea	nt Loss ^1	77.8 deg. F	Ht gain ^T	12	.8 deg. F			Proje Layo	ect # out #	PJ-00267 JB-09509
First Respond teal   First State   First S						Р									ED 2		ВАТН												
College periodic 1 20 May 10 M																						Α						Α	
Find     317 Area   318 Area   138 Area	Run											3																	
Exposed Callings A 98 A 98 A 77 A 157 A 95 A A A A A A A A A A A A A A A A A												1			_													9.0 Area	
Property College   Property Co	E						ea				171 4	Area A			a		69 A						ı						
Egocod Fibro Span   50 mm   10									В										В					В		В		В	
Control   Cont		Exposed Floors					•					-Ir					34 Flr		Flr		Flr	Flr		Flr		Flr		Fir	
Companion   Device   Line   Care   Line						261			189		261			144															
Month   Mont		Gross Exp Wall B	5 v . I.		<u> </u>																								
Employee   4.00   1145   7560   20   30   30   30   30   30   30   3						Lo	ss Gai	ın	Loss	Gain	ו ר	_oss	Gain	Los	is Gain	$\neg$	Loss	Gain	Loss	Gain	Loss Gail	Los	Gain	Loss	Gain	Loss	Gain	Loss	Gain
Second   1.60   7.64   2.260   2.26   2.260   2.26   2.260   2.26   2.260   2.26   2.260   2.26   2.260   2.						20	389	593	16 311	475	16	311	475	20	389 5	93													
Styling   20   303   39.12																													
Description   Application   Control   Application   Control   Co		<b>Existing Windows</b>	1.99	39.10	24.56																								
Net species with R   2-20   3.64   0.69   219   76   33   175   629   105   240   191   44   45   197   410   30   34   69   8   197   44   4   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   40   170   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   197   410   30   34   69   8   8   197   410   30   34   69   8   8   197   410   30   34   69   8   8   8   8   8   8   8   8   8																													
Not explosed entities   1,500   1,515   1,51									470	400																			
Exposed Cellings A. 59.22   1.31   3.67   387   590   260   98   120   66   177   225   115   19   206   106   69   54   64   65   66   67   67   67   67   67   67						219	796	131	1/3 629	103	245	891	147	124	451	14													
Exposed Cellings   27.55   2.24   3.44   3.4   1.5   4.5   3.5   3.4   99   8						387	508	260	98 129	66	171	225	115	157	206 1	06	69 91	46											
Exposed File   Part									.20																				
Total Conductive   Mark Lates		Exposed Floors				4	10	1			17	44	4	157	410	36	34 89	8											
Material	Foundation Cond											4.5																	
Art catalogn   Heat LeastCatan   0.2999   0.5990   0.590   0.51	<b>Total Conductive</b>					- 1		1402	1069	644		1471	740	1		00	179	E4											
Verifiation   Case 2   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   15.00   1.342   1.345	Air Leakage			0.2999	0.0569				321			441					54												
Vertilation							000		V2.	Ü.								ŭ											
Heat Gain People   239   2   478	Ventilation			16.80	13.82																								
Appliances Looks   1 x 25 percent   2817			х	0.06					66	74		90					11	6											
Duct and Pipe loss   10%   1			4 05			2		478			1		239	1	2	39													
Level H Total			1 =.25 p	ercent										4	100 1	ne	4 22	-											
Level HG Total   7,066   Total HG per room x 1.3   2879   981   1438   1679   89			To	tal HL for i			2902		1455			2002				03		3											
Layer   A								2879		981			1438			79		89											
Run ft. exposed wall A B B B B B B B B B B B B B B B B B B				•	•		•			•	_		,		•			•					•						•
Run ft. exposed wall A B B B B B B B B B B B B B B B B B B	-																												
Run fix exposed wall B		Level 4																											
Colling height Floor area From a Area Area Area Area Area Area Area Area														Α					Α			Α						Α	
Floor area	Run					В			В		Е	3		В			В		В		В	В		В		В		В	
Exposed Cellings   A						٨٠	00		Aroa		,	Aroa		Aro	•		Aroa		Aroa		Aroa	Aro		Aroa		Aroa		Area	
Exposed Cellings B	F														a								ı						
Fir																												В	
Compens   R-Values   Loss   Gain   Loss		Exposed Floors												Flr														Fir	
Components R-Values Loss   Gain   Loss   G																													
North Shaded			5 V . I.		<u> </u>																								
EastWest   4.00   19.45   22.66						Lo	ss Gai	ın	Loss	Gain	1 F	_oss	Gain	Los	is Gain	_	Loss	Gain	Loss	Gain	Loss Gail	Los	Gain	Loss	Gain	Loss	Gain	Loss	Gain
South   4.00   19.45   22.60																													
Existing Windows   1.99   33.10   24.56																													
Doors   4.00   19.45   3.20     Net exposed walls A   21.40   3.64   0.50     Net exposed walls B   8.50   9.15   1.51     Exposed Ceilings A   59.22   1.31   0.67     Exposed Ceilings B   27.65   2.81   1.44     Exposed Floors   29.80   2.61   0.23     Foundation Conductive Heatloss     Total Conductive Heat Gain   Heat Loss / Heat Loss / Heat Loss/Gain   0.0000   0.0569     Air Leakage   Heat Loss/Gain   0.0000   0.011     Ventilation   Case 2   16.80   13.82     Case 3   x   0.06   0.11     Heat Gain People   2.39     Appliances Loads   1 = 25 percent   2831     Duct and Pipe loss   10%																													
Net exposed walls A   21.40   3.64   0.60																													
Net exposed Ceilings A   59.22   1.31   0.67     Exposed Ceilings B   27.65   2.81   1.44     Exposed Floors   29.80   2.61   0.23     Foundation Conductive Heatloss     Heat Loss     Heat Gain   0.0000   0.0569     Ventilation   Case 2   16.80   13.82     Case 3   x   0.06   0.11     Heat Gain People   239     Appliances Loads   1 = .25 percent   2831     Duct and Pipe loss   10%	NI-																												
Exposed Ceilings A   59.22   1.31   0.67     Exposed Ceilings B   27.65   2.81   1.44     Exposed Floror   29.80   2.61   0.23     Foundation Conductive Heatloss     Total Conductive Heat Loss   Heat Loss     Air Leakage   Heat Loss/Gain   0.0000   0.0569     Ventilation   Case 1   0.00   0.11     Case 1   0.00   0.11     Case 2   16.80   13.82     Case 3   x   0.06   0.11     Heat Gain People   239     Appliances Loads   1 = 25 percent   2831     Duct and Pipe loss   10%			21.40 8.50																										
Exposed Ceilings B   27.65   2.81   1.44     Exposed Flores   29.80   2.61   0.23     Foundation Conductive Heatloss																													
Foundation Conductive Heat Loss		xposed Ceilings B	27.65	2.81	1.44																								
Total Conductive			29.80	2.61	0.23																								
Heat Gain																													
Air Leakage Heat Loss/Gain 0.0000 0.0569    Case 1 0.00 0.11	Total Conductive																												
Case 1	Air Leakage			0.0000	0.0569																								
Case 3		Case 1		0.00	0.11																								
Heat Gain People   239	Ventilation																												
Appliances Loads   1 = .25 percent   2831			X	0.06																									
Duct and Pipe loss 10%			1 - 25 -	ercent																									
			1 =.23 p	CICCIII																									
Level HL Total 0 Total HL for per room	Level HL Total	0	To	otal HL for p																									
Level HG Total 0 Total HG per room x 1.3		0																											
I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under																				_									

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:

Mane Molesto

David DaCosta

SB-12 Package Energy Star



2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

System Design Option
Exhaust only / forced air system

HRV WITH DUCTING / forced air system

Part 6 design

HRV simplified connection to forced air system

HRV full ducting/not coupled to forced air system

1 2

3 x

4

Project # Layout # Page 6 PJ-00267 JB-09509

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:	Energy Star			D.0 -	1-14750	L - 1 00 D	
Project:	Richmond Hill		odel:		del 1750 -		
	RESIDENTIAL MECHANICAL						
	For systems serving one dwelling unit & con	ntorming to	tne Untario Bulla	ling Coae, O.	reg 332/12		
	Location of Installation		Total	Ventilation	Capacity 9.32	2.3.3(1)	
Lot #	Plan #	Bs	smt & Master Bdrr	n	2 @ 21.2	cfm 42.4	cfm
Township	Richmond Hill		ther Bedrooms athrooms & Kitche	en	2 @ 10.6 4 @ 10.6		cfm cfm
Roll #	Permit #	Ot	ther rooms		3 @ 10.6 Total	cfm 31.8 137.8	_ cfm
Address		<u> </u>					=
	Builder		Princip	al Ventilatio	n Capacity 9	.32.3.4(1)	
Name	Buildon	M:	aster bedroom		1 @ 31.8	cfm 31.8	cfm
Address	EM Air	Ot	ther bedrooms		2 @ 15.9 Total	cfm 31.8 63.6	cfm =
City			Dri	incinal Evha	ust Fan Capa	acity	
Tel	Fax		Make	пісіраі Ехпа	Model	Location	
		1	VanEE	V1	50E75NS	Base	
	Installing Contractor						
Name			127 cfm			80.0 Sones	or Equiv.
Address				Heat Recov	ery Ventilato	r	
			Make		VanEE		_
City		N	Model	127 cfm hi	150E75NS	90	cfm low
Tel	Fax		ensible efficiency	@ -25 deg C	gii	60% 75%	<u>6</u>
			Note: Installer to b		ERV to within		
, [	Combustion Appliances 9.32.3.1(1)		Sup	plemental Vo	entilation Ca	pacity	
a) x b) c) d) e)	Direct vent (sealed combustion) only Positive venting induced draft (except fireplaces) Natural draft, B-vent or induced draft fireplaces Solid fuel (including fireplaces) No combustion Appliances	Le	otal ventilation cap ess principal exhar EQUIRED suppler	ust capacity	Capacity	137.8 63.6 74.2	
					I Fama 0 20 2		
	Heating System		Location	cfm	I Fans 9.32.3 Mode		es
х	Forced air		Ens	50	XB50		
	Non forced air Electric space heat (if over 10% of heat load)		Bath	50	XB50	0.3	3
	House Type 9.32.3.1(2)	1					
l x	Type a) or b) appliances only, no solid fuel	al	l fans HVI listed	Make	Broan	or Equiv.	
	Type I except with solid fuel (including fireplace)						
III L	Any type c) appliance Type I or II either electric space heat	1 L	oroby cortify that		Certification	boon designer	1
IV Other	Type I, II or IV no forced air		nereby certify that accordance with t				ı

	Designer (	Certification	
I hereby certify t	hat this ventilatio	n system has been	designed
in accordance w	rith the Ontario B	uilding Code.	•
Name	David D	aCosta	
	41	166	
Signature	- came	-40-60	
HRAI#	5190	BCIN #	32964
Date	June 24	ł, 2024	



## Energy Efficiency Design Summary: Performance & Other Acceptable Compliance Methods

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca (Building Code Part 9, Residential)

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Project # PJ-00267
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This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the Performance or Other Acceptable Compliance Methods described in Subsections 3.1.2. and 3.1.3. of SB-12,

This form must accurately reflect the information contained on the drawings and specifications being submitted. Refer to Supplementary Standard SB-12 for details about building code compliance requirements. Further information about energy efficiency requirements for new buildings is available from the provincial building code website or the municipal building department.

	For use by Princip	oal Authority							
Application No:		Model/Certification Nur	mber						
A. Project Information									
Building number, street name			Unit number	Lot/Con					
	Model 1750 - Lot 68-E	3							
Municipality Richmond Hill	Postal code	Reg. Plan number / oth	ner description						
B. Prescriptive Compliance [indicate the but	e house design]								
☐ SB-12 Performance* [SB-12 - 3.1.2.]	*Attach energy performa	ance results using	an approved softwa	re (see guide)					
✓ ENERGY STAR®* [SB-12 - 3.1.3.]	m								
R-2000 <sup>®*</sup> [SB-12 - 3.1.3.]	*Attach R-2000 HOT200	00 Report							
C. Project Building Design Conditions									
Climatic Zone (SB-1):	Heat. Equip. Efficiency		Space Heating F	uel Source					
Zone 1 (< 5000 degree days)	≥ 92% AFUE	Gas	Propane	Solid Fuel					
Zone 2 (≥ 5000 degree days)	☐ ≥ 84% < 92% AFUE	☐ Oil	☐ Electric	Earth Energy					
Ratio of Windows, Skylights & Glass (W, S	& G) to Wall Area		Other Building Cha	aracteristics					
Area of Walls = 100 m² or 1076.4 ft²		☐ Log/Post&Beam	☐ ICF Above	Grade					
Alca of Walls - 100 III of 1070.4		☐ Slab-on-ground	│ │ Walkout Ba	sement					
	W,S &G % = <u>15.0%</u>	☐ Air Conditioning	Combo Unit	t					
Area of W, S & G = $15 \text{ m}^2 \text{ or } 161.5 \text{ ft}^2$		☑ Air Sourced Heat Pump (ASHP)							
SB-12 Performance Reference Building Design Pa	ckage indicating the pres	scriptive package to	be compared for c	ompliance					
SB-12 Referenced Building Package (input des	sign package):								
D. Building Specifications [provide values a	and ratings of the energy effici	ency components prop	oosed, or attach ENERC	GY STAR BOP form]					

Building Component		SI/R-Values or n U-Value¹	Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value (1) or ER rating	
Ceiling with Attic Space	60	59.22	Windows/Sliding Glass Doors	1.4
Ceiling without Attic Space	31	27.65	Skylights	2.8
Exposed Floor	31	29.80	Mechanicals	
Walls Above Grade	22 +5.0ci	21.40	Heating Equip.(AFUE)	96%
Basement Walls	20.0ci	21.12	HRV Efficiency (SRE% at 0°C)	75%
Slab (all >600mm below grade)	х	х	DHW Heater (EF)	0.95
Slab (edge only ≤600mm below grade)	10	11.13	DWHR (CSA B55.1 (min. 42% efficiency))	42.0% #Showers
Slab (all ≤600mm below grade, or heated)	10	11.13	Combined Heating System	

<sup>(1)</sup> U value to be provided in either W/(m²·K) or Btu/(h·ft·F) but not both.



## Energy Efficiency Design Summary: Performance & Other Acceptable Compliance Methods

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### E. Project Design Verification [Subsection 3.1.2. Performance Compliance]

The annual energy consumption using Subsection 3.1.1. SB-12 Ref	erence Building Pa	<u> </u>	000MJ)
The annual energy consumption of this house as designed is		GJ	
The software used to simulate the annual energy use of the build	ing is:		
The building is being designed using an air tightness baseline of:			
☐ OBC reference ACH, NLA or NLR default values (no depres	ssurization test requ	ired)	
☐ Targeted ACH, NLA or NLR. Depressurization test to meet		ACH50 or NLR or NLA	
Reduction of overall thermal performance of the proposed bis compared against (3.1.2.1.(6 )).	ouilding envelope is	not more than 25% of the envelope of the	compliance package it
☐ Standard Operating Conditions Applied (A-3.1.2.1 - 4.6.2)			
Reduced Operating Conditions for Zero-rated homes Applie	ed (A-3.1.2.1 - 4.6.2	5)	
☐ On Site Renewable(s): Solar:			
Other Types:			
F. ENERGY STAR or R-2000 Performance Design Veri	fication [Subsection	n 3.1.3. Other Acceptable Compliance Methods	
The NRCan "ENERGY STAR for New Homes Standard Verbuilding performance meeting or exceeding the prescriptive			
The NRCan, "2012 R-2000 Standard " technical requiremen exceeding the prescriptive performance requirements of the		0 0	ance meeting or
Performance Energy Modeling Professional			
Energy Evaluator/Advisor/Rater/CEM Name and company:	Accreditation or Eva	luator/Advisor/Rater License #	
ENERGY STAR or R-2000			
Energy Evaluator/Advisor/Rater/Name and company:			
Angela Bustamante,Building Knowledge Canada		5506	
G. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) pro		ein to substantiate that design meets building o	code]
Name	BCIN	Signature	,
David DaCosta	32964	Mane Al	<del>{                                    </del>

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



50 Fleming Drive, Unit # 6, Cambridge, ON, N1T 2B1

ENERGY STAR® for New Homes Version Ontario 17.1 Revision 2 BOP Form Zone 1 Ontario



T | 1-800-267-6830 F | 519-658-6103 E | nfo@buildingknowledge.ca

General Details		House Details	
Performance or Prescriptive :	Prescriptive	ESEnrolment ID:	
Attached or Detached or MURB:	Attached	Site/Phase:	KING EAST PH 2&3
Province / Territory :	ON	LOT :	
Zone :	Zone 1 Heating Degree Days	Street # and Name:	
Service Organization (SO) number :	55 - Enerquality	Street Type:	
Builder number :	TBD	City:	RICHMOND HILL
Builder Name:	PLAZACORP	Postal Code (or FSA) :	
		Model:	ALL MODELS
		Third Party Evaluator:	BUILDING KNOWLEDGE CANADA
Supplementa	ry Information	Evaluator Name:	ANGELA BUSTAMANTE
		Evaluator Number:	5506

Building Component	Core / Option	BOP Selection Description	BOP Option Credits	Measure Selected (Check) √	Nominal Efficiency Values (Optional)	Notes (Optional)
Ceilings Below Attic	Core	RSI 10.43 (R 59.2)	Core Minimum	√	R60	
-		N/A	n/a			
Cathedral Ceilings and Flat Roofs	Core Option	RSI 4.87 (R 27.7) N/A	Core Minimum n/a	√	R31	
Ceilings Below Attic and Cathedral Ceilings/Flat Roofs	Option	N/A	n/a			
Walls Above Grade	Core	RSI 3.08 (R 17.5)	Core Minimum			
Walls Above Grade	Option	RSI 3.72 (R 21.1)	0.7	√	R22+R5	
Floors Over Unheated Spaces	Core	RSI 5.25 (29.8)	Core Minimum	√	R31	
Foundation Walls Below or in Contact	Core	RSI 3.72 (R 21.1) below grade	Core Minimum	√	R20 blanket	
with the Ground	Option	N/A	n/a			
Unheated Floors on Ground Above Frost Line	Core	RSI 1.96 (R 11.1)	Core Minimum	√	R10 if applicable	
Unheated Floors on Ground Below Frost Line	Option	N/A	n/a			
Heated Floors on Ground	Core	N/A	n/a			
Slabs on Grade with Integral Footing	Core	N/A	n/a			
	Core	ENERGY STAR Zone 2 UV1.4 and/or ER29	Core Minimum	√	Zone 2	
Windows (Fenestrations)	Option	N/A	n/a			
Wildows (Tellestrations)	Core	Total area of all windows to max. 20% of above grade wall area.	Core Minimum	√		
Fireplace	Core	Gas fireplace spak ignition if installed	#N/A	√		
Space Heating	Core	Min. 96% AFUE ENERGY STAR fuel fired furnace	Core Minimum	√		COOLING - ASHP
	Req'd	Supply ducts and 1m return sealed	Required	√		
Domestic Water Heating	Core	Instantaneous min. EF or UEF 0.80 Tank EF or UEF 0.80 (direct vent (sealed))	Core Minimum			
	Option	Instantaneous condensing min. UEF 0.95	0.4	√		
Drain Water Heat Recovery	Option	≥ 42% to ≤ 54% - two showers	0.3	√	42%	
Airtightness	Core Option	Level 1 (DT 2.5ach / 0.18 nlr) (AT 3.0ach/0.26nlr) N/A	Core Minimum n/a	√		
Ventilation (HRV / ERV)		65% SRE @0 °C and 55% SRE @ -25 °C	Core Minimum			
	Option Rea'd	≥75% SRE @ 0 °C Interconnected to the Furnace Fan	0.2 Required	√ √		
	Rea'd	HRV balanced	Required	V		
		SRE ≥75% SRE @ 0 °C, ≥ 0.57 L/s/W	0.1 Core Minimum	√		
Electrical Savings	Core Option	75% ENERGY STAR lighting 100% ENERGY STAR lighting	0.1	√		
ENERGY STAR Certified Appliances	Option	• •	n/a	,		

NOTE: Thermal resistance values under "BOP Selection Description" are listed in effective values, unless indicated with "nominal".



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Layout # JB-09509

Energy Star Richmond Hill System: Model: Package: System 1 Model 1750 - Lot 68-B Project:

Project	:		Ric	chmond F	lill		l l	/lodel:		Me	odel 1750	- Lot 68	-B	
					Air	Leaka	age C	alculati	ons					
		B 0.018	Building A LRairh 0.326	Air Leakage  Vb  20732	Heat Loss HL^T 77.8	HLleak 9456			B 0.018	Building LRairh 0.091	Air Leakag Vb 20732	e Heat Ga HG^T 12.8	in HG Leak 436	
											Le	vels		
		Air Lea	kage Heat	Loss/Gain I	Multiplier 1	Table (Sect	ion 11)			1	2	3	4	
	Level	Level Factor (LF)	Building Air	Level Co Heat Loss		Air Le	eakage H			(LF)	(LF)	(LF)	(LF)	
	Level 1 Level 2	0.5 0.3		54 56	02		0.8753 0.4985			1.0	0.6 0.4	0.5 0.3	0.4	
	Level 3	0.2	9456	63	07		0.2999				0.4	0.3	0.2	
	Level 4	0		(	)		0.0000		<u> </u>				0.1	
	DIW D	HG L		T 0 4 13 1	436	Air Le	eakage H 0.0569					is Dwelling 3	J	
	BUILD	ING CONDU			7668	FT	6.71	М						
							'	lculatio	nns					
			Ventilat	ion Heat Loss		Jiilliall		louialic	0110	Ventil	ation Heat G	ain		
nt				n Heat Loss						/	Us at Oak		1	nt
Vent	С	PVC	HL^T	(1-E) HRV		bvent				Ventilation Heat Gain HG^T HGbvent			-	Vent
	1.08	63.6	77.8	0.20		069			1.1 63.6 12.8 879					
			Cas						Case 1					
l ⊢		Ventilat	ion Heat Los	ss (Exhaust or	nly Systems)			<u> </u>	Ventilation Heat Gain (Exhaust Only Systems)					
_	Case 1 - Exhaust Only							Case 1 - Exhaust Only Multiplier				_		
ase	Level         LF         HLbvent         LVL Cond. HL         Multiplier           Level 1         0.5         5402         0.10								HGbvent   879				Case	
0	Level 2 Level 3 Level 4	0.3 0.2 0	1069	56 63	07	0.06 0.03 0.00				•				0
			Cas	e 2							Case 2			
2		Ventilat	ion Heat Los	s (Direct Duc	ted Systems	)		Ventilation Heat Gain (Direct Ducted Systems)				2		
Case	C 1.08	HL^T 77.8	(1-E) HRV 0.20	Multi 16.	plier .80				C 1.08	HG^T 12.8		iplier 3.82		Case
			Cas	e 3							Case 3			
3		Ventila	ation Heat Lo	oss (Forced A	ir Systems)				Ven	tilation Heat	Gain (Force	d Air System	ns)	3
Case	Total Ven	tilation Load		ovent 069		tiplier ).06			HGbvent 879	HG*1.3		eat Gain 79	Multiplier 0.11	Case
Found	lation Co	nductive F	leatioss	Level 1		Lev	el 1	13	78	Watts	47	701	Btu/h	
Found	lation Co	nductive F	leatloss l	Level 2		Lev	el 2			Watts			Btu/h	
Slab o	Slab on Grade Foundation Conductive Heatloss									Watts			Btu/h	
Walk (	Out Base	ment Four	ndation C	onductive	e Heatlos	SS				Watts			Btu/h	

## **Envelope Air Leakage Calculator**

Supplemental tool for CAN/CSA-F280

Weather Sta	tion Description
Province:	Ontario <b>v</b>
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):	6.71
Building (	Configuration
Type:	Semi-Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m <sup>3</sup> ):	587.13
Air Leaka	ge/Ventilation
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:
	39.75
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Heating Air Leakage Rate (ACH/I	н): 0.326
Cooling Air Leakage Rate (ACH/H	H): 0.091

## **Residential Foundation Thermal Load Calculator**

Supplemental tool for CAN/CSA-F280

Weather Station Description									
Province:		Ontario							
Region:		Richmond Hill ▼							
Site Description									
Soil Conductivity:		High conductivity: moist soil   ▼							
Water Table:		Normal (7-10 m, 23-33 Ft) ▼							
Foundation Dimensions									
Floor Length (m):	17.23								
Floor Width (m):	3.64								
Exposed Perimeter (m):	33.53								
Wall Height (m):	2.74								
Depth Below Grade (m):	1.52	Insulation Configuration							
Window Area (m²):	1.39								
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): 1378									



## 2985 Drew Road, Suite 202 Mississauga, Ontario L4T 0A4

Tel: 905-671-9800 email: hvac@gtadesigns.ca

#### **Effective R-Value Calculations**

Effective R-Value - Above Grade Walls								
Insulation	R22+5ci							
Exterior Air Film	0.17							
Hollow Vinyl Siding	0.62							
Continuous Insulation	5.00							
Effective Cavity Insulation	14.49							
Drywall	0.44							
Interior Air Film	0.68							
Effective R-Value	21.40							

Effective R-Value - Below Grade Walls								
Insulation	R20ci							
Concrete Foundation	0.44							
Interior Air Film	0.68							
Continuous Insulation	20.0							
Effective R-Value	21.12							

Effective R-Value – Exposed Floors								
Insulation	R31							
Exterior Air Film	0.17							
Effective Cavity Insulation	28.72							
Interior Air Film	0.91							
Continuous Insulation	0.00							
Effective R-Value	29.80							

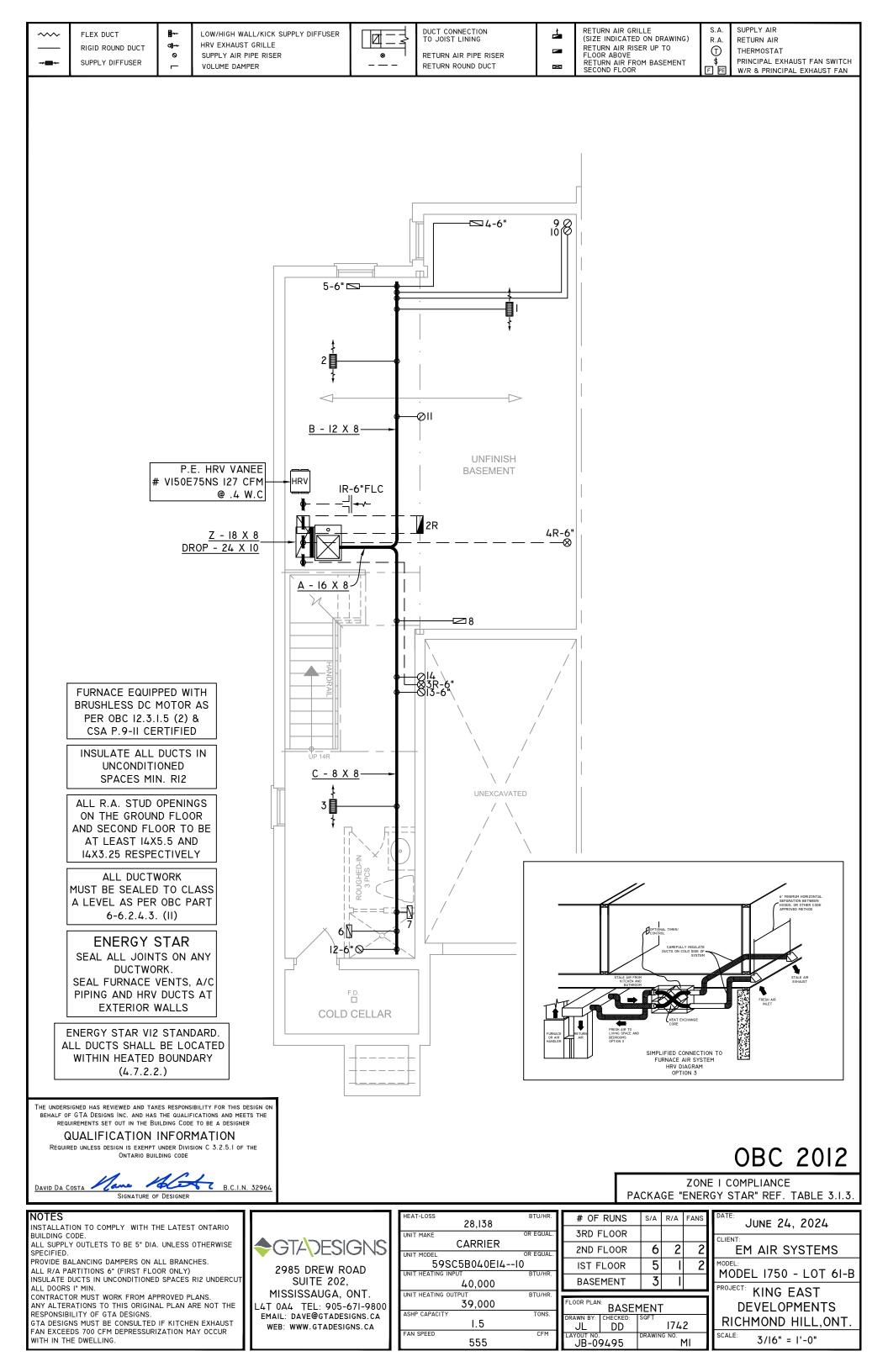


## 2985 Drew Road, Suite 202 Mississauga, Ontario L4T 0A4

Tel: 905-671-9800 email: hvac@gtadesigns.ca

Effective R-Value – Exposed Ceiling with Attic							
Insulation	R60						
Exterior Air Film	0.17						
Effective Insulation	58.61						
Drywall	0.44						
Effective R-Value	59.22						

Effective R-Value – Exposed Ceiling with Flat Roofs								
Insulation	R31							
Exterior Air Film	0.17							
Effective Insulation	27.04							
Drywall	0.44							
Effective R-Value	27.65							



LOW/HIGH WALL/KICK SUPPLY DIFFUSER FLEX DUCT HRV EXHAUST GRILLE RIGID ROUND DUCT 0 SUPPLY AIR PIPE RISER SUPPLY DIFFUSER VOLUME DAMPER



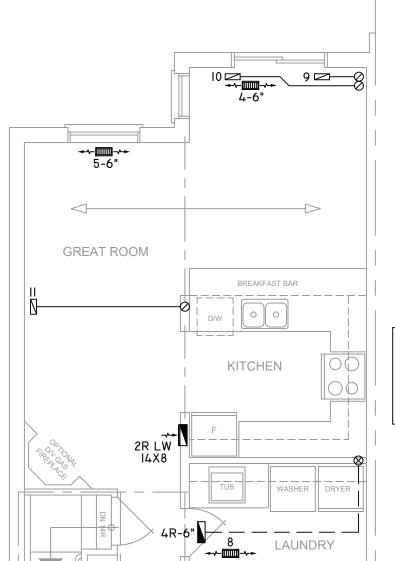
DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT

4  $\mathbf{x}$ 

RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR

SUPPLY AIR R.A 1

RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN



**-**2014 **─** 3R-6

GARAGE

**△**13-6"

KITCHEN EXHAUST 100 CFM MIN. 6" ALL OTHER FANS SHALL BE A MIN. OF 50 CFM OR OTHERWISE NOTED AS PER 9.32.3.5

CIRCULATION PRINCIPAL FAN SWITCH TO BE CENTRALLY LOCATED

INSULATE ALL DUCTS IN UNCONDITIONED

ALL R.A. STUD OPENINGS ON THE GROUND FLOOR AT LEAST 14X5.5 AND **I4X3.25 RESPECTIVELY** 

MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3. (II)

SEAL ALL JOINTS ON ANY DUCTWORK. SEAL FURNACE VENTS, A/C PIPING AND HRV DUCTS AT EXTERIOR WALLS

ENERGY STAR VI2 STANDARD. ALL DUCTS SHALL BE LOCATED WITHIN HEATED BOUNDARY

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

B.C.I.N. 32964

# **GTADESIGNS**

**FOYER** 

CONCRETE

**VERANDA** 

7

2985 DREW ROAD SUITE 202,

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

28,138 CARRIER 59SC5B040EI4--I0 40,000 39,000 TONS 1.5 FAN SPEED 555

PACKAGE "ENERGY STAR" REF. TABLE 3.1.3							
# OF RUNS		S/A	R/A	FANS	DATE: JUNE 24, 2024		
3RD FLO				CLIENT:			
2ND FLOOR		6	2	2	EM AIR SYSTEMS		
IST FLO	IST FLOOR		I	2	MODEL: MODEL 1750 - LOT 61-B		
BASEMEI	3	-					
FLOOR PLAN:	חוווט	FLΩ	ΛR		PROJECT: KING EAST DEVELOPMENTS		

JL

DD

JB-09495

1742

M2

ZONE I COMPLIANCE

OBC 2012

PROJECT: KING EAST **DEVELOPMENTS** RICHMOND HILL, ONT. 3/16" = 1'-0"

SPACES MIN. RI2

AND SECOND FLOOR TO BE

ALL DUCTWORK

**ENERGY STAR** 

(4.7.2.2.)

# INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

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.

ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

BUILDING CODE.

WITH IN THE DWELLING.

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

FLEX DUCT RIGID ROUND DUCT SUPPLY DIFFUSER

LOW/HIGH WALL/KICK SUPPLY DIFFUSER HRV EXHAUST GRILLE oll⊶ 0 SUPPLY AIR PIPE RISER VOLUME DAMPER

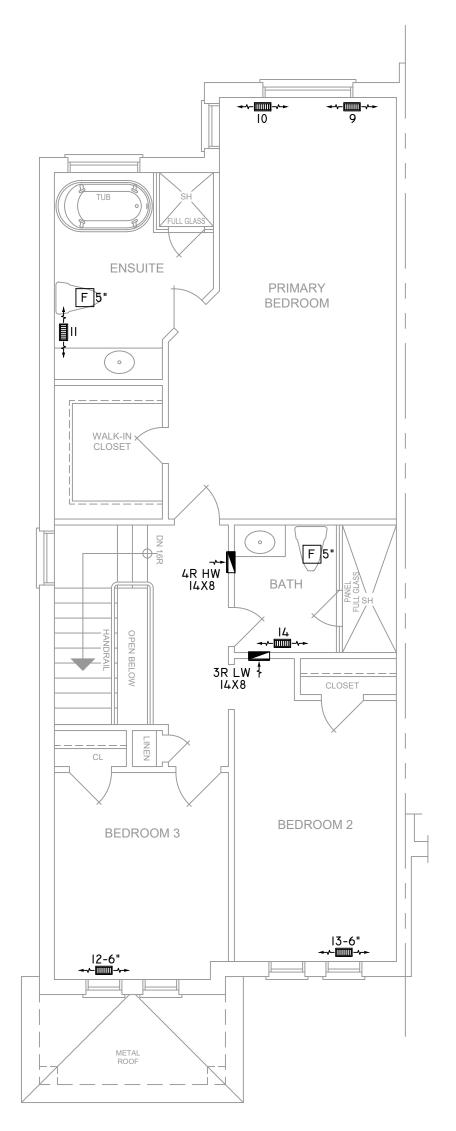


DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT

RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) 4 RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR  $\mathbf{x}$ 

R.A 1

SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN



INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. RI2

ALL R.A. STUD OPENINGS ON THE GROUND FLOOR AND SECOND FLOOR TO BE AT LEAST I4X5.5 AND **I4X3.25 RESPECTIVELY** 

ALL DUCTWORK MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3. (II)

**ENERGY STAR** SEAL ALL JOINTS ON ANY DUCTWORK. SEAL FURNACE VENTS, A/C PIPING AND HRV DUCTS AT EXTERIOR WALLS

ENERGY STAR VI2 STANDARD. ALL DUCTS SHALL BE LOCATED WITHIN HEATED BOUNDARY (4.7.2.2.)

THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN ON BEHALF OF GTA DESIGNS INC. AND HAS THE QUALIFICATIONS AND MEETS THE

REQUIRED UNLESS DESIGN IS EXEMPT UNDER DIVISION C 3.2.5.1 OF THE ONTARIO BUILDING CODE

Ane 1866 B.C.I.N. 32964

REQUIREMENTS SET OUT IN THE BUILDING CODE TO BE A DESIGNER QUALIFICATION INFORMATION

SPECIFIED. PROVIDE BALANCING DAMPERS ON ALL BRANCHES. ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)

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

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.

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

# **♦GTA**DESIGNS

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.
28,138	
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B040EI4-	
UNIT HEATING INPUT	BTU/HR.
40,000	
UNIT HEATING OUTPUT	BTU/HR.
39,000	
ASHP CAPACITY	TONS.
1.5	
FAN SPEED	CFM
555	

	PACKAGE "ENERGY STAR" REF. TAB							
# OF RUNS		S/A	R/A	FANS	JUNE 24, 2024			
3RD FLOOR					CLIENT:			
2ND FLOOR		6	2	2	EM AIR SYSTEMS			
IST FLOO	5	I	2	MODEL: HOT 61-B				
BASEMEN	3	1						
FLOOR PLAN:					PROJECT: KING EAST			

D: 10 L		•	П	J						
			П							
OOR PLAN:										
SECOND FLOOR										
AWN BY:	CHECKED:	SQFT								
JL	DD	1742	L							
YOUT NO.		DRAWING NO.	Н	•						
JB-09	9495	M3	Н							

JUNE 24, 2024 CLIENT: **EM AIR SYSTEMS** MODEL MODEL 1750 - LOT 61-B PROJECT: KING EAST **DEVELOPMENTS** RICHMOND HILL, ONT.

3/16" = 1'-0"

**OBC 2012** 

ZONE I COMPLIANCE