

## **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:	
Model 3	250		Lot/con.	
Municipality Richmond Hill	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design	n activities			
Name David DaCosta		Firm	gtaDesigns Inc.	
Street address 2985 Drew Road	-		Unit no.	Lot/con.
Municipality Mississauga	Postal code L4T 0A4	Province Ontario	E-mail hvac@gtades	igns.ca
Telephone number	Fax number		Cell number	<del></del>
(905) 671-9800  C. Design activities undertaken by individual identified in Se	ction B. [Buil	ding Code Table 3.	5.2.1 of Division C]	
☐ House ☒ HVAC – Ho	use		■ Building Structural	
☐ Small Buildings ☐ Building Ser	vices		☐ Plumbing – House	
☐ Large Buildings ☐ Detection, L	ighting and Pow	er	☐ Plumbing – All Buildings	S
☐ Complex Buildings ☐ Fire Protecti	on		☐ On-site Sewage System	ns
Description of designer's work Mod	el Certification		Project #:	PJ-00267
			Layout #:	JB-09056
Heating and Cooling Load Calculations Main Air System Design Alternate	Х	Builder	EM Air Systems	
Air System Design Alternate Residential mechanical ventilation Design Summary O.D. GFA	3237	Project	King East Developm	ents
Residential System Design per CAN/CSA-F280-12	3237	Model	Model 3250	
Residential New Construction - Forced Air		SB-12	Energy Star	
D. Declaration of Designer				
l David DaCosta	declare that (c	hoose one as appro	priate):	
(print name)				
,				
☐ I review and take responsibility for th Division C of the Building Code. I am				
classes/categories. Individual BCIN:				
Firm BCIN:			•	
			•	
I review and take responsibility for t designer" under subsection 3.2.5 of	•	• • • • • • • • • • • • • • • • • • • •	opriate category as an "other	
Individual BCIN:	3296	64		
Basis for exemption	on from registra	tion: <u> </u>	Division C 3.2.4.1. (4)	
☐ The design work is exempt from the	registration and	qualification requireme	ents of the Building Code.	
Basis for exemption	on from registra	tion and qualification:		
I certify that:				
The information contained in this schedule is true to the best of my	knowledge.			
2. I have submitted this application with the knowledge and consent of	of the firm.			
July 28, 2023		Mare A	4	
Date		Signature of De	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.
- 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 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

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These documents issued for the use of and may not be used by any other persons without authorization. Documents  Building I  Address (Model): Model 3250  Model:	Form No. 1  EM Air Systems  Layout No.  for permit and/or construction are signed in red.  JB-09056
Address (Model): Model 3250	for permit and/or construction are signed in red. JB-09056
Address (Model): Model 3250	· · · · · · · · · · · · · · · · · · ·
Address (Model): Model 3250	_ocation
Model:	Site: King East Developments
model.	Lot:
City and Province: Richmond Hill	Postal code:
Calculations	s based on
Dimensional information based on:	rchitectural Design Inc.Mar/2023
Attachment: Detached	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: 5
Sensible Eff. at -25C 60% Apparent Effect. at -0C 80%	Units: Imperial Area Sq ft: 3237
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 3	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/	Gain Caculations based on CSA-F280-12 Effective R-Values
Notes: Residential New 0	Construction - Forced Air
Calculations p	performed 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



Builder:

## Air System Design

Date:

SB-12 **Energy Star**  2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

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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 July 28, 2023

EM Alr Systems Project # PJ-00267 System 1 Individual BCIN: 32964 Plane Alexander Model 3250 Project: King East Developments David DaCosta Layout # JB-09056 Model:

Project: King East L	Developii	iciits		Model:			Wodei	3230							"	idividuai i	BCIIN.	32904	1 01				David Dace	osta	Lay	out #	JD-	-09030
DESIGN LOAD SPECIFICATION	S			AIR DISTE	RIBUTION	& PRESSI	URE				F	URNACE/	AIR HAND	DLER DAT	A:			BOILER/W	VATER HEA	TER DA	ГА:			A	A/C UNIT D	ATA:		
									-		_						_							_				
Level 1 Net Load	17,881 I	otu/h	1	Equipmer	nt External	Static Pre	essure		0.5 "	w.c.	N	/lake		Carr				Make			T	ype		c	Carrier		3.0 T	on
Level 2 Net Load	16,590 I	otu/h	4	Additiona	I Equipme	nt Pressu	re Drop		0.225 "		N	/lodel	5	59SC5B06	DE1714			Model						c	Cond		3.0	
Level 3 Net Load	18,424 I	otu/h			Design Pre				0.275 "			nput Btu/h		6000				Input Btu/	'h					c	Coil		3.0	
Level 4 Net Load	0 1	otu/h	I	Return Br	anch Long	gest Effect	tive Lengt	h	300 f	t	C	Output Btu	/h	5800				Output Bt	u/h									
Total Heat Loss	52,895 I	otu/h	I	R/A Plenu	m Pressur	re			0.138 "	w.c.	E	.s.p.		0.5	0 "	W.C.		Min.Outpu	ıt Btu/h		A	WH						
Total Heat Gain	31,206 l	otu/h	;	S/A Plenu	m Pressur	re			0.14 "	w.c.	V	Vater Tem	р		d	eg. F.	L						wer DATA:					
			1	Heating A	ir Flow Pro	oportionin	g Factor		0.0205	fm/btuh	,	AFUE		97%	6			Blower Sp	eed Selecte	ed:	Yello	w		E	Blower Typ	e E	CM	
Building Volume Vb	40235 f	t³	•	Cooling A	ir Flow Pro	oportionin	ng Facter		0.0348	fm/btuh	P	lux. Heat													(Brushle	ss DC OE	BC 12.3.1.5	5.(2))
Ventilation Load	1,336 I	3tuh.				1	R/A Temp		70 c	leg. F.	5	B-12 Pack	age	Energy	Star			Check	1085 cf	m (	Cool. Chec	k _	1085 cf	im				
Ventilation PVC	79.5	cfm					S/A Temp		119 c	leg. F.																		
Supply Branch and Grill Sizing			ļ	Diffuser lo	oss _	0.01	"w.c.				1	emp. Rise	·>>> <u> </u>	<u>49</u> c	leg. F.			Heat.	1085 cf	m (	Cooling	=	1085 cf	fm C	Design Airfl	ow _	1085 c	fm
L							Leve	el 1													Level							
S/A Outlet No.	1	2	3	4	5										6	7	8	9	10	11	12	13	25					
Room Use	BASE	BASE	BASE	BASE	BASE										KIT	KIT	FAM	LIV	WR	FOY	LAUN	DIN	STAIR					
Btu/Outlet	3576	3576	3576	3576	3576										1678	1678	2390	1681	564	3485	1930	1438	1747					
Heating Airflow Rate CFM	73	73	73	73	73										34	34	49	34	12	71	40	30	36					
Cooling Airflow Rate CFM	11	11	11	11	11										76	76	84	93	12	49	45	81	9					
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	44	37	44	22	36										52	47	52	31	26	40	5	33	25					
Equivalent Length	140	110	80	100	110	70	70	70	70	70	70	70	70	70	100	90	120	80	110	90	90	70	150	70	70	70	70	70
Total Effective Length	184	147	124	122	146	70	70	70	70	70	70	70	70	70	152	137	172	111	136	130	95	103	175	70	70	70	70	70
Adjusted Pressure	0.07	0.09	0.10	0.11	0.09	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.09	0.09	0.08	0.12	0.10	0.10	0.14	0.13	0.07	0.19	0.19	0.19	0.19	0.19
Duct Size Round	6	6	6	6	6										6	6	6	6	3	5	4	5	4					
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10
Trunk	D	С	D	С	F		-								D	D	D	В	В	F	PTO	<u>B</u>	E					$\overline{}$
L							Leve														Level	4						
S/A Outlet No. Room Use	14 MAST	15 MAST	16 ENS	17 BED 4	18 BATH2	19 MEDIA	20 MEDIA	21 BED 3	22 BED 3	23 BATH	24 BED 2																	
Room Use Btu/Outlet	1754	1754	1688	1096	744	2678	2678	1908	1908	829	1388																	
						_0.0																						
Heating Airflow Rate CFM	36 59	36 59	35 49	22 36	15 16	55 67	55 67	39 55	39 55	17	28 31																	
Cooling Airflow Rate CFM  Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	12 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	75	83	56	47	36	60	47	50	54	49	24	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
Equivalent Length	130	120	150	110	140	120	110	120	130	140	100	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Total Effective Length	205	203	206	157	176	180	157	170	184	189	124	70	70	70	70	70	70	70	70 70	70	70 70	70	70 70	70	70	70	70	70
Adjusted Pressure	0.06	0.06	0.06	0.08	0.07	0.07	0.08	0.08	0.07	0.07	0.10	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Duct Size Round	5	5	5	0.06	3	6.07	6	5	5	3	0.10	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.15	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Outlet Size	3x10	3x10	3x10	3x10	3x10	4x10	4x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	C	C	D	В	В	4x10	4x10	5x10	5X10	5x10	PTO	4210	4210	4210	4210	4210	47.10	4210	47.10	47.10	4210	4210	47.10	4210	4210	4210	4210	4210
Return Branch And Grill Sizing		(	Grill Press	ure Loss		0.02	"w.c					R	eturn Tru	ınk Duct S	izing					<u> </u>	Supply Tru	nk Duct S	Sizing					
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R	Т	runk	(	CFM P	ress. R	ound	Rect.	Size	•	Trunk C	.CFM I	H.CFM P	ress. F	Round	Rect. S	ize	
Inlet Air Volume CFM	183	497	105	150	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		rop		1085	0.05	16.5	24x10				1009	1017	0.06	15.5	28x8	22x10	
Actual Duct Length	19	33	58	39	53							Z			1085	0.05	16.5	32x8	24x10		В	685	631	0.06	13.5	20x8	16x10	
Equivalent Length	115	175	115	160	200	50	50	50	50	50	50	Υ			830	0.05	15.0	26x8	20x10	(	C	448	518	0.06	12.0	16x8	12x10	
Total Effective Length	134	208	173	199	253	50	50	50	50	50	50	х									D	307	299	0.06	10.0	12x8	10x10	
Adjusted Pressure	0.09	0.06	0.07	0.06	0.05	0.24	0.24	0.24	0.24	0.24	0.24	v	<b>/</b>							ı	E	324	386	0.07	10.5	12x8	10x10	
Duct Size Round	8.0	12.0	6.0	8.0	8.0							V									F	126	200	0.07	8.5	8x8	107	
Inlet Size	FLC	8	8	8	8							u								(	3							
" "	OR	x	x	x	x	x	x	x	x	x	x	Т								ı	Н							
Inlet Size	9x6	30	14	14	14							S								ı								
												R									J							
Trunk	Y	Y	Z	Z	Y							<u>c</u>	l .							<u> </u>	K							



Total Heat Loss

Total Heat Gain

52,895 btu/h

31,206 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

Man 16Cot 2

32964

David DaCosta

**Energy Star** 

	Builder:	EM Air Syst	ems		Date:	Jı	ıly 28, 2023				Wea	ther Data	Richr	nond Hill	44	-5.8 8	8 20	50				Page
2012 OBC	Project:	King East Devel	opments	Mo	odel:	N	Model 3250			System 1	Hea	at Loss ^T	77.8 deg. F		Ht gain ^T	12.8 d	eg. F				ject # /out #	PJ-0026 JB-0905
Run ft. exposed wall. Run ft. exposed wall Ceiling heigt Floor are Exposed Ceilings. Exposed Ceilings.	t t t		BASE 181 A B 4.0 AG 1335 Area A B Fir	:	A B 4.0 AG Area A B Fir	4.0	A B AG Area A B	A B 4.0 AG Area A B Fir	4.	A B O AG Area A B Fir	A B 4.0 AG Area A B Fir		A B 4.0 AG Area A B Fir		A B 4.0 AG Area A B Fir		A B 4.0 AG Area A B Fir		A B 4.0 AG Area A B Fir		A B 4.0 AG Area A B Fir	ı
Gross Exp Wall I Gross Exp Wall I			724																			
Component	t 4.00 4.00 5 3.55 5 2.03 6 4.00 20.84 8 21.40 5 59.22 8 27.65 8 29.80	19.45 11.73 19.45 29.66 19.45 22.60 21.92 27.86 38.33 89.12 19.45 3.20 3.73 0.61 1.31 0.67 2.81 1.44 2.61 0.23  1.1110 0.0575 0.08 0.07 16.80 13.82	7413 8307 9229	297 226 67 416	Loss	Gain	Loss Gai	in Loss	Gain	Loss Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	S Gain
	3 x	0.04 0.07	344	78																		
Case   Heat Gain People   Appliances Load   Duct and Pipe los   Level HL Total   17,881   Level HG Total   1,566	1 =.25 pe	239 ercent 5476 10% stal HL for per room HG per room x 1.3	17881	1566																		
Heat Gain Peopl Appliances Load Duct and Pipe los Level HL Total 17,881 Level HG Total 1,566  Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings. Exposed Ceilings Exposed Floor Gross Exp Wall	To Total	ercent 5476 10% stal HL for per room	17881  KIT 36 A B 10.0 292 Area A B Fir 360		DIN 14 A B 10.0 178 Area A B Fir 140	19 11.0 82	B Area A B Fir	FOY 40 A B 10.0 152 Area A B Fir 400	12.	0 Area A B Fir	WI 6 A B 10.0 41 Area A B Fir	R	20 A B 10.0 286 Area A B Fir 200		29 A B 10.0 200 Area A B Fir 290		A B 10.0 Area A B Fir		A B 10.0 Area A B Fir		A B 10.0 Area A B Fir	•
Heat Gain Peopl Appliances Load Duct and Pipe los Level HL Total 17,881 Level HG Total 1,566  Level HG Total 1,566  Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings. Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Component	1 = .25 pt	ercent 5476 10% tal HL for per room HG per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir		14 A B 10.0 178 Area A B Fir 140	19 11.0 82 209 <u>Gain</u>	A B Area A B Fir	40 A B 10.0 152 Area A B FIr 400	12. 9	8 A B O O Area A B	6 A B 10.0 41 Area A B Fir		20 A B 10.0 286 Area A B FIr	Gain	29 A B 10.0 200 Area A B FIr		B 10.0 Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B	
Heat Gain Peopl Appliances Look Duct and Pipe los Level HL Total 17,881 Level HG Total 1,566  Level HG Total 1,566  Run ft. exposed wall Run ft. exposed wall Ceiling height Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Gross Exp Wall Existing Window Skylight Door Net exposed walls Net exposed walls	1 = .25 pr   Total		KIT 36 A B 10.0 292 Area A B Fir 360 Loss	Gain 1572	14 A B 10.0 178 Area A B Fir 140	19 11.0 82 209 Gain 3 305 9	A B Area A B Fir Loss Gal	40 A B 10.0 152 Area A B Fir 400	12 9 21 Gain 653	8 A B O O O Area A B Fir 6 C C Gain	6 A B 10.0 41 Area A B Fir 60 Loss	Gain 75 203	20 A B 10.0 286 Area A B FIr 200	Gain	29 A B 10.0 200 Area A B FIr 290	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Heat Gain Peopl Appliances Load Duct and Pipe los Level HL Total 17,881 Level HG Total 1,566  Run ft. exposed wall Ceiling heigt Floor are Exposed Ceilings. Exposed Ceilings. Exposed Ceilings. Component North Shade EastWee Sout Existing Window Skyligh Door Net exposed walls. Net exposed walls. Level 2,504 Rever 1,504 Rever 1,5	1 = .25 pr Total  Total  R-Values L 4.00 4.00 4.00 4.00 21.40 8.50 2.03 59.22		KIT 36 A B 10.0 292 Area A B Fir 360 Loss	Gain 1572	14 A B 10.0 178 Area A B Fir 140 Loss 26 506	19 11.0 82 209 Gain 3 305 9	A B Area A B Fir Loss Gal	40 A B 10.0 152 Area A B Fir 400  100 100 100 100 100 100 100 100 10	12 9 21 Gain 653	8 A B O O O Area A B Fir 6 C C Gain	6 A B 10.0 41 Area A B Fir 60 Loss	Gain 75 203	20 A B 10.0 286 Area A B Fir 200 Loss	Gain	29 A B 10.0 200 Area A B Fir 290 Loss	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Heat Gain Peopl Appliances Load Duct and Pipe los Duct and Pipe los Level HL Total Level HG Total  Run ft. exposed wall Ceilings Exposed Ceilings Exposed Goors Existing Window Skyligh Door Net exposed walls Exposed Ceilings Lexposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Component North Shade EastWee Sout Existing Window Skyligh Door Net exposed walls Exposed Ceilings Lexposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive Heatloss Heat Los Heat Gai	1 = .25 pt     To   Total	LOSS Gain 19.45 11.73 19.45 22.60 39.10 24.56 19.45 32.00 38.31 38.912 19.45 3.20 3.64 0.60 2.81 1.31 0.67 2.81 1.44 2.61 0.23	KIT 36 A B 10.0 292 Area A B Fir 360  Loss 53 1031	Gain 1572 184	14 A B 10.0 178 Area A B Fir 140 Loss 26 500	19 11.0 82 209 Gain 3 305 9 4 68 179	A B B Area A B B Fir Loss Gai 175 408 651	40 A B 10.0 152 Area A B Fir 400  100  22 428 67 27 525 107 351 1276	12 9 21 Gain 86 2 210 15	8 A B 0 0 0 Area A B Fir 6 C Loss Gain 11 408 € 5 709 11	6 A B 10.0 41 Area A B Fir 60  Loss  9 17 57 51 18	Gain	20 A B 10.0 286 Area A B Fir 200 Loss 42 42 178 64	Gain 3 497 7 106	29 A B 10.0 200 Area A B Fir 290 Loss 260 945	Gain 890 5 156	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Heat Gain Peopl Appliances Load Duct and Pipe los Duct and Pipe los Level HL Total Level HG Total  Run ft. exposed wall Run ft. exposed wall Ceilings light Floor are Exposed Ceilings: Exposed Ceilings: Exposed Ceilings Exposed Goings Exposed Goings Exposed Floor Gross Exp Wall Gross Exp Wall Existing Window Skyligh Door Net exposed walls: Exposed Ceilings: Exposed Ceilings: Exposed Goings Exposed Ceilings Exposed Goings Exposed Floor Foundation Conductive Heatloss otal Conductive Heat Loss Heat Gai Air Leakage Heat Loss/Gai Ventilation Case	s 1 = .25 pt To Total  Total  S R-Values L 4.00 4.00 4.00 4.00 5.1.99 2.03 4.00 2.1.40 8.50 5.9.22 5.7.65 2.9.80		KIT 36 A B 10.0 292 Area A B Fir 360  Loss 53 1031	1572 184 1756 101	14 A B 10.0 178 Area A B Fir 140 Loss 26 500 114 414	19 11.0 82 209 Gain 3 305 9 14 68 179 373 0 21	A B B Area A B B Fir Loss Gai 175 408 651 1234 644	40 A B 10.0 152 Area A B Fir 400  100 22 428 67 27 525 107 351 1276	21 Gain 653 86 2 210 15	8 A B 0 0 0 Area A B Fir 6 C Loss Gain 1117 1117 115 583 11	6 A B 10.0 41 Area A B Fir 60  Loss  37 57 51 18 34 11 18	Gain  75 203  35 31  60 234  88 13	20 A B 10.0 286 Area A B Fir 200 Loss 42 42 178 64	Gain  497  106  604  35	29 A B 10.0 200 Area A B Fir 290 Loss 260 945	Gain 4 890 5 156 9 1045 8 60	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Heat Gain Peopl Appliances Load Duct and Pipe los Level HL Total	1 = .25 pt     To   Total     S   R-Values   L     4 .00     4 .00     4 .00     4 .00     5   1.99     2 .03     4 .00     5   2.7.65     5   29.80     1   = .25 pt     1	COSS Gain 19.45 11.73 19.45 22.60 19.45 22.60 19.45 32.0 19.45 3.20 19.46 0.60 19.47 3.20 19.48 0.6	KIT 36 A B 10.0 292 Area A B Fir 360  Loss 53 1031	1572 184 1756 101	14 A B 10.0 178 Area A B Fir 140 Loss 26 500	19 11.0 82 209 Gain 3 305 9 14 68 179 373 0 21	A B B Area A B B FIr Loss Gal 175 408 651 1234 644 51	40 A B 10.0 152 Area A B Fir 400  100  22 428 67 27 525 107 351 1276	21 Gain 653 86 2 210 15	8 A B 0 0 0 Area A B Fiir 6 C Loss Gain 1117 1117 115 583 11	6 A B 10.0 41 Area A B Fir 60  Loss  37 57 51 18 34 11 18	Gain	20 A B 10.0 286 Area A B Fir 200 Loss 42 42 178 64	Gain  497  106  604  35	29 A B 10.0 200 Area A B Fir 290 Loss 260 945	Gain 4 890 5 156 9 1045 8 60	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	

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



52,895

31,206

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

		Builder:	ЕМ	l Air System	ns	_	Date:		July	28, 2023			_			Wea	ther Data	Ri	chmond Hill	4	4 .	-5.8 8	8 20	50				Page 5
2012 OBC		Project:	King Ea	ast Develop	ments	_ ^	Model:		Mo	del 3250				System	1	He	at Loss ^T	77.8 deg	j. F	Ht gain	^T	12.8 d	leg. F				ect # out #	PJ-00267 JB-09056
	Level 3				MAST	т	17 A	ED 2	6 A		29			MEDIA 46 A	•	BA1 9 A	H2	12 A	ED 4	21 /			A		A		A	
Run	ft. exposed wall B Ceiling height				B 9.0		B 9.0		9.0		11.0	В		B I1.0		B 9.0		9.0		9.0	3		B 9.0		B 9.0		9.0	
	Floor area				425 Area		185 Area	a	109 A	rea		Area		390 Area		97 Area		165 Are	а	102 /	rea		Area		Area		a.u Are	ea
E	xposed Ceilings A				425 A		185 A	-	109 A		183			390 A		97 A		165 A	-	102			A		A		Α	-
E	xposed Ceilings B				В		В		В			В		В		В		В		E			В		В		В	
	Exposed Floors				Flr		Flr		35 F	ir	183			117 Flr		Flr		Fir		F	ir		Flr		Flr		Flr	
	Gross Exp Wall A Gross Exp Wall B			3	369		153		54		319		ŧ	506		81		108		189								
	Components	R-Values I	Loss Ga	ain	Loss	Gain	Los	s Gain		oss Ga	ain I	Loss Ga	ain	Loss	Gain	Loss	Gain	Los	s Gain		.oss	Gain	Loss	Gain	Loss	Gain	10	ss Gain
	North Shaded	4.00	19.45	11.73	2000	1		311 188		175	106			2000			- Juni		June June	ĪΓ		Ju		T			[	JU JUIII
	East/West	4.00	19.45		48 934	4 1424		نساخ			48	934	1424	52 1011	1542					20	389	593						
	South	4.00	19.45	22.60										14 272	316	9 1	5 203	14	272 316	9	175	203						
	Existing Windows	1.99	39.10	24.56					4																	4		
	Skylight Doors	2.03 4.00	38.33 19.45	89.12 3.20																								
Ne	et exposed walls A	21.40	3.64		321 1167	7 192	137	498 82	45	164	27 271	985	162 4	440 1600	263	72 2	32 43	94	342 56	160	582	96						
	et exposed walls B	8.50	9.15	1.51	721 1107	132		430 02	40	104		303	.02	1000	203		75	34	342 30	100	302	30						
	xposed Ceilings A	59.22	1.31		425 558	8 286	185	243 124	109	143	73 183	240	123 3	390 512	262	97 1	7 65	165	217 111	102	134	69						
E	xposed Ceilings B	27.65	2.81	1.44		4																				4		
	Exposed Floors	29.80	2.61	0.23			-		35	91	8 183	478	42 1	117 305	27													
Foundation Cond	luctive Heatloss Heat Loss				2659		1	1052	1	573		2637		3701		5			831		1280			4		4		
Total Conductive	Heat Gain				2033	1901		394		3/3	214		1751	3701	2411	,	312		484		1200	961						
Air Leakage	Heat Loss/Gain		0.2776	0.0575	738			292 23		159	12	732	101	1028	139	1	7 18		231 28		355	55						
	Case 1		0.02	0.07																								
Ventilation	Case 2		16.80	13.82																	-							
	Case 3 Heat Gain People	Х	0.04	0.07 239	110	0 140 478		44 29 239		24	16	109	129 239	153	178		23 23	1	34 36 239		53	71		4		4		
	Appliances Loads	1 =.25 pe	ercent	5476	2	4/0		239					239					- 1	238									
	Duct and Pipe loss	<u>-</u>	JI GOIN	10%					1	73	21 1	337	199	1 473	241													
Level HL Total	18,424		tal HL for pe	er room	3507			1388		829		3815		5355		7-		1	096		1688							
Level HG Total	14,544	Total	HG per roon	II X 1.3		3417	L	890	J L		342		3143		3858	<u> </u>	458		1022	1 L		1413					L	
	Lovel 4			-	-		-																					
Dun	Level 4 ft. exposed wall A				Α		Α		А			A		Α		Α		Α					Α		Α		Α	
	ft. exposed wall B				В		В		В			В		В		В		В		É			В		В		В	
	Ceiling height																											
	Floor area				Area		Area	a		rea		Area		Area		Area		Are	a		rea		Area		Area		Are	ea
	xposed Ceilings A				A		A		A			A		A		A B		Α		,	١.		A		Α		A	
E	Exposed Ceilings B Exposed Floors				В		В		В	,		В											В				B Flr	
	Gross Exp Wall A													B				B		E	3 Str				B			
	Gross Exp Wall B				Flr		Flr		F			Fir		Fir		Flr		B Fir		F	B Fir		Fir		B Flr			
					FIF				F											F	B Fir						- "	
			Loss Ga		Loss	Gain		ss Gain			1		ıin	Flr	Gain		Gain			F	ir	Gain		Gain		Gain		ss Gain
	North Shaded	4.00	19.45	11.73		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
	North Shaded East/West	4.00 4.00	19.45 19.45	11.73 29.66		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
	North Shaded East/West South	4.00 4.00 4.00	19.45 19.45 19.45	11.73 29.66 22.60		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
	North Shaded East/West South Existing Windows	4.00 4.00	19.45 19.45	11.73 29.66		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
	North Shaded East/West South Existing Windows Skylight Doors	4.00 4.00 4.00 1.99 2.03 4.00	19.45 19.45 19.45 39.10 38.33 19.45	11.73 29.66 22.60 24.56 89.12 3.20		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
Ne	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A	4.00 4.00 4.00 1.99 2.03 4.00 21.40	19.45 19.45 19.45 39.10 38.33 19.45 3.64	11.73 29.66 22.60 24.56 89.12 3.20 0.60		Gain	Fir	ss Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
Ne Ne	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls B	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51		Gain	Fir	ss Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ess Gain
Ne Ne E	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls B Exposed Ceilings A	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67		Gain	Fir	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
Ne Ne E	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A exposed Ceilings A exposed Ceilings B	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51		Gain	Fir	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
Ne Ne E	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed Ceilings A exposed Ceilings B Exposed Floors Lective Heatloss	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		oss Gain
Ne Ne E E	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed Ceilings A exposed Ceilings B Exposed Floors Luctive HeatLoss Heat Loss	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67		Gain	Fir	ss Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
No N	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed Cellings A xposed Cellings B Exposed Floors luctive Heatloss Heat Loss Heat Gain	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.81 2.61	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44		Gain	Fir	s Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain
Ne Ne E E Foundation Cond	North Shaded East/West South Existing Windows. Skylight Doors et exposed walls A et exposed ceilings A exposed Ceilings A exposed Ceilings A exposed Foors uctive Heatloss Heat Loss Heat Loss Heat Gain Heat Loss/Gain	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.81 2.61	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23		Gain	Fir	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		oss Gain
No N	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed Cellings A xposed Cellings B Exposed Floors luctive Heatloss Heat Loss Heat Gain	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.81 2.61	11.73 29.66 22.66 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23		Gain	Fir	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ass Gain
No.	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A exposed Ceilings A exposed Ceilings B Exposed Floors uctive Heatloss Heat Gain Heat Loss/Gain Case 1	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.81 2.61	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23		Gain	Flr	ss Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ess Gain
Foundation Cond Total Conductive Air Leakage Ventilation	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed ceilings A Exposed Ceilings B Exposed Floors uctive Heatloss Heat Gain Heat Loss/Gain Case 1 Case 2 Case 3 Heat Gain People	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.61 0.0000 0.000 16.80 0.04	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23 0.0575 0.07 13.62 0.07		Gain	Flr	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		oss Gain
Foundation Cond Total Conductive Air Leakage Ventilation	North Shaded East/West South Existing Windows. Skylight Doors et exposed walls A te exposed Ceilings A txposed Ceilings B Exposed Floors luctive Heatloss Heat Loss Heat Loss Heat Loss Gase 2 Case 3 Heat Gain People Appliances Loads	4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.61 0.0000 0.000 16.80 0.04	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23 0.0575 0.077 13.82 0.07 239		Gain	Flr	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ess Gain
No.	North Shaded East/West South Existing Windows Skylight Doors et exposed walls A exposed Ceilings A exposed Ceilings B Exposed Floors uctive Heatloss Heat Loss Heat Loss Heat Case 1 Case 1 Case 2 Case 3 Heat Gain People Appliances Loads Ouct and Pipe loss	4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 2.81 2.61 0.0000 0.000 16.80 0.004	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23 0.0575 0.07 13.82 0.07 239 5476 10%		Gain	Flr	is Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ess Gain
Foundation Cond Total Conductive Air Leakage Ventilation	North Shaded East/West South Existing Windows. Skylight Doors et exposed walls A te exposed Ceilings A txposed Ceilings B Exposed Floors luctive Heatloss Heat Loss Heat Loss Heat Loss Gase 2 Case 3 Heat Gain People Appliances Loads	4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80 x	19.45 19.45 19.45 39.10 38.33 19.45 3.64 9.15 1.31 2.61 0.0000 0.000 16.80 0.04	11.73 29.66 22.60 24.56 89.12 3.20 0.60 1.51 0.67 1.44 0.23 0.0575 0.07 13.82 0.07 239 5476 10%		Gain	Flr	ss Gain		Îr	1	Flr	ain	Flr	Gain	Fir	Gain	Fir		F	ir	Gain	Flr	Gain	Flr	Gain		ss Gain

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 Alexa

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

2

3 x

4

Project # Layout #

David DaCosta

Page 6 PJ-00267 JB-09056

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

Package:	Energy Star Richmond Hill	Madal.	Model 2250
Project:		Model:	Model 3250
	RESIDENTIAL MECHANICAL		
	For systems serving one dwelling unit & co	ntorming to the Onland Building	Code, U.reg 332/12
	Location of Installation	Total Ve	entilation Capacity 9.32.3.3(1)
Lot #	Plan #	Bsmt & Master Bdrm	2 @ 21.2 cfm 42.4 cfm
Township	Richmond Hill	Other Bedrooms  Bathrooms & Kitchen	3 @ 10.6 cfm 31.8 cfm 5 @ 10.6 cfm 53 cfm
Roll #	Permit #	Other rooms	6 @ 10.6 cfm 63.6 cfm Total 190.8
Address		Principal	Martilation Connection 22.2 4/4)
	Builder	Principal	Ventilation Capacity 9.32.3.4(1)
Name Address	EM Air Systems	Master bedroom Other bedrooms	1 @ 31.8 cfm 31.8 cfm 3 @ 15.9 cfm 47.7 cfm Total 79.5
0:4.			
City		Princ	ipal Exhaust Fan Capacity
Tel	Fax	Make	Model Location
	lu atallia a Canturator	VanEE	V150E75NS Base
Name	Installing Contractor	127 cfm	80.0 Sones or Equiv.
			•
Address		Make He	eat Recovery Ventilator VanEE
City		Model	V150E75NS
Tel	Fax		127 cfm high 80 cfm low
		Sensible efficiency @ Sensible efficiency @	
		Sensible efficiency @ Note: Installer to bala	0 deg C 75% ance HRV/ERV to within 10 percent of PVC
a) x b) c) d) e)	Combustion Appliances 9.32.3.1(1)  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	Sensible efficiency @ Note: Installer to bala	o deg C 75%  ance HRV/ERV to within 10 percent of PVC  mental Ventilation Capacity  ity 190.8 capacity 79.5
b) c) d)	Combustion Appliances 9.32.3.1(1)  Direct vent (sealed combustion) only Positive venting induced draft (except fireplaces) Natural draft, B-vent or induced draft fireplaces Solid fuel (including fireplaces)	Sensible efficiency @ Note: Installer to bala Supple  Total ventilation capac Less principal exhaust REQUIRED suppleme	o deg C 75%  ance HRV/ERV to within 10 percent of PVC  mental Ventilation Capacity  ity 190.8 capacity 79.5
b) c) d)	Combustion Appliances 9.32.3.1(1)  Direct vent (sealed combustion) only Positive venting induced draft (except fireplaces) Natural draft, B-vent or induced draft fireplaces Solid fuel (including fireplaces)	Sensible efficiency @ Note: Installer to bala Supple  Total ventilation capac Less principal exhaust REQUIRED suppleme	o deg C 75%  ance HRV/ERV to within 10 percent of PVC  mental Ventilation Capacity  ity 190.8 capacity 79.5 ntal vent. Capacity 111.3 cfm
b)	Combustion Appliances 9.32.3.1(1)  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  Heating System Forced air Non forced air Electric space heat (if over 10% of heat load)  House Type 9.32.3.1(2)  Type a) or b) appliances only, no solid fuel	Sensible efficiency @ Note: Installer to bala Supple  Total ventilation capace Less principal exhaust REQUIRED suppleme  Suppleme  Location Ens Bath	O deg C   75%
b)	Combustion Appliances 9.32.3.1(1)  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  Heating System Forced air Non forced air Electric space heat (if over 10% of heat load)  House Type 9.32.3.1(2)  Type a) or b) appliances only, no solid fuel Type I except with solid fuel (including fireplace)	Sensible efficiency @ Note: Installer to bala Supple  Total ventilation capace Less principal exhaust REQUIRED suppleme  Sup  Location Ens Bath Bath 2  all fans HVI listed	O deg C   75%
b)	Combustion Appliances 9.32.3.1(1)  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  Heating System Forced air Non forced air Electric space heat (if over 10% of heat load)  House Type 9.32.3.1(2)  Type a) or b) appliances only, no solid fuel	Sensible efficiency @ Note: Installer to bala Supple  Total ventilation capace Less principal exhaust REQUIRED suppleme  Sup  Location Ens Bath Bath 2  all fans HVI listed	O deg C   75%

Designer Certification										
I hereby certify that this ventilation system has been designed										
in accordance w	ith the Ontario B	uilding Code.	· ·							
accordance		anding obder								
N1	D 11 D									
Name	David D	aCosta								
	11	166								
Signature	- Cane	THE C								
,										
HRAI#	5190	BCIN#	32964							
1110 11 11	0100	5011111	02001							
Б.		0000								
Date	July 28	, 2023								



# **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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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	·						
Application	No:			Model/Certification Nur	mber					
A.	Project Information			•						
Building nur	mber, street name				Unit numb	er	Lot/Con			
		N	lodel 3250				İ			
Municipality	Richmond Hill		Postal code	Reg. Plan number / oth	ner descrip	tion				
B.	Prescriptive Compliance [indicate the build	ding code	compliance option l	being employed in the	house de	sign]				
	SB-12 Performance* [SB-12 - 3.1.2.]	*Attach	energy performs	ance results using	an annr	oved softwa	re (see a	uide)		
	OB-12 i enormance [GB-12 - 3.1.2.]	Attacii	energy periorina	ance results using	ан аррг	JVEG SOILWA	ie (see g	uide)		
<b>V</b>	ENERGY STAR®* [SB-12 - 3.1.3.]	*Attach	Builder Ontion E	Package [BOP] for	m					
Ŭ	ENERGY STAIL [SB-12 - 3.1.3.]	Allacii	Builder Option F	ackage [BOF] for	111					
	R-2000®* [SB-12 - 3.1.3.]	*Attach	R-2000 HOT200	00 Report						
	1X-2000 [3B-12 - 3.1.3.]	Attacii	11-2000 110 1200	oo report						
C.	<b>Project Building Design Conditions</b>									
	Climatic Zone (SB-1):	Heat. E	quip. Efficiency		Spac	e Heating Fu	uel Sourc	е		
<b>~</b>	Zone 1 (< 5000 degree days)		% AFUE	✓ Gas		Propane		Solid Fuel		
	Zone 2 (≥ 5000 degree days)	_ ≥8	4% < 92% AFUE	Oil		Electric		Earth Energy		
R	atio of Windows, Skylights & Glass (W, S	& G) to V	Vall Area		Other I	Building Cha	ıracterist	ics		
Aron of	Walls = 406.7 m² or 4377.9 ft²			☐ Log/Post&Beam		ICF Above C	3rade	☐ ICF Basement		
Alea Ul	Walls - 400.7 III 01 4377.9 It			☐ Slab-on-ground		Walkout Bas	sement			
		W,S	&G % = <u>10%</u>	☑ Air Conditioning		Combo Unit				
Area of W	$I, S \& G = 40.41 \text{ m}^2 \text{ or } 435.0 \text{ ft}^2$			☐ Air Sourced Heaf	t Pump (A	SHP)				
				☐ Ground Source H	Heat Pump	(GSHP)				
SB-12 Pe	rformance Reference Building Design Pac	kage ind	licating the preso	criptive package to	be com	pared for co	mpliance			
SB-1	2 Referenced Building Package (input desi	ge):								
D.	Building Specifications [provide values an	nd ratings	of the energy efficie	ncy components prope	osed or a	ttach ENERG\	STAR BO	)P forml		
υ.					occu, or a	CON LIVERYO	21711100	71 101111]		

Building Component	-	I/R-Values or n U-Value¹	Building Component	Efficiency Rating		
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value <sup>(1)</sup> 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	20.84	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 2	
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

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

The annual energy consumption using Subsection 3.1.1. SB-12 Ref  The annual energy consumption of this house as designed is	erence Building Pa	ackage isGJ (1J=1000MJ)
The annual energy consumption of this nouse as designed is		_60
The software used to simulate the annual energy use of the buildi	ng 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	uired)
☐ 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	d (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	on 3.1.3. Other Acceptable Compliance Methods]
The NRCan "ENERGY STAR for New Homes Standard Ver building performance meeting or exceeding the prescriptive		
The NRCan, "2012 R-2000 Standard " technical requirement exceeding the prescriptive performance requirements of the		
Performance Energy Modeling Professional		
Energy Evaluator/Advisor/Rater/CEM Name and company:	Accreditation or Eva	aluator/Advisor/Rater License #
BUILDING KNOWLEDGE CANADA		5506
ENERGY STAR or R-2000		
Energy Evaluator/Advisor/Rater/Name and company:	Evaluator/Advisor/R	tater License #
ANGELA BUSTAMANTE		5506
G. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) pro		
David DaCosta	32964	Signature  Mane Alexander

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:	Detached	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	
<b>3</b>	Option	N/A	n/a			
Cathedral Ceilings and Flat Roofs	Core	RSI 4.87 (R 27.7)	Core Minimum	√	R31	
	Option	N/A	n/a			
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			
Williams (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	√		
	Reg'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		Level 1 (DT 2.5ach / 0.18 nlr) (AT 3.0ach/0.26nlr)	Core Minimum	√		
-	Option		n/a			
Ventilation (HRV / ERV)	Core Option	65% SRE @0 °C and 55% SRE @ -25 °C ≥75% SRE @ 0 °C	Core Minimum 0,2	<b>√</b>		
		Interconnected to the Furnace Fan	0.2 Required	V		
	Rea'd	HRV balanced	Required	V		
	Electrical	SRE ≥75% SRE @ 0 °C, ≥ 0.57 L/s/W	0.1	√		
Electrical Savings		75% ENERGY STAR lighting	Core Minimum			
Licetical Savings	Option	100% ENERGY STAR lighting	0.1	√		
ENERGY STAR Certified Appliances	Option	N/A	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-09056

Energy Star Richmond Hill System 1 Package: System: Model: **Model 3250** Project:

Project:	Richmond Hill	N	flodel:	Model	3250
		Air Leakage Ca	alculations		
		nt Loss IL^T HLleak 77.8 18459	B 0.018	Building Air Leakage LRairh Vb 0.092 40235	Heat Gain HG^T HG Leak 12.8 857
Level Level 1 Level 2 Level 3 Level 4		ctive Air Leakage He	eat Gain	Lev  1 2 (LF) (LF) 1.0 0.6 0.4  Levels this	3 4 (LF) (LF) 0.5 0.4 0.3 0.3 0.2 0.2 0.1
	g	Ventilation Ca			
	Ventilation Heat Loss	venilialion Ca	iculations	Ventilation Heat Ga	ain
C 1.08	Ventilation Heat Loss	HLbvent 1336	C PVC 1.1 79.5	Ventilation Heat Gain HG^T HGb 12.8 10:	
	Case 1			Case 1	
	Case 1  Ventilation Heat Loss (Exhaust only S	ystems)	Vent	Case 1	Only Systems)
Level 1 Level 2 Level 3 Level 4			Case 1 - Ex HGbvent Building	ilation Heat Gain (Exhaust	plier 🔻 🔻
Level 1 Level 2 Level 3	Case 1 - Exhaust Only     LF	HL Multiplier 0.08 0.04 0.02	Case 1 - Ex	haust Only Multi	plier
Level 1 Level 2 Level 3	Case 1 - Exhaust Only     LF	HL Multiplier	Case 1 - Ex HGbvent Building	haust Only Multi 1099 14915	plier  D7  Date of the plant of
Level 1 Level 2 Level 3 Level 4	Case 1 - Exhaust Only	HL Multiplier	Case 1 - Ex HGbvent Building  Vent	haust Only Multi 1099 14915  Case 2  Ilation Heat Gain (Direct Do Multi HG^T 13	plier  07  Compared to the state of the stat
Level 1 Level 2 Level 3 Level 4  CO CO T.08	Case 1 - Exhaust Only     LF	HL Multiplier	Vent  Case 1 - Ex  HGbvent Building  Vent  C  1.08	Case 2  Ilation Heat Gain (Exhaust  Multi 1099 14915  Case 2  Ilation Heat Gain (Direct Du  Multi 1099 14915  13.	plier  07  ucted Systems)  plier  82  Air Systems)
C Level 3 Level 3 Level 4  C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Case 1 - Exhaust Only     LF	HL Multiplier	Vent  Case 1 - Ex  HGbvent Building  Vent  C  1.08	Case 2  Ilation Heat Gain (Exhaust  haust Only Multi 1099 14915  Case 2  Ilation Heat Gain (Direct Do  Multi HG^T 12.8  Case 3	plier  O7  CO  CO  CO  CO  CO  CO  CO  CO  CO
Level 1 Level 2 Level 3 Level 4  Comparison of the comparison of t	Case 1 - Exhaust Only	HL Multiplier 0.08 0.04 0.02 0.00  Systems)  r  Multiplier  Multiplier	Vent  Case 1 - Ex  HGbvent Building  Vent  C 1.08	Case 2  Ilation Heat Gain (Exhaust  haust Only Multi 1099 14915  Case 2  Ilation Heat Gain (Direct Do  Multi HG^T 12.8  Case 3  Attilation Heat Gain (Forced  Vent He HG*1.3	plier  07  Complete Systems  plier  82  Air Systems  at Gain Multiplier  99  0.07
Level 1 Level 2 Level 3 Level 3 Level 4  CO  Total Ven  Foundation Co	Case 1 - Exhaust Only     LF	HL Multiplier	Vent Case 1 - Ex HGbvent Building  Vent C 1.08  Vei HGbvent 1099	Case 2  Ilation Heat Gain (Exhaust  haust Only Multi 1099 14915  Case 2  Ilation Heat Gain (Direct Do  Multi HG^T 12.8  Case 3  Attilation Heat Gain (Forced  Vent He HG*1.3 109	plier  07  Complete Systems  plier  82  Air Systems  at Gain Multiplier  99  0.07

Watts

Btu/h

Walk Out Basement Foundation Conductive Heatloss

## **Envelope Air Leakage Calculator**

Supplemental tool for CAN/CSA-F280

Weather Sta	ation Description
Province:	Ontario <b>▼</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):	7.01
Building	Configuration
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m <sup>3</sup> ):	1139.46
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/	н): 0.328
Cooling Air Leakage Rate (ACH/I	H): 0.092

## **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) ▼		
Fou	ındatio	n Dimensions		
Floor Length (m):	21.93			
Floor Width (m):	5.66			
Exposed Perimeter (m):	55.17			
Wall Height (m):	2.74			
Depth Below Grade (m):	1.52	Insulation Configuration		
Window Area (m²):	2.32			
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):		2173		



## 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		

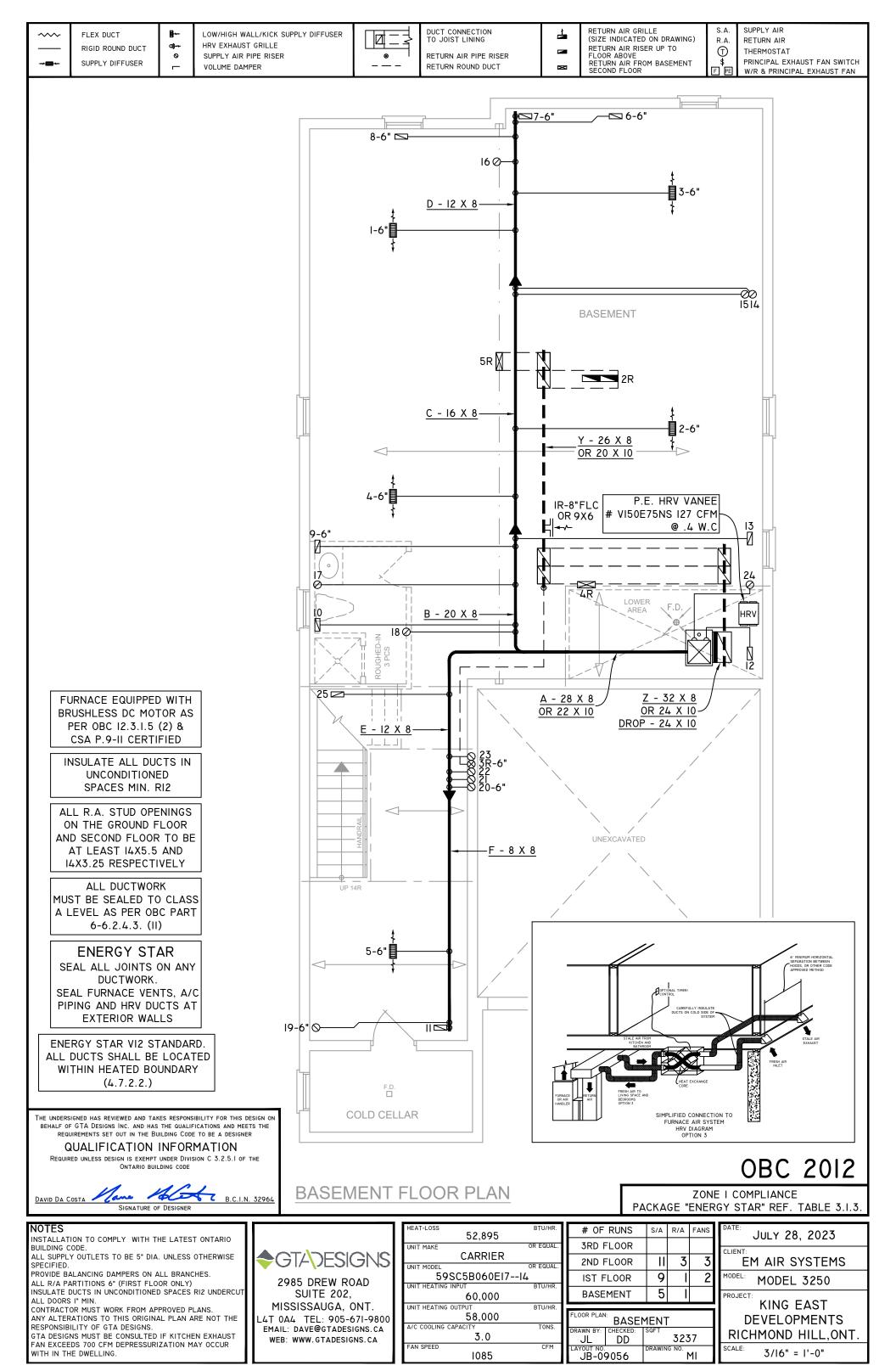


## 2985 Drew Road, Suite 202 Mississauga, Ontario L4T 0A4

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		



RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) SUPPLY AIR DUCT CONNECTION LOW/HIGH WALL/KICK SUPPLY DIFFUSER 4 FLEX DUCT TO JOIST LINING R.A RETURN AIR HRV EXHAUST GRILLE RETURN AIR RISER UP TO FLOOR ABOVE RIGID ROUND DUCT 1 THERMOSTAT 0 SUPPLY AIR PIPE RISER RETURN AIR PIPE RISER 8 SUPPLY DIFFUSER PRINCIPAL EXHAUST FAN SWITCH RETURN AIR FROM BASEMENT SECOND FLOOR VOLUME DAMPER RETURN ROUND DUCT  $\mathbf{x}$ W/R & PRINCIPAL EXHAUST FAN 15 ⊏ 1450-7-6' 8-6" 16 🛭 DW KITCHEN EXHAUST 100 CFM MIN. 6" ALL OTHER FANS SHALL BE **FAMILY** ROOM A MIN. OF 50 CFM OR **KITCHEN** OTHERWISE NOTED AS PER 9.32.3.5 SERVERY 5R \$ 2R LW 30X8 COFFERED CEILING COFFERED CEILING LIVING ROOM DINING ROOM 13 9-6 TUB WR io 📋 🛚 SUNKEN 12 -----CIRCULATION PRINCIPAL 25 FAN SWITCH STAIR TO BE CENTRALLY LOCATED **3R-6**" INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. RI2 ALL R.A. STUD OPENINGS ON THE GROUND FLOOR AND SECOND FLOOR TO BE **GARAGE** AT LEAST 14X5.5 AND 14X3.25 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 **FOYER** PIPING AND HRV DUCTS AT EXTERIOR WALLS 0 ENERGY STAR VI2 STANDARD. ALL DUCTS SHALL BE LOCATED WITHIN HEATED BOUNDARY CONCRETE (4.7.2.2.)**VERANDA** 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 OBC 2012 FIRST FLOOR PLAN ane 1866 B.C.I.N. 32964 ZONE I COMPLIANCE PACKAGE "ENERGY STAR" REF. TABLE 3.1.3. # OF RUNS R/A S/A **FANS** JULY 28, 2023 52,895 INSTALLATION TO COMPLY WITH THE LATEST ONTARIO 3RD FLOOR BUILDING CODE. CLIENT **GTADESIGNS** ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE **CARRIER** 3 3 **EM AIR SYSTEMS** 2ND FLOOR Ш PROVIDE BALANCING DAMPERS ON ALL BRANCHES 59SC5B060EI7--I4 9 IST FLOOR 2985 DREW ROAD **MODEL 3250** ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)

INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT

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

GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST

FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR

ALL DOORS I" MIN.

WITH IN THE DWELLING.

RESPONSIBILITY OF GTA DESIGNS.

SUITE 202,

MISSISSAUGA, ONT.

L4T 0A4 TEL: 905-671-9800 EMAIL: DAVE@GTADESIGNS.CA

WEB: WWW.GTADESIGNS.CA

5

3237

M2

GROUND FLOOR

DD

KING EAST

**DEVELOPMENTS** 

RICHMOND HILL, ONT.

3/16" = 1'-0"

**BASEMENT** 

JB-09056

FLOOR PLAN:

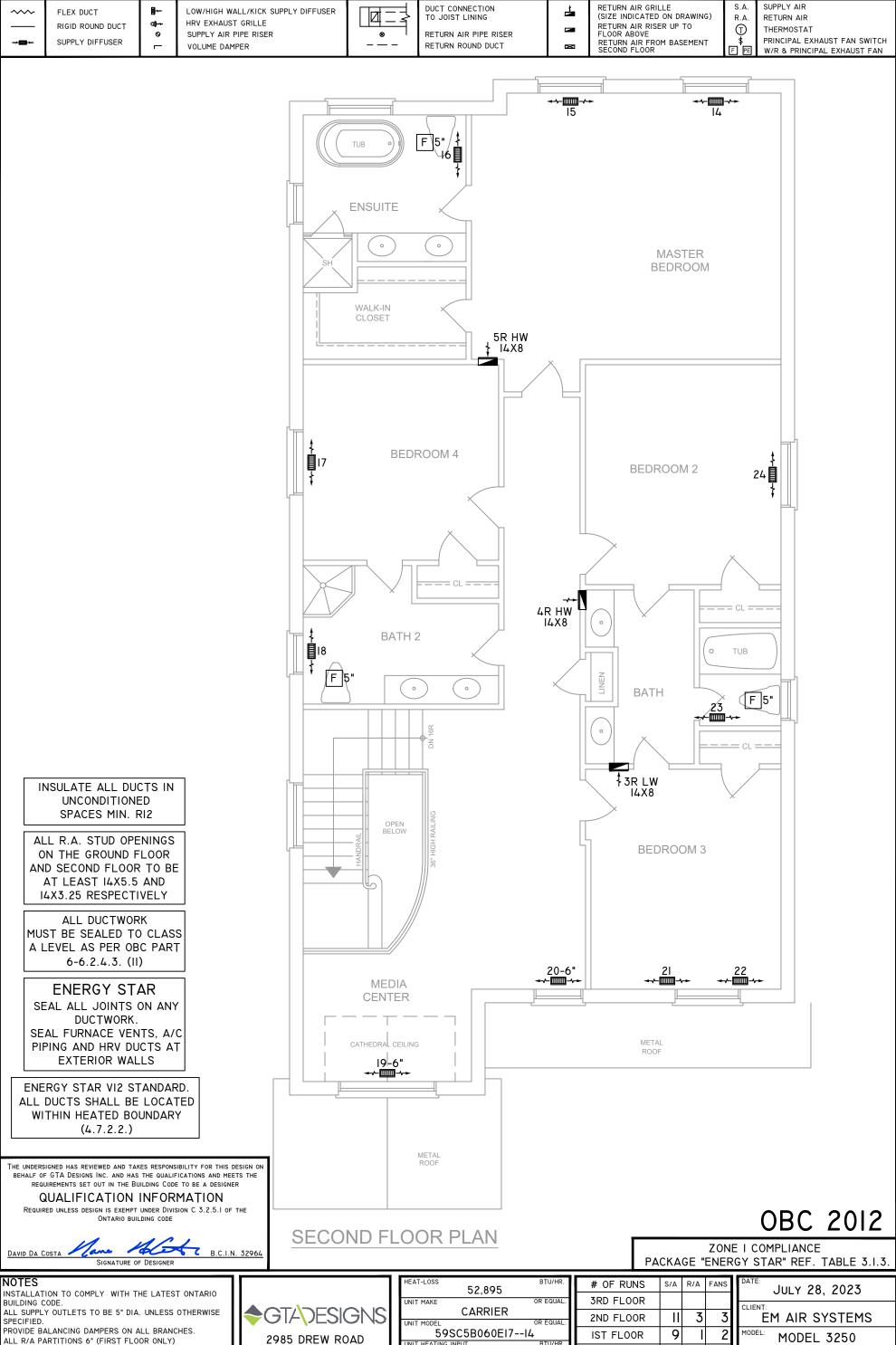
TONS

60,000

58,000

3.0

1085



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.

2985 DREW ROAD SUITE 202,

3011L LUL,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

HEAT-LOSS	BTU/HR.
52,895	
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B060EI7	4
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
58,000	
A/C COOLING CAPACITY	TONS.
3.0	
FAN SPEED	CFM
1085	

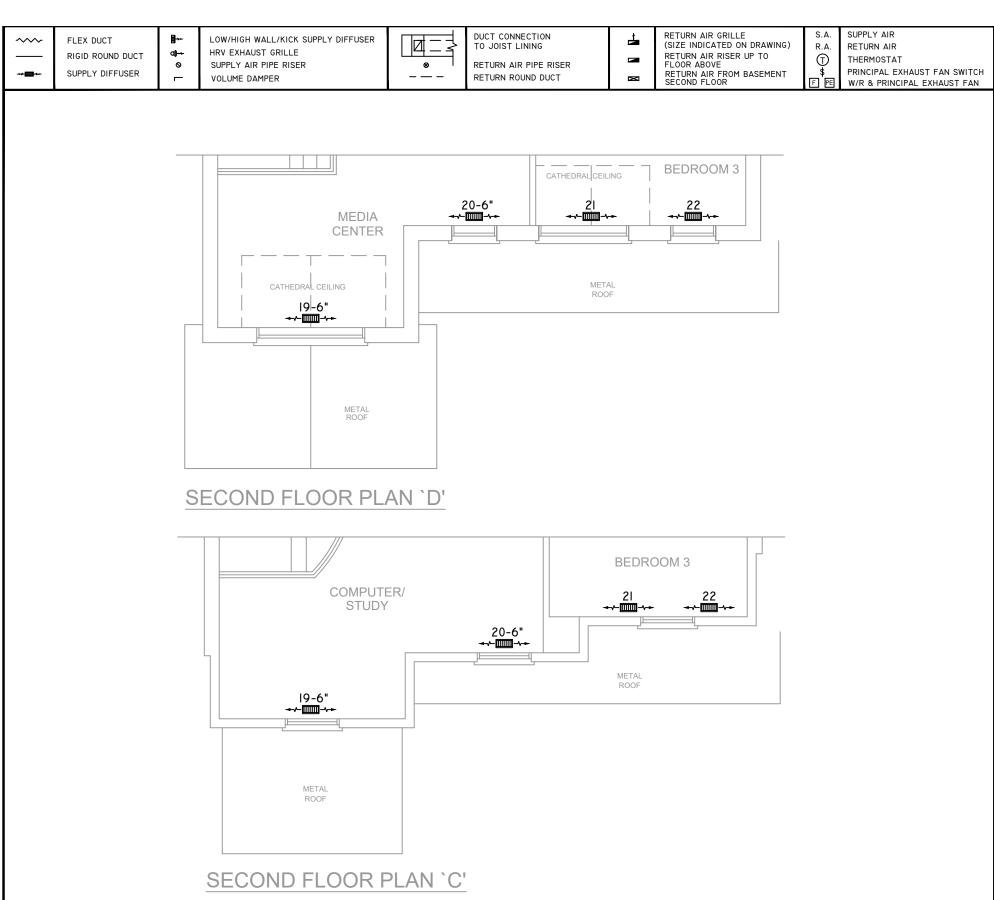
# OF RUNS	S/A	R/A	FANS	[
	3/A	IV/A	1 ANS	
3RD FLOOR				
2ND FLOOR	- 11	3	3	
IST FLOOR	9	- 1	2	١
BASEMENT	5			F
SECOND	FLO	0R		
RAWN BY: CHECKED:	SQFT	323	57	
			• •	

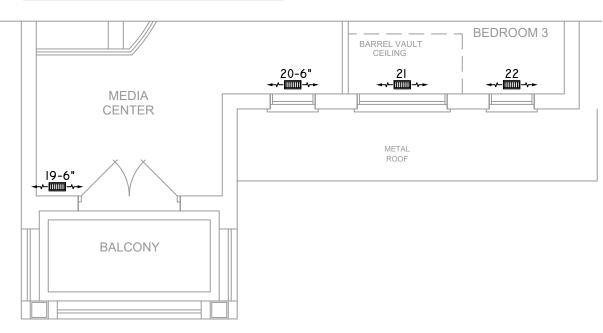
M3

YOUT NO. JB-09056

JULY 28, 2023
CLIENT:
EM AIR SYSTEMS
MODEL 3250
PROJECT:
KING EAST
DEVEL ODMENTO

DEVELOPMENTS RICHMOND HILL, ONT. 3/16" = 1'-0"





SECOND FLOOR 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  $$\operatorname{\textsc{Ontario}}$$  building code

Ane 1866 B.C.I.N. 32964

## OBC 2012

ZONE I COMPLIANCE PACKAGE "ENERGY STAR" REF. TABLE 3.1.3.

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

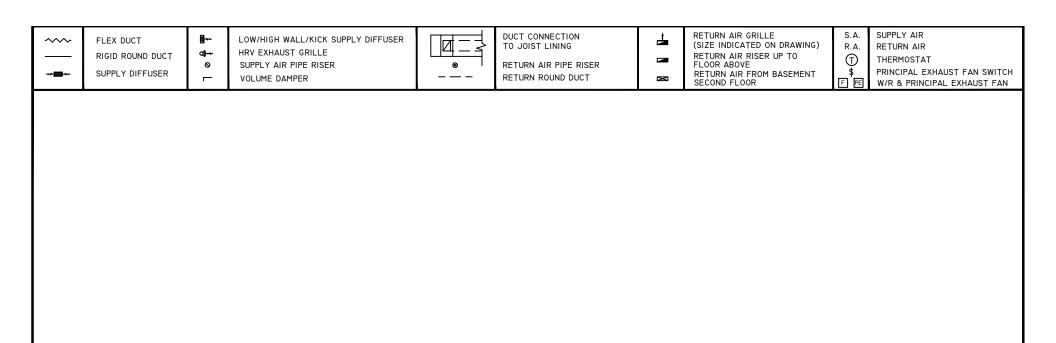
HEAT-LOSS 52,895	BTU/HR.
52,695	
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B060EI7	-14
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
58,000	
A/C COOLING CAPACITY	TONS.
3.0	
FAN SPEED	CFM
1085	

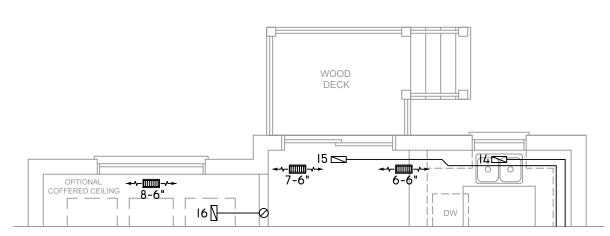
# OF	RUNS	S/A	R/A	FANS	ı	Ī
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	3RD F 2ND F IST F BASE FLOOR PLAN P DRAWN BY: JL LAYOUT NO.	DRAWN BY: CHECKED:	3RD FLOOR  2ND FLOOR  IST FLOOR  BASEMENT  FLOOR PLAN: PARTIAL PLAN DRAWN BY: CHECKED: SOFT JL DD LAYOUT NO. DRAWIN	3RD FLOOR  2ND FLOOR  IST FLOOR  BASEMENT  FLOOR PLAN: PARTIAL PLAN(S)  DRAWN BY: CHECKED: SOFT JL DD 323  LAYOUT NO. DRAWING NO.	3RD FLOOR  2ND FLOOR  II 3 3  IST FLOOR 9 I 2  BASEMENT 5 I  FLOOR PLAN: PARTIAL PLAN(S)  DRAWN BY: CHECKED: SQFT JL DD 3237  LAYOUT NO. DRAWING NO.	3RD FLOOR

JULY 28, 2023
CLIENT: EM AIR SYSTEMS
MODEL 3250
KING EAST DEVELOPMENTS

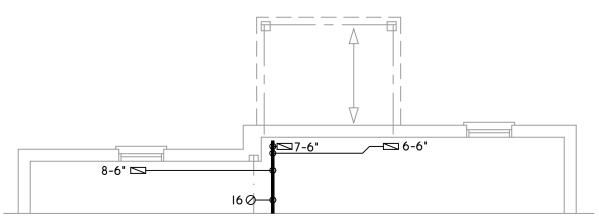
RICHMOND HILL, ONT.

3/16" = 1'-0"





FIRST FLOOR PLAN WITH DECK OPTIONAL



BASEMENT FLOOR PLAN WITH DECK OPTIONAL

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

Ane 1864 B.C.I.N. 32964

## OBC 2012

ZONE I COMPLIANCE PACKAGE "ENERGY STAR" REF. TABLE 3.1.3.

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

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

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



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

HEAT-LOSS	BTU/HR.
52,895	510/1111
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B060EI7-	-14
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
58,000	
A/C COOLING CAPACITY	TONS.
3.0	
FAN SPEED	CFM
1085	

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# OF RUNS	S/A	R/A	FANS	Ī
3RD FLOOR				
2ND FLOOR	Ш	3	3	l
IST FLOOR	9	- 1	2	l
BASEMENT	5	I		l
FLOOR PLAN: PARTIAL PLAN(S)				Ī

DD

JL JB-09056 3237

M5

JULY 28, 2023	
CLIENT: EM AIR SYSTEMS	
MODEL 3250	
PROJECT:	

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