

### **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 2			Lot/con.	
Municipality Richmond Hill	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design	n activities	T		
Name David DaCosta		Firm	gtaDesigns Inc.	
Street address 2985 Drew Road		T	Unit no.	Lot/con.
Municipality Mississauga	Postal code L4T 0A4	Province Ontario	E-mail hvac@gtades	igns.ca
Telephone number	Fax number		Cell number	-
(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	
	ighting and Pow	er	☐ Plumbing – All Building	
☐ Complex Buildings ☐ Fire Protecti			☐ On-site Sewage System	
Description of designer's work Mod	el Certification		Project #:	PJ-00267
Heating and Cooling Load Calculations Main	Х	Builder	Layout #:	JB-09504
Air System Design Alternate	Α	Project	King East Developm	ents
Residential mechanical ventilation Design Summary O.D. GFA Residential System Design per CAN/CSA-F280-12	2945	Model	Model 2930	
Residential New Construction - Forced Air		SB-12	Energy Star	
D. Declaration of Designer			<b>g</b> ,	
I David DaCosta (print name)	declare that (c	choose one as appro	opriate):	
☐ 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 exempti	on from registra	tion:	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.			
I have submitted this application with the knowledge and consent of	of the firm.			
June 24, 2024		Mana 16.	Contraction of the contraction o	,
Date		Signature of De	esigner	

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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Heat loss and gain calcula	ation 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-09504
Building L	cocation
Address (Model): Model 2930	Site: King East Developments
Model:	Lot:
City and Province: Richmond Hill	Postal code:
Calculations	s based on
Dimensional information based on:	chitectural Design Inc. May/2024
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: 2945
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/0	Gain Caculations based on CSA-F280-12 Effective R-Values
Notes: Residential New C	construction - 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:



EM Air

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

Date: 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.

P.I-00267

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Project: King East D	Developm	nents	l	Model:			Model	2930				Sys	stem 1			uilding C ndividual		32964	Mo	ne A	4 <i>6</i> =4-c	I	David DaCo	osta		oject # yout #	PJ JB	-09504
DESIGN LOAD SPECIFICATION	s		A	AIR DISTR	IBUTION	& PRESS	URE				F	URNACE/A	IR HANDI	LER DAT	A:			BOILER/	WATER HE	ATER DA	ATA:			Ţ	A/C UNIT D	DATA:		
Level 1 Net Load Level 2 Net Load Level 3 Net Load Level 4 Net Load	16,089 k 15,888 k 16,632 k	otu/h	I I	Additional Available I	t External Equipme Design Pro	nt Pressu essure		1	0.5 " 0.225 " 0.275 " 300 f	w.c.	M H	lake lodel igh Input igh Output		Carrio SC5B060 6000 5800	E1714 0 B	TU/h		Make Model Input Btu Output B			т	ype			Carrier Model: Cond		2.5 1 2.5 2.5	· · · · · · · · · · · · · · · · · · ·
Total Heat Loss	48,610 b	otu/h			m Pressur				0.138 "			.s.p.		0.50		w.c.		Min.Outp			A	WH						
Total Heat Gain	26,313 b	otu/h	5	S/A Plenui	m Pressur	e			0.14 "	w.c.	W	ater Temp			d	eg. F.		-				Blo	ower DATA:					
			H	Heating Ai	ir Flow Pro	portionin	ng Factor		0.0189	fm/btuh	Т	hermal Eff.			97%			Blower S	peed Selec	ted:	Orang	je			Blower Typ	oe E	СМ	
<b>Building Volume Vb</b>	36207 f	t³	(	Cooling A	ir Flow Pro	oportionir	ng Facter		0.0350	fm/btuh	E	lectric Hea	t												(Brushle	ess DC O	BC 12.3.1.	5.(2))
Ventilation Load	1,336 E	3tuh.				I	R/A Temp			leg. F.								Check	920	fm	Cool. Chec	k _	920 cf	m				
Ventilation PVC	79.5 c	fm					S/A Temp		128 c	leg. F.																		
Supply Branch and Grill Sizing				Diffuser lo	ss _	0.01	"w.c.				T	emp. Rise>	<u> </u>	<u>58</u> d	eg. F.			Heat.	920	cfm	Cooling	=	920 cf	m	Design Airl	flow	<u>920</u> c	fm
							Leve	I 1													Level	2						
S/A Outlet No.	1	2	3	4			2010							•	5	6	7	8	9	10		12	13					
Room Use	BASE	BASE	BASE	BASE											KIT	KIT	LAUND	WR	FOY	DIN/LIV		FAM	FAM					
Btu/Outlet	4022	4022	4022	4022											1743	1743	1647	411	3171	1921	1921	1666	1666					
Heating Airflow Rate CFM	76	76	76	76											33	33	31	8	60	36	36	32	32					
Cooling Airflow Rate CFM	8	8	8	8											70	70	41	2	26	52	52	48	48					
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	37	20	22	29											35	41	11	8	24	20	29	43	34					
Equivalent Length	70	90	110	110	70	70	70	70	70	70	70	70	70	70	80	90	130	120	80	110	120	90	80	70	70	70	70	70
Total Effective Length	107	110	132	139	70	70	70	70	70	70	70	70	70	70	115	131	141	128	104	130	149	133	114	70	70	70	70	70
Adjusted Pressure	0.12	0.12	0.10	0.09	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.11	0.10	0.09	0.10	0.13	0.10	0.09	0.10	0.11	0.19	0.19	0.19	0.19	0.19
Duct Size Round	6	6	6	6											5	5	4	2	5	5	5	5	5					
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10
Trunk	В	Α	D	В											В	В	A	A	D	Α	. В	С	С					
							Leve	13													Level	4						
<del>_</del>																												
S/A Outlet No.	14	15	16	17	18	19	20	21	22	23	24																	
Room Use	MAST	MAST	ENS	BED 4	BATH	BED 3	BED 3	OFF	OFF	BED 2	ENS 2																	
Room Use Btu/Outlet	MAST 1735	MAST 1735	ENS 1853	BED 4 1101	BATH 835	BED 3 1964	BED 3 1964	OFF 1690	OFF 1690	BED 2 1465	ENS 2 600			•														
Room Use Btu/Outlet Heating Airflow Rate CFM	MAST 1735 33	MAST 1735 33	ENS 1853 35	BED 4 1101 21	BATH 835 16	BED 3 1964 37	BED 3 1964 37	OFF 1690 32	OFF 1690 32	BED 2 1465 28	ENS 2 600 11																	
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM	MAST 1735 33 68	MAST 1735 33 68	ENS 1853 35 43	BED 4 1101 21 29	835 16 12	BED 3 1964 37 43	BED 3 1964 37 43	OFF 1690 32 59	OFF 1690 32 59	BED 2 1465 28 43	ENS 2 600 11 14	0.40	0.40		0.40	0.40	0.40	0.40	0.40	0.40	242	0.40	0.40		0.40			0.40
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure	MAST 1735 33 68 0.13	MAST 1735 33 68 0.13	ENS 1853 35 43 0.13	BED 4 1101 21 29 0.13	835 16 12 0.13	BED 3 1964 37 43 0.13	BED 3 1964 37 43 0.13	OFF 1690 32 59 0.13	OFF 1690 32 59 0.13	BED 2 1465 28 43 0.13	ENS 2 600 11 14 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
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length	MAST 1735 33 68 0.13 58	MAST 1735 33 68 0.13 48	ENS 1853 35 43 0.13	BED 4 1101 21 29 0.13 39	BATH 835 16 12 0.13 20	BED 3 1964 37 43 0.13 37	BED 3 1964 37 43 0.13	OFF 1690 32 59 0.13 46	OFF 1690 32 59 0.13 41	BED 2 1465 28 43 0.13 33	ENS 2 600 11 14 0.13 37																	
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length	MAST 1735 33 68 0.13 58 120	MAST 1735 33 68 0.13 48 130	ENS 1853 35 43 0.13 48 120	BED 4 1101 21 29 0.13 39 100	835 16 12 0.13 20 90	BED 3 1964 37 43 0.13 37 160	BED 3 1964 37 43 0.13 34 150	OFF 1690 32 59 0.13 46 130	OFF 1690 32 59 0.13 41 120	BED 2 1465 28 43 0.13 33 120	ENS 2 600 11 14 0.13 37 90	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length	MAST 1735 33 68 0.13 58 120 178	MAST 1735 33 68 0.13 48 130 178	ENS 1853 35 43 0.13 48 120 168	BED 4 1101 21 29 0.13 39 100 139	BATH 835 16 12 0.13 20 90 110	BED 3 1964 37 43 0.13 37 160 197	BED 3 1964 37 43 0.13 34 150 184	OFF 1690 32 59 0.13 46 130	OFF 1690 32 59 0.13 41 120 161	BED 2 1465 28 43 0.13 33 120 153	ENS 2 600 11 14 0.13 37 90 127	70 <b>70</b>	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70	70 70
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure	MAST 1735 33 68 0.13 58 120	MAST 1735 33 68 0.13 48 130 178 0.07	ENS 1853 35 43 0.13 48 120 168 0.08	BED 4 1101 21 29 0.13 39 100 139 0.09	BATH 835 16 12 0.13 20 90 110	BED 3 1964 37 43 0.13 37 160 197 0.07	BED 3 1964 37 43 0.13 34 150 184 0.07	OFF 1690 32 59 0.13 46 130 176 0.07	OFF 1690 32 59 0.13 41 120 161 0.08	BED 2 1465 28 43 0.13 33 120 153 0.08	ENS 2 600 11 14 0.13 37 90 127 0.10	70	70	70	70	70	70	70	70	70	70 70	70	70	70	70	70	70	70
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	MAST 1735 33 68 0.13 58 120 178 0.07 6	MAST 1735 33 68 0.13 48 130 178 0.07 6	ENS 1853 35 43 0.13 48 120 168 0.08 5	BED 4 1101 21 29 0.13 39 100 139 0.09 4	BATH 835 16 12 0.13 20 90 110 0.12 3	BED 3 1964 37 43 0.13 37 160 197 0.07	BED 3 1964 37 43 0.13 34 150 184 0.07	OFF 1690 32 59 0.13 46 130 176 0.07	OFF 1690 32 59 0.13 41 120 161 0.08 5	BED 2 1465 28 43 0.13 33 120 153 0.08 5	ENS 2 600 11 14 0.13 37 90 127 0.10 3	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size	MAST 1735 33 68 0.13 58 120 178 0.07 6	MAST 1735 33 68 0.13 48 130 178 0.07	ENS 1853 35 43 0.13 48 120 168 0.08	BED 4 1101 21 29 0.13 39 100 139 0.09	BATH 835 16 12 0.13 20 90 110	BED 3 1964 37 43 0.13 37 160 197 0.07	BED 3 1964 37 43 0.13 34 150 184 0.07	OFF 1690 32 59 0.13 46 130 176 0.07	OFF 1690 32 59 0.13 41 120 161 0.08	BED 2 1465 28 43 0.13 33 120 153 0.08	ENS 2 600 11 14 0.13 37 90 127 0.10	70 <b>70</b>	70 70	70 70	70 70	70 70	70 70	70 70	70 70 0.19	70 70	70 70 0.19	70 70	70 70	70 70	70 70	70 70	70 70	70 70
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	MAST 1735 33 68 0.13 58 120 178 0.07 6	MAST 1735 33 68 0.13 48 130 178 0.07 6	ENS 1853 35 43 0.13 48 120 168 0.08 5	BED 4 1101 21 29 0.13 39 100 139 0.09 4	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10	BED 3 1964 37 43 0.13 37 160 197 0.07 5	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10	OFF 1690 32 59 0.13 46 130 176 0.07 5	OFF 1690 32 59 0.13 41 120 161 0.08 5	BED 2 1465 28 43 0.13 33 120 153 0.08 5	ENS 2 600 11 14 0.13 37 90 127 0.10 3	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C	ENS 1853 35 43 0.13 48 120 168 0.08 5	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No.	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10	OFF 1690 32 59 0.13 46 130 176 0.07 5	OFF 1690 32 59 0.13 41 120 161 0.08 5	BED 2 1465 28 43 0.13 33 120 153 0.08 5	ENS 2 600 11 14 0.13 37 90 127 0.10 3	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10	70 70 0.19	70 70 0.19	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19	70 70 0.19	70 70 0.19 4x10	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3x10 A	70 70 0.19 4x10 <u>Re</u> Tr	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing P	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10	70 70 0.19 4x10 nk Duct 3	70 70 0.19 4x10 Sizing	70 70 0.19 4x10 ress.	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19 4x10	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10 Ree Tr	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10  Supply Truit Trunk C	70 70 0.19 4x10 nk Duct \$	70 70 0.19 4x10 Sizing H.CFM Pr	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect.	70 70 0.19 4x10	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A re Loss 4R 150 0.12	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3x10 A	70 70 0.19 4x10 Ree Tr Dr Z	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10  Supply Trunk C A B	70 70 0.19 4x10 nk Duct 5 .CFM	70 70 0.19 4x10 Sizing H.CFM Pr	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect.	70 70 0.19 4x10 Size 14x10 12x10	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C 1R 152 0.12 14 110	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A  sure Loss 4R 150 0.12 29 160	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10 Ree Tr Dr Z	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10  Supply Trunk C  A B C	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Equivalent Length Total Effective Length	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 130 142	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A sure Loss 4R 150 0.12 29 160 189	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D 0.02 6R 0.12	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12 50 50	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10 Ree Tr Dr Z	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10  Supply Trunk Trunk C A B C D	70 70 0.19 4x10 nk Duct 5 .CFM	70 70 0.19 4x10 Sizing H.CFM Pr	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect.	70 70 0.19 4x10 Size 14x10 12x10	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C 1R 152 0.12 14 110 124 0.09	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130 142 0.08	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 105 0.12 38 115 153 0.08	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A 4 150 0.12 29 160 189 0.06	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203 0.06	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10 Ree Tr Dr Z Y X	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10  Supply Trunk C  A B C	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C  1R 152 0.12 14 110 124 0.09 7.0	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130 142 0.08 10.0	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115 153 0.08 6.0	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A sure Loss 4R 150 0.12 29 160 189	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203 0.06 8.0	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D 0.02 6R 0.12	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12 50 50	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19  4x10  Ree Tr  Dr  Z  Y  X  W	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10 Supply Trunk C	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C 1R 152 0.12 14 110 124 0.09	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130 142 0.08	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115 153 0.08 6.0	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A 4 150 0.12 29 160 189 0.06	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203 0.06 8.0 8	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D 0.02 6R 0.12	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12 50 50	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10 Ree Tr Dr Z Y X W V	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10 Supply Trunk C A B C D E F G	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Inlet Size " "	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C  1R 152 0.12 14 110 124 0.09 7.0	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130 142 0.08 10.0 8 x	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115 153 0.08 6.0 8 x	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A  sure Loss 4R 150 0.12 29 160 189 0.06 8.0 8 x	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203 0.06 8.0 8.0 8.0	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D 0.02 6R 0.12	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12 50 50	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3×10 A	70 70 0.19 4x10 Ree Tr Dr Z Y X W V U	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10 Supply Trunk C	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C  1R 152 0.12 14 110 124 0.09 7.0 FLC	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130 142 0.08 10.0 8	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115 153 0.08 6.0	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A  sure Loss 4R 150 0.12 29 160 189 0.06 8.0 8	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203 0.06 8.0 8	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D 0.02 6R 0.12 50 0.24	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12 50 50	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3x10 A  11R 0.12 50 0.24	70 70 0.19 4x10 Ree Tr Dr Z Y X W V U T S	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10 Supply Trunk C A B C D E F G	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19
Room Use Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk  Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Inlet Size " "	MAST 1735 33 68 0.13 58 120 178 0.07 6 4x10 C  1R 152 0.12 14 110 124 0.09 7.0 FLC	MAST 1735 33 68 0.13 48 130 178 0.07 6 4x10 C 2R 363 0.12 12 130 142 0.08 10.0 8 x	ENS 1853 35 43 0.13 48 120 168 0.08 5 3x10 B Grill Press 3R 105 0.12 38 115 153 0.08 6.0 8 x	BED 4 1101 21 29 0.13 39 100 139 0.09 4 3x10 A  sure Loss 4R 150 0.12 29 160 189 0.06 8.0 8 x	BATH 835 16 12 0.13 20 90 110 0.12 3 3x10 PTO 5R 150 0.12 43 160 203 0.06 8.0 8.0 8.0	BED 3 1964 37 43 0.13 37 160 197 0.07 5 3x10 D 0.02 6R 0.12 50 0.24	BED 3 1964 37 43 0.13 34 150 184 0.07 5 3x10 D "w.c 7R 0.12 50 50	OFF 1690 32 59 0.13 46 130 176 0.07 5 3x10 D	OFF 1690 32 59 0.13 41 120 161 0.08 5 3x10 D	BED 2 1465 28 43 0.13 33 120 153 0.08 5 3x10 A	ENS 2 600 11 14 0.13 37 90 127 0.10 3 3x10 A  11R 0.12 50 0.24	70 70 0.19 4x10 Ree Tr Dr Z Y X W V U	70 70 0.19 4x10 turn Trun	70 70 0.19 4x10 k Duct Si	70 70 0.19 4x10 zing FM P	70 70 0.19 4x10	70 70 0.19 4x10 Round	70 70 0.19 4x10 Rect 24x10 24x8	70 70 0.19 4x10	70 70 0.19	70 70 0.19 4x10 Supply Trunk C A B C D E F G	70 70 0.19 4x10 nk Duct s .CFM 671 482 232	70 70 0.19 4x10  Sizing H.CFM Pr 630 419 129	70 70 0.19 4x10 ress.	70 70 0.19 4x10 Round 13.0 11.5 9.0	70 70 0.19 4x10 Rect. 18x8 14x8 8x8	70 70 0.19 4x10 Size 14x10 12x10 10x7	70 70 0.19



Total Heat Loss

Total Heat Gain

48,610 btu/h

26,313 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

Mana Mate

David DaCosta

**Energy Star** 

		Builder:	EM Ai	r		Date:			June 24, 2	2024					Weather	er Data	Richmor	nd Hill	44 -5	5.8 88	20	50				Page
2012 OBC		Project:	King East Deve	lopments		Model:			Model 2	930			System 1		Heat Lo	_oss ^T	77.8 deg. F	Ht gair	^T	12.8 de	eg. F			F	Project # Layout #	PJ-0026 JB-0950
	Level 1		<u>-</u>	ВА	ASE		` <u> </u>																			
	ft. exposed wall A			170 A			Α		Α		Α		Α		A		Α		A		Α		Α			A
Run ft	ft. exposed wall B			В			В		В		В		В		В		В		В		В		В			В
	Ceiling height Floor area			2.0 AG 1213 Area		2.0	AG Area		2.0 AG Area		2.0 AG Area		2.0 AG Area	2.0	AG Area		2.0 AG Area	2.0	AG Area	•	2.0 AG Area		2.0 AG Area		2.0	AG Area
Fyr	xposed Ceilings A			A A			Area		A		A		A		Area		Area		Area A		Area		A	1		Area A
	cposed Ceilings B			В			В		В		В		В		В		В		В		В		В			В
	Exposed Floors			10 Flr			Flr		Flr		Flr		Fir		Fir		Flr		Fir		Flr		Fir			Fir
	Gross Exp Wall A			340																						
G	Gross Exp Wall B																									
	Components			Loss		59	Loss	Gain	Loss	Gain	Loss	Gain	Loss Gai	n	Loss (	Gain	Loss C	Bain	Loss G	Gain	Loss	Gain	Loss	s Gain		Loss Gain
	North Shaded East/West	4.00 4.00	19.45 11.73 19.45 29.66		97																					
	South	4.00	19.45 22.60		35 2.	51																				
WOB Windows	s Including Doors	4.00	19.45 27.86																							
	Skylight	2.03	38.33 89.12																							
	Doors	4.00	19.45 3.20			67																				
	t exposed walls A	21.12	3.68 0.61		18	B4																				
	t exposed walls B	21.40	3.64 0.60																							
	xposed Ceilings A	59.22 27.65	1.31 0.67 2.81 1.44																							
	cposed Ceilings B Exposed Floors	29.80	2.61 0.23		26	2																				
Foundation Conduc		20.00	2.01	57																						
Total Conductive	Heat Loss			64	174																					
	Heat Gain				6	09																				
Air Leakage	Heat Loss/Gain		1.4379 0.0720		109	44																				
	Case 1		0.10 0.09																							
	Case 2 Case 3	х	16.80 13.82 0.05 0.09		306	56																				
Ventilation						50																				
ŀ	Heat Gain People Appliances Loads	1 =.25 pe	239																							
l- A Du	Heat Gain People Appliances Loads Ouct and Pipe loss	1 =.25 pe	239 rcent 4924 10%																							
l-	Heat Gain People Appliances Loads	1 =.25 pe	239 rcent 4924	160		21																				
A Du Level HL Total Level HG Total Run ft	Heat Gain People Appliances Loads suct and Pipe loss 16,089 921  Level 2 ft. exposed wall A	1 =.25 pe	239 rcent 4924 10% al HL for per room	160 Ki 35 A	9:		LAUNE 5 A B	0	7 A		FOY 34 A B		DIN/LIV 45 A B	35			A B		A B		A B		A			A B
A Du Level HL Total Level HG Total Run ft	Heat Gain People Appliances Loads Fuct and Pipe loss 16,089 921  Level 2	1 =.25 pe	239 rcent 4924 10% al HL for per room	160	9:		Б В						45 A		A B		A B 10.0			11	A B					A B
Level HL Total Level HG Total Run ft	Heat Gain People Appliances Loads Loads 16,089 921  Level 2 ft. exposed wall A ft. exposed wall B Ceiling height Floor area	1 =.25 pe	239 rcent 4924 10% al HL for per room	160 Ki 35 A B 10.0 372 Area	9: :IT	15	B B Area		7 A B 10.0 32 Area		34 A B 10.0 125 Area	1	45 A B 0.0 409 Area	10.0 189	A B Area		B 10.0 Area	10.0	B Area	11	B 0.0 Area		B 10.0 Area	1	10.0	B Area
Level HL Total Level HG Total Run ft	Heat Gain People Appliances Loads Fuct and Pipe loss 16,089 921  Level 2  ft. exposed wall A Ceiling height Floor area kposed Ceilings A	1 =.25 pe	239 rcent 4924 10% al HL for per room	160 K 35 A B 10.0 372 Area A	9: :IT	15	A B Area A		7 A B 10.0 32 Area A		34 A B 10.0 125 Area A	1	45 A B 0.0 409 Area A	10.0 189	A B Area A		B 10.0 Area A	10.0	B Area A	10	B 0.0 Area A		B 10.0 Area A		10.0	B Area A
Level HL Total Level HG Total Run ft	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B	1 =.25 pe	239 rcent 4924 10% al HL for per room	160 K: 35 A B 10.0 372 Area A B	9: :IT	15	A B Area A B		7 A B 10.0 32 Area A B		34 A B 10.0 125 Area A B	1	45 A B 0.0 409 Area A B	10.0 189	A B Area A B		B 10.0 Area A B	10.0	B Area A B	10	B 0.0 Area A B		B 10.0 Area A B		10.0	B Area A B
Level HL Total Level HG Total Run ft Run ft Exp	Heat Gain People Appliances Loads Loads 16,089 921  Level 2 ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors	1 =.25 pe	239 rcent 4924 10% al HL for per room	160 Ki 35 A B 10.0 372 Area A B Fir	9: :IT	15 10.0 73	A B Area A B		7 A B 10.0 32 Area A B Fir		34 A B 10.0 125 Area A B FIr	1	45 A B 0.0 409 Area A B FIr	10.0 189	A B Area A		B 10.0 Area A	10.0	B Area A	11	B 0.0 Area A		B 10.0 Area A		10.0	B Area A
Level HL Total Level HG Total  Run ft Run ft Ex	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B	1 =.25 pe	239 rcent 4924 10% al HL for per room	160 K: 35 A B 10.0 372 Area A B	9: :IT	15	A B Area A B		7 A B 10.0 32 Area A B		34 A B 10.0 125 Area A B	1	45 A B 0.0 409 Area A B	10.0 189	A B Area A B		B 10.0 Area A B	10.0	B Area A B	11	B 0.0 Area A B		B 10.0 Area A B	1	10.0	B Area A B
Level HL Total Level HG Total  Run ft Run ft Ex	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall A fc. exposed wall B Ceiling height Floor area xposed Ceilings A xposed Ceilings A xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components	1 =.25 pe Total Total	239   rcent	35 A B 10.0 372 Area A B Fir 350 Loss	9:	150 10.0 73	A B Area A B Fir	Gain	7 A B 10.0 32 Area A B Fir	Gain	34 A B 10.0 125 Area A B FIr 340	1 d Gain	45 A B 0.0 409 Area A B FIr	10.0 189 350	A B Area A B Fir	Gain_	B 10.0 Area A B Fir	10.0	B Area A B FIr	11	B 0.0 Area A B	Gain	B 10.0 Area A B		10.0	B Area A B
Level HL Total Level HG Total  Run ft Run ft Ex	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded	1 =.25 pe Tot Total	rcent 4924 10% al HL for per room HG per room x 1.3  poss Gain 19.45 11.73	160  KI 35 A B 10.0 372 Area A B Fir 350  Loss 14 2	9: IIT s Gain 272 11	150 10.0 73 150	A B Area A B Fir	Gain	7 A B 10.0 32 Area A B Fir 70		34 A B 10.0 125 Area A B Fir 340	1 d Gain	45 A B 0.0 409 Area A B Fir	10.0 189 350	A B Area A B Fir		B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
Level HL Total Level HG Total  Run ft Run ft Ex	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest	1 = .25 pe Total Total	rcent 4924 10% al HL for per room x 1.3  Oss Gain 19.45 11.73 19.45 29.66	160  KI 35 A B 10.0 372 Area A B Fir 350  Loss 14 2 42 8	9:	150 10.0 73 150	A B Area A B Fir	Gain	7 A B 10.0 32 Area A B Fir 70		34 A B 10.0 125 Area A B FIr 340	Gain 223	45 A B 0.0 109 Area A B Fir 150 Loss Gai	10.0 189 350	A B Area A B Fir	Gain_	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
Level HL Total Level HG Total Run ft Run ft Exp	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings A xposed Ceilings A xposed Ceilings A xposed Floors Gross Exp Wall B Gross Exp Wall B Components I North Shaded EastWest South	1 = .25 pe Total Total  R-Values L 4.00 4.00 4.00	rcent 4924 10% al HL for per room HG per room x1.3  oss Gain 19.45 11.73 19.45 22.66	160 160 35 A B 10.0 372 Area A B Fir 350 14 2 8	9: IIT s Gain 272 11	150 10.0 73 150	A B Area A B Fir	Gain	7 A B 10.0 32 Area A B Fir 70		34 A B 10.0 125 Area A B FIr 340	Gain 223	45 A B 0.0 109 Area A B Fir 150 Loss Gai	10.0 189 350	A B Area A B Fir	Gain_	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
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Level HL Total Level HG Total Run ft Run ft Exp	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings A xposed Ceilings A xposed Ceilings A xposed Floors Gross Exp Wall B Gross Exp Wall B Components I North Shaded EastWest South	1 = .25 pe Total Total  R-Values L 4.00 4.00 4.00 1.99	rcent 4924 10% al HL for per room HG per room x 1.3  poss Gain 19.45 11.73 19.45 22.66 19.45 22.66 19.45 22.66 39.10 24.56	160  KI 35 A B 10.0 372 Area A B Fir 350  Loss 14 2 8	9: IIT s Gain 272 11	150 10.0 73 150	A B Area A B Fir Loss 175	Gain 106 67	7 A B 10.0 32 Area A B Fir 70		34 A B 10.0 125 Area A B FIr 340	Gain 223	45 A B 0.0 409 Area A B Fir 450  Loss Gain 26 506	10.0 189 350	A B Area A B Fir	Gain_	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
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Level HL Total Level HG Total Level HG Total  Run ft Run ft Run ft Exp G G G  Net Net Exp Foundation Conductive Air Leakage Ventilation	Heat Gain People Appliances Loads Appliances Loads Appliances Loads Let and Pipe loss 16,089 921  It. exposed wall A Ceiling height Floor area Aposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors At exposed walls A t exposed walls A t exposed Hoors At exposed	1 = .25 pe Total  Total  R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	rcent 4924 10% al HL for per room x 1.3  r	KI 35 A B 10.0 372 Area A B Fir 350 Loss 14 2 8 294 10 21 12	9: Gain 117 122 117 122 117 122 117 122 117 122 117 122 117 123 123 123 123 123 123 123 123 123 123	150 10.0 73 150 150 150 21 120	A B Area A B Fir 175 175 175 175 175 175 175 175 175 175	Gain 106 67 72 245 18	7 A B 10.0 32 Area A B Fir 70 Loss	Gain 4 42 4 42 4 3	34 A B 10.0 125 Area A B Fir 340  Loss 19 370  27 294 1069	Gain 223 86 176 485 35	45 A B 0.0 109 Area A B Fir 150  Loss Gai  26 506 21 408 1465	10.0 189 350 1 50 588 67 241 300	A B Area A B B Fir Loss (0 973 1091 2063	Gain 586 179	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
Level HL Total Level HG Total Level HG Total  Run ft Run ft Run ft Run ft Run ft Run ft Coductive Air Leakage Ventilation	Heat Gain People Appliances Loads Juct and Pipe loss 16,089 921  Level 2  ft. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors t exposed walls A gross Exp Wall B Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors Juctive Heatloss Heat Gain Heat Loss/Gain Heat Loss/Gain Heat Loss Case 1 Case 2 Case 3 Heat Gain People	1 = .25 per Total   To	rcent 4924 A924 A1HL for per room x 1.3  OSS Gain 19.45 19.45 19.45 19.45 22.66 39.10 2.46 39.10 2.46 2.61 2.81 1.44 2.61 0.23 0.5677 0.072 0.04 0.09 16.80 13.82 0.05 0.09	160  Ki 35 A B 10.0 372 Area A B Fir 350  Loss 14 2 42 8  294 10  21 12	Gain 1772 1.177 12-187 12-187 12-187 13-187	150 10.0.73 150 150 150 150 150 150 150 150 150 150	Area A B B Fir Loss 175 408 436 436 48	Gain 106 67 72 245 18	7 A B 10.0 32 Area A B Fir 70 Loss 70 25-	Gain 4 42 4 42 4 3	34 A B 10.0 125 Area A B Fir 340  Loss 19 370  27 294 1069	Gain 223 86 176 485 35 444	45 A B B 0.0 1409 Area A B Fir 1450  Loss Gai  26 506  21 408 103 1465  2379 1351	350 350 50 588 67 241 300	A B Area A B Fir Loss ( 973 ) 1091	Gain 586 179 766 55	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
Level HL Total Level HG Total Level HG Total  Run ft Run ft Run ft  Exp G G G F  Net Exp Foundation Conduct Total Conductive Air Leakage Ventilation  P A D D	Heat Gain People Appliances Loads Appliances Loads Luct and Pipe loss 16,089 921  It. exposed wall A ft. exposed wall A Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors t exposed walls A t exposed walls A t exposed walls A t exposed floors t exposed Floors t exposed Floors t exposed Floors t exposed Heat Loss Heat Cash Heat Loss Heat Gain Heat Loss/Gain Loss 2 Loss 3 Heat Gain People Appliances Loads Appliances Loads Auct and Pipe loss	1 = .25 pe  Total  Total  R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 7.65 29.80  x 1 = .25 pe	rcent 4924 All H. for per room x 1.3  Doss Gain 19.45 11.73 19.45 22.60 19.45 22.60 19.45 22.60 19.45 22.60 19.45 22.61 19.45 22.60 19.45 32.03 38.33 89.12 19.45 3.20 24.56 2.81 1.44 2.61 0.23  x  0.5677 0.0720 0.04 0.09 16.80 13.82 0.055 0.005 0.05 0	Ki 35 A B 10.0 372 Area A B Fir 350 Loss 2 42 8 294 10 21 12	9.     9.	150 10.0.73 150 150 150 150 150 150 150 150 150 150	Area A B B Fir Loss 175 408 436 436 436 48 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Gain 106 67 72 245 18 22	7 A B B 10.0 32 Area A B Fir 70 Loss 25-14-15	Gain 4 42 4 42 4 3	34 A B 10.0 125 Area A B Fir 340  Loss 19 370 27 525 294 1069	Gain 223 86 176 485 35 444	45 A B B 0.0 409 Area A B Fir 150  Loss Gai 26 506 21 408 103 1465  2379 1351 112 1.0 1	350 350 50 588 67 241 300	A B B Area A B B B Fir 1091 1091 1091 1091 1091 1091 1091 109	766 70	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B
Level HL Total Level HG Total Level HG Total  Run ft  Run ft  Exp Exp G G G  Net Exp Exp  Total Conductive Air Leakage Ventilation	Heat Gain People Appliances Loads Appliances Loads Appliances Loads Ite, 089 921  Level 2  ft. exposed wall A Ceiling height Floor area Aposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors t exposed walls A texposed Ceilings B Exposed Geilings B Exposed Floors Components Appliances Wall B Existing Windows Skylight Doors t exposed walls A texposed Ceilings B Exposed Ceilings B Exposed Ceilings A Aposed Ceilings A Heat Loss Heat Loss Heat Loss Heat Gain Loss 1 Case 1 Case 2 Case 3 Heat Gain People Appliances Loads	1 = .25 pe Total  Total  R-Values L 4.00 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80  x 1 = .25 pe	rcent 4924 All Hor per room x 1.3  oss Gain 19.45 11.73 19.45 11.73 19.45 22.66 39.10 24.56 39.10 24.56 39.11 1.31 0.67 2.81 1.44 2.61 0.23  x 0.5677 0.0720 0.04 0.09 1.38 0.05 0.05 0.09 239 rcent 4924	160  Ki 35 A B 10.0 372 Area A B Fir 350  Loss 14 2 8  294 10  21 12	9.     9.	150 10.0.73 150 150 150 150 150 150 150 150 150 150	Area A B B Fir Loss 175 408 436 436 48	Gain 106 67 72 245 18 22	7 A B 10.0 32 Area A B Fir 70 Loss 70 25-	Gain 4 42 4 42 4 3	34 A B 10.0 125 Area A B Fir 340 Loss 19 370 27 525 294 1069 1964 11115	Gain 223 86 176 485 35 444	45 A B B 0.0 1409 Area A B Fir 1450  Loss Gai  26 506 21 408 103 1465  2379 1351 112 1.0 1 3842	350 350 50 588 67 241 300	A B Area A B Fir Loss ( 973 ) 1091	766 70	B 10.0 Area A B Fir	10.0	B Area A B FIr		B 0.0 Area A B Fir	Gain	B 10.0 Area A B Fir		10.0	B Area A B B

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



48,610

26,313

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:		EM Air			Date:		1	ne 24, 202	24							Weath		Pichr	nond Hill	44	-5.8 8	8 20	50				Page 5
2012 ODG		_													Syste	n 1	1								30		Proje		PJ-00267
2012 OBC		Project:	King Eas	st Develo	pments	'	lodel:		M	lodel 2930	)		_		Oyoto.			Heat	Loss ^T	77.8 deg. F		Ht gain ^T	12.8 d	eg. F			Layo	ut#	JB-09504
P	Level 3				MA:	ST		NS	44	BED 4		10 A	ATH		BED	3	36	OFF		BED 45 A	2	ENS 2	2	Α		Α			
	ft. exposed wall A ft. exposed wall B				В		23 A B			В		В			35 A B			В		15 A B		7 A B		В		В		A B	
	Ceiling height Floor area				9.0 302 Area		9.0 129 Area		9.0	Area		9.0 95 Are			9.0 269 Area		11.0 209	Aroa		9.0 255 Area		9.0 54 Area		9.0 Area		9.0 Area		9.0 Area	
	Exposed Ceilings A				302 A		129 A		151	Α		95 A	a		269 A		209	Α		255 A		54 A		Α		Α		Α	
E	Exposed Ceilings B Exposed Floors				B Flr		B Flr			B Flr		B 8 Flr			B 255 Flr			B Fir		B Flr		B Flr		B Flr		B Flr		B Fir	
	Gross Exp Wall A				333		207		99			90			315		396			135		63		• ••		• •		•	
	Gross Exp Wall B Components	R-Values L	oss Gai	in	Loss	Gain	Los	Gain		Loss	Gain	Los	ss Gain		Loss	Gain		Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
	North Shaded	4.00	19.45	11.73			12	233 14	1 16	311	188			06															
	East/West South	4.00 4.00	19.45	29.66 22.60	60 116	1780	16	311 47	5						30 584	890	33 16	642 311		16 31	1 362	9 175	203						
	Existing Windows	1.99 2.03	39.10 38.33	24.56 89.12																									
	Skylight Doors	4.00	19.45	3.20																									
	et exposed walls A et exposed walls B	21.40 8.50	3.64 9.15	0.60 1.51	273 99	163	179	551 10	7 83	302	50	81	294	48	285 1030	170	347	1262	208	119 43	3 71	54 196	32						
E	xposed Ceilings A	59.22	1.31	0.67	302 39	7 203	129	169 8	7 151	198	101	95	125	64	269 35	181	209	275	140	255 33	5 171	54 71	36						
E	Exposed Ceilings B Exposed Floors	27.65 29.80	2.81	1.44 0.23								8	21	2	255 666	58													
Foundation Cond	ductive Heatloss												615					2489		407		442							
Total Conductive	Heat Loss Heat Gain				255	2146	1	865	9	811	339			220	2639	1299		2489	1688	107	604	442	272						
Air Leakage	Heat Loss/Gain Case 1		0.3104 (	0.0720	79	155		124 5	8	252	24		191	16	819	94		773	122	33	5 44	137	20						
Ventilation	Case 2		16.80	13.82																									
	Case 3 Heat Gain People	х	0.05	0.09 239	2 12	196		64 7	4 1	38	31 239		29	20	1 12	119 239		117	155	1 5	1 55 239	21	25						
	Appliances Loads	1 =.25 pe	ercent	4924							200						0.5		615										
Level HL Total	Duct and Pipe loss 16,632	To	tal HL for per	10% r room	347	0	1	353		1101			835		1 340			3379		146	5	600							
Level HG Total	13,713		HG per room			3867		122	4		823			32		2476	lΙ		3354		1225		411						
ī																													
	Level 4																												
	ft. exposed wall A				A B		A B			A B		A R			A B			A B		A B		A B		A B		A B		A B	
Kun	ft. exposed wall B Ceiling height				В		В			В		В			В			В		В		В		В		В		В	
-	Floor area Exposed Ceilings A				Area A		Area A	ı		Area A		Are A	ea		Area A			Area A		Area A		Area A		Area A		Area A		Area A	
	xposed Ceilings B				В		В			В		В			В			В		В		В		В		В		В	
	Exposed Floors Gross Exp Wall A				Fir		Flr			Flr		Flr			Flr			Fir		Flr		Flr		Fir		Flr		Fir	
	Gross Exp Wall B	R-Values L	.oss Gai	· I	Loss	Gain	Los	Gain		Loss	Gain	Los	ss Gain		Loss	Gain		Loss	0-!	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
	North Shaded	4.00		11.73	Loss	Gain	Los	Gain		LOSS	sain	LOS	ss Gain	1	LOSS	Gain	Т	LOSS	Gain	Loss	Gain	Loss	Gain	LOSS	Gain	Loss	Gain	Loss	Gain
	East/West South	4.00 4.00		29.66 22.60																									
	<b>Existing Windows</b>	1.99	39.10	24.56																									
	Skylight Doors	2.03 4.00	38.33 19.45	89.12 3.20																									
	et exposed walls A	21.40	3.64	0.60																									
	et exposed walls B Exposed Ceilings A	8.50 59.22	9.15 1.31	1.51 0.67																									
E	Exposed Ceilings B Exposed Floors	27.65 29.80	2.81	1.44 0.23																									
Foundation Cond	luctive Heatloss	29.00	2.01	0.23																									
Total Conductive	Heat Loss Heat Gain																												
Air Leakage	Heat Loss/Gain			0.0720																									
Ventilation	Case 1		0.00 16.80	0.09 13.82																									
	Case 3	х	0.05	0.09																									
	Heat Gain People Appliances Loads	1 =.25 pe	ercent	239 4924																									
	Duct and Pipe loss		tal HL for per	10%																									
Level HG Total	0		HG per room																										

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 Х

4

Project # Layout #

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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 Individual BCIN: 32964

Division C subsection 3.2.5. of the Building Code.

Mane Africate

David DaCosta

Package:	Energy Star			
Project:	Richmond Hill	Model:	Model 2930	
	RESIDENTIAL MECHANICAL	VENTILATION DESI	GN SUMMARY	
	For systems serving one dwelling unit & con	forming to the Ontario Building	Code, O.reg 332/12	
	Location of Installation	Total Va	ntilation Capacity 9.32.3.3	(4)
Lot #	Plan #	Total ve	initiation Capacity 9.32.3.3	(1)
		Bsmt & Master Bdrm	2 @ 21.2 cfm	
Township	Richmond Hill	Other Bedrooms Bathrooms & Kitchen	3 @ 10.6 cfm 5 @ 10.6 cfm	
Roll #	Permit #	Other rooms	5 @ 10.6 cfm	
			Total	180.2
Address				
		Principal V	/entilation Capacity 9.32.3	.4(1)
	Builder	1 1111011	on a paony or a paony	(.)
Name		Master bedroom	1 @ 31.8 cfm	
Address	EM Air	Other bedrooms	3 @ 15.9 cfm Total	47.7 cfm 79.5
, .uu. 000				
City				
Tel	Fax	Princi Make	pal Exhaust Fan Capacity  Model	Location
i ei	гах	Make	Wodel	Location
		VanEE	V150E75NS	Base
Maria	Installing Contractor	407	00.0	. Caraa
Name		127 cfm	80.0	Sones or Equiv.
Address		He	at Recovery Ventilator	
0.1		Make	VanEE	
City		Model1	V150E75NS 27 cfm high	80 cfm low
Tel	Fax	Sensible efficiency @ -:	25 deg C	60%
		Sensible efficiency @ 0	<u> </u>	75%
	Combustion Appliances 9.32.3.1(1)		nce HRV/ERV to within 10 p	
a) x	Direct vent (sealed combustion) only	омри.		,
b)	Positive venting induced draft (except fireplaces)  Natural draft, B-vent or induced draft fireplaces	Total ventilation capacit	•	180.2
c) d)	Solid fuel (including fireplaces)	Less principal exhaust of REQUIRED supplement		79.5 100.7 cfm
e)	No combustion Appliances		····· · · · · · · · · · · · · · · · ·	
	Heating System	Location	plemental Fans 9.32.3.5.  cfm Model	Sones
х	Forced air	Ens	50 XB50	0.3
	Non forced air	Ens 2	50 XB50	0.3
	Electric space heat (if over 10% of heat load)	Bath	50 XB50	0.3
	House Type 9.32.3.1(2)			
l x	Type a) or b) appliances only, no solid fuel	all fans HVI listed	Make Broan	or Equiv.
	Type I except with solid fuel (including fireplace) Any type c) appliance		Designer Certification	
III IV	Type I or II either electric space heat		ventilation system has beer	n designed
Other	Type I, II or IV no forced air	in accordance with the		

Designer Certification										
I hereby certify that this ventilation system has been designed										
in accordance w	in accordance with the Ontario Building Code.									
Name	David D	-0								
Name	David D	acosta								
	Mane	Made								
Signature	2 2 2 2 2 2	. + 0								
HRAI#	5190	BCIN #	32964							
Date	June 24	1, 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
Layout # JB-09504

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						
Balang Hambol, Glock Hamo	Model 2930		One nambor							
Municipality Bislaman d Liil	Postal code	Reg. Plan number / oth	or description							
Richmond Hill	r Ostal Code	rteg. Flan number / ou	iei description							
B. Prescriptive Compliance [indicate the bu	ilding code compliance option	being employed in the	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.]	*Attach Builder Option F	Package [BOP] for	m							
R-2000®* [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 m <sup>2</sup> or <u>1076.4</u> ft <sup>2</sup>		☐ Log/Post&Beam	☐ ICF Above	Grade						
Alea 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 = $15$ m <sup>2</sup> or $161.5$ ft <sup>2</sup>		☐ Air Sourced Hea	t Pump (ASHP)							
		☐ Ground Source H	leat Pump (GSHP)							
SB-12 Performance Reference Building Design Pa	12 Performance Reference Building Design Package indicating the prescriptive package to be compared for compliance									
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 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

(Building Code Part 9, Residential)

Mane Alet

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Project # PJ-00267 Layout # JB-09504

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

**Project Design Verification** [Subsection 3.1.2. Performance Compliance] The annual energy consumption using Subsection 3.1.1. SB-12 Reference Building Package is GJ (1J=1000MJ) The annual energy consumption of this house as designed is The software used to simulate the annual energy use of the building is: The building is being designed using an air tightness baseline of: OBC reference ACH, NLA or NLR default values (no depressurization test required) Targeted ACH, NLA or NLR. Depressurization test to meet ACH50 or NLR or NLA Reduction of overall thermal performance of the proposed building envelope is not more than 25% of the envelope of the compliance package it is compared against (3.1.2.1.(6)). Standard Operating Conditions Applied (A-3.1.2.1 - 4.6.2) Reduced Operating Conditions for Zero-rated homes Applied (A-3.1.2.1 - 4.6.2.5) On Site Renewable(s): Other Types: ENERGY STAR or R-2000 Performance Design Verification [Subsection 3.1.3. Other Acceptable Compliance Methods] The NRCan "ENERGY STAR for New Homes Standard Version 12.6" technical requirements, applied to this building design result in the building performance meeting or exceeding the prescriptive performance requirements of the Supplementary Standard SB12 (A-3.1.3.1). The NRCan, "2012 R-2000 Standard" technical requirements, applied to this building design result in the building performance meeting or exceeding the prescriptive performance requirements of the Supplementary Standard SB12 (A-3.1.3.1). Performance Energy Modeling Professional Energy Evaluator/Advisor/Rater/CEM Name and company: Accreditation or Evaluator/Advisor/Rater License # **ENERGY STAR or R-2000** Energy Evaluator/Advisor/Rater/Name and company: 5506 Angela Bustamante, Building Knowledge Canada G. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets building code] Name Signature

32964

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

David DaCosta



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

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Vent

Case

Case

**Energy Star** Package: System: System 1 Project: Richmond Hill Model: **Model 2930** 

## Air Leakage Calculations

Building Air Leakage Heat Loss											
В	LRairh	Vb	HL^T	HLleak							
0.018											

	Building Air Leakage Heat Gain											
Г	В	LRairh	Vb	HG^T	HG Leak							
	0.018											

	Air Leakage Heat Loss/Gain Multiplier Table (Section 11)										
Level	Level	Building	Level Conductive	Air Leakage Heat Loss							
Level	Factor (LF)	Air	Heat Loss (HLclevel)	Multiplier							
Level 1	0.5		6474	1.4379							
Level 2	0.3	18619	9838	0.5677							
Level 3	0.2	10019	11997	0.3104							
Level 4	0		0	0.0000							

		Air Leakage Heat Gain
HG LEAK	864	0.0720
BUILDING CONDUCTIVE HEAT GAIN	12005	0.0720
•	-	
Highoot Coiling Hoight	27.0	ET 0.22 M

201010				
1 2		3	4	
(LF)	(LF)	(LF)	(LF)	
1.0	0.6	0.5	0.4	
	0.4	0.3	0.3	
		0.2	0.2	
			0.1	

Levels this Dwelling	
3	

Vantilation	Coloulations
ventilation	Calculations

Ventilation Heat Loss					
			Ventilation	a Hoat I oss	
	С	PVC			HLbvent
	1.08	79.5	77.8	0.20	1336
		C 1.08	C PVC 1.08 79.5	Ventilation C PVC HL^T	Ventilation Heat Loss

Ventilation Heat Gain					
C PVC HG^T HGbvent					
.1	79.5	12.8	1099		
	C .1	C PVC	C PVC HG^T		

**Ventilation Heat Gain** 

Case 1

Case 2 **Ventilation Heat Gain (Direct Ducted Systems)** 

Ventilation Heat Gain (Exhaust Only Systems)

Ventilation Heat Loss (Exhaust only Systems)
--

Case 1 - Exhaust Only					
Level	LF	HLbvent	LVL Cond. HL	Multiplier	
Level 1	0.5	1336	6474	0.10	
Level 2	0.3		9838	0.04	
Level 3	0.2		11997	0.02	
Level 4	0		0	0.00	

Case 1

Case 1 - Exhaust Only		Multiplier
HGbvent	1099	0.09
Building	12005	0.09

Case 2
Ventilation Heat Loss (Direct Ducted Systems

		•	•
			Multiplier
С	HL^T	(1-E) HRV	16.80
1.08	77.8	0.20	10.00

		Multiplier
С	HG^T	13.82
1.08	12.8	13.02

Ventilation Heat Loss (Forced Air Sy	stems)

Case 3

	HLbvent	Multiplier
Total Ventilation Load	1336	0.05

V	
Ventilation Heat Gain (Forced Air Systems)	

		vent Heat Gain	Multiplier
HGbvent	HG*1.3	1099	0.09
1099	1	1099	0.09
		•	

Case 3

Foundation Conductive Heatloss Level 1 Level 1	1685 V	atts 5748	Btu/h
--	--------	-----------	-------

Foundation Conductive Heatloss Level 2	Level 2	Watts	Btu/h
--	---------	-------	-------

Slab on Grade Foundation Conductive Heatloss Watts Btu/h

**Walk Out Basement Foundation Conductive Heatloss** 

Btu/h



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
Supplementary 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	
3	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>		
		Option ≥75% SRE @ 0 °C U.2 ▼ Reg'd Interconnected to the Furnace Fan Required ▼				
	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".

# **Envelope Air Leakage Calculator**

Supplemental tool for CAN/CSA-F280

Weather S	tation Description
Province:	Ontario <b>▼</b>
Region:	Richmond Hill ▼
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10
Loca	al Shielding
Building Site:	Suburban, forest ▼
Walls:	Heavy ▼
Flue:	Heavy ▼
Highest Ceiling Height (m):	8.23
Building	g Configuration
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m <sup>3</sup> ):	1025.38
Air Leak	age/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	/H): <b>0.367</b>
Cooling Air Leakage Rate (ACH,	/H): 0.104

# **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	on Dimensions			
Floor Length (m):	20.38				
Floor Width (m):	5.53				
Exposed Perimeter (m):	51.82				
Wall Height (m):	2.74				
Depth Below Grade (m):	2.13	Insulation Configuration			
Window Area (m²):	1.39				
Door Area (m²):	1.95				
	Radi	iant Slab			
Heated Fraction of the Slab:	0				
Fluid Temperature (°C):	33				
	Desig	n Months			
Heating Month	1				
	Founda	ation Loads			
Heating Load (Watts): 1685					



### 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		

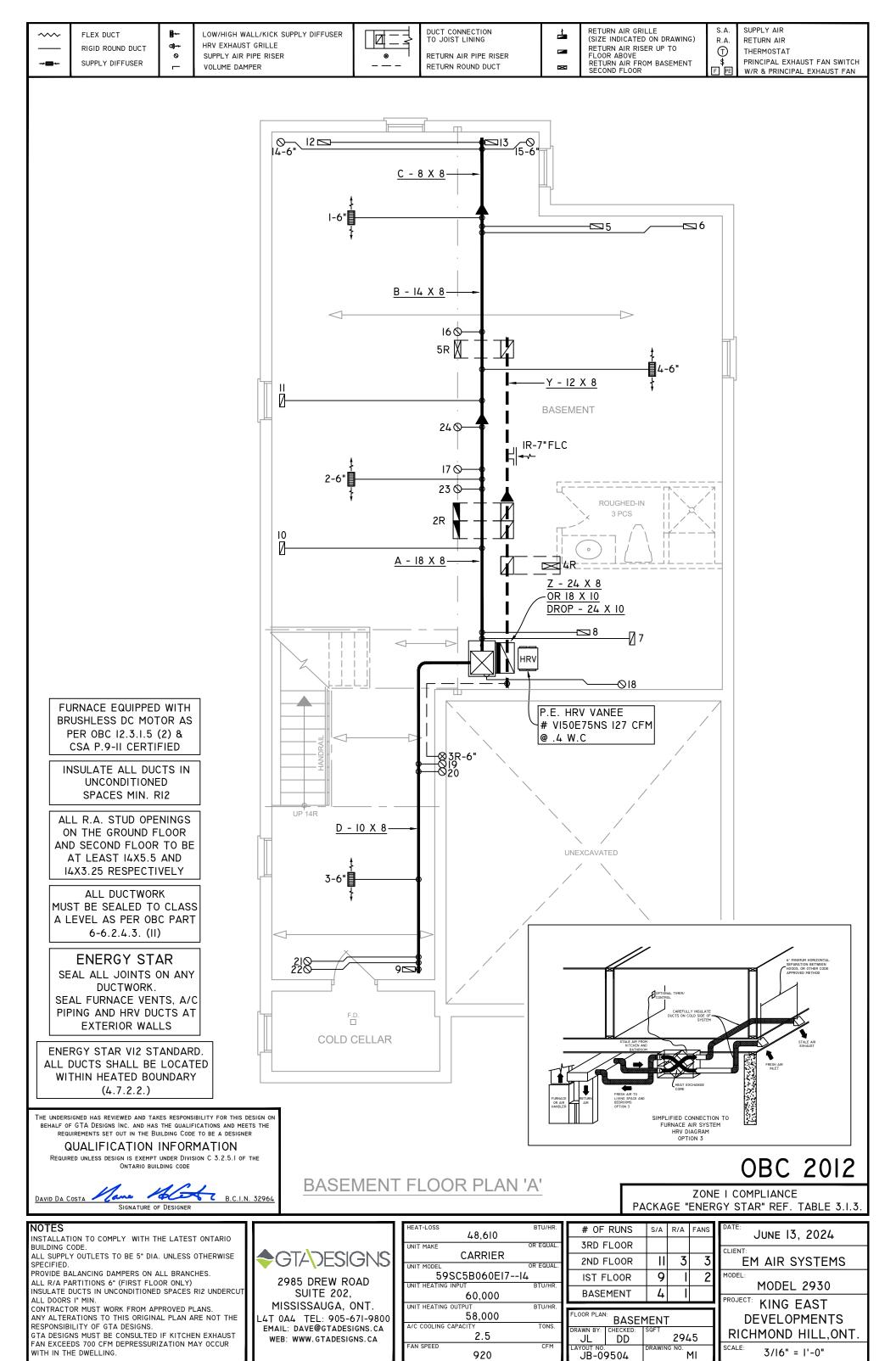


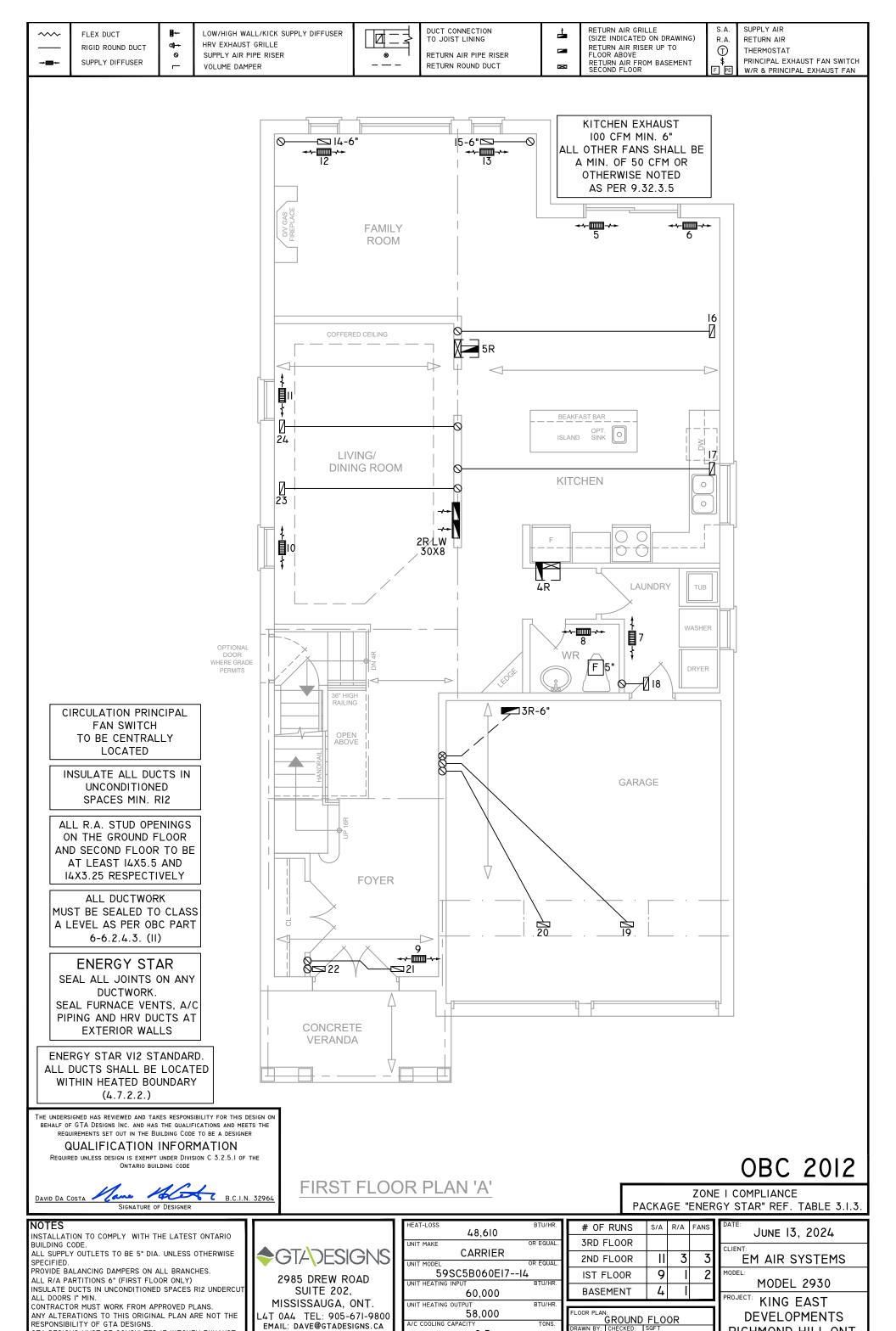
## 2985 Drew Road, Suite 202 Mississauga, Ontario L4T 0A4

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		





TONS

2.5

920

FAN SPEED

WEB: WWW.GTADESIGNS.CA

RICHMOND HILL, ONT.

3/16" = 1'-0"

2945

M2

DD

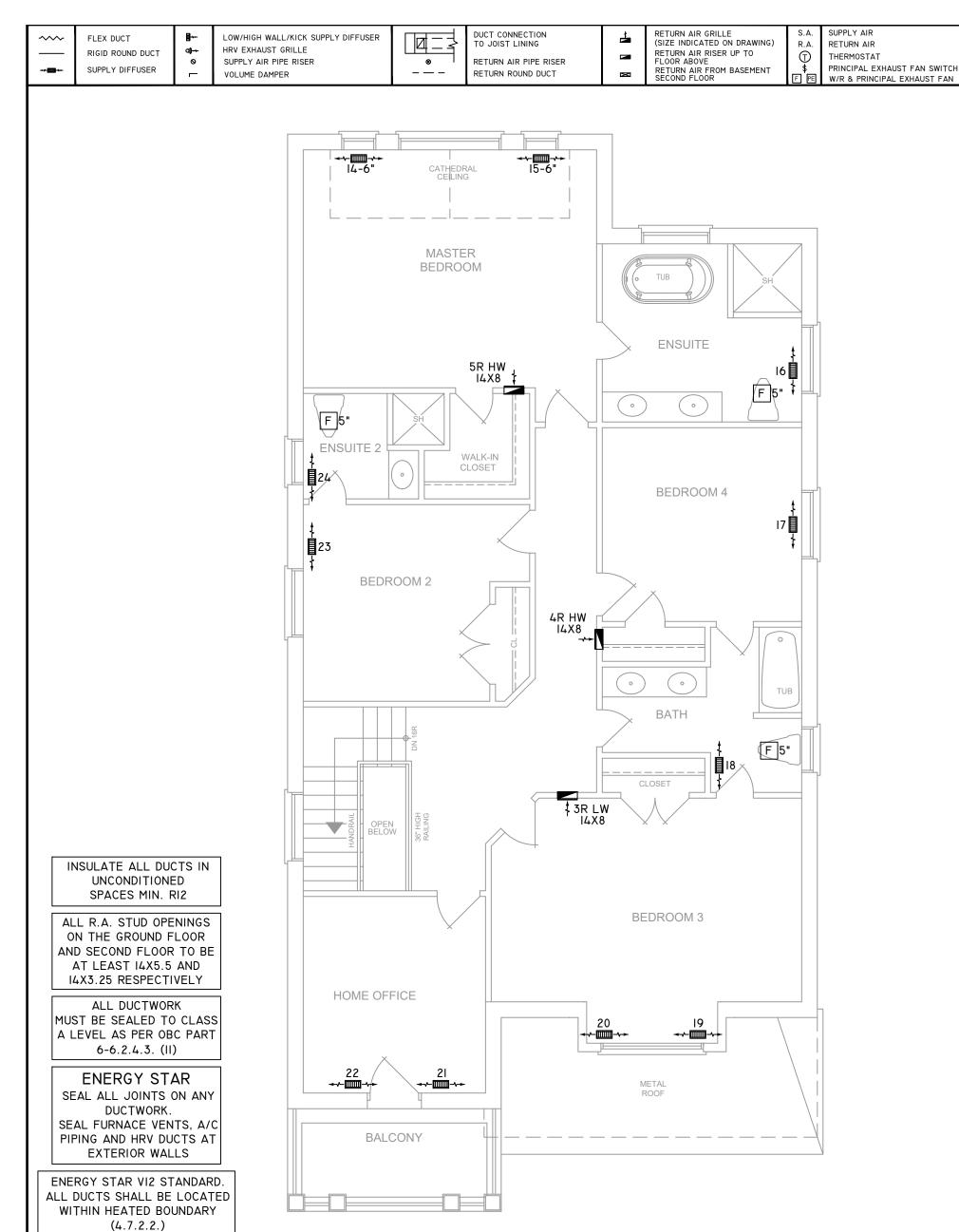
JB-09504

RESPONSIBILITY OF GTA DESIGNS.

WITH IN THE DWELLING.

GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST

FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR



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

B.C.I.N. 32964

# SECOND FLOOR PLAN 'A'

HEAT-LOSS

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.



2985 DREW ROAD SUITE 202, MISSISSAUGA, ONT. L4T 0A4 TEL: 905-671-9800 EMAIL: DAVE@GTADESIGNS.CA

WEB: WWW.GTADESIGNS.CA

48,610	
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B060EI7I	
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
58,000	
A/C COOLING CAPACITY	TONS.
2.5	
FAN SPEED	CFM
920	

BTU/HR.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	Ш	3	3
IST FLOOR	9	I	2
BASEMENT	4	I	
FLOOR PLAN: SECOND FLOOR			
SECOND LEOUR			

DD

JB-09504

2945

M3

JUNE 13, 2024 CLIENT **EM AIR SYSTEMS** MODEL MODEL 2930 PROJECT: KING EAST **DEVELOPMENTS** RICHMOND HILL, ONT.

3/16" = 1'-0"

FLEX DUCT RIGID ROUND DUCT SUPPLY DIFFUSER

LOW/HIGH WALL/KICK SUPPLY DIFFUSER HRV EXHAUST GRILLE **a**]---0 SUPPLY AIR PIPE RISER VOLUME DAMPER



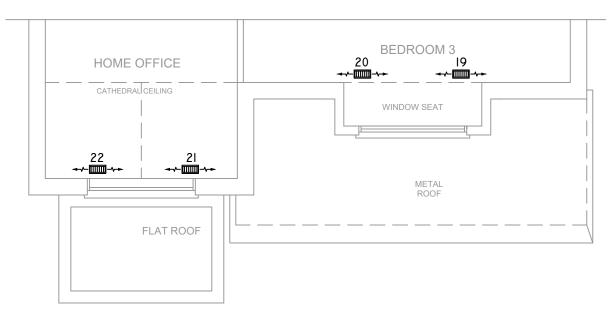
DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT

4  $\mathbf{x}$ 

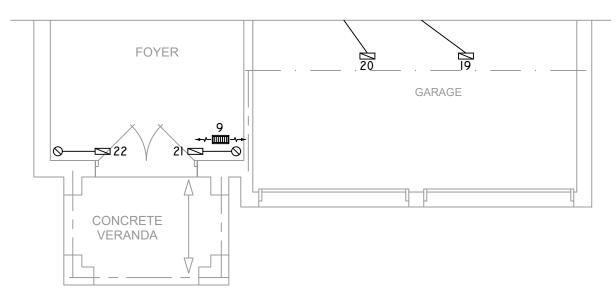
RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR

R.A 1

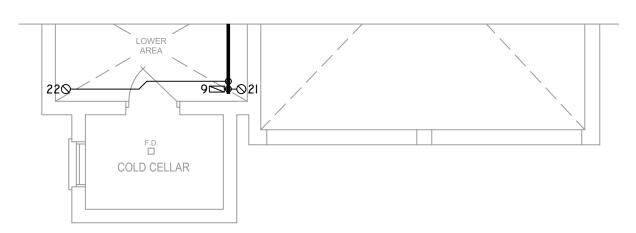
SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN



## SECOND FLOOR PLAN 'B'



## FIRST FLOOR PLAN 'B'



## BASEMENT 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 166 B.C.I.N. 32964

2945

M4

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

SCALE:

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.



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.
48,610	
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B060EI7I	-
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
58,000	
A/C COOLING CAPACITY	TONS.
2.5	
FAN SPEED	CFM
920	
·	

HEAT-LOSS

S/A	R/A	FANS	
S/A	R/A	FANS	
Ш	3	3	
9	I	2	
4	I		
FLOOR PLAN: PARTIAL PLAN(S)			
	4		

CHECKED

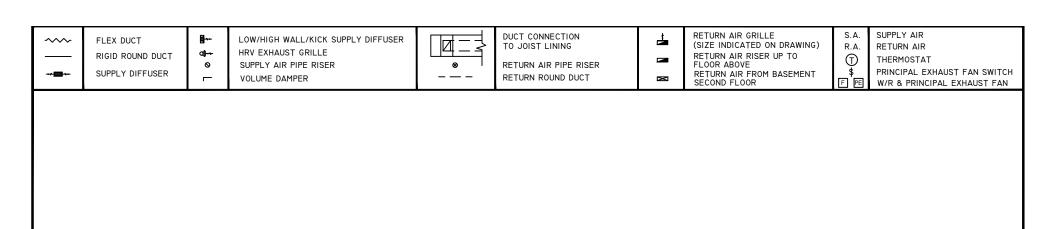
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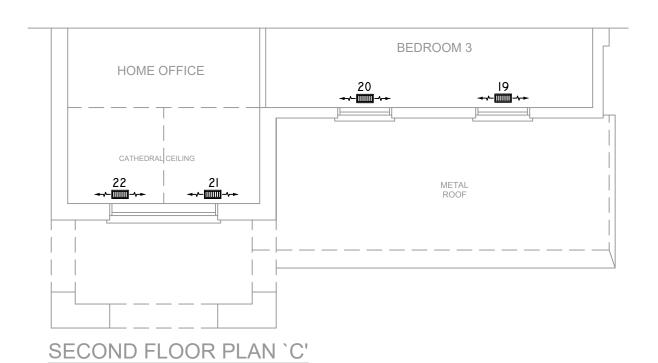
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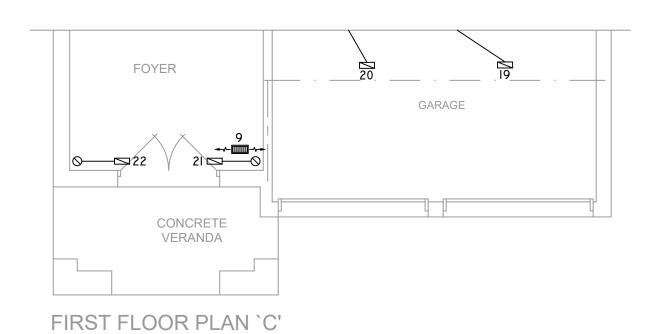
ł	JUNE 13, 2024
	CLIENT: EM AIR SYSTEMS
1	MODEL: MODEL 2930
1	PROJECT: KING EAST
	DEVELOPMENTS
ı	RICHMOND HILL, ONT

3/16" = 1'-0"

OBC 2012









**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.



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.
48,610	·
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B060EI7	
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
58,000	
A/C COOLING CAPACITY	TONS.
2.5	
FAN SPEED	CFM
920	

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	Ш	3	3
IST FLOOR	9	I	2
BASEMENT	4		
FLOOR PLAN: PARTIAL PLAN(S)			

DD

JL JB-09504 2945

M5

JUNE 13, 2024 CLIENT **EM AIR SYSTEMS** MODEL: MODEL 2930 PROJECT: KING EAST **DEVELOPMENTS** RICHMOND HILL, ONT.

3/16" = 1'-0"