

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					
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 <u>hvac@gtades</u>	<u>igns.ca</u>		
Telephone number (905) 671-9800	Fax number		Cell number			
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	s		
☐ Complex Buildings ☐ Fire Protecti	ion		On-site Sewage System	าร		
Description of designer's work Mod	el Certification		Project #:			
Heating and Cooling Load Calculations Main	X	Builder	Layout #:	JB-09503		
Heating and Cooling Load Calculations Main Air System Design Alternate	^	Project	EM Air King East Developm	ents		
Residential mechanical ventilation Design Summary O.D. GFA	2889	Model	-			
Residential System Design per CAN/CSA-F280-12 Residential New Construction - Forced Air		SB-12	Model 2890			
D. Declaration of Designer		3D-12	Energy Star			
David DaCosta (print name) I review and take responsibility for the Division C of the Building Code. I am classes/categories.	ne design work o		stered under subsection 3.2.4			
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 requirement	ents of the Building Code.			
Basis for exempti	on from registra	tion and qualification:				
certify that: 1. 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 the firm.						
June 24, 2024		Mane 14				
Date		Signature of De	esigner			

NOTE:

Page 1

- 1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d), of Division C, Article 3.2.5.1. of Division C and all other persons who are exempt from qualifications under Subsections 3.2.4. and 3.2.5.of Division C.
- 2. Schedule 1 does not require to be completed a holder of a license, temporary license, or a certificate of authorization, issed by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.



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

Page 2

No. of Levels: 3 Ventilated? Included Air tightness: 1961-Present (ACH=3.57) Assumed? Yes	Heat loss and gain calcula	ation summary sheet CSA-F280-M12 Standard
Building Location	These documents issued for the use of	EM Air Layout No.
Address (Model): Model 2890 Site: King East Developments	and may not be used by any other persons without authorization. Documents	for permit and/or construction are signed in red. JB-09503
Address (Model): Model 2890 Site: King East Developments	Building I	ocation
Postal code: Post		
Calculations based on Dimensional information based on: Architectural Design Inc. May/2024 Attachment: Detached Social SeastWest Assumed? Yes No. of Levels: 3 Ventilated? Included Air tightness: 1961-Present (ACH=3.57) Assumed? Yes Wind exposure: Sheltered HRV? VanEE V150E75NS Internal shading: Light-translucent Vocupants: 5 Sensible Eff. at -25C 60% Apparent Effect. at -0C 80% Units: Imperial Area Sq ft: 2889 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 Style A: As per OBC SB12 Energy Star R 22 + 5cl Style A: As per OBC SB12 Energy Star R 22 + 5cl Style B: Style B: Style B: Style B: Style A: As per Selected OBC SB12 Energy Star R 25 Exposed floors Style B: Style A: As per Selected OBC SB12 Energy Star R 31 Style B: Style A: As per Selected OBC SB12 Energy Star R 31 Style A: As per Selected OBC SB12 Energy Star R 32 Style B: S	Model:	Lot:
Dimensional information based on: Architectural Design Inc. May/2024 Attachment: Detached Front facing: EastWest Assumed? Yes	City and Province: Richmond Hill	Postal code:
Attachment: Detached Front facing: East/West Assumed? Yes	Calculations	s based on
No. of Levels: 3 Ventilated? Included Air tightness: 1961-Present (ACH=3,57) Assumed? Yes	Dimensional information based on:	chitectural Design Inc. May/2024
Weather location: Richmond Hill	Attachment: Detached	Front facing: East/West Assumed? Yes
HRV? VanEE	No. of Levels: 3 Ventilated? Included	Air tightness: 1961-Present (ACH=3.57) Assumed? Yes
Sensible Eff. at -25C	Weather location: Richmond Hill	Wind exposure: Sheltered
Sensible Eff. at -0C 75%	HRV? VanEE V150E75NS	Internal shading: Light-translucent Occupants: 5
Heating design conditions Cutdoor temp -5.8 Indoor temp: 72 Mean soil temp: 50 Outdoor temp 88 Indoor temp: 75 Latitude: 44 Above grade walls Style A: As per OBC SB12 Energy Star R 22 + 5ci Style A: As per OBC SB12 Energy Star R 20 c Style B: Style B: Style C: Style C: Style D: Style B: As per Selected OBC SB12 Energy Star R 30 Style B: Style B: As per Selected OBC SB12 Energy Star R 31 Style B: Style	Sensible Eff. at -25C 60% Apparent Effect. at -0C 80%	Units: Imperial Area Sq ft: 2889
Outdoor temp -5.8 Indoor temp: 72 Mean soil temp: 50 Outdoor temp 88 Indoor temp: 75 Latitude: 44	Sensible Eff. at -0C 75%	
Above grade walls Style A: As per OBC SB12 Energy Star R 22 + 5ci Style A: As per OBC SB12 Energy Star R 20c Style B: Style C: Style C: Style D: Floors on soil Ceilings Style A: As per Selected OBC SB12 Energy Star R 20c Style D: Floors on soil Ceilings Style A: As per Selected OBC SB12 Energy Star Style B: Style B: As per Selected OBC SB12 Energy Star R 20c Style B: As per Selected OBC SB12 Energy Star R 20c Style B: As per Selected OBC SB12 Energy Star R 20c Style B: Style B: As per Selected OBC SB12 Energy Star R 20c Style B: St	Heating design conditions	Cooling design conditions
Style A:	Outdoor temp -5.8 Indoor temp: 72 Mean soil temp: 50	Outdoor temp 88 Indoor temp: 75 Latitude: 44
Style B: Style C: Style C: Style D: Floors on soil Style A: As per Selected OBC SB12 Energy Star Style B: Style B: Style C: Style A: As per Selected OBC SB12 Energy Star Style B: Style B: As per Selected OBC SB12 Energy Star R Style C: Style A: As per Selected OBC SB12 Energy Star R 31 Exposed floors Style C: Style A: As per Selected OBC SB12 Energy Star R 31 Windows Style B: Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style B: Style B: Style B: Style B: Style C: Style B: Style C:	Above grade walls	Below grade walls
Style C: Style D: Floors on soil Style A: As per Selected OBC SB12 Energy Star Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: Style B: As per Selected OBC SB12 Energy Star R 31 Doors Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style A: As per Selected OBC SB12 Energy Star R 4.0 Windows Style B: Style A: As per Selected OBC SB12 Energy Star R 4.0 Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: St	Style A: As per OBC SB12 Energy Star R 22 + 5ci	Style A: As per OBC SB12 Energy Star R 20ci
Style D: Style A: As per Selected OBC SB12 Energy Star Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Style A: As per Selected OBC SB12 Energy Star R Style A: As per Selected OBC SB12 Energy Star R Style A: As per Selected OBC SB12 Energy Star R 31 Doors	Style B:	Style B:
Style A: As per Selected OBC SB12 Energy Star Style B: Style B: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Style B: St	Style C:	Style C:
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Style B: Style B: As per Selected OBC SB12 Energy Star R Style C: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style B: Style B: Skylights Style B: Skylights Style B: Skylights Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Style B	Floors on soil	Ceilings
Exposed floors Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style A: As per Selected OBC SB12 Energy Star R 4.0 Windows Style B: Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Skylights Style B: Skylights Style C: Style A: As per Selected OBC SB12 Energy Star R 2.0 Style B: Style B: Style B: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Style A: As per Selected OBC SB12 Energy Star	Style A: As per Selected OBC SB12 Energy Star R 60
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 B: Skylights Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R 2.00 Style B: Style A: As per Selected OBC SB12 Energy Star R 2.00 Style D: Style B: Style B: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Style B:	Style B: As per Selected OBC SB12 Energy Star R 31
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 2.00 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 Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Exposed floors	Style C:
Windows 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 2.0 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 Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Style A: As per Selected OBC SB12 Energy Star R 31	Doors
Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R 2.0 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 Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Style B:	Style A: As per Selected OBC SB12 Energy Star R 4.00
Style B: Style C: Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Windows	Style B:
Style C: Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Style A: As per Selected OBC SB12 Energy Star R 4.00	Style C:
Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Style B:	Skylights
Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800		Style A: As per Selected OBC SB12 Energy Star R 2.03
Notes: Residential New Construction - Forced Air Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800		Style B:
Calculations performed by Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Attached documents: As per Shedule 1 Heat Loss/0	Gain Caculations based on CSA-F280-12 Effective R-Values
Name: David DaCosta Postal code: L4T 0A4 Company: gtaDesigns Inc. Telephone: (905) 671-9800	Notes: Residential New C	Construction - Forced Air
Company: gtaDesigns Inc. Telephone: (905) 671-9800	Calculations p	erformed by
	Name: David DaCosta	Postal code: L4T 0A4
Address: 2985 Drew Road, Suite 202 Fax:	Company: gtaDesigns Inc.	Telephone: (905) 671-9800
	Address: 2985 Drew Road, Suite 202	Fax:
City: Mississauga E-mail hvac@gtadesigns.ca	City: Mississauga	E-mail hvac@gtadesigns.ca



Inlet Size

Trunk

9x6

30

14

Z

14

14

z

14

Air System Design

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

I review and take responsibility for the design work and am qualified in the EM Air June 24, 2024 Builder: Date: Page 3 appropriate category as an "other designer" under Division C subsection 3.2.5. of the Project # PJ-00267 **Building Code.** System 1 Mana HLEX-Project: King East Developments Model 2890 Individual BCIN: 32964 David DaCosta Lavout # JB-09503 Model: BOILER/WATER HEATER DATA: DESIGN LOAD SPECIFICATIONS AIR DISTRIBUTION & PRESSURE FURNACE/AIR HANDLER DATA: A/C UNIT DATA: Level 1 Net Load 15,606 btu/h **Equipment External Static Pressure** 0.5 "w.c. Make Make Carrie Туре Carrier 3.5 Ton Level 2 Net Load 16,699 btu/h **Additional Equipment Pressure Drop** 0.225 "w.c. Model 59SC5B060E17--14 Model Model: Level 3 Net Load 19.904 btu/h **Available Design Pressure** 0.275 "w.c. **High Input** 60000 BTU/h Input Btu/h Cond.-3.5 58000 BTU/h Level 4 Net Load Return Branch Longest Effective Length **High Output** Output Btu/h Coil ---3.5 0 btu/h 300 ft ΔWH 52 209 htu/h 0.50 " W C Min.Output Btu/h Total Heat Loss R/A Plenum Pressure 0.138 "w.c. E.s.p. **Total Heat Gain** 36,092 btu/h S/A Plenum Pressure 0.14 "w.c. Water Temp deg. F. Blower DATA: Gray 97% Blower Speed Selected: ECM Heating Air Flow Proportioning Factor 0.0255 cfm/btuh Thermal Eff. Blower Type 35663 ft³ Cooling Air Flow Proportioning Facter (Brushless DC OBC 12.3.1.5.(2)) **Building Volume Vb** 0.0369 cfm/btuh Electric Heat Ventilation Load 1.336 Btuh. Check 1330 cfm Cool. Check 1330 cfm R/A Temp 70 dea. F. Ventilation PVC 79.5 cfm S/A Temp 110 deg. F. Supply Branch and Grill Sizing Diffuser loss 1330 cfm Cooling 1330 cfm 0.01 "w.c. Temp. Rise>>> 40 deg. F Heat. Design Airflow 1330 cfm Level 1 Level 2 S/A Outlet No 2 5 10 11 12 13 Room Use BASE BASE BASE KIT/GRT KIT/GRT FOY LIV LIV LIV LAUND WR Btu/Outlet 3901 3901 3901 3901 2149 2149 2422 1826 1826 1826 1793 560 2149 **Heating Airflow Rate CFM** 99 99 99 99 55 55 55 62 47 47 47 46 14 10 10 10 10 89 89 39 83 83 51 Cooling Airflow Rate CFM 83 16 **Duct Design Pressure** 0.13 **Actual Duct Length** 14 33 28 52 20 42 34 29 45 53 56 15 Equivalent Length 100 130 70 130 70 70 70 70 70 70 70 70 70 70 110 140 130 80 120 130 100 110 130 70 70 70 70 70 Total Effective Length 114 163 182 70 70 70 70 70 70 70 70 70 130 182 164 109 165 183 156 125 135 70 70 70 98 70 70 70 Adjusted Pressure 0.11 0.08 0.13 0.07 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.10 0.07 0.08 0.12 0.08 0.07 0.08 0.10 0.10 0.19 0.19 0.19 0.19 0.19 **Duct Size Round** 5 **Outlet Size** 4x10 4x10 4x10 4x10 4x10 3x10 4x10 3x10 4x10 3x10 4x10 4x10 4x10 4x10 Trunk D В D Level 3 Level 4 S/A Outlet No. 14 15 16 17 20 21 22 23 24 25 18 19 26 Room Use P.RFD P.RFD HAII HAII BFD 2 RFD 2 RFD 2 BATH 2 BFD 3 BFD 3 **BATH** RFD 4 FNS Btu/Outlet 1631 1631 1287 1287 1568 1568 1568 1590 2059 2059 797 1508 1350 **Heating Airflow Rate CFM** 42 42 33 33 40 40 41 52 52 20 38 34 65 65 65 65 53 Cooling Airflow Rate CFM 61 61 65 33 45 45 19 25 **Duct Design Pressure** 0.13 59 55 **Actual Duct Length** 44 52 70 78 78 16 17 29 **Equivalent Length** 160 130 120 160 150 130 140 120 110 140 160 100 100 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 219 174 212 205 200 198 191 176 117 70 70 70 70 70 70 70 70 70 70 70 70 Total Effective Length 164 218 224 129 70 70 70 Adjusted Pressure 0.06 0.07 0.08 0.06 0.06 0.07 0.06 0.07 0.07 0.06 0.07 0.11 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 **Duct Size Round** 6 6 5 Outlet Size 4x10 4x10 4x10 4x10 4x10 4x10 4x10 3x10 4x10 4x10 3x10 4x10 3x10 4x10 PTO Trunk R C ח C Return Branch And Grill Sizing **Grill Pressure Loss** 0.02 "w.c **Return Trunk Duct Sizing** Supply Trunk Duct Sizing R/A Inlet No 1R 2R 3R 4R 5R 6R 7R 8R 9R 10R 11R Trunk CFM Press. Round Rect. Size Trunk C.CFM H.CFM Press. Round Rect. Size Inlet Air Volume CFM 199 421 200 105 150 105 150 **Duct Design Pressure** 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 1330 0.05 18.0 24x12 1277 1291 0.06 17.0 22x12 Drop 26x10 1330 1031 13 76 36 67 36 0.05 18 0 291 0.06 16.0 **Actual Duct Length** 44 Z 30v10 24y12 30v8 22v10 **Equivalent Length** 75 135 90 185 180 180 185 50 50 50 50 Υ 830 0.05 15.0 26x8 20x10 С 612 505 0.06 13.0 18x8 14x10 **Total Effective Length** 88 179 97 261 216 247 221 50 50 50 50 х 631 0.05 13.5 20x8 16x10 306 272 0.06 10.0 12x8 10x10 Adjusted Pressure 0.13 0.07 0.12 0.05 0.05 0.05 0.05 0.24 0.24 0.24 0.24 w Duct Size Round 8.0 11.0 7.5 6.0 8.0 6.0 8.0 F FLC G Inlet Size 8 U OR x

s

Q



Total Heat Loss

Total Heat Gain

52,209 btu/h

36,092 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:	E	1 Air		_	Date:			June	24, 202	24					We	ather Data	Rich	mond Hill	44	-5.8	88 20	50					Page 4
2012 OBC		Project:	King East	evelopi	nents	_	Model:			Mod	del 2890)			Syst	em 1	He	at Loss ^1	77.8 deg. F		Ht gain ^T	12.8	deg. F				Proje Layo	.t# !	PJ-00267 JB-09503
	Level 1		g		BAS																								
	ft. exposed wall A			1	61 A			Α		Α			Α		Α		Α		Α		Α		Α		Α			Α	
Run	ft. exposed wall B				В			В		В	_		В		В		В		В		В		В		В			В	
	Ceiling height				2.0 AG 25 Area		2.0	AG Area		2.0 A	G rea		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 Are			2.0 AG Area	
Ε.	Floor area Exposed Ceilings A			11.	25 Area A			Area A		A			Area A		Area A		Area A		Area A		Area A		Area A		Are A	ea		Area A	
	Exposed Ceilings B				В			В		В			В		В		В		В		В		В		В			В	
	Exposed Floors				Flr			Flr		FI			Flr		Flr		Flr		Fir		Flr		Flr		Fir			Flr	
	Gross Exp Wall A			3	22																								
	Gross Exp Wall B																												
	Components				Loss	Gain	_	Loss	Gain	Lo	oss G	Sain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Los	ss G	Sain	Loss	Gain
	North Shaded	4.00		•	5 9																								
	East/West South	4.00		2.60	15 29	2 44	Ď.																						
WOR Window	ws Including Doors	4.00		.86																									
WOD WIIIUOW	Skylight	2.03		.12																									
	Doors	4.00			21 40	8 67	7																						
Ne	et exposed walls A	21.12		.61 2		170)																						
	et exposed walls B	21.40	3.64	.60																									
	Exposed Ceilings A	59.22		.67																									
Ex	xposed Ceilings B	27.65		.44																									
- 1.: 0 1	Exposed Floors	29.80	2.61	.23	500																								
Foundation Condu	Heat Loss				538 617																								
Total Conductive	Heat Gain				017	74																							
Air Leakage	Heat Loss/Gain		1.4840 0.0	433	916																								
	Case 1			.06																									
	Case 2			.82																									
Ventilation	Case 2		0.04	. 00	25	8 4	ı																						
Ventilation	Case 3	х	0.04	.06	25	-																							
	Case 3 Heat Gain People			239	23	1																							
	Case 3 Heat Gain People Appliances Loads	x 1 =.25 pe	rcent	239 759	25																								
, D	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	1 =.25 pe	rcent	239 759 0%																									
	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059	1 =.25 pe	rcent	239 759 0% om	1560	6 1059)																						
Level HL Total Level HG Total Run 1 Run 1	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A off. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors	1 =.25 pe	rcent al HL for per r	239 759 0% om 1.3	KIT/G 65 A B 0.0 04 Area A B Fir	6 1059	22 10.0 258	Area A B Fir		50 A B 10.0 224 Ai A B	rea		17 A B 11.0 70 Area A B Fir	UND	W 6 A B 10.0 58 Area A B Fir	R	A B 10.0 Area A B Fir		A B 10.0 Area A B Fir		A B 10.0 Area A B Fir		A B 10.0 Area A B Fir		A B 10.0 Are A B Fir		1	A B 0.0 Area A B Fir	
Level HL Total Level HG Total Run 1 ES	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 If t. exposed wall A of t. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A	1 =.25 pe	rcent al HL for per r	239 759 0% om 1.3	KIT/G 65 A B 0.0 04 Area A B	6 1059	22	A B B Area A B		10.0 224 Ai A B	rea		17 A B 11.0 70 Area A B	IND	6 A B 10.0 58 Area A B	R	B 10.0 Area A B		B 10.0 Area A B		B 10.0 Area A B		B 10.0 Area A B		B 10.0 Are A B		1	B 0.0 Area A B	
Level HL Total Level HG Total Run 1 ES	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B	1 =.25 per Tot Total I	al HL for per r	239 759 0% om 1.3	1560 KIT/G 65 A B 0.0 04 Area A B Fir	6 1059	22 10.0 258	B Area A B B Fir		10.0 224 Ai A B FI 500	rea r	Sain	17 A B 11.0 70 Area A B Fir 187		6 A B 10.0 58 Area A B Fir 60		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 ES	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 If t. exposed wall A of t. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A	1 =.25 per Tot Total I	at HL for per r	239 759 0% om 1.3	KIT/G 65 A B 0.0 04 Area A B Fir	6 1059	22 10.0 258 220	B Area A B B Fir	Gain	10.0 224 Ai A B FI 500	rea r	Sain	17 A B 11.0 70 Area A B Fir		6 A B 10.0 58 Area A B Fir		B 10.0 Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Are A B		1 Sain	B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 ES	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall B Components	1 = .25 pe Total I R-Values L 4.00 4.00	rcent al HL for per r HG per room :	239 759 0% om 1.3	KIT/G 65 A B 0.0 04 Area A B FIr 50	6 1059	22 10.0 258 220	A B Area A B Fir	Gain	10.0 224 Ai A B FI 500	rea r 5055 G	1780	17 A B 11.0 70 Area A B Fir 187		6 A B 10.0 58 Area A B Fir 60	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Example 1 Example 2 Example 2 Example 3	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A f.t. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Gross Exp Wall B Components North Shaded East/West South	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00		239 759 0% om 1.3	KIT/G 65 A B 0.0 04 Area A B Fir 50 Loss 42 81	6 1059	22 10.0 258 220	A B Area A B Fir	Gain	10.0 224 Ai A B FI 500	rea r oss G		17 A B 11.0 70 Area A B Fir 187	Gain	6 A B 10.0 58 Area A B Fir 60	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Example 1 Example 2 Example 2 Example 3	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 If t. exposed wall A of t. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings A Gross Exp Wall B Components North Shaded East/West South Existing Windows	1 = .25 pe Total I R-Values L 4.00 4.00 4.00 4.00 1.99	ncent al HL for per r HG per room s 19.45 1 19.45 2 19.45 2 19.45 2	239 759 0% om 1.3 10 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	KIT/G 65 A B 0.0 04 Area A B Fir 50 Loss 42 81	6 1059	22 10.0 258 220	A B Area A B Fir	Gain	10.0 224 Ai A B FI 500	rea r 5055 G	1780	17 A B 11.0 70 Area A B Fir 187	Gain	6 A B 10.0 58 Area A B Fir 60	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Example 1 Example 2 Example 2 Example 3 Example 2 Example 3 Example 4 Example 4 Example 5 Example 4 Example 5 Example 6 Example 6 Example 7 Exampl	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight	1 = .25 pe Total I R-Values L 4.00 4.00 4.00 1.99 2.03	oss Gain 19.45 1 19.45 2 19.45 2 39.10 2	239 759 0% 0m 1.3 10 5 6 6 6 6 6 6 6 6 6	KIT/G 65 A B 0.0 04 Area A B Fir 50 Loss 42 81	6 1059	220 10.0 258 220	A B B Area A B Fir Loss	Gain 534	10.0 224 Ai A B FI 500	rea r 5055 G	1780	17 A B 11.0 70 Area A B Fir 187 Loss	Gain 75 267	6 A B 10.0 58 Area A B Fir 60	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Example 1 Example 2 Example 2 Example 2 Example 3 Example 3 Example 4 Example 5 Example 4 Example 4 Example 5 Example 6 Example 7 Exampl	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A ff. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors	1 =.25 pe Total I Total I R-Values L 4.00 4.00 4.00 1.99 2.03 4.00	oss Gain 19.45 1 19.45 2 19.45 2 19.45 3 19.45 3 19.45 2 19.45 3 19.45 2 19.45 3 19.45 3 19.45 3	239 759 0% 0m 11.3 10 5 6 6 	1560 KIT/G 65 A B 1.0 04 Area A B FIr 50 Loss 42 71 138	Gain 7 4921 1 2100	22 10.0 258 220 2 3 3	2 A B B B Area A B Fir Doss 350	Gain 534	B 10.0 224 AI A B FI 500 Lc	rea G	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1	Gain 75 267	6 A B 10.0 58 Area A B Fir 60 Loss	Gain 267	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run I ES	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 If t. exposed wall A If t. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A	1 = .25 pe Total I R-Values L 4.00 4.00 4.00 4.00 4.00 2.03 4.00 2.140	ncent al HL for per r HG per room s Doss Gain 19.45 1 19.45 2 19.45 2 38.33 8 19.45 3 19.45 3 3.64	239 759 0% 0% 0	1560 KIT/G 65 A B 1.0 04 Area A B FIr 50 Loss 42 71 138	Gain 7 4921 1 2100	22 10.0 258 220 2 3 3	2 A B B B Area A B Fir Doss 350	Gain 534	B 10.0 224 AI A B FI 500 Lc	rea r 5055 G	1780	17 A B 11.0 70 Area A B Fir 187 Loss 9 1	Gain 75 267	6 A B 10.0 58 Area A B Fir 60 Loss	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Run 1 Exp. 1 Run 1 Run 1 Run 1 Run 1	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A	1 = .25 pe Total I R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50	rcent al HL for per r HG per room : 19.45 1 19.45 2 19.45 2 39.10 2 39.10 2 36.33 8.33 8.33 8.33 8.33 8.33 8.33 8.33	239 759 0% 0m 11.3 10 5 6 6 	1560 KIT/G 65 A B 1.0 04 Area A B FIr 50 Loss 42 71 138	Gain 7 4921 1 2100	22 10.0 258 220 2 3 3	2 A B B B Area A B Fir Doss 350	Gain 534	B 10.0 224 AI A B FI 500 Lc	rea G	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1	Gain 75 267	6 A B 10.0 58 Area A B Fir 60 Loss	Gain 267	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Experiment Run 1	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 If t. exposed wall A If t. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A	1 = .25 pe Total I R-Values L 4.00 4.00 4.00 4.00 4.00 2.03 4.00 2.140	oss Gain 19.45 19.45 19.45 239.10 2 39.30 3 3.64 9.15 1.31	239 759 000 001 1.3 10 5 6 6 	1560 KIT/G 65 A B 1.0 04 Area A B FIr 50 Loss 42 71 138	Gain 7 4921 1 2100	22 10.0 258 220 2 3 3	2 A B B B Area A B Fir Doss 350	Gain 534	B 10.0 224 AI A B FI 500 Lc	rea G	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1	Gain 75 267	6 A B 10.0 58 Area A B Fir 60 Loss	Gain 267	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Run 1 Example 1 Run 1 Run 1 Run 1 Example 2 Example 2 Run 1 R	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A et exposed walls B Exposed Ceilings A Exposed Floors	1 =.25 pe Total I Total I R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22	oss Gain 19.45 1 19.45 2 19.45 2 38.33 8 19.45 3.64 9.15 1.31	239 759 0% 0% 0	1560 KIT/G 65 A B 1.0 04 Area A B FIr 50 Loss 42 71 138	Gain 7 4921 1 2100	22 10.0 258 220 2 3 3	2 A B B B Area A B Fir Doss 350	Gain 534	B 10.0 224 AI A B FI 500 Lc	rea G	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1	Gain 75 267	6 A B 10.0 58 Area A B Fir 60 Loss	Gain 267	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Experiment Run 1	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 If t. exposed wall A f.t. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Exposed Ceilings B Exposed Ceilings A Exposed Ceilings B Exposed Floors Beschools	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 1 19.45 2 19.45 2 38.33 8 19.45 3.64 9.15 1.31	239 759	KIT/G KIT/G KIT/G B 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Gain 7 49:11 2104	22 10.0 258 220 2 3 3	2 A B B S Area A B Fir Loss 350 584 625	Gain 534 96 103	B 10.0 224 Ai A B FI 500 Lc	rea r oss G 1167 934 1425	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 21 4 157 5	Gain 75 267 08 67 71 94	6 A B 10.0 58 Area A B Fir 60 Loss 9 1	Gain 75 267 35 31	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Run 1 Example 1 Run 1 Run 1 Run 1 Example 2 Example 2 Run 1 R	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B Exposed Vallings B Exposed Vallings B Exposed Walls A Existing Windows Skylight Doors et exposed walls B Exposed Vallings B Exposed Ceilings B Exposed Floors ductive Heatloss Heat Loss Heat Loss	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 1 19.45 2 19.45 2 19.45 2 19.45 3 39.10 2 36.33 8 19.45 3 64 9.15 1.31 2.81 2.81	239 759	1560 KIT/G 65 A B 1.0 04 Area A B FIr 50 Loss 42 71 138	Gain 7 493 1 2100 2 322 322 322	222 10.0 258 220 220 2 3 18	2 A B B B Area A B Fir Doss 350	Gain 534 96 103	B 10.0 224 Ai A B FI 500 Lc	rea G	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1	Gain 75 267 08 6771 94	6 A B 10.0 58 Area A B Fir 60 Loss 9 1	Gain 75 267 35 31	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run i Run i Run i E E E Foundation Conductive	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A et exposed Walls A et exposed Ceilings A Exposed Floors Suctive Heatloss Heat Loss Heat Gain	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 1 19.45 2 19.45 2 39.10 2 38.33 8 19.45 3.64 9.15 1.31 2.81 2.81	239 2759 00% 00m 1.3 10 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	KIT/G KIT/G KIT/G KIT/G B B C C C C C C C C C C C	Gain 7 49220 11 21000 22921 2 322	222 10.0.258 220 220 2 18 30 172	2 A B B B B B B B B B B B B B B B B B B	Gain 534 96 103	B 10.0 224 Ai A B FI 500 Lc	r r 1167 934 1425	1780 1085 234 3099	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 775 267 008 6771 94	6 A B 10.0 58 Area A B Fir 60 Loss 9 1	Gain 75 267 35 31	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run i Run i Example 1 Nee	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 If t. exposed wall A f.t. exposed wall A f.t. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Existing Windows Skylight Existing Windows Skylight Exposed Walls A et exposed walls A et exposed Walls A et exposed Ceilings B Exposed Ceilings B Exposed Ceilings A Exposed Floors Lective Heatloss Heat Loss Heat Loss Heat Loss Heat Gain	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	Des Gain 19.45 19.45 239.10 239.10 2.81 2.81 2.61 0.5118 0.0118	239 759	KIT/G KIT/G KIT/G B 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Gain 7 49220 11 21000 22921 2 322	222 10.0.258 220 220 2 18 30 172	2 A B B S Area A B Fir Loss 350 584 625	Gain 534 96 103	B 10.0 224 Ai A B FI 500 Lc	rea r oss G 1167 934 1425	1780 1085	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 75 267 08 6771 94	6 A B 10.0 58 Area A B Fir 60 Loss 9 1	Gain 75 267 35 31	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run i Run i Run i E E E Foundation Conductive	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A et exposed Walls A et exposed Ceilings A Exposed Floors Suctive Heatloss Heat Loss Heat Gain	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	Description of the control of the co	239 759 0% 0m 1.3 10 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	KIT/G KIT/G KIT/G KIT/G B B C C C C C C C C C C C	Gain 7 49220 11 21000 22921 2 322	222 10.0.258 220 220 2 18 30 172	2 A B B B B B B B B B B B B B B B B B B	Gain 534 96 103	B 10.0 224 Ai A B FI 500 Lc	r r 1167 934 1425	1780 1085 234 3099	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 775 267 008 6771 94	6 A B 10.0 58 Area A B Fir 60 Loss 9 1	Gain 75 267 35 31	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Run 1 Exp. Net	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Exposed Walls A et exposed walls B Exposed Ceilings B Exposed Walls B Exposed Veilings B Exposed Veilings B Exposed Veilings B Exposed Floors Unctive Heatloss Heat Gain Heat Loss/Gain Heat Loss/Gain Case 1	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00 21.40 8.50 59.22 27.65	oss Gain 19.45 1 19.45 2 19.45 2 39.10 2 39.10 2 39.33 8 19.45 3 64 9.15 3 19.45 3 19.45 3 19.45 3 30.0 2 30.31 8 30.0 2 30.01 3 30.0 3	239 759	KIT/G KIT/G KIT/G KIT/G B B C C C C C C C C C C C	Gain 7 7 493 1 2100 2 2 322 324 4 123	222 10.0.258 2220 258 220 30 1172	2 A B B B B B B B B B B B B B B B B B B	Gain 534 96 103 733 32	B 10.0 224 Ai A B FI 500 Lc C 48 392	r r 1167 934 1425	1780 1085 234 3099	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 775 267 008 6771 94	6 A B 10.0 58 Area A B Fir 60 Loss 9 1 51 1	Gain 75 267 35 31	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run in	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls A et exposed Walls A et exposed Walls A et exposed Walls B Exposed Ceilings B Exposed Floors texting Windows Existing Windows Skylight Doors et exposed walls B Exposed Ceilings A et exposed Geilings B Exposed Floors fuctive Heatloss Heat Loss Heat Loss Heat Loss Heat Gain Heat Loss/Gain Case 2	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	oss Gain 19.45 1 19.45 2 19.45 2 39.10 2 39.10 2 36.4 9.15 1.31 2.81 2.61 7 0.5118 0.004 16.80 1	239 239 255 255 255 255 255 255 255 255 255 25	KIT/G KIT/G KIT/G KIT/G B LO A B Fir Fir Loss Loss 412 415 415 415	Gain 7 4939 11 2100 0 2922 4 127 3 3 163	222 10.0 258 220 220 18 177 177	A Area A B B Fir Sir Sir Sir Sir Sir Sir Sir Sir Sir S	Gain 534 96 103 733 32	B 10.0 2224 At A B B 5500 Lt.	r r r r r r r r r r r r r r r r r r r	1780 1085 234 3099 134	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 75 267 08 6771 94 54 428 91 19	6 A B 10.0 58 Area A B Fir 60 Loss 9 1 51 1	Gain 75 267 35 31 60 297 34 13	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Run 1 Example 1 Nee Nee Nee Nee Nee Nee Nee Nee Nee Ne	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls B Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors texting Windows Skylight Doors et exposed walls B Exposed Ceilings B Exposed Floors textive Heattoss Heat Loss Heat Loss Heat Gain Case 2 Case 3 Heat Gain People Appliances Loads	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	oss Gain 19.45 1 19.45 2 19.45 2 39.10 2 39.30 8 2.81 2.81 2.81 2.61 0 0.04 16.80 1 0.04 1	239 2759 0% 0m 1.3 115 5 6 6 6 7 7 3 .666 5 .51 2.20 5.51 .67 .44 1.23 1.06 6.82 1.06 239 239 259 259 2	KIT/G KIT/G KIT/G KIT/G B LO A B Fir Fir Loss Loss 412 415 415 415	Gain 7 7 493 1 2100 2 2 322 324 4 123	222 10.0 258 220 220 18 177 177	A Area A B B Fir Sir Sir Sir Sir Sir Sir Sir Sir Sir S	Gain 534 96 103 733 32	B 10.0 224 Ai A B FI 500 Lc C 48 392	r r r r r r r r r r r r r r r r r r r	1780 1085 234 3099 134	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 75 267 08 6771 94 54 428 91 19	6 A B 10.0 58 Area A B Fir 60 Loss 9 1 51 1	Gain 75 267 35 31 60 297 34 13	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run in	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Components North Shaded East/West South Existing Windows Skylight Doors Exposed Ceilings B Exposed Floors Gross Exp Wall B Exposed Floors Gross Exp Wall B Exposed Floors Gross Exp Wall B Exposed Floors Skylight Doors Exposed Ceilings B Exposed Floors Incited Floors Exposed Floors Exposed Floors Exposed Floors Incited Floors Exposed Floors Expose	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80 x	oss Gain 19.45 1 19.45 2 19.45 3 19.45 2 19.45 1 19.45 2 19.45 1 19.45 2 19.45	239 759 0% 0m 1.3 10 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	KIT/G KI	Gain 7 493 11 2104 22 32 32 4 12 3 3 16 2 37 8	222 10.0 258 220 220 18 177 177	2 A B 3 Area A B Fir Loss 350 1559 798	96 103 733 32 41	B 10.0 2224 At A B B F F F F F F F F F F F F F F F F F	rea r 1167 934 1425 13526 1804 147	1780 1085 234 3099 134	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 21 4 157 5	Gain 75 267 08 67 71 94 54 428 91 19 48 24 595	6 A B 10.0 58 Area A B Fir 60 Loss 9 1 51 1	Gain 75 267 35 31 50 297 34 13	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain
Level HL Total Level HG Total Run 1 Run 1 Example 1 Nee Nee Nee Nee Nee Nee Nee Nee Nee Ne	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss 15,606 1,059 Level 2 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A et exposed walls B Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors texting Windows Skylight Doors et exposed walls B Exposed Ceilings B Exposed Floors textive Heattoss Heat Loss Heat Loss Heat Gain Case 2 Case 3 Heat Gain People Appliances Loads	1 = .25 pe Total I Total I R-Values L 4.00 4.00 4.00 4.00 2.03 4.00	oss Gain 19.45 1 19.45 2 19.45 2 39.10 2 39.30 8 2.81 2.81 2.81 2.61 0 0.04 16.80 1 0.04 1	239 2759 0% 0m 1.3 10 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	KIT/G KIT/G KIT/G KIT/G KIT/G KIT/G LOSS B LOSS 1388 415 415 212 177	Gain 7 493 11 2104 22 32 32 4 12 3 3 16 2 37 8	22 10.0 258 220 258 220 18 18 30 11 172	A Area A B B Fir Sir Sir Sir Sir Sir Sir Sir Sir Sir S	96 103 733 32 41	B 10.0 2224 At A B B F F F F F F F F F F F F F F F F F	r r r r r r r r r r r r r r r r r r r	1780 1085 234 3099 134	17 A B 11.0 70 Area A B Fir 187 Loss 9 1 157 5	Gain 75 267 08 67 71 94 54 428 91 19 48 24 595	6 A B 10.0 58 Area A B Fir 60 Loss 9 1 51 1	Gain 75 267 35 31 60 297 34 13	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Are A B Fir			B 0.0 Area A B Fir	Gain

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



Heatloss/Gain Calculations CSA-F280-12

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

e-mail hvac@gtadesigns.ca EM Air June 24, 2024 Weather Data Richmond Hill 44 -5.8 88 20 Page 5 Project # P.I-00267 System 1 2012 OBC Heat Loss ^T 77.8 deg. F Project: King East Developments Model: Model 2890 Ht gain ^T 12.8 deg. F Layout # JB-09503 Level 3 P.BED HALL BED 2 BATH 2 BED 3 BATH BED 4 ENS Run ft. exposed wall A 32 A 11 A 33 A 12 A 33 A 12 A 21 A 13 A Run ft. exposed wall B В R В R В В R В В В Ceiling height 11.0 13.0 11.0 11.0 9.0 9.0 9.0 273 Area 287 Area 275 Area 244 Area 65 Area 130 Area 115 Area Floor area 119 Area Area Area Area **Exposed Ceilings A** 273 A 287 A 275 A 119 A 244 A 65 A 130 A 115 A Α Α Exposed Ceilings B В В Exposed Floors Flr Flr 44 Flr 113 Flr 237 Flr Flr Flr Flr Flr Flr Flr Gross Exp Wall A 352 143 363 108 363 108 189 117 Gross Exp Wall B Components R-Values Loss Gain Gain Gain Loss Loss Loss Loss Loss Gain Loss Loss Loss Gain Loss Loss Loss North Shaded 4.00 19.45 11.73 584 352 57 1109 70 1362 70 1362 2076 175 20 East/West 4.00 19.45 29.66 1691 South 4.00 19.45 22.60 934 1085 18 350 407 42 817 949 **Existing Windows** 1.99 39.10 24.56 Skylight 2.03 38.33 89.12 Doors 4.00 19.45 3.20 Net exposed walls A 21.40 3.64 0.60 295 1072 176 73 265 44 245 891 147 90 327 54 321 1167 192 99 360 59 169 614 101 87 316 Net exposed walls B 8.50 9.15 1.51 **Exposed Ceilings A** 59.22 1.31 0.67 273 359 183 287 377 193 275 361 185 119 156 80 244 321 164 65 85 130 171 87 115 151 Exposed Ceilings B 27.65 2.81 1.44 Exposed Floors 2.61 0.23 115 113 295 26 237 619 29.80 Foundation Conductive Heatloss Heat Loss 2540 2004 3662 1129 2923 620 1174 1051 **Total Conductive** Heat Gain 2051 2313 3503 566 1359 370 782 481 Air Leakage Heat Loss/Gain 0.2429 0.0433 617 89 487 100 889 152 274 25 710 59 151 285 255 21 Case 1 0.02 0.06 Ventilation Case 2 16.80 13.82 Case 3 0.04 0.06 106 115 129 153 196 47 32 122 26 **Heat Gain People** 239 478 239 239 239 4759 Appliances Loads 140 57 363 160 **Duct and Pipe loss** 10% 3262 1350 Level HL Total 19,904 Total HL for per room 2574 4704 1590 4118 797 1508 Level HG Total 18,161 Total HG per room x 1.3 3552 3305 5316 883 2461 529 1428 688 Level 4 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Area Area Area Floor area Area Area Area **Area** Area Area Area Area **Exposed Ceilings A** Exposed Ceilings B В В В В В В В В Exposed Floors Flr Gross Exp Wall A Gross Exp Wall B Components R-Values Loss Gain Loss Gain Gain Gain Gain Loss Gain Loss Loss Loss Loss Loss Loss Loss North Shaded 4.00 19.45 11.73 East/West 4.00 19.45 29.66 South 4.00 19.45 22.60 **Existing Windows** 1.99 39.10 24.56 Skylight 2.03 38.33 89.12 Doors 4 00 19 45 3 20 Net exposed walls A 21.40 3.64 0.60 Net exposed walls B 8.50 9.15 1.51 **Exposed Ceilings A** 59.22 1.31 0.67 Exposed Ceilings B 27.65 2.81 1.44 Exposed Floors 29.80 2.61 0.23 Foundation Conductive Heatloss **Heat Loss Total Conductive** Heat Gain Air Leakage 0.0000 0.0433 Heat Loss/Gain Case 1 0.00 0.06 Ventilation 16.80 13.82 Case 3 0.04 0.06 Heat Gain People 239 **Appliances Loads** 4759 10% **Duct and Pipe loss** Level HL Total Total HL for per room

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

52,209 Total Heat Loss otu/h Total Heat Gain 36,092 btu/h

Level HG Total

Total HG per room x 1.3

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

Mane Maler

David DaCosta

SB-12 Package **Energy Star**



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

System Design Option
Exhaust only / forced air system

HRV WITH DUCTING / forced air system

Part 6 design

HRV simplified connection to forced air system

HRV full ducting/not coupled to forced air system

1 2

3 x

4

Project # Layout # Page 6 PJ-00267 JB-09503

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

Division C subsection 3.2.5. of the Building Code.

Individual BCIN: 32964

David DaCosta

Package:	Energy Star					
Project:	Richmond Hill	Model:		Model 289	0	
	RESIDENTIAL MECHANICAL					
	For systems serving one dwelling unit & co	nforming to the Ontario E	Building Code, O.re	eg 332/12		
	Location of Installation	Т	Total Ventilation C	anacity 9 32 3	3(1)	
Lot #	Plan #					
Township	Richmond Hill	Bsmt & Master Other Bedroom Bathrooms & Ki	is :	2 @ 21.2 cf 3 @ 10.6 cf 5 @ 10.6 cf	m 31.8	cfm cfm cfm
Roll #	Permit #	Other rooms		4 @ 10.6 cf Total		
Address						
		Pri	ncipal Ventilation	Capacity 9.32	.3.4(1)	
Name	Builder	Maataulaadusau		4 @ 240 -	04.0	
Name	EM Air	Master bedroom Other bedroom		1 @ 31.8 cf 3 @ 15.9 cf	m 47.7	cfm cfm
Address				Total	79.5	
City			Dringing Evhau	est Fon Consoir	4	
Tel	Fax	Make	Principal Exhau	Model	Location	
		VanEl	F \/15	50E75NS	Base	
	Installing Contractor			.02.00	2400	
Name	<u> </u>	127 cf	m	80	0.0 Sones	or Equiv.
Address			Heat Recove			
City		Make Model		VanEE 50E75NS		
City		iviodei	127 cfm hig		80	cfm low
Tel	Fax	Sensible efficie Sensible efficie	ncy @ -25 deg C	, .	60% 75%	<u>.</u>
-			r to balance HRV/E	RV to within 10	percent of F	PVC
	Combustion Appliances 9.32.3.1(1)		Supplemental Ve	ntilation Capad	city	
a) x b) c) d) e)	Direct vent (sealed combustion) only Positive venting induced draft (except fireplaces) Natural draft, B-vent or induced draft fireplaces Solid fuel (including fireplaces) No combustion Appliances		n capacity exhaust capacity pplemental vent. C	apacity	169.6 79.5 90.1	cfm
			Supplemental	Fanc 0 32 3 5		
	Heating System	Location	cfm	Model	Sone	ıs
х	Forced air	Ens	50	XB50	0.3	
	Non forced air 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 liste	ed Make	Broan	or Equiv.	
<u> </u>	Type I except with solid fuel (including fireplace)					
III	Any type c) appliance	l bench and the		ertification	on docine	
IV Other	Type I or II either electric space heat Type I, II or IV no forced air		that this ventilation with the Ontario Bu		een aesigned	

	Designer Certification								
, ,	I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.								
Name	David D	aCosta							
Signature	Hane	166	:						
HRAI#	5190	BCIN#	32964						
Date	June 24, 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-09503

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 Principal Authority									
Application No:		Model/Certification Number							
A. Project Information									
Building number, street name			Unit number	Lot/Con					
	Model 2890								
Municipality Richmond Hill	Postal code	Reg. Plan number / oth	ner 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	are (see guide)					
✓ ENERGY STAR®* [SB-12 - 3.1.3.]	*Attach Builder Option F	Package [BOP] for	m						
R-2000®* [SB-12 - 3.1.3.]	□ R-2000®* [SB-12 - 3.1.3.] *Attach R-2000 HOT2000 Report								
C. Project Building Design Conditions									
Climatic Zone (SB-1):	Heat. Equip. Efficiency	y Space Heating Fuel 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 Ch	aracteristics					
Area of Walls = 100 m ² or 1076.4 ft ²		Log/Post&Beam	☐ ICF Above						
		☐ Slab-on-ground	│ │ Walkout Ba						
	W,S &G % = <u>15.0%</u>	Air Conditioning	Combo Uni	t					
Area of W, S & G = $15 \text{ m}^2 \text{ or } 161.5 \text{ ft}^2$		☐ Air Sourced Hea	t Pump (ASHP)						
		☐ Ground Source Heat Pump (GSHP)							
SB-12 Performance Reference Building Design Pa	ckage indicating the pres	criptive package to	o be compared for c	ompliance					
SB-12 Referenced Building Package (input des	sign package):								
D. Building Specifications [provide values a	and ratings of the energy effici	ency components prop	oosed, or attach ENERO	GY STAR BOP form]					

Building Component	Minimum RSI/R-Values or Maximum U-Value ¹		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	•		

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



Energy Efficiency Design Summary: Performance & Other Acceptable Compliance Methods

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Project # PJ-00267 Layout # JB-09503

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

The annual energy consumption using Subsection 3.1.1. SB-12 Reference Building Package isGJ (1J=1000MJ)									
The annual energy consumption of this house as designed is		_ GJ							
The software used to simulate the annual energy use of the build	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 depres	☐ 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 bis compared against (3.1.2.1.(6)).	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)	Standard Operating Conditions Applied (A-3.1.2.1 - 4.6.2)								
Reduced Operating Conditions for Zero-rated homes Applie	Reduced Operating Conditions for Zero-rated homes Applied (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	sion 12.6 " technica	cal requirements, applied to this building design result in the							
The NRCan, "2012 R-2000 Standard" technical requiremen exceeding the prescriptive performance requirements of the		ouilding design result in the building performance meeting or standard SB12 (A-3.1.3.1).							
Performance Energy Modeling Professional									
Energy Evaluator/Advisor/Rater/CEM Name and company:	Accreditation or Eva	/aluator/Advisor/Rater License #							
ENERGY STAR or R-2000									
Energy Evaluator/Advisor/Rater/Name and company:									
Angela Bustamante,Building Knowledge Canada		5506							
G. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) pro		erein to substantiate that design meets building code]							
Name	BCIN	Signature							
David DaCosta	32964	Mane Mit							

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	
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	√		
		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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Page 9 Project # PJ-00267

Layout # JB-09503

System: System 1 Package: **Energy Star**

Project:		chmond Hill		Model:			Model			
		Air	Leakage C	alculation	ons					
	Building <i>A</i> B LRairh 0.018 0.367	Air Leakage Heat Loss Vb HL^T 35663 77.8	HLleak 18339		B 0.018	Building A	Air Leakag Vb 35663	e Heat Gai HG^T 12.8	HG Leak	
-	0.016 0.367	33063 77.8	16339	<u> </u>	0.018	0.104		rels	651	-11
_	Air I eakage Heat	Loss/Gain Multiplier T	able (Section 11)		1	1	2	3	4	
Level	Level Building	Level Conductive	Air Leakage F	leat Loss		(LF)	(LF)			
Level 1	Factor (LF) Air 0.5	Heat Loss (HLclevel) 6179	Multipl 1.484		-	1.0	0.6	(LF) 0.5	(LF) 0.4	
Level 2	0.3	10749	0.511 0.242	8			0.4	0.3	0.3	
Level 3 Level 4	0.2	15103 0	0.000					0.2	0.2 0.1	
			Air Leakage I	Heat Gain	1		Levels this	s Dwelling		
BUILD	HG LEAK DING CONDUCTIVE HEA	851 AT GAIN 19642	0.043	3			;	3		
	Highest Ceiling Heigh	t 27.0	FT 8.2	3 M	_]	•				
		Ve	entilation Ca	alculatio	ns					
	Ventilat	ion Heat Loss				Ventila	tion Heat G	ain		
lt	Vantilation	n Heat Loss			,	entilation H	loot Coin		7	nt
Vent	PVC HL^T		bvent	С	PVC	HG^T		vent	1	Vent
1.08	79.5 77.8		336	1.1	79.5	12.8	10	99		
	Cas	e 1					Case 1			
_	Ventilation Heat Los	ss (Exhaust only Systems)			Venti	ation Heat G	ain (Exhaust	Only Syste	ms)	_
_	Case 1 - Ex	xhaust Only		Cas	se 1 - Exh	aust Only	Multi	iplier		_
Level 1	LF HLbvent	LVL Cond. HL 6179	Multiplier 0.11		HGbvent 1099 Building 19642 0.06					ase
Level 3	0.3 0.2	10749 15103	0.04 0.02		unung	13042			_	Ö
Level 4	0	0	0.00							
	Cas		•	Case 2 Ventilation Heat Gain (Direct Ducted Systems)						
2	ventilation Heat Los	s (Direct Ducted Systems		<u> </u>	ventii	ation Heat Ga	•		msj	2
0 C 1.08	HL^T (1-E) HRV	Multiplier			С	HG^T	Multi			Case
1.08	77.8 0.20	16.80			1.08	12.8	13	.82		Ö
	Cas	ie 3					Case 3			
m	Ventilation Heat Lo	oss (Forced Air Systems)			Vent	tilation Heat	Gain (Forced	l Air System	s)	3
Total Ven	HLb	ovent Mul	tiplier		<u> </u>		Vent He	at Gain	Multiplier	Case
Total Ven	tilation Load 13	336 0	.04		Gbvent 1099	HG*1.3 1	10	99	0.06	ဒိ
Foundation Co	onductive Heatloss	l evel 1	Level 1	157	7	Watts	52	81	Btu/h	
	onductive Heatloss			137	•		33	V I		
			Level 2			Watts			Btu/h	
Slab on Grade	Foundation Condu	ctive Heatloss				Watts			Btu/h	
Walk Out Base	ement Foundation C	onductive Heatlos	S			Watts			Btu/h	

Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

Weather Station	Description
Province:	Ontario ▼
Region:	Richmond Hill ▼
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10
Local Shie	lding
Building Site:	Suburban, forest ▼
Walls:	Heavy ▼
Flue:	Heavy ▼
Highest Ceiling Height (m):	8.23
Building Confi	iguration
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m ³):	1009.98
Air Leakage/Vo	entilation
Air Tightness Type:	Present (1961-) (ACH=3.57)
Custom BDT Data:	322.44 cm ² 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):	0.367
Cooling Air Leakage Rate (ACH/H):	0.104

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weat	her Sta	tion Description		
Province:		Ontario		
Region:		Richmond Hill		
	Site D	escription		
Soil Conductivity:	Conductivity: High conductivity: moist soil			
Water Table:		Normal (7-10 m, 23-33 Ft) ▼		
Fou	ındatio	n Dimensions		
Floor Length (m):	19.05			
Floor Width (m):	5.49			
Exposed Perimeter (m):	49.07			
Wall Height (m):	2.74			
Depth Below Grade (m):	2.13	Insulation Configuration		
Window Area (m²):	1.86			
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):		1577		



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		

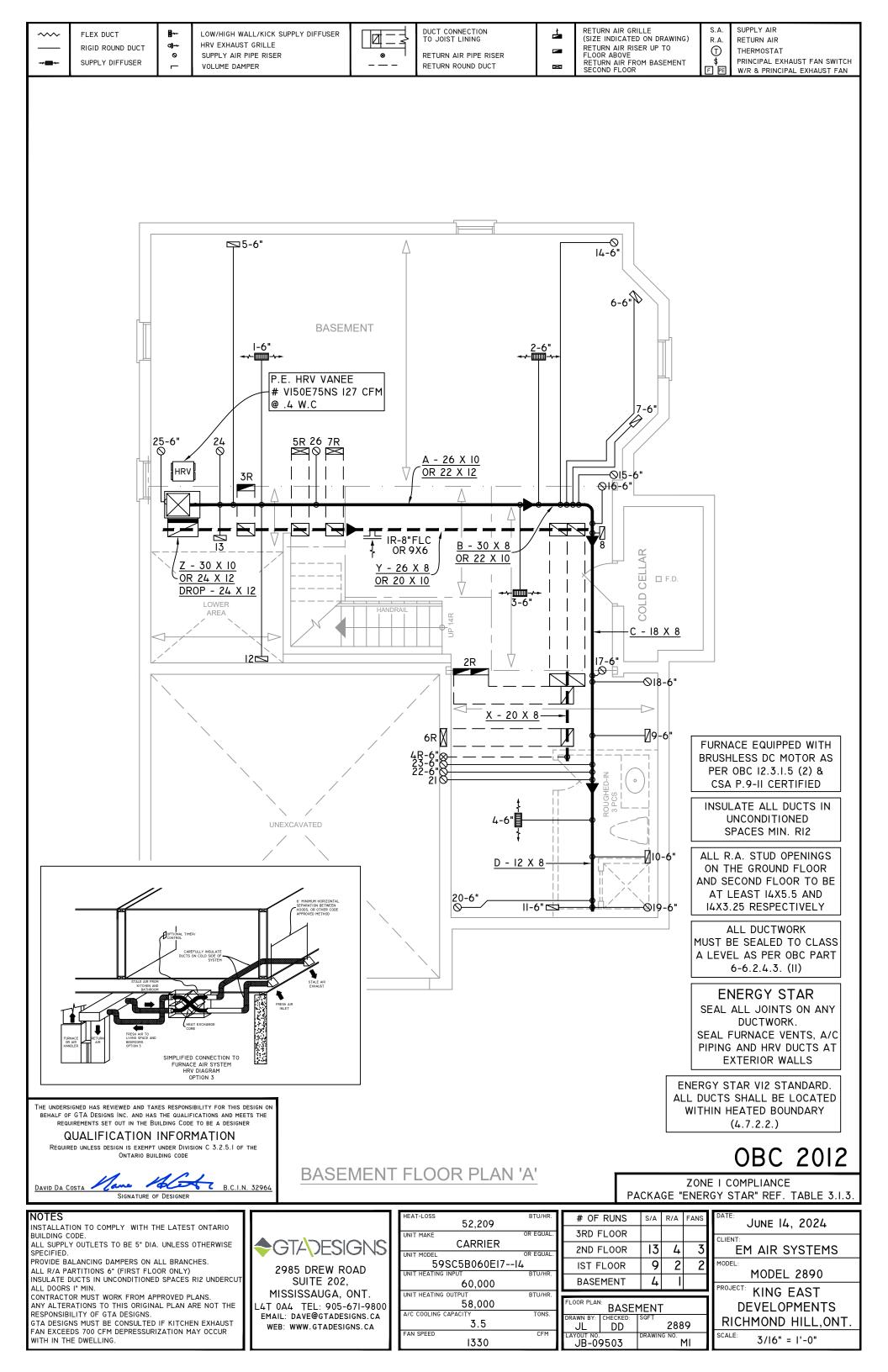


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Tel: 905-671-9800 email: hvac@gtadesigns.ca

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 FLEX DUCT LOW/HIGH WALL/KICK SUPPLY DIFFUSER 4 RETURN AIR TO JOIST LINING R.A HRV EXHAUST GRILLE RETURN AIR RISER UP TO FLOOR ABOVE RIGID ROUND DUCT **a**)--1 THERMOSTAT 0 SUPPLY AIR PIPE RISER RETURN AIR PIPE RISER 8 RETURN AIR FROM BASEMENT SECOND FLOOR PRINCIPAL EXHAUST FAN SWITCH SUPPLY DIFFUSER RETURN ROUND DUCT VOLUME DAMPER \mathbf{x} W/R & PRINCIPAL EXHAUST FAN KITCHEN EXHAUST 100 CFM MIN. 6" ALL OTHER FANS SHALL BE A MIN. OF 50 CFM OR OTHERWISE NOTED AS PER 9.32.3.5 OPTIONAL[®] DINETTE/ KITCHEN 26 OPTIONAL BAR SINK Z 0 **GREAT ROOM** 25-6 5R 000 F 5" 7R -0 24 \$ 3R LW 14X8 8 13 ⇜▥◂ DN 14R WASHER OPEN ABOVE **FOYER**

17-6 SUNKEN LAUNDRY TUB DRYER ------2R LW 30X8 Ø 6R 4R-6" LIVING ROOM **GARAGE** 10-6" 11-6" ---□ 20-6' 0 0

△21

FIRST FLOOR PLAN 'A'

CIRCULATION PRINCIPAL FAN SWITCH TO BE CENTRALLY LOCATED

INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. RI2

ALL R.A. STUD OPENINGS ON THE GROUND FLOOR AND SECOND FLOOR TO BE 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 PIPING AND HRV DUCTS AT EXTERIOR WALLS

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

OBC 2012

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

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

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

ane 166 B.C.I.N. 32964

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

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.



★22-6"

△23-6"

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

HEAT-LUSS	BIU/HK.
52,209	
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.
3.5	
FAN SPEED	CFM
1330	

1.2		<u> </u>		
# OF RUNS	S/A	R/A	FANS	Ī
3RD FLOOR				
2ND FLOOR	13	4	3	
IST FLOOR	9	2	2	
BASEMENT	4	- 1		
FLOOR PLAN:				i

GROUND FLOOR

DD

JB-09503

2889

M2

SCALE:

JUNE 14, 2024
CLIENT: EM AIR SYSTEMS
MODEL:
MODEL 2890
PROJECT: KING EAST
DEVELOPMENTS
RICHMOND HILL ONT

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 oll⊶ 1 THERMOSTAT 0 SUPPLY AIR PIPE RISER RETURN AIR PIPE RISER 8 PRINCIPAL EXHAUST FAN SWITCH SUPPLY DIFFUSER RETURN AIR FROM BASEMENT SECOND FLOOR RETURN ROUND DUCT VOLUME DAMPER \mathbf{x} W/R & PRINCIPAL EXHAUST FAN ∫F /5' CLOSET **ENSUITE** 26 **PRIMARY BEDROOM** 0 0 BEDROOM 4 15-6 5R HW 14X8 WALK-IN CLOSET 7R HW 🕏 2/4 14X8 HALL16-6" **BATH** | F |5" 36" HIGH RAILING 17-6" LEDGE WALK-IN CLOSET WALK-IN CLOSET 18-6" 6R HW 14X8 4R LW 🖡 TUB BEDROOM 2

INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. RI2

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

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

ENERGY STAR

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

OBC 2012

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

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

BEDROOM 3



SECOND FLOOR PLAN 'A'

BATH 2

(F 5"

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 52,209	BTU/HR.
32,209	
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.
3.5	
FAN SPEED	CFM
1330	

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	4	3
IST FLOOR	9	2	2
BASEMENT	4	- 1	
FLOOR PLAN: SECOND EL OOP			

19-6"

1:			
SECOND FLOOR			
CHECKED:	SQFT		
DD	2889	L	
	DRAWING NO.	1	
9503	M3		
	SECOND CHECKED: DD	SECOND FLOOR CHECKED: SQFT DD 2889 DRAWING NO.	

JUNE 14, 2024 CLIENT **EM AIR SYSTEMS** MODEL: **MODEL 2890** PROJECT: KING EAST **DEVELOPMENTS** RICHMOND HILL, ONT.

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER

LOW/HIGH WALL/KICK SUPPLY DIFFUSER

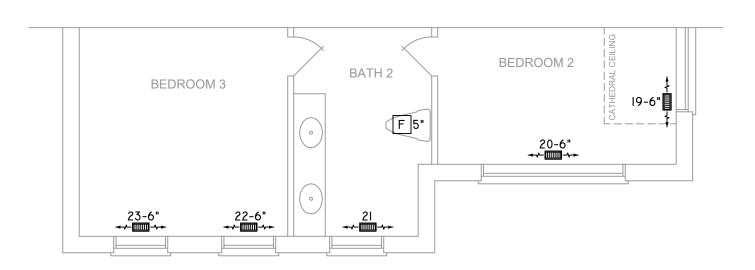
HRY EXHAUST GRILLE
SUPPLY AIR PIPE RISER
VOLUME DAMPER



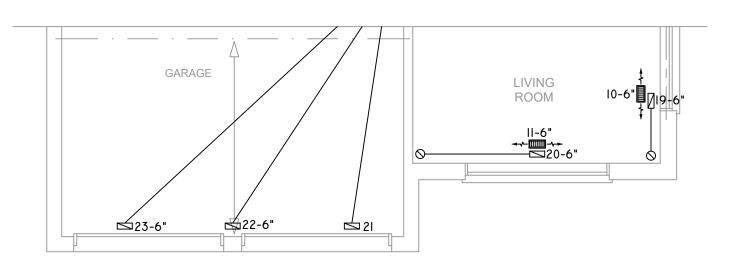
DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT

RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR S.A. R.A. T

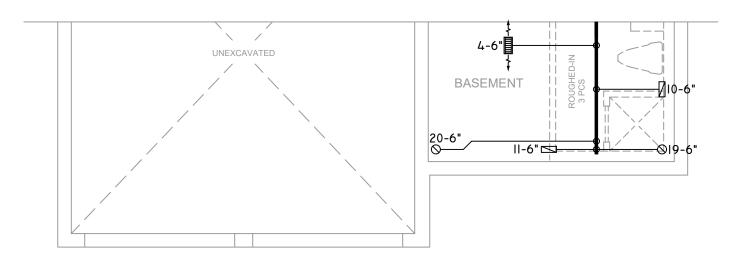
SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN



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 ONTARIO BUILDING CODE

VID DA COSTA

B.C.I.N. 32964

BTU

OBC 2012

JUNE 14, 2024

EM AIR SYSTEMS

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

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

ALL DUORS I" MIN.
CONTRACTOR MUST WORK FROM APPROVED PLANS.
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GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST
FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR
WITH IN THE DWELLING.



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

52,209	BTO/FIK.
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.
3.5	
FAN SPEED	CFM
1330	

DATE:	FANS	R/A	S/A	RUNS	# OF	
CLIENT:				LOOR	3RD F	
E	3	4	13	LOOR	2ND F	
MODEL:	2	2	9	LOOR	IST F	
PROJEC		l	4	MENT	BASE	
	FLOOR PLAN: PARTIAL PLAN(S) DRAWN BY: LCHECKED: ISQFT					
l RIC	0	200	Jul I	CHECKED:	DRAWN BT:	

DD

JB-09503

2 2	MODEL: MODEL 2890			
'	PROJECT: KING EAST			
I(S)	DEVELOPMENTS			
2889	RICHMOND HILL,ONT.			
^{G NO.} M4	SCALE: 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



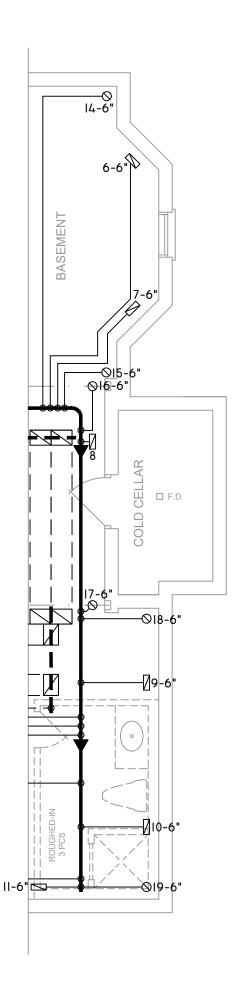
DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT

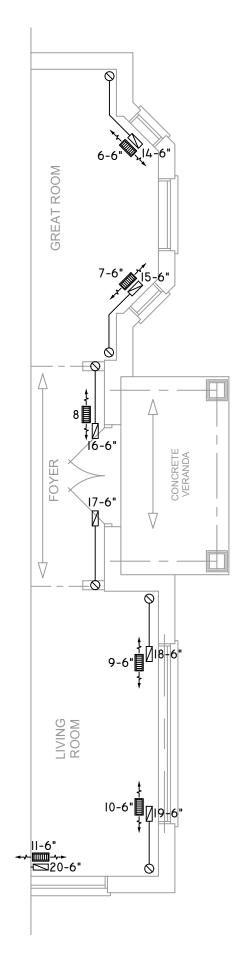
4 \boxtimes

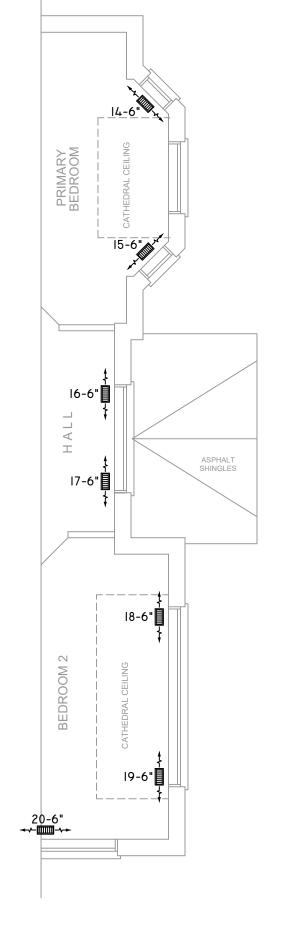
RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR

R.A. (T) _\$_

SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH







BASEMENT FLOOR PLAN 'B'

FIRST FLOOR PLAN 'B'

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

ONTARIO BUILDING CODE

♦GTA\DESIGNS

2985 DREW ROAD

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

WEB: WWW.GTADESIGNS.CA

52,209 OR EQUAL. **CARRIER** 59SC5B060EI7--I4 RTIJ/HR 60,000 58,000 TONS 3.5 FAN SPEED 1330

		PA	CKA	GE "		E I COMPLIANCE RGY STAR" REF. 1
1	# OF RU	NS	S/A	R/A	FANS	JUNE 14,
1	3RD FLO	OR				CLIENT:
┨	2ND FLO	OR	13	4	3	EM AIR S
1	IST FLO	OR	9	2	2	MODEL:
ı	BASEME	٧T	4	I		
1	FLOOR PLAN: PARTIAL PLAN(S)					PROJECT: KING E DEVELOP

(GY STAR" REF. TABLE 3.1.3.
	JUNE 14, 2024
	CLIENT: EM AIR SYSTEMS
	MODEL: MODEL 2890
	PROJECT: KING EAST
	DEVELOPMENTS
	I RICHMOND HILL.ONT.

OBC 2012

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

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

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

CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS. GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR

WITH IN THE DWELLING.

2889 JL DD

M5

JB-09503

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER

LOW/HIGH WALL/KICK SUPPLY DIFFUSER

HRY EXHAUST GRILLE
SUPPLY AIR PIPE RISER

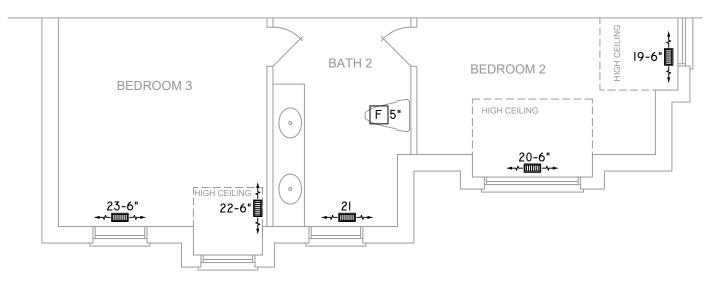
VOLUME DAMPER



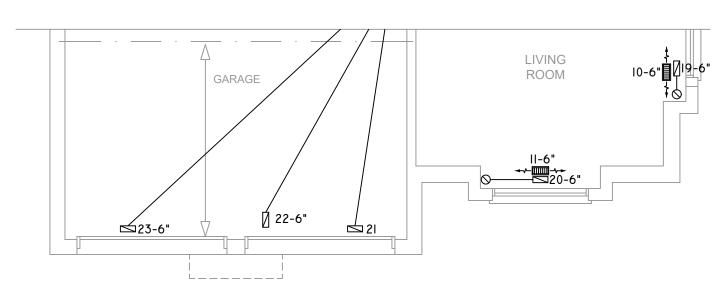
DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT

RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR S.A. R.A. T

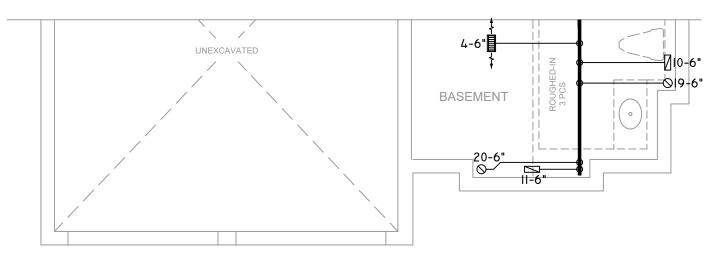
SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN



SECOND FLOOR PLAN 'C'



FIRST FLOOR PLAN 'C'



BASEMENT FLOOR PLAN 'C'

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

QUALIFICATION INFORMATION

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

DAVID DA COSTA Mare 1865 B.C.I.N. 32964

OBC 2012 ZONE I COMPLIANCE

PACKAGE "ENERGY STAR" REF. TABLE 3.1.3.

NOTES
INSTALLATION TO COMPLY WITH THE LATEST ONTARIO
RUII DING CODE

BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE SPECIFIED.
PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT
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GTA DESIGNS MUST BE CONSULTED IS KITCHEN EXHAUST.

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.
	52,209	
UNIT MAKE		OR EQUAL.
	CARRIER	
UNIT MODEL		OR EQUAL.
	C5B060EI7	
UNIT HEATING INF	PUT	BTU/HR.
	60,000	
UNIT HEATING OU	TPUT	BTU/HR.
	58,000	
A/C COOLING CAP	ACITY	TONS.
	3.5	
FAN SPEED		CFM
	1330	

HEAT-LOSS

BTU/HR.	# OF RUNS	S/A	R/A	FANS	Г
OR EQUAL.	3RD FLOOR				H
OR EQUAL.	2ND FLOOR	13	4	3	
BTU/HR.	IST FLOOR	9	2	2	П
БТО/ПК.	BASEMENT	4	- 1		H
BTU/HR.	ELOOP PLAN				
TONS.	FLOOR PLAN: PARTIAL PLAN(S)				
10143.	DRAWN BY: CHECKED:	SQFT			11

JL DD YOUT NO. JB-09503 2889

M6

	CLIENT: EM AIR SYSTEMS
ı	MODEL:
ı	MODEL 2890
	PROJECT: KING EAST
l	DEVELOPMENTS
l	RICHMOND HILL,ONT.

JUNE 14, 2024

DUCT CONNECTION TO JOIST LINING RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) SUPPLY AIR LOW/HIGH WALL/KICK SUPPLY DIFFUSER j FLEX DUCT R.A. (T) __\$__ RETURN AIR HRV EXHAUST GRILLE a]... ⊘ RETURN AIR RISER UP TO FLOOR ABOVE RIGID ROUND DUCT THERMOSTAT SUPPLY AIR PIPE RISER 8 RETURN AIR PIPE RISER SUPPLY DIFFUSER PRINCIPAL EXHAUST FAN SWITCH RETURN AIR FROM BASEMENT SECOND FLOOR RETURN ROUND DUCT VOLUME DAMPER **⊙**|4-6" -[]6-6' 14-6" BASEMENT GREAT ROOM 15-6" ∕0|5-6" 16-6" $-\phi$ 8 COLD CELLAR 16-6' FOYER 17-6" -0 Ø|8-6" **BEDROOM 2** 18-6" HIGH CEILING LIVING ROOM 10-6" 19-6 **∏**|10+6" HIGH CEILING II-6" 20-6" SECOND FLOOR PLAN 'C' FIRST FLOOR PLAN 'C' BASEMENT FLOOR PLAN 'C'

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

QUALIFICATION INFORMATION

Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

DAVID DA COSTA Mare 1865 B.C.I.N. 32964

NOTES 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.



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

HEAT-LOSS	BTU/HR.
52,209	
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.
3.5	
FAN SPEED	CFM
1330	

	PA	CNA	GE	ENER	(G
# OF RUNS		S/A	R/A	FANS	I
3RD FLO	OR				ŀ
2ND FLO	OR	13	4	3	
IST FLO	OR	9	2	2	
BASEME	٧T	4	1		lŀ

| PARTIAL PLAN(S)
| PARTIAL PL

DATE:
JUNE 14, 2024
CLIENT:
EM AIR SYSTEMS
MODEL:
MODEL 2890
PROJECT: KING EAST
DEVELOPMENTS
RICHMOND HILL,ONT.

3/16" = 1'-0"

OBC 2012

ZONE I COMPLIANCE