


Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>				
Building number, street name <b>FP Town 4 - Aberdeen</b>			Lot:	
			Lot/con.	
Municipality <b>Clarington</b>	Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>				
Name <b>David DaCosta</b>		Firm <b>gtaDesigns Inc.</b>		
Street address <b>2985 Drew Road, Suite 202</b>		Unit no.	Lot/con.	
Municipality <b>Mississauga</b>	Postal code <b>L4T 0A4</b>	Province <b>Ontario</b>	E-mail <a href="mailto:dave@gtadesigns.ca">dave@gtadesigns.ca</a>	
Telephone number <b>(905) 671-9800</b>		Fax number <b>(647) 494-9643</b>	Cell number <b>(416) 268-6820</b>	
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]</b>				
<input type="checkbox"/> House <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Structural <input type="checkbox"/> Small Buildings <input type="checkbox"/> Building Services <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Large Buildings <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> Complex Buildings <input type="checkbox"/> Fire Protection <input type="checkbox"/> On-site Sewage Systems				
<b>Description of designer's work</b>		<b>Model Certification</b>		<b>Project #</b> <b>PJ-00022</b>
				<b>Layout #</b> <b>JB-00699</b>
Heating and Cooling Load Calculations		Builder	Delpark/Highcastle Homes	
Air System Design		Project	Northglen	
Residential mechanical ventilation Design Summary		Model	FP Town 4 - Aberdeen	
Residential System Design per CAN/CSA-F280-12		SB-12	Package D	
Residential New Construction - Forced Air				
<b>D. Declaration of Designer</b>				
<p>I, <u>David DaCosta</u> declare that (choose one as appropriate):  (print name)</p> <p><input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.  Individual BCIN: _____  Firm BCIN: _____</p> <p><input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code.  Individual BCIN: <u>32964</u>  Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u></p> <p><input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.  Basis for exemption from registration and qualification:</p>				
<p>I certify that:</p> <p>1. The information contained in this schedule is true to the best of my knowledge.</p> <p>2. I have submitted this application with the knowledge and consent of the firm.</p> <p style="text-align: center;"><u>June 17, 2015</u>                      <u></u>  Date    Signature of Designer</p>				

**NOTE:**

- 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, temporary license, or a certificate of authorization, issued 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.

Heat loss and gain calculation summary sheet				CSA-F280-M12 Standard Form No. 1	
These documents issued for the use of <b>Delpark/Highcastle Homes</b>				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				<b>JB-00699</b>	
Building Location					
Address (Model): <b>FP Town 4 - Aberdeen</b>			Site: <b>Northglen</b>		
Model:			Lot:		
City and Province: <b>Clarington</b>			Postal code:		
Calculations based on					
Dimensional information based on:			<b>Cassidy &amp; Co. Dwgs Dated Apr/2013</b>		
Attachment: <b>Townhome</b>		Front facing: <b>East/West</b>		Assumed? <b>Yes</b>	
No. of Levels: <b>3</b>		Ventilated? <b>Included</b>		Air tightness: <b>1961- Present (ACH=3.57)</b> Assumed? <b>Yes</b>	
Weather location: <b>Durham</b>		Wind exposure: <b>Shelterd</b>			
HRV?		Internal shading: <b>Light-translucent</b> Occupants: <b>4</b>			
Sensible Eff. at -25C <b>0</b>		Apparent Effect. at -0C <b>0</b>		Units: <b>Imperial</b> Area Sq. ft <b>1445</b>	
Heating design conditions			Cooling design conditions		
Outdoor temp <b>-4.0</b> Indoor temp: <b>72</b> Mean soil temp <b>48</b>			Outdoor temp <b>84</b> Indoor temp: <b>75</b> Latitude: <b>44</b>		
Above grade walls			Below grade walls		
Style A: <b>As per Selected OBC SB12 Package D R 24</b>			Style A: <b>As per Selected OBC SB12 Package D R 20</b>		
Style B: <b>Existing Walls (When Applicable) R 12</b>			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: <b>As per Selected OBC SB12 Package D</b>			Style A: <b>As per Selected OBC SB12 Package D R 50</b>		
Style B:			Style B: <b>As per Selected OBC SB12 Package D R 31</b>		
Exposed floors			Style C:		
Style A: <b>As per Selected OBC SB12 Package D R 31</b>			Doors		
Style B:			Style A: <b>As per Selected OBC SB12 Package D R 3.01</b>		
Windows			Style B:		
Style A: <b>As per Selected OBC SB12 Package D R 3.15</b>			Style C:		
Style B: <b>Existing Windows (When Applicable) R 1.99</b>			Skylights		
Style C:			Style A: <b>As per Selected OBC SB12 Package D R 2.03</b>		
Style D:			Style B:		
Attached documents: <b>As per Shedule 1</b>					
Notes: <b>Residential New Construction - Forced Air</b>					
Calculations performed by					
Name: <b>David DaCosta</b>			Postal code: <b>L4T 0A4</b>		
Company: <b>gtaDesigns Inc.</b>			Telephone: <b>(905) 671-9800</b>		
Address: <b>2985 Drew Road, Suite 202</b>			Fax: <b>(416) 268-6820</b>		
City: <b>Mississauga</b>			E-mail <b>dave@gtadesigns.ca</b>		

Builder: Delpark/Highcastle Homes

2015 June 17, 2015

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.

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Project: Northglen

Model: FP Town 4 - Aberdeen

System 1

Individual BCIN: 32964

David DaCosta

Project # PJ-00022  
Layout # JB-00699

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	9,325 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	1.5 Ton
Level 2 Net Load	7,397 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	GMEC960302BNA	Model		Cond.-----	1.5
Level 3 Net Load	5,955 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	30000	Input Btu/h		Coil -----	1.5
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	28800	Output Btu/h			
Total Heat Loss	22,677 btu/h	R/A Plenum Pressure	0.138 "w.c.	E.s.p.	0.50 " W.C.	Min.Output Btu/h	AWH		
Total Heat Gain	12,291 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:			
Total Heat Loss + 10%	24,944 Btu/h	Heating Air Flow Proportioning Factor	0.0274 cfm/btuh	AFUE	96%	Blower Speed Selected:	T2	Blower Type	ECM
Building Volume Vb	16607 ft³	Cooling Air Flow Proportioning Factor	0.0505 cfm/btuh	Aux. Heat		(Brushless DC OBC 12.3.1.5.(2))			
Ventilation Load	5,521 Btu/h.	R/A Temp	70 deg. F.	SB-12 Package	Package D	Heating Check	621 cfm	Cooling Check	621 cfm
Ventilation PVC	60 cfm	S/A Temp	113 deg. F.	Temp. Rise>>>	43 deg. F.	Selected cfm>	621 cfm	Cooling Air Flow Rate	621 cfm
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.						

	Level 1 Outlets														Level 2 Outlets														
S/A Outlet No.	8	13	14	15											7	9	10	11	12										
Room Use	CAV	BASE	BASE	BASE											KIT	PWD	FOY	LIV/DIN	MUD										
Btu/Outlet	4844	1494	1494	1494											1719	923	1763	1380	1612										
Heating Airflow Rate CFM	133	41	41	41											47	25	48	38	44										
Cooling Airflow Rate CFM	5	4	4	4											96	61	27	92	54										
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		
Actual Duct Length	39	26	21	18											35	19	22	26	18										
Equivalent Length	140	100	90	140	90	90	90	90	90	90	90	90	90	120	130	110	100	130	90	90	90	90	90	90	90	90	90		
Total Effective Length	179	126	111	158	90	90	90	90	90	90	90	90	90	90	155	149	132	126	148	90	90	90	90	90	90	90	90		
Adjusted Pressure	0.07	0.10	0.12	0.08	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.08	0.09	0.10	0.10	0.09	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14		
Duct Size Round	7	4	4	5											6	5	5	6	5										
Outlet Size	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10		
Trunk	D	B	B	D											C	D	D	C	B										

	Level 3 Outlets														Level 4 Outlets															
S/A Outlet No.	1	2	3	4	5	6																								
Room Use	MAST	MAST	BED 2	BED 3	BATH	ENS																								
Btu/Outlet	1173	1173	1595	1305	106	601																								
Heating Airflow Rate CFM	32	32	44	36	3	16																								
Cooling Airflow Rate CFM	59	59	70	62	3	20																								
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				
Actual Duct Length	39	41	35	42	26	46																								
Equivalent Length	140	150	120	110	130	110	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90				
Total Effective Length	179	191	155	152	156	156	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90				
Adjusted Pressure	0.07	0.07	0.08	0.09	0.08	0.08	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14				
Duct Size Round	6	6	6	5	2	4																								
Outlet Size	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10				
Trunk	C	C	D	D	B	C																								

Return Branch And Grill Sizing		Grill Pressure Loss		0.02 "w.c.							
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R
Inlet Air Volume CFM	140	100	180	80	121						
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
Actual Duct Length	17	29	7	27	8						
Equivalent Length	185	175	145	170	175	70	70	70	70	70	70
Total Effective Length	202	204	152	197	183	70	70	70	70	70	70
Adjusted Pressure	0.06	0.06	0.08	0.06	0.06	0.17	0.17	0.17	0.17	0.17	0.17
Duct Size Round	7.5	6.0	8.0	6.0	6.0						
Inlet Size	8	8	6	FLC	FLC						
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size	14	14	30								
Trunk	Z	Z	Z	Z	Z						

Return Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size	
Drop	621	0.06	13.0	24x10	
Z	621	0.06	13.0	18x8 14x10	
Y					
X					
W					
V					
U					
T					
S					
R					
Q					

Supply Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size	
A	622	0.07	12.5	18x8 14x10	
B	295	0.07	9.5	10x8 127	
C	166	0.07	8.0	8x8 8x7	
D	327	0.07	10.0	12x8 10x10	
E					
F					
G					
H					
I					
J					
K					





I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code.

Individual BCIN: 32964



David DaCosta

**Package:**
**Package D**
**Project:**
**Clarington**
**Model:**
**FP Town 4 - Aberdeen**

## RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

*For systems serving one dwelling unit & conforming to the Ontario Building Code, O. Reg. 159/93*

Location of Installation	
Lot #	Plan #
Township	Clarington
Roll #	Permit #
Address	

Builder	
Name	Delpark/Highcastle Homes
Address	
City	
Tel	Fax

Installing Contractor	
Name	
Address	
City	
Tel	Fax

Combustion Appliances 9.32.3.1(1)	
a)	<input type="checkbox"/> Direct vent (sealed combustion) only
b)	<input checked="" type="checkbox"/> Positive venting induced draft (except fireplaces)
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft fireplaces
d)	<input type="checkbox"/> Solid fuel (including fireplaces)
e)	<input type="checkbox"/> No combustion Appliances

Heating System	
<input checked="" type="checkbox"/> Forced air	
<input type="checkbox"/> Non forced air	
<input type="checkbox"/> Electric space heat (if over 10% of heat load)	

House Type 9.32.3.1(2)	
I	<input checked="" type="checkbox"/> Type a) or b) appliances only, no solid fuel
II	<input type="checkbox"/> Type I except with solid fuel (including fireplace)
III	<input type="checkbox"/> Any type c) appliance
IV	<input type="checkbox"/> Type I or II either electric space heat
Other	<input type="checkbox"/> Type I, II or IV no forced air

System Design Option	
1	<input checked="" type="checkbox"/> Exhaust only / forced air system
2	<input type="checkbox"/> HRV WITH DUCTING / forced air system
3	<input type="checkbox"/> HRV simplified connection to forced air system
4	<input type="checkbox"/> HRV full ducting/not coupled to forced air system
Part 6 design	

Total Ventilation Capacity 9.32.3.3(1)			
Bsmt & Master Bdrm	2 @	20 cfm	40 cfm
Other Bedrooms	2 @	10 cfm	20 cfm
Bathrooms & Kitchen	4 @	10 cfm	40 cfm
Other rooms	2 @	10 cfm	20 cfm
Total			<u>120</u>

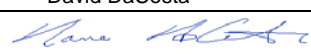
Principal Ventilation Capacity 9.32.3.4(1)			
Master bedroom	1 @	30 cfm	30 cfm
Other bedrooms	2 @	15 cfm	30 cfm
Total			<u>60</u>

Principal Exhaust Fan Capacity		
Make	Model	Location
Broan	684N	Ensuite
90 cfm		2.5 Sones

Heat Recovery Ventilator	
Make	
Model	
cfm high <span style="margin-left: 100px;">0 cfm low</span>	
Sensible efficiency @ -25 deg C <span style="float: right;"><u>0</u></span>	
Sensible efficiency @ 0 deg C <span style="float: right;"><u>0</u></span>	

Supplemental Ventilation Capacity	
Total ventilation capacity	120.0
Less principal exhaust capacity	<u>60.0</u>
REQUIRED supplemental vent. Capacity	<u>60.0</u> cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Pwd.	50	770	
Bath	50	770	
<i>all fans HVI listed</i> Make    Broan      or Equiv.			

Designer Certification			
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.			
Name	David DaCosta		
Signature			
HRAI #	5190	BCIN #	32964
Date	June 17, 2015		

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

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Project # PJ-00022  
Layout # JB-00699

This form is used to summarize the energy efficiency design of the project. Information on completing this form is on the reverse

For use by Principal Authority

Application No:	Model/Certification Number
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## A. Project Information

Building number, street name <b>FP Town 4 - Aberdeen</b>		Unit number	Lot/Con
Municipality <b>Clarington</b>	Postal code	Reg. Plan number / other description	

## B. Compliance Option

<input checked="" type="checkbox"/> SB-12 Prescriptive [SB-12 - 2.1.1.]	Table: Package: A B C D E F G H I J K L M	<b>Package D</b>
<input type="checkbox"/> SB-12 Performance* [SB-12 - 2.1.2.]	* Attach energy performance calculations using an approved software	
<input type="checkbox"/> Energy Star®* [SB-12 - 2.1.3.]	* Attach BOP form	
<input type="checkbox"/> EnerGuide 80® *	* House must be evaluated by NRCAN advisor and meet a rating of 80	

## C. Project Design Conditions

Climatic Zone (SB-1):	Heating Equipment	Space Heating Fuel Source		
<input checked="" type="checkbox"/> Zone 1 (< 5000 degree days)	<input checked="" type="checkbox"/> ≥ 90% AFUE	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Propane	<input type="checkbox"/> Solid Fuel
<input type="checkbox"/> Zone 2 (≥ 5000 degree days)	<input type="checkbox"/> ≥ 78% < 90% AFUE	<input type="checkbox"/> Oil	<input type="checkbox"/> Electric	<input type="checkbox"/> Earth Energy

Windows+Skylights+Glass Doors		Other Building Conditions			
Gross Wall Area =	105 m²	% Windows+ 13%	<input type="checkbox"/> ICF Basement	<input type="checkbox"/> Walkout Basement	<input type="checkbox"/> Log/Post&Beam
Gross Window+ Area =	13 m²		<input type="checkbox"/> ICF Above Grade	<input type="checkbox"/> Slab-on-ground	

## D. Building Specifications [provide values and ratings of the energy efficiency components proposed, or attach Energy Star BOP form]


Building Component	RSI / R values	Building Component	Efficiency Ratings
<b>Thermal Insulation</b>		<b>Windows &amp; Doors<sup>1</sup></b>	
Ceiling with Attic Space	50	Windows/Sliding Glass Doors	1.8
Ceiling without Attic Space	31	Skylights	2.8
Exposed Floor	31	<b>Mechanicals</b>	
Walls Above Grade	24	Space Heating Equip. <sup>2</sup>	94%
Basement Walls	20	HRV Efficiency (%)	0%
Slab (all >600mm below grade)	x	DHW Heater (EF)	0.67
Slab (edge only ≤600mm below grade)	10	NOTES	
Slab (all ≤600mm below grade, or heated)	10	1. Provide U-Value in W/m2.K, or ER rating 2. Provide AFUE or indicate if condensing type combined system used	

## E. Performance Design Verification [complete applicable sections if SB-12 Performance, Energy Star or EnerGuide80 options used]

**SB-12 Performance:**  
The annual energy consumption using Subsection 2.1.1. SB-12 Package \_\_\_\_\_ is \_\_\_\_\_ Gj (1 Gj =1000Mj)  
The annual energy consumption of this house as designed is \_\_\_\_\_ Gj  
The software used to simulate the annual energy use of the building is: \_\_\_\_\_  
The building is being designed using an air leakage of \_\_\_\_\_ air changes per hour @50Pa.

**Energy Star:** BOP form attached. The house will be labeled on completion by:  
**Energy Star and EnerGuide80:**  
Evaluator/Advisor/Rater Name: \_\_\_\_\_ Evaluator/Advisor/Rater Licence #: \_\_\_\_\_

## F. Designers [names of designers who are responsible for the building code design and whose plans accompany the permit application]

Architectural	Mechanical <b>David DaCosta</b> 
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Package: **Package D** System: **System 1**  
Project: **Clarington** Model: **FP Town 4 - Aberdeen**

## Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL <sup>^</sup> T	HL <sub>leak</sub>
0.018	0.143	16607	76	3247

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG <sup>^</sup> T	HG Leak
0.018	0.010	16607	9.2	26

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air	Level Conductive Heat Loss	Air Leakage Heat Loss Multiplier
1	0.5	3247	5239	0.3099
2	0.3		4945	0.1970
3	0.2		4198	0.1547
4	0		0	0.0000

Levels			
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

HG LEAK		Air Leakage Heat Gain	
	26		0.0052
BUILDING CONDUCTIVE HEAT GAIN		5050	

Levels this Dwelling	
3	

## Ventilation Calculations

Vent	Ventilation Heat Loss					Ventilation Heat Gain				Vent	
	Ventilation Heat Loss					Ventilation Heat Gain					
	C	PVC	HL^T	(1-E) HRV	HLbvent	C	PVC	HG^T	HGbvent		
	1.08	60	76	1.00	4925	1.1	60	9.2	596		
Case 1						Case 1					
Case 1	Ventilation Heat Loss (Exhaust only Systems)					Ventilation Heat Gain (Exhaust Only Systems)					Case 1
	Case 1 - Exhaust Only					Case 1 - Exhaust Only		Multiplier			
	Level	LF	HLbvent	LVL Cond. HL	Multiplier	HGbvent	596	0.12			
	1	0.5	4925	5239	0.47	Building	5050				
	2	0.3		4945	0.30						
	3	0.2		4198	0.23						
4	0	0		0.00							
Case 2						Case 2					
Case 2	Ventilation Heat Loss (Direct Ducted Systems)					Ventilation Heat Gain (Direct Ducted Systems)					Case 2
				Multiplier				Multiplier			
	C	HL^T	(1-E) HRV	82.08		C	HG^T	9.94			
	1.08	76	1.00			1.08	9.2				
Case 3						Case 3					
Case 3	Ventilation Heat Loss (Forced Air Systems)					Ventilation Heat Gain (Forced Air Systems)					Case 3
			HLbvent	Multiplier				Vent Heat Gain	Multiplier		
	Total Ventilation Load		4925	0.34		HGbvent		HG*1.3	596	0.12	
						596		1			

**Foundation Conductive Heatloss Level 1** 1332 Watts 4546 Btu/h

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



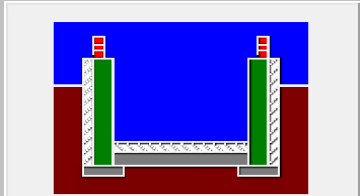
# Envelope Air Leakage Calculator



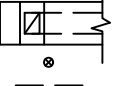













Supplemental tool for CAN/CSA-F280

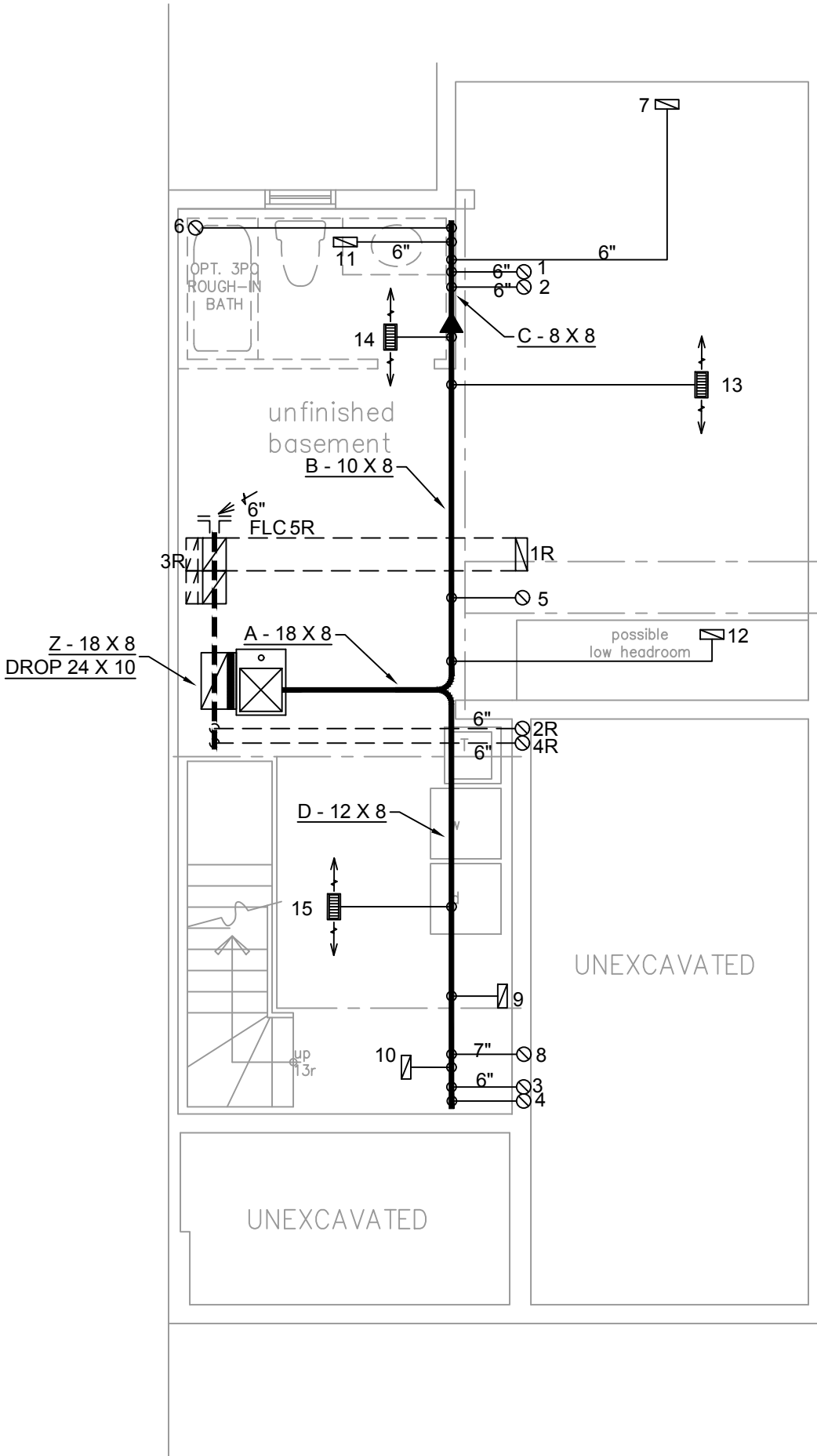
Weather Station Description				
Province:	Ontario ▼			
Region:	Durham ▼			
Weather Station Location:	Open flat terrain, grass ▼			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest ▼			
Walls:	Heavy ▼			
Flue:	Heavy ▼			
Highest Ceiling Height (m):	5.79			
Building Configuration				6.4
Type:	Semi-Detached ▼			
Number of Stories:	Two ▼			
Foundation:	Full ▼			
House Volume (m <sup>3</sup> ):	566.3 470.31			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57) ▼			
Custom BDT Data:	ELA @ 10 Pa. ▼ 185.83 cm <sup>2</sup> 3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	0		30	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Envelope Air Leakage Rate				
Heating Air Leakage Rate (ACH/H):		0.143		
Cooling Air Leakage Rate (ACH/H):		0.010		

# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	▼
Region:	Durham	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	13.82	 <p>Insulation Configuration</p>
Floor Width (m):	4.16	
Exposed Perimeter (m):	36.27	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	
Window Area (m <sup>2</sup> ):	0.28	
Door Area (m <sup>2</sup> ):	0.00	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	23	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1332

	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIDIT ROUND DUCT		HRV EXHAUST GRILL		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN ROUND DUCT		RETURN AIR FROM BASEMENT SECOND FLOOR		THERMOSTAT
			VOLUME DAMPER						PRINCIPAL EXHAUST FAN SWITCH
									W/R & PRINCIPAL EXHAUST FAN



INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

ALL DUCTWORK MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3. (11)

CIRCULATION PRINCIPAL FAN SWITCH TO BE CENTRALLY LOCATED

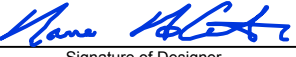
FURNACE EQUIPPED WITH BRUSHLESS DC MOTOR AS PER OBC 12.3.1.5 (2)

The undersigned has reviewed and takes responsibility for this design on behalf of GTA Designs Inc. and has the qualifications and meets the requirements set out in the Building Code to be a designer

**QUALIFICATION INFORMATION**

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

David Da Costa



B.C.I.N. 32964

Signature of Designer

OBC 2012

ZONE 1 COMPLIANCE  
PACKAGE "D" REF. TABLE 2.1.1.2.A

**NOTES**

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE SPECIFIED.

ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)

INSULATE DUCTS IN UNCONDITIONED SPACES R12

UNDERCUT ALL DOORS 1" MIN.

HEATING CONTRACTOR MUST WORK FROM APPROVED PLANS.

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSABILITY OF GTA DESIGNS.

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





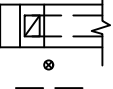













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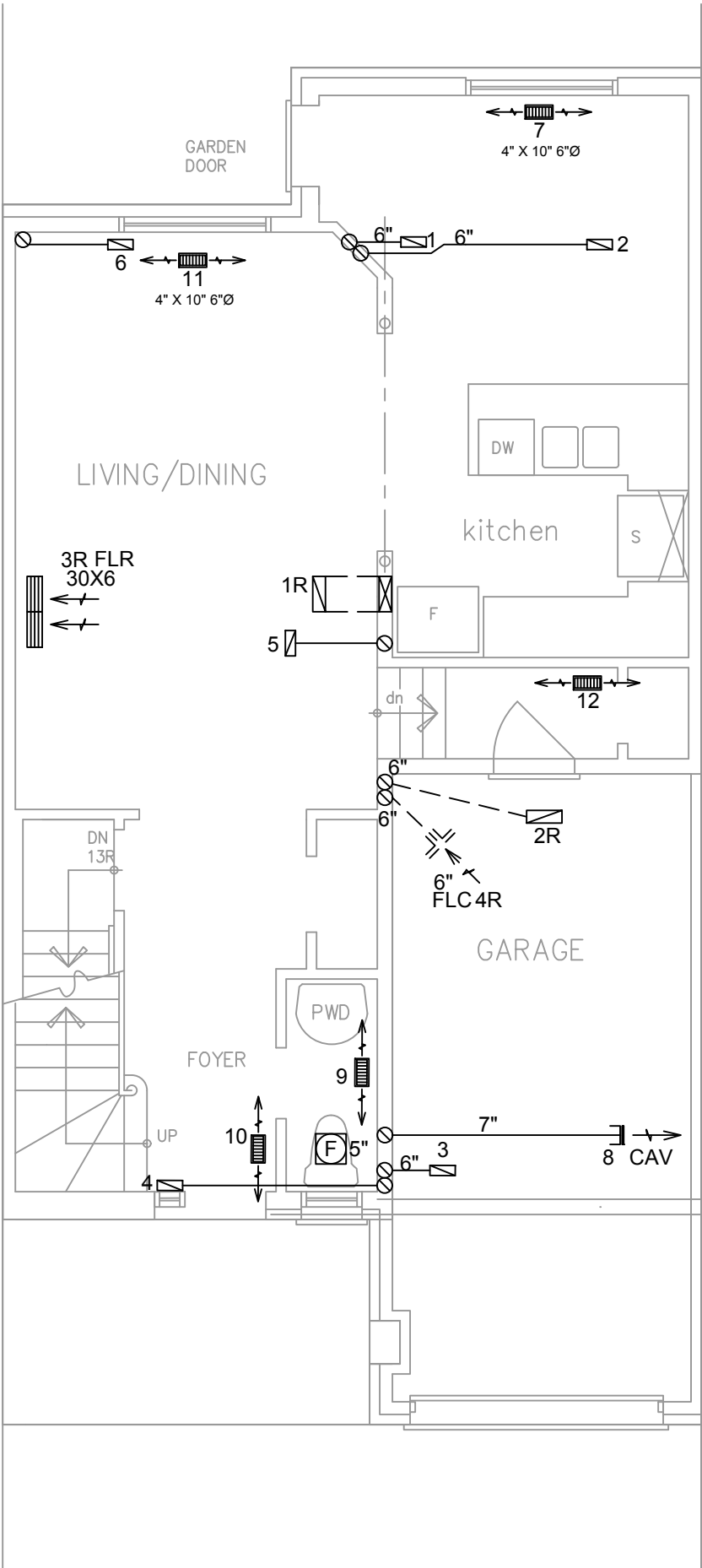
HEAT-LOSS	22,677	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	GMEC960302BNA	OR EQUAL.
UNIT HEATING INPUT	30,000	BTU/HR.
UNIT HEATING OUTPUT	28,800	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	621	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	2	2
1ST FLOOR	6	2	2
BASEMENT	3	1	

FLOOR PLAN: BASEMENT	
DRAWN BY: RB	CHECKED: DD
LAYOUT NO. JB-00699	DRAWING NO. M1
SQFT 1445	

DATE:	JUNE 17, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	FP TOWN 4 - ABERDEEN
PROJECT:	NORTHGLEN BOWMANVILLE,ONT.
SCALE:	3/16" = 1'-0"

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			VOLUME DAMPER						PRINCIPAL EXHAUST FAN SWITCH
									W/R & PRINCIPAL EXHAUST FAN



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Signature of Designer

OBC 2012

ZONE 1 COMPLIANCE  
PACKAGE "D" REF. TABLE 2.1.1.2.A

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gtaDesigns



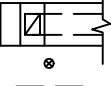













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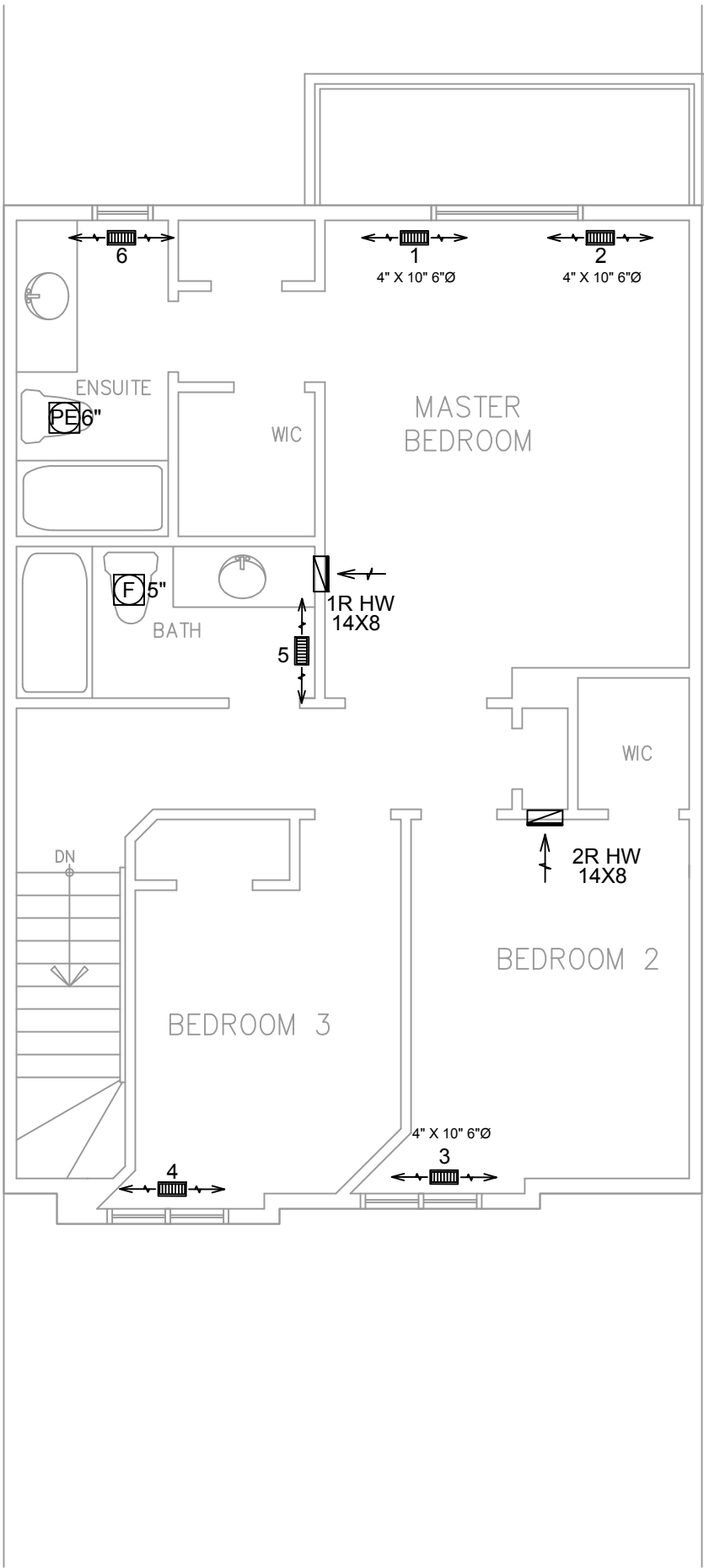
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FAN SPEED	621	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	2	2
1ST FLOOR	6	2	2
BASEMENT	3	1	

FLOOR PLAN:		
GROUND FLOOR		
DRAWN BY:	CHECKED:	SQFT
RB	DD	1445
LAYOUT NO.	DRAWING NO.	
JB-00699	M2	

DATE:	JUNE 17, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	FP TOWN 4 - ABERDEEN
PROJECT:	NORTHGLEN BOWMANVILLE,ONT.
SCALE:	3/16" = 1"-0"

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UNIT HEATING OUTPUT	28,800	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	621	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	2	2
1ST FLOOR	6	2	2
BASEMENT	3	1	
FLOOR PLAN: SECOND FLOOR			
DRAWN BY: RB	CHECKED: DD	SQFT	1445
LAYOUT NO. JB-00699	DRAWING NO. M3		

DATE:	JUNE 17, 2015
CLIENT:	DELPARK HIGHCASTLE
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