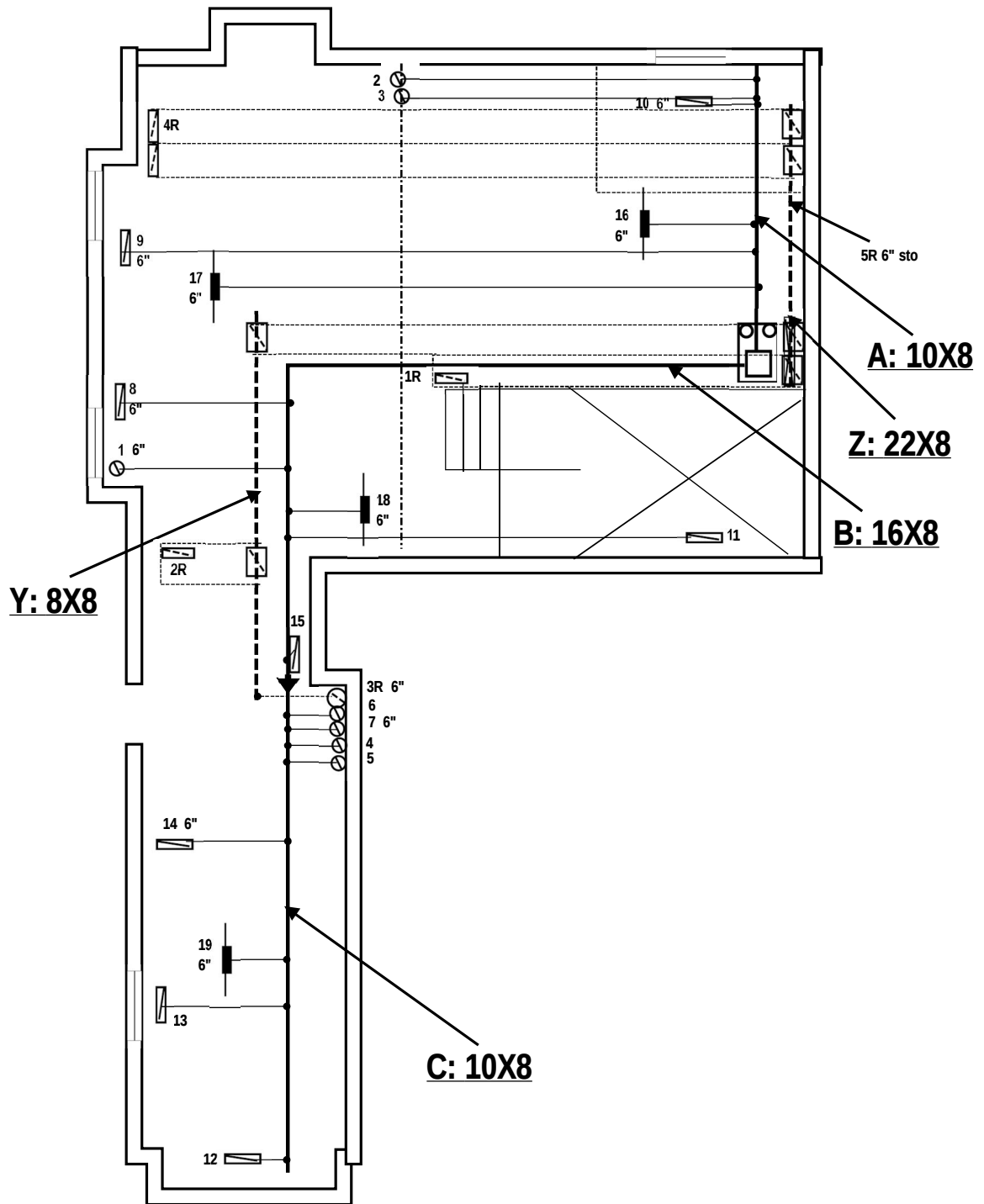


34' 10"



#### Notes:

- Furnace to have ECM motor
- Hot Water Tank Minimum 0.8 EF
- Heat and Cool loads calculated using CAN/CSA F280
- HRV: RNC Lifebreath 155 or Equivalent 75% SRE

(Or Equivalent Furnace)

#### SB-12 Package A1

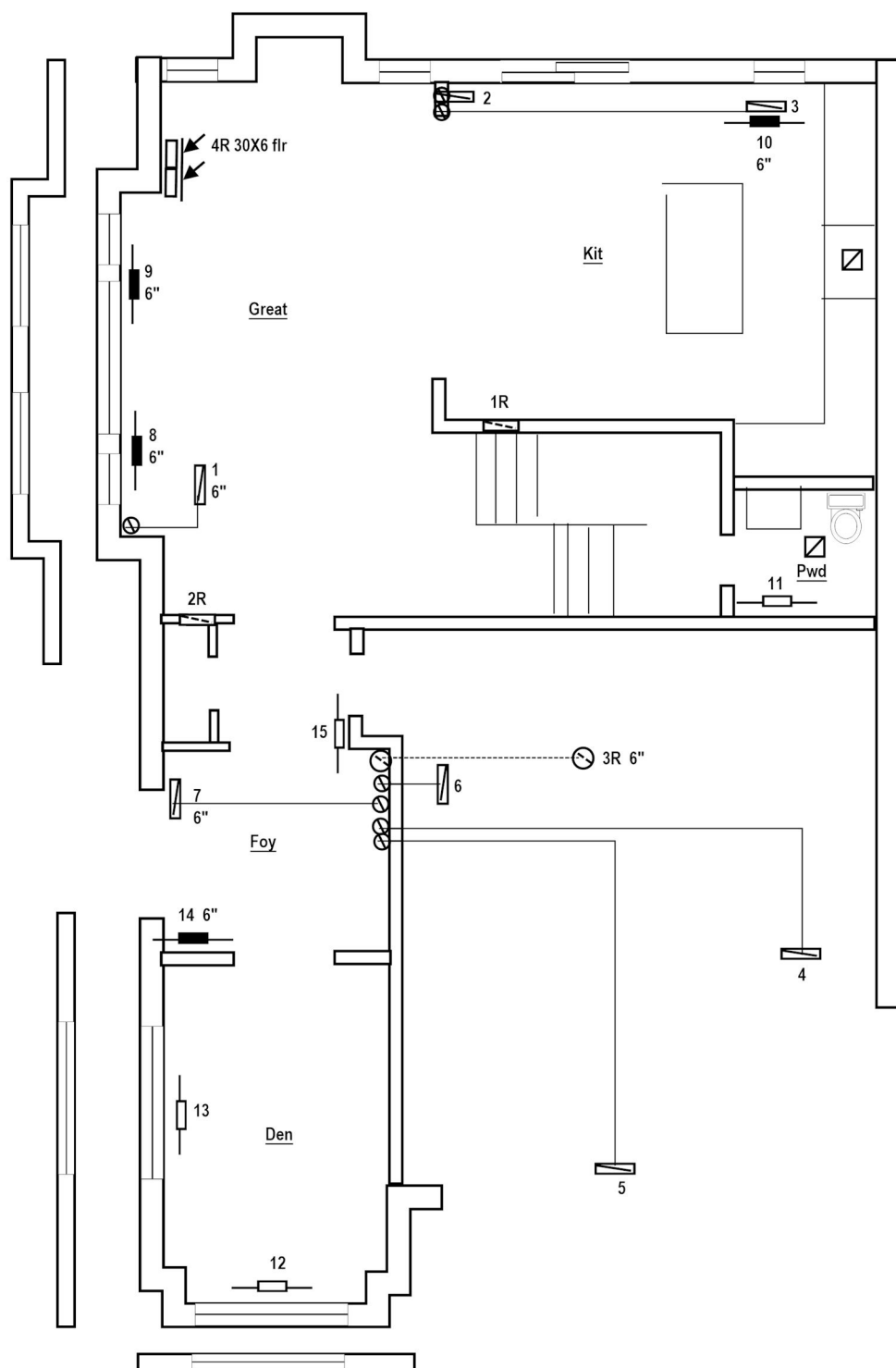
|                | Nom | Act   |           | Nom  | Act   |
|----------------|-----|-------|-----------|------|-------|
| Ceil.w Attic   | 60  | 59.22 | Bsmt wall | 20ci | 21.12 |
| Ceil.w/o Attic | 31  | 27.65 | Windows   |      | R3.57 |
| Exp.Floor      | 31  | 29.8  | Skylights |      |       |
| Walls          | 24  | 17.03 | Furn Eff  |      | 96%   |
| ECM Motor      | Yes |       | HRV Eff   |      | 75%   |

Heat Loss: 40260 BTU

Heat Gain: 19864 BTU

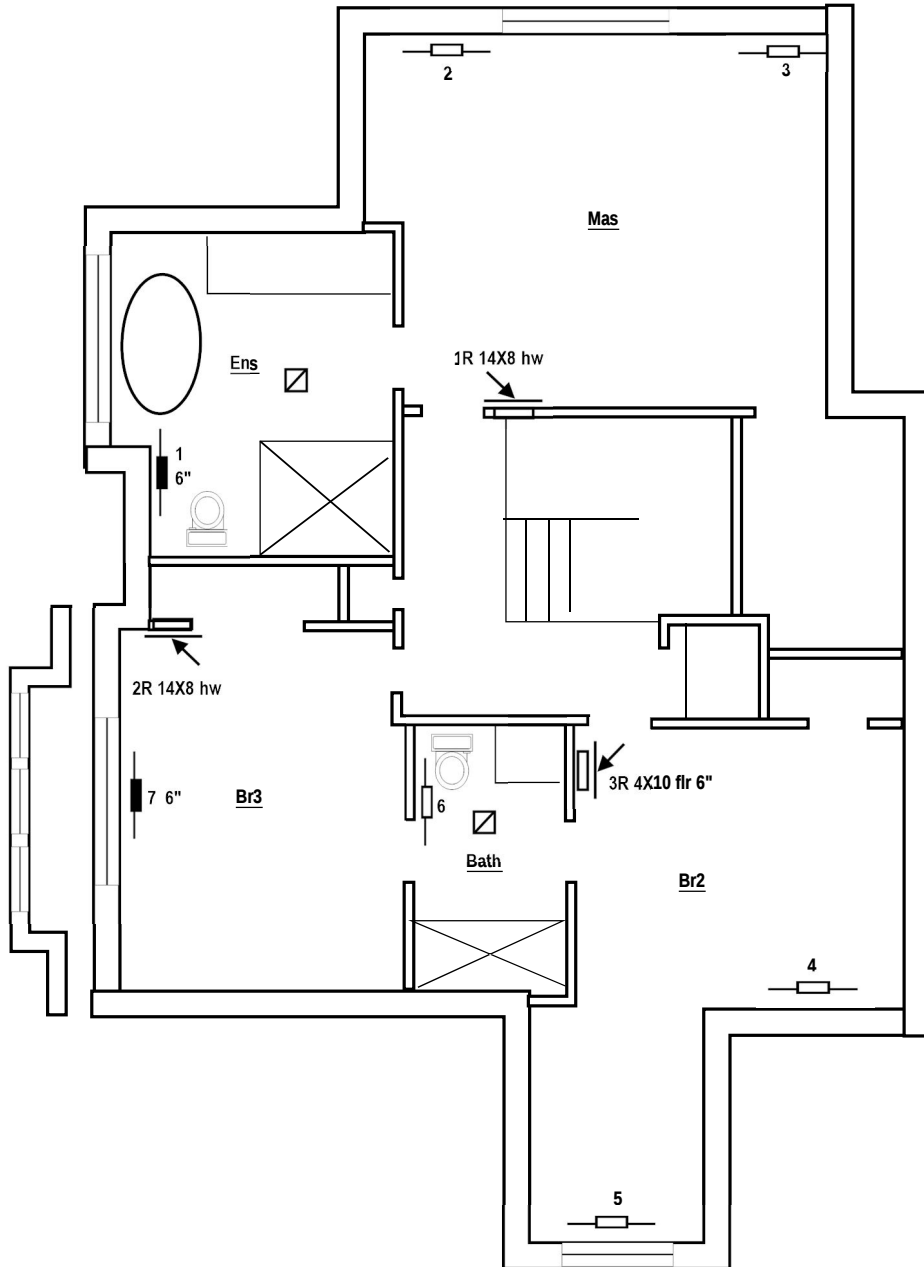
1915 SF

|                                                                   |                         |            |                                                                                                                                                                                                          |  |  |                         |  |                                                                |  |
|-------------------------------------------------------------------|-------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-------------------------|--|----------------------------------------------------------------|--|
| <b>Make</b> Goodman<br><b>UNIT DATA</b><br><b>Model</b> GMEC96060 |                         |            | I have reviewed and take responsibility for this design and am qualified as an "other designer" as described by the OBC Div.C, Part 3, ss 3.2.5 in relation to HVAC design.<br><i>Alexis Dearie-Vonk</i> |  |  | <b>Type</b> 3704 Alfred |  | <b>NewRes</b><br><b>HVAC Design</b>                            |  |
| <b>Input</b> 60000 BTU                                            | <b>Output</b> 57600 BTU |            |                                                                                                                                                                                                          |  |  | <b>Floor</b> Basement   |  |                                                                |  |
| <b>Cooling</b> 2 Tons                                             | <b>Fan</b> 785 Cfm      |            |                                                                                                                                                                                                          |  |  | <b>Scale</b> 3/16"=1'0" |  | 9 Hurontario st Orangeville On L9W 1Y8<br>Phone (416) 320-5870 |  |
| <b>No. of Runs</b>                                                | <b>S/A</b>              | <b>R/A</b> |                                                                                                                                                                                                          |  |  | <b>Date</b> Mar-18      |  | <b>Client</b> Esquire                                          |  |
| 2nd Floor                                                         | 8                       | 3          |                                                                                                                                                                                                          |  |  | <b>Revised</b>          |  | <b>LO#</b> 9183                                                |  |
| 1st Floor                                                         | 7                       | 1          |                                                                                                                                                                                                          |  |  |                         |  |                                                                |  |
| Basement                                                          | 4                       | 1          |                                                                                                                                                                                                          |  |  |                         |  |                                                                |  |



|             |     |                 |     |                                                                                                                                                                                                                                                                         |         |             |                                                                                         |         |
|-------------|-----|-----------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|-----------------------------------------------------------------------------------------|---------|
| Make        |     | UNIT DATA Model |     | I have reviewed and take responsibility for this design and am qualified as an "other designer" as described by the OBC Div.C, Part 3, ss 3.2.5 in relation to HVAC design.<br><br><i>Alexis Dearie-Vonk</i><br><br>Alexis Dearie-Vonk    27098    3986<br>BCIN    HRAI | Type    | 3704 Alfred | NewRes<br>HVAC Design<br>9 Hurontario st Orangeville On L9W 1Y8<br>Phone (416) 320-5870 |         |
| Input       |     | Output          |     |                                                                                                                                                                                                                                                                         | Floor   | First       |                                                                                         |         |
| Cooling     |     | Fan             |     |                                                                                                                                                                                                                                                                         | Scale   | 3/16"=1'0"  |                                                                                         |         |
| Tons        |     | Cfm             |     |                                                                                                                                                                                                                                                                         | Date    | Mar-18      |                                                                                         |         |
| No. of Runs | S/A |                 | R/A |                                                                                                                                                                                                                                                                         | Revised | LO#         | Client                                                                                  | Esquire |
| 2nd Floor   |     |                 |     |                                                                                                                                                                                                                                                                         |         |             |                                                                                         |         |
| 1st Floor   |     |                 |     |                                                                                                                                                                                                                                                                         |         |             |                                                                                         |         |
| Basement    |     |                 |     |                                                                                                                                                                                                                                                                         |         |             |                                                                                         | 9183    |

◀34' 10"▶



All runs 5" unless otherwise specified

|             |     |           |  |                                                                                                                                                                                                                                                                         |         |             |                                                                                         |
|-------------|-----|-----------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|-----------------------------------------------------------------------------------------|
| Make        |     | UNIT DATA |  | I have reviewed and take responsibility for this design and am qualified as an "other designer" as described by the OBC Div.C, Part 3, ss 3.2.5 in relation to HVAC design.<br><br><i>Alexis Dearie-Vonk</i><br><br>Alexis Dearie-Vonk    27098    3986<br>BCIN    HRAI | Type    | 3704 Alfred | NewRes<br>HVAC Design<br>9 Hurontario st Orangeville On L9W 1Y8<br>Phone (416) 320-5870 |
| Input       |     | Output    |  |                                                                                                                                                                                                                                                                         | Floor   | Second      |                                                                                         |
| Cooling     |     | Fan       |  |                                                                                                                                                                                                                                                                         | Scale   | 3/16"=1'0"  |                                                                                         |
| Tons        |     | Cfm       |  |                                                                                                                                                                                                                                                                         | Date    | Mar-18      | Client                                                                                  |
| No. of Runs | S/A | R/A       |  |                                                                                                                                                                                                                                                                         | Revised |             | Esquire                                                                                 |
| 2nd Floor   |     |           |  |                                                                                                                                                                                                                                                                         |         |             | LO#                                                                                     |
| 1st Floor   |     |           |  |                                                                                                                                                                                                                                                                         |         |             | 9183                                                                                    |
| Basement    |     |           |  |                                                                                                                                                                                                                                                                         |         |             |                                                                                         |

## MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL

Housetype 3704 Alfred

File # 9183

|         |         |
|---------|---------|
| Builder | Esquire |
| Address |         |
| City    |         |
| Phone   |         |

|                                         |      |     |
|-----------------------------------------|------|-----|
| Heat Loss Due to Mechanical Ventilation |      |     |
| PVC X DTDh X 1.08 X (1-E)=              | 1576 | BTU |
| Heat Gain Due to Mechanical Ventilation |      |     |
| PVC X DTDc X 1.08=                      | 760  | BTU |

|                                     |                                                       |
|-------------------------------------|-------------------------------------------------------|
| Combustion Appliances               |                                                       |
| <input checked="" type="checkbox"/> | a) Direct Vent (sealed combust) including fireplaces  |
| <input type="checkbox"/>            | b) Positive venting induced draft (exclude fireplace) |
| <input type="checkbox"/>            | c) Natural Draft, B vent or induced draft fireplaces  |
| <input type="checkbox"/>            | d) Solid Fuel                                         |
| <input type="checkbox"/>            | e) No Combustion Appliances                           |

|                            |   |          |       |
|----------------------------|---|----------|-------|
| Total Ventilation Capacity |   |          |       |
| Bsmt & Master              | 2 | 21.2 cfm | 42.4  |
| Other Bed                  | 2 | 10.6 cfm | 21.2  |
| Bath & Kitchen             | 4 | 10.6 cfm | 42.4  |
| Other Rooms                | 3 | 10.6 cfm | 31.8  |
| Room Count cfm             |   |          | 137.8 |

|                                     |                     |
|-------------------------------------|---------------------|
| Heating System                      |                     |
| <input checked="" type="checkbox"/> | Forced Air          |
| <input type="checkbox"/>            | Non Forced Air      |
| <input type="checkbox"/>            | Electric Space Heat |

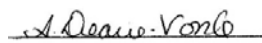
|                                     |                                                   |
|-------------------------------------|---------------------------------------------------|
| Housetype                           |                                                   |
| <input checked="" type="checkbox"/> | I - Type a or b appliances only, no solid fuel    |
| <input type="checkbox"/>            | II - Type I with solid fuel (including fireplace) |
| <input type="checkbox"/>            | III - Type C appliance                            |
| <input type="checkbox"/>            | IV - Type I or II with electric space heat        |
| <input type="checkbox"/>            | Other - Type I,II,or IV no forced air             |

|                                       |        |
|---------------------------------------|--------|
| Supplemental Ventilation Capacity     |        |
| TVC room or air change (which larger) | 138    |
| Less Principal Exhaust Capacity (HRV) | 64     |
| Required Supp.Vent Capacity           | CFM 74 |

|                                     |                                                    |
|-------------------------------------|----------------------------------------------------|
| System Design Option                |                                                    |
| <input checked="" type="checkbox"/> | Exhaust Only/Forced air system                     |
| <input checked="" type="checkbox"/> | HRV Simplified Connection to Forced Air System     |
| <input type="checkbox"/>            | HRV with ducting to forced air system              |
| <input type="checkbox"/>            | HRV fully ducted/ not coupled with forced air sys. |
| <input type="checkbox"/>            | Part 6 design CSA F326-M91                         |
| <input checked="" type="checkbox"/> | Part 9 9.32.3.1                                    |

|                     |     |             |      |
|---------------------|-----|-------------|------|
| Supplemental Fans   |     |             |      |
| Location            | cfm | Model       | Pipe |
| Ens                 | 50  | Broan ZB80M | 5"   |
| Pwd                 | 50  | Broan ZB80M | 5"   |
| Bath                | 50  | Broan ZB80M | 5"   |
| all fans HVI listed |     |             |      |

|                           |        |
|---------------------------|--------|
| HRV-Principal Ventilation |        |
| Model                     |        |
| RNC Lifebreath 155        |        |
| 30 L/S                    | 64 cfm |
| ASE                       | 84     |

|                                                                                                                                                                       |                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Designer Certification                                                                                                                                                |                                                                                       |
| I have reviewed and take responsibility for this design and am qualified as an "other designer" as required by the OBC 3.2.5 as it relates to residential HVAC design |                                                                                       |
| Alexis Dearie-Vonk                                                                                                                                                    |  |
| BCIN# 27098                                                                                                                                                           | HRAI# 3986                                                                            |

NEWRES HVAC DESIGN

9 Hurontario St  
Orangeville Ont  
L9W 1Y8  
416-320-5870

Heat Loss Calculation

Heat loss ^T 76 f Heat Gain ^T 11 f Bsmt ^T 62 f

I have reviewed and take responsibility for this design & am  
qualified as an "other designer" as required by the OBC 3.2.5  
as it relates to residential HVAC design.

Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986

Alexis Dearie-Vonk

Customer Esquire  
Housetype 3704 Alfred  
File # 9183  
Date Mar-18  
Township Ajax

|                 | Eff  | Ens  |      | Mas  |      | Br2  |      | Bath |      | Br3  |      | Great |      | Kit  |      | Pwd  |      | Den  |      | Foy  |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | Bsmt  |  |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-------|--|
|                 | Fac  | Act  | Loss | Act  | Loss | Act  | Loss | Act  | Loss | Act  | Loss | Act   | Loss | Act  | Loss | Act  | Loss | Act  | Loss | Act  | Loss | Act | Loss | Act | Loss | Act | Loss | Act | Loss | Act | Loss | Act | Loss | Act | Loss |       |  |
| Width           | 17.0 | 10   |      | 17   |      | 12   |      | 5    |      | 11   |      | 12    |      | 18   |      | 18   |      | 9    |      | 9    |      |     |      |     |      |     |      |     |      |     |      |     |      |     | 30   |       |  |
| Length          |      | 12   |      | 15   |      | 14   |      | 12   |      | 14   |      | 21    |      | 14   |      | 5    |      | 14   |      | 14   |      |     |      |     |      |     |      |     |      |     |      |     |      |     | 30   |       |  |
| Area            |      | 120  |      | 255  |      | 168  |      | 60   |      | 154  |      | 252   |      | 252  |      | 90   |      | 126  |      | 126  |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | 900   |  |
| Height          |      | 8    |      | 8    |      | 8    |      | 8    |      | 8    |      | 9     |      | 9    |      | 9    |      | 9    |      | 9    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | 8     |  |
| LinFtWall       |      | 17   |      | 37   |      | 40   |      | 5    |      | 25   |      | 36    |      | 32   |      | 23   |      | 36   |      | 28   |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | 164   |  |
| Gr.Wall         |      | 136  |      | 296  |      | 320  |      | 40   |      | 200  |      | 324   |      | 288  |      | 207  |      | 324  |      | 252  |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Net Wall        |      | 106  | 473  | 266  | 1187 | 302  | 1348 | 40   | 179  | 164  | 732  | 240   | 1071 | 232  | 1035 | 207  | 924  | 252  | 1125 | 224  | 1000 |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Windows         |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| E,W             |      |      |      | 30   | 639  | 18   | 383  |      |      |      |      | 24    | 511  | 56   | 1192 |      |      | 36   | 766  |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     | 4    | 85    |  |
| S               |      | 30   | 639  |      |      |      |      |      |      | 36   | 766  | 60    | 1277 |      |      |      |      | 36   | 766  | 28   | 596  |     |      |     |      |     |      |     |      |     |      |     |      |     | 12   | 255   |  |
| N               |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Skylight        | 3.57 |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Door            | 4    |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      | 43   | 817  |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Ceiling         | 59.2 | 120  | 154  | 255  | 327  | 168  | 216  | 60   | 77   | 154  | 198  | 40    | 51   | 20   | 26   |      |      | 126  | 162  |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Cold Flr        | 29.8 |      |      |      |      | 168  | 428  | 60   | 153  |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Header          | 17.0 |      |      |      |      |      |      |      |      |      |      | 36    | 148  | 32   | 131  | 23   | 94   |      |      | 28   | 115  |     |      |     |      |     |      |     |      |     |      |     |      | 164 | 674  |       |  |
| HL bgcr         |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | 4832  |  |
| SlabHLbgcr      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| People/App      |      |      | 1    |      | 1    |      |      |      |      | 1    |      | 1     |      | 3    |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| HL agcr         |      |      | 1266 |      | 2153 |      | 2375 |      | 409  |      | 1696 |       | 3059 |      | 2385 |      | 1018 |      | 2819 |      | 2528 |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| HL airr         |      | 2    | 409  | 2    | 696  | 2    | 768  | 2    | 132  | 2    | 548  | 1     | 992  | 1    | 773  | 1    | 330  | 1    | 914  | 1    | 820  |     |      |     |      |     |      |     |      |     |      |     |      |     |      | 6381  |  |
| HL dr           |      |      |      |      |      | 168  | 314  | 60   | 54   |      |      |       |      |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |       |  |
| Tot.Rm.Loss BTU |      | 1675 |      | 2849 |      | 3457 |      | 595  |      | 2244 |      | 4050  |      | 3158 |      | 1348 |      | 3733 |      | 3347 |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | 12227 |  |

HL airb=26733 X 0.018 X 76 X 0.3490

3741W12763BTU

BasementHLR1416W X 3.414832BTU

HLairr Multipliers

|                |       |      |
|----------------|-------|------|
| 2nd BTU (0.2)  | 7898  | 0.32 |
| 1st BTU (0.3)  | 11808 | 0.32 |
| Bsmt BTU (0.5) | 5846  | 1.09 |

Total Structure Heat Loss38684

Mech.Vent Loss1576

TOTAL HEAT LOSS BTU40260

All Calculations based on CAN/CSAF280 and HRAI Digest Standards

NEWRES HVAC DESIGN

9 Hurontario street  
Orangeville Ont  
L9W 1Y8  
416-320-5870

Heat Gain Calculation

Heat loss ΔT 76 f Heat Gain ΔT 11 f Bsmt ΔT 62 f

I have reviewed and take responsibility for this design & am  
qualified as an "other designer" as required by the OBC 3.2.5  
as it relates to residential HVAC design.

Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986

Alexis Dearie-Vonk

Customer

Esquire

Housetype

3704 Alfred

File #

9183

Date

Mar-18

Township

Ajax

|            | Fac   | Ens |      | Mas  |      | Br2  |      | Bath |      | Br3  |      | Great |      | Kit  |      | Pwd  |      | Den  |      | Foy |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      | Bsmt |  |
|------------|-------|-----|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|------|--|
|            |       | Act | Gain | Act  | Gain | Act  | Gain | Act  | Gain | Act  | Gain | Act   | Gain | Act  | Gain | Act  | Gain | Act  | Gain | Act | Gain | Act | Gain | Act | Gain | Act | Gain | Act | Gain | Act | Gain | Act | Gain | Act | Gain |      |  |
| Width      | 17.03 | 10  |      | 17   |      | 12   |      | 5    |      | 11   |      | 12    |      | 18   |      | 18   |      | 9    |      | 9   |      |     |      |     |      |     |      |     |      |     |      |     |      | 30  |      |      |  |
| Length     |       | 12  |      | 15   |      | 14   |      | 12   |      | 14   |      | 21    |      | 14   |      | 5    |      | 14   |      | 14  |      |     |      |     |      |     |      |     |      |     |      |     |      | 30  |      |      |  |
| Area       |       | 120 |      | 255  |      | 168  |      | 60   |      | 154  |      | 252   |      | 252  |      | 90   |      | 126  |      | 126 |      |     |      |     |      |     |      |     |      |     |      |     |      | 900 |      |      |  |
| Height     |       | 8   |      | 8    |      | 8    |      | 8    |      | 8    |      | 9     |      | 9    |      | 9    |      | 9    |      | 9   |      |     |      |     |      |     |      |     |      |     |      |     |      | 8   |      |      |  |
| LinFtWall  |       | 17  |      | 37   |      | 40   |      | 5    |      | 25   |      | 36    |      | 32   |      | 23   |      | 36   |      | 28  |      |     |      |     |      |     |      |     |      |     |      |     |      | 164 |      |      |  |
| Gr.Wall    |       | 136 |      | 296  |      | 320  |      | 40   |      | 200  |      | 324   |      | 288  |      | 207  |      | 324  |      | 252 |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Net Wall   |       | 106 | 25   | 266  | 62   | 302  | 71   | 40   | 9    | 164  | 39   | 240   | 56   | 232  | 54   | 207  | 49   | 252  | 59   | 224 | 53   |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Windows    |       |     |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| E,W        |       | 27  |      |      | 30   | 820  | 18   | 492  |      |      |      |       | 24   | 656  | 56   | 1531 |      |      | 36   | 984 |      |     |      |     |      |     |      |     |      |     |      |     |      | 4   | 109  |      |  |
| S          |       | 18  | 30   | 545  |      |      |      |      |      |      | 36   | 654   | 60   | 1090 |      |      |      |      | 36   | 654 | 28   | 509 |      |     |      |     |      |     |      |     |      |     |      | 12  | 218  |      |  |
| N          | 11    |     |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Skylight   | 49    |     |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Door       | 4     |     |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      | 43  | 43   |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Ceiling    | 59.22 | 120 | 156  | 255  | 332  | 168  | 218  | 60   | 78   | 154  | 200  | 40    | 52   | 20   | 26   |      |      | 126  | 164  |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Cold Flr   | 29.8  |     |      |      |      | 168  | -6   | 60   | -2   |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Header     | 17.03 |     |      |      |      |      |      |      |      |      |      | 36    | 8    | 32   | 7    | 23   | 5    |      |      | 28  | 6    |     |      |     |      |     |      |     |      |     |      | 164 | 35   |     |      |      |  |
| HG svr     |       |     | 55   |      | 92   |      | 59   |      | 6    |      | 67   |       | 141  |      | 122  |      | 4    |      | 141  |     | 46   |     |      |     |      |     |      |     |      |     |      |     |      | 27  |      |      |  |
| HG dr      |       |     |      |      |      | 409  |      | 19   |      |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
|            |       |     |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| Total Cond |       |     | 726  |      | 1214 |      | 776  |      | 85   |      | 893  |       | 1863 |      | 1618 |      | 54   |      | 1861 |     | 611  |     |      |     |      |     |      |     |      |     |      |     |      | 363 |      |      |  |
| Air Leak.  |       |     | 31   |      | 52   |      | 33   |      | 4    |      | 38   |       | 79   |      | 69   |      | 2    |      | 79   |     | 26   |     |      |     |      |     |      |     |      |     |      |     |      | 15  |      |      |  |
| Peop/App   |       |     |      | 1    | 240  | 1    | 240  |      |      | 1    | 240  | 1     | 1000 | 3    | 1800 |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
|            |       |     |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |  |
| HG sr      |       | 812 |      | 1598 |      | 1517 |      | 114  |      | 1239 |      | 3083  |      | 3609 |      | 60   |      | 2161 |      | 683 |      |     |      |     |      |     |      |     |      |     |      |     |      | 406 |      |      |  |

HG salb= 26732.5 X 0.018 X 11 X 0.081 126 W 429 BTU

Mech. Vent Gain 760 BTU HG cb 10064 BTU

All Calculations based on CAN/CSAF280 and HRAI Digest Standards

Total Structure Heat Gain 15280

Latent Load Multiplier 1.3

Total Heat Gain BTU 19864

9 Hurontario street  
Orangeville Ont  
L9W 1Y8  
416-320-5870

I have reviewed and take responsibility for this design & am qualified as an "other designer" as required by the OBC 3.2.5 as it relates to residential HVAC design. Alexis Dearie-Vonk

Alexis Dearie-Vonk      BCIN# 27098      HRAI# 3986

Customer  
Housetype  
File #  
Date  
Township

[illegible]

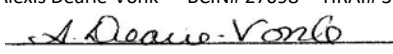
|             |      |      |      |      |      |  |  |  |  |
|-------------|------|------|------|------|------|--|--|--|--|
| Trunk       | Y    |      | Z    |      |      |  |  |  |  |
| Inlet #     | 3R   | 2R   | 4R   | 5R   | 1R   |  |  |  |  |
| CFM         | 90   | 140  | 325  | 90   | 140  |  |  |  |  |
| Inlet Size  | 6"   | 14X8 | 30X6 | 6"   | 14X8 |  |  |  |  |
| Act&Eff Len | 185  | 170  | 220  | 200  | 175  |  |  |  |  |
| Adj.Press.  | 0.06 | 0.06 | 0.05 | 0.06 | 0.06 |  |  |  |  |
| Tr.Fl.Rate  |      | 230  |      |      | 785  |  |  |  |  |
| Tr.Width    |      | 8    |      |      | 22   |  |  |  |  |
| Tr.Height   |      | 8    |      |      | 8    |  |  |  |  |
| Velocity    |      | 518  |      |      | 642  |  |  |  |  |

| Equipment    |           |
|--------------|-----------|
| Manufacturer | Goodman   |
| Furnace      | GMCE96060 |
| Output       | 57600     |
| AirFlow      | 785       |
| AC Size      | 2         |

|                   |      |
|-------------------|------|
| Supply Air Pres   | 0.15 |
| S.Air Plenum Pres | 0.14 |
| Diffuser Loss     | 0.01 |
| System Static     | 0.5  |

|                   |      |
|-------------------|------|
| Return Air Pres   | 0.15 |
| R.Air Plenum Pres | 0.11 |
| Diffuser Loss     | 0.04 |

**Required equipment capacity based on CAN/CSA-F280 standards**  
**All Calculations based on CAN/CSAF280 and HRAI Digest Standards**

| Heat Loss & Gain Calculation Summary Sheet                                                                                |                                                                          |             |     |                                                                                      |                                       | CSA-F280-M12 |                        |
|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------|-----|--------------------------------------------------------------------------------------|---------------------------------------|--------------|------------------------|
| These documents issued for the use of                                                                                     |                                                                          |             |     |                                                                                      |                                       | Esquire      |                        |
| and may not be used by any other person without authorization. Documents for permit and/or construction are signed in red |                                                                          |             |     |                                                                                      |                                       | Project #    |                        |
| Building Location                                                                                                         |                                                                          |             |     |                                                                                      |                                       |              |                        |
| Model:                                                                                                                    | 3704 Alfred                                                              |             |     |                                                                                      | Site:                                 |              |                        |
| Address:                                                                                                                  |                                                                          |             |     |                                                                                      | Lot:                                  |              |                        |
| City:                                                                                                                     | Ajax                                                                     |             |     |                                                                                      | Postal Code:                          |              |                        |
| Calculations Based On                                                                                                     |                                                                          |             |     |                                                                                      |                                       |              |                        |
| Dimensional Info. Based on:                                                                                               |                                                                          |             |     | Hunt Design                                                                          |                                       |              |                        |
| Attachment:                                                                                                               | Detached                                                                 |             |     | Front Face:                                                                          | East                                  | Assumed?     | Yes                    |
| # of Stories:                                                                                                             | 2+Bsm't                                                                  |             |     | Air Tight:                                                                           | Very Tight                            | Assumed?     | Yes                    |
| Weath Loc:                                                                                                                | Ajax                                                                     | Ventilated? | Yes | Wind Exp:                                                                            | Partial Shade                         |              |                        |
| HRV?                                                                                                                      | Yes                                                                      |             |     | Int.Shade:                                                                           | Yes                                   | Occupants:   | 4                      |
| Recovery %                                                                                                                | 75                                                                       |             |     | Unit:                                                                                | Imperial                              |              |                        |
| Heating Design Conditions                                                                                                 |                                                                          |             |     | Cooling Design Conditions                                                            |                                       |              |                        |
| Out Temp:                                                                                                                 | -20                                                                      | Ind.Temp:   | 22  | Soil Temp:                                                                           | 10                                    | Out Temp:    | 30                     |
|                                                                                                                           |                                                                          |             |     |                                                                                      |                                       | Ind.Temp:    | 24 Lat:43.85 ST ran:10 |
| Above Grade Walls                                                                                                         |                                                                          |             |     | Below Grade Walls                                                                    |                                       |              |                        |
| Style A:                                                                                                                  | R22 Nominal                                                              |             |     | Style A:                                                                             | R20ci Nominal                         |              |                        |
| Style B:                                                                                                                  | (R 17.03 Actual)                                                         |             |     | Style B:                                                                             | (R21.12 Actual)                       |              |                        |
| Style C:                                                                                                                  |                                                                          |             |     | Style C:                                                                             |                                       |              |                        |
| Style D:                                                                                                                  |                                                                          |             |     | Style D:                                                                             |                                       |              |                        |
| Floors on Soil                                                                                                            |                                                                          |             |     | Ceilings                                                                             |                                       |              |                        |
| Style A:                                                                                                                  |                                                                          |             |     | Style A:                                                                             | R60 Nominal                           |              |                        |
| Style B:                                                                                                                  |                                                                          |             |     | Style B:                                                                             | (R59.22 Actual)                       |              |                        |
| Exposed Floors                                                                                                            |                                                                          |             |     | Style C:                                                                             | (R27.65 Actual Ceiling with no attic) |              |                        |
| Style A:                                                                                                                  | R31 Nominal                                                              |             |     | Doors                                                                                |                                       |              |                        |
| Style B:                                                                                                                  | (R29.8 Actual)                                                           |             |     | Style A:                                                                             | Assumed Insulated                     |              |                        |
| Windows                                                                                                                   |                                                                          |             |     | Style B:                                                                             |                                       |              |                        |
| Style A:                                                                                                                  | U 0.28                                                                   |             |     | Style C:                                                                             |                                       |              |                        |
| Style B:                                                                                                                  | (R 3.57 Actual)                                                          |             |     | Skylights                                                                            |                                       |              |                        |
| Style C:                                                                                                                  |                                                                          |             |     | Style A:                                                                             | U 0.49                                |              |                        |
| Style D:                                                                                                                  |                                                                          |             |     | Style B:                                                                             | (R 2.04 Actual)                       |              |                        |
| Att.Docs:                                                                                                                 |                                                                          |             |     |                                                                                      |                                       |              |                        |
| Notes:                                                                                                                    | 96% Furnace; Min 0.8EF HWT                                               |             |     |                                                                                      |                                       |              |                        |
| Calculations Performed By                                                                                                 |                                                                          |             |     | I have reviewed and take responsibility for this design & am                         |                                       |              |                        |
| Name:                                                                                                                     | Alexis Dearie-Vonk                                                       |             |     | qualified as an "other designer" as required by the OBC 3.2.5                        |                                       |              |                        |
| Company:                                                                                                                  | New Res Hvac Design                                                      |             |     | as it relates to residential HVAC design.                                            |                                       |              |                        |
| Address:                                                                                                                  | 9 Hurontario Street                                                      |             |     | Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986                                            |                                       |              |                        |
| City:                                                                                                                     | Orangeville ON                                                           |             |     |  |                                       |              |                        |
| Postal Code:                                                                                                              | L9W 1Y8                                                                  |             |     |                                                                                      |                                       |              |                        |
| Phone:                                                                                                                    | 416-320-5870                                                             |             |     |                                                                                      |                                       |              |                        |
| Email:                                                                                                                    | <a href="mailto:alexis_dearie@hotmail.com">alexis_dearie@hotmail.com</a> |             |     |                                                                                      |                                       |              |                        |

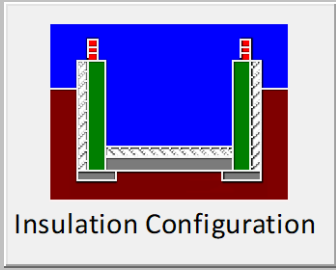
# Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description       |                                                           |                |    |    |
|-----------------------------------|-----------------------------------------------------------|----------------|----|----|
| Province:                         | Ontario ▼                                                 |                |    |    |
| Region:                           | Atx ▼                                                     |                |    |    |
| Weather Station Location:         | Open flat terrain, grass ▼                                |                |    |    |
| Anemometer height (m):            | 10                                                        |                |    |    |
| Local Shielding                   |                                                           |                |    |    |
| Building Site:                    | Suburban forest ▼                                         |                |    |    |
| Walls:                            | Urban ▼                                                   |                |    |    |
| Flue:                             | Hwy ▼                                                     |                |    |    |
| Highest Ceiling Height (m):       | 8.1                                                       |                |    |    |
| Building Configuration            |                                                           |                |    |    |
| Type:                             | Detached ▼                                                |                |    |    |
| Number of Stories:                | Two ▼                                                     |                |    |    |
| Foundation:                       | Full ▼                                                    |                |    |    |
| House Volume (m <sup>3</sup> ):   | 684                                                       |                |    |    |
| Air Leakage/Ventilation           |                                                           |                |    |    |
| Air Tightness Type:               | Present (1961-) (ACH=3.57) ▼                              |                |    |    |
| Custom BDT Data:                  | ELA @ 10 Pa. ▼ 865.32 cm <sup>2</sup><br>3.57 ACH @ 50 Pa |                |    |    |
| Mechanical Ventilation (L/s):     | Total Supply:                                             | Total Exhaust: |    |    |
|                                   | 30                                                        | 30             |    |    |
| Flue Size                         |                                                           |                |    |    |
| Flue #:                           | #1                                                        | #2             | #3 | #4 |
| Diameter (mm):                    | 0                                                         | 0              | 0  | 0  |
| Envelope Air Leakage Rate         |                                                           |                |    |    |
| Heating Air Leakage Rate (ACH/H): |                                                           | 0.349          |    |    |
| Cooling Air Leakage Rate (ACH/H): |                                                           | 0.081          |    |    |

# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

| Weather Station Description    |                                           |                                                                                                                     |
|--------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Province:                      | Ontario                                   | ▼                                                                                                                   |
| Region:                        | Ajax                                      | ▼                                                                                                                   |
| Site Description               |                                           |                                                                                                                     |
| Soil Conductivity:             | Normal conductivity: dry sand, loam, clay | ▼                                                                                                                   |
| Water Table:                   | Normal (7-10 m, 23-33 Ft)                 | ▼                                                                                                                   |
| Foundation Dimensions          |                                           |                                                                                                                     |
| Floor Length (m):              | 10.3                                      |  <p>Insulation Configuration</p> |
| Floor Width (m):               | 14.6                                      |                                                                                                                     |
| Exposed Perimeter (m):         | 49.8                                      |                                                                                                                     |
| Wall Height (m):               | 2.5                                       |                                                                                                                     |
| Depth Below Grade (m):         | 1.9                                       |                                                                                                                     |
| Window Area (m <sup>2</sup> ): | 1.9                                       |                                                                                                                     |
| Door Area (m <sup>2</sup> ):   | 0                                         |                                                                                                                     |
| Radiant Slab                   |                                           |                                                                                                                     |
| Heated Fraction of the Slab:   | 0                                         |                                                                                                                     |
| Fluid Temperature (°C):        | 33                                        |                                                                                                                     |
| Design Months                  |                                           |                                                                                                                     |
| Heating Month                  | 1                                         |                                                                                                                     |
| Foundation Loads               |                                           |                                                                                                                     |
| Heating Load (Watts):          |                                           | 1416                                                                                                                |