



Residential Heating, Ventilation and Air Conditioning Design Requirements

The City of Cambridge Building By-Law No. 116-05, as amended to date, requires heating, ventilation and air conditioning design to be submitted with the *Application for a Permit to Construct or Demolish*. The HVAC system shall be designed, constructed and installed to conform to good engineering practice.

Designer Qualifications

Persons (other than owners) who design and take responsibility for the design of HVAC systems in a house must be qualified. Qualification includes the successful completion of a legal/ process examination and the HVAC – House technical examination. The designer must include the following information on all documents respecting design activities as per Div. C- 3.2.5.1.(1)(c) of the Ontario Building Code:

- i) The persons name and any identifying number issued by the Ministry of Housing.
- ii) A statement that the person has reviewed and taken responsibility for the design activities, and
- iii) The person's signature

Please include **two (2)** sets of the following information with the Permit Application:

1. Heat Loss and Heat Gain Calculations

- Design conditions i.e. design temperatures, temperature differences, soil conductivity
 - Detailed heat loss and heat gain calculations on a room-by-room basis that indicate areas, R-values and factors for each component.
 - Building air leakage factors and calculations for heat loss and heat gain
 - Building ventilation heat loss and heat gain
- Please note: the typical soil conductivity in Cambridge is high and a factor of 1.3 is required unless a lot specific P.Eng. soil report identifying the soil type is provided with the submission.

2. Mechanical Ventilation Design Summary

- Provide a completed Residential Mechanical Ventilation and Heating/Cooling Design Summary form.
- Calculations are required for duct sizes lesser than listed in Section 9.32 of the Building Code.
- A dwelling with more than 5 bedrooms requires the mechanical ventilation design to comply with Part 6 of the Building Code.
- Include fan curve charts if duct sizes are designed in conformance with Part 6 of the Building Code.

Please call the Planning Services Department at 519.740.4613 if you have any further questions.