



## **Joint Building Services Department Radon Gas Mitigation Program**

**This program applies to all building permits applied for after  
June 1, 2017.**

**WHEREAS** Section 7 of the *Building Code Act*, 1992, S.O. 1992 c23 as amended authorizes a municipal council to pass a resolution respecting the adoption of a Radon Gas Mitigation Program.

**AND WHEREAS** pursuant to Section 3(3) of the Building Code Act the Municipalities of Grey Highlands and West Grey and the Townships of Chatsworth and Southgate (the "Parties") entered into a Joint Building Services Agreement;

**AND WHEREAS** pursuant to the Joint Building Services Agreement the Parties wish to implement the Radon Gas Mitigation Program, in accordance with Section 9.13.4.1(1) of the Ontario Building Code Regulations and Bill 11, Radon Awareness and Prevention Act, 2012;

**NOW THEREFORE** the Parties hereby wish to pass a resolution to implement the Radon Gas Mitigation Program.

### **The Radon Gas Mitigation Program aims to:**

- Create an effective radon gas mitigation program;
- Proactively address potential exposure to radon gas and to remediate the exposure levels to levels below guidelines;
- Reduce potential health risks to building occupants.

## What is Radon Gas?

Radon is a colourless, odourless and tasteless radioactive gas that forms when uranium in soil, rock and water breaks down. Radon gas seeps into homes and buildings through cracks and holes in floors and foundations.

Health Canada recommends that all buildings be tested for radon gas. Radon gas is the second leading cause of lung cancer after smoking.

## New Homes and Additions

The Radon Gas Mitigation Program is implemented in accordance with the Ontario Building Code Regulation Section 9.13.4.1(1).

### Minimum Provisions for Radon Ready

- Provide a minimum 100 mm (4") of granular fill under the basement floor slab
- Install a soil / gas barrier in accordance with Supplementary Standard SB-9
- Rough-in a soil gas pipe in accordance with Supplementary Standard SB-9

This will provide for the future connection of an extraction system should it become necessary.

An information package will be provided at the time the building permit is issued.

For new home owners, homes will be built in compliance with the minimum radon gas mitigation. All new homes in Ontario come with a new home warranty that is provided by your builder and backed by Tarion. This warranty also covers excessive radon gas levels in new homes.

## Radon Gas Testing Period

All radon gas test will consist of long-term tests (minimum 91 days) completed during the winter season, when windows and doors are generally closed and must be carried out by a **Canadian National Radon Proficiency Program (C-NRPP)** (<http://c-nrpp.ca/>) certified professional.

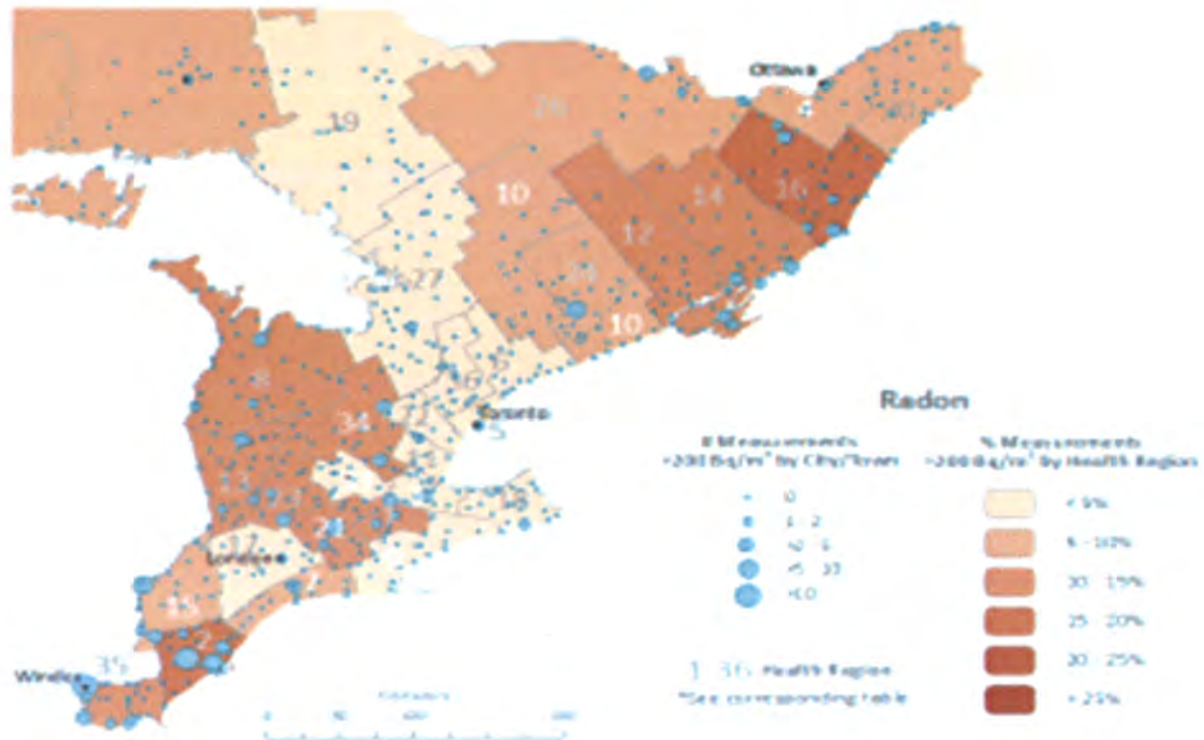
## Test Results

Where radon gas testing results come back over 200 becquerels per cubic meter (Bq/m<sup>3</sup>), the home owner may contact the builder and/or Tarion to discuss next steps.

## Radon Gas Testing in Existing Homes

Existing home owners may be advised that where construction is not proposed and individuals wish to have their homes tested for radon, test kits can be purchased voluntarily through certified agencies. A list of certified agencies can be found at the Canadian National Radon Proficiency Program (C-NRPP): <http://www.carst.ca/page-1859536>

## Radon Potential Map for Ontario







## **BUILDING REPORT**

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**To:** Mayors, Deputy Mayors, CAO's, Joint Building Services  
**From:** J. Acres, Director Building Facilities & By-law Services  
**Date:** August 18, 2016  
**Report:** 01-16  
**Subject:** **Radon Gas**

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### **Purpose of Report**

The purpose of this staff report is to inform the Board of Directors for Joint Building Services of the effects of Radon Gas in the home.

### **Background**

#### **What is Radon?**

Radon is a cancer-causing radioactive gas. You cannot see, smell or taste radon. It occurs naturally from the decay of Uranium. Radon enters buildings where it accumulates. Building occupants inhale the gas and are exposed to ionizing radiation. Ionizing radiation occurs when the Radon Isotopes and their progeny (daughters) decay. The inhaled gases and particles deliver a high internal dose directly to vulnerable lung tissue.

#### **Health Facts from Public Health Ontario**

Approximately 10 to 15% of all lung cancers are caused by radon.

13% of lung cancers (or almost 850 deaths) each year in Ontario alone is caused by radon.

#### **How does Radon enter the home?**

It's called Stack Effect: Air buoyancy caused by thermal variance and wind pressure cause air to be forced out of the building at the upper levels which reduces pressure on the lower levels causing suction and soil gas/vapour intrusion into subsurface structures (basement).

## **The Ontario Building Code speaks to Radon.**

The Ontario Building Code requires radon levels be controlled by design and construction in designated areas only.

- a) The Town of Elliott Lake in the Territorial District of Algoma.
- b) The Township of Faraday in the County of Hastings, and
- c) The Township of Hyman in the District of Sudbury.

In the Province there are three Relative Radon Hazard zones, Zone 1 – High, Zone 2 – Elevated and Zone 3 – Guarded.

Within our four municipalities the Radon Potential Map for Ontario indicates that some of our area is within Zone 3 (Guarded) while other parts of our municipalities are in Zone 1 (High)

## **How to mitigate Radon in the home**

Mitigation measures are quite simple to do in new construction and are relatively very inexpensive. To rough-in for a future radon reduction system should the need arise you would need the following:

A 4 inch diameter pipe which runs vertically through the floor at or near the centre of the basement. The bottom end of the pipe is open to the granular fill. The granular fill shall not be less than 6 inches in depth for a radius of not less than 12 inches centred on the pipe.

The top end of the pipe shall be provided with a removable seal and shall be clearly labeled to indicate that it is intended only for the removal of soil gas.

Its top end will permit connection to depressurization equipment

## **Recommendations**

Given the fact that some parts of our municipalities are within the Zone 1 High area, I would recommend the following:

- 1) That a budget be struck for public education on the effects of Radon, the need for home testing and potential mitigation measures.
- 2) That all new homes built within our four municipalities complete rough-ins for a future radon reduction system should the need arise.

## **Financial Impact**

The financial impact has not been determined at this time

## **Staffing Impact**

There are no staffing implications for the Corporation resulting from the proposed recommendation.

Respectfully submitted,

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John Acres, CBCO, CRBO, MLEO  
Director, Building, Facilities and By-law Services

Government of Canada (2015, October, 13). *Radon*. Retrieved from  
<http://healthycanadians.gc.ca/security-securete/radiation/radon/home-test-maison-eng.php>