

Naturally Occurring Elevated Radon

What is radon?

Radon is a colourless, odourless gas that is naturally occurring in the air we breathe. It is produced by the decay of radium and uranium, which are found in trace amounts in nearly all rocks, soil and groundwater as well as in some building materials.

How does radon get into a house?

Radon, produced by soils surrounding the house, can enter undetected through openings such as cracks and holes in the foundation. Other potential points of entry include open construction joints, gaps around utility fixtures, hollow support posts, floor drains that are not properly trapped, poorly installed window casements, uncovered sumps and dirt floors. Radon gas can build up in houses that are well insulated without adequate fresh air ventilation.

According to Health Canada, about seven per cent of all houses in Canada have naturally occurring elevated radon gas levels, that is, levels above 200 Becquerels per cubic metre (200 Bq/m³) in the normal living area.

Why is the Port Hope Area Initiative (PHAI) monitoring radon?

The PHAI's Property Radiological Survey is testing all Ward 1 and a few Ward 2 Port Hope properties for the presence of historic low-level radioactive waste. Six-month radon monitoring is the first step in the survey. Elevated radon levels in a house or building may indicate the presence of historic low-level radioactive waste in the ground, around or under the building or, possibly, in building materials.

How does the PHAI determine if elevated radon is naturally occurring and not the result of historic low-level radioactive waste?

If elevated radon levels are detected, the PHAI survey team will take a series of soil samples

from within a three-metre (10-foot) perimeter area surrounding the building. The soil samples will be analyzed for the signature elements of radium, uranium, thorium, and arsenic that indicate the presence of historic low-level radioactive waste. This unique "signature" makes it clearly identifiable to project staff. If historic waste is present above the PHAI clean-up criteria, it will be removed through the PHAI. However, elevated radon levels caused by natural conditions will not be mitigated by the PHAI, as this falls outside of the PHAI's mandate.

How can I reduce naturally occurring elevated levels of radon in my house?

There are a number of ways to reduce radon in your house. Improving ventilation and sealing radon entry points such as cracks, gaps and floor drains can help reduce radon levels. Another solution is a commonly used method known as sub-slab depressurization. A pipe is installed through the basement floor and is vented to the outside. A small fan is installed in the pipe to draw the radon gas from under the house and push it outside. This solution can reduce the radon level in a house by more than 90 per cent.

CNL encourages you to contact the following agencies for additional information about radon:

To find a certified radon professional:
Canadian National Radon Proficiency Program
www.c-nrpp.ca **1-855-722-6777**

Canadian Association of Radon Scientists and Technologists
www.carst.ca/memberlist **204-798-9649**

Health Canada – Radiation Protection Bureau
www.canada.ca/radon **1-866-225-0709**

