

## **RADON ASSESSMENT PROGRAM**

The District has proactively undertaken testing for radon gas in our buildings. This testing is a voluntary exercise to determine if any of the District's facilities have elevated levels of radon present following the Health Canada's guidelines and recommendations.

Radon is a gas that is formed naturally by the breakdown of uranium in soil, rock and water, which is colourless & odorless and cannot be detected by the senses. Radon can be detected with specialized monitoring devices. Radon usually escapes from the ground into the outdoor air where it mixes with fresh air resulting in levels too low to cause concern. When radon enters an enclosed space, such as in buildings with inadequate ventilation levels could accumulate to higher concentrations which becomes a concern.




### **Phases & Testing**

As part of the District's due diligence, a five year proactive program approach to testing for radon gas started in 2015 across every school in the District.

Phase	Year	# Schools	Positive
Phase I	2015	22	0
Phase II	2016	33	2
Phase III	2017	35+ 2	1
Phase IV	2018	30+3	
Phase V	2019	27	

\* Subject to change as program is implemented

Health Canada recommends that remediation measures should be in place within two years for **average annual** radon levels in excess of 200 Bq/m<sup>3</sup>, and one year for levels in excess of 600 Bq/m<sup>3</sup>. The testing is only the first step of the program and any school exceeding the Health Canada limits will immediately be assessed for proper ventilation and re-verified.


Average Annual Radon Measurement - Remediation Action		
<200 Bq/m <sup>3</sup> No Action Required	200-600Bq/m <sup>3</sup> Remediate within 2 years	>600Bq/m <sup>3</sup> Remediate within 1 year
		

SCHOOLS PER PHASE OF RADON TESTING				
Phase I	Phase II	Phase III	Phase IV	Phase V
2015/16	2016/17	2017/18	2018/19	2019/20
Adrienne Clarkson	A. Lorne Cassidy E.S.	Alta Vista P.S.	Carson Grove E.S.	Administration Bld.
Avalon P.S.	A.Y. Jackson S.S.	Arch Street P.S.	Confederation Centre	Agincourt Road P.S.
Bayshore P.S.	Albert Street Centre	Bayview P.S.	Convent Glen E.S.	Bell H.S.
Bells Corners P.S.	Barrhaven P.S.	Brookfield H.S.	Dunning-Foubert E.S.	Broadview Avenue P.S.
Blossom Park P.S.	Berrigan E.S.	Cambridge Street P.S.	* Elmdale P.S.	Churchill A.S.
Cairine Wilson S.S.	Briargreen P.S.	Canterbury H.S.	Emily Carr M.S.	D. Roy Kennedy P.S.
Chapman Mills P.S.	Bridlewood Community	Carleton Heights P.S.	Fallingbrook Comm. E.S.	Findlay Creek E.S.
Colonel By S.S.	Castlefrank E.S.	Castor Valley E.S.	Forest Valley E.S.	Half Moon Bay P.S.
General Vanier P.S.	Cedarview M.S.	Centennial P.S.	Glen Ogilvie P.S.	J.H. Putman P.S.
Gloucester H.S.	Crystal Bay Centre	Charles H. Hulse P.S.	Henry Larsen E.S.	Knoxdale P.S.
Henry Munro M.S.	Earl Of March S.S.	Clifford Bowey P.S.	Heritage P.S.	Lakeview P.S.
Jockvale E.S.	Elizabeth Wyn Wood A.S.	Connaught P.S.	Hillcrest H.S.	Meadowlands P.S.
Le Phare E.S.	Farley Mowat P.S.	Devonshire P.S.	Hopewell Avenue P.S.	Merivale H.S.
Leslie Park P.S.	Frederick Banting S.A.	Dunlop P.S.	* Jack Donohue P.S.	Munster E.S.
Manordale P.S.	Glen Cairn P.S.	Elgin Street P.S.	Kars on the Rideau P.S.	Pinecrest P.S.
Richmond P.S.	Goulbourn M.S.	Elmdale P.S.	Manotick P.S.	Regina Street P.S.
Roch Carrier E.S.	Huntley Centennial P.S.	Featherston Drive P.S.	Maple Ridge E.S.	Sawmill Creek E.S.
Rockcliffe Park P.S.	Jack Donohue P.S.	Fielding Drive P.S.	Metcalfe P.S.	Severn Avenue P.S.
South March P.S.	John Mccrae S.S.	First Avenue P.S.	Norman Johnston A.S.	Sir Robert Borden H.S.
Stonecrest E.S.	John Young E.S.	Fisher Park P.S.	Orleans Wood E.S.	Sir Wilfrid Laurier S.S.
Vincent Massey P.S.	Katimavik E.S.	Glashan P.S.	Osgoode P.S.	Sir Winston Churchill
W. Erskine Johnston	L.D. Heights H.S.	Glebe Collegiate Inst.	Osgoode Township H.S.	Stittsville Depot
	Mary Honeywell E.S.	Greely E.S.	Ottawa Technical S.S.	Summerside P.S.
	North Gower P.S.	Hawthorne P.S.	Pleasant Park P.S.	Terry Fox E.S.
	Roland Michener P.S.	Hilson Avenue P.S.	Queen Elizabeth P.S.	Trillium E.S.
	Sir Guy Carleton S.S.	* Jack Donohue P.S.	Queen Mary Street P.S.	Woodroffe Avenue P.S.
	South Carleton H.S.	Kanata Highlands P.S.	Ridgemont H.S.	Woodroffe H.S.
	Stephen Leacock P.S.	Lady Evelyn A.S.	Riverview A.S.	
	Steve Maclean P.S.	Lisgar Collegiate Inst.	Robert Bateman P.S.	
	Stittsville P.S.	Manor Park P.S.	Robert E. Wilson P.S.	
	The Adult H.S.	Mutchmor P.S.	Robert Hopkins P.S.	
	W.O. Mitchell E.S.	Nepean H.S.	Roberta Bondar P.S.	
	West Carleton S.S.	Richard Pfaff S.A.	* Roland Michener P.S.	
	Westwind P.S.	* Roland Michener P.S.		
		Viscount Alexander P.S.		
		W.E. Gowling P.S.		
		York Street P.S.		
<b>22</b>	<b>34</b>	<b>35 + 2</b>	<b>30</b>	<b>27</b>

\* Re-test

## Testing Process

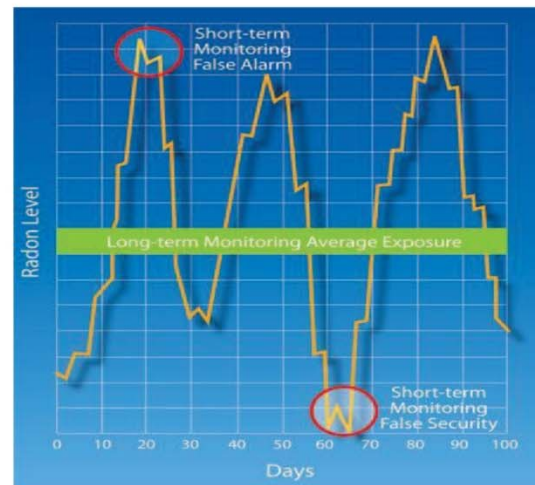
Attached is an electronic copy of your school's floor plans indicating the proposed room locations for the installation of the Alpha-Track radon gas detector devices. These devices will be suspended from ceilings to be out of the reach of the children during this process. The devices are placed in all of the **highly** occupied rooms by an individual for more than 4 hours per day (Classrooms & Offices) on the lowest floor levels of the school & every 3<sup>rd</sup> highly occupied rooms for the levels above, if there is more than one floor level as per Health Canada's Guide for Radon Measurements in Public Buildings.

	Device
	Alpha-Track radon gas detector
	Size
	3" dia x 2" high

Monitoring devices are placed in normally in highly occupied spaces (Classrooms, Main Office, Staff Rooms, etc) for a minimum of 91 days or 3 months and recommended over the winter months during the heating season. Long term testing is the only accepted measure under the Heath Canada's guidelines, since levels could fluctuate over time and any short term test could result in false readings.

## WHY LONG-TERM TESTING?

- **Indoor radon levels vary greatly, even over a 24 hour period**
- **Several factors including building design, building condition, occupancy pattern etc. influence radon levels in a house**
- **Two houses built side-by-side can have different indoor radon levels**
- **So, measurements gathered over a longer period of time will provide a better estimate of the annual average exposure**



Long term measurement period (minimum of 91 days) will provide a more accurate indication of the annual average radon concentrations than a short measurement and during the heating season and higher radon level are usually observed during the winter months/season.

The winter season test results are expected to be received in April/May with a report following in June. Once copies of the results are received by the District, they will be reviewed and shared with the school, staff and central Joint Occupational Health and Safety Committee. Two (2) hard copies of the final report will be sent through internal mail to each school's attention. One copy should be stored in the custodian's DSSR (Designated Substances Survey Reports) inventory binder and the second copy shall be posted on the Health and Safety board or the main office.

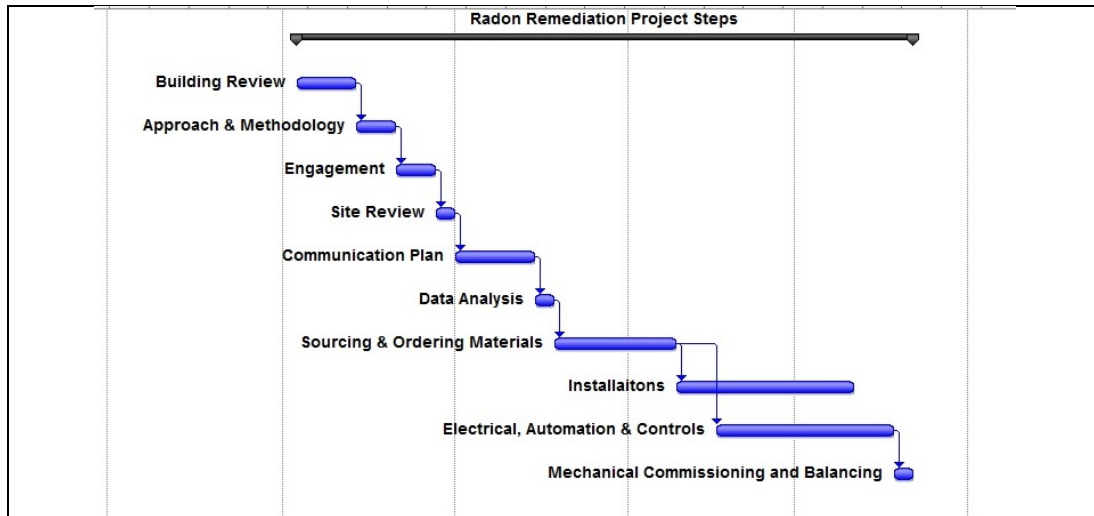
## **Remediation**

In the event of a positive result, the District will promptly review the mechanical systems to determine if there are any deficiencies within the ventilation system(s) since the building functions as a whole and could contribute to elevated concentrations of radon gas due to poor ventilation. If no deficiencies are discovered, the mechanical systems would be reviewed for possible upgrades or improvements to the ventilation levels throughout the school or areas of concern to reduce the radon levels. There has been evidence through subsequent testing undertaken at an affected school, that ventilation improvements or re-balancing/re-commissioning of mechanical systems may be successful in reducing the background radon levels.

For schools or buildings with radon concentrations in excess of the allowable limits, a building specific radon gas mitigation plan will be put into place and actioned, in order to reduce the levels and meet the recommendations as set out by Health Canada. As part of the remediation plan, short term testing may be conducted to determine if the approach / remediation is successful, with monitoring continuing on an annual basis to ensure that the remediation actions are effective. The installation of a Sub-Slab Depressurization system may be an effective way to negatively depressurize or vent the radon gas directly to the exterior, reducing the risk of radon from entering the building.



The process of implementing a complete mitigation plan varies depending on the size and complexity of the building/school with the following steps and could span across several months.



Radon Remediation Project Steps

It is a requirement that all measurement and mitigation professionals be certified under the Canadian National Radon Proficiency Program (C-NRPP). Currently the District has engaged the services of CM3, Greenough Environmental & EHS Partnerships Ltd as certified (C-NRPP) environmental consultants to support this program.

The District has developed a Radon Assessment Program flow chart which indicates all the steps, stages and actions as part of the program and should be posted with this information package on the schools Occupational Health and Safety bulletin board.

Included is a form letter, developed to assist schools to communicate and inform communities, which would have to be tailored with the specific results and steps the District will be taking to remediate the radon levels within the school.

Further information is available on the Health Canada's website through the following links:

<https://www.canada.ca/en/health-canada/services/environmental-workplace-health/radiation/radon.html>

<https://www.takeactiononradon.ca/test/ontario>

Should you have any questions or concerns, please contact Daniel Fournier, Project Officer 613-596-8211 ext. 8690 or Daniel.Fournier@ocdsb.ca.