



Radon Testing and Mitigation

Lesson Radon is a serious health threat in homes throughout Minnesota. Radon is the second leading cause of lung cancer in the United States, claiming approximately 20,000 lives annually.

Goal Achieve radon levels consistent with public health guidelines (under 4 pCi/L) in all living spaces.

What Happened On Viking Terrace, radon testing and mitigation was not completed when they developed the original scope of work. Unusual funding sources required additional environmental testing, including radon, and some units had high test levels (above 4 pCi/L). Several mitigation options were explored. The cost of mitigation was reasonable and ultimately the system used was relatively simple. Mitigation decreased radon levels dramatically below the recommended levels set by the EPA. Southwest Minnesota Housing Partnership, who works in the southwest corner of the state with some of the highest radon levels in Minnesota, has made it standard practice to expect radon is in every building and to include mitigation in every work scope and project budget. They include passive radon mitigation on all new construction projects, and use short-term tests on rehabilitation projects, mitigating with an active radon mitigation system if levels are above 4 pCi/L.

Recommendations Test for radon if you are completing a rehabilitation project in Minnesota. Radon is the second leading cause of lung cancer, and most of Minnesota—including all of the most populous areas—are in high-risk locations. Testing is simple and inexpensive. A ten-day, \$10 test is adequate to confirm situations where radon is not a problem.

In cases where radon mitigation is necessary to achieve the goal (levels below 4pCi/L), it is relatively simple and inexpensive when undertaken during construction. Engaging a radon mitigation expert is recommended on multifamily projects. A typical mitigation program includes a stack or pipe running from below the basement slab up through the roof to vent soil radon before it enters the home.

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Relevant Green Communities Criteria:

7.11b Basement and Concrete Slabs—Radon Mandatory for new construction and substantial rehabilitation

For substantial rehab, test the homes or building for presence of radon. If elevated levels of radon exist, introduce radon-reduction measurements.

Check technical guidance at www.epa.gov/iaq/radon/pubs/index.html.



Viking Terrace, Worthington



Recommendations
(continued)

Often any holes or cracks in the slab are sealed, and if adequate pressure is not attained passively, a fan may also be installed to increase negative pressure under the slab to draw the air out.

On Viking Terrace, three buildings (containing 60 units of housing) were mitigated for approximately \$30,000.

Take Away

It's easy and inexpensive to test for radon and affordable to mitigate when a problem exists.

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LESSONS LEARNED Minnesota Green Communities Demonstration Projects

This publication is part of a series of lessons learned originating from Minnesota Green Communities demonstration projects. The Minnesota Green Communities initiative is currently the largest green building program in Minnesota, with 497 units completed, 908 under construction, and another 1,645 under development. Eight demonstration projects were funded through the Minnesota Green Communities program. The initiative is completing building performance testing on the demonstration projects, and has gathered lessons learned in several areas.

The Lessons Learned series includes the following publications: Integrated Design, Multifamily Green Rehabilitation, Construction Training and Monitoring, Ductwork, Duct Design, Duct Sealing, Kitchen Ventilation, Radon Testing and Mitigation, Pressure Balancing Between Rooms, Water Efficiency, and Cost Increase Triggers in Plans and Specifications. All publications can be found online at www.mngreencommunities.org.

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Minnesota Green Communities, a collaboration of the Greater Minnesota Housing Fund, the Family Housing Fund, and Enterprise, is an initiative designed to foster the creation of affordable, healthier, and more energy-efficient housing throughout Minnesota. The initiative will support the production of affordable housing with markedly reduced energy costs, use of materials beneficial to the environment, conservation-minded land use planning, and attention to the creation of healthy environments and lifestyles for individuals, children, families, and communities. For more information, please visit www.mngreencommunities.org.

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