

# Building a new home? Have you considered radon?

**IF** you are building a new home, you are no doubt making a lot of decisions regarding the number of bedrooms, kitchen layout, closets, etc. But have you considered addressing radon? In the Johnson County area, you should, as EPA has designated Johnson County as "Zone 1" (high potential) for radon.

## TALK TO YOUR BUILDER

**YOU** and your builder can design your house to be radon resistant. In the Johnson county area, as of this publication date (September, 2005) radon-resistant features added to your house prior to construction might average only \$100-\$250. If you add the system after construction, however, the approximate cost for this area is about \$850-\$1000.

## WHAT ARE RADON-RESISTANT FEATURES?

- \* **Install** a 4" layer of gravel beneath the floor slab. This is already done in many cases.
- \* **Lay** a sheet of 6-mil polyethylene sheeting on top of the gravel layer.
- \* **Install** a 3-4" gas-tight or PVC pipe, which runs from the gravel through the house to the roof, where it safely vents radon and other soil gases above the house.
- \* **Install** an electrical junction box in case an electric venting fan is needed later.

*Architectural blueprints and drawings for installing radon-resistant new construction are available through the Johnson County Environmental Department.*

## WHY BUY A RADON-RESISTANT HOME?

1. **Health reasons.** Radon is the second-leading cause of lung cancer, behind smoking, and causes an estimated 21,000 lung cancer deaths each year, according to EPA.
2. **The techniques work.** Simple and inexpensive techniques reduce radon levels by an average of 50%. They may also help to lower other types of soil gases and decrease moisture problems.
3. **It's cost-effective.** Having the system installed as part of construction is cheaper and easier than having it done after the house is built.
4. **Saves money.** These techniques also help make your home more energy efficient.
5. **Upgrading is easy.** If high levels are found after the house is built, a fan can be added to the system near the junction box installed as part of the system.



# Radon in Johnson County

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- Radon is a naturally occurring radioactive gas produced by the breakdown of uranium in soil, rock, or water.
- Radon can be a problem in any type of home. New or old, drafty or well-insulated, with or without a basement.
- Radon is measured in picoCuries per liter of air (pCi/L), a unit of measurement for radiation in a given volume of air. The Environmental Protection Agency (EPA) has established an "action level" of 4 pCi/L for radon. EPA believes that further action is warranted should any home exceed that level.
- Real estate sales are the primary driving force for radon tests in Johnson County.
- Testing is the only way to determine the existence of radon in any particular home. There is no way to test a vacant lot for radon prior to new construction. The house must be in place before a valid radon test can be performed.
- The highest confirmed radon reading in Johnson County to date is about 137 pCi/L.
- Mitigation costs in the Johnson County area to an existing home are reported to be in the \$100-\$1000 range, depending on the level of radon in the home and the correction techniques used.
- Radon does not cause headaches, flu, colds, etc. As it is radioactive, it has only been linked to lung cancer and is the second leading cause of this disease, after smoking.

## WHAT CAN I DO ABOUT RADON IN MY HOME?

1. **Don't panic.** You usually have adequate time to act on radon and it can be dealt with usually without great expense.
2. **Test** when the house is closed up, either in winter or when the air conditioner is operating.
3. **Arrange** for radon measurement. You can buy a kit from the Environmental Department, local retail stores, or a radon testing company.
4. **Test**, using a short-term test, usually 2-5 days. Be sure to follow the directions.
5. **If the first test** is between 4-10 pCi/L, and you need the follow-up test quickly, such as in a real estate sale, conduct another short-term test. If you have time, the best results can be obtained with a long-term test, but this takes several months to one year.
6. **If the first test results** were 10 pCi/L or above, do the follow-up measurements with another short-term test. If this second test confirms a reading above 10 pCi/L, corrective action should be taken as soon as possible.
7. **EPA** recommends that corrective action be taken if the results are above 4 pCi/L.
8. **Corrective measures** may be as simple as filling cracks in basement walls or floors. Or you may need the help of a professional contractor that has attended a radon proficiency course.
9. **Questions?** Contact the Environmental Department by phone (913-715-6900), fax(913-715-6970), e-mail (env-admin@jocogov.org), or our website: <http://www.sharetheair.com> for more information.

The Environmental Department has these publications available at our office or our website:

"Buying a New Home? How to protect Your Family From Radon"

"Citizens Guide to Radon"

"Radon—A Physician's Guide"

"Home Buyer's & Seller's Guide to Radon"

Short-term & Long-term test kits are also available for sale.

## NEED MORE INFORMATION?

You can find additional information on radon and other indoor air quality questions at the following websites:

- Johnson County Environmental Department:  
<http://www.sharetheair.com>
- National Center for Environmental Publications and Information (NCEPI):  
<http://www.epa.gov/ncepihom/>  
Or call 1-800-490-9198
- EPA's Indoor Environments Division:  
<http://www.epa.gov/iaq>

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