



## Radon Reminder

With the construction season in full swing, this is a good time to issue a reminder regarding the presence of radon in the Fairbanks area. In brief, radon is a radioactive soil gas that is produced by the natural breakdown of uranium in the ground. The Surgeon General's office estimates that as many as 20,000 lung cancer deaths per year are caused by radon, ranking it second only to smoking. In 2011, the minimum level of exposure was 4 pCi/l (picocuries per liter), however this number should by no means be interpreted as a "safe" level of exposure.

Unfortunately in Fairbanks, many hillside home sites have concentrations of radon much higher than the minimum exposure level and so these areas are particularly at risk – although radon can occasionally be a problem in low lying areas too. On the bright side, the issue can be dealt with relatively easily during the foundation stage. As a general rule, if you are building in an area where radon is a concern, it is far cheaper to install a mitigation system than to run the risk and increased expense of having to deal with a potential problem later.

Typically a basement slab is poured over a non-frost susceptible (NFS) layer of gravel or crushed rock, which is imported to help with drainage and foundation leveling. To cope with radon, an interconnected series of 4" perforated drain pipes is run through this porous layer of fill. Depending on the size of the house, the pipes will skirt the inside perimeter of the foundation and possibly also run through the center of the slab. The piping ties into a common exhaust point stubbed out at a predetermined location in the floor such as under the stairs. Once the slab is poured and the house is finished, an inline exhaust fan is connected to the exhaust pipe. The fan functions to pull the air from under the slab and exhaust it safely out of the house - typically through the roof.

2011 building codes require plastic sheeting be installed over the ground before the slab is poured to control ground moisture. This sheeting also serves as an effective air barrier for radon gas and should also extend under the footings and/or beneath any load bearing pads before they are poured. The sheeting should be well sealed around all penetrations in the floor, such as plumbing drains, and electrical service wires. In many cases, a properly installed ground vapor barrier will make enough of a difference that the depressurization fan doesn't get turned on, however this can only be determined once the house is closed in and radon levels can be measured.

More information can be found on the UAF Cooperative Extension Service (CES) website: [www.uaf.edu/ces](http://www.uaf.edu/ces).