

# The Creepy Room

Nearly one half the members of Egyptian Electric Cooperative have a room in their house that 1) they seldom go into, if ever and, 2) it has several 8-inch by 16-inch holes through the walls directly to the outside. And although they seldom go into this room, spiders, snakes, mice and other varmints may frequent it on a regular basis. In the winter it's a nice warm home and in the summer, it's a cool spot. Quite often, a supply of water is available. If you haven't figured it out by now, I'm talking about that mysterious, creepy room we call a crawl space. Oh, by the way, I forgot to mention that in addition to those unwanted tenants that may be occupying your crawlspace, radon, methane and mold might be living there as well. I recently read an article in Home Energy magazine written by David Hales, a building systems and energy specialist at Washington State University, that brought to light many issues with crawl spaces that I've had concerns with for many years.

Historically, most crawl spaces have been vented to the outside. In fact, until recently, most building codes required venting. Before the advent of central air conditioning and the placement of duct systems in crawl spaces, this didn't present a major concern beyond energy efficiency, and with cheap energy, that wasn't really a concern either. Today, most all homes are air-conditioned and when there's a crawl space present, it seems that's where the ductwork goes. The problem in high humidity climates like southern Illinois is that the temperature of the air, when air conditioning, is around 52 degrees, well below the dew point. If the ductwork is not properly sealed and insulated, condensation occurs.

According to Mr. Hales, walls in below-grade crawl spaces get wet. As they cannot dry to the exterior,



they must dry to the interior. If Kraft-faced fiberglass batts are used, then the insulation cannot dry out and real problems can develop. We used to think this was generally a winter-time problem, but with high summer humidity and the crawlspace vented to the outside, it is actually a year-round issue.

One issue to keep in mind in southern Illinois is radon gas. Radon is an odorless, tasteless and invisible gas produced by the decay of naturally occurring uranium in soil and water and is a proven carcinogen. The EPA recommends action if the radon level in a home is over four pCi/L (picocuries per liter).

Hales found that 40 percent of the air in a home with a vented crawlspace originated in the crawlspace. Stack effect, warm air rising upward, sucks air out of the crawlspace into the home. A sealed crawlspace lowers this percentage, but also runs the risk of elevated radon levels as there is less dilution.

## So, how do you take the creep out of the creepy room? Here are some tips:

- Make sure there is a continuous vapour barrier on the floor. Use 6-mil black polyethylene as a minimum, with it turned 6 inches up the sides and sealed to the walls. All seams should be overlapped 6

inches and taped.

- Slope the floor to a sump pump and pump to the outside if there is a high water table or periodic flooding.
- Make sure the exterior grade slopes away from the building and all gutter downspouts are drained away from the foundation.
- Don't vent dryers or bathroom vent fans to the crawl space.
- Remove all wood, cardboard or organic material from the crawlspace and do not use it for storage.
- Seal all perforations through the crawlspace sub-floor with caulk or expanding foam.
- Insulate the side walls and wood sills with 2 inch expanded polystyrene ("blue" or "pink" board), R-10, or have commercially applied open or closed cell foam sprayed on exterior foundation.
- Install a power vent in the crawl space sized to supply 1 CFM for every 50-square foot of crawl space area if radon levels have been found above accepted levels.
- Consider using insulated concrete forms (ICF) instead of traditional poured concrete or concrete block foundations.

Once a vapour barrier and foundation insulation have been installed, the 2009 International

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