

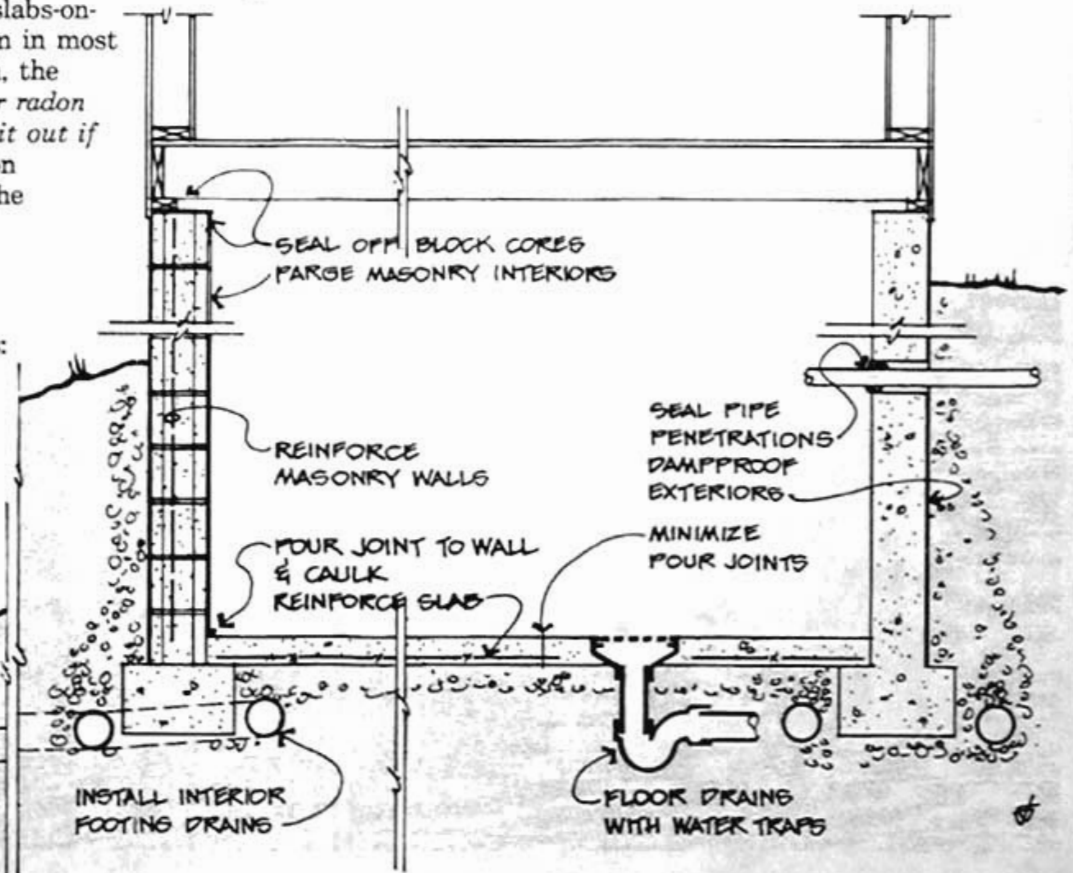
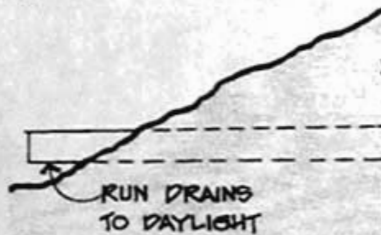
Keeping Radon Out of New Houses

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What can be done to prevent radon problems in new houses? The first line of defense is to limit paths from the soil into the building. There is little risk that radon will get into a house built on piers or a well-vented crawlspace. But slabs-on-grade and basements are the norm in most of the country. In all construction, the main rule is this: *Make it hard for radon to get in and easy for you to get it out if it turns up.* These radon-prevention guidelines apply to key areas of the structure:

Slabs

- Minimize the number of pours: make as few joints as possible.
- Pour the slab right up to the basement wall.
- Caulk perimeter crack and control joints with polyurethane.
- Reinforce slabs with wire mesh to help prevent large cracks.



Sub-slab

- Drain to daylight if possible, or to a drywall, or sewer. If you must use an interior sump pump, seal it and vent it to outdoors.
- As a precaution, use interior footer drains (in addition to exterior drains) and 4 inches of #2 stone below the slab that drains to the building exterior. This way, sub-slab ventilation can be added easily in case a problem is discovered later.

Floor drains

- Use solid pipe to daylight openings, or use water traps in floor drains that empty into interior or exterior drains.

Walls

- Reinforce concrete and block walls to minimize cracks.
- Dampproof the exterior of the

foundation (block in particular) to slow the diffusion of radon gas.

- Seal the top of hollow block walls with ethafoam sill sealer and butyl caulk.
- Coat the interior of block walls with epoxy paint or parging.
- Seal around any pipe or electrical penetrations with polyurethane caulk.

radon concentrations in buildings can vary greatly hour to hour, and at different times of the year. The most common device for this job is a passive track-etch monitor. An exposure time of at least one month is recommended for these. Track-etch detectors are small, accurate, and easy to use. They are also relatively inexpensive.

It is a good idea to take readings in the basement or crawlspace and in the living room. You can get an idea of whether or not the house has a problem by comparing the results of your

measurements to current standards (see the standards table, 5/85).

If you find a problem, don't panic. A number of methods have successfully lowered high radon concentrations. Most involve sealing the radon entry points and ventilating as near to the source as possible.

Pinpointing the sources

A look around the basement can give you a list of potential sources. Any hole that goes through the foundation to the surrounding soil is a good candidate.

Examples are sump holes in slabs, cracks around plumbing or wiring, cracks in walls and slabs, exposed earth, or crushed-stone floors. These allow radon to diffuse directly from the soil into the basement and can be large radon sources. Cracks and holes often introduce more radon gas than does diffusion through a solid material.

Track-etch monitors, which can fit inside cracks as small as an inch wide, can help you locate the main entry points. For example, in one house with an average basement air concentration of about