

When to Consider a Radon System Upgrade for Your Home

If you own a home with an existing radon mitigation system, you have already taken the most important step toward reducing your family's exposure to radon gas. But like any mechanical system, a radon mitigation system does not run forever without attention. Fans wear out, pipes develop cracks, and the ground around your foundation can shift over time. Knowing when to plan a radon system upgrade can save you from higher repair costs down the road and keep your indoor air as safe as possible.

I have worked on hundreds of radon systems across St. Louis, and I can tell you that the most common question I hear is, "My system is still running, so is it working?" The short answer is maybe, but not necessarily. A fan that sounds fine can still lose efficiency, and a manometer that shows a steady reading might be hiding a slow leak in the vent pipe. That is why a regular radon inspection matters, and why a targeted radon system upgrade can restore performance without replacing everything.

How a Radon Mitigation System Works

Most homes in St. Louis with a radon problem use a method called sub-slab depressurization, also known as active soil depressurization. A radon fan is installed in the basement or crawlspace, connected to a suction pit dug below the concrete slab. The fan pulls air from beneath the house, creating a negative pressure zone that prevents radon from migrating through radon entry points like cracks, sump openings, or gaps around pipes. The radon-laden air is then vented through a radon vent pipe that exits above the roofline, where the gas disperses harmlessly into the atmosphere.

It is a simple but robust design. The key components are the fan, the pipe, the suction pit, and a monitoring device - usually a U-tube manometer or an electronic radon monitor. The manometer shows the pressure difference the fan is creating. If that reading drops or goes to zero, something is wrong. But even if the manometer looks normal, the system may still be underperforming due to a worn fan motor, a cracked pipe, or a suction pit that has become blocked with debris over years of use.

Signs You May Need a Radon System Upgrade

Not every issue requires a full system replacement. Sometimes a simple fan replacement solves the problem. But there are a few clear signs that a broader [radon system upgrade](#) is worth considering.

First, if your system is more than ten years old and the fan motor is the original unit, you are running on borrowed time. Older fans were less energy-efficient and more prone to condensate bypass issues. Newer fans are designed to handle moisture better and use less electricity. Upgrading the fan alone can improve system performance and cut your utility bill slightly.

Second, if you have recently completed major renovations - new siding, a new roof, or foundation work - the radon vent pipe may have been disturbed. Sometimes a pipe gets disconnected or crushed without anyone noticing. A radon system upgrade can involve replacing a section of pipe or rerouting it to avoid future damage.

Third, if you have tested your indoor radon levels and they are higher than they were when the system was installed, that is a red flag. It could mean the system is not pulling enough air from beneath the slab. A radon test kit or an electronic radon monitor will give you a reliable reading. If levels have crept up, do not ignore it. A professional radon inspection can identify whether the problem is a failing fan, a leak in the pipe, or a change in soil conditions around the suction pit.

Fourth, if your manometer has not moved in years and you have never replaced the fluid or checked it, the device itself might be giving a false reading. A U-tube manometer is simple, but it can become clogged or the fluid can evaporate. Electronic monitors require battery changes and calibration. Part of a radon system upgrade can include installing a more reliable monitoring setup so you always know what your system is doing.

What a Radon System Upgrade Actually Involves

I want to clear up a common misconception: a radon system upgrade does not mean tearing out everything and starting over. In fact, that is rarely necessary. Most upgrades focus on the components that wear out or become outdated.

The most common upgrade is fan replacement. Fans have a typical lifespan of five to ten years, depending on model and operating conditions. Newer fans are quieter, more efficient, and better at handling moisture. A good upgrade will match the fan to the specific size of your home and the soil type beneath it. A fan that is too small will not create enough suction; one that is too large can cause excessive noise and wear out faster.

Another frequent part of an upgrade is improving the condensate bypass system. In cold weather, moisture in the warm air pulled from under the house can freeze inside the vent pipe, blocking airflow. A properly designed condensate bypass allows water to drain away before it reaches the fan, preventing ice buildup and fan damage. If your system has had recurring freeze issues, a radon system upgrade that adds or improves the bypass can save you a lot of headache.

Sometimes the upgrade involves the suction pit itself. Over time, the pit can fill with dirt, gravel, or even small roots. If the pit is too shallow or has collapsed, the fan will not be able to pull enough air. A radon system upgrade might involve excavating a new suction pit or deepening the existing one. This is a bigger job, but it can dramatically improve system performance.

Sealing cracks is another task that often accompanies an upgrade. Even the best fan cannot overcome a house that has large new openings in the foundation. A thorough radon inspection will identify radon entry points that need caulking or sealing. This step is relatively inexpensive but can make a huge difference in how well the system works.

Why St. Louis Homeowners Should Pay Attention

St. Louis sits on a geologic formation that produces moderate to high levels of radon. The soil here is a mix of clay and limestone in many areas, which can allow radon to migrate easily through the ground. Many homes built before 2000 did not include any radon-resistant construction, so the mitigation systems that were installed later are often the only thing standing between you and elevated radon levels. That is why a working system matters here more than in some other parts of the country.

Air Sense Environmental has been servicing St. Louis radon systems for years, and they see the same patterns over and over. A system that was installed correctly but never maintained will eventually fail. A radon system upgrade, done by a qualified contractor, can extend the life of your system by another decade or more. It is also worth noting that many mitigation system warranties require regular maintenance and inspections to remain valid. Neglecting the system could void the warranty, leaving you to pay for a full replacement out of pocket.

How to Plan for an Upgrade

If you think your system might need an upgrade, start with a radon test. You can buy a radon test kit at most hardware stores or order an electronic radon monitor online. Run the test according to the instructions, usually over a few days to a week. If your results are above 4 picocuries per liter, the Environmental Protection Agency recommends taking action. If your system is already in place and still reading above that level, you have a problem that needs fixing.

Next, call a professional for a radon inspection. They will check the fan, the pipe, the manometer, and the suction pit. They can also perform a smoke test to see if air is being drawn from under the slab properly. Based on what they find, they can recommend whether a simple fan replacement will do or whether a full radon system upgrade is a better investment.

Do not wait until the system stops completely. A gradual decline in performance is harder to notice but just as dangerous as a sudden failure. By the time you notice a problem, radon

levels may have been elevated for weeks or months. Regular testing and periodic upgrades are the best way to protect your home.

Final Thoughts

A radon mitigation system is not a set-it-and-forget-it solution. It is a piece of mechanical equipment that needs attention, just like your furnace or air conditioner. But with the right care and an occasional radon system upgrade, it can keep your family safe for many years. Whether you need a new fan, a better condensate bypass, or a full inspection and seal of your foundation, taking action now is cheaper and easier than dealing with a failed system later.

If you live in St. Louis and have questions about your system, reach out to a local expert like Air Sense Environmental. They know the local soil, the common installation quirks, and the best equipment for the job. A well-planned radon system upgrade is one of the best investments you can make in your home's indoor air quality.