

Proper Ventilation Can Keep Your Home Comfortable and Healthy



By Gordon White

People experiencing comfort issues often assume that the problem resides in their HVAC system. Not cool enough? The air conditioner must be in need of a tune-up. Too much or too little humidity? A homeowner might assume that a component in the air conditioner might be acting up. However, sometimes, the cause of the trouble might be rooted in the ventilation system of a home.

The ventilation system is responsible for carrying and distributing conditioned air around the home. This means that if the ventilation in a home is subpar, cooled air will not be moved around the house as it should, even if the air conditioner is working perfectly. This can lead to uncomfortable homes, more dust, subpar humidity control, and other issues.

Duct Design

The design of the ductwork has a massive impact on the quality of a home's ventilation. It might be tempting to view ductwork a little like an electrical wire, which can bend and twist without affecting the flow of electricity. However, ductwork is not as forgiving as electrical wire. Even though the ductwork is moving air, if the design has too many sharp turns, the flow of air will be restricted. When examining ductwork, a quality contractor will use advanced mathematics to calculate how much ventilation a home needs and whether the ductwork is correctly meeting the need.

Duct Quality

The quality of ductwork will also have an important effect on how well air is ventilated through the home. One aspect of the ductwork's quality is how much it leaks, whether that be through holes, severe dents, or improper and unsealed connections between two ducts. If the air is leaking out of the ductwork, then it is not getting to its intended destination, potentially leading to uncomfortable rooms. Keeping ductwork clean will also improve ventilation, as systems that collect large amounts of dust will make it harder for clean air to flow throughout the home.

Air Handling Unit Issues

Air handlers are designed to move air around a home, working in tandem with air conditioners and furnaces to deliver air around the home. Air handling units (AHUs) aren't responsible for warming or cooling a home; instead, they have the job of pressurizing the air so that it moves throughout the ductwork. If the air handling unit has damage, its operation will be suboptimal. Or if the unit has a buildup of dirt or mold growth, it could be the cause of strange odors in a home.

Grilles, Filters, and Dampers

Supply and return grilles are responsible for blowing air into a home and then collecting that same air for filtration and cooling/heating. If the grilles are blocked, even by something as simple as furniture, then they won't be able to do their job successfully.

Filters keep the air in a home clean, collecting dust and impurities in the air. Once the filters get dirty, they need to be changed, which is a part of regularly maintaining an HVAC system. But if filters aren't changed as often as they should be, the dirt buildup on the filter will slow down the air moving through it.

Lastly, dampers are used in ductwork to slow or restrict airflow to certain areas. They can be used for zoning, as dampers allow individual control of various parts of a home — one room can get a full blast of cool air, while another room can receive just 75% of that air if the homeowner wants that room a little warmer.

And doors can actually act as “dampers.” If a door is open, large amounts of air will be flowing through the doorway. But if it is closed, the door will block that air from equalizing. Sometimes, a pesky comfort issue that only arises during certain times can be fixed by being a bit more conscious of when to keep doors open and closed.