

OTTAWA HVAC PRO

Indoor Air Quality

Filtration, humidity, HRVs, and air quality in Ottawa homes

8 Expert Answers from Construction Brain

ottawahvacpro.ca/construction-brain

Table of Contents

1. How do I improve air quality in my basement?
.....
2. What is an air exchanger and do I need one?
.....
3. What is a HEPA filter and do I need one?
.....
4. Should I get an HRV or ERV for my home?
.....
5. What humidity level should my house be in winter?
.....
6. Can my HVAC system help with allergies?
.....
7. How do I reduce dust in my house?
.....
8. Are UV air purifiers worth it?
.....

Q1

How do I improve air quality in my basement?

Improving air quality in your basement is a great goal, and there are several effective strategies that work together to make a real difference.

Start with moisture control, since basements in Ottawa are prone to humidity issues, especially during our humid summers. High moisture leads to mold growth, musty odors, and poor air quality throughout your whole home. A quality dehumidifier sized for your basement (look for 50-70 pint capacity for most Ottawa basements) is often the single biggest improvement you can make. Keep relative humidity between 30-50% year-round.

Ventilation is your next priority. Basements are often poorly ventilated, allowing pollutants, radon, and stale air to accumulate. If your basement has windows, use them strategically for cross-ventilation in mild weather. For finished basements, ensure your HVAC system's ductwork properly serves the space — sometimes basement vents are undersized or blocked, which your HVAC technician can assess during a routine inspection.

Radon is a serious Ottawa-specific concern. Ottawa and the surrounding region have elevated radon levels compared to many Canadian cities, due to local geology. Radon is a naturally occurring radioactive gas that seeps up from the ground and can accumulate in basements. Health Canada recommends testing every home — inexpensive long-term test kits are available at hardware stores. If levels exceed 200 Bq/m³, a licensed radon mitigation contractor should install a sub-slab depressurization system.

Your HVAC system plays a big role in whole-home air quality, including the basement. A clean, well-maintained furnace with a quality filter (MERV 8-11 is a good range for most homes) will circulate and filter basement air effectively. **Professional duct cleaning** is worth considering if it hasn't been done in 3-5 years — dust, debris, and mold in ductwork can significantly degrade air quality. Ottawa HVAC Pro offers whole-home duct cleaning starting around \$400-\$800 depending on home size.

Practical steps you can do today include checking for and sealing any visible cracks in foundation walls, ensuring your dryer vents outside (not into the basement), replacing your furnace filter if it's overdue, and removing any stored chemicals or paints to a well-ventilated shed.

If you'd like a professional assessment of your basement's ventilation and HVAC setup, Ottawa HVAC Pro offers free consultations — we can identify whether your ductwork, filtration, or humidity control needs attention.

Q2

What is an air exchanger and do I need one?

An air exchanger (also called an HRV - Heat Recovery Ventilator, or ERV - Energy Recovery Ventilator) is a mechanical ventilation system that brings fresh outdoor air into your home while simultaneously exhausting stale indoor air, recovering most of the heat energy in the process.

Why Air Exchangers Matter in Modern Homes

Today's homes are built much more airtight than they used to be, especially newer construction in Ottawa. While this is great for energy efficiency, it creates a problem: without adequate fresh air, indoor air quality suffers. Cooking fumes, humidity, VOCs from furniture and cleaning products, and even CO2 from breathing all build up over time. An HRV solves this by continuously cycling fresh air through your home without wasting the heat you've already paid for - it transfers roughly 70-80% of the heat from outgoing air to incoming air.

The Difference Between HRV and ERV

An **HRV (Heat Recovery Ventilator)** is the most common choice for Ottawa homes. It recovers heat but exhausts moisture, which is ideal for our cold winters when indoor humidity can already get too high. An **ERV (Energy Recovery Ventilator)** recovers both heat and moisture, making it better suited for very dry climates or homes with humidity problems in summer. For most Ottawa homeowners, an HRV is the right call.

Do You Actually Need One?

In Ontario, the **Ontario Building Code requires HRVs in all new residential construction**, so if your home was built after roughly 2017, you likely already have one. If you live in an older home, you may not have one - but you'd benefit from one if you notice condensation on windows, musty odors, allergy symptoms indoors, or if your home feels stuffy. Older homes with natural drafts and leaky envelopes sometimes get "accidental" ventilation, but this is unpredictable and inefficient.

Ottawa-Specific Context

Ottawa's climate makes HRVs particularly valuable. Our winters are long and cold, meaning homes are sealed up tight for 5-6 months of the year. Without mechanical ventilation, indoor air quality can deteriorate significantly. A whole-home HRV unit installed in Ottawa typically costs **\$1,500 - \$3,000 installed**, depending on the complexity of the ductwork integration. Some units can tie directly into your existing furnace duct system, while others require dedicated ductwork.

Next Steps

If you're unsure whether your home has an HRV or whether it's functioning properly (they require annual filter cleaning and periodic servicing), an HVAC technician can assess your system during a routine visit. If you're considering adding one to an older home, Ottawa HVAC Pro can evaluate your existing ductwork and recommend the right unit for your home's size and layout. Feel free to reach out for a free consultation.

What is a HEPA filter and do I need one?

A **HEPA filter** (High-Efficiency Particulate Air) is a premium air filter that captures 99.97% of particles 0.3 microns or larger, including dust, pollen, pet dander, mold spores, and some bacteria. These filters use dense mats of fine fibers to trap microscopic particles that standard furnace filters miss.

Most residential HVAC systems cannot accommodate true HEPA filters because they create too much airflow restriction for standard furnace blowers. True HEPA filters are typically 4-6 inches thick and require specialized equipment. However, many manufacturers offer "HEPA-type" or high-efficiency filters (MERV 13-16) that provide excellent filtration while working with residential systems.

You might benefit from high-efficiency filtration if you have family members with asthma, allergies, or respiratory sensitivities, pets that shed, or live in an area with high pollen counts. Ottawa's seasonal pollen from maple, oak, and ragweed can be particularly challenging for allergy sufferers. These filters can significantly improve indoor air quality by capturing allergens and fine particles.

Important considerations for Ottawa homes: Higher efficiency filters need more frequent changes (every 1-3 months) and cost more (\$15-40 each versus \$5-10 for basic filters). They also create more resistance, so your furnace blower works harder, potentially increasing energy costs. Some older furnaces may struggle with the reduced airflow.

Before upgrading to high-efficiency filters, have an HVAC technician verify your system can handle the increased resistance without damaging the blower motor. We can also discuss whole-home air purification systems that work alongside your existing HVAC system if maximum air quality is your goal.

For a professional assessment of your indoor air quality needs and filter options, request a consultation with Ottawa HVAC Pro.

Q4

Should I get an HRV or ERV for my home?

The choice between an HRV (Heat Recovery Ventilator) and ERV (Energy Recovery Ventilator) depends on your home's humidity levels and your family's comfort preferences. In Ottawa's climate, most homes benefit from an HRV, but ERVs work better in homes that tend to be too dry.

HRVs are ideal for most Ottawa homes because they exchange stale indoor air with fresh outdoor air while recovering heat energy. During our cold winters, HRVs help prevent excess humidity buildup that can lead to condensation on windows and potential mold issues. They're particularly beneficial if you have a newer, well-sealed home where natural air exchange is limited. An HRV will help maintain good indoor air quality while reducing heating costs by capturing up to 85% of the heat from outgoing air.

ERVs go one step further by also transferring moisture between incoming and outgoing air streams. This makes them better suited for homes that experience very dry indoor air during winter heating season. If your family frequently deals with dry skin, static electricity, or respiratory discomfort from low humidity, an ERV can help maintain more balanced moisture levels. However, in Ottawa's climate, ERVs are less commonly needed since most homes naturally retain adequate humidity during winter.

Installation costs in Ottawa typically range from \$2,500 to \$4,500 for either system, depending on your home's ductwork and complexity. Both systems require professional installation and connection to your existing HVAC system. TSSA requirements may vary for electrical connections - confirm with your licensed HVAC technician.

The best choice depends on a professional assessment of your home's current humidity levels, air quality, and ventilation needs. A qualified technician can measure your indoor air quality and recommend the most suitable system for your specific situation.

Q5

What humidity level should my house be in winter?

Indoor humidity during Ottawa winters should be maintained between 30-40% to balance comfort, health, and protection of your home. This range prevents the air from becoming too dry while avoiding condensation problems that can lead to mold and structural damage.

Why winter humidity matters so much in our climate is that cold outdoor air holds very little moisture. When that frigid air enters your home and gets heated, it becomes extremely dry - often dropping below 20% relative humidity.

This dry air causes static electricity, dry skin and throat irritation, and can even crack wooden furniture and flooring. Your furnace's operation compounds this by constantly circulating and heating already dry air.

The challenge with Ottawa's cold winters is that if you add too much humidity, it will condense on cold windows and walls, potentially causing mold growth and damage. This is especially problematic in older homes with less efficient windows. Many Ottawa homeowners find they need to adjust their target humidity based on outdoor temperature - aiming for 35-40% when it's mild, but dropping to 30-35% during those brutal -20°C stretches we get in January and February.

Monitor your humidity levels with a simple hygrometer (available at any hardware store for under \$20) and watch for signs you need adjustment. If you see condensation forming on windows, you have too much humidity. If you're experiencing frequent static shocks or your hardwood floors are showing gaps, the air is too dry. Most modern thermostats also display humidity levels.

For adding humidity safely, a whole-home humidifier integrated with your furnace system is the most effective solution. These systems automatically maintain your desired humidity level and are much more reliable than portable units. If you're experiencing humidity issues or considering a whole-home humidifier installation, a professional assessment can help you choose the right solution for your Ottawa home's specific needs.

Q6

Can my HVAC system help with allergies?

Yes, your HVAC system can significantly help reduce allergens in your home when properly maintained and equipped with the right filtration components. A well-functioning HVAC system continuously circulates and filters indoor air, capturing many common allergens like dust mites, pollen, pet dander, and mold spores.

Air filtration is the key component for allergy relief. Standard 1-inch furnace filters only capture large particles, but upgrading to a high-efficiency filter (MERV 11-13) can trap much smaller allergens. For even better results, consider installing a whole-home air purifier or electronic air cleaner that works with your existing HVAC system. These systems can capture particles as small as 0.3 microns, including most allergens and even some bacteria and viruses.

Humidity control also plays a crucial role in managing allergens. Dust mites thrive in humidity above 50%, while mold grows in damp conditions. Your HVAC system can work with a whole-home dehumidifier to maintain optimal humidity levels (30-50%), creating an environment where these allergens struggle to survive. In Ottawa's humid summers, this is particularly important for basement areas and homes without central air conditioning.

Regular maintenance is essential for allergy relief. Dirty ducts, clogged filters, and neglected HVAC components can actually make allergies worse by circulating contaminated air. Professional duct cleaning every 3-5 years removes accumulated allergens, while monthly filter changes ensure continuous clean air circulation. **Carbon monoxide detectors should always be maintained** alongside any HVAC improvements, as proper system operation is critical for safety.

For Ottawa homeowners dealing with seasonal allergies, combining high-efficiency filtration with regular HVAC maintenance can provide year-round relief. Want to discuss specific air quality solutions for your home? We offer free consultations to assess your current system and recommend the best allergy-fighting upgrades.

How do I reduce dust in my house?

Dust reduction starts with your HVAC system - upgrading your furnace filter and ensuring proper airflow are the most effective steps you can take. A high-quality MERV 11-13 filter will capture significantly more dust particles than basic fiberglass filters, though you'll need to change it more frequently.

Your ductwork plays a crucial role in dust circulation. Over time, dust, pet dander, and debris accumulate in your ducts and get blown throughout your home every time your furnace or AC runs. Professional duct cleaning removes this buildup and can dramatically reduce airborne dust. In Ottawa's climate, where homes are sealed tight for energy efficiency, this trapped dust becomes even more problematic.

Beyond your HVAC system, focus on source control. Regular vacuuming with a HEPA filter vacuum, washing bedding weekly in hot water, and maintaining proper humidity levels (30-50%) all help minimize dust. Dry air causes more particles to become airborne, while overly humid conditions can promote dust mites. A whole-home humidifier integrated with your HVAC system maintains optimal humidity year-round.

Consider upgrading your HVAC system's filtration capabilities. If dust is a persistent problem, options like electronic air cleaners or UV air purifiers can be integrated into your existing system. These work continuously as your furnace or AC operates, providing whole-home air cleaning rather than just single-room solutions.

TSSA requirements may vary for any HVAC modifications - always work with licensed technicians for system upgrades. If you're dealing with excessive dust despite regular cleaning, it may indicate ductwork issues, improper system sizing, or air leaks that need professional assessment.

For a comprehensive evaluation of your home's dust issues and HVAC system performance, consider scheduling a consultation with Ottawa HVAC Pro to identify the most effective solutions for your specific situation.

Find a HVAC Contractor

Ottawa HVAC Pro connects you with experienced contractors through the <https://justynrookcontracting.com>:

- Steven Labelle - Your Complete Home Renovator ?
- Somar Contracting Inc. ?
- The Deck Store Inc ?

[View all hvac contractors ?](#)

Are UV air purifiers worth it?

UV air purifiers can be effective for killing certain microorganisms, but they're not a magic solution for all indoor air quality issues. The effectiveness depends on your specific needs, existing HVAC system, and what air quality problems you're trying to solve.

UV-C lights work by damaging the DNA of bacteria, viruses, and mold spores as air passes through your HVAC system. They're most effective against biological contaminants and can help reduce odors caused by microbial growth. However, UV lights don't remove dust, pollen, pet dander, or chemical pollutants - you'd still need a good filtration system for those particles.

The key factors for UV effectiveness include proper sizing, correct placement in your ductwork, and adequate exposure time. Many homeowners expect UV lights to solve all their air quality problems, but they work best as part of a comprehensive approach that includes quality air filters, proper ventilation, and regular HVAC maintenance. In Ottawa's climate, where homes are sealed tight during winter months, UV lights can be particularly helpful in preventing mold growth in your HVAC system.

Installation costs in Ottawa typically range from \$600 to \$1,200 depending on your system configuration and the type of UV unit. The bulbs need replacement annually (around \$100-150), and the system should be installed by a licensed HVAC technician to ensure proper placement and electrical connections. Poor installation can reduce effectiveness significantly.

Consider your specific air quality concerns before investing. If you're dealing with frequent respiratory issues, musty odors, or have family members with compromised immune systems, UV purification might be worthwhile. However, if your main concerns are dust or allergies, upgrading to a high-efficiency filter system might provide better value.

For a professional assessment of your indoor air quality needs and whether UV purification makes sense for your Ottawa home, request a consultation with Ottawa HVAC Pro.

Find a HVAC Contractor

Ottawa HVAC Pro connects you with experienced contractors through the <https://justynrookcontracting.com>:

- Callandgone
- L.L. Renovation ?

- Gillani Heating & Appliance Care Inc. ?

[View all hvac contractors ?](#)

Disclaimer: This guide is provided for informational purposes only by Ottawa HVAC Pro. It does not constitute professional advice. Always consult qualified, licensed contractors and your local building authority before starting any construction or renovation project. Information is current as of September 13, 2026 and may change. Visit ottawahvacpro.ca for the latest answers.