VANCOUVER HVAC PRO

Ductwork, Ventilation & Air Quality

Duct design and sealing, duct cleaning, HRVs and ERVs, bathroom and kitchen exhaust, humidity, filtration and wildfire smoke

4 Expert Answers from HVAC IQ

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Q1

Which furnace filter helps most during wildfire smoke season in the Lower Mainland?

For wildfire smoke, a MERV 13 filter is the practical target for most forced-air furnaces in the Lower Mainland. It captures fine particulate matter in the PM2.5 range that carries the most health risk, without the airflow restriction of a HEPA or MERV 16 panel filter that can damage an older blower motor.

Choosing the Right Rating

MERV 11 is a reasonable minimum if your furnace is older or has a smaller blower. It removes a meaningful share of smoke particles and is widely available at hardware stores. MERV 13 captures significantly more fine particles and is what public health authorities commonly recommend during smoke events. Anything above MERV 13 in a standard residential furnace risks starving the heat exchanger of airflow, which can cause overheating and cracking over time. If your furnace manual lists a maximum MERV rating, that number wins.

A few things matter as much as the filter rating itself. First, fit: a filter that leaves a gap around the edges lets unfiltered air bypass it entirely, which is a common problem in older Lower Mainland houses where the filter slot is a loose fit. Tape the edges if needed. Second, replacement frequency: during a heavy smoke event, a MERV 13 filter can load up in two to three weeks instead of the usual two to three months. Check it every week and replace it when it looks grey-brown. Third, the blower setting: running the fan continuously (not just when heating) circulates air through the filter more often, which helps noticeably in a sealed house during a smoke advisory.

For a strata apartment or a home without a forced-air system, a portable HEPA air purifier sized for the room is the practical alternative. Look for a unit rated for the square footage of the space where you spend the most time.

One more step worth taking before smoke season: make sure the return-air side of your system is reasonably sealed. Gaps around the return grille or at the air handler cabinet pull outdoor air directly into the duct system, bypassing the filter. A contractor doing an annual tune-up can check this, and Technical Safety BC recommends annual servicing of home heating appliances.

When getting a quote for a filter upgrade or a system tune-up, ask whether the contractor will check the blower motor's rated airflow against the filter you plan to use, and whether the return plenum is sealed. Those two checks cost nothing extra and protect the furnace.

The bottom line: a MERV 13 filter in a well-sealed return is the most effective single step for wildfire smoke in a forced-air home, and pairing it with a portable HEPA unit covers the gaps. Ask a local HVAC contractor to check your filter capacity before smoke season; Vancouver HVAC Pro will pass your request along.

Q2

What should a ductwork design plan include for a house renovation near Commercial Drive?

A ductwork design plan for a house renovation in the Commercial Drive area should cover eight core elements, and getting them right before a contractor starts cutting holes is what separates a comfortable, efficient system from one that needs expensive corrections later.

What a Proper Duct Design Plan Covers

Start with a room-by-room heat loss and heat gain calculation (Manual J or equivalent). This is the foundation. Every duct size, every register location and every equipment capacity follows from those numbers. Sizing from the old system or from square footage alone is one of the most common and costly mistakes in renovation work.

From there, the plan should include:

A supply and return layout showing the location, size and type of every register and grille, with return air paths that allow air to circulate back to the air handler without relying on gaps under doors. Older Commercial Drive-area houses often have one central return, which causes pressure imbalances and comfort complaints upstairs.

Duct sizing calculations (Manual D) for every branch and trunk, matched to the airflow each room needs. Undersized ducts create noise and static pressure; oversized ones waste money and reduce humidity control.

Equipment selection and placement, including the air handler or furnace location, the path for the flue or heat pump refrigerant lines, and the condensate drain route. In a two-storey or basement-plus-main renovation, where the air handler sits changes everything about duct routing and cost.

Ventilation integration, because Vancouver's wet climate makes this non-negotiable. The plan should show how an HRV or ERV connects to the duct system, where the fresh-air intake and exhaust terminate on the exterior, and how the system balances supply and exhaust airflow. A poorly integrated HRV is a common oversight in renovation projects.

Sealing and insulation specifications for ducts running through unconditioned spaces such as a crawlspace or attic, including the target leakage rate. Unsealed duct joints in a crawlspace can waste 20 to 30 percent of heating energy.

Filter and access provisions: a properly sized filter slot, a MERV rating appropriate for the equipment, and access panels for every section that will need cleaning or inspection. Wildfire smoke events have made MERV 11 to 13 filtration a practical consideration for many Vancouver households.

Permit requirements: in the City of Vancouver, installing or replacing a heating or cooling system triggers a mechanical permit (required since July 2022) in addition to the electrical permit the city issues itself for the heat pump or furnace circuit. If the renovation involves removing or capping a gas line, a gas permit is also required, issued by the City of Vancouver. Your contractor should pull all of these and include the fees in the quote.

A fair quote for ductwork design and installation in a Metro Vancouver house renovation typically runs $8,000 to $20,000 for a full new duct system, and $20,000 to $30,000 or more when combined with a new heat pump and electrical work. What moves that number most is whether usable duct pathways exist in the existing framing or whether soffits, chases and floor cavities need to be built from scratch.

Getting two or three quotes with the full design plan attached is the best way to compare them honestly; Vancouver HVAC Pro can connect you with local contractors who work in the Commercial Drive area.

Q3

Is black mould around the vents a sign of a duct problem in Surrey?

Black or dark staining around supply and return vents is one of the more common complaints in Surrey homes, and it usually points to a combination of duct leakage, poor filtration and condensation rather than a single dramatic failure. The good news is that a duct inspection and air quality assessment typically runs $120 to $250 for a diagnostic visit, and duct sealing or cleaning, if that is what is needed, usually falls between $400 and $900 for a typical Surrey house.

What Is Actually Causing the Staining

The dark ring around a vent grille is almost always a mix of dust, skin cells, cooking particles and outdoor pollution that has been deposited by moving air. Mould grows on top of that organic layer when moisture is present. Three things drive moisture into ducts in Surrey's climate: warm humid indoor air hitting a cold metal duct surface (condensation), duct joints that have pulled apart in a crawlspace or attic and are pulling in unconditioned damp air, and a furnace or air handler that is not removing enough humidity on its own.

Leaky return ducts are a particularly common culprit in the 1970s to 1990s houses that make up a large part of Surrey's housing stock. When a return pulls air from a crawlspace or attic instead of the living space, it drags in cold, damp, sometimes mouldy air and deposits it across every supply register in the house. If the staining is worst at the return grilles, that is a strong signal.

A contractor finding visible black mould inside the duct itself, not just staining on the grille, is a different situation. That warrants a proper mould assessment before any cleaning, because disturbing it without

containment can spread spores through the whole house.

What a proper inspection should cover: the technician should check static pressure across the air handler, inspect accessible duct joints for separation or gaps, look at the condition of flex duct in the attic or crawlspace, check the condensate drain on the furnace or air handler, and assess whether an HRV or ERV would help manage indoor humidity year-round. Surrey's wet winters make ventilation a real factor, not an optional upgrade.

On the permit side, duct sealing and cleaning do not require a permit on their own. If the inspection reveals the furnace or air handler needs to be replaced, gas work in Surrey requires a permit from Technical Safety BC, and the electrical circuit permit is issued by Surrey itself. The contractor normally pulls both and includes the fees in the quote.

Before hiring anyone for duct work, ask whether they carry WorkSafeBC coverage and confirm that any gas work will be done by a gas fitter employed by a Technical Safety BC-licensed gas contractor. Duct cleaning is not regulated the same way, so ask for references and check whether they use negative-pressure containment equipment.

Staining around vents is worth taking seriously, but it is rarely an emergency unless you are seeing visible mould growth inside the duct or smelling something musty every time the furnace runs. Get a duct inspection done before winter bookings fill up. Vancouver HVAC Pro can match you with a local Surrey HVAC contractor who can assess the ducts and give you a written quote, free of charge.

Q4

Is duct cleaning actually worth the money in Metro Vancouver?

Duct cleaning runs about $400 to $900 for a typical Metro Vancouver house, and whether it earns that money depends almost entirely on your specific situation, not on a general rule.

There are clear cases where it is worth doing. If you have just finished a renovation that opened up walls or ceilings, construction dust, drywall particles and fibres will have settled into the ductwork and will circulate every time the furnace runs. The same applies if you have moved into a home where the ducts have never been cleaned and you can see visible debris at the supply grilles, or if there is evidence of rodents or mould inside the system. Allergy sufferers sometimes notice a real difference after a thorough cleaning, though the research on health benefits for otherwise clean systems is mixed.

The honest case against routine cleaning is this: in Metro Vancouver's mild, damp climate, the bigger indoor air quality threats are usually moisture, mould and inadequate ventilation, not dust accumulation in sealed ducts. A well-sealed duct system with a good filter changed every two to three months stays reasonably clean on its own. If your filter is doing its job, the ducts downstream of it are not collecting much.

What actually moves the needle on air quality here is the filter itself (a MERV 11 or 13 filter catches far more than a fibreglass panel filter), a functioning HRV or ERV that brings in fresh air and controls humidity, and keeping the furnace's blower and coil clean. During wildfire smoke events, which hit Metro Vancouver most summers now, a sealed return system with a high-MERV filter or a portable HEPA unit does more than clean ducts.

When you do hire a duct cleaner, the job should include the supply and return trunks, all branch runs, the air handler cabinet and the blower wheel. A reputable company uses negative pressure (a truck-mounted or portable vacuum) and agitation tools, not just a shop vac at the register. Ask whether they will clean the coil and blower, or whether that is a separate charge. Be cautious of very low-priced offers that turn into upsells for chemical treatments or "sanitizers"; most homes do not need them.

One Metro Vancouver-specific note: if your home has a shared chimney serving both a gas furnace and a gas water heater, and you are considering a high-efficiency furnace upgrade at the same time, have the contractor assess the venting before you book duct cleaning. A new 95% AFUE furnace will need its own PVC flue, and the water heater venting will need to be re-evaluated. That is a bigger conversation than duct cleaning, but it comes up often in the older Burnaby, New Westminster and East Vancouver housing stock.

For most Metro Vancouver homes with a reasonably maintained forced-air system, duct cleaning every five to ten years is a reasonable interval, not every year. If you are doing it because the system has not been touched in over a decade, or after a renovation, it is probably worth it. If you are doing it hoping to solve an air quality problem, start

with the filter, the HRV and an annual furnace tune-up first.

Skip the coupon offers and book an inspection first; if the ducts do need work, request a written scope and price from a local contractor through Vancouver HVAC Pro.

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