TORONTO DUCTWORK

Kitchen & Bathroom Exhaust

Range hood exhaust ducting, bathroom exhaust fan installation, and proper exterior termination for ventilation systems

18 Expert Answers from Duct IQ

torontoductwork.com/construction-brain

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Q1

What exhaust ductwork do I need for a spray booth in a Toronto home workshop?

A spray booth in a residential home workshop requires dedicated, explosion-proof exhaust ductwork made entirely of grounded metal — no flex duct, no plastic, no fibreglass duct board — and it almost certainly requires a building permit, fire department review, and possibly a variance from Toronto's zoning bylaws.

This is one of the most technically demanding and code-sensitive exhaust projects a GTA homeowner can undertake. Spray finishing produces flammable vapours (from lacquers, solvent-based paints, and conversion varnishes) that can ignite from a single static spark inside a duct. The consequences are catastrophic. Getting this right is not optional.

Duct Material Requirements

All ductwork serving a spray booth must be **continuous welded or mechanically fastened galvanized steel or stainless steel**, with all joints sealed and every section electrically bonded and grounded to prevent static discharge. The interior must be smooth — no fibreglass liner, no duct board, no flex duct anywhere in the system. Overspray accumulates on duct walls over time, and that residue is fuel. Smooth steel can be cleaned; fibreglass cannot. Minimum 22-gauge steel is typical for residential spray booth exhaust, with heavier gauge (18-20) for longer runs or larger booths.

The duct run should be as **short and straight as possible**, terminating directly through an exterior wall or roof with a listed exhaust cap that prevents backdraft and spark entry. Every bend increases static pressure and creates a surface where overspray accumulates. Avoid 90-degree elbows where possible — use two 45-degree bends instead. The exterior termination must be located away from any ignition sources, air intakes, windows, and property lines, and must comply with setback requirements under the Ontario Fire Code and Toronto's zoning bylaws.

Fan and Motor Specifications

The exhaust fan must be **explosion-proof (spark-proof)**, with a motor located outside the airstream or rated for use in Class I, Division 1 or Division 2 hazardous locations under the Canadian Electrical Code. A standard furnace blower or bathroom exhaust fan will ignite solvent vapours. The fan must be sized to achieve **100 feet per minute face velocity** across the booth opening (or per your booth manufacturer's specifications), which typically means 1,000–3,000 CFM for a small residential booth. The fan motor must be wired by an **ESA-Licensed Electrical Contractor** using explosion-proof conduit, boxes, and fittings throughout the hazardous zone.

GTA-Specific Considerations

In Toronto, a residential spray booth triggers multiple regulatory layers simultaneously. The **Ontario Fire Code (O. Reg. 213/07, Section 5.3)** governs spray finishing operations and requires specific booth construction, ventilation rates, fire suppression, and storage limits for flammable liquids. The **Ontario Building Code** requires a permit for the exhaust system. The **ESA** requires permits for all electrical work in the hazardous zone. Toronto Fire Services may conduct an inspection. Depending on your zoning classification, operating a spray finishing operation from a residential property may not be permitted at all — this is worth confirming with **Toronto City Planning (311 or toronto.ca)** before investing in the installation.

Make-up air is not optional here. Exhausting 1,500–3,000 CFM from a workshop will depressurize the space severely, potentially backdrafting any gas appliances (furnace, water heater) in or near the workshop. A **tempered make-up air system** interlocked with the exhaust fan is required — this must be designed and installed by a **TSSA-registered contractor** for any gas-fired tempering component.

Practical Cost Range

A properly engineered residential spray booth exhaust system in the GTA — including explosion-proof fan, grounded steel ductwork, make-up air, electrical, and permits — typically runs **$4,000–$12,000** depending on booth size, run length, and make-up air complexity. This is not a project to cut costs on.

Hire a professional for every aspect of this project. The ductwork fabrication, fan selection, electrical, make-up air, and permit coordination should all be handled by contractors with documented experience in spray finishing ventilation. Toronto Ductwork can connect you with sheet metal and ventilation contractors through the Toronto Construction Network — browse the directory at **torontoconstructionnetwork.com/directory?trade=hvac** or get matched for free.

Q2

How do I install a makeup air damper that opens automatically when my Toronto kitchen hood turns on?

Installing an automatic make-up air damper requires electrical interlocking with your range hood and may need a building permit in Toronto. This is typically a job for HVAC and electrical professionals due to code requirements, combustion safety considerations, and the need for proper airflow balancing.

Understanding Make-Up Air Requirements in Toronto

Under the Ontario Building Code, when your total exhaust capacity exceeds 75 litres per second (approximately 159 CFM), you must install a make-up air system. Most range hoods rated 400 CFM or higher trigger this requirement. The system must be interlocked with the exhaust fan, meaning the make-up air damper opens automatically when the hood operates, replacing the exhausted air to prevent negative pressure in your home.

Negative pressure from high-CFM exhaust without make-up air creates serious problems in GTA homes: backdrafting of gas appliances (furnaces, water heaters, fireplaces), which can introduce deadly carbon monoxide into your living space. It also causes doors to slam shut, difficulty opening exterior doors, and cold drafts being pulled through every crack and gap in your home's envelope during Toronto's harsh winters.

Automatic Damper Installation Process

The automatic damper is typically a motorized unit installed in the make-up air duct, controlled by a relay that's wired to your range hood's electrical circuit. When you turn on the hood, the relay signals the damper to open. When the hood shuts off, the damper closes to prevent cold outdoor air from entering during Toronto's sub-zero winters.

The damper must be sized to match your hood's CFM rating and installed in a dedicated make-up air duct that brings outdoor air directly into the kitchen area. In Toronto's climate, this incoming air often needs tempering (heating) during winter months to prevent uncomfortable cold drafts. Some systems use electric heating coils, while others tie into your home's heating system.

Professional Installation Requirements

This work requires coordination between HVAC and electrical trades. The electrical connections must be done by an ESA-Licensed Electrical Contractor, as the damper motor and relay controls involve 120V wiring that must be properly integrated with your hood's electrical circuit. The mechanical installation requires proper duct sizing, outdoor air intake location, and potentially a building permit from the City of Toronto.

TSSA registration may be required if the make-up air system integrates with gas-fired heating equipment for air tempering. The outdoor air intake must be properly located away from exhaust terminations, dryer vents, and other contamination sources according to Ontario Building Code requirements.

Cost and Timing Considerations

Expect to budget $2,000-$5,000 for a complete automatic make-up air system installation, including the motorized damper, ductwork, electrical controls, and any required air tempering. The damper unit itself typically costs $300-$800, but installation labor, electrical work, and ductwork comprise the majority of the project cost.

Winter installation can be challenging due to the need to penetrate your home's exterior envelope, so many Toronto homeowners schedule this work for spring or fall when outdoor conditions are more favorable for contractors

working on exterior wall penetrations.

When to Hire Professionals

The electrical interlocking, proper damper sizing, duct design, and code compliance make this a professional installation. Improper make-up air systems can create combustion safety hazards, uncomfortable drafts, or fail to provide adequate air replacement. An experienced HVAC contractor will calculate the required make-up air volume, design the duct system, specify the appropriate damper, and coordinate with an electrical contractor for proper controls integration.

Need help finding HVAC and electrical contractors for your make-up air system? Browse qualified professionals through the Toronto Construction Network directory at torontoconstructionnetwork.com/directory?trade=hvac.

Q3

What happens if exhaust ductwork is undersized for a commercial range hood in a Toronto restaurant?

Undersized exhaust ductwork for a commercial range hood creates serious fire safety hazards, code violations, and operational problems that can shut down a Toronto restaurant. The consequences range from failed inspections to grease fires, and the Toronto Fire Department can order immediate closure until the system is brought to code.

Commercial kitchen exhaust systems in Toronto are governed by strict fire and building codes because they handle massive volumes of grease-laden air at high temperatures. When the ductwork is undersized for the range hood's CFM rating, several dangerous conditions develop immediately.

Fire Safety Hazards are the most critical concern. Undersized ducts create excessive air velocity that strips grease from the airstream and deposits it on duct walls in thick layers. This grease buildup becomes fuel for devastating duct fires that can spread through the entire building. High velocity also creates turbulence that prevents proper grease extraction by the hood's baffle filters, allowing more grease to enter the ductwork. The Toronto Fire Department requires commercial kitchen exhaust ducts to be cleaned every 3-6 months specifically because grease accumulation is inevitable, but undersized ducts accelerate this buildup dramatically.

Code Violations and Inspection Failures will shut down operations. Toronto Building Division and Toronto Fire Services inspect commercial kitchen exhaust systems during construction, renovation, and routine fire inspections. Undersized ductwork violates Ontario Building Code requirements for minimum duct velocities (typically 1,500-2,500 FPM for grease-laden vapors) and proper CFM delivery. The system will fail inspection, and the restaurant

cannot operate until corrections are made. Make-up air requirements also become critical — commercial kitchens exhausting large volumes need properly sized make-up air systems to prevent negative pressure that affects gas appliance combustion.

Operational Problems destroy kitchen efficiency and create unbearable working conditions. Undersized ducts cannot remove heat, smoke, and cooking odors effectively, leaving the kitchen hot, smoky, and uncomfortable for staff. Poor exhaust performance forces cooks to work in hazardous conditions with reduced visibility and excessive heat. The range hood's exhaust fan will work harder against the high static pressure created by undersized ducts, leading to premature motor failure and higher energy costs.

Equipment Damage and Efficiency Loss compound the problems. Exhaust fans operating against excessive static pressure from undersized ducts draw higher amperage, overheat, and fail prematurely. The entire HVAC system becomes unbalanced when the exhaust system cannot perform as designed. Kitchen equipment may not operate properly in the hot, humid environment created by inadequate exhaust.

Correction requires complete duct replacement in most cases. You cannot simply add a larger exhaust fan to compensate for undersized ductwork — this creates even higher velocities and worse grease deposition. The ductwork must be properly sized using Manual D calculations based on the range hood's actual CFM requirements, cooking equipment heat output, and duct run length and configuration. Commercial kitchen exhaust ductwork typically requires 16-gauge galvanized steel with welded joints and must be accessible for cleaning.

Professional design and installation is absolutely essential for commercial kitchen exhaust systems. This work requires mechanical permits from Toronto Building Division, TSSA registration for any gas connections, ESA licensing for electrical work, and coordination with Toronto Fire Services. The contractor must understand commercial kitchen codes, grease duct design, fire suppression system integration, and make-up air requirements.

For commercial kitchen exhaust systems in Toronto, never attempt to modify or repair the system yourself — hire a contractor experienced specifically with commercial kitchen ventilation who can ensure code compliance and fire safety. The consequences of improper exhaust ductwork in a commercial kitchen are too severe to risk.

Q4

What is the proper exhaust duct termination height above a Toronto flat roof?

Exhaust duct terminations on flat roofs in Toronto must be at least 18 inches (450mm) above the roof surface according to Ontario Building Code requirements, with additional height requirements depending on the type of exhaust and proximity to air intakes or property lines.

The Ontario Building Code Part 6 (Mechanical) establishes specific termination heights to prevent exhaust air from re-entering the building through windows, air intakes, or HVAC equipment, and to ensure proper dispersion above the roof surface. For most residential exhaust systems (bathroom fans, dryer vents, general ventilation), the **minimum 18-inch height** applies when the termination is at least 10 feet from any air intake, operable window, or property line.

Kitchen range hood exhaust requires greater clearances — typically 3 feet above the roof surface and 10 feet horizontally from any air intake, window, or door. High-capacity commercial-style range hoods (600+ CFM) may require even greater separation distances. The code also requires that exhaust velocity be sufficient to prevent downdrafts — typically 1,500 feet per minute minimum exit velocity for grease-laden kitchen exhaust.

Special considerations for Toronto's flat roof climate: Toronto's frequent wind direction changes and the urban heat island effect around flat roofs can create complex air pressure patterns that pull exhaust back down to roof level. Many experienced GTA sheet metal contractors recommend exceeding minimum code heights by 6-12 inches, especially for bathroom exhaust in dense urban areas where neighboring buildings create wind turbulence. **Proper termination caps are critical** — use wind-resistant caps designed for flat roof applications that prevent rain entry while maintaining adequate exhaust flow.

Make-up air considerations: If your kitchen exhaust exceeds 400 CFM (which triggers Ontario's make-up air requirement), the make-up air intake must be positioned to avoid drawing in the exhaust air. This often requires careful coordination of exhaust and intake locations during the design phase, especially on smaller flat roof areas where separation distances are limited.

Professional installation is essential for flat roof exhaust terminations because improper flashing and roof penetrations are the leading cause of flat roof leaks in the GTA. The termination must be properly flashed with a roof curb, sealed with appropriate roofing membrane, and positioned to avoid ponding water areas. Any work involving roof penetrations typically requires both a mechanical permit and coordination with a qualified roofer familiar with Toronto's flat roof membrane systems.

Need help finding a ductwork contractor experienced with flat roof exhaust installations? Toronto Ductwork can match you with professionals who understand both the mechanical code requirements and proper flat roof integration techniques.

Q5

Can I install a recirculating range hood instead of ducted exhaust in my Toronto condo?

Yes, you can install a recirculating range hood in your Toronto condo, and it's often the most practical solution for high-rise and mid-rise units where ducting to the exterior is impossible or prohibitively expensive. Recirculating hoods filter cooking odors, grease, and smoke through charcoal filters and return the cleaned air to the kitchen rather than exhausting it outside.

How Recirculating Range Hoods Work

Recirculating hoods use a two-stage filtration system. The first stage captures grease particles through aluminum mesh filters that can be removed and washed in the dishwasher. The second stage uses activated charcoal (carbon) filters to absorb cooking odors and smoke before recirculating the air back into the kitchen. Modern recirculating hoods are surprisingly effective at removing cooking pollutants, especially when properly maintained with regular filter changes.

The key to effective recirculating hood performance is choosing the right CFM rating for your cooking style and ensuring adequate makeup air circulation in your condo. A 300-400 CFM recirculating hood is typically sufficient for most condo kitchens, while serious home cooks might prefer 500-600 CFM models. Higher CFM ratings provide better capture of steam and odors from multiple burners or high-heat cooking.

Toronto Condo Considerations

Most Toronto condos built after 1990 have centralized HVAC systems that make individual ducted exhaust installations extremely complicated and expensive. Running new ductwork through concrete floors, fire-rated assemblies, and shared building envelope requires engineering approval, condo board permission, and often costs $3,000-$8,000 or more. Many condo corporations prohibit individual exhaust modifications that penetrate the building envelope or affect the central ventilation system.

Recirculating hoods eliminate these complications entirely. Installation typically requires only electrical connection (which must be done by an ESA-Licensed Electrical Contractor in Ontario) and mounting to the wall or under a cabinet. No permits are required for recirculating hood installation since there's no ductwork or building envelope penetration.

Performance and Maintenance

Quality recirculating hoods from manufacturers like Broan, Zephyr, or Bosch provide excellent performance when properly maintained. The aluminum grease filters should be cleaned monthly in the dishwasher, while charcoal filters need replacement every 3-6 months depending on cooking frequency. Charcoal filters cost $20-$60 per set

and are readily available at appliance stores throughout the GTA.

The main limitation of recirculating hoods is that they don't remove moisture from cooking, which can be a concern in tightly sealed condos. Running your bathroom exhaust fan during cooking or cracking a window slightly can help manage humidity levels. Some newer recirculating hoods include humidity sensors that automatically adjust fan speed based on moisture levels.

Installation Costs and Options

Recirculating range hood installation in Toronto condos typically costs $300-$800 including electrical connection, compared to $2,000-$5,000+ for ducted exhaust systems. Under-cabinet models start around $200-$400, while high-performance wall-mount or island hoods range from $600-$2,000+. Professional installation ensures proper electrical connection and secure mounting, especially important for heavier stainless steel models.

When to Consider Alternatives

If your condo has an existing exhaust duct from a previous range hood, connecting to that existing ductwork is usually the better option for performance. However, many older Toronto condos have exhaust ducts that terminate in common areas, attics, or mechanical rooms rather than true exterior exhaust, making them ineffective. Have a qualified HVAC contractor inspect any existing ductwork before assuming it provides proper exterior exhaust.

Need help finding an HVAC contractor to assess your condo's ventilation options? Toronto Ductwork can match you with local professionals experienced in condo kitchen exhaust solutions through the Toronto Construction Network.

Q6

What exhaust requirements apply to a Toronto home darkroom or art studio with chemical fumes?

Darkrooms and art studios using chemicals require dedicated exhaust ventilation to safely remove toxic fumes, with specific CFM rates and direct exterior termination required under Ontario Building Code.

Chemical fumes from darkroom developers, fixers, stop baths, and art studio solvents, paints, and adhesives pose serious health risks in enclosed spaces. Unlike standard bathroom or kitchen exhaust, chemical fume removal requires **continuous operation during use** and often **higher air change rates** to maintain safe indoor air quality. The Ontario Building Code Part 6 requires mechanical exhaust for spaces where hazardous vapours are generated, and these systems must terminate directly to the exterior — never into attic spaces, soffits, or shared

ventilation systems.

Exhaust System Requirements for chemical fume removal typically require **6-12 air changes per hour** during active use, significantly higher than standard room ventilation. For a typical home darkroom (8x10 feet with 8-foot ceilings), this translates to **320-640 CFM of exhaust capacity**. Art studios need similar rates depending on the chemicals used — oil painting with turpentine, printmaking with acids, or sculpture work with adhesives all generate different types and concentrations of fumes. The exhaust fan must be **explosion-proof rated** if flammable vapours are present, and **corrosion-resistant** for acidic darkroom chemicals that can quickly destroy standard bathroom fans.

Make-up air becomes critical with these exhaust rates. Ontario Building Code requires make-up air systems when total exhaust exceeds 75 litres per second (159 CFM), which most chemical fume applications will exceed. Without proper make-up air, the exhaust system will create negative pressure that can backdraft gas appliances, pulling deadly carbon monoxide into the home. The make-up air system must be **interlocked with the exhaust fan** and may need **tempering in winter** — bringing -20°C outside air directly into the space creates comfort and condensation problems.

Ductwork design for chemical exhaust differs significantly from standard HVAC systems. **Stainless steel or PVC ductwork** may be required instead of galvanized steel, which corrodes rapidly when exposed to acidic vapours. The duct run should be **as short and straight as possible** to minimize static pressure and prevent chemical buildup in long horizontal runs. **No flex duct** should be used — chemicals can degrade the plastic liner and wire helix. All joints must be **welded or chemically-compatible sealed** rather than standard duct mastic, which may not withstand chemical exposure.

Exhaust termination must be carefully located to prevent re-entrainment of chemical vapours into the building. The exhaust outlet should be **at least 10 feet from any operable windows, doors, or air intakes**, and positioned to take advantage of prevailing winds. In dense GTA neighbourhoods, this can be challenging — exhausting chemical fumes toward a neighbour's property can create liability issues and complaints. **Roof termination** is often preferred over wall termination for chemical exhaust, but requires proper flashing and weatherproofing to prevent water infiltration.

Electrical requirements include a **dedicated circuit** for the exhaust fan, often with **explosion-proof switches and fixtures** if flammable vapours are present. An **ESA-Licensed Electrical Contractor** must perform all electrical work, and the system may require **emergency shut-off switches** accessible from outside the room. Many installations also benefit from **variable speed controls** to adjust exhaust rates based on the intensity of chemical use — full exhaust during active processing, reduced rates for drying and storage.

Permit requirements in Toronto include both **mechanical and electrical permits** for new exhaust installations. The **building permit application** must specify the types of chemicals being used, exhaust CFM rates, make-up air provisions, and ductwork materials. **TSSA involvement** may be required if the make-up air system includes gas-fired tempering, and **ESA inspection** is mandatory for all electrical components.

Professional installation is essential for chemical exhaust systems due to the complexity of proper design, code compliance, and safety considerations. A qualified **sheet metal contractor experienced with laboratory or industrial exhaust** should design the system based on the specific chemicals being used, room size, and usage patterns. **GTA pricing** for a complete chemical exhaust system typically ranges **$3,000-$8,000** including explosion-proof fan, stainless steel ductwork, make-up air provisions, and electrical work.

Ongoing maintenance includes **quarterly filter changes** if filtration is used, **annual duct cleaning** with chemical-compatible methods, and **fan motor inspection** for corrosion damage. Chemical residue buildup in ductwork can create fire hazards and reduce system effectiveness over time.

Need help finding a contractor experienced with chemical exhaust systems? Toronto Ductwork can match you with professionals who understand the specialized requirements for darkroom and art studio ventilation.

Q7

Can I install a continuous bathroom exhaust fan ducted to the outside in my Toronto home?

Yes, you can install a continuous bathroom exhaust fan ducted to the outside in your Toronto home, and it's actually an excellent upgrade for indoor air quality and moisture control. Continuous exhaust fans run 24/7 at low speed with a boost function for occupied periods, providing consistent ventilation that's especially beneficial in Toronto's humid summers and tightly sealed homes.

Continuous exhaust fans operate differently from standard bathroom fans. They run continuously at 10-30 CFM (quiet background ventilation) and ramp up to 50-110 CFM when the light switch is activated or motion is detected. This constant air exchange prevents moisture buildup, reduces bathroom odors, and improves overall indoor air quality. Popular models include the Panasonic WhisperGreen Select and Broan Sensonic series, which are specifically designed for continuous operation with ultra-quiet motors and energy-efficient ECM technology.

Installation requirements in Toronto follow Ontario Building Code Part 6 requirements. The fan must be ducted directly to the exterior — never into the attic, soffit, or wall cavity. Use rigid metal ductwork or insulated flex duct with a maximum of two 90-degree bends to minimize static pressure. The exterior termination requires a backdraft damper and weather-resistant wall cap or roof jack. Duct runs through unconditioned spaces (attics, exterior walls) must be insulated with R-8 duct wrap minimum to prevent condensation in Toronto's climate extremes.

Electrical considerations require an ESA-Licensed Electrical Contractor in Ontario. Continuous fans need dedicated wiring — they cannot share circuits with lights or outlets. Many models require separate switching for the boost function, and some include humidity sensors or timers that need additional low-voltage wiring. The fan must be GFCI protected if installed within the bathroom wet location zones.

GTA climate benefits make continuous exhaust particularly valuable. Toronto's summer humidity often exceeds 70%, and tightly sealed homes (especially newer construction or renovated older homes) trap moisture that leads to mould growth, window condensation, and poor air quality. Continuous exhaust provides the consistent air exchange that prevents these problems. In winter, the constant ventilation helps manage indoor humidity while the boost function handles shower moisture loads.

Sizing and performance matter significantly. The continuous speed should provide 0.5-1.0 air changes per hour for the bathroom volume, while boost speed should deliver 1 CFM per square foot of floor area (minimum 50 CFM per Ontario Building Code). Oversized fans waste energy and create drafts; undersized fans don't control moisture effectively. Sound levels should be under 1.0 sone for continuous operation to avoid noise complaints.

Installation costs in the GTA typically range from $400-$1,200 depending on duct run complexity, electrical requirements, and fan model selection. Premium continuous fans with humidity sensors and variable speed controls cost $200-$500 for the unit alone. Factor in electrical work ($200-$400), ductwork installation ($150-$400), and exterior termination ($100-$200).

Professional installation is strongly recommended for continuous exhaust fans. The electrical work requires an ESA-Licensed Electrical Contractor, proper duct sizing prevents performance issues, and exterior penetrations must be weatherproofed correctly to prevent water infiltration. DIY installation often results in inadequate airflow, electrical code violations, or moisture problems that cost more to fix than proper installation.

Need help finding a qualified contractor for your continuous exhaust fan installation? Toronto Ductwork can match you with experienced ventilation professionals who understand Ontario Building Code requirements and GTA climate considerations.

Q8

What are the Toronto building code requirements for bathroom exhaust fan ductwork?

The Ontario Building Code requires every bathroom in a Toronto home to have mechanical exhaust ventilation rated at a minimum of 50 CFM, and the exhaust duct must terminate at the building's exterior — never into the attic, soffit, crawlspace, or any other enclosed space. These requirements apply to new construction, renovations where exhaust is being added or replaced, and any situation where a building permit is pulled for bathroom work.

The 50 CFM minimum applies to a standard residential bathroom. For larger bathrooms or ensuites with a separate shower enclosure, higher CFM ratings are appropriate — a common guideline is 1 CFM per square foot of bathroom floor area, with a 50 CFM minimum. Bathrooms with jetted tubs, steam showers, or multiple fixtures benefit from 80 to 150 CFM fans to manage the additional moisture load. In Toronto's climate, where winter heating creates very dry indoor air and summer humidity can be excessive, properly sized bathroom exhaust is critical for controlling condensation on windows, preventing mould growth on grout and drywall, and maintaining healthy indoor air quality.

The duct material matters. Bathroom exhaust duct should be rigid or semi-rigid aluminum or galvanized steel — smooth-wall duct provides lower airflow resistance and does not trap moisture the way corrugated flex duct does. If flex duct is used for a bathroom exhaust run, it must be ULC-rated, pulled taut with no sags or kinks, and supported every 4 feet to prevent sagging. Sagging flex duct creates low points where condensation pools, eventually dripping

back through the fan housing onto the bathroom ceiling. This is an extremely common problem in GTA homes, especially in attic-routed exhaust runs where the temperature difference between warm bathroom exhaust and cold attic air during winter generates heavy condensation.

The duct must slope upward from the fan toward the exterior termination to allow condensation to drain outward rather than back toward the fan. The exterior termination point needs a proper vent cap with a damper flap — not a simple open pipe — to prevent cold air backdraft during Toronto winters and to keep pests, rain, and snow out. Wall termination is generally preferred over roof termination because roof penetrations are more prone to leaks and are harder to maintain, though roof termination is sometimes necessary depending on the bathroom's location in the home.

One of the most common code violations found in Toronto homes is bathroom exhaust vented into the attic. This is never acceptable under the OBC, yet it is found in a surprising number of GTA homes, including relatively recent builds where shortcuts were taken. Warm, moisture-laden exhaust air dumped into a cold attic creates severe condensation, mould growth on roof sheathing, ice damming, and wood rot. If your Toronto home has bathroom exhaust venting into the attic, extending the duct to a proper exterior termination should be a priority — this repair typically costs $300 to $800 per fan in the GTA, including duct extension, exterior cap, and proper sealing.

Any electrical work associated with bathroom exhaust fan installation — wiring, switching, timer controls — must be performed by an ESA-Licensed Electrical Contractor in Ontario. For new fan installations or replacements that involve duct modifications, a ductwork professional can ensure the run is properly sized, routed, insulated, and terminated. Find qualified contractors through the Toronto Construction Network.

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- Kitchen Land
- A Renovation Company Toronto Corporation
- Youbility Inc.
- yourCloset.ca
- LMP Scaffolding Services

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Q9

Can I vent multiple bathroom exhaust fans into one duct in my Toronto home?

Connecting multiple bathroom exhaust fans to a single shared duct is technically possible but creates significant performance and moisture problems, and in most residential applications across the GTA it is better to run a dedicated duct for each fan. If you do combine fans onto a shared duct, specific design requirements must be met to prevent backdrafting, moisture damage, and code compliance issues.

The fundamental problem with connecting two or more exhaust fans to one duct is backdrafting. When one fan runs and the other is off, exhaust air takes the path of least resistance. If the duct path to the exterior has more friction than the path backward through the inactive fan's duct connection, humid exhaust air will flow backward into the second bathroom rather than exiting the building. This pushes moist air into a bathroom that may not even be in use, causing condensation on mirrors, walls, and ceilings. In Toronto's cold winters, this backdrafted moisture can condense on cold surfaces and promote mould growth — exactly the problem bathroom exhaust is supposed to prevent.

To prevent backdrafting in a shared duct configuration, each fan connection to the common duct must have a backdraft damper installed immediately at the junction point. These dampers close when the fan is not running, preventing reverse airflow. The shared trunk duct must also be sized larger than each individual branch to handle the combined airflow when both fans run simultaneously. If each fan is rated at 80 CFM, the common duct needs to handle 160 CFM — typically requiring a 6-inch round duct rather than the standard 4-inch. Undersizing the common duct restricts airflow from both fans and makes condensation pooling worse.

In practice, the cost of properly designing a shared duct system — with oversized common duct, backdraft dampers at each junction, and careful slope management — often approaches or exceeds the cost of simply running separate dedicated ducts. A dedicated 4-inch duct from each bathroom fan to its own exterior termination point is simpler, more reliable, avoids all backdraft issues, and is easier to maintain. Each installation runs $300 to $800 in the GTA including the duct run, insulation in unconditioned spaces, and exterior vent cap.

If building constraints genuinely prevent separate duct runs — which sometimes happens in Toronto homes with limited exterior wall access or complex attic framing — a multi-port exhaust fan is a better solution than connecting separate fans to one duct. Panasonic, Fantech, and other manufacturers make inline multi-port exhaust fans designed specifically for this purpose. A single powerful inline fan is installed in the attic or mechanical space, with individual intake ports ducted to each bathroom. The fan pulls air from all connected bathrooms simultaneously through properly sized ductwork and exhausts through a single exterior termination. These systems cost $800 to $2,000 installed in the GTA, including the fan unit, ductwork, and controls, but they eliminate backdrafting entirely and are specifically engineered for multi-bathroom ventilation.

Whichever approach you choose, all exhaust ductwork must terminate at the building exterior per the Ontario Building Code — never into the attic, soffit, or crawlspace. Any electrical work must be done by an ESA-Licensed Electrical Contractor. A ductwork professional can evaluate your home's layout and recommend the most practical solution. Browse HVAC and ductwork contractors through the Toronto Construction Network directory at torontoconstructionnetwork.com.

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- The English Carpenter
- Leveloff.LTD
- Metro Rent-All
- A Renovation Company Toronto Corporation

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Q10

What size exhaust duct do I need for a large range hood in my Toronto kitchen?

The exhaust duct size for your range hood depends directly on the hood's CFM rating, and getting this wrong will choke performance and create excessive noise. Most range hoods in the 400-600 CFM range require a minimum 6-inch round duct, while hoods rated above 600 CFM typically need an 8-inch duct. High-performance commercial-style hoods pushing 900-1,200 CFM often require 10-inch ductwork. Your hood's installation manual will specify the required duct size — never go smaller than what the manufacturer recommends.

The reason duct sizing matters so much is airflow velocity and static pressure. When you push a large volume of air through an undersized duct, the velocity increases dramatically, which creates two problems: the air resistance (static pressure) skyrockets, forcing the blower to work harder and move less air than its rating suggests, and the high velocity generates a loud rushing or whistling noise that makes the hood unbearable to use. A 600 CFM hood connected to a 4-inch duct — something I've seen in older Toronto kitchens where homeowners installed a new hood on an existing vent — will deliver maybe 250-300 CFM in practice and sound like a jet engine doing it.

Duct material matters just as much as size in the GTA. Use rigid or semi-rigid metal duct for your range hood exhaust — galvanized steel or aluminum. Never use flex duct for range hood exhaust runs. Flex duct's corrugated interior creates far more friction than smooth metal, effectively reducing your duct's capacity by 25-40%. A 6-inch flex duct performs more like a 5-inch smooth duct in terms of actual airflow delivery. The Ontario Building Code also requires that kitchen exhaust duct materials meet specific flame spread and smoke development ratings, which rules out standard plastic flex duct entirely.

Keep your duct run as short and straight as possible. Every 90-degree elbow in the run adds the equivalent of 5-10 feet of straight duct in terms of airflow resistance. If your kitchen is on an interior wall and you need to run the duct through the ceiling, across the attic, and out through the roof or a gable wall, you could be looking at 20-30 equivalent feet of duct by the time you account for the elbows. In that scenario, upsizing to the next larger duct diameter is smart insurance. A 6-inch duct on a long, winding run should be bumped to 7 or 8 inches to compensate.

There is one critical issue many Toronto homeowners overlook: **if your range hood is rated above approximately 400 CFM, the Ontario Building Code requires a make-up air system** to replace the air being exhausted. The threshold is 75 litres per second, which works out to roughly 159 CFM — but in practice, make-up air requirements are triggered by hoods in the 400+ CFM range once you account for the OBC's calculation methods. A make-up air system adds $2,000-$5,000 to your project but is non-negotiable for code compliance and combustion safety, especially if you have a gas furnace or water heater. Installing the range hood exhaust duct itself typically costs $500-$2,500 in the GTA depending on run length and routing complexity, plus the cost of the

hood itself. A building permit is required for new kitchen exhaust installations and runs around $200-$500 through the City of Toronto. Have a qualified contractor assess your kitchen layout before purchasing the hood — they can advise on the optimal duct route and whether make-up air will be required for your specific setup.

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Q11

Why does my bathroom exhaust fan seem weak even though it is running in my GTA home?

A running but weak bathroom exhaust fan almost always comes down to one of four problems: a blocked or restricted duct run, an undersized or aging fan motor, a crushed or disconnected duct in the attic, or a clogged exterior vent cap. The fan motor itself is often the last thing that has actually failed — the ductwork between the fan and the outside is where most problems hide.

The most common culprit in GTA homes, especially those built in the 1970s through 1990s across Scarborough, Mississauga, Brampton, and Markham, is a flex duct in the attic that has sagged, kinked, or partially disconnected from either the fan housing or the roof cap. Flex duct is lightweight and relies on being pulled taut and supported every 4 feet with straps or hangers. Over decades, the supports fail, insulation shifts, and the duct droops into a U-shape that traps condensation and restricts airflow. In GTA winters, moisture inside a sagging attic exhaust duct freezes, creating an ice blockage that further reduces airflow. By spring, the melting ice drips back through the fan housing and stains the bathroom ceiling — a classic complaint in older GTA homes.

Check the exterior vent cap first — it is the easiest thing to inspect. Go outside and find where the bathroom exhaust terminates. If the flapper is stuck shut, caked with lint, or blocked by a bird's nest or wasp nest, no amount of fan power will push air through. Clean or replace the vent cap — a basic replacement costs $20-$40 for the cap

itself. While you are there, have someone turn the fan on inside and hold a tissue near the exterior opening. If the tissue barely moves, the blockage is further up the line in the duct itself.

Fan age and sizing are the next considerations. Bathroom exhaust fans have a lifespan of roughly 10-15 years before the motor bearings wear out and performance drops significantly. The Ontario Building Code requires a minimum of 50 CFM for a standard bathroom, but many older homes have fans rated at only 30-40 CFM that were undersized from day one. If you are replacing the fan, upgrade to at least 80-110 CFM for a standard bathroom or 110-150 CFM for a bathroom with a large shower or soaker tub that generates more moisture. Modern fans are dramatically quieter than old models — look for fans rated at 1.0 sone or lower for near-silent operation.

If the duct run needs replacement, use rigid or semi-rigid metal duct rather than flex duct for the new installation. A 4-inch rigid aluminum duct delivers significantly more airflow than a 4-inch flex duct of the same length because the smooth interior creates far less friction. For longer runs — anything over 10-12 feet — consider upsizing to a 6-inch duct and fan for noticeably better performance. Professional bathroom exhaust fan replacement with new ductwork to the exterior runs $300-$800 in the GTA, and it is one of the most impactful upgrades you can make for moisture control and mould prevention. Any electrical work involved requires an ESA-Licensed Electrical Contractor in Ontario.

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Q12

Should I vent my Toronto home bathroom exhaust fan through the roof or the soffit?

Always vent through the roof or a gable wall — never through the soffit. While soffit venting might seem easier and cheaper, it creates serious moisture problems in GTA homes that far outweigh any installation savings.

The exhaust air you are pushing out of your bathroom is warm, moisture-laden air, and when it exits through a soffit vent, it gets drawn right back into the attic through the soffit intake vents that are part of your roof ventilation system. You are essentially pumping bathroom humidity directly into your attic.

This is a particularly damaging problem in Toronto's climate. During winter, that warm, moist exhaust air enters the cold attic space and condenses on the underside of the roof sheathing. Over a single heating season, a soffit-vented bathroom fan can deposit litres of moisture onto your roof decking. The result is mould growth on the plywood sheathing, wood rot, deteriorating roof structure, and ice damming where the moisture freezes near the roof edge. Home inspectors in the GTA flag soffit-vented bathroom exhausts as a deficiency on virtually every inspection report, and it can become a deal-breaker during a home sale.

A roof cap termination is the preferred method for most GTA homes. A proper roof cap installation involves running rigid or semi-rigid metal duct from the fan housing up through the attic and out through a purpose-cut hole in the roof, sealed with a flashed roof cap that prevents rain and snow from entering. The duct must be insulated in the attic space with a minimum of R-8 duct wrap to prevent condensation from forming on the cold exterior of the duct during winter. Without insulation, a bathroom exhaust duct running through a -15 degree attic will sweat profusely, dripping water back into the fan and onto the bathroom ceiling below.

Gable wall termination is an excellent alternative if your attic layout allows for a reasonably short, straight run to a gable end. This avoids penetrating the roof membrane entirely, eliminating any future leak risk at the roof cap. It is especially practical in homes with accessible gable ends on the same side of the house as the bathroom.

A few practical considerations for the installation: slope the duct slightly downward toward the exterior termination point so any condensation that does form drains outward rather than back into the fan housing. Use a minimum 4-inch duct — 6-inch is better for longer runs. Ensure the roof cap or wall cap has a damper flap that closes when the fan is off to prevent cold air backdraft in winter, which is a common complaint in Toronto homes. The total cost for a professional bathroom exhaust fan installation with new ductwork through the roof typically runs $400-$800 in the GTA. Any electrical work for wiring the fan requires an ESA-Licensed Electrical Contractor. If your home currently has a soffit-vented bathroom fan, rerouting it through the roof is one of the smartest moisture-control investments you can make.

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Q13

What happens if I vent my bathroom exhaust into the attic instead of outside in Toronto?

Venting a bathroom exhaust fan into the attic instead of to the outside is one of the most damaging code violations found in GTA homes, and the consequences range from mould growth and structural rot to voided insurance and failed home inspections. The Ontario Building Code is clear — all bathroom exhaust must terminate outside the building envelope. There is no exception, no grey area, and no grandfathering for existing installations that dump moist air into the attic.

Here is what actually happens when bathroom exhaust dumps into an attic in Toronto's climate. Every time someone showers, the fan pushes warm air saturated with moisture — typically at 30-35 degrees Celsius and near 100% relative humidity — directly into the attic space. During winter, when attic temperatures drop to -10 or -20 degrees, that moisture condenses instantly on the cold roof sheathing, rafters, and any surface it contacts. A single bathroom fan running 30 minutes per day deposits roughly half a litre of water into the attic daily. Over a five-month heating season, that is 75 litres of water accumulating in a space designed to stay dry.

The damage progression is predictable and severe. Within the first winter, you will see frost forming on the underside of the roof sheathing. As temperatures fluctuate through Toronto's 50-plus freeze-thaw cycles per winter, this frost melts and refreezes repeatedly, saturating the plywood. By the second or third winter, black mould appears on the sheathing and spreads across the rafters. The plywood begins to delaminate — the layers separate as the adhesive breaks down from repeated wetting. Within 5-7 years, the structural integrity of the roof sheathing is compromised. I have seen homes in Etobicoke and Scarborough where attic-vented bathroom fans caused the roof sheathing to rot so badly it needed complete replacement — a $10,000-$20,000 repair that dwarfs the $400-$800 it would have cost to vent the fan properly through the roof in the first place.

There are also immediate health and safety concerns. Mould growth in the attic does not stay in the attic. Mould spores migrate through ceiling penetrations — light fixtures, attic hatches, and gaps around plumbing stacks — into the living space below. Occupants may experience respiratory symptoms, allergic reactions, and worsening asthma without realizing the source is attic mould from an improperly vented bathroom fan.

From a practical standpoint, this violation will be flagged on any home inspection and can derail a real estate transaction. Insurance companies may deny moisture-related claims if the damage traces back to an improperly vented exhaust fan, arguing it was a known code violation. If your GTA home currently vents bathroom exhaust into the attic — and this is surprisingly common, especially in homes where fans were added after original construction — the fix is straightforward. A professional can extend the existing duct through the roof with a proper roof cap and insulate the duct run for $400-$800. Compared to the cost of mould remediation and roof sheathing replacement,

this is one of the best returns on investment in home maintenance.

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Q14

How do I properly vent a kitchen range hood exhaust in a Toronto condo?

Venting a kitchen range hood in a Toronto condo is fundamentally different from a house because you are working within a shared building envelope, and most condos have strict rules about modifying exterior walls, shared ductwork, and exhaust termination points. Before you purchase a range hood or hire a contractor, your first step is always to check with your condo board and review the building's declaration and rules regarding HVAC modifications.

Most Toronto condo buildings fall into one of two categories for kitchen ventilation. **Buildings with dedicated kitchen exhaust chases** have a vertical shaft running from each unit to the roof, with individual connections at each floor. If your building has this setup, you can connect a range hood to the existing chase — but you are limited by the size of the chase connection (typically 6 inches) and the total duct run length, which limits practical CFM capacity. Range hoods in these buildings typically work well up to about 400 CFM. Going higher creates excessive back-pressure because the shared chase has limited capacity, and you may push exhaust into neighbouring units through leaky connections in the chase.

Buildings without dedicated kitchen exhaust chases — which includes many older Toronto condos from the 1960s through 1980s — present a much bigger challenge. In these buildings, the original kitchen ventilation was typically a recirculating fan over the stove with a charcoal filter. There is no path to the exterior for kitchen exhaust. Adding one would mean penetrating the exterior wall of the building, which virtually every condo corporation prohibits because it affects the building envelope, waterproofing, and aesthetics. In this situation, your options are

limited to a high-quality recirculating range hood with multi-stage carbon filters. Modern recirculating hoods have improved significantly — look for units with activated charcoal filters rated for odour and grease capture, and plan to replace the filters every 3-6 months at $30-$60 per set.

If your condo does allow exterior venting through an existing chase or approved wall penetration, there are important technical requirements. The duct from your hood to the chase or exterior must be rigid metal — galvanized steel or aluminum. Use smooth-wall duct, not flex duct, to maximize airflow in what is usually a tight, restricted path through condo walls and soffits. Every joint must be sealed with UL 181-rated foil tape or duct mastic. Install a backdraft damper at the hood connection to prevent odours and conditioned air from escaping when the hood is off — in a Toronto winter, an open exhaust path is essentially a hole in your wall letting -15 degree air pour in.

Cost-wise, connecting a range hood to an existing condo exhaust chase typically runs $500-$1,500 in the GTA including the ductwork, connections, and backdraft damper, on top of the hood itself. If the building permits a new wall penetration — which is rare — expect $1,500-$3,000 for the complete installation including the core drilling, duct installation, exterior cap, and interior finishing. Remember that any range hood over approximately 400 CFM triggers the Ontario Building Code's make-up air requirement, which is extremely difficult to meet in a condo setting. Most condo-appropriate range hoods are in the 200-400 CFM range for exactly this reason. Always get your condo board's written approval before starting any exhaust ductwork modification.

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Q15

What are the OBC requirements for exhaust duct materials in a Toronto residential home?

The Ontario Building Code (OBC Part 6 — Mechanical) requires that all exhaust duct materials in residential homes meet specific flame spread, smoke development, and durability standards, and the requirements differ depending on whether the duct carries kitchen grease-laden exhaust, bathroom moisture, or general ventilation air. Understanding these requirements protects your home and ensures your installation passes inspection.

Kitchen range hood exhaust ducts face the strictest material requirements because they carry grease-laden air that represents a fire hazard. The OBC requires that kitchen exhaust ducts be constructed of steel, stainless steel, or copper with a minimum thickness of 0.43 mm (26 gauge) for round ducts. All joints must be sealed to prevent grease accumulation at connection points. The duct must have smooth interior surfaces — corrugated flex duct is not permitted for kitchen exhaust because grease accumulates in the ridges, creating a fire risk. The duct must terminate outside the building envelope with a cap that has a back-draft damper but no insect screen, since screens clog with grease and become a fire hazard themselves. Kitchen exhaust ducts must maintain minimum clearances from combustible materials as specified by the duct manufacturer and the OBC.

Bathroom exhaust and general ventilation ducts have somewhat less restrictive material requirements but still must meet important standards. Duct materials must be non-combustible or have a flame spread rating no greater than 25 and a smoke development rating no greater than 50 when tested to CAN/ULC-S102. In practical terms, this means galvanized steel, aluminum, and ULC S110-compliant flex duct are all acceptable for bathroom exhaust. Rigid metal duct is preferred for performance — its smooth interior creates significantly less airflow resistance than flex duct. When flex duct is used, it must comply with ULC S110 and be installed according to manufacturer specifications: pulled taut, supported at maximum 4-foot intervals, and with total bend angles not exceeding 180 degrees.

All exhaust duct joints must be mechanically fastened and sealed. The OBC requires that duct connections use sheet metal screws, rivets, or other approved mechanical fasteners — you cannot rely on tape alone. After mechanical fastening, joints must be sealed with UL 181-rated foil tape or duct mastic to prevent air leakage. This is especially important for exhaust ducts because leaking exhaust air into wall cavities, ceiling spaces, or attics causes moisture damage and potentially introduces combustion gases or cooking odours into unintended areas.

Fire dampers are required where exhaust ducts penetrate fire-rated assemblies. If your bathroom exhaust duct passes through a fire separation — such as between a house and an attached garage, or between dwelling units in a duplex or semi-detached home — a fire damper rated to match the fire-resistance rating of the assembly must be installed. Fire dampers automatically close when exposed to heat, preventing fire from spreading through the duct system.

Insulation requirements apply to exhaust ducts running through unconditioned spaces. In GTA attics, where winter temperatures can drop well below freezing, uninsulated exhaust ducts cause severe condensation problems.

The OBC and good practice dictate a minimum of R-8 duct wrap insulation with an intact vapour barrier on all exhaust ducts in unconditioned spaces. The insulation prevents warm, moist exhaust air from condensing inside the duct and dripping back into the fan housing. A building permit is required for new exhaust duct installations in Toronto, and the inspector will verify material compliance, fire damper placement, and exterior termination. Permit fees through the City of Toronto are typically $200-$500 depending on scope.

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Q16

Can I install an inline exhaust fan with ductwork for multiple bathrooms in my Toronto home?

Yes, an inline exhaust fan serving multiple bathrooms is an excellent solution for GTA homes, and it is increasingly popular in Toronto renovations because it offers quieter operation, more powerful extraction, and simplified roof penetrations compared to individual ceiling-mounted fans in each bathroom. A single inline fan mounted in the attic or between floors can serve two, three, or even four bathrooms through a branched duct system with individual pickup points in each room.

The concept is straightforward: a powerful inline fan — typically rated at 200-400 CFM — mounts remotely in the attic, a mechanical closet, or a joist cavity between floors. Individual 4-inch or 6-inch ducts run from ceiling grilles in each bathroom to a central junction or wye fitting, which connects to the inline fan. The fan exhausts through a single duct to a roof cap or gable wall termination. Because the fan motor is located away from the bathrooms — often 10-20 feet away — the noise at the ceiling grille is dramatically lower than a traditional ceiling fan. Many homeowners describe the difference as going from a noticeable hum to near silence.

Proper design is critical for a multi-bathroom inline system to work correctly. Each bathroom branch needs a backdraft damper at the ceiling grille to prevent air from flowing backward through one bathroom when only another is in use. Without these dampers, running the fan with one bathroom grille open pulls air backward through the other bathroom grilles, essentially making those rooms air intakes instead of exhausts. The inline fan must be sized to handle the combined airflow of all connected bathrooms — the Ontario Building Code requires a minimum 50 CFM per standard bathroom, so a two-bathroom system needs at least 100 CFM, and a three-bathroom system needs 150 CFM minimum. In practice, sizing up to 80-110 CFM per bathroom gives much better moisture removal performance.

Duct sizing and layout follow specific rules. Each branch run from a bathroom grille to the central junction should be a minimum 4-inch diameter, with 6-inch preferred for runs longer than 10 feet. The main trunk from the junction to the fan and from the fan to the exterior should be 6-inch minimum, with 8-inch recommended for systems serving three or more bathrooms. Keep branch runs as short and straight as possible — every 90-degree elbow adds equivalent length that reduces airflow. The fan should be mounted with vibration isolators to prevent motor noise from transmitting through the framing.

In GTA attics, insulation is non-negotiable. All ductwork in the attic space must be wrapped with minimum R-8 insulation with an intact vapour barrier. Toronto's winter attic temperatures routinely drop below -10 degrees, and warm, moist bathroom exhaust air hitting uninsulated duct walls creates heavy condensation that drips back into the bathrooms and promotes mould growth on the duct exterior.

Cost for a professional multi-bathroom inline fan system in the GTA runs approximately $800-$2,000 for a two-bathroom setup and $1,200-$3,000 for three bathrooms, including the fan unit ($200-$500), ductwork, ceiling grilles, backdraft dampers, insulation, and roof cap. The electrical connection for the fan and any timer or humidity-sensing switches in each bathroom must be done by an ESA-Licensed Electrical Contractor. This is a project where professional installation pays for itself — an improperly designed system with wrong duct sizes or missing backdraft dampers will underperform and create cross-contamination between bathrooms.

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Q17

Why does cold air come back through my kitchen exhaust vent in winter in Toronto?

Cold air backdraft through your kitchen exhaust vent is one of the most common winter complaints in GTA homes, and it happens because your exhaust duct is essentially an open pipe connecting your warm kitchen to the -15 degree air outside. When the range hood is off, there is nothing actively pushing air outward, so cold outdoor air naturally falls down through the duct into your kitchen — a phenomenon driven by the density difference between cold outdoor air and warm indoor air, combined with wind pressure on the exterior vent cap.

The primary defence against this backdraft is a **backdraft damper**, and in many Toronto homes, the damper is either missing, stuck open, broken, or inadequate. There are typically two damper locations in a range hood exhaust system: one built into the range hood itself at the duct connection, and one at the exterior wall or roof cap. Both should be present and functioning. The exterior cap damper (a gravity flap or spring-loaded flap) closes when the fan turns off, blocking wind-driven air from entering the duct. The internal damper at the hood provides a second barrier. If either damper is stuck open — which happens when grease accumulates on the flap, preventing it from

seating properly — cold air pours straight through.

Start by inspecting and cleaning both dampers. The exterior vent cap is usually accessible from outside — look for the round or rectangular cap on your exterior wall or roof. Check that the flap moves freely and seats firmly when closed. Grease buildup, paint, rust, or debris can hold the flap open. Clean it with a degreaser and verify it swings shut by gravity. If the cap is damaged or the flap is missing, replace it — exterior vent caps cost $20-$50 and are a straightforward swap. For the internal damper at the hood, you will typically need to remove the duct connector or access panel on the hood to inspect it. Clean any grease accumulation and ensure the flap moves freely.

If both dampers are working and you still get cold air infiltration, the problem is usually wind pressure. Toronto homes on exposed lots, near the lake, or at higher elevations in areas like the Scarborough Bluffs or North York uplands experience significant wind pressure on exterior walls. Wind hitting the vent cap can force air through even a functioning gravity damper. The solution is a **spring-loaded backdraft damper** installed inline in the duct — these require positive air pressure from the fan to open and snap shut the moment the fan turns off. They cost $20-$40 and install inside the duct with sheet metal screws. For severe cases, a **motorized damper** that opens only when the range hood is running provides the tightest seal — these run $80-$200 installed and are wired to operate with the hood fan switch.

One important consideration in tightly sealed GTA homes is the stack effect. In winter, warm air rises and exits through upper levels of the home, creating negative pressure on lower floors that actively pulls cold outside air inward through any available opening — including kitchen exhaust ducts. Homes with poor air sealing at the attic level, recessed lights, or bathroom exhaust fans without dampers experience stronger stack effect, which worsens kitchen vent backdraft. Addressing overall air sealing in your home reduces the driving force behind cold air backdraft through all exhaust vents.

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Q18

Can I install a bathroom exhaust fan and ductwork in a Toronto condo bathroom?

Yes, you can install or replace a bathroom exhaust fan in a Toronto condo, but the approach depends entirely on your building type, existing ventilation infrastructure, and condo corporation rules. Most Toronto condos already have bathroom exhaust — the question is usually whether you can upgrade, replace, or add a fan where one does not currently exist.

Most Toronto high-rise condos built after the 1970s have centralized exhaust systems with a rooftop exhaust fan that creates negative pressure through a vertical riser duct shared by multiple units on the same stack. Your bathroom connects to this shared riser through a branch duct, and a grille or small in-suite fan controls the airflow from your unit. In these buildings, you typically cannot install a new independent exhaust fan that vents to the exterior because you only have one exterior wall (usually the window wall, far from the bathroom), and running a new exhaust duct horizontally through the suite and out the exterior wall requires condo board approval, engineering review, and significant renovation. The more practical option is upgrading or adding a fan on your existing branch connection to the building's exhaust riser.

Replacing an existing bathroom fan on a shared riser is straightforward and is the most common condo bathroom ventilation project. You remove the old fan housing, install a new fan that matches the existing duct size (typically 4-inch round), and connect it to the existing branch duct. Modern bathroom fans are dramatically quieter and more efficient than units from the 1990s or earlier — look for models rated 0.3 to 1.0 sones for whisper-quiet operation. Installation costs $300 to $600 in a condo setting. However, because this involves electrical work, an ESA-Licensed Electrical Contractor is required in Ontario. Do not hire a handyman for this — improper electrical work in a condo creates fire risk and liability for you and your neighbours.

If your condo bathroom has no existing exhaust fan or duct connection, adding one is more complex. If your building has a shared exhaust riser accessible from your unit, a contractor can tap into it with a new branch duct and fan. This requires coordination with your condo's property manager, as modifying a common element (the exhaust riser) requires board approval and possibly a Section 98 modification agreement under the Ontario Condominium Act. If no shared riser exists or is accessible, the alternative is running a new exhaust duct to an exterior wall — feasible in low-rise condos and townhouse-style condos, but often impractical in high-rises due to the distance involved.

Ontario Building Code requires bathroom exhaust ventilation at a minimum of 50 CFM, and the exhaust must terminate outside the building envelope. Venting a bathroom fan into the ceiling cavity, attic, or corridor is a code violation. In condo buildings, the shared riser terminates at the rooftop exhaust fan, satisfying this requirement. If

you are in a townhouse-style condo with attic access, the exhaust duct must run through the attic and exit through a roof cap or wall cap — never into the attic space itself, which causes severe moisture damage and mould growth.

A backdraft damper is essential in any condo exhaust installation. Because multiple units share the same exhaust riser, odours, moisture, and noise from neighbouring units can travel back through the shared duct into your bathroom when your fan is off. A spring-loaded backdraft damper on your branch duct connection prevents this reverse airflow. Most quality exhaust fans include a built-in backdraft damper, but adding an external one on the branch duct provides extra protection. These cost $15 to $40 and are a worthwhile addition in any Toronto condo bathroom exhaust installation.

For condo exhaust fan projects, find a contractor experienced with multi-unit buildings through the Toronto Construction Network directory.

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