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Where Do Bathroom Fans Vent to in Apartments

Written by [Joonas Pütsepp](#) in [Bathroom Ventilation](#), [Ventilation](#)

With the increasing height and residential capacity of apartment buildings, the challenge of proper ventilation is increasing as well. The risk of stale air and odor being transferred between apartment units is a pressing problem, especially across bathrooms.

Therefore, the best way to avoid uncomfortable situations is by understanding how the bathroom fan ventilation systems in apartment buildings work and using the knowledge to curtail smells.

Apartment bathroom fans vent to the outside. However, individual fans typically have their exhausts connected before exiting the building. In most cases, there is a damper that keeps the air from one bathroom from entering the neighbour's unit.

A diverse group of tenants of various backgrounds, ages and occupations reside in apartment buildings. There are numerous daily activities like showering and smoking which can result in unnecessary odors being introduced from one bathroom unit into somebody else's home. **If you are curious to know what are the few things that you should be mindful of, continue reading as we investigate where your bathroom fans are venting to.**

Are apartment air vents connected?

All habitable buildings require adequate ventilation to ensure the circulation of air, removal of odor and humidity control. This is of two types – Natural ventilation and Mechanical ventilation.

The opening of windows and doors to the apartment unit for stale air to move out and fresh air from outside to come is called **natural ventilation**.

On the contrary, the use of equipment such as fans, vents and ducts to control the above mentioned process is called **mechanical ventilation**. Most Multi Unit Residential Buildings (MURBs) are installed with HVAC systems that run through the establishment and regulate this process. The intake and distribution of air is supported by ducts and numerous vents which are a part of this system.

You will find numerous holes along the walls in your apartment that are covered by metal plates. These are the air vents whose purpose is to let air enter and exit the air ducts. The air duct network running through the apartment guides the air that enters from the air vents to the central air or exhaust unit.

Interestingly, there are two further subcategories of mechanical ventilation systems. These are **centralized systems** or **compartmentalized systems**.

Usually, mid to high rise MURBs constructed after the 1960s have the central ventilation system. One way to identify if your apartment building has a centralized ventilation system is to check for a number of exhaust fans on the roof. These fans are connected to grills in individual apartments through vertical shafts or ducts serving the apartments below them.

Apartments in such buildings consist of multiple fans which exhaust air from the bathrooms, kitchens or both. The air flows into a common shaft which is ducted to multiple apartments. These are extremely effective in drawing out the air from bathrooms which is typically an area with high moisture and odor sources.



Figure 1 demonstrates the common centralized apartment exhaust fan configurations.

Source: [Multifamily Ventilation Assessment and Retrofit Guide, 2016](#)

On the left is a representation of an exhaust fan serving both the kitchen and baths of vertically stacked apartments. On the right is the illustration of an exhaust fan serving back to back bathrooms.

Since apartments in a building use the same floor plan it is highly likely that they are sharing a few things between them. Therefore, yes, living in an apartment means that your next door neighbors are literally next door because the air vents across apartments are usually connected through a common shaft which in turn is a part of a centralized ventilation system.

Can smoke travel through vents?

In each building, controlling the air temperature and airflow are the core functions of the HVAC system. It is not designed to manage odors. There are times when people residing in apartments have noticed that the air flowing out of their vents smells a lot like smoke.

This could be because the central ventilation system has not been designed and constructed in the best possible way and therefore is not working as it is expected to. There could be multiple flaws which could lead to this.

At times, the entire system has not been designed carefully or there are parts of the system which have been constructed poorly. For instance, the dampers could be installed at a wrong angle or are just malfunctioning.

Therefore, if somebody wants to smoke indoors discreetly two things could happen – the smoke could travel to other parts of the room notifying roommates or family members or the smoke could travel to other apartment units causing discomfort to the neighbours.

In the first case, **if somebody is smoking in any room with an air vent, the HVAC system will circulate the smoke inside the system and throughout the apartment.** In the short term, the smoke will get into the air vent and can travel to another room through a defective damper.

One way to eliminate smoke odor from traveling out from your apartment is by fitting a [charcoal filter](#) in front of the air duct. This one from Amazon is a large sheet that you can cut to size to fit any air duct. However, it is important to keep in mind that the filter needs to be replaced regularly to be effective.

In the long term, the smoke will linger in the inaccessible parts of the air vents including but not limited to the condenser coils further down the system. Eventually, this smell could become more pronounced every time the AC or the furnace is switched on since the air will blow the chemicals back into the interiors.

While you can minimize this effect with regular dusting and vacuuming, it could be extremely difficult to completely get rid of it.

In the second case, there are many ways for the smoke to transfer from one apartment unit to another adjacent one. This could be through vents, pipers, gaps in insulation, electrical outlets, ceiling fixtures, windows, doors etc. In most cases it is the air vents that cause the smoke to travel.

This is because the air vents are interconnected through the common HVAC system. **If both apartments are fitted with bathroom fans then the smoke from your apartment could flow upwards through the common ductwork to the apartment above and enter its bathroom if its fan is turned off.**

Similarly, in case there is ever a huge wind blast could cause the smoke in the exhaust track to be blown into the bathroom downstairs. Therefore, bathroom fans are notorious for the smoke to travel to other units.

Similar to the situation in which the smoke lingers in the air vents and ducts inside the apartment, the smoke and residual odors could remain in the common shaft as well. Further, the dust and lint could absorb the

cigarette odor-causing it to stay longer and distribute it across the system especially whenever one unit switches on their bathroom fan.

Will it smell if I smoke in the bathroom?

The simple answer is – yes. Having said that, there are ways to reduce or cover the smell as much as possible. Most smokers seek refuge in their bathrooms because there are more ways to cover up the smell here as compared to other parts of the apartment.

It is important to bear in mind that the sense of smell for smokers as it relates to secondhand smoke is **significantly diminished**. Especially as compared to non-smokers who have a higher ability to detect smoke related odor. Therefore, the rule of thumb is to be extra cautious even if you are smoking in the bathroom which is safer in comparison.

There are three things which could be helpful allies for smokers – bathroom fans, windows and air vents. If utilised the right way these could help reduce the smell of smoke.

Firstly, the window and the bathroom fan can be used together to create a suction. If the fan is strong enough and the window is cracked open just a little bit then the smoke can be pushed out of your own unit.

Secondly, check if your bathroom is fitted with an air vent which comes with a little metal lever that slides backward and forwards. If yes, you can use this to open or close the vent. You must close the air vent prior to smoking using the lever. For added protection, consider taping a plastic bag or piece of paper on top of the vent.

Some smokers also go out of their way to plug the air gap at the bottom of the bathroom door using a wet towel. This way one can create a closed unit from which the smoke can only escape through the fan or window outlet.

However, be mindful that you still take a chance of the smell hanging around and the smoke flowing upwards to your neighbours through the HVAC system.

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I like it when I'm able to fix everything that needs fixing around the house. In order to do that, I have to do a lot of research. This site will cover everything I learn and maybe help others do the same.