

Ventilation Blows Away Smoking Issues In Restaurants



"My staff is very happy with the recent ventilation improvements made. With the addition of the Venmar ventilation system, the level of second hand cigarette smoke in our work environment has been drastically reduced. Suffering from allergies, I am even more sensitive than most of my staff. Cigarette smoke was a real problem. Since the installation of the Venmar system, I have not suffered from any of these cigarette related allergy problems. I am very pleased with the overall results."

Brian Foss, General Manager

Breaking News

The City of Toronto has approved an amendment to the current smoking bylaw that will allow for ventilation and designated smoking areas in Toronto bars and restaurants pending a peer review. The decision to amend this bylaw was based on testing done at the *Black Dog Pub* pilot project where the indoor air quality was improved by using a Venmar ventilation system.

The Problem

The *Black Dog Pub*, located in Scarborough, Ontario has been serving local clientele in a friendly, English Pub atmosphere for over 7 years. The Pub is in a stand-alone building which had previously been home to a variety of restaurants and even a gas station. The Pub now features a quaint bar with a seating area designated for smoking patrons off the main entry, a large non-smoking seating area, and an outdoor patio. The Pub can accommodate approximately 150 people.

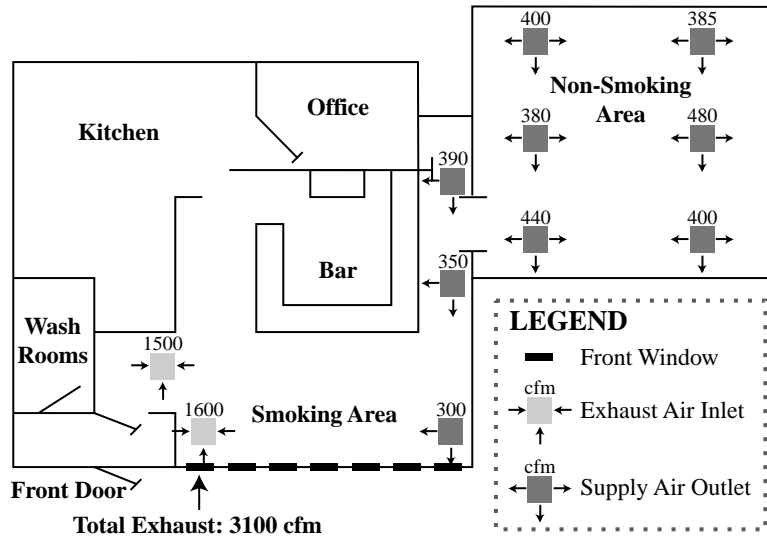
Ken Rueter is the owner of the *Black Dog Pub*. He is an active member of the Ontario Restaurant Hotel and Motel Association and has had a long-standing commitment to improving air quality. A number of technologies for smoke removal have been implemented at the Pub including ceiling mounted electronic precipitator type filters and even a heat recovery ventilator. Unfortunately these first attempts at ventilation were undersized and focused simply on capturing smoke from the smoking area.

The Solution

The input from Norm Hutchonson - the installing contractor of *International Air Technologies*, the Restaurant Association consultants, and Venmar Technicians resulted in a comprehensive displacement of directional flow designed for the Pub. The owner committed to the modifications of the existing mechanical systems and to the ongoing monitoring of specific IAQ (indoor air quality) indicators. Key design criteria included:

- Sizing the ventilation system based on ASHRAE guidelines for smoking and non-smoking areas of a restaurant.
- Relocating existing air diffusers and adding others to create a directional airflow from the non-smoking to smoking area.
- Using latent and sensible energy recovery ventilation technology to avoid adding additional heating or cooling capacity.

The walls between the smoking and non-smoking area have two open doorways and two open “window” areas. Since 100% of the exhaust air is taken from the smoking area and over 60% of the fresh air is delivered to the non-smoking area, the ventilation design creates a velocity of approximately 30 feet per minute across the open areas. The exhaust air is taken directly back through the rooftop ERV and exhausted outside, while the fresh air is delivered into the return air side of the two heat/cool rooftop units servicing both areas.



The Results

Since the installation of the Venmar ERV3000e, staff and patrons have noticed a remarkable improvement in the Pub's air quality. Through extensive testing, several IAQ indicators were monitored. The results of these tests showed a dramatic reduction in the airborne particulates and gases associated with environmental tobacco smoke.

Non-Smoking Areas:

- 80% reduction in respirable particulates
- 50-90% reduction in tobacco specific components

Smoking Areas:

- 70% reduction in respirable particulates
- 40% reduction in tobacco specific components

The test results also showed a significant improvement in other air quality indicators aside from tobacco related compounds. In fact, test results completed by

the *Center for Toxicology and Environmental Health* in Little Rock, Arkansas found that the tobacco smoke levels and air quality were comparable to a publicly regulated smoke-free food court.

“Ventilation is an internationally recognized front line means to protect workers from indoor air contaminants. The ORHMA believes that the commitment from Toronto City Hall to implement ventilation as a compliance alternative is precedent setting and is a responsible solution to a serious matter. Upon the successful completion of a scientific and technical review of the Indoor Air Quality Initiative, food-service and hospitality operators will be able to use ventilation as a compliance alternative to separately enclosed and ventilated designated smoking rooms (DSRs).”

Terry Mundell, President
Ontario Restaurant Hotel and Motel Association

Project Details

Reference Standard	ASHRAE 62-89
Design Airflow	3100 cfm
Venmar Model	ERV3000e
Design/Build Project by Contractor: Norm Hutchonson of <i>International Air Technologies</i>	<i>Location:</i> Toronto, ON <i>Phone:</i> (416) 818-8766 <i>Fax:</i> (416) 423-3354
Manufacturer's Representative: Jeff Fisher of <i>JC Fisher & Associates</i>	<i>Location:</i> Mississauga, ON <i>Phone:</i> (905) 612-1902 <i>Fax:</i> (905) 612-0225

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