

Sports Bar/Restaurant Clears the Air

Finding Filtration to Handle the Smoke on 'Cigar Night.'

Cooper Stewart wanted to decrease the amount of smoke and tobacco odor in his restaurant, Wizard's Sports Café in Richardson, TX, but he didn't want limited smoking areas.

Instead, he chose to explore various options to enhance his ventilation system to accommodate nonsmokers and smokers throughout the facility. The gradual process of upgrading the hvac system has increased the amount of outdoor air brought into Wizard's, with positive results.

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Wizard's Sports Café in Richardson, TX.

This case study explains the steps taken by Stewart and describes how he was able to create a more comfortable environment for his customers and employees.

THE PLACE

In 1987, Cooper Stewart opened the first Wizard's Sports Café, an entertainment and dining venue that has proved to be a successful concept in the Dallas/Fort Worth area, where five are now in operation.

The flagship and largest facility, in Richardson, is 12,300 sq ft. An average evening capacity is 150 patrons and peak occupancy is 300.

Wizard's Sports Café provides a wide range of entertainment, including big-screen TVs for sports

viewing, billiard tables, shuffleboard, darts, and "cigar nights." Dining and sports-viewing areas comprise half the Richardson facility, and two banquet rooms make up an area referred to as "the skybox." Wizard's is open for lunch, dinner, and late-night dining, seven days a week.

Because many of Wizard's customers choose to smoke, Stewart believes that accommodating both nonsmokers and smokers is critical to the success of his business. He had been taking gradual steps to better accommodate his customers for about three years, but recognized that the hvac system was not keeping up, especially on cigar nights.

In addition, since Stewart decided not to create separate nonsmoking and smoking sections, he needed a powerful system to minimize smoke drift throughout the facility.

Last but not least, on a daily basis, he wanted to be sure not to send the business-lunch crowd back to work smelling of smoke.

THE OPTIONS

Stewart called the Invironment® Hotline, a free ventilation consulting service provided by Options, Philip Morris U.S.A., to learn more about options for updating his ventilation technology to improve indoor air quality (IAQ) in his facility.

Wizard's existing hvac system was comprised of seven units totaling 80 tons, varying in size from 7.5 to 12.5 tons. A separate, 10-ton Trane unit serviced the skybox. Stewart wanted to know what else he could do to dramatically improve the restaurant's IAQ.

The on-call engineers informed Stewart of the three principles to improve IAQ in any facility:

1. Bring in enough outdoor air.
2. Filter the majority of impurities out of the outdoor and recirculated air.
3. Better manage the airflow direction.

To begin with, the engineer advised Stewart to determine if his existing system was bringing in enough outdoor air. These systems were equipped to bring in outdoor air, but were set at minimum positions. Stewart had his contractor reset the manual damper positions to increase the quantity of outdoor air.



The interior of Wizard's features a bar/restaurant area as well as several pool tables.

THE TECHNOLOGY

Next, the engineer advised Stewart to determine whether his system adequately filtered outdoor and recirculated air. Stewart upgraded the filters to 2-in., extended-surface models. He also initiated a service contract to have filters changed on a monthly basis.

According to Stewart, bringing in more outdoor air and increasing filtration on the unit made a dramatic difference in the IAQ. "I can almost always tell when a filter change is due, just by the haziness in the air. It is definitely noticeable if we don't keep on top of it."

Stewart then spotted a problem on the horizon. As the amount of smoking in Wizard's increased, especially in the skybox, the amount of smoke in the air also increased. Once again, he called that hotline.

Engineers on the Invironment Hotline suggested that Stewart consider an energy recovery ventilator (ERV) to help increase the outdoor air intake in the area. ERVs are designed to bring in more outdoor air while minimizing the energy costs associated with conditioning the increased amount of air.

From the options presented by the engineers (the hotline does not endorse specific ventilation suppliers), Stewart selected the SEMCO fresh air ventilator FV-2000.

According to SEMCO, the unit serves as a supplement to the initial hvac system and enables 2,000 cfm of additional outdoor air without requiring an upgrade of the air handlers. SEMCO recommended Jerry Smith of H/VAC Maintenance Management to install the bolt-on ERV directly onto the existing Trane hvac unit that serviced the skybox area.

Other than the ERV unit, all equipment, such as exhaust and supply ducts, was part of Stewart's existing system.

The ERV made a favorable impression on Smith. "This was

the first I had installed," he said. "It's well made and easy to put on. And now that I've seen it work, I know it is a useful product. I'm impressed with how much smoke it took out of the space."

Because he is planning further growth, Stewart intends to work with the hotline engineers to learn more about how to control airflow direction and space pressure.

The principle of managing airflow is simple: Areas with smoke and odors have less air supplied and more air exhausted than areas without odors. This helps contain odors from a variety of sources — smoking, kitchens, and restrooms — in the areas where they originate. (Since smoking is permitted throughout the Richardson location, Stewart chose not to address directional airflow there.)

According to John Fischer, SEMCO technology consultant, directional airflow and filtration add to the benefits of the ERV. "Where possible, the total energy recovery technology should be applied to provide directional airflow — exhausting air from the smoking areas and positively pressurizing the nonsmoking areas," Fischer says.

"Air balancing, filter maintenance, and an ERV that does not transfer airborne contaminants from the exhaust to the supply airstream are all necessary to help ensure a successful design option."

THE RESULTS

Stewart is pleased with the results. "I knew it was not impossible to accommodate both nonsmokers and smokers to each group's satisfaction," he said; "I just had to figure out how. Customers notice, too — they seem pleasantly surprised."

He says his effort was worth it, and that he has learned valuable lessons. "If there is one thing I have found through this process, it's that indoor air quality is some-

thing that you must take upon yourself to achieve.

"There was a lot of groundwork involved in this process, but I would do it all again in an instant — as a matter of fact, I am doing it again at our newest facility. This time, however, I am looking at indoor air quality from the start, not just as a response to a problem."

Stewart also plans to extend his accommodation strategies to other areas of his flagship facility. He has recently ordered additional ERV units to increase the outdoor air intake capacity of some of his other hvac units.

AFFORDABILITY

Stewart readily admits that improving IAQ is an investment, but it's one that he believes is well worth it. "I probably pay four times as much as I used to for those throw-away filters, but these definitely work better."

Each month, Stewart spends approximately \$250 on new filters for his seven hvac units — about \$36 for each unit.

Stewart was fortunate to have SEMCO donate the ERV unit, which retails for approximately \$6,000, plus \$1,700 for installation. In return, Wizard's will act as a model installation for SEMCO where air quality information can be collected.

Fischer notes that proper use of the SEMCO ventilation module can recover up to 80% of the total energy normally exhausted from a building — providing a significant cost savings.

This case study was prepared by Chelsea Group, Ltd., for Options, Philip Morris U.S.A. For more information on the SEMCO fresh air ventilator, visit www.semconinc.com. For more information on the Trane unit, visit www.trane.com. ©