



# Ventilation Products Get Smarter, More Efficient

*Building Codes, Energy Efficiency Influencing Ventilation Products*

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CHICAGO — Across the U.S., municipalities and states are adopting increasingly stringent building codes that mandate ventilation in homes and buildings. Those codes — along with increasingly educated consumers who understand the benefits of proper ventilation — are driving innovation in the ventilation market.

## Intelligent Fans

Many new ventilation products were on display at the most recent AHR Expo, including an assortment of fans for residential, commercial, and industrial applications. On the residential side, the award-winning Haiku residential ceiling fan from [Big Ass Solutions](#) showcased its technology that can sense the condition and occupancy status of a room and adjust accordingly.

“Every couple of months, we come out with a new bell or whistle for the Haiku,” said Dawn Harrington, architect engineer specialist, Big Ass Solutions. “Our newest is what they refer to as the Smart Ass Fan, which has SenseMe technology. You put all your preferences into your smartphone or iPad, and the unit has a built-in occupancy sensor, so, when you come in the room, it turns on. It also monitors the temperature and humidity of the room and self-adjusts. So, it speeds up or slows down to maintain each user’s unique preferences. And, of course, when you leave the room, it turns off. It will work in conjunction with a Nest thermostat, and it also works with Jawbone, so, while you sleep and the temperature in your room rises, your fan picks up to cool it down.”

[Continental Fan Mfg.](#) showcased its new line of motorized axial fans at the expo. “We now have ac motors, dc motors, and EC [electronically commutated] motors, and we go from 200-mm diameter fans all the way up to 450-mm fans as a standard out-of-the-catalog product,” said Bruce Gover, national sales manager, OEM fan division, Continental Fan Mfg. “But, we can, on the ac motor, go up to 900 mm. It can be mounted as a panel fan, or just as a guard mount, so, if someone has a designed panel already existing and they just need a fan and motor to insert into that, that’s when they can use that type of guard mount.”

Brendan Loughrey, regional sales, [Panasonic Eco Solutions North America](#), said builders and installers are fans of the plug-and-play technology in Panasonic's WhisperGreen Select™, the latest addition to the popular line of WhisperGreen™ vent fans. WhisperGreen Select features Pick-A-Flow and plug-and-play technologies, which allow builders and installers to customize the vent fan for a variety of applications.

"We're the only ones doing the plug-and-play modules," Loughrey said. "Once you say 'plug-and-play module' to contractors, their eyes light up."

The Pick-A-Flow speed selector is available via two base models — 50-80-110 cfm or 110-130-150 cfm — and the required airflow can be achieved with just the flip of a switch, according to the company. Four plug-and-play modules allow installers the ability to customize the fan by choosing from multiple features, including multispeed operation, motion sensor, condensation sensor, and the NiteGlo™ LED night light.

The WhisperGreen Select helps fill a need brought on by more stringent building codes and increasingly tighter homes. "IAQ has been the push for the past five years or so," Loughrey said. "We're tightening up the house, which is great, but all of the sudden, it's stagnant. So, here, we can ventilate with a bath fan."

## **Variable Speed Taking Over**

The biggest trend sweeping across the ventilation market is the increasing desire for variable-speed motors in ventilation products. Continental Fan's new DXG & DXP EC Motorized Axials utilize an EC external rotor motor and feature reduced power consumption of the high-efficiency motor, which translates directly to savings.

"The trend is leaning toward EC motors once again," Gover said. "There is a greater demand for the ECM because it simplifies the whole control-design process for customers, as it can be easily tied into a control system, and they can vary the speed based on the type of equipment and how it needs to use the fan."

[ebm-papst](#)'s new W1G200 axial fan with BUS communication utilizes energy-saving motor (ESM) technology and can be used to circulate air in either evaporator or condenser applications. The fan line is suited for multiple supermarket or warehouse refrigeration applications, including island freezers, freezer shelves, horizontal display cases, bottle coolers, commercial evaporators, condensers, and condensing units, the company said.

"The trend toward variable-speed motors is nothing really earth-shatteringly new, but it's more toward making it efficient and saving the customer money," said Alicia Hutchins, marketing manager, ebm-papst Inc. "The mindset change like it has in Germany, where everything is based on energy savings and sustainability — people want to save the environment, but they also want to save money."

## Fresh Air in Schools

Finding increasingly efficient ways to deliver fresh air to students in institutional buildings has been a trend in the ventilation market that has grown over the past few years. Joe Ellison, sales manager, [Modine Mfg. Co.](#), said increased ventilation begets improved IAQ, which can improve students' health and performance in school.

"You're going to have a better IAQ if you're using a lot of ventilation air," Ellison explained. "You've heard the term sick building before — that means you're not having enough air changes per hour. Schools are concerned about bringing in proper ventilation levels to meet code and prevent sick building syndrome."

Modine introduced the redesigned Airedale SchoolMate® water/ground-source heat pump packaged system. The SchoolMate offers efficiency, noise reduction, and a small footprint, providing great flexibility for school installations. It's offered in two cabinet sizes and six capacities ranging 24-60 MBtuh, and it features Modine's patented CF® microchannel evaporator coil, the company said.

"If it's an older school and they're renovating, in some cases — especially in the Northeast, where you have a lot of old two- or three-story schools that only have the old under-the-window unit ventilators that have been there for 50 years that have hot water only — on the geothermal side, with our new SchoolMate, you get a school that will rip out the football field in the summer, put in a huge loop system, and now they put in one of these units in every single classroom," Ellison said. "Now, they have air conditioning, too, and you gain sufficient energy-efficiency savings. You can also put in an energy recovery wheel and just do a lot more things for the classroom than you could before."

## Energy Recovery

To help mitigate the energy loss that comes with bringing in large amounts of outside air, Airxchange recently introduced its Expanded Capacity Energy Recovery Wheels. The largest of the six new energy recovery wheels, which range 20,000-60,000 cfm in capacity, can provide more than 150 ton of cooling. The wheels also feature Airxchange's signature segmented design, which makes installation and serviceability easier.

"Our new product is extending some of our existing product offerings into larger capacities and cfm," said Richard Taft, vice president of strategy and business development, [Airxchange](#). "Our product is unique in that it can be taken apart, serviced, and put back together, all in one place."

Another up-and-coming trend for the ventilation market is connectivity, Taft said. "We have an option and a feature that allows people to remotely monitor the operation of their wheel and what it's doing as far as performance," he said. "A lot of manufacturers will use their own control systems to integrate those features, but monitoring for energy efficiency is becoming a bigger

part of the industry. The need to monitor energy performance is becoming more and more important.”

## **Future of Ventilation**

Building codes and consumer awareness may be driving ventilation product innovation, but so is the Internet of Things (IoT). Many industry leaders now see remote monitoring and control as the next big trend for ventilation products.

“The integration of the smart home sits atop any list of trends,” Harrington said. “The industry is definitely moving toward the smart home, and wireless is a big trend.”

The Trane Tracer Concierge gives building owners simplified HVAC and lighting control, which results in improved comfort and performance with reduced operating costs, said Bryan Elser, product manager, catalog airside products, [Trane](#), a brand of [Ingersoll Rand](#).

“The consumer has more information than ever, and they’re smarter than ever,” said Elser. “As they gain more experience with these products, the more complex stuff is moving down to the more simple products. They’re becoming more familiar, and it’s becoming more standardized, so everybody wins.”

Additionally, consumers are more energy-conscious than ever before, and code requirements will only continue to push product efficiencies.

“We’ve tried to take note of that in the designs of our products and the components of our products,” Elser said. “Specific to ERV [energy recovery ventilator] solutions, we have dedicated options within an air handler that recover energy. If you look at where the code requirements are going, pretty soon, it’s going to be a requirement for all air handlers. It’s on the way. We’re certainly seeing that growth.”

Balanced ventilation is trending, but it’s very specific to individual markets, Loughrey said.

“I know that because I cover Minnesota and Washington, and they are very stringent states, and I think it’s temperature-driven. They’ve decided the exhaust-only strategy, which has been wonderful for us to be compliant with ASHRAE 62.2, may turn into balanced ventilation, so you’ll have to have supply as well as exhaust.”

Taft said regulations from the DOE and other regulatory bodies will continue to influence ventilation products for years to come. “But, at the same time, the industry has responded and provided new standards and codes that are specifying higher efficiency levels,” he said. “Even with the recent drop in energy prices, there will continue to be a demand for higher and higher efficiency and more sustainable buildings.”