

DEMAND-CONTROLLED EXHAUST SYSTEMS FOR DRYERS, KITCHENS & BATHROOMS

ECONOMICAL AND GREEN BUILDING

86%

ENERGY
SAVINGS

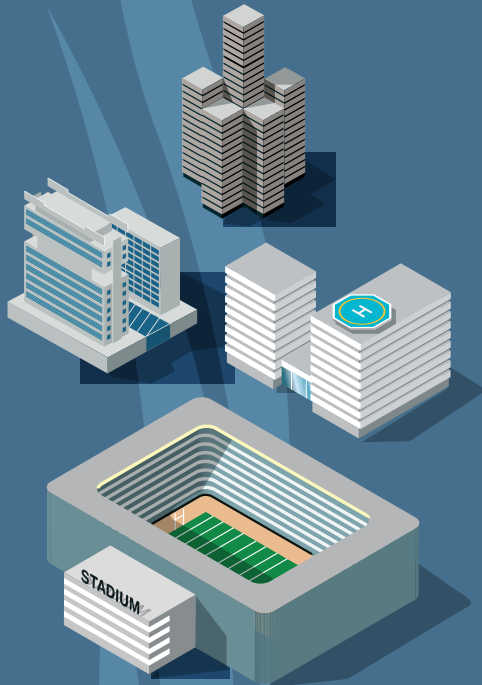


ENERVEX[®] 
VENTING DESIGN SOLUTIONS

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ENERVEX MODULATING BUILDING EXHAUST SYSTEM™

Demand-Controlled Exhaust for Buildings with Kitchen Hoods, Bathrooms or Dryers on Multiple Floors



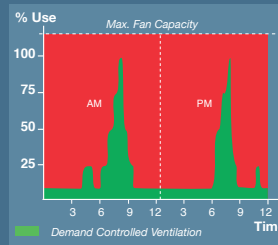
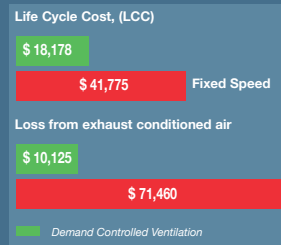
No two buildings have the same energy usage. So why have a constant air exhaust system that runs full speed 24/7? Instead, pay only for the times when appliances are in operation.

A perfect solution for multi-story kitchens, bathrooms and dryers, the ENERVEX Modulating Building Exhaust System responds quickly to demand changes, adjusting the fan speed and pressure, to save up to 86% in energy costs:

90% LOWER ENERGY CONSUMPTION

80% LOWER COST OF CONDITIONED AIR

SPACE, MATERIALS AND LABOR SAVINGS



ECONOMICAL

Saves up to \$500 per dryer/kitchen and \$200 per bathroom per Year.

ENERGY SAVINGS

Fan kicks into low speed when no appliances are running, minimizing waste and CO2 output.

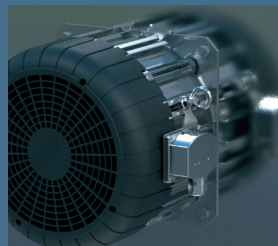
QUIET PERFORMANCE

Virtually eliminates noise from speed variations or fans running at full speed all day.



AESTHETICS

Avoid lint and dirt build-up on non-accessible parts of the building. The MDVS mounts out-of-sight on the roof.



EC MOTORS

Brushless design consumes 30-40% less power than induction motors; superior speed control, flexibility, virtually silent.

ANNUAL ENERGY COST SAVINGS

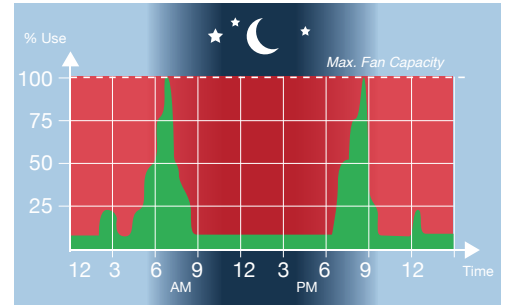
Compared to constant air volume (or fixed-speed) systems, the Modulating Building Exhaust System drives dramatic cost savings and lower energy consumption. In the example below, over a 15-year period, a typical demand-controlled ventilation system serving eight dryers costs 55% less to operate and saves 86% of the cost of exhausting conditioned air. This translates to annual savings of \$500 per dryer or kitchen and \$200 per bathroom:

System Operation	Constant Air Volume	Demand-Controlled Exhaust
Cost of Fan Operation	\$ 2,200	\$ 260
Cost of Conditioned Air	\$ 11,630	\$ 1,630
Total Annual Cost	\$ 13,830	\$ 1,890

HOW DEMAND-CONTROLLED EXHAUST WORKS

In vertical subdivisions, a typical dryer, kitchen or bathroom exhaust system operates less than 30% of the day. Yet, most exhaust systems operate continuously at full speed regardless of the demand.

The Modulating Building Exhaust System senses when an appliance is not in use and adjusts the fan to operate at a very low speed. When the appliance starts up again, pressure change inside the common duct is detected and the system sends a signal to increase the fan speed.



- Most exhaust systems run at full speed regardless of the demand.
- Demand-Controlled Exhaust adjusts to meet the needs of the system.

COMPONENTS AND OPERATION

Variable speed ventilator

Quiet, low-profile rooftop design is easily accessible to clean.

Exhaust source

Can be a dryer, kitchen hood or bathroom vent; emits the exhaust that must be ventilated out of the building.

Duct probe Connects the common duct to the pressure transducer.

Constant pressure controller

Modulates the speed of single-phase and three-phase fans; can be enclosed in a NEMA panel; can be installed indoors or outdoors.

Control wire

Connects pressure controller to the pressure transducer.

Main duct

Square or round; can have offsets.

Pressure transducer

Monitors pressure inside main duct through a probe; powered by the controller; can be installed at top of main duct, if necessary.

MODULATING BUILDING EXHAUST SYSTEM (MBES)

BEST VENTING FOR KITCHENS AND BATHROOMS

Designed specifically for ventilating exhaust from kitchen hoods or bathroom fans in multi-story buildings, ENERVEX's MBESV system is an extremely economical and green solution for retrofit kitchen and bathroom projects.

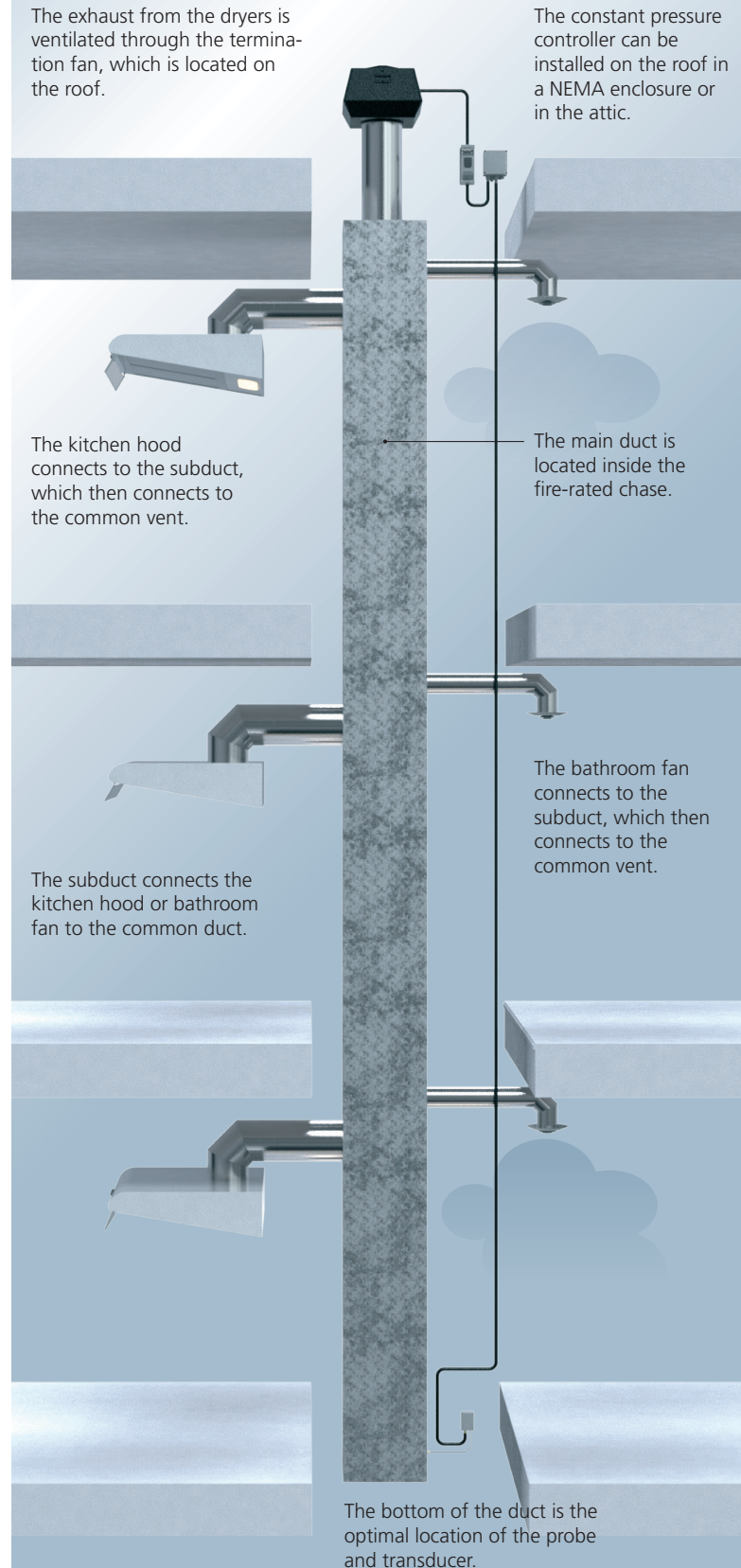
Most systems are designed to have a single exhaust fan serve a single vertical duct. Sometimes it is more convenient to have a single exhaust fan serve multiple ducts.

This is possible by using individual pressure transducers in each duct. They are connected to a "Comparator" that provides the optimal common control signal to the pressure controller.

RETROFIT EXAMPLE

Here's an example from Potomac, Maryland where ENERVEX replaced 14 fixed-speed fans with 14 MBE demand-controlled fan systems. The solution provided a simple ROI of 632% over 5 years and payback within 8 months:

Shaft Name: Kitchen	
No. of shafts	14
No. of Systems	87
Est. loss of conditioned air	\$ 77,000
Est. fan energy savings	\$ 10,600
Total Annual Energy savings	\$ 87,600
Replacement Cost + Labor	\$ 59,825

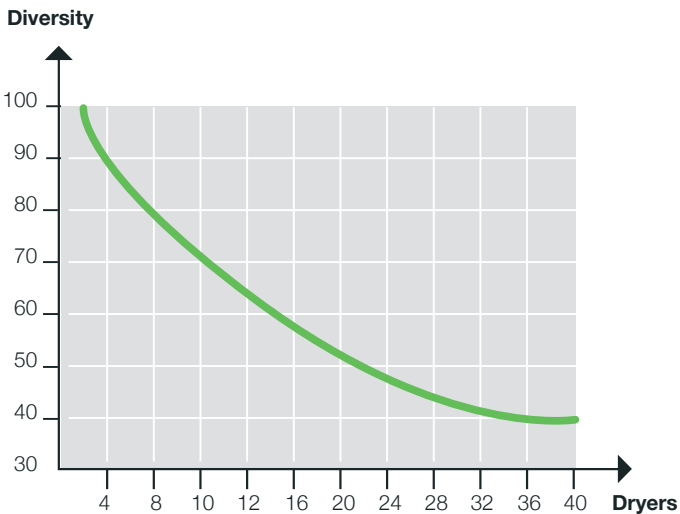


MULTI-STORY CLOTHES DRYERS

One of our most economically smart multi-story building exhaust systems is the MBES, a demand-controlled exhaust system for clothes dryers. The MBES offers custom-designed systems for central clothes dryer facilities, depending on your specific application.

DIVERSITY

The MBES leverages diversity factors and statistics around how many dryers are likely to operate at a given time. This will reduce main duct sizes but may not reduce the fan size or amount of air exhausted. We can help you interpret local codes to determine whether this is possible. Even if the fan is larger than necessary, it will still exhaust only when demand dictates.



The exhaust from the dryers is ventilated through the termination fan, which is located on the roof.

The constant pressure controller can be installed on the roof in a NEMA enclosure or in the attic.

The bottom of the duct is the optimal location of the probe and transducer.

MECHANICAL DRYER VENTING SYSTEM (MDVS)

CENTRAL CLOTHES DRYERS AND COIN-LAUNDRIES

Central laundry systems and coin-laundry systems are larger in size and capacity and we offer custom-designed systems for the facilities. The MDVS system controls the exhaust rate as all other Modulating Building Exhaust Systems, but make-up air can be supplied as well.

In these systems most of the controlling is taking place in the laundry facility. The exhaust fan can be mounted inline or at the termination.

SUPPLY OF MAKE-UP AIR

For buildings with a common laundry area, supply of make-up air can make a huge difference in efficiency. Traditional make-up air supply systems rely on gravity to supply outside air regardless of how many applications are running. The MDVS uses a Modulating Air Supply System to sense when no appliances are running and adjusts fan speed to maintain neutral pressure in the room. Once the appliance starts, it emits exhaust, driving the room pressure toward negative and increasing the air-supply fan speed to meet the precise needs of the facility.

The forced air louver, located on the building envelope, is substantially smaller than a gravity louver.



DOCUMENTED PERFORMANCE

In recent years we participated in a major development project with Enbridge Gas and National Gas Technologies Center in Montreal, where our MBES system was put to the test and proven solid. After more than 35,000 hours of monitoring with 8 dryers, the system:

SAVED \$5,067 USD IN ANNUAL ENERGY COSTS VS. A FIXED-SPEED FAN SYSTEM

HAD A LIMITED IMPACT ON DRYING TIME, BUT CUT ENERGY CONSUMPTION BY 3% WHILE PREVENTING UP TO 10 TIMES MORE CONDITIONED AIR THAN NECESSARY FROM EXHAUSTING TO THE OUTSIDE

REDUCED CONDITIONED AIR FROM 288,000 CU. FT. (7,000 M³) PER DAY PER DRYER TO 40,000 CU. FT. (1,200 M³) PER DAY PER DRYER

PRODUCED ADDITIONAL ELECTRICAL SAVINGS OF UP TO 8,800 KWH/YEAR

GUARANTEED QUALITY COMPONENTS

At ENERVEX, we understand that each project has unique requirements and code considerations. Our engineers use a proprietary design program, WISP, to quickly analyze your data and design the right mix of high-efficiency mechanical draft fans, modulating motor controllers, and pressure controls sized accurately for your job.

A typical multi-story kitchen, bathroom or dryer venting solution includes:

BOX FAN

A termination-mounted, high-efficiency mechanical draft fan designed for high temperatures, indoors or out. Its compact, ultra-quiet and corrosion-resistant design is perfect for special exhaust, exhaust of lint-laden air, and supply air.

CAPACITIES UP TO 20,000CFM

ULTRA HIGH-EFFICIENCY ELECTRONICALLY COMMUTATED (EC) MOTORS

UL LISTED TO UL378 & UL705 UP TO 1400°F DEPENDING ON FAN MODEL SELECTED.

EDRIVE MOTOR CONTROL

A compact, high-efficiency, industrial-type motor controller programmed specifically to control and adjust the speed of ENERVEX fans and ventilators using EC motors.

MODULATING PRESSURE CONTROL

An efficient, easy set-up modulating pressure control solution with an integrated safety system, this product controls and maintains common duct pressure in systems serving single- and multistory clothes dryers, bathrooms, kitchen hoods and other applications Integrated Modbus communication.



EXPLORE ENERVEX



Park Potomac Place – Potomac, MD

14 MBES installed in this 10-story condo eliminated noise from kitchen hoods that were running constantly, it also saved nearly \$10,000 annually with an 8-month payback and an ROI of 632% over 5 years.



Madrigal Lofts – Washington, DC

This 12-story condo is using 38 MBES systems to exhaust dryers and bathrooms, driving significant energy savings and lower operating costs.



Americana-at-Brand – Glendale, CA

A mixed-use development used more than 160 MBES systems to connect multiple dryers, kitchen hoods and bathroom fans to single exhaust ducts – which reduced the introduction of make-up air, cut energy consumption by 80% and decreased heating and cooling losses by at least 60%.

WHY ENERVEX?

Quality components. Superior technology. Experienced people.

PRODUCT PERFORMANCE GUARANTEE

PROVEN SAVINGS WITH RAPID PAYBACK

SUSTAINABILITY

SAFETY & CODE COMPLIANCE

AESTHETICS & SPACE SAVINGS

COMPREHENSIVE PRE-SALES ANALYSIS, SYSTEM DESIGN, ENGINEERING & INSTALLATION SUPPORT

ALWAYS GREEN

For decades ENERVEX has actively promoted low-energy installations, savings, indoor air quality and recycling. Not just because we had to:

LONG-TIME PARTICIPANT IN EUROPEAN LEGISLATION PROCESSES

ACTIVE RELATIONSHIP WITH CODE GOVERNORS

ALL SYSTEMS QUALIFY FOR LEED POINTS UNDER THE ENERGY & ATMOSPHERE (EA):

Materials & Resources (MR), Indoor Environmental Quality (EQ), Innovation & Design Process (ID) sections

LEARN MORE

What would you do with 86% energy savings? To learn how a demand-controlled ventilation system can save energy and costs for your multi-story kitchen, bathroom and dryer applications, visit

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