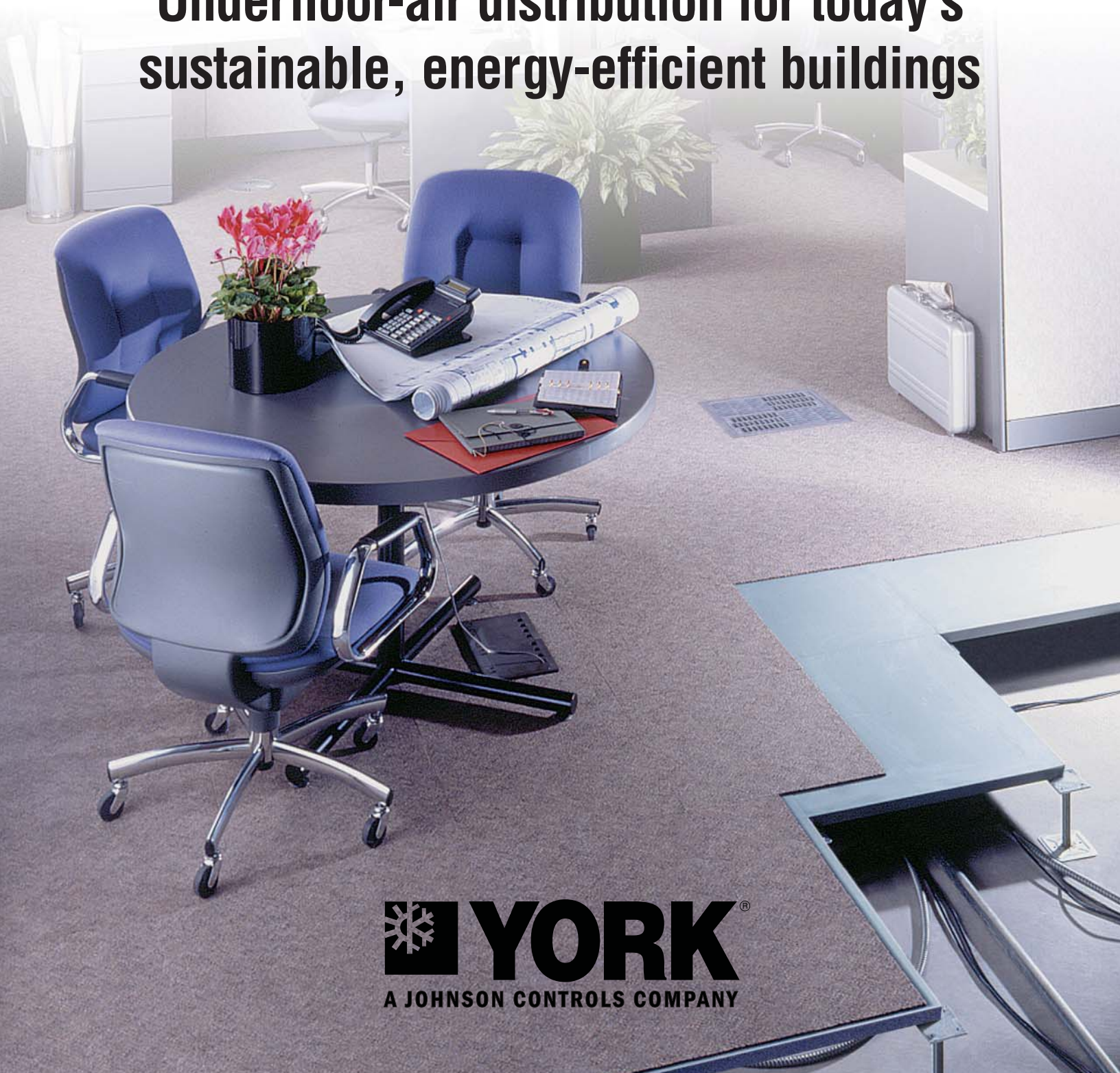


**Underfloor-air distribution for today's sustainable, energy-efficient buildings**



 **YORK**<sup>®</sup>  
A JOHNSON CONTROLS COMPANY

# The foundation for the ideal work



## Creating comfortable, smart buildings for today's workspaces

The integration of technology into the building infrastructure demands technological innovation in your heating, ventilation and air-conditioning (HVAC) system. YORK® meets this demand with the FlexSys™ System, which employs raised-access-floor (RAF) technology that allows tremendous flexibility with your workspace while enhancing the overall aesthetic value of the building. This design concept provides a low-pressure airway under the floor for heating and cooling, plus easy access for the utility-service infrastructure, including power, data and telecommunications cabling. With more underfloor experience than any other HVAC manufacturer, YORK knows how to successfully implement projects for all types of facilities including: office buildings, schools, libraries, call centers, and multi-tenant buildings.

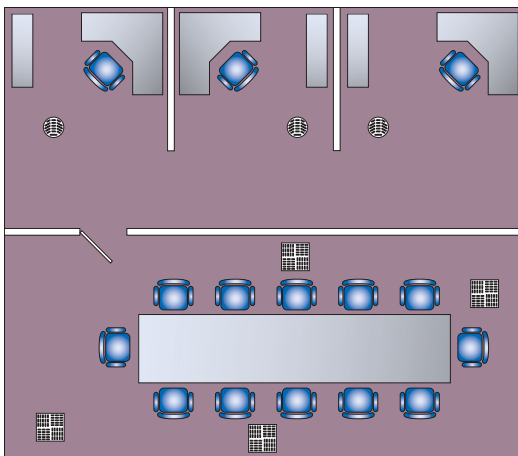
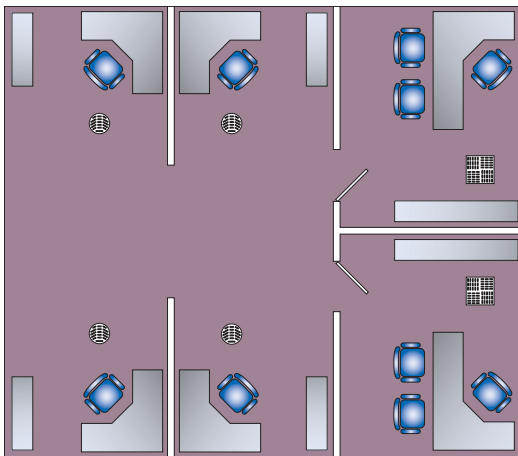
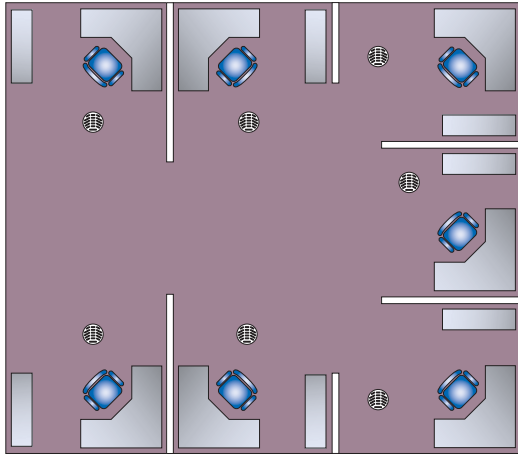
## Covering a wide range of needs with the FlexSys™ System

YORK's FlexSys System addresses all the critical factors in today's work environment — improved comfort, reduced cost, and better indoor environmental quality — through air-conditioning supplied by underfloor-air-distribution (UFAD). Our FlexSys System is a unique UFAD solution, which has experienced rapid adoption due



*An underfloor-air-distribution system provides easy access for the building infrastructure and is easily reconfigured reusing existing materials.*

# environment: Underfloor-Air-Distribution



*As space use changes, so do the HVAC requirements for that space. The FlexSys System allows for easy reconfiguration of terminal units and control zones.*

to the many benefits that it offers compared with conventional, ceiling-based air distribution.

The superior design of the YORK FlexSys UFAD system:

- Operates at a low design pressure of .05" w.g., which helps maintain airway integrity
- Provides a profile as low as 8" high for the entire system, which allows easier integration into new or existing structures
- Supplies air at 60–63°F for a more comfortable and energy-efficient system
- Creates an environment that is not conducive to mold growth, while supplying air at a more comfortable occupant temperature
- The FlexSys System provides an HVAC system that can be quickly and easily reconfigured, reducing the disruptions caused by churn.

## A major contributor to LEED™ certification

As a partner with the U.S. Green Building Council, YORK is one of the manufacturers that support the LEED™ (Leadership in Energy and Environmental Design) certification program. If you are designing or renovating a building with certification in mind, then incorporating the FlexSys System, along with other modular system components, into your project could provide up to 16 of the 26 points required for certification. See your local YORK representative for more information.



*The low-profile of the FlexSys terminal allows the lowest access floor height of any underfloor-air-distribution system.*



# The key FlexSys™ component:



*MIT units can be installed anywhere in the floor grid.*

## The latest terminal technology

The YORK FlexSys System provides a UFAD solution through an advanced terminal design known as the Modular Integrated Terminal (MIT). Because YORK is committed to continuous product improvement, we've enhanced the MIT for maximum flexibility and performance. With the FlexSys System, the entire volume under the floor becomes a pressurized air-handling space. Consequently, MITs can be installed anywhere within the raised floor grid. When the layout changes, so can the location of any terminal, which saves installation and maintenance time. Delivering air at a consistent velocity at partial loads with sufficient throw avoids creating cold puddles of air that compromise comfort and efficiency—a common problem that exists with constant-volume solutions.

## Pulse-width modulation valve

Because building occupants may complain when they are uncomfortable, it is important to maintain temperature and humidity comfort levels. Based on state-of-the-art, digital technology, MIT units employ a pulse-width modulation (PWM) valve that automatically adjusts individual terminals, using time-modulation logic and digital accuracy to maintain thermostat set points. The fully integrated high-efficiency motor uses a timed sequence of fully open or closed positions, based on load, to silently supply cooling or heating to the space. This digital technology also allows the system to react very quickly to changes in load or desired comfort levels.

## Improved aesthetics increase appeal

With the FlexSys System, your indoor comfort is not only more architecturally pleasing, but also more eye pleasing:

- Terminal interiors can be painted to match your carpet or room color
- Choose from a selection of standard grille colors or specify a custom color to complement your décor
- No fire code compliance issues — unlike some plastic grille alternatives, the FlexSys System diffuser grilles are made of die-cast aluminum which maintains structural integrity in a fire, ensuring safe egress for emergency personnel and occupants
- 2-piece repositionable grille is standard on the MIT models:
  - offers up to 16 different air flow patterns to optimize comfort



*Through pulse-width modulation cycles, the air valve on the MIT provides silent comfort.*

# Improved Modular Integrated Terminals

- grille slots are less than .30" in width in accordance with OSHA and ASTM standards for shoe-heel safety
- grilles are load-bearing up to 1250 pounds in accordance with RAF standard specifications
- New personal comfort diffusers (PCD) with consistent velocity have been added to the line.

## Complete controls integration

With FlexSys MIT units, control and power wiring are located under the floor, so they can be connected to the terminals via “plug-and-play” connectors. Terminals can be added or removed to meet changing loads, and control zones can be added or rearranged as easily as the furniture.

Control zones — consisting of one or more MIT units — can be created wherever needed. Zoning limitations of constant volume systems with underfloor dividing walls are a thing of the past. The FlexSys System offers true plug-and-play technology. Each zone can be as large or as small as desired, simplifying thermostat placement and power supply. It's a new level of adaptability that speeds installation and lowers costs.



*Thermostat placement is easy for any zone size.*

## Options for perimeter heat

The FlexSys System design incorporates 2-stage fan-assisted, perimeter-heat boxes with electric-resistance fin-tube or water-fin-tube coils. While this is the most efficient and cost-effective method of adding heat, the FlexSys System is compatible with other, more traditional, system perimeter solutions such as fin-tube or baseboard radiant heat. Contact your local YORK representative for details.

## Satisfy individual needs with personal control diffusers

YORK has developed a new, manually adjustable, personal comfort diffuser with the same great consistent velocity and directional control as our MITs. Whether you have a constant load, as in an equipment room; or if individual terminals are desired, the new, manually adjustable diffuser for the FlexSys System ensures individual comfort and satisfying options.

These manually adjusted, directional diffusers are available in round or square configurations. The grille is simply rotated for directional control, and a recessed thumb wheel adjusts the volume flow.

YORK PCDs are available in two sizes. One is designed specifically for use in an individual office environment. The other is a larger, general-purpose diffuser that may be applied either in large office spaces or in an open environment.



### **Modular Integrated Terminals:**

**A) PCDs come in two different CFM ratings depending on application.**

**B) Pulse-width modulation diffusers are available with adjustable direction grilles, C) a selection of standard and custom colors, as well as square and D) round configurations.**

# Cost savings at every phase of the building life

## Reduced construction costs

Perhaps the most compelling advantage of the FlexSys System is that it offers all the benefits of improved flexibility and comfort at a cost that is competitive with traditional designs. If you're already planning on a raised floor for data, power and telecommunications, the addition of UFAD using the FlexSys System can cost less than a traditional HVAC system, because it:

- Eliminates overhead ductwork
- May reduce building height, typically 6" per floor
- Simplifies modifications to the air system, prior to and after occupant move-in, which reduces labor costs and speeds occupancy
- Allows more energy-saving daylighting opportunities through decreased plenum height and the elimination of overhead ductwork.

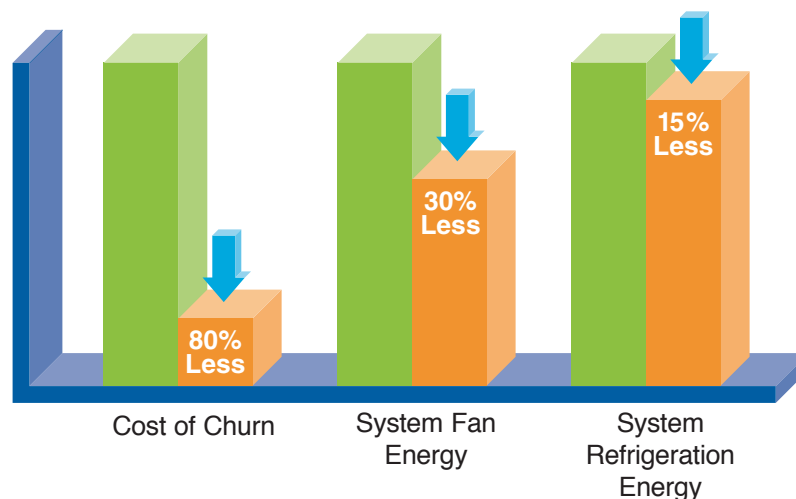
## Reduced life-cycle costs

The FlexSys System really pays off when you consider life-cycle costs, because it:

- Reduces costs — and disruptions — caused by “churn”
- Provides greater energy efficiency than an overhead Variable Air Volume (VAV) system — fan energy is only .05" static pressure, instead of the static pressure typically needed by overhead VAV systems — which translates into 30% fan-energy operating savings annually
- Affords more hours of economizer cycling by delivering 60°–63°F air, versus a conventional 55°F supply air temperature
- May qualify for accelerated tax-depreciation based on the FlexSys System plug-and-play modular design. Consult your tax advisor for more information.

## Life Cycle Costs

Typical FlexSys System vs. Conventional Overhead VAV System



# Go with the leader in HVAC innovation

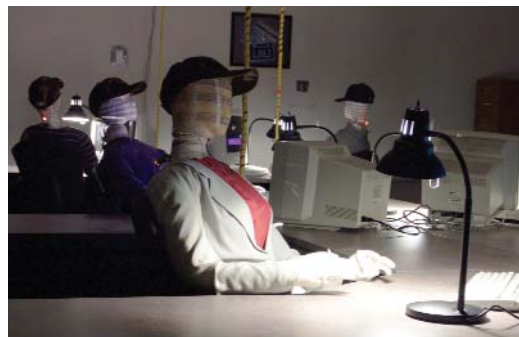
## Ensure your success with YORK's proven system

With YORK, you're working with the recognized leader in innovative air-conditioning technology. Focused exclusively on HVAC&R, we are the single source to develop and support the solutions needed throughout 21st-century facilities. For example, YORK pioneered variable-speed-drive technology applied to chillers, and received the Environmental Protection Agency's (EPA) recognition of its energy saving contributions when we were awarded the 2005 Climate Protection Award.

A second innovation and major contribution to the industry is variable-air-volume diffuser technology, one of the most efficient methods used in modern ventilation.

Our continued dedication to research and innovation is reflected in our air-distribution laboratory at the York, PA campus. YORK is a partner with the University of California, Berkeley's Center for the Built Environment and other industry participants in researching and promoting the benefits of underfloor-air-distribution.

Today, our ability to combine comfort, improved indoor-air quality, and low energy consumption into innovative underfloor-air-distribution technology is seen in a wide range of applications. Across the U.S., our underfloor-air-distribution technology has been used to condition millions of square feet in hundreds of installations since 1997. Our technology is employed in such prestigious Fortune 100 facilities as Alcoa,



*YORK continues to be a testing and development industry leader with our innovative laboratory.*

Bank of America, Citigroup, Comcast, Dell Corporation, Federal Express, Ford Motor Company, Hertz, Microsoft, Morgan Stanley, and Verizon. Universities such as Harvard, Massachusetts Institute of Technology, and Penn State also have facilities utilizing the YORK FlexSys System.

YORK's FlexSys solution can improve the environment and operation of your facility. Call the YORK underfloor-air experts at 1-800-861-1001, or visit us at [www.york.com](http://www.york.com)

