Carrier®

ComfortID System

IDENTIFYING AND RESPONDING TO COMFORT NEEDS

Discover the World of ComfortID

Today's building owners and occupants expect more than ever before from their building systems – and HVAC is no exception. Comfort is a primary concern and is linked, not only to tenant satisfaction, but to productivity as well. Indoor air quality is now a key factor in building planning, to meet government regulations and deliver the "healthy" buildings an educated public demands. Energy efficiency is on everyone's mind, for the benefits to the planet as well as the cost-saving benefits to the bottom line. And of course, the system must perform reliably – no one can afford the inconvenience of downtime.

In addition, building owners/managers, consulting/specifying engineers and HVAC contractors share the need for systems that are flexible – systems that are easily adapted when building needs change, as they inevitably do in today's fast-paced world. Systems that are technologically sophisticated, but are easily installed, and do not require extensive – and expensive – modifications to expand or change them.

Carrier's new ComfortID is a control system that meets all these needs and more.

The ComfortID Solution

The key to building-wide HVAC performance is delivery of conditioned air where and when it is needed. This is the responsibility of the control system. And ComfortID takes this responsibility very seriously. Not only does the system flawlessly supply heating and cooling as building loads require, but ComfortID takes variable air volume controls to a whole new level.

ComfortID is a completely integrated control system that uses state-of-the-art direct digital control (DDC) to continually monitor and communicate the varying heating and cooling conditions in each zone of the building. With DDC, information collected from zone sensors is evaluated by microprocessors, which can be programmed in a variety of ways to interpret the information and direct the HVAC equipment to respond. DDC surpasses traditional analog and pneumatic controls, using electronic technology that provides repeatable performance without expensive maintenance requirements.

The ComfortID system uses intelligent controls built right into the equipment to report changing requirements and meet them by "pulling" comfort into the space. And ComfortID's standard configuration allows for the use of humidity, CO_2 or other IAQ sensors to provide complete environmental comfort and indoor air quality to every zone in the building.

ComfortID is the perfect control solution for multi-story buildings using variable air volume (VAV) systems. And because it is modular in design, ComfortID works equally well for retrofit applications, providing older buildings with the benefit of the newest control technology.

ComfortID provides a uniquely responsive control system that allows all of the varying needs of a multi-zone building to be met precisely and immediately with a complete comfort solution.

ComfortID provides the benefits of intelligent monitoring and response, delivering consistent comfort to multiple zones and continually adjusting for changing occupancy conditions.

With ComfortID, a group of HVAC components becomes an integrated, intelligent system that identifies the variety of needs existing within a building and orchestrates individual comfort to meet each of those needs. Each component has the ability to share information with all parts of the system.

Because every component in the system is linked, the zone's requirements can be communicated directly to the air source equipment, allowing precise and immediate delivery of just the right amount of conditioned air to the space. This continual intelligence flow means that unexpected or rapidly changing occupancy levels are automatically accommodated without having to make manual adjustments.

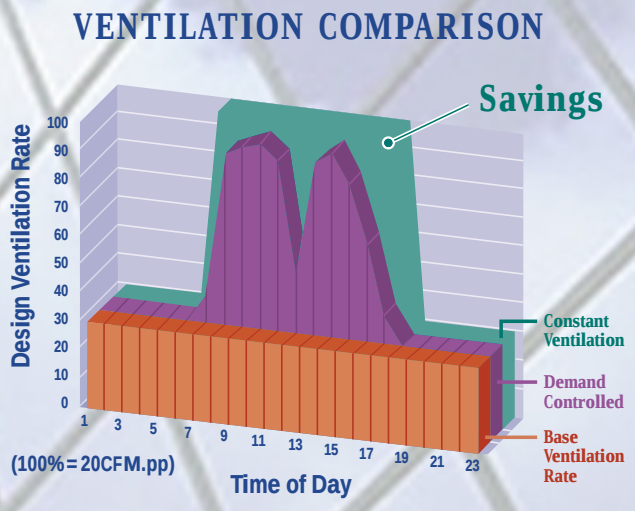
And because ComfortID delivers heating and cooling only where and when it's needed, the system is energy-efficient, minimizing waste and maximizing cost savings. In fact, ComfortID is an excellent addition to any overall building energy management strategy.

ComfortID's capabilities go well beyond temperature control. By adding humidity, CO_2 or other IAQ sensors, indoor air quality and consistent comfort can be tailor-made for each zone. And proper ventilation for the number of occupants can be precisely maintained. Using ComfortID for demand controlled ventilation (DCV) allows for compliance with ASHRAE standard 62-1989, and helps keep energy costs down as well. ComfortID doesn't merely monitor air quality – it maintains it, taking into consideration the number of people occupying a zone, and adjusting accordingly, to promote building health.

Demand Controlled Ventilation Benefits

ASHRAE standard 62-1989 and its addendum, 62a-1990, specify "Ventilation for Acceptable Indoor Air Quality," (the quality and quantity of ventilation air to be supplied to indoor spaces to achieve acceptable indoor air quality levels) – and that provisions must be made to maintain these levels when the supply of air is reduced while a space is occupied. A common approach to complying with the standards is to calculate the amount of outdoor air required to meet the specifications based on maximum design occupancy. This constant ventilation method satisfies the standards, but often results in over-ventilation, wasting energy and money. More seriously, when the intake of outdoor air is needlessly high, coils can freeze in colder climates and humidity levels can rise in warmer ones.

Demand controlled ventilation (DCV) offers a significant advantage over constant ventilation. Using CO_2 sensors, a zone's occupancy can be precisely monitored and adequate ventilation provided for each changing condition. This dynamic, flexible response eliminates over-ventilation and its accompanying problems, and results in significant cost savings.

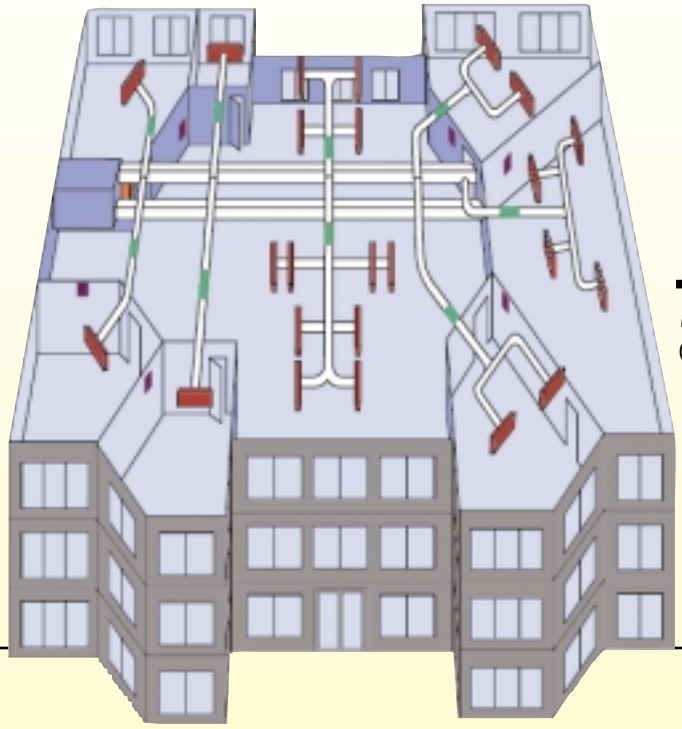


The ComfortID Solution

KEY

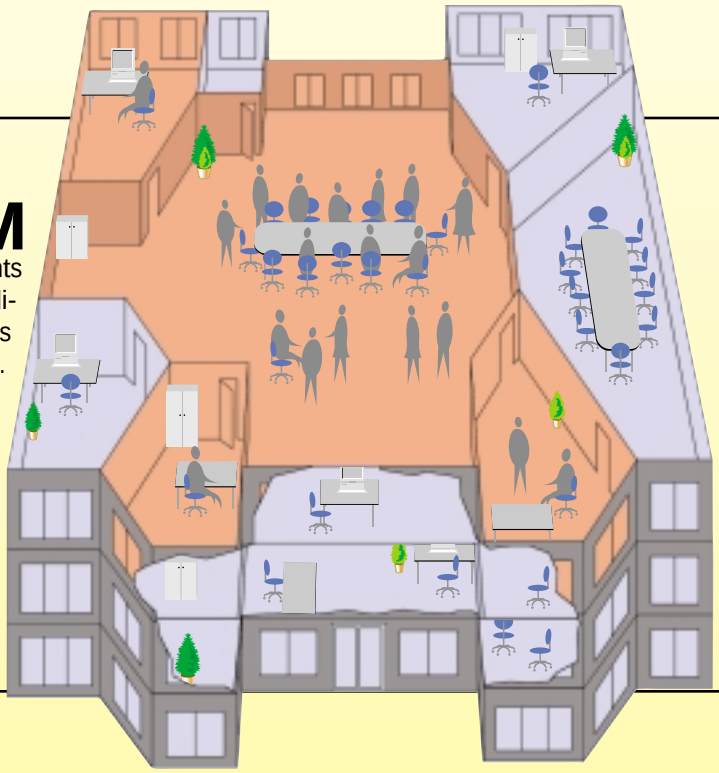
Occupied

Unoccupied



7:00 AM

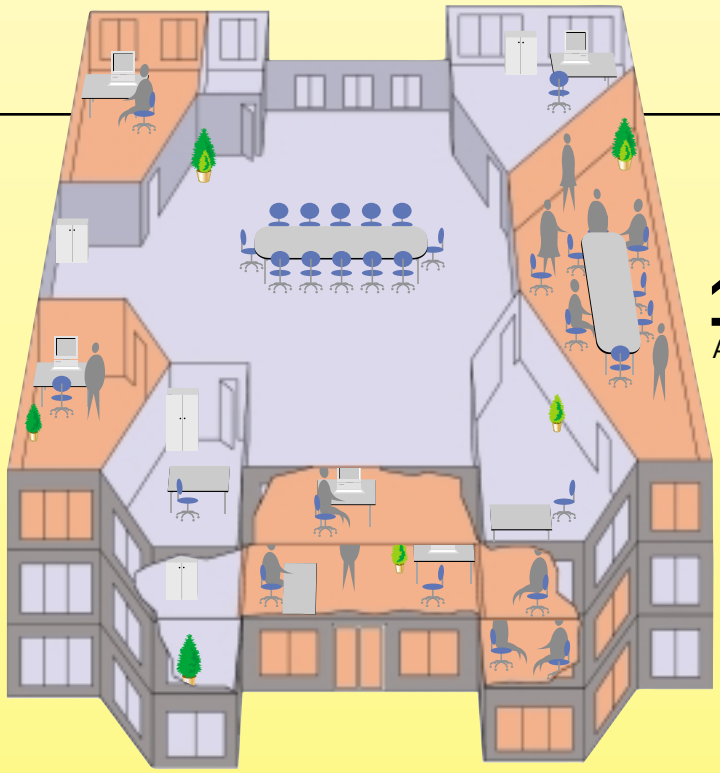
ComfortID identifies current conditions throughout the building. As building occupants begin arriving for the day, the systems responds to each zone's changing occupancy level.



9:00 AM

Building activity increases, with comfort requirements varying widely in different zones. With ComfortID, individual setpoints for occupied and unoccupied status can be set for each zone's unique schedule.

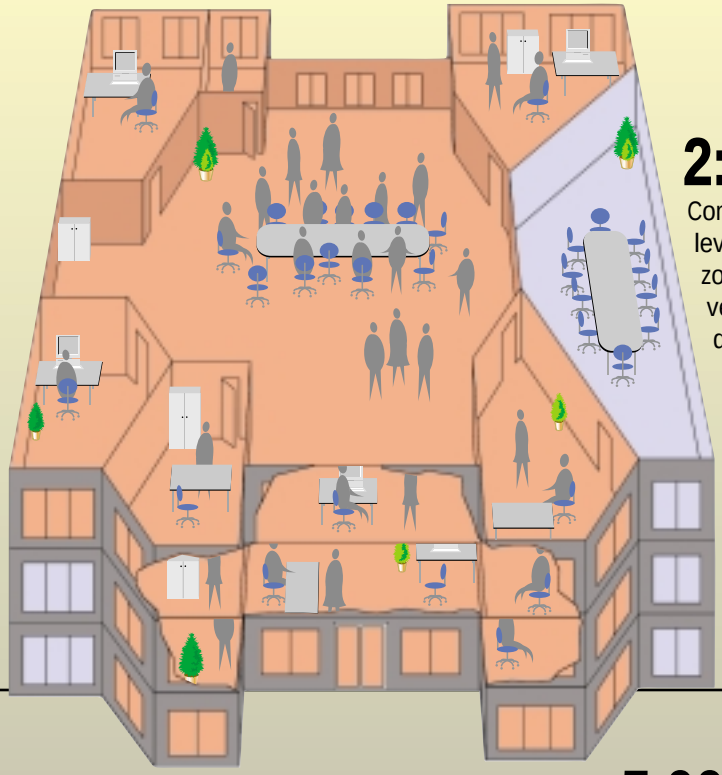
Time of Day	Total Occupancy	ComfortID™ Outdoor Air Required	Typical Constant Ventilation System Outdoor Air Required
9:00 AM	19	285 CFM	750 CFM



12:00 PM

As occupants leave the building or congregate in common spaces for lunch, ComfortID identifies the load shift and delivers conditioned air precisely where it's required.

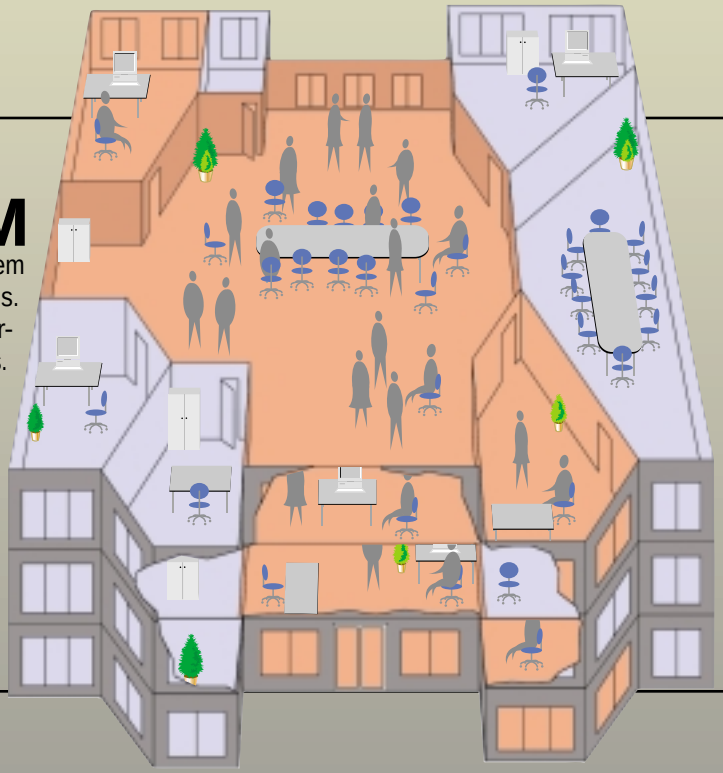
Time of Day	Total Occupancy	ComfortID™ Outdoor Air Required	Typical Constant Ventilation System Outdoor Air Required
12:00 PM	14	210 CFM	750 CFM



2:00 PM

ComfortID tracks continually changing occupancy levels, as building occupants move from zone to zone throughout the afternoon. With CO_2 sensors, ventilation requirements are met and indoor air quality is maintained for all zones.

Time of Day	Total Occupancy	ComfortID™ Outdoor Air Required	Typical Constant Ventilation System Outdoor Air Required
2:00 PM	31	465 CFM	750 CFM



5:00 PM

As activity winds down for the day, the system responds to declining occupancy levels. ComfortID prevents over-conditioning and over-ventilation, providing energy cost savings.

Time of Day	Total Occupancy	ComfortID™ Outdoor Air Required	Typical Constant Ventilation System Outdoor Air Required
5:00 PM	23	345 CFM	750 CFM

7:00 PM

The system provides the appropriate amount of heating/cooling and ventilation to maintain the building overnight in an unoccupied mode. Yet if any zone becomes occupied unexpectedly, ComfortID will respond immediately to the changed condition.

Time of Day	Total Occupancy	ComfortID™ Outdoor Air Required	Typical Constant Ventilation System Outdoor Air Required
7:00 PM	4	60 CFM	750 CFM

The ComfortID Advantage

ComfortID delivers the ultimate in zone-directed building control. Its intelligent sensing and reporting functions allow each space to request the type and amount of air needed to provide for varying occupancy levels. Conditioned air is requested from the air source and is delivered to the zone as necessary to provide consistent and complete comfort even under constantly changing conditions.

Easy to Install

Carrier's ComfortID provides sophisticated HVAC monitoring, calculation and response using the most advanced technology available. Yet the system is designed for simplicity. Control functions are pre-programmed into the components at the factory, making them easy to install.

Flexible

The ComfortID system can be expanded at any time, with no complicated reprogramming needed. For example, additional zones can be easily created on the network, and additional humidity, CO_2 or other IAQ sensors are easily added to selected zones or the entire building for increased monitoring capability. ComfortID's standard configuration is designed to accommodate future modifications or additions – a truly flexible system that meets the needs of many building types.

Short and Long-Term Cost Benefits

ComfortID delivers an unprecedented array of features – at a very competitive price. Its benefits exceed those of similar control systems on the market today, yet its cost does not. And buildings using ComfortID will operate more efficiently, with heating and cooling resources going only where they are needed, saving substantial energy dollars over the long term. ComfortID maximizes HVAC operating efficiency, prolonging equipment life and protecting building owners' investment.

Reliable Performance

Each ComfortID system has the engineering expertise and decades-long controls experience of Carrier Corporation behind it. Carrier's design experts have created a system that intelligently interprets building conditions and optimizes equipment response. Reliably. Year after year. And when used in conjunction with Carrier's ComfortWORKS® or ComfortVIEW™ building management programs, a wide array of operational and strategic tools become available to analyze trends, and enhance performance, historical information and possible alarm conditions.

In addition, a building with a ComfortID system can be remotely monitored by professionals in Carrier's leading-edge Farmington, Connecticut facility. This option provides 24-hour-a-day coverage to track system operation, spot problems, record trends – and schedule preventive maintenance to minimize downtime.

Buildings with the ComfortID system, paired with Carrier HVAC equipment have the advantage of a single source supplier, and the consistently superior building management systems only Carrier can provide.

Ventilation Compliance

Every building must have proper ventilation controls in place, to ensure tenant safety and to comply with the ASHRAE 62-1989 air quality standard. With CO_2 sensors operating as part of the ComfortID system, appropriate setpoints can be established and occupancy levels continuously monitored, to introduce the required amount of outside air, while avoiding over-ventilation. This provides precise, individually-tailored ventilation to each zone and represents considerable cost savings over systems delivering design-load ventilation regardless of occupancy levels.

Building-Wide Comfort

With ComfortID, a continual flow of information about zone conditions is communicated from the space to the air source, resulting in a minute-by-minute response to changing conditions. ComfortID achieves this through extensive monitoring, embedded component intelligence and an integrated communications network. The result is continual tenant comfort in all zones at all times.

The Perfect Solution for Many Building Applications

EDUCATION

Ideal for schools that have multiple HVAC systems throughout a campus, ComfortID identifies and maintains productive comfort levels for all students.

HEALTHCARE

ComfortID provides peace of mind while monitoring and delivering the precise temperatures needed in operating rooms, patient suites, lobbies and cafeterias.

OFFICE

ComfortID gives building owners and building management groups a competitive advantage by insuring the comfort of all tenants, while meeting ventilation standards and containing energy costs.

RETAIL

ComfortID delivers conditioned air exactly where and when it's needed, by continually identifying changing occupancy levels in each individual zone.

MANUFACTURING

For accurate equipment adjustments for process cooling or space comfort, ComfortID identifies each zone's requirements and adjusts conditioned air flow accordingly.

OTHER APPLICATIONS

ComfortID is an integrated, intelligent system that delivers the precise temperature and indoor air quality required by multiple zones in a wide variety of building types.

For multi-zone buildings with large heating and cooling requirements, there is no better system than ComfortID. DDC technology, combined with multiple-point sensing, ensures that the system knows exactly what conditions exist in each zone at any given time. With intelligent interpretation, sophisticated calculations and real-time response, ComfortID provides unprecedented climate consistency and operating efficiency. Building managers can breathe easier knowing that ComfortID is identifying changing conditions as they occur, and proactively adjusting each zone's environment for maximum tenant comfort.

ComfortID delivers all this in a user-friendly, easily installed package, designed to work seamlessly with Carrier's superior HVAC equipment and the Carrier Comfort Network. This cost-competitive system optimizes efficient operation, saves energy dollars and maximizes the life of the building's HVAC equipment. It is the system of choice for reliable performance, flexibility and unmatched delivery of a comfortable building environment.

Carrier's ComfortID: not just a control system, but a dynamic, integrated building solution...now and for the future.

ComfortID is compatible with the

Carrier® COMFORT NETWORK

Carrier®

As the world leader in Heating, Ventilation and Air Conditioning, Carrier is committed to continually improving the quality of comfort we provide to our customers.

But our level of responsibility extends well beyond...

Carrier Corporation has identified six specific areas which directly impact how we, as a world manufacturer, balance our customers' needs for comfort with the environment's needs for responsible consumption.

These symbols graphically represent our six areas of concentration and will serve as visual reminders of the importance of managing our finite resources.

Each one of us at Carrier Corporation believes that, for generations to come, success will not only be measured by the quality of our products and systems, but also by how we have improved the quality of life.