

Mitsubishi Electric's *Engineer* Newsletter is a quarterly digital publication that highlights the latest developments and perspectives related to designing HVAC systems within commercial buildings. This issue focuses on **hotels and lodging**. Explore trends, HVAC solutions and advancements below.

INDUSTRY INSIGHTS

Specifying With Thermal Comfort in Mind

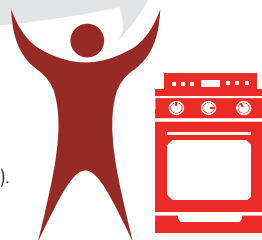
It's common knowledge that thermal comfort ranks among the most common occupant complaints in hotels. As a result, thermal comfort has become a focus of design in retrofits and new construction. Engineers have a responsibility but also an opportunity to create comfortable spaces. To do so, they have to keep in mind the four environmental factors of thermal comfort:

RADIANT TEMPERATURE

The weighted average temperature of the surfaces surrounding a person.

STRATEGY

Consider what other heat sources are in a room (e.g., television, refrigerator, stove, etc.).



AIR TEMPERATURE

The temperature of the air surrounding a person; the most commonly used indicator of thermal comfort.

STRATEGY

Specify an HVAC system that cools and heats evenly, is easy for the occupant to adjust and responds quickly to an adjustment.



AIR VELOCITY

The rate of air moving around a person.

STRATEGY

Specify an HVAC system with subtle, consistent airflow and washable/changeable filters. High-performance filters lower operating costs and improve IAQ and airflow. Also consider if guests will be very active in a space; physical activity increases air movement.



RELATIVE HUMIDITY

The percentage of water vapor in the air surrounding a person.

STRATEGY

Take into account any outdoor weather conditions that might influence the indoor thermal environment. Also consider how the specified HVAC system might contribute to humidity problems or relief.



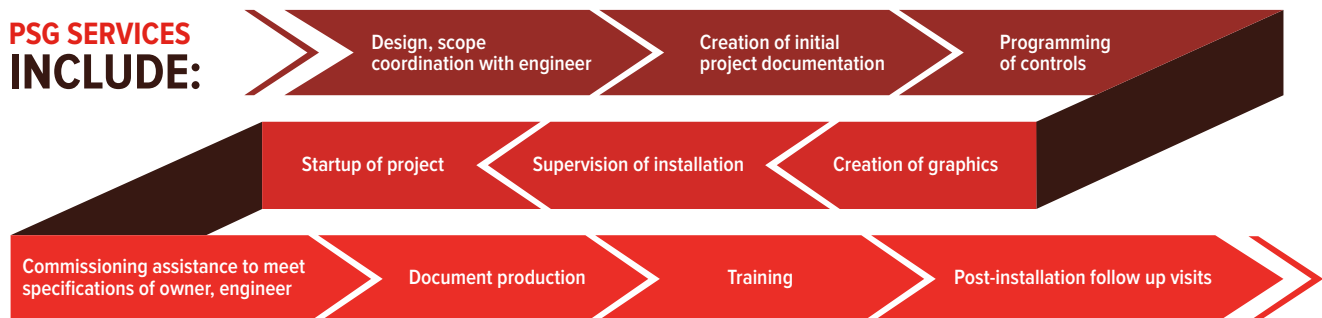
PRODUCT INNOVATION

A Tool for Providing Innovative Building Management

Engineers specifying HVAC for hotel and lodging facilities must meet a long list of needs, including occupant comfort, operational ease and cost efficiency. Variable Refrigerant Flow (VRF) is of course a solution to this challenge. Now, engineers specifying [Mitsubishi Electric VRF](#) have a new tool that will turn this challenge into an opportunity: [Diamond Controls™ Solutions](#) (Diamond Controls).

Diamond Controls pairs building automation controls with top-notch professional services. The DC-600E™ Integration Controller offers an unprecedented level of control over a building, while the wide range of offerings from Mitsubishi Electric's [Professional Solutions Group](#) (PSG) covers every relevant service, from the initial design to post-installation follow-up support. The result: engineers can deliver a system that makes the most of facility managers' and owners' budgets and time.

PSG SERVICES INCLUDE:



For a hotel/lodging application, Diamond Controls integrates most any mechanical system – from elevators to HVAC, occupancy sensors to lighting, hotel room systems to water features and more. The high-level display offers trends, reports and analyses in real time. All of this information is clearly displayed on a web-based interface, with 3D representations of equipment and floor plans, and a customizable interface.

PSG takes the product a step further, offering a single, integrated solution through a reliable provider. This improves the speed of the integration process and reduces the risk of integration mishaps. And since one company with a national presence is providing both the product and the services, every region of the country has controls staff ready to assist with any product or service challenge.

For engineers, Diamond Controls is a one-stop-shop for HVAC and controls, allowing them to provide clients with efficiency gains, lower costs and ease of use. [Click here](#) to learn more.

CASE STUDY

VRF Offers Hilton Garden Inn Quiet Operation, LEED Certification

When [Hilton Garden Inn® Hotels](#) (Hilton) decided to build LEED®-certified lodging in Washington, D.C., it turned to Clyde Hurst. A second-generation principal of Hurst Engineers, Falls Church, Virginia, Hurst is an expert on hotel design. For him, occupant comfort is always a priority because “every guest in a hotel is comfortable at a different temperature.” To meet the future Hilton occupants’ diverse needs, Hurst said he “wanted to specify a system that would allow each person to closely control the temperature in his or her very own environment.” He turned to VRF – what he called a “unique solution to a common problem” – given VRF’s ability to vary each individual unit’s capacity to meet the exact load of a space.

Hurst favored [Mitsubishi Electric VRF](#), specifically, because of its proven benefits. “I was aware that Mitsubishi Electric’s VRF technology was the quietest (imperative for hotel rooms), most versatile (because of its simultaneous cooling and heating intelligence and superior controllers) and easiest to install (the industry’s only two-pipe system).”

With the hotel now up and running, Hurst particularly enjoys sharing an anecdote of overhearing a guest tell the front desk, “This is the first hotel I have ever visited that I could not hear the air conditioner go on and off all night long! Consequently, I had a wonderful sleep. From now on, this is the only hotel I am booking when I come to Washington!”

Hurst has also been pleased by the system’s year-round performance. “At first I was concerned about the system’s ability to adequately provide heat in the winter. But now, after a particularly cold winter, I am especially impressed with the heat pump performance. The same goes for the summer. The Mitsubishi Electric system has performed so well and there have been no complaints.”

The cherry on top – beating ASHRAE 90.1 by 21 percent and becoming the first hotel in the area to achieve LEED Silver certification. To learn more, [read the full case study](#).



Photos: Hilton Garden Inn