

Mitsubishi Electric *Architect* Newsletter

The Mitsubishi Electric Cooling & Heating (Mitsubishi Electric) *Architect* Newsletter is a quarterly digital publication that highlights the latest developments and perspectives on applying HVAC systems within commercial buildings. This issue focuses on designing for **commercial retrofits**. Explore design trends, HVAC solutions and system advancements below.

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INDUSTRY INSIGHTS

Economies of Design and Energy for Retrofits with VRF

With [50 percent of U.S. commercial building stock built before 1980](#), energy efficiency targets will not be met without architects who bring legacy structures in line with [today's energy performance standards](#). Variable Refrigerant Flow (VRF) has emerged as a technology that provides higher energy efficiency and comfort without requiring the sacrifice of a building's historic character.

VRF's indoor units are compact and discreet in terms of look and sound, enabling a contemporary feel and design freedom for architects. As you will read in the case study featured in this newsletter, VRF is flexible and unobtrusive so that architects can help owners retain desirable historic elements of their buildings or better utilize spaces occupied by cumbersome legacy HVAC equipment.

This economy of design is also reflected in VRF's outdoor units, which have a smaller footprint than the outdoor units of traditional HVAC technologies. VRF units help architects maximize square footage: what used to be a condenser farm can become an attractive amenity such as a rooftop garden or tenant social space.

Just as the physical components of VRF use less space, VRF offers full-range variable capacity to deliver only the amount of conditioning required to match a zone's cooling or heating demand. Sensors measure conditions in each zone and VRF's INVERTER-driven compressor, working in tandem with integrated controls, can produce savings of up to 25 percent on utility bills.

To learn how Mitsubishi Electric's smart technologies support design freedom for architects, visit mitsubishipro.com.



PRODUCT INNOVATION

Connected To Control Your Comfort

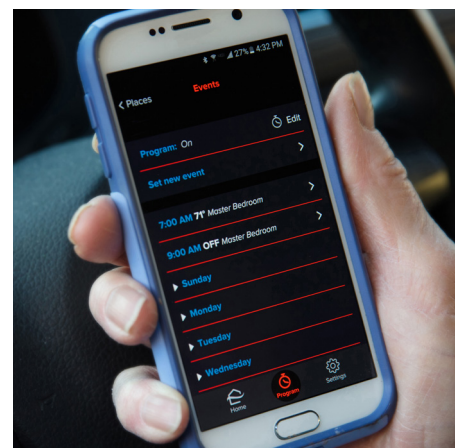
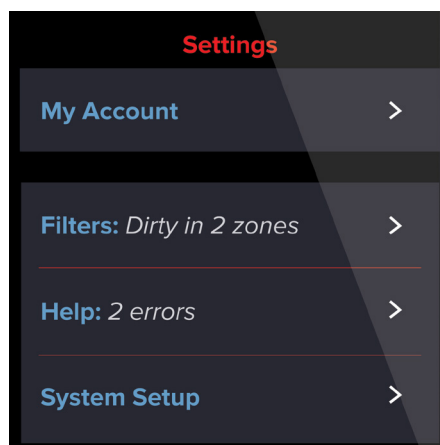
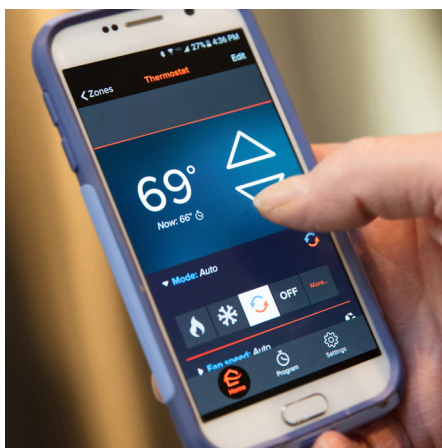
Commercial buildings retrofitted with modern HVAC technologies such as Variable Refrigerant Flow (VRF) can further improve the tenant experience with [kumo.cloud™](#), the programmable controller app from Mitsubishi Electric. In a technology-driven era where connectivity is becoming a necessity, this app offers tech-savvy tenants and building managers a smart technology that provides precise control over comfort. Even those who are tech-resistant will see the appeal, since the app lets them control and access their system from anywhere, at any time.

This user-friendly app offers the ability to customize zone temperatures conveniently from a smartphone, tablet or desktop. kumo.cloud optimizes energy usage and comfort – such as turning the system off in unoccupied spaces or presetting temperatures in each space based on preference, further contributing to energy cost reductions by as much as 30 to 40 percent.

kumo.cloud is compatible with the latest generation of Mitsubishi Electric ductless and VRF systems. Installation requires only three major components: a wireless interface for each indoor unit, an Internet connection and a router. The system can be ready to use in a few simple steps: install the wireless interface, download and set up the app.

Additional app features include:

- Set and control multiple systems in different locations.
- Program cooling and heating schedules.
- Receive alerts about filter status, system errors and low/high temperature alarms.



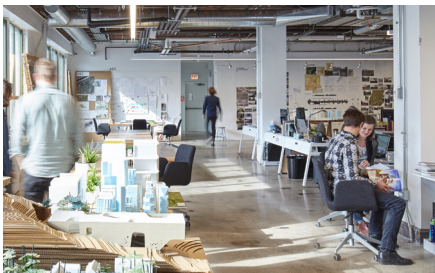
CASE STUDY

Landmark Building Retrofit For A Sustainable Future With VRF Technology

[Studio Gang](#) is a Chicago-based architecture and urbanism practice that emphasizes sustainability, experimentation and collaboration in its design process. This ethos informed their decision to purchase and renovate the neighborhood's 76-year-old Polish National Alliance Building to serve as both its office space and a City of Chicago Landmark Building.

When Studio Gang began thinking about HVAC, maintaining the building's Landmark status was a priority. Senior Technical Director at Studio Gang, Harry Soenksen, AIA, LEED AP, said, "For this project, we were working within the constraints of the building. It was important not to add any more than was necessary, and to intervene in the original spaces and structure as little as possible. This was an important part of the Landmark Department's (Landmark) requirements."

Working with Alex Tompsidis, president, [AT Mechanical, LLC](#), Melrose Park, Illinois, Studio Gang identified VRF as the solution that would deliver comfort and satisfy Landmark requirements. Soenksen said, "VRF fit the function, cost, acoustic and visual requirements. In terms of cost, it was pretty competitive with a conventional system but where VRF stood out was that it met Landmark's performance requirements of exceeding ASHRAE standards by at least 17 percent."



"We've been happy with it. It's been far less noisy than the old system and way more consistent and comfortable than our old office. People are way more comfortable and it's actually costing us less per square foot," said Studio Gang Chief Financial Officer Meredith Mack.

Studio Gang's previous office space had a monthly expenditure (electric + gas) of \$0.14 per square foot. The new office space comes in at \$0.11 per square foot.

Another mark of the project's success has been impressive recognitions, including LEED® certification. Mack said, "The office has also been popular for the [Architecture Foundation](#) open house. It's just a nice space."