MITSUBISHI ELECTRIC
COOLING & HEATING

# STUDIO GANG CHICAGO OFFICE

*Chicago*


## COMPLETION DATE

November 2015

## PROJECT TEAM

**Architect:**

Studio Gang, Chicago

**Mechanical Contractor:**

AT Mechanical, LLC,
Melrose Park, Illinois

**Manufacturer's Representative**

Windy City Representatives,
Oak Brook, Illinois

## CHALLENGE

Achieving true occupant comfort with a highly efficient system in a renovation of a historic building

## SOLUTION

Mitsubishi Electric VRF

## RESULT

Thermal and acoustic comfort of workplace, money saved and reliable operation in even the coldest of temperatures during Chicago winters

Studio Gang is an architecture and urbanism practice based in Chicago and New York that works at a range of scales to help organizations, people and cities design their future. Focused on a design process that emphasizes sustainability, experimentation and collaboration, Studio Gang has been in Chicago since its founding by Principal Jeanne Gang 20 years ago. Recently, after years of renting space in Wicker Park, Studio Gang purchased and renovated a small building down the street. In addition to completing an adaptive reuse of the upper two floors, which now accommodate approximately 70 employees, Studio Gang built a prairie on the roof and an adjacent, enclosed event space. That **21,000-square-foot office** is now cooled and heated by a Hyper-Heating INVERTER® (H2i®) Variable Refrigerant Flow (VRF) system from Mitsubishi Electric Cooling & Heating (Mitsubishi Electric).

In 2013, Studio Gang was looking to grow and expand, and purchased what was the old Polish National Alliance building. Built in 1937, it was recently closed, after serving as a technical school. Senior Technical Director at Studio Gang, Harry Soenksen, AIA, LEED AP, worked with owners Jeanne Gang and Mark Schendel to procure the building and renovate it into office space. He said, "We always felt connected to this neighborhood and wanted to support its ongoing rebirth. While we do a lot of new construction projects for our clients, we also always try to save and repurpose structures and materials where we can. This building is also very beautiful – as architects say, it had great bones. So we purchased it, and worked to convert it into a City of Chicago Landmark building."

When the Studio Gang team began thinking about HVAC, that Landmark status became important, as did Studio Gang's commitment to sustainability. Soenkesen said, "We're a pretty progressive firm and are always looking for the best possible solution for the environment. 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."

To conduct the search for an HVAC system, Alex Tompsidis, president, AT Mechanical, LLC, Melrose Park [Chicago], Illinois, was called in. He said, "This was a unique situation. Studio Gang was acting as owner, architect and end-user. No matter my customer, though, my focus is always on delivering a system that is cost-competitive – but not so cheap that people will regret it. The city has a real reputation for that. **You have to balance money and quality. In terms of quality, comfort comes first. That's not really a negotiable item.** Ultra-quiet operation is also a key criterion, along with indoor air quality, maintainability and reliability of the equipment."

For Studio Gang, comfort was paramount. Soenksen said, "In our previous office, which was one open space, we had one massive HVAC unit with a single zone. In the summer, we would never get cool air over where I sat, while other people were too cold. Temperature striation was a big struggle, creating a complete lack of comfort for our employees. So we asked ourselves, 'This time around, how can we be modern and more efficient?' And that was a no-brainer. We could not go for big, packaged units. They'd also be visible, since we would be adding the system on the rooftop of the 1937 structure. Landmark was adamant about not seeing the system from the street. We needed something with a small footprint that was acoustically reasonable for us and our neighbors."

The answer was VRF. 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. No other system could meet that requirement." Acoustics and visuals on the roof became particularly important as Studio Gang planned their roof prairie and event space. The HVAC system had to be discreet if people were going to be able to enjoy these spaces. Studio Gang Chief Financial Officer Meredith Mack echoed Soenksen's satisfaction: "We had pictured a green roof with plantings and even trees, and we knew the VRF units would not be unattractive next to it. And they wouldn't blow all over you if you were up on the roof grilling or eating lunch."

Tompsidis said, "Ultimately, we design for clients the system that we would design for ourselves – and that's Mitsubishi [Electric] VRF because nothing else is as good. **In addition to meeting our design criteria, the Mitsubishi [Electric] VRF system mirrored the green, high-efficiency values of Studio Gang. And its outside condensing units are super, super quiet; that was important for their green roof.** We also like how flexible the system is. If Studio Gang ever wants to move things or add to the system, it will be relatively easy."

Tompsidis also prefers Mitsubishi Electric because of the strong local support: "We work with the distributor Windy City and they're a pretty sharp group. If a problem comes up, they handle it well. They're very good and professional."

For Soenksen, Tompsidis' recommendation of VRF technology from Mitsubishi Electric rang true: "I know of the company. I was aware of their elevators and escalators, and I knew that VRF was very popular across Europe and Asia, so I had a good feeling in general."

The installation was quick and easy. Soenksen said, "It was smooth sailing, and everything went in pretty cleanly. It's not a difficult thing to put the units up there. And since then, so far so good. We control the office's dozen or so zones, determining set points. Other than that, upkeep is limited. We're doing very little, thankfully!"

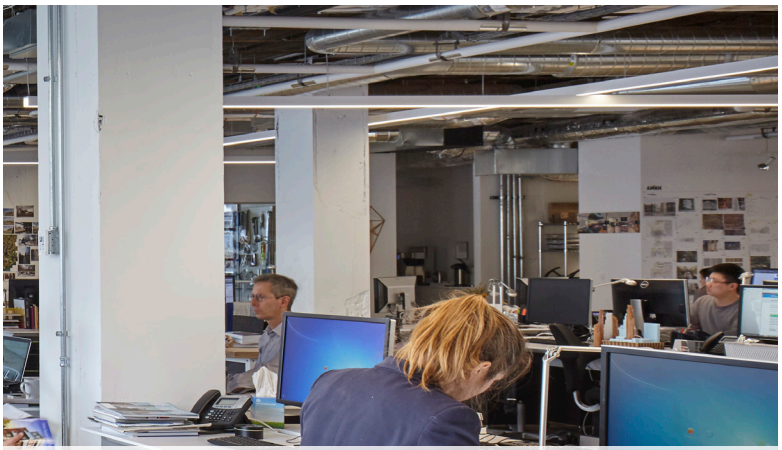
"We've been happy with it. It's been far less noisy than the old system and way more consistent and comfortable than our old office. People are way more comfortable and it's actually costing us less per square foot," said Mack.

That's no exaggeration. **The 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. Soenksen said, "These numbers let us put our money where our mouth is with our clients.** Because some people think they're going to spend a lot of money on a system and then it'll run all the time and ring up bills. But it doesn't work that way. It's designed to run. If you let it do its thing, as we have, you save money."

"Any way you slice it, we're spending less per square foot now," added Mack.

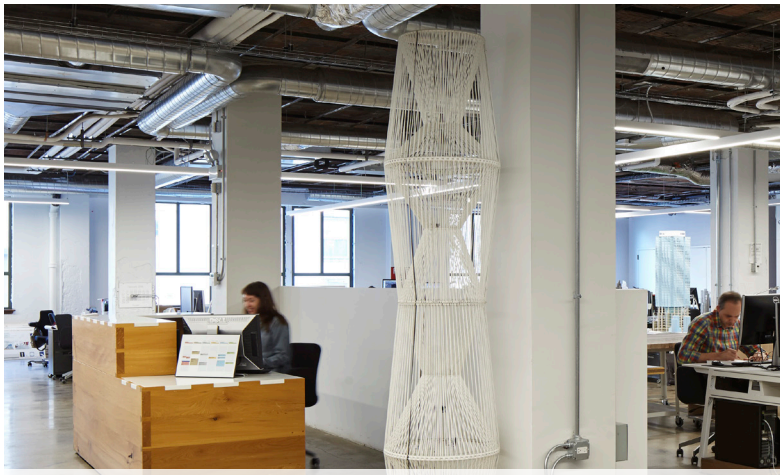
Another mark of the project's success has been impressive recognitions, including LEED® certification and Landmark status. Mack said, "The office has also been popular for the Architecture Foundation open house. It's just a nice space."

Soenksen said, "It feels good to think about how we might have saved this building from destruction. It was not much cared for over the last 50 years or so. Now it's beautiful and ready for the next 100 years."



*"Comfort is the most important thing, especially during a particularly brutal winter. Mitsubishi [Electric] H2i – it works. I visited Studio Gang this past winter when it was 2 degrees out and the heat was working perfectly."*

- Alex Tompsidis, president, AT Mechanical, LLC



**MITSUBISHI ELECTRIC EQUIPMENT INSTALLED**

**5** PURY R2-Series Outdoor Units, **22** PEFY Ceiling-concealed Ducted Indoor Units, **4** CMB BC Controllers, **7** LGH Lossnay® Energy Recovery Ventilators