

COMPLETION DATE

February 2014

PROJECT TEAM

Distributor

Mitsubishi Electric de Colombia Ltda,
Bogotá, Colombia

CHALLENGE

Selecting an HVAC system that would offer minimal inconvenience during its installation and ample efficiency for the rest of its lifetime

SOLUTION

Y-Series VRF from Mitsubishi Electric

RESULT

Impressive energy efficiency and an installation that didn't interrupt daily business operations

The Cambulos Building (Cambulos) is a mixed-use facility with 23 shops and a 12-story tower with 80 offices. The **32-year-old historic building is located in downtown Medellín**, Colombia's second largest city. Since its opening, the facility's commercial portion was cooled by a water chiller from Mitsubishi Electric US, Inc. Cooling & Heating Division (Mitsubishi Electric). When decades passed and it came time to replace that system, the staff at Cambulos knew they could count on Mitsubishi Electric. Instead of doing another chiller, a different technology and its various features and benefits appealed to Cambulos: Variable Refrigerant Flow (VRF) zoning technology. Cambulos favored VRF for its comfort, quiet operation, easy installation and cleanliness – all with impressive energy efficiency.

The ground floor of the 16,146-square-foot Cambulos building hosts a variety of shops, including Calzado BOSI, TV NOVEDADES, EPS salud Total and Calzado Aquiles. These businesses needed updated, cost-effective cooling, but none wanted to close during renovations. To tackle the problem, Cambulos called in Mitsubishi Electric de Colombia Ltda, Bogotá, Colombia, who had provided and serviced their old HVAC system. The 30-plus years of enjoying Mitsubishi Electric equipment meant Cambulos trusted Mitsubishi Electric de Colombia's guidance and service.

John Steven Hernandez, Mitsubishi Electric de Colombia's air-conditioning engineer, and Jailer Jiménez, the air-conditioning supervisor of the same company, came up with an idea: Cambulos

would remove the old chiller and put in a new VRF system. Jiménez said, "The selected system had to offer a very non-disruptive installation – both in terms of not interrupting the shops' business and avoiding dramatic work to the building itself. VRF could offer that since it does not require the installation of ducts, and therefore doesn't entail major work within a building's ceilings. VRF's space-saving features are also helped by the network of small pipes taking up very little space."

Hernandez spoke to other needs of the new system: "Cambulos' decision was principally about energy efficiency. They wanted to consume less power, and of course any savings in terms of energy was appealing. **VRF is highly efficient due to its modulation of refrigerant usage based on actual demand**, making it a good fit." Jiménez added, "It's also very quiet" – a must-have for businesses serving customers and patients.

The cherry on top, according to Hernandez: "VRF turned out to be less expensive than putting in a new chiller system."

When it came time to choose brands, Cambulos compared Mitsubishi Electric and Daikin. They decided to work with Mitsubishi Electric because of its products' "flexibility, energy efficiency" and "speed of installation," said Hernandez and Jiménez, respectively. Olga Lucia Palacio, Cambulos' property manager, said the decision was also about "the extended warranty, good advice and support offered by Mitsubishi Electric de Colombia, which successfully maintained our chiller system for 31 years."

With a system selected, installation began. “The project was very well-coordinated, and projected benchmarks were met,” said Palacio. Hernandez added, “As projected, **the installation did not disrupt normal operation in the facility. The stores were able to remain open and in operation.** The budget also kept very tightly to the prediction.”

Since installation, Cambulos has been pleased with the “appearance, comfort and improved user satisfaction throughout the commercial premises,” said Palacio. Regarding appearance, Hernandez pointed to the indoor units’ aesthetic qualities and the lack of exposed pipes. The minimal noise level has also been impressive. “Chillers make a

lot of noise, but the outdoor VRF units are almost imperceptible. And with the indoor units, you can’t hear them at all,” said Hernandez.

User satisfaction has taken the form of *no news is good news*. Hernandez said, “The Cambulos administration is satisfied that **the number of complaints they get from shop owners has dropped to zero.** Preventative maintenance and repairs have also been reduced,” furthering the cost savings and overall satisfaction.

In short, as Jiménez said, “It was a very good experience.”



“The appearance of the facility is nice now. There are no exposed pipes and the indoor units are stylish.”

- John Stiven Hernandez, air-conditioning engineer, Mitsubishi Electric de Colombia Ltda



MITSUBISHI ELECTRIC EQUIPMENT INSTALLED

2 PUHY-P550TSHM-A Y-Series Outdoor Units, **1** PUHY-P800TSHM-A Y-Series Outdoor Unit, **14** PKFY-P32VHM-E Wall-mounted Indoor Units, **5** PKFY-P32VGM-E Wall-mounted Indoor Units, **14** PKFY-P40VGM-E Wall-mounted Indoor Units, **4** PKFY-P50VGM-E Wall-mounted Indoor Units, **5** PKFY-P63VKM-E Wall-mounted Indoor Units, **1** PKFY-P100VKM-E Wall-mounted Indoor Unit, **1** PLFY-P80VBM-E 4-Way Ceiling-recessed Cassette Indoor Unit