



#### COMPLETION DATE

November 2015

#### PROJECT TEAM

##### General Contractor

R.D. Olson Construction, Inc.,  
Irvine, California

##### Architect

Lee & Sakahara Architects,  
Irvine, California

##### Mechanical Contractor

Thermal-Cool,  
Riverside, California

#### CHALLENGE

Selecting a quiet, effective HVAC system for a new, high-end hotel

#### SOLUTION

Mitsubishi Electric VRF

#### RESULT

Comfort and whisper-quiet operation across a variety of room styles and spaces

Since 1984, The Bicycle Casino has been a gaming destination in Los Angeles. With the addition of a **new, 118,000-square-foot hotel**, The Bicycle Hotel & Casino (Bicycle) is now a high-end, boutique resort destination – not just for patrons of the casino, but for anyone looking for a comfortable place to gather professionally or recreationally. The project team wanted a quiet and reliable HVAC system with a contemporary look to contribute to that overall feel. The selected system would also have to meet the varying needs of the hotel's many guest rooms and amenities. The solution was Variable Refrigerant Flow (VRF) from Mitsubishi Electric Cooling & Heating (Mitsubishi Electric).

The casino component of Bicycle is a dynamic gaming facility, attracting televised poker tournaments – and their audiences – regularly. For Doug Lee, architect, Lee & Sakahara Architects, Irvine, California, that meant creating a hotel concept and actual construction process that would not interrupt the facility. It was also important to not interrupt patrons' enjoyment. "To do that, [Bicycle] needed an HVAC system that was compatible with the iconic contemporary design concept, and that offered minimal disturbance during operating hours."

Since those operating hours never end – the casino and hotel are open 24 hours a day – the selected HVAC system would have to work continuously and quietly. Lee said, "We recommended VRF from the very beginning. The hotel is right next to I-710, which is already loud. We needed a quiet system. And we were already using Mitsubishi [Electric] on a hotel by Disneyland®, so we knew how quiet it could be."

John Ramirez, vice president of construction, R.D. Olson Construction, Inc., Irvine, explained another challenge of the project: "It's a really large

facility. **The hotel is seven stories and has 100 rooms. The rooms are all large and luxurious. The hotel also includes a full spa, a restaurant, a bar, a brewhouse, a multi-purpose room, gaming areas, a coffee shop, a gift shop, meeting rooms and offices, which include control rooms and management spaces.**" Lee said that with such varying uses and spaces, "The challenge was to make sure every space was comfortable. VRF offered that."

Corey Hampton, commercial estimator, Thermal-Cool, Inc., Riverside, California, estimated the cost of the job and served as the project manager. He said, "Three VRF manufacturers bid on the project: Mitsubishi [Electric], Daikin and LG. Mitsubishi [Electric] fit the function of the building the best, which was about reducing the number of branch controllers. Having fewer branch controllers means having fewer ceiling access panels, which Architects just don't like the appearance of, so Mitsubishi [Electric] was better for the design."

Going with Mitsubishi Electric also meant working with a two-pipe system versus a three-pipe system. **"When you have just two pipes, you save a lot of the cost on copper and at least 20 percent on labor.** Minimizing labor is huge," said Hampton.

Hampton also preferred Mitsubishi Electric because of product quality and project support. He said, "This is our fourth time using Mitsubishi [Electric] and so far it's been great. We've yet to have one service call – and service calls can be a real nightmare for a contractor! And then for support, with the hotel, we had project support the entire time. We really called on Mitsubishi [Electric], and we got answers right away. They were even on-site for start-up. It's the best customer service I've dealt with."

The system's advanced controls were another plus; they offer smooth and effective daily operation. Ramirez said, **"Mitsubishi Electric's management system allows an engineering staff to ensure the system is functioning as it's supposed to. You can put the management system in a central location, so everything can be overseen from one spot. A lot of ground is lost without a system like that."**

Lee addressed the importance of a quick installation: "Initially, the management wanted the project completed in 10 to 12 months, so it was an aggressive timeline. We wanted a system that would help facilitate and speed up that construction." VRF's small footprint and flexibility offered just that: **"We had the system installed in 50 days."** Hampton explained that installation was made easier – and cheaper – because of the ability to go ductless. "With ductless cassettes, the hotel saw a savings of about \$350 per unit. That's by saving on things like labor for the installation, the ductwork itself and diffusers." With 183 ductless units installed, the hotel saved more than \$64,000. Ceiling cassettes also enabled the guest room entryways to be three to four inches taller – making the rooms feel bigger.

The result has been reliable comfort – and already some impressive recognition! Built to be air-tight and water-tight, the hotel was certified by CALGreen and SoCal Edison – certifications that Ramirez described as "stringent."

The project team recognized the importance of Mitsubishi Electric VRF in earning these certifications, but has been even more impressed by how the technology ensures a positive experience for hotel guests. Hampton said, **"We've done so many big hotels. What I've learned is that, in hotels, you can really hear the air conditioning. With PTACs – you just can't sleep. But Mitsubishi [Electric] is super quiet. You can't hear it. For a hotel, that's a real advantage."**

Lee added, "I've been at this for 35 years now and I've never had such an interesting project. When you have management who says, 'We want the very best, so give us what you've got,' it's like having an open canvas to work with. They were receptive to new ideas like VRF, and they gave us a lot of latitude to design. The result has been great. Here's what says it best: The comments from visitors and word-of-mouth have all been positive."



#### **MITSUBISHI ELECTRIC EQUIPMENT INSTALLED**

**15** PURY R2-Series Outdoor Units, **84** PLYF 4-Way Ceiling-recessed Cassette Indoor Units, **99** PMFY 1-Way Ceiling-recessed Cassette Indoor Units, **5** PVFY Concealed Vertical Ducted Indoor Units, **7** AG-150 Centralized Controllers, **188** PAR Deluxe MA Remote Controllers