

CASE STUDY

Civilian Airport Terminal at March Air Reserve Base, Riverside, CA



Project Details

- March Air Reserve Base Civilian Airport Terminal,
- Riverside, CA
- New construction, 5,000 square foot facility
- System capacity – 14 tons
- Outdoor units – Heat Recovery
- Indoor units – 7 total
(Compact 4-Way Cassette, Concealed Duct)

“The building was designed in a way that was very open in nature. We have about a 38-foot ceiling and a lot of glass. I think overall, you can’t beat the efficiency of this particular system”

- Gary Gosliga
Airport Director, March Air Reserve Base

Project Objectives

Once a proud and productive tool of the U.S. military, the March Air Reserve Base had a problem. As part a massive nationwide realignment that essentially shut down a number of military installations, it needed to find a way to continue serving its surrounding communities. One facet of the solution included a civilian airport featuring a 5,000 square foot terminal in the California desert. This new construction project provided a blank canvas for an HVAC system that could deliver on the following objectives:

- high energy efficiency, but not necessarily LEED certified
- zoning to support multiple uses and the ability to re-assign areas for different activities
- simultaneous heating and cooling in separate zones
- heating and cooling loads with wide temperature swings outside and large variations in traffic and activity inside

Solution

This project brought together the talents of Construction Manager John Haag of Arcadia Corporation, Product Sales Manager Vinny Albano of Sigler Wholesale Distributors and March Air Reserve Base Airport Director Gary Gosliga. It also provided many challenges that showcased the advantages of Carrier VRF. The system’s multiple inverter-driven variable-speed compressors offered the perfect solution for comfort within a wide spectrum of load requirements. A variety of available indoor units made the VRF system a natural fit for zoning applications. From a very high-traffic, hot, high load days down to very mild days with low traveler volume, Carrier VRF can respond with accurate temperature control and a high level of energy efficiency. The resulting 14-ton installation includes heat recovery outdoor units and seven indoor fan coils -- Compact 4-Way Cassette and Concealed Duct models.

Comfort Takes Flight with Carrier VRF



Project Synopsis

When the German military began developing an “army in the air,” forever changing the scope of modern warfare, the United States responded... and a new airfield rose from the California desert to become a vital arm of the fledgling U.S. Air Force. That was 1918, and in the years since, the facility that has been known as Alessandro Field, March Air Force Base, and most recently March Air Reserve Base has proven to be a versatile and efficient component of the U.S. military. Today, the facility continues to find new ways to serve the Riverside, CA area with a 5,000 square foot airport terminal that is heated and cooled by an equally versatile and efficient Carrier VRF system.

When plans for the new terminal started coming together, it was clear the HVAC system was going to have a number of obstacles. First was location – the California desert. In the summer, temperatures can reach as high as 110° F, and in the winter they can fall as low as 30° F. There are times when the temperature changes by 40° F during the day. And, there are days with a very high solar load in the morning that will require cooling, even in winter.

Another consideration was the nature of the facility – an airport terminal – that has periods of time with high levels of foot traffic followed by periods of time with much less activity. Construction Manager John Haag of Arcadia Corporation also had to account for a variety of different activities within the terminal. “It serves many uses – ticketing, dining area and offices.” And in keeping with the base’s history of evolving use, Haag needed a system that could be altered easily as their needs changed. “They have certain offices they want to use as offices but they also want to change those offices into media centers.”

Finally, Gosliga desired a system that was energy efficient for the long term. “Not necessarily LEED certified, but wanted to make sure it was as efficient as possible.”

Because it was a new construction project, there were a lot of options to consider for HVAC. The clear winner was Carrier VRF. Haag, Gosliga and Sigler Product Sales Manager Vinny Albano chose VRF for a number of reasons. The outdoor units offer the

type of technology that can handle wide variances in loads. That’s the result of multiple inverter-driven, variable-speed rotary compressors. Heat recovery units were selected so the system could handle both heating and cooling loads simultaneously. These systems can “recover” heat energy from cooling a space which leads to greater efficiency and reduced energy usage. To handle the multi-zone requirement, the team designed a system that would use seven indoor units. As he learned about VRF during the process, Gosliga

marveled at its capabilities, noting “The biggest thing that shocked me was the incredible flexibility.”

Once the plans for a VRF system were in place, Albano made sure Haag and crew were thoroughly up-to-speed through a two-day session at the Sigler training center. That was an important part of the equation because getting the installation done right is critical for VRF. And the education didn’t end there, according to Albano. “I also came with the contractor to do site visits during the process of the installation to make sure it came together in the correct way.”

Through his continued involvement, Albano was able to help Haag find a solution when a piece of equipment could not support the required line length as specified by

the design engineer. The issue was solved using a Carrier Ductless unit, also supplied by Sigler Wholesale.

Work on the project was completed in time for a July commissioning. Haag noted that it turned out to be a great day to test the system’s cooling ability. “The day that was scheduled was the hottest day that year... had to be 105 degrees.” In spite of the heat, the commissioning process went as smoothly as anyone could have expected. Added Albano, “Everything went perfect.”

Four months after the commissioning, everybody was still impressed with the system. For Haag, there were no maintenance follow-ups, a sign of system reliability and a job well executed. For Gosliga, he came away impressed with the Carrier customer service. “The rep we got from Carrier, the instructions we had, the description of the system was unparalleled. We still have communication today... the customer service is fantastic.”

