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Museum gets first HFC rooftop units

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TUCSON, ARIZ. — In keeping with its environmental theme and mission, the Sonora Desert Museum here is the first commercial building in the country using rooftop units charged with chlorine-free R-407c.

The combination desert zoo, museum and botanical garden showed off the environmentally friendly rooftop units at an open house and reception in mid-December.

The Carrier "Tierra" series 48GJ commercial rooftops will heat and cool the museum's new gift shop, coffee bar and aquatics exhibit.

The museum was interested in a technologically advanced unit that would combine energy and cost savings. It was tipped off about the availability of the new HFC rooftops by mechanical contractor Able Refrigeration Inc.

The museum bought a 5-ton unit and two 7.5-ton units. Carrier delivered them on a tight three-week turnaround period so Able Refrigeration could install them before Thanksgiving.

While it is adapted from Carrier's HJ Weathermaster Series, the Tierra rooftop is actually an entire new line. It uses R-407c, a blend of R-32, HFC-125, and HFC-134a. The unit achieves an 82% AFUE for gas heat — exceeding even California standards — and a 10.0 SEER. The unit also features new "Apollo" direct digital controls for communication with the Carrier Comfort Network. It includes an

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Mechanics from Able Refrigeration lower the first HFC-refrigerant rooftop unit onto the Sonora Desert Museum in Tucson, Ariz.

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integrated gas unit controller that has built-in diagnostic capabilities. Cooling comes from hermetic scroll compressors with internal vibration isolators.

The compressors are also mounted in independent base rails for a sound power level as low as 8.0 bels, crucial for a museum.

Able Refrigeration also added programmable thermostats and MicroMetl economizers equipped with CO_2 sensors. "The system is designed to accommodate periods when areas of the building are unoccupied and when outside air requirements decrease, said Able's president Carol Hull.

In Tucson, she explained, "cooling systems are required to use at least 20% outside air. When the external temperature falls below 55°F, the economizers allow the units to draw in fresh outside air. If there are a lot of people in the room, the CO_2 sensors will automatically bring in more outside air, but only when required."

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