
CASE STUDY

McQuay Vision™ Air Handlers and Air-Cooled Screw Chillers Are The Perfect Fit For Miami's Freedom Tower

Built in 1924, the tower at 600 Key Biscayne Boulevard in Miami, Florida has housed many prestigious tenants, including the Miami Daily News and Cuban Refugee Emergency Center. Known as the Freedom Tower, this once beautiful architectural landmark had fallen into a state of disrepair and decay over the years.

It was the dream of the Cuban American National Foundation (CANF) to restore this building and have it serve as a museum dedicated to the Cuban exodus, an exhibition center dedicated to Cuban art, and a library that documents Cuban history. To realize this dream, the CANF had to be brought up to code and many modern amenities had to be installed. This included air conditioning.

As with most buildings constructed in the early twentieth century, there were no provisions made for air

conditioning – no mechanical rooms, and in this case, there wasn't even space on the roof where a rooftop unit could easily fit. Therefore, the building presented a unique challenge for Freedom Tower Project Director Jose G. Puig, P.E., and McQuay Latin American Representative Art Alfonso.

One of the first limitations the two men had to consider was the amount of space available for the equipment and where the space was located. To achieve the designation of a National Monument, the building was required to keep as close as possible to its original design. This meant the HVAC equipment had to be kept out of sight as much as possible – not an easy task with no mechanical room and nineteen floors to cool.

The Freedom Tower also presented challenges to getting the equipment into the building. It was determined



that the mezzanine off the museum floor was the best place to house the equipment, even though the height of the room was just over six feet. Once the total load of the building was figured in, it became clear that the best solution was the McQuay Air-Cooled Screw Chiller and Vision™ Air Handlers.

With the lowest sound levels in the industry, the McQuay air-cooled screw chiller could be located near the museum without disturbing its visitors. The McQuay air-cooled screw chiller uses single-rotor screw compressor technology,



which is more efficient and has fewer moving parts to enhance its overall reliability. The energy-efficient ALS-270 single-screw chiller, with three compressors and three independent circuits, provided a measure of dependability no other chiller could match. The fact that the chiller could quickly be connected with the Building Automation System (BAS) was also very important to the project's managers.

To get the cooled air where it's supposed to go, Mr. Puig chose six McQuay Vision Air Handlers. Available in easy-to-assemble shipping sections that could easily be moved into the building, and offering features such as sound attenuators to minimize sound, the Vision Air Handlers seemed like they were made for the Freedom Tower . . . and in a sense they were.

With their complete sizing and unit arrangement flexibility and their wide variety of component options, these unique air handlers provide a

custom-modular platform for configuring optimal air handling systems – without the high price of customized units. Working within the limitations that the Freedom Tower's construction dictated, Mr. Puig was able to choose features for the Vision Air Handlers that would provide superior indoor air quality and the operating efficiency the building needed, while helping to reduce installation and maintenance costs.

The unique framework design of the McQuay Vision Air Handler provides an added benefit by allowing coils to be removed from the unit through the top, the side, or a combination of both without disassembling the entire coil section. This minimizes the amount of service clearance needed in the mechanical room to remove and replace the coil – an important benefit given the limited mechanical room space in the Freedom Tower.

Another consideration in choosing McQuay Vision Air handlers was

their unique ability to protect their cooling coils from the ravages of the salty Biscayne Bay air which had corroded the building's original steel rebar, resulting in expensive repairs and replacements.

Summing up his reason for choosing McQuay equipment, Mr. Puig simply said "I wanted the highest quality equipment available in the market today." He expects to count on the McQuay equipment for the next fifty years.

On Saturday May 19, 2001, the Freedom Tower held its Grand Opening Celebration. Dedicated to those Cubans who struggled or died for their liberty, the rejuvenated Freedom Tower will serve as a poignant reminder of the greatness of the human spirit and the power of the American Dream. And all who walk through its doors and absorb a little piece of Cuban history will do so in a comfortable indoor environment provided by McQuay.