



Commercial Case Study

ClimateMaster Heat Pumps Equate to Sky-High Energy Savings at Museum Tower in Dallas

Rising 560 feet and 42 stories into the Downtown Dallas skyline, Museum Tower is the tallest residential building to be constructed in the city in more than 20 years. Its location in the heart of the vibrant Dallas Arts District, coupled with its striking contemporary architecture and design, makes it a unique and appealing choice for those seeking the very best in metropolitan living.

The project, which is owned by the Dallas Police and Fire Pension System, was completed in January 2013, and includes 115 one-, two- and three-bedroom luxury condominiums that range

from 1,800-sq. ft. pied-à-terres to a 9,000-sq. ft. penthouse. Each "sky-bound estate" features floor-to-ceiling glass walls, private elevator entry and access to a host of amenities including outdoor recreational areas, a state-of-the-art fitness center, three event spaces and 24-hour valet and concierge services.

Designed to achieve LEED® Gold certification from the U.S. Green Building Council (USGBC), Museum Tower features several sustainable construction elements, such as maximized daylighting, fresh air intake, indoor greenery and environmentally conscious building materials. In addition, individual 3.5-ton to 25-ton energy-efficient water-source heat pump driven systems were specified for each residential unit, featuring a total of 335 ClimateMaster Tranquility® 20 Single-Stage (TS) Series vertical and horizontal water-source units, as well as two Tranquility® Large (TL) Series horizontal water-source units, all with EarthPure® (HFC-410A) refrigerant.

Mechanical engineering firm Blum Consulting Engineers, Inc. was commissioned to design all aspects of the building's HVAC operations, including the water-source heat pump systems in each residence.



Emily Summers - Interior Designer

"The main goal was two-fold – to be able to sub-meter the electrical usage of each condo unit, and also to achieve an ultra-high level of efficiency with the HVAC system's operation," said Jake Musick, PE, project manager at Blum Consulting Engineers. "A heat pump-driven system helped us to achieve both aims, while also providing the quiet operation expected in a residence of such luxury caliber."

According to Musick, ClimateMaster was selected based on his firm's previous experience with the company and its products, and the decision was further supported by manufacturer's representative McMillan James.

"We've had good experience with ClimateMaster on several other large-scale residential projects, and McMillan James affirmed they were the right choice when it came to our goal of earning LEED credits in energy efficiency," said Musick.

Blum Consulting Engineers began mechanical design on the project in 2008, and completed it in 2009. In addition to heat pumps, the building's entire system includes a standard condenser water system with cooling towers, heat exchangers,



Emily Summers - Interior Designer

boilers and pumps, and a 100-percent air ventilation system that delivers fresh air to all residences and common areas of the building.

Construction officially commenced on Museum Tower with a groundbreaking in June of 2010, and mechanical contracting firm Don Burden & Associates, Inc. began initial installation of the HVAC system in December of that same year.

"We started with the central plant piping and equipment that would feed the individual water-source heat pump systems in the residences," explained Ray Hamilton, senior project manager at Don Burden & Associates. "ClimateMaster units began arriving at the job site in May of 2011, and our last shipment came that December."

According to Hamilton, design of the water-source heat pump systems required their unique installation onto a set of spring isolators.

"This was our first experience with a job specifying such a large number of ClimateMaster units, and between that and the fact that we needed to install them on the isolators, I was honestly a little concerned about what would happen at start-up," Hamilton said. "When we fired the first units, there was no movement whatsoever, and they operated just as they should."

"Overall the project went very well, and I'd say it's very much due to the high quality of ClimateMaster's heat pumps," continued Hamilton.



Museum Tower Dallas, TX



Marco French - Interior Designer

"They are some of the best I've ever run across on the job, and we had very few issues with their installation. McMillan James was also notably supportive throughout the process, and provided a high level of professional representation for the ClimateMaster brand."

Museum Tower residents began moving into the property in December 2012, and will continue to do so throughout 2013.

"From the beginning, Museum Tower was designed and built to rigorous LEED Gold environmental standards," said Bill Criswell of Criswell Radovan, the owner's representative for Museum Tower. "Our construction and mechanical engineering teams recommended ClimateMaster with the knowledge that we wanted the best product to meet our environmental objectives."



Marco French - Interior Designer





Museum Tower

Property Owner:
Museum Tower, LP

Architects:
Johnson Fain; Gromatzky Dupree and Associates

General Contractor:
Austin Commercial

Mechanical Engineer:
Blum Consulting Engineers, Inc.

Mechanical Contractor:
Don Burden & Associates, Inc.

ClimateMaster Equipment:
335 ClimateMaster Tranquility® 20 Single-Stage (TS) Series vertical and horizontal water-source units, as well as two Tranquility® Large (TL) Series horizontal water-source units, all with EarthPure® (HFC-410A) refrigerant

Project Website:
www.museumtowerdallas.com



ClimateMaster is the world's largest and most progressive manufacturer of geothermal heat pumps. The company is committed to innovation and dedicated to environmentally clean, economically sound and superbly comfortable home and business environments.

ClimateMaster has been designing and building equipment that enhances the environments we live and work in every day for more than 50 years. In addition to geothermal heat pumps, ClimateMaster offers the most extensive product line of water-source heat pumps for use in a wide variety of applications. ClimateMaster products are proudly built in the U.S.A.



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CLIMATEMASTER
7300 S.W. 44th St.
Oklahoma City, OK 73179
Phone 405-745-6000
Fax 405-745-6058
climatemaster.com