CLIMATEMASTER®

Millennium Tower
New York City, NY

Commercial Case Study

Big Apple Trendsetters

On the West coast, California is recognized as having the toughest environmental restrictions. And on the East coast, New York typically sets the most stringent expectations, with New York City sitting at the state's cutting edge.

For some commercial enterprise, it's challenging enough just to meet the city's environmental stipulations. Yet, some exceed them.

One of those going the extra mile lies on the southern tip of Manhattan Island, along the shore of the Hudson River, in the area known as Battery Park. Managers of the City Authority have set their own standards for new construction. Lofty environmental requirements for Battery Park City are spelled out in its Residential Environmental Guidelines, intentionally setting the affluent community apart as one of the highest-profile "green" neighborhoods in the country.

The 35-story, 400,000-square-foot Millennium Tower offers 234 condominium and apartment units; many sold to families with children. The living units range from one to four bedrooms in size, each within a single-story
living space.

The environmentally sustainable facets of the development appealed to buyers and broadly exceed Battery Park City's stringent requirements – because Millennium Partners has pledged to attain "gold" certification of the building under LEED® (Leadership in Energy and Environmental Design), administered by the U.S. Green Building Council in Washington.

The 35-story Millennium Tower

Turning Green

Achieving LEED gold at Millennium Tower is possible, in part, because the developer chose to install 932 super-efficient, ClimateMaster water-to-air heat pumps that are woven into the building's closed-water-loop, boiler/cooling-tower heating-and-cooling system. A huge boost toward LEED gold certification comes with the manufacturer's non-ozone-depleting refrigerant: EarthPure® HFC-410A.

"A point was earned under LEED for having the

The kitchen of a Tower condo features a ClimateMaster console unit and a vertical unit in the living area

'green' refrigerant," said Christopher Bisaccia, sales engineer for Gil-Bar Industries Inc., the manufacturer's commercial representative in the New York metro area. "In addition, our heat pump units' higher EERs contributed toward energy savings within the building's energy envelope.

In fact, managers at Millennium Partners saw to it that all facets of the building's energy-efficient design were rigorously evaluated.

"In this building, we've managed to reduce our anticipated energy consumption by about 22 percent," said Charles Norman, project manager at Millennium Partners. "We measured it in a

simulated study against a 'baseline' condominium building."

The building's heating-and-cooling system is served by two different types of heat pumps: the vertical style and the console style – both in sizes of about a ton to a ton-and-a-half of heating-and-cooling capacity. Console units were installed under bedroom windows and the vertical units, in living rooms and kitchens.

Raising the Bar

"In many ways, this project marks a turning point, an important benchmark for multi-unit development in the New York City market," said Bisaccia. "And since this building went up, heat pumps have been installed in most other new condominium developments in New York. A key contributor is that all of the heat pump enclosures are fitted with ClimateMaster's G-type 'return' panel, designed to muffle the sound of operation."

The acoustic element was seen as an essential advantage by Millennium Partners when choosing HVAC equipment for the facility. "The elimination of noise was critical to our decision-making process," said Norman. "So, early in the planning stage of the project, we installed the systems in our office here, and we ran them. We even hired a sound consultant to verify and confirm the manufacturer's claims."

According to Bisaccia, other ease-of-construction factors tied to the features of the heat pumps. Many of the units came with pre-installed risers that permitted a simple, closed water loop, linking floor to floor.

"It's a very efficient design," continued Norman. "We laid out the piping network and simply put the cabinets in. With the vertical heat pumps, cabinets are placed during the framing process without installing the chassis or the actual mechanical portions of the unit. Equipment chassis are installed only after all of the rough work has been completed. This prevents the chassis from taking a lot of abuse during the construction process."

In addition, the multiple condensing boiler/cooling-tower arrangement for the closed-water-loop heat-exchange system figures physically into the Tower's energy-efficient design.

The result is that a green, urban family high-rise has helped to establish important environmental expectations on a national level. Millennium Towers has helped to set a living example for future generations within and beyond the Big Apple.

Millennium Tower
New York City, NY

Building Size:
234 Condo units in 35 stories
and 400,000 square feet

Type of System:
Closed-Loop System

Number of Units:
932 Water-to-Air Heat Pumps,
Ranging from 1 to 1½ Tons

Energy Savings:
22 Percent, compared to a
'baseline' condo building

Project Manager:
Charles Norman, Millennium Partners

Distributor:
Gil-Bar Industries, Inc.

Architect:
Handel Architects

Manufacturer:
ClimateMaster, Inc.
climatemaster.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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