CLIMATEMASTER®

Alta at Thomas Circle
Washington, D.C.

Commercial Case Study

Washington D.C. is known for many "firsts" including, the first live appearance of the Beatles, home of the first Miss America (Mary Gorman, 1921), and other notable events in history.

The "Alta at Thomas Circle" – located just a few blocks from the White House – recently entered the list when it became the first certified LEED condo/mixed-use development in the District of Columbia. But it didn't start out that way.

The Alta includes 126 residential units from efficiency to 2-bedroom (with a few larger penthouse offerings), plus two retail spaces on the first floor – all packed into an "official" 13 stories, with penthouse roof/deck space all the way at the top, and a 5-level below-grade parking garage.

What sets the Alta development apart from other higher-end condos around the downtown Washington area are its green characteristics. Everything from insulation to paints to the water-source heat pump, closed-loop heating-and-cooling system was carefully selected for environmental compatibility and sustainability. These characteristics qualify the building for certification under Leadership in Energy and Environmental Design (LEED) criteria administered by the U.S. Green Building Council.

When the project was first conceived several years ago, the original specifications included equipment that used R-22 refrigerant. It was only very late in the process – during actual construction – that the developer made a strategic decision to switch to water-source units that use EarthPure® HFC 410a, a zero ozone depletion refrigerant. This became a key step in achieving the building's LEED certification. ClimateMaster's new Tranquility systems, which are built to accommodate HCFC-410a refrigerant, got the nod.

"Everyone was pulling in the same direction to get this done. Otherwise, it probably wouldn't have happened," said Al Hedin, senior vice president of development at residential developer PN Hoffman Inc. in Washington. "Initially, we didn't envision this as a LEED-certified project."

The lobby of the "Alta at Thomas Circle"

Hedin and others at PN Hoffman nonetheless saw benefits in switching midstream to a LEED-certifiable multifamily/mixed-use concept, using recyclable and sustainable elements on many facets of the building.

"We definitely feel that a keen environmental awareness helps to set our product apart from others in our core niche of multifamily condo/residential with a little mixed-use included," added Melisa Cinarli, LEED AP, Hoffman's development manager, hired to help manage the Alta project when the developer decided to make it a 'green' project, and to seek LEED certification.
Still, it didn't figure to be a small issue to begin a project with what might be described as a more "traditional" design concept, then suddenly – in the middle of the construction phase – to go green. A number of parameters had to be changed immediately, including the heating-and-cooling apparatus.

"The equipment for this project had not only been spec'd; it had been ordered," said DMR Associates sales engineer Mike Benson. "When PN Hoffman contacted us and said, 'What would it take to change this to 410A? We want to change this building to LEED,' and this is after it's already under construction – that's unusual because there's cost associated with it."

"The mid-stream change to 410a could have potentially been a real challenge," said Jac Chiang, project manager for Shapiro & Duncan, the mechanical firm tapped to install all of the building's mechanical systems. "But because of the way the units were arranged in a 'stacked' fashion, from one floor to the next, there were very few changes to deal with."

A technician installs a ClimateMaster vertical stack unit in the Alta

At the Alta, we have a penthouse structure on top of the building, providing rooftop access and space for mechanical equipment. The penthouse is up 14 floors, but technically it's a 13-story building – with a penthouse.

Most of the Alta's residential units have a single water-to-water heat pump – although each of the penthouse units has two heat pumps. The systems they

chose are a water-based closed loop, with boiler and cooling tower both installed on the roof.

"We used vertical-stack heat pump units because we were trying to conserve floor space," said Hedin. "The residential units are relatively tight, and we had about six square feet of floor area in each residential unit that we would need to house the heat pump – unlike a cabinet-type unit that would've required 15 square feet. Many of the smaller systems we used are in closet spaces, or even built into the kitchen island."

"The heat pump systems are pre-piped. And as you construct the building, it's just like you're putting blocks together vertically," added Benson. "One set of pipes fits inside the other set of pipes, and then you go to the next floor – do the next unit, then set the next ones and so on."

Noise abatement was another advantage for the systems they chose. "It's a big issue," Hedin said, "because we have these heat-pump units that are right in the middle of the living/dining areas. We're very pleased with the acoustics of the heat pumps."

Residents at the Alta are undoubtedly finding that living in a green environment is a net positive in many more ways than one.

Alta at Thomas Circle

Building Size:
13 Stories; 126 Residential Units

Type of System:
Water-Source Heat Pump

Developer:
PN Hoffman, Inc.

Mechanical Engineer/Contractor:
Shapiro & Duncan

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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Rev.: April 2016