



# **Chief Engineer**



*Official Publication of The Chief Engineers Association of Chicagoland for over 73 years*

**DECEMBER, 2008**

**COAL vs. WIND  
The Fight Rages On**

**Changing Water  
Treatment Ways**

**Boost Your  
VAV Efficiency**

*Santa Claus.*





## ***Another First For Washington, D.C. The Alta at Thomas Circle Gets LEED Certified***

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 the first all-black university (Howard, 1867).

The “Alta at Thomas Circle” - located just a few blocks from the White House - recent-

***CONTINUED ON PAGE 3***

# FEATURE FEATURE FEATURE FEATURE



*Designers came up with creative ways to incorporate mechanical and electrical elements into condo unit "furniture".*

## ALTA AT THOMAS CIRCLE CONTINUED FROM PAGE 2

ly 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-cool-

ing 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 direc-

**CONTINUED ON PAGE 4**



*Wide open space with LED lighting in the lobby area are just the beginning of the many "green" characteristics of the Alta at Thomas Circle.*



# FEATURE FEATURE FEATURE FEATURE

## ALTA AT THOMAS CIRCLE CONTINUED FROM PAGE 3

tion 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.

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.

"A couple of my development managers and I came to the conclusion that this would be a way to distinguish our products from other competitors in the marketplace," added Hedin.

"And 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 con-



*The smart incorporation of HVAC ductwork into the design of the living space makes the Alta at Thomas Circle a much desired place to live.*



*Although a higher cost was involved once the design team decided to go 'green', they determined the cost was feasible and went ahead.*

struction 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.

"In other words, the units that use HFC-410A refrigerant - which are more efficient and were brand new at the time - cost more than the initially-spec'd equipment that uses R-22," added Benson. "But the construction team ultimately came to the decision that if the somewhat higher cost, and delivery, would be feasible, we'd move forward with it."

"The mid-stream change to 410a could have potentially been a real challenge," said Jac Chiang, project manager

**CONTINUED ON PAGE 5**

# FEATURE FEATURE FEATURE FEATURE



**(BOTTOM)** Cooling tower equipment and **(TOP)** cooling tower piping were an important part of the decision to go for LEED certification.

## ALTA AT THOMAS CIRCLE CONTINUED FROM PAGE 4

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."

The purchase cost for the condos reached up to about \$500 per square foot. So it was with that in mind that Rodney Simpson, proj-

ect manager for Arlington, VA-based GHT, Ltd., the mechanical and electrical engineering firm, pushed for effective use of interior space. So GHT designers came up with creative ways to incorporate mechanical and electrical elements into condo unit "furniture" - unobtrusively hiding, and yet availing ready access to building system components.

"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-style 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 put

**CONTINUED ON PAGE 25**



**A ClimateMaster technician checks the filter of a vertical stack unit.**



# FEATURE FEATURE FEATURE FEATURE

## **ALTA AT THOMAS CIRCLE CONTINUED FROM PAGE 5**

ting blocks together vertically,” added Benson. “One set of pipes fits inside the other set of pipes, and then you go 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



*Lonnie Minnovrich, NE regional manager, ClimateMaster (LEFT), consults with a LEED professional atop the LEED certified green roof of the Alta at Thomas Circle.*

### **MORE GREENERY AT THE ALTA:**

- Green roofing. Incorporation of green roof elements to reduce urban heat, and to enhance on-site storm water management.
- Eco-friendly materials. Green-Seal certified carpet with zero CFC/HCFC.
- Low VOC paints and adhesives used to reduce contaminant off-gassing.
- Ultra-efficient mechanical systems. ClimateMaster water-to-water heat pumps using R410A (non CFC/HCFC) refrigerant offer healthier IAQ
- CO2 detectors monitor CO2 levels in common areas
- High efficiency building envelope reduces operational and maintenance costs by 15%
- Alternative transportation. The Alta is near Metro/bus routes and has bicycle racks on site.
- Low emitting finishes to maximize solar gain efficiency, and to reduce heating and cooling loads.
- Recycled content materials. Over 15% of materials used have 50% or more recycled content, and more than 40% of the materials are manufactured locally.

**Let us feature your building or recent project in a  
future edition of the Chief Engineer.**

**Contact the office today for details.**

**708.293.1720**