

Multifamily Developer Sets the Pace for Efficiency

Over the past decade, many efficient construction methods and technologies have been integrated into the single-family residential, municipal, government, and light commercial markets. But, one sector has lagged: multi-family con-

dominiums and apartments.

Tampa, Florida-based Phillips Development and Realty recently made a bold decision to take its efficiency to the next level. The multi-development company builds, manages, and owns Class-A apartment developments throughout the South.

One of the firm's newest projects is a 59-unit, mixed-use project being added to their existing Chatham Pointe property in Cary, North Carolina.

"Since 2009, we've turned our focus toward reducing our residents' overall living expenses and enhancing the

standards of our units," said Kevin Johnston, COO, Phillips Development. "When we began, we implemented a spiral development program whereby we would, over time, continue

to use more advanced technologies as they became financially feasible. Our first spiral was referred to as efficiency 1.0, in which we implemented Low-E glass, native landscaping, low-



A TEAM EFFORT: employees at Raleigh, North Carolina-based Eco Green Air install one of many rooftop condensing units at the Chatham Pointe development in Cary, North Carolina.



QUITE AN ADDITION: The latest addition to the Chatham Pointe development is a 59-unit, mixed-use building that features split heating and cooling as well as condensing tankless water heaters.



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CUSTOM COMFORT: Chatham Pointe bedrooms feature high ceilings and are conditioned with small, wall-hung evaporators.



QUANTITY AND QUALITY: Space conditioning at the new facility is achieved with 68 condensing units on the roof and 145 evaporators throughout.

flow fixtures, and Energy Star appliances on a few properties.”

“Here at Chatham Pointe, for spiral efficiency 2.0, we’re integrating high-efficiency, split-system heat pumps and condensing tankless water heaters.

Attractive and modern apartment buildings, wireless access hotspots, luxurious clubhouses, and pool lounge areas are found at all Phillips properties. Now, the company is changing the less tangible, though equally impor-

tant, aspects of each development.

While Phillips isn’t building to attain Leadership in Energy and Environmental Design (LEED) certification, the units would likely qualify from an energy-use standpoint.

High-performance windows and heavy insulation are joined by cutting-edge plumbing and mechanical equipment to provide maximum comfort, low utility bills, and effective use of living space. Because of its high

ceilings, the four-story building at Chatham Pointe towers over the other units around it. The ground floor includes 10,000 square feet of retail space to accommodate a fitness center, restaurant, and other amenities.

A SHARED VISION

As with many of their projects, Phillips worked closely with professionals at its affiliate builder, Spartan Construction & Development, on the Chatham Pointe

site. The general contractor is in lockstep with Phillips as together they march toward higher efficiency by means of new technology and building techniques.

“There’s always a short learning curve when integrating new elements,” said Phil Baker, president of Spartan Construction. “On this job, we implemented ductless split systems for HVAC and gas-fired instantaneous water heaters. Working with great subs smoothed the transition.”

Eco-Green Air Inc. in Raleigh, North Carolina, was hired to install single- and multi-zone Fujitsu Halcyon mini-split systems. Mega Plumbing of the Carolinas in Graham, North Carolina, served as the plumbing sub and was in charge of installing Navien tankless water heaters and hot water recirculation lines.

Alan Stephens, owner of Eco-Green Air, created the company in 2005. Today, the firm employs 12 technicians. Hydronic systems, geothermal equipment, and conventional HVAC are all in Stephens’ wheelhouse, but 75 percent of the company’s work is ductless installations.

Before Spartan broke ground, Stephens submitted his design for the heating and cooling systems. Mounted on the building’s roof, 68 Fujitsu Halcyon condensing units condition the entire structure via 145 indoor evaporators.

“A compact ceiling cassette serves the open floor plan of the kitchen, dining room, and living room,” said Stephens. “The bedrooms have a smaller wall-hung unit. That way, the main spaces are zoned individually.”

Because the corridors are located on the interior of the building, the majority of these common areas don’t need dedicated systems. The large rotunda spaces inside the building’s center tower are the only exception. Here, at the apex of the building’s two wings, a single ceiling cassette is used.

SEER, SOUND, AND SPACE

“We chose ductless technology for this job based primarily on its efficiency, but saving space and eliminating outdoor noise were part of the equation, too,” said Johnston. “The old 13-SEER heat pumps sound like a Chinook helicopter taking off in typical multifamily compressor farms. Because the Fujitsu units are much quieter and on the roof, tenants won’t even know they exist.”

“We’re using a variety of sys-

tems here, so there are different SEER ratings,” said Stephens. “At the very least, we’re operating at 17 SEER. But, Fujitsu single-zone systems go as high as 33 SEER.”

Due to the height of the building, lineset lengths up to 65 feet were used. The multi-zone units used by Eco-Green Air can operate with linesets as long as 165 feet — a real asset when piping refrigerant runs in a multifamily application.

Eliminating ductwork helped keep the ceilings higher than 13 feet in most places. It also meant more storage space for tenants.

“With the ceiling cassettes and wall-hung units, we’re able to save closet space that’s traditionally occupied by air handlers,” said Baker. “The new domestic hot water design helps in this respect, too.”

Instead of using electric tank-type water heaters in each apartment, Mega Plumbing installed 16 condensing, tankless water heaters in a ground-floor utility room. Vented and plumbed together, the units will automatically cascade their firing rate to supply ample hot water to the entire building, regardless of demand.

With a meter on the hot water supply to each apartment, Phillips is still able to bill tenants for their individual hot water use.

EFFICIENCY 3.0

“Our efficiency plan will fully mature upon completion of our new development in Charlotte,” said Johnston.

The new project, about three hours west of Chatham Pointe, is about to break ground. Phillips plans to build 45 apartments utilizing ICF (insulated concrete form) walls and a variable refrigerant flow (VRF) system with heat recovery.

“Eco-Green Air’s ductless installation here at Chatham has assisted us in our spiral development program,” continued Johnston. “The systems will give us the data we need to compare efficiencies and maintenance to older technology so we can make decisions on larger 300- to 400-unit developments. As a developer, I think it’s our responsibility to lead the technology curve in this market sector. And, for the tenant, there’s a lot of value in having a negligible utility bill. I really don’t think we’ll struggle to keep the units full.”

Information courtesy of Fujitsu General America Inc. For more information call 888-888-3424 or visit www.fujitsugeneral.com.