

# Touraine Apartments

## Philadelphia, Pennsylvania



## Historic Touraine Apartments Achieves Modern HVAC Efficiency, Improves Comfort for Tenants with IEC *ReStorAMOD*® Fan Coil Replacement Project

Mixing the striking artistry of historic Philadelphia architecture with a modern style that appeals to today's metropolitan dwellers, the Touraine provides a unique city living experience near Philadelphia's Rittenhouse Square and the Avenue of the Arts. The 13-story apartment building, originally designed as a hotel in 1917 by renowned architect Frederick Weber, stands today among a mix of old and new as an exemplar of the city's sturdy yet exceptionally elegant structural roots.

Owner's representative company Reinhold Residential, which acquired the Touraine in 1987, recently earmarked the historic property for extensive capital improvements to enhance both the comfort of its tenants and the energy efficiency of the building at-large.

"When we took over management of the Touraine in the late 1980s, we were inheriting some features that weren't exactly ideal," said

Giuliano Pignataro at Reinhold Residential. "Over the years we had some great support in maintaining the building and elements like its mechanical system for optimal operation, but with goals to improve the sustainability and indoor comfort of the property, it was time for a more substantial change."

According to Pignataro, Reinhold Residential's holistic property management philosophy naturally emphasizes the tenets of sustainability, as the company specializes in transforming historic architectural properties into attractive, modern residential communities.

"Using existing building stock in fresh and creative ways is the ultimate method to reduce, reuse, recycle," said Pignataro. "In addition, bringing new life into buildings like the Touraine, which just wouldn't be constructed this way today, means that we can offer a unique, enriched living experience that is full of character and very different from the shiny

new cookie-cutter buildings going up around town."

In addition to focusing in building renovations versus new construction, Reinhold Residential strives to incorporate the latest green building innovations, from non-toxic paints, finishes and cleaning products, to locally sourced and reclaimed materials, to highly efficient lighting and HVAC systems. These were all elements included in the Touraine's capital improvement plan, which was put into motion in 2011.

With a goal of substantially increasing energy efficiency, Reinhold Residential enlisted the services of regional HVAC/R service company Elliott-Lewis Corp. to identify improvements to the building's mechanical system that would make the greatest impact.

"Our company has been operating in this area since 1905, which means we have a lot of history with a lot of older buildings here," said Gene Zak, director of service at Elliott-Lewis. According to Zak, Elliott-Lewis has been a longstanding provider of mechanical system service for the Touraine building.

"We'd worked on several components of the mechanical system over the years, including the 15-ton natural gas-fired engines that supply energy to the building's 300-ton chiller," said Zak. "We also specified and installed two new 100-ton boilers for the building, and have supported ongoing maintenance of the individual fan coil units in the apartments."

For the building-wide HVAC system upgrade, Zak collaborated with regional manufacturers' representative Energy Transfer Solutions to specify replacement fan coil units for all 131 apartments in the Touraine. After more than three decades in operation, the original fan coil units had reached the end of their useful life.

"When we opened up the walls and saw that the unit was made by someone still in the business, we were excited," said Pignataro. "Then it became about evaluating what the best replacement unit solution would be."

The manufacturer, International Environmental Corp. (IEC), had recently released its new

**ReStoramod**® modular hi-rise replacement fan coil series at the time, which seemed like an ideal fit for the Touraine project.

"Our goal was to minimize disturbance to the existing infrastructure of the apartment, particularly as the building is fully occupied and we wanted the job done as quickly as possible in each unit," said Zak. "We also wanted to reduce the amount of reconstruction work that would be necessary by a general contractor, to further streamline the project and save on cost."



Installed **ReStoramod**® unit

In response to these needs, Energy Transfer Solutions recommended the new **ReStoramod**® product for several reasons.

"With nearly 250 fan coil units to replace, including a wide range of size combinations and many different discharge air configurations, this was a big job in general," said Casey Younkens, PE, sales engineer at Energy Transfer Solutions. "The new **ReStoramod**® from IEC seemed to come along just at the right time, and we were excited about the fact that the unit is designed for this very type of application."

"IEC has engineered the **ReStoramod**® with high-rise building owners and operators in mind, providing a replacement modular unit that can be installed in three simple steps and without requiring demolition," said Darren Mounts, product manager at IEC. "Mechanical contractors will also appreciate that the **ReStoramod**® is backed by IEC's proven engineering and customer support, helping them be successful with an application that is quick, efficient and lucrative."

According to Mounts, the **ReStoramod**® product was designed for fast and minimally invasive installation that does not impact neighboring spaces and can be completed on a room-by-room basis. Its streamlined three-step installation process includes: removal of existing surface components and trim drywall; removal of the existing unit's internal components and trim cabinet edges; and setting the unit into the existing cavity and hooking it up to the existing infrastructure.

Compatible with most modular hi-rise units, including IEC and competitive models, the **ReStoramod**® product is available in 300, 400 and 600 CFM

capacities. It provides the latest in energy savings and indoor air quality (IAQ), with a wide variety of options including closed cell insulation, an ECM motor, anti-microbial coatings, and advanced humidity control.

Energy Transfer Solutions worked with Elliott-Lewis to install a preliminary mock-up unit in the spring of 2012, after which the team worked with IEC on some slight modifications to the cabinet sizing, which would ensure an ideal fit.

"For this application, Elliott-Lewis and IEC realized that reusing a portion of the existing supply air plenum would expedite installation while reducing project costs," said Mounts. "To enable the **ReStoramod**® unit to accommodate these elements, IEC shortened the unit's standard height, which was achieved without impacting its performance or service access."

Upon formally selecting **ReStoramod**® units for the 243-unit replacement project at the Touraine, the project team worked with Reinhold Residential to develop a three-phase installation plan.

"Our first order of business was to shut down the heating and cooling completely to replace all valves on the 18 risers in the building, which would allow us to isolate the risers during replacement of the individual fan coil units," explained Zak. "We did this in March of 2013 while the weather was mild and neither heating nor cooling was needed by the tenants."

In addition, as the new **ReStoramod**® units included two-way control valves to further enhance energy efficiency, the team worked to upgrade the building's electrical wiring to accommodate them. Specifically, variable frequency drives (VFDs) were added to the pumps to optimize operation, and the boiler controls system was updated to allow for improved modulation.

"With this additional electric component, the new units will provide the tenants with more control over their heating and cooling during the shoulder months of the season," explained Younkens.

The first of three phases of installation began in the spring of 2013 and was completed by the summer. Phase-two installation began and was completed in the fall of 2013.

"The tiered installation process has been beneficial for us on numerous ends," said Pignataro. "We've been able to minimize the impact on our tenants by isolating replacements according to the orientation of the risers, which means construction is only happening in specific areas of the building. In addition, IEC has provided us with just-in-time delivery of the units only as we need them, which means we're able to more ideally finance the project, and we don't have to worry about storing units until they're installed."

With the project scheduled for completion in April 2014, all parties have confirmed its success to date.

"After our initial experience with **ReStoramod**®, we would definitely recommend it for similar retrofit jobs," said Zak. "The units installed thus far have worked out very well for us, and I'd say we've probably cut the job time in half compared to what it would have taken using another type of HVAC equipment."

"The Touraine project has been an ideal venue for showing what **ReStoramod**® brings to the table in hi-rise retrofit applications," said Younkens. "There are literally hundreds of buildings just in the Philadelphia area where old fan coils are being serviced and piecemealed, when they should really be replaced. **ReStoramod**® offers an efficient, reliable way to do this without making huge capital investments, particularly in reconstruction work. We expect this to be the first of many successful **ReStoramod**® installations in the city."

"At the end of the day it's all about improving the experience of our tenants," said Pignataro, "and we're also glad to be saving on energy and bringing this historic gem of a building back up to shining status."

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**ReStoramod**® patent pending



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