

2002 WINNER RETROFIT/RENOVATION (up to 3,000 sq.ft.)



Comfort At Long Last

by Valerie Stakes, editorial coordinator/associate editor

A HOUSE JUST ISN'T A HOME WITHOUT A TOP-NOTCH HVAC SYSTEM. THANKS TO KEIL HEATING & AIR CONDITIONING, THE HOMEOWNERS CAN ENJOY EVERY PART OF THEIR HOME, NO MATTER WHAT SEASON.

Some homes just make you want to relax and sit a spell. The Nazzaros' three-story townhouse in West Milford, NJ is one such home. Situated in a large, park-like complex, the home is surrounded by wooded areas, gardens, and open lawns perfect for spending a summer day.

The home's interior is equally lovely and spacious. When entering the home, you find yourself on the second level looking down on the living and dining rooms. Cathedral ceilings in the living room rise up to 12 feet, permitting an unobstructed view from the main entry. Large windows at the end of the home add to its light, airy feel.

The kitchen provides a view of the dining and living room areas, and the bedrooms are located on the second and third levels of the home, providing even more privacy.

Despite their beautiful surroundings, something was missing in the lives of the Nazzaros: comfort. Depending on the season, they would retreat to the parts of the home that were comfortable, avoiding those that were either too hot or cold. According to Dorothy, this meant never truly enjoying their home.

"During the winter, it was impossible to spend time in the downstairs living area. If we wanted to watch television, we'd make a cup of tea as fast as we could and run upstairs," she says.

Furthermore, the downstairs windows typically froze every year. "I think our neighbors were just as cold because you rarely saw lights on in their first floor."

In fact, those windows have been quite the point of contention between residents and the condo association. "The association wrongfully decided that our cooling and heating problems were a direct result of faulty windows and suggested replacing them, which would have cost us nearly \$5,000," says Dorothy.

Summers were just as uncomfortable. "New Jersey summers are hot and humid. Because our bedrooms are upstairs and heat rises, we would be miserable upstairs while the downstairs was cold."

Heat, humidity, and poor indoor air quality can also be detrimental to Dorothy's health, as she has Lupus. "It's essential for the air condi-



tioning to work well so I can breathe." In an attempt to make the house more evenly comfortable, they even tried to adjust the dampers on their ductwork themselves, which helped little.

The Nazzaros suspected their HVAC system was on its last legs and knew there had to be a way to be comfortable in every part of their home, all year long. They also knew they could trust KEIL Heating and Air Conditioning to find a solution to their problems.

A WINNING SOLUTION

A 2001 Quality Home Comfort Award winner, KEIL has a solid reputation performing retrofit and redesign projects in homes like the Nazzaros'. "Barbara Keil and her team are terrific. We wouldn't even think of calling anyone else."

Leading the project was KEIL's sales manager and comfort consultant, Donna Golding. "Before we even touch their equipment, we meet extensively with customers and have them fill out a questionnaire. We don't just make them guess about what they like and dislike about the exist-

The Nazzaros' home is located in a park-like setting surrounded by trees (left). The living area features cathedral ceilings that rise up to 12 ft. (above).

COMFORT SYSTEM AT A GLANCE**Category A****Retrofit/Renovation in an existing home up to 3,000 sq.ft.**

Total Comfort System Investment: \$11,269

This 1,756 sq.ft. townhouse condominium is nestled in a park-like setting away from the hustle and bustle of the world. Equally lovely is the interior, which features cathedral ceilings, spacious living areas, and large windows that provide an airy feeling to the home. There was only one problem: the home was never comfortable.

Dorothy and Adolph Nazzaro suspected their aging HVAC system was on its last legs and knew there had to be a way to enjoy every part of their home, all year long. They also knew that KEIL Heating and Air conditioning would find a solution.

KEIL found that not only was the system aging and inefficient, it didn't condition the first and third floors properly. Also contributing to the comfort problems was the ductwork. The main trunk line was oversized and the flex duct supply runs were improperly insulated and installed.

Finally, the system had no means of providing excellent indoor air quality, which was crucial because of Dorothy's health concerns. In typical fashion, KEIL came to the rescue with a system that met the Nazzaro's needs and budget:

- ▶ KEIL removed the old system and replaced it with a two-stage, forced air heating and cooling system.
- ▶ To handle the insufficient air distribution, particularly to the upper floor, KEIL performed a redesign of the duct system and relocated supply and return registers on the second floor.
- ▶ Indoor air quality was greatly improved by cleaning the existing air duct system, adding a humidifier, upgrading air filtration, and adding UV lighting.



PHOTO BY PAUL MUNSON



The KEIL team (left to right): Barbara Keil, Donna Golding, Steven Smits, and Matthew McGowen.

ing equipment. This way, we can design a system that truly meets their needs," she says.

"We discovered that not only was comfort an issue, we also needed to take Dorothy's health concerns into account. This led us to carefully examine the indoor air quality in her home and see how we could improve it through new equipment and clean ductwork," Golding adds.

Upon inspecting the Nazzaros' existing system, Golding found it consisted of builder's grade equipment and materials, which was typical of the new construction in the area. Not only was it aging, the system was also never designed to condition the house effectively or evenly.

The ductwork, which was primarily in the attic, was also a mess. The main trunk line was oversized for the system, and the flex duct supply runs were improperly insulated and installed. According to Steven Smits, KEIL's operations man-

EQUIPMENT LIST

- ▶ Goodman GMPE-100-4 100,000 Btu gas furnace
- ▶ Goodman U-30 2½-ton cased coil
- ▶ Goodman CKL-30-1D 2½-ton condenser
- ▶ Skuttle 2000 humidifier
- ▶ Skuttle humidistat
- ▶ Beckett CB-151-UL condensate pump
- ▶ Breathe-Eze ElectroKEIL air filter
- ▶ Eclipse HO222 UV light
- ▶ Arzel AIRBOSS 3 three-zone system
- ▶ White Rodgers IF80-1 two-stage thermostats
- ▶ Kool Kap condenser cover

The Nazzaros' new system provides even, energy-efficient comfort as well as improved indoor air quality.



A spacious kitchen area provides views of the dining and living areas.

ager, "The contractor who performed the initial installation put the ductwork into the attic space and just ran it every which way to get to the other areas."

The home's design also made it impossible to keep comfortable with the existing equipment. "The home has three levels and just one zone. Everything tries to push at once. You can't balance a system that's so unevenly designed," Smits adds.

Finally, the Nazzaros were concerned about their heating and cooling bills and wanted top-of-the-line, high-efficiency equipment. They also wanted to stay within their budget. After performing a complete analysis of the home, which included a room-by-room load calculation, "We found we couldn't solve all of the Nazzaros' concerns and remain within their budget," Golding says. "However, we were able to devise a system that was far more efficient and provided even comfort year-round. It also fit their budget."

KEIL began by removing the old heating and cooling system. In its place, they installed an 80% AFUE, two-stage variable speed furnace with a 10 SEER air conditioner, which would provide significant energy savings over their old system. To enable the Nazzaros to enjoy every part of their home, no matter what season, the team installed a three-zone pneumatic dampering system.

Next, KEIL addressed the air distribution problems by performing a complete redesign and fabrication of the air duct system. This involved removing the old ductwork from the attic and replacing it with R-6 insulated flex duct.

Smits comments how correcting poor system design is always a challenge. "Originally, the

ductwork ran across the attic hatch, which prevented the homeowners from entering. To correct this, we rerouted some of the individual duct runs to make the space usable," he says. "We also found that the system needed to be rewired correctly. Although the wiring was up to code, it wasn't exactly organized."

To complete the air system renovation, KEIL relocated supply and return registers on the second floor.

EASY BREATHING

Although a well-functioning heating and air conditioning system would be a tremendous boon to Dorothy's health, Golding knew KEIL could do more. The team began by cleaning, sanitizing, and filtering the duct system. They then added UV lighting to kill mold, bacteria and pollutants, along with a high-efficiency air filter. Finally, a humidifier adds extra comfort during the cold, dry winter months.

A FINAL TOUCH

As with all of their projects, the KEIL team performed a thorough start-up, testing and balancing of the system. According to Dorothy and Adolph Nazzaro, the system has performed beautifully since the installation, and they've never been more comfortable. "We're thrilled with our new system — it's the best investment we've ever made," Dorothy says. "In fact, this past winter was the first year we didn't have to hide upstairs or use the gas fireplace to be warm downstairs. The air conditioning has also kept us quite comfortable upstairs so far this summer."

The new system has also reduced the freezing of their downstairs windows during the winter, which is something they've brought to the attention of their fellow residents and the condo association. "At a recent meeting, we let them know that it's not the windows causing our problems; it's the poor heating and cooling systems. We also said, 'If you want to be comfortable in your home, call KEIL Heating and Air Conditioning!'" Dorothy adds.

"Working for the Nazzaros has been a rewarding experience. I have to commend our whole team, including our lead installer Matthew McGowen," Golding says.

Smits adds that although winning a QHCA award is exciting, customer satisfaction is the true reward. "It's amazing how you can take a system that other contractors would walk away from and make two people really happy, just by being patient, listening, and then addressing each problem. This project shows what a great team effort can accomplish." ★