

PARTNERS

UNICO Contractor

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The Unico System is designed to fit. It's ideal for heating or cooling buildings with:

- Electric Heat
- Hot Water Heat
- Chilled Water Loops
- Steam Heat
- Radiant Floor Heat
- Inadequate or No Ductwork
- Limited Space
- Inadequate Cooling on Upper Levels
- Baseboard Heat
- Radiator Heat



Overview

Built as part of the pilot program for the U.S. Green Building Council's Leadership in Energy and Environmental Design residential designation, Resonance House was the first home in Kentucky to receive LEED certification. Located in Lexington, Ky., the 4,400-square-foot home features low-e argon windows, high-efficiency lighting fixtures, LED and compact fluorescent bulbs, high-density recycled wool cellulose insulation, programmable thermostats, low VOC paint, recycled fiber carpet, hardwood flooring and FSC-certified woods. The architect researched HVAC systems and selected Unico's small-duct, high-velocity system as the perfect solution for the project due to energy savings and its ability to fit in tight spaces. Ray Brown Heating, Cooling & Plumbing was the contractor selected to design and install the HVAC system.

Strategy

There were many factors that made Unico the best fit for this project. With the high-profile architectural design, it was important to have low-profile ductwork and outlets that would blend in or be completely invisible. Structurally, the flat roof using TGI trusses required units and ductwork that could fit in very tight spaces. Finally, the home had to meet a number of energy efficiency criteria to qualify for LEED certification.

Ray Brown's solution was to use two split air-source heat pumps, one 3.5-ton Unico air handler, one 5-ton Unico air handler, backup electric heaters and Unico ductwork and outlets throughout the home. The home

features a combination of round wood and plastic outlets, slotted floor and wall outlets, and even open slots that were screened off. The selection and placement of the outlets was based on load calculations. In general, the open slots are in the slate floor, the slotted outlets are on the walls, and the round outlets are on the ceilings and wooden floors.

The Unico System provided two things for the project. First, it provided points needed to obtain the LEED Silver certification, as well as remarkable energy efficiency due to the 0% duct leakage. The use of The Unico System presented a unique opportunity in the LEED certification process because the traditional heating and cooling requirements did not account for small-duct, high-velocity systems. Ray Brown, Unico and Gregory Luhan worked together to document The Unico System, providing engineering specifications to the USGBC to prove it met the requirements. The petition was approved to show Unico met the criteria.

Results

According to Philip Brown of Ray Brown Heating, Cooling & Plumbing, Unico was very helpful during the design and installation. He said, "This project is a great example of Unico's flexibility. The ductwork, supply and plenum were all custom-made for this project."

Resonance House achieved LEED Silver certification in August 2008.

