

# Runyon Family in Beech Island

*New furnace had brought same old problems*

## Home Fast Facts

- Built in 1977
- 1,240 square foot single-story home
- Crawlspace and attic
- 5 occupants
- Average monthly electric bill: \$225



The Runyons had replaced both their electric furnace and air conditioner within the past three years, but their duct system remained very leaky; their attic insulation was inadequate; and their water heater was ready to burst. So, despite their investments in energy efficiency, their electric bills were still higher than average given the size of their home.

## Comprehensive Home Analysis

- Todd Usher of Addison Homes conducted a comprehensive home energy analysis and found the home was very drafty and had more than three times the air changes per hour it should.

## Heating and Air Conditioning

- The home was heated with an electric furnace and cooled by a central air conditioner, each installed by separate companies within the past three years. However, both systems were improperly installed and did not operate efficiently together. Palmetto Heating and Air replaced both systems with a single 2.5 ton, 15 SEER Lennox heat pump system.
- Palmetto replaced the manual thermostat with a digital programmable thermostat.

## Ducts and Ventilation

- Palmetto Heating and Air installed a new, sealed plenum return air duct, and also sealed and balanced the existing air supply ductwork in the attic.
- Palmetto also installed a Lennox energy recovery ventilator (ERV) system to improve indoor air quality and comfort.

## How the House Was Helped

## Sealing and Insulation

- In the attic, Glenco Insulation added an additional layer of blown fiberglass insulation to bring it from R-13 to an R-38 level, the current standard for new homes.
- In the crawlspace, Glenco Insulation removed the R-11 fiberglass batts that were falling down in some places, and replaced them with R-19 rated fiberglass insulation batts.
- Glenco Insulation installed a 6 mil thick plastic sheet to cover the bare dirt floor in the crawlspace to serve as a vapor barrier to keep out moisture, and protect against mold and mildew.

## Water Heater

- Cooper's Plumbing of Aiken replaced the 1994 80-gallon water heater with a new one with a timer. The old water heater was rusted around the tank bottom. Since similar heater tanks come with a 6-7 warranty and tend to deteriorate from the inside out, it was possible that this one had rusted iron settled in the bottom of the tank. Water heaters with installation are a \$1,100 value, but they are provided by Aiken Electric Cooperative to all cooperative members for free through Aiken's H2O Select Plus program because the timers help the cooperative save on its wholesale power purchases.

Presented by The Electric Cooperatives of South Carolina

**Costs**

**Actual Investment**

- Heat pump, duct and ventilation improvements by Palmetto Heating and Air with Lennox.....\$5,000
- Attic and Crawlspace insulation by Glenco Insulation.....\$1,800
- Water heater installed by Cooper Plumbing.....\$1,100
- Comprehensive home energy analysis by Addison Homes.....\$375

**Total estimated value of weatherization efforts in this home.....\$8,275**



**Home Energy Efficiency Makeover**

The Runyon family, Beech Island, SC

The Runyons were trying to do the right things in their home, having invested substantially in energy efficiency over the past few years. Still their electric bills were higher than average.

**BEFORE**



The Runyon's relatively new air conditioning unit and electric furnace were mismatched and improperly installed. Ductwork was suffering from multiple air leaks, compounding the system's problems and wasting energy and money.



**AFTER**



A new high-efficiency Lennox heat pump, sealed ductwork, digital programmable thermostat and fresh air ventilator will dramatically improve comfort, air quality and energy savings in the Runyon's home.



The existing water heater, installed in 1994, was an 80 gallon unit that had rusted iron settled at the bottom of the tank. It was inefficient and needed to go.



A new energy efficient A.O. Smith water heater and timer replaced the old unit, and was provided free to co-op members through Aiken Electric's H2O Select Plus program.



Like many homes, insulation in the Runyon's attic and crawlspace had settled or deteriorated over time, significantly reduced this important barrier between their inside living area and extreme hot and cold outside temperatures.



Glenco installed new blown fiberglass insulation in the attic. They placed new fiberglass batts in the crawlspace and covered the dirt floor with a thick plastic sheet to protect against mold and mildew.

**Who Helped**

Heating and Cooling System installed by



www.palmettoheatandair.com  
(803) 641-0044

Heating and Cooling System provided by



Comprehensive Home Analysis conducted by



www.addison-homes.com

Attic and Crawlspace Insulation installed by



www.glencoinsulation.com

Water heater installed by

Cooper's Plumbing Company  
(803) 648-0203

Participating Electric Cooperatives



www.aikenco-op.org

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