



Case Study

COMMUNITY:

Cedar Hill
Baltimore, MD

CONTRACTOR:

Airtron
Frederick, MD

3.2 deg. F

Average heating mode air temperature delta room-to-room (Jan - Apr)

3.4 deg. F

Average cooling mode air temperature delta room-to-room (May - Aug)

7.1 CFM

Average CFM delta across all supply ducts measured at commissioning

Situation/Overview

In August 2020 Rheia began working with NVR with a pilot program for Cedar Hill, a townhome community in Baltimore, MD. The pilot home was a 1,575 sq. ft., three-story end unit. The garage was located under the living space and included a ground floor mechanical unit.

Install

Using a two-man crew, the supply rough-in was completed in five hours. The Rheia home was commissioned according to Rheia's standard procedures. At system start up, in collaboration with PEG technicians, the home was balanced using Rheia's Verify process. At that time, measurements confirmed the duct airflows corresponded to the Manual J design within industry standard margins.

A thermostat and sensor network was installed for long-term monitoring. ACCA Manual RS specifies the maximum acceptable room-to-room temperature difference as 4 degrees F for heating and 6 degrees F for cooling.

Results

The builder observed installation time savings of almost 50% versus the conventional system, and this decreased further with subsequent installations.

In addition, the pilot home achieved 3.2 deg. F in heating mode and 3.4 deg. F in cooling mode during the monitoring period.

ACCA standard 5 allows no more than 25 CFM or 20% difference per duct versus the Manual J design estimates. This home measured an average per duct CFM delta of 7.1.

The home passed the Energy Star duct leakage test with a score of 2.8 cfm per 100 sq.ft

