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In-Law Quarters: A Growing Trend in the U.S.

By Dan Vastyan, Common Ground Uncommon Communications, LLC

Multi-generational living is a growing trend across the U.S. Mother-in-law quarters were a hot item in the 1970s, and it appears the notion of having several generations under one roof is once again gaining momentum, although not necessarily for the same reasons.

With a burgeoning economy, upward creeping real estate market, increased retirement and assisted living facility costs and better-than-ever life expectancies, the idea of sharing a floorplan with aging relatives has become more attractive to a lot of Americans.

On the flip side, more young adults are moving back in with parents. This may be an indicator of rising student debt, the unavailability of high-paying jobs available to new graduates unwilling to move



7,000 BTUH wall-hung evaporators were used in the upstairs bedrooms of the new in-law suite.

to a metro area or simply a “Failure to Launch,” as depicted in the 2006 romantic comedy film starring Matthew McConaughey.

In both scenarios—grown children moving back home or aging relatives cohabiting with family—separate living quarters are generally best for all parties involved. According to the National Association of Homebuilders, custom builders have seen increasing demand for homes with separate living suites. The trend is also evident in areas where additions and renovations outpace new construction startups. Contractors are dealing with all variety of considerations, from building lot size to septic system capacity and the need to provide individual HVAC control.

“This spring, we worked simultaneously on three properties where in-laws are selling their homes and moving in with their middle-aged children,” said Dustin Ebersole, of High Efficiency Solutions, LLC, in Lancaster, PA. The HVAC company has seen more retrofit and addition projects than new construction.



A technician programs a thermostat for one of the home's Halcyon mini-split units.

“At one of these properties, the owner was actually providing a separate apartment for both sets of parents, so the addition was quite a bit larger than the existing home,” continued Ebersole. “When deciding what type of system to install, one of the key considerations is providing individual HVAC control between the different living spaces.”

Three in one

Starting in November of 2017, High Efficiency Solutions was hired to provide heating and cooling for an addition at a 40-year-old, 1,600 sq ft home. The owners planned to add a total of 5,000 sq ft for his parents and her parents, along with a new master suite for themselves.

“The biggest challenge on this job was working off of three different electrical panels,” said Ebersole. “As much as individual control was concern, so was the ability to provide separate electrical metering. If not for this, we likely would have used a Fujitsu Airstage J-II single-phase variable refrigerant flow (VRF) system.”

Originally, the plan was to install a zoned unitary system, but once the number of zones was determined, Ebersole looked to a mini-split system with slim duct for the solution.

“Had we used wall-hung units, we’d have needed quite a few of them,” explained Ebersole. “Slim duct units also allow us to maintain a high ceiling and match the loads really well, two luxuries we wouldn’t have with a conventional, ducted system.”



High Efficiency Solutions used slim-duct units above the basement’s drop ceiling to remain above the beam.

In all, Ebersole installed four Fujitsu Halcyon single-zone mini-split units. Provisions were made for a fifth unit if and when the remaining 900 sq ft is finished.

“Using the variable speed slim duct units allowed us to match the small loads accurately,” he said. “For example, the 12,000 BTUH Halcyon system has a heating out-



Dustin Ebersole, owner of High Efficiency Solutions, LLC, pulls a vacuum before starting the new multi-zone Fujitsu Halcyon unit.

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put of 15,400 BTUH at our outdoor design temperature. We used 12,000 BTUH units on three zones, with heat losses of 13,857; 15,158 and 15,876. So we're pretty much spot-on for the demand at full capacity and the systems will modulate to lower capacities most of the time."

Additionally, an 18,000 BTU, single-zone unit serves the upstairs living quarters, which is the largest space between the two in-law quarters. A 9,000 BTU unit is to be added when the basement is finished. Work wrapped up in March of 2018, right before the first set of parents moved in. The occupants have been very pleased with the comfort level.

Multi-zone flexibility

Most jobs where accommodations are being made for parents moving in aren't as complicated. Over the past several months, High Efficiency Solutions has worked closely with general contractor Longview Structures on an existing home in an upscale, wooded neighborhood. More than 1,100 sq ft were added to a 2,000 sq ft home over the winter, to include a new bedroom suite and living area on two stories. The home's existing kitchen is shared.

A single, 24,000 BTU Fujitsu Halcyon multi-zone system was used, including one 12,000 and two 7,000 BTU wall-hung evaporators. In addition, a wall in the old portion of the home was removed to open up the floorplan.

"There was ductwork from the existing system in each stud bay of that wall," said Ebersole. "So we

According to the National Association of Homebuilders, custom builders have seen increasing demand for homes with separate living suites.

had to reroute that ductwork and build a soffit around it."

The only other unusual element of the project was providing condensate drainage for each of the three evaporators.

"We like gravity to drain all our condensate lines if possible," said Ebersole, "but the location of one of the units here wouldn't permit that. Instead, we installed an Aspen Mini condensate pump."

Ebersole has worked with the general contractor, Longview Structures, on a variety of mini-split projects, so the builder is familiar with the brand and its capabilities. It was their idea to use a three-zone split system.

"Unlike a lot of our projects, I didn't have much interaction with the homeowner on this job," he explained. "They trusted the suggestion of the builder, but they had the added piece of mind that we're a Fujitsu Elite Dealer, and that means an extra two years of warranty coverage on the equipment on top of the standard 10 years."

Ahead of the curve

At 33 years of age, Ebersole is

the oldest in the company. That youth provides a lot of energy, and easy adaptation to the industry's newest technology.

"We do our best to stay ahead of the tech curve," said Ebersole. "As quickly as things are changing, that can prove to be a full-time job in and of itself. Whether it's the use of design software or web-enabled equipment, we want to maintain a reputation of providing clients

with the best of what is available today."

Because mini-splits and VRF are a quickly growing sector of the business, Ebersole dedicated himself to becoming a Fujitsu Elite Dealer in late 2016. It required a significant time commitment, but the intimate understanding of the equipment has helped not only sales, but design and installation as well.

"It doesn't matter if we're installing boilers or mini-splits, we select product based on three things: quality, support at the distributor level and support from the manufacturer," said Ebersole.

"Our part of the bargain is knowing the equipment and its capabilities and how that applies to each job, along with proving the uncompromising service and support we feel we owe our clients," he added.

All types of work carry their own unique challenges and design quirks, and conditioning in-law quarters is no exception. As 2018 marches on and the trend continues to grow, High Efficiency Solutions goes into each new job building on the experience gained on the previous one. **ICM**