Artistic Homes of Albuquerque was the first production home builder in the United States to offer a true net-zero upgrade option on all of its homes. According to co-owner Tom Wade, in 2010, 45% of the homes Artistic sold were built to near or at true zero net energy (with HERS scores of under 5). Artistic’s standard home averaged a low HERS score of 51. “Zero energy was not much harder than what we were already doing. When we sat down with our subs and told them our goals, they got excited about hitting that zero too,” said Wade.

Standard features in Artistic’s homes include advanced framed 2x6 24-inch on-center walls with R-21 blown insulation in the wall cavities, high-efficiency windows, slab-on-grade foundations with R-10 rigid foam insulation under the slab and R-5 rigid foam insulation at the slab edge. Ducts are located in conditioned space in a dropped ceiling in the hallway and the air handler is located inside the utility room. In 2009, Artistic made R-50 blown fiberglass attic insulation standard (up from R-32).

To improve air quality, every home has a heat recovery ventilator with a HEPA filter, radon mitigation with a passive pipe venting from below the slab to the roof, and a garage venting system that uses a motion sensor to switch on a garage fan mounted to an outside wall. Air sealing details include gasketing the sill plate and caulking or foam sealing all wiring and piping holes. Every home is tested for whole house and duct leakage. Whole house air leakage ranges from 500 to 800 cfm: a code-built house would typically be about 2,700 cfm, according to Wade, who said Artistic’s goal was to get every home below 500 cfm in 2011.
### Lessons Learned

- **The biggest energy savings probably come from locating the ducts in conditioned space.** Most of the home’s heating and cooling registers come directly off a main duct trunk line that runs through a dropped ceiling in the hallway. The air handler is also located inside conditioned space in a utility room.

- **Advanced framing techniques included 2x6 24-inch on center walls, California (3-stud) corners, and open headers, which use less lumber and provide more space for insulation in the wall cavity.**

- **The downturn in the real estate market had a positive side for Artistic. “When money was easy, people didn’t care about energy efficiency. Some buyers were more interested in big foyers and vaulted ceilings, which we don’t do. In 2010-2011, 100% of our buyers came to us for the energy efficiency,” said Wade.**

- **“The HERS index is the very best measuring stick we could use to see if we are improving. We use it for ourselves and we’d like to see other builders use it so homebuyers can compare,” said Wade.**

- Techniques like the location of the air handler and furnace in the home’s conditioned space, timed ventilation with a fresh air intake, extensive envelope air sealing, jump ducts to balance indoor air pressure, high efficiency HVAC with a HEPA filter, an ERV, and blower door and duct blaster testing of every home help to ensure efficiency and a comfortable and healthy indoor air environment.

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