

## Can Zero Energy Modular Homes Reframe the Future of Affordable Housing?

Susan M. Davis – Resource Development Specialist, MHDC

As the largest affordable housing solutions provider in Delaware, **Milford Housing Development Corporation (MHDC)** had to be at the forefront of the green and healthy homes initiative, as well as a leader in bringing zero energy homes to the Delmarva Peninsula. The combination of these two concepts would create sustainable options for low income, senior, and/or disabled Delaware homeowners. Building modular homes in the footprint of single-wide manufactured homes would also allow for the replacement of aging homes on both leased and owner-occupied land, resolving two other housing issues for Delaware. Could MHDC get all these features into a home, and still make it affordable? The solution: to harness the power of partnership and leverage down payment assistance and energy incentives at the same time.

MHDC partnered with the **Delaware Sustainable Energy Unit (DESEU)**, **Beracah Homes**, and **Vermont Energy Investment Corporation (VEIC)**. MHDC would serve by identifying potential homeowners, teaching them about the ZeMod Program, helping them become mortgage ready, guiding them in purchasing or repurposing their lot, packaging their USDA 502 loans, and accompanying them to settlement. The DESEU, founded in 2007 by the state of Delaware to foster a sustainable energy future for the state, created a model that is being replicated in communities around the world. DESEU would offer energy incentives of \$16,500 to homebuyers to help make the solar aspect of the home more accessible to all, and \$25,000 in down payment assistance to qualified homebuyers. Beracah Homes, the only manufacturer of modular homes in Delaware, was a clear choice to build the actual homes. VEIC had successfully launched VerMod Homes and would provide technical assistance to us as we launched **ZeMod Delaware**.

Efficiency is the cornerstone to zero energy homes. ZeMod homes are independently certified to meet the Department of Energy's Zero Energy Ready Home Guidelines. ZeMod homes produce as much energy as they use, which means homeowners will have no electric or fuel costs. ZeMod homes achieve zero energy by having a super-insulated envelop, all-electric HVAC system, and all ENERGY STAR® rated

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appliances and lighting. An ENERGY STAR® front-loading washer and ventless dryer with heat pump technology are also included in this home. The washer uses 50% less water and 30% less energy than standard washers. Water fixtures are WaterSense certified to meet EPA specifications. ZeMod's high efficiency windows are maintenance free and comply with DOE ZERH home standards. All windows have two layers of glass, insulated frames, and airtight sashes that keep warmth in and drafts out.

To keep a home this tight healthy, fresh filtered air replaces pollutants that build up in the home and increase the likelihood of allergy and asthma attacks. The CERV ventilation system works like a thermostat – it monitors indoor air quality and automatically delivers fresh air when levels of carbon dioxide (CO<sub>2</sub>) and volatile organic compounds (VOCs) exceed recommended levels. The CERV continuously circulates and filters indoor air to remove pollen, dust, and other contaminants. Built-in dehumidification ensures a dry indoor environment, preventing the growth of mold and mildew. Homes with this Indoor airPLUS Certification, are designed to enhance health and well-being, so all the paints, flooring, cabinets, and other finishes are also made from low-VOC materials and feature formaldehyde-free products to reduce exposure to airborne pollutants. Studies show that those who minimize VOC and CO<sub>2</sub> levels in their home sleep better, have better concentration, and are more productive.

ZeMod homes are affordable because they deliver quality that lasts, savings that grow over time, and virtually no electric and heating costs. ZeMod homeowners save with access to low-interest financing, longer mortgage terms, and the ability to put the closing and land costs into the loan, rather than paying upfront out of pocket costs and/or paying monthly lot rents. In Delaware, land rents can be as high as \$800 a month. In addition to paying mortgage payments and utilities, this is extremely difficult for those living solely on a pension, Social Security, or Supplemental Security Income (SSI). Those fortunate enough to no longer have a mortgage payment often find themselves paying a high lot rent for an older manufactured home in disrepair. ZeMod Delaware is pleased to offer an affordable home that will hold

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its value over time. In many cases, we can eliminate electric and fuel costs, eliminate lot rent, and offer mortgage payments lower than the average cost of rent in Delaware.

Although the pilot program still has a year to go, ZeMod Delaware will likely become another model (in addition to VerMod) that other affordable housing providers will replicate, learn from, and improve upon. When this pilot program is complete, MHDC is excited to combine all this with a community land trust model for even more sustainable savings for those who do not own or are unable to purchase their own land.

If anyone would like to come and tour ZeMod, we have two models available for you to see. Beracah Homes also offers a tour of the factory where they are made. We will be happy to partner as an advisor and pay forward what VEIC has done for us to another program. Feel free to contact me at [sdavis@milfordhousing.com](mailto:sdavis@milfordhousing.com) or 302.422.8255 Ext 102 for more information. You can further view the program at [www.zemodelaware.com](http://www.zemodelaware.com).