

<http://www.vermontbiz.com/news/june/first-zero-energy-modular-home-burlington-delivered-north-ave-community>

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First zero-energy modular home in Burlington delivered to North Ave community

Vermont Business Magazine On Friday a new type of home was delivered to the North Avenue Co-op, a resident-owned manufactured home community in Burlington. An alternative to manufactured housing, this modular home came from the VERMOD factory in Wilder, VT, where it was designed and built for maximum energy efficiency, affordability, durability, and health.



The new structure is a zero energy modular (ZEM) home. Efficiency Vermont and Burlington Electric Department are partnering to promote ZEM homes as an affordable and sustainable housing solution, with a special focus on mobile home replacement. The home will serve as a resource and educational tool for the North Avenue Co-op community to demonstrate the benefits and features of a ZEM home.

Mobile and manufactured homes are generally energy-inefficient and particularly vulnerable to extreme weather events. Vermonters living in mobile and manufactured homes spend 66 percent more of their income on energy than owners of stick-built homes. In 2011, mobile and manufactured homes represented seven percent of the state's housing stock, a large portion of which were damaged or destroyed during Tropical Storm Irene.

"Concerns about high energy costs and a lack of resilient housing stock in Vermont are mounting and the need for more stable and reliable options is clear," said Karen Glitman, Director of Efficiency Vermont. "By combining energy efficient building practices and technologies, and collaborative partnerships, the ZEM program is bringing healthy, affordable housing to Vermonters."

ZEM homes are constructed with high-quality materials on a frost-protected foundation and are built to Efficiency Vermont's highest building certification tier. All ZEM homes also are equipped with rooftop solar photovoltaic (PV) arrays that produce as much energy as they use over the course of one year. This translates into no electric or heating costs for the homeowners. With a 30-year mortgage, up to \$50,000 in incentives from Burlington Electric Department, Champlain Housing Trust, and others, and minimal maintenance costs, ZEM homes in suitable locations provide an affordable option to homebuyers with savings that last the life of the home.

Support and assistance from Mayor Miro Weinberger, his Administration team, and other community partners helped the residents of the North Avenue Co-op purchase the park from its former owner in 2015. The 117 households in the park now own the community and manage it as a cooperative, providing critical affordable housing within the City of Burlington.

"Over the past year we have worked hard to remove several abandoned homes from our community," said Stephen Hamlin, President of the North Avenue Co-op board. "This partnership with Efficiency Vermont and Burlington Electric is allowing us to fill one of those vacancies with a different option for affordable, healthy, housing."

"I congratulate the North Avenue Co-op on its progress in addressing the long-standing neighborhood problem of abandoned trailers," said Mayor Miro Weinberger. "It is exciting to see the Co-op and its partners creating new, innovative, green, affordable housing options and to know that this new housing will help Burlington achieve its vision of becoming a net zero energy city."

To date, the Efficiency Vermont ZEM program has partnered with utilities and local affordable housing organizations to place over 70 ZEM homes across Vermont. The North Avenue Co-op home is the first ZEM home in Burlington.

Prospective buyers of the model home are encouraged to inquire for more information about pricing and income-based subsidies. Additional support for the educational mission of this project comes from the High Meadows Fund, VLITE, and Jane's Trust Foundation. To schedule a tour of the model home contact Phoebe Howe at Efficiency Vermont: phowe@veic.org(link sends e-mail) or (802) 540-7855.

Source: June 9, 2017, Burlington, VT – BED

Efficiency Vermont was created by the Vermont Legislature and is regulated by the Vermont Public Service Board. As the statewide energy efficiency utility, it helps all Vermonters reduce energy costs, strengthen the economy, and protect Vermont's environment. For more information, contact Efficiency Vermont at (888) 921-5990 or visit www.efficiencyvermont.com(link is external)

Burlington Electric Department has been serving its customers with safe and reliable power since 1905. Burlington Electric is a recognized national leader in green energy with the recent milestone achievement of sourcing 100 percent of its power from renewable generation. With a focus on low and stable rates and a

commitment to energy efficiency, Burlington Electric's 20,000 customers use less power today than they did in 1989. For more information about Burlington Electric, visit www.burlingtonelectric.com(link is external).

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---- end of the article at this link, above. Our email to learn more about ZEM and their verbatim reply, below. ----

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Phoebe Howe,

Your name and email was near the end of this article, which one of our readers brought to our attention.

Kindly provide written, emailed answers to some questions we have, prior to our doing a report.

You and/or the person responding, can type your reply below the numbered question, and email that back to us for use in crafting our article. We may publish in both MHLivingNews.com, as well as MHProNews.com.

1) What building code is the ZEM made to, please?

2) The story reported that mobile and manufactured homes had higher energy use than conventional housing. With that backdrop;

2a) Was the energy use data broken out by pre-HUD Code homes - true mobile homes - and post 1976 Code Manufactured Housing?

(As the terminology matters, let me supply a link:

<https://www.manufacturedhomelivingnews.com/40th-birthday-of-manufactured-housing-end-of-mobile-home-era/>)

2b) Where the model years of the homes in the energy study examined and taken into account? As you know, older conventional housing - as well as factory-built housing - has evolved on energy efficiency.

3) What size is the ZEM, total cost at retail, cost per square foot?

4) How many ZEM have sold?

5) Where specifically is the ZEM produced? Is it made by a modular or manufactured home builder, and privately labeled? Details welcome.

6) Interior and exterior photos are welcomed.

7) If the name, title of the person(s) responding to this trade media inquiry would be provided, that would be great. We'd welcome a head/shoulder photo too for illustration purposes of the planned report.

Kindly confirm this message. Then email me the replies, and thank you.

Tony

----- ZEM Replies -----

Dear Tony,

Thanks for reaching out - below you will see answers to your questions with several links to additional information. I am happy to talk further, and please let me know if there are any other materials or resources that we can provide for you. I am also available to review a draft of your article prior to publication if that would be helpful.

Have a great day!

Sincerely,
Phoebe

Phoebe Howe
Zero-Energy Modular (ZEM) program
Efficiency Vermont
[\(802\) 540-7855](tel:8025407855)

1) What building code is the ZEM made to, please? **ZEM is a modular home, meets the latest IBC requirements, is set directly on a frost protected foundation and is built to meet the Efficiency Vermont Certified: High Performance standard. This standard far exceeds IECC 2015 as you can see at the following link.**

<https://www.efficiencyvermont.com/Media/Default/docs/services/brochures/efficiency-vermont-residential-new-construction-specifications-and-incentives.pdf>

2) The story reported that mobile and manufactured homes had higher energy use than conventional housing. With that backdrop;

2a) Was the energy use data broken out by pre-HUD Code homes - true mobile homes - and post 1976 Code Manufactured Housing? **The comparison looks at a new HUD manufactured home delivered today in the same climate, Vermont, with the same program elements (square footage, beds, bath and geometry) as compared to a ZEM. The HUD manufactured home reflects the Uo value required in Thermal Zone 3, 0.079 BTU/hr·ft²·oF.**

(As the terminology matters, let me supply a link:

<https://www.manufacturedhomelivingnews.com/40th-birthday-of-manufactured-housing-end-of-mobile-home-era/>)

2b) Where the model years of the homes in the energy study examined and taken into account? As you know, older conventional housing - as well as factory-built housing - has evolved on energy efficiency. **Yes. See above.**

3) What size is the ZEM, total cost at retail, cost per square foot? The ZEM homes are custom designed and come in many different configurations but are primarily designed to replace single wide and double wide manufactured homes in parks and on private land. Most homes are a 14x70ft single box or 26x42ft two box home. The completed homes run approximately \$120/sf FOB, which includes a full ENERGY STAR appliance package including dishwasher, clothes washer and ventless heat pump dryer in addition to a ductless cold climate heat pump for heating and cooling, heat pump water heater and fresh air ventilation system. With crawlspace foundation, delivery, set, utility hookup, and solar, the homes run approximately \$160/sf.

We do find that most of our low- and moderate-income buyers are looking at their month-to-month costs, not the “upfront” or sq ft pricing. Please see the pricing comparison here for a 14x70 2 bed/2 bath ZEM and HUD manufactured home: <http://vermodhomes.com/wp-content/uploads/2016/08/2017-05-23GeneralMHRpricing-page-001.jpg>

The North Ave Co-op cottage home in the VermontBiz story you referenced was designed to fit on a lot which only allowed a 14x35ft footprint and needed to include a lofted space. Accordingly, this home is much pricier per square foot due to its increased complexity of design and much smaller square footage, but is still affordable to a low-income homebuyer. A pricing breakdown for that home is available here: <http://vermodhomes.com/wp-content/uploads/2017/06/2017-06-07Purchase26AvenueB.pdf>

4) How many ZEM have sold? 70 to date with approximately 45 homes scheduled for this year. The factory is designed to deliver one home per week.

5) Where specifically is the ZEM produced? Is it made by a modular or manufactured home builder, and privately labeled? Details welcome. Vermod Homes (www.vermodhomes.com – Wilder, Vermont) is our partner modular builder. If you’re in the area at any point, we’d be happy to meet you at Vermod and provide a tour with the owner, Steve Davis.

6) Interior and exterior photos are welcomed. Attached are interior and exterior shots of a basic 2 bed/2 bath Vermod ZEM home. You can find photos of the new cottage model here: <http://vermodhomes.com/first-zem-home-burlington-delivered-north-ave-community/>

7) If the name, title of the person(s) responding to this trade media inquiry would be provided, that would be great. We'd welcome a head/shoulder photo too for illustration purposes of the planned report.

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<http://www.MHProNews.com/blogs/daily-business-news/closer-look-vermods-zem-zero-energy-modular-manufactured-home-replacement>

End of Q&A end emailed messages exchanged. This article was published at the link above. Third party content is provided under fair use guidelines. ###

There are claims made that MHProNews does not claim to settle in the above, but we will provide another expert's view that has researched this energy efficient issue that suggests a different outcome than what those who promote the ZEM do. **"We Provide, You Decide."** ©



NOT YOUR GRANDFATHER'S TRAILER HOUSE



Dr. Hunt (hhunt@tamu.edu) is a research economist with the Real Estate Center at Texas A&M University.

THE TAKEAWAY

It's a well-kept secret that today's manufactured housing is energy efficient. Buyers, most of whom are focused on affordability, have the option to pick and choose among a wide array of efficiency options.

To see Dr. Harold Hunt's full report, please click [here](#).

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<https://www.manufacturedhomelivingnews.com/not-your-grandfathers-trailer-house/>
