How Much and How Much Better?

Perceptions of Zero Net Energy

ZNE homes are unfamiliar to most people, and many builders assume they are cost prohibitive to build. Our project asks two key questions:
1. How much more does the ZNE house cost to construct and own compared to the same house built to code?
2. How much better is it?

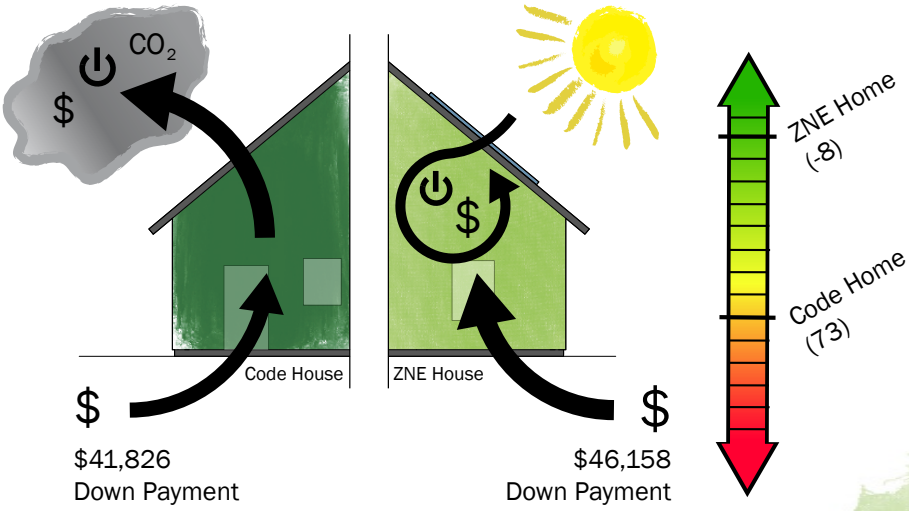
What is Zero Net Energy?

A zero-net energy (ZNE) home is a super-efficient building with a renewable energy system on site (like solar panels on the roof) that produces as much energy each year as the house consumes each year.

A Little More Upfront, A Lot More Benefit

Using current real-world industry pricing in Duluth, we found that the Evergreen ZNE home costs 11% more to build, requiring a down payment $4,300 higher than that of the equivalent code built home. But, our analysis shows that the monthly mortgage + energy costs of the ZNE home are actually $2.31 LESS per month than the mortgage + energy costs of the code-built home. The higher mortgage of the ZNE house is offset by savings in energy costs, meaning that the ZNE house is more affordable to live in over the long term. The ZNE home is more comfortable, too!

ZNE makes sense - both for our environment and our wallets.



The residential sector accounts for about 20% of the greenhouse gas emissions in Minnesota. 85% of residential energy usage comes from non-renewable electricity generation and natural gas. Upgrading our homes is an invaluable opportunity to tackle climate change, and the cost barrier is not as large as most people think. At the same time, we have a shortage of housing, but most people cannot afford a newly built home.

There is an opportunity here to create policy and investment that increases access to zero net energy homeownership - for everyone's benefit.

GREEN NEW DEAL HOMES

Office of Sustainability
University of Minnesota Duluth
Driven to Discover

with assistance from the UMN Institute on the Environment, Minnesota Center for Energy and the Environment, and industry partners.