Kentucky Highlands and Southern Tier Housing are nearing completion of a development of five near Zero Energy affordable residences in Emlyn, KY. When complete, they are expected to be the first buildings in Kentucky to be certified Passive Houses. The Passive House Standard is the most rigorous building energy standard in the world. Buildings that meet the standard use 90% less energy for heating and cooling and 75% less total energy than new buildings built to code. These load reductions make it more affordable to achieve Zero Energy with a small solar photovoltaic system. Zero Energy means that these houses will generate as much energy on a net annual basis as they consume. The houses in Emlyn achieve the performance goals of Passive House through:

- superinsulation of the entire building envelope
- elimination of thermal bridges
- airtightness of the building envelope
- energy recovery ventilation
- high performance windows and doors (triple glazed, insulated frame)
- solar domestic hot water
- energy modeling using the Passive House Planning Package (PHPP)

### Comparative Energy Use in Buildings

- **Passive House**
- **Energy Star**
- **New Building Built to Code**
- **Old Building**

- **75% REDUCTION**

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**PV Required for Net-Zero Energy**

- **Expensive PV System**
- **Affordable PV System**

- **Plug Loads**
- **Hot Water**
- **Heating & Cooling**

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**Passive House Consultants:**

[www.cscdesignstudio.com](http://www.cscdesignstudio.com)