



Building a High Performance Home

A High Performance home is also known as; *Green Building, Sustainable Construction* and represents an industry movement toward building homes that require less energy consumption and / or the use of environmentally safe products. The home will have been either been newly constructed or completely renovated to have incorporated the most energy effective construction practices and energy efficient products. These energy efficient products and practices are merged into a process to yield less consumption of natural resources like water, electricity, propane and natural gas.

There are many theories and practices which result in different levels and ranges of high performance housing. They can be as simple as increasing the SEER's on your HVAC system to solar powered homes with battery storage capabilities and backup generators. The later example is referred to as a *Net-Zero Home*. The concept of a *Net-Zero Homes* is based on the best practices of energy efficient building practices that result in home operating at little to no grid provided electricity consumption during any weather condition. The name Net-Zero Home can also be loosely used in describing a home that also consumes no grid provided electricity in normal weather conditions, but must rely on the grid electricity during cloudy or inclement days.

So what does this all mean? What it should mean to home owners that are preparing for building a new home or a major home renovation that effects the homes envelope and or the major utility consumption systems of the house, to take note of the various practices and products available to you in your upcoming project. The significant importance is to do some homework on these products and determine their service value to you over the life cycle of the product and length of your stay in the home.

High Performance Products

- High SEER A/C Condensers & Evaporators
- Low E- Dual Pane Windows
- Programmable Thermostats
- Home Envelope Foam Insulation
- Fresh Air Intake to Balance Negative Air
- PV Panel Solar Arrays



- Electrical Battery Storage
- Back Up Generators
- Metal or Tile Roofs
- Low Voltage / LED Lighting / Dimmers
- Energy Star Appliances
- Low Volume Plumbing Fixtures
- House Wrap Products - Air Infiltration
- Heat Recovery Water Heaters
- Geo Thermal Heat Pump
- Multiple Speed Exhaust Fans

High Performance Design & Practices

- Home Sun Exposure Orientation
- Proper Attic Ventilation
- Rain Water Harvesting
- Draught Resistant Landscaping
- Multiple HVAC Zones
- Extended Roof Overhangs or Window Shading
- High Ceilings with Wall Air Diffusers
- Seal all Penetrations in Home Envelope
- Ceiling Fans

The key to determining the optimum mix of energy efficient products and practices is understanding the monthly/annual cost savings that they will provide you over the expected period of time you plan on living in your home. The popularity of these products and practices is on the rise but that does not always translate to an equal dollar for dollar transfer in resale value. Many of these mechanical products also require some routine and repair maintenance expense. So it is best to do your research and seek out the advice of your professional home advisers during the design phase of your process.