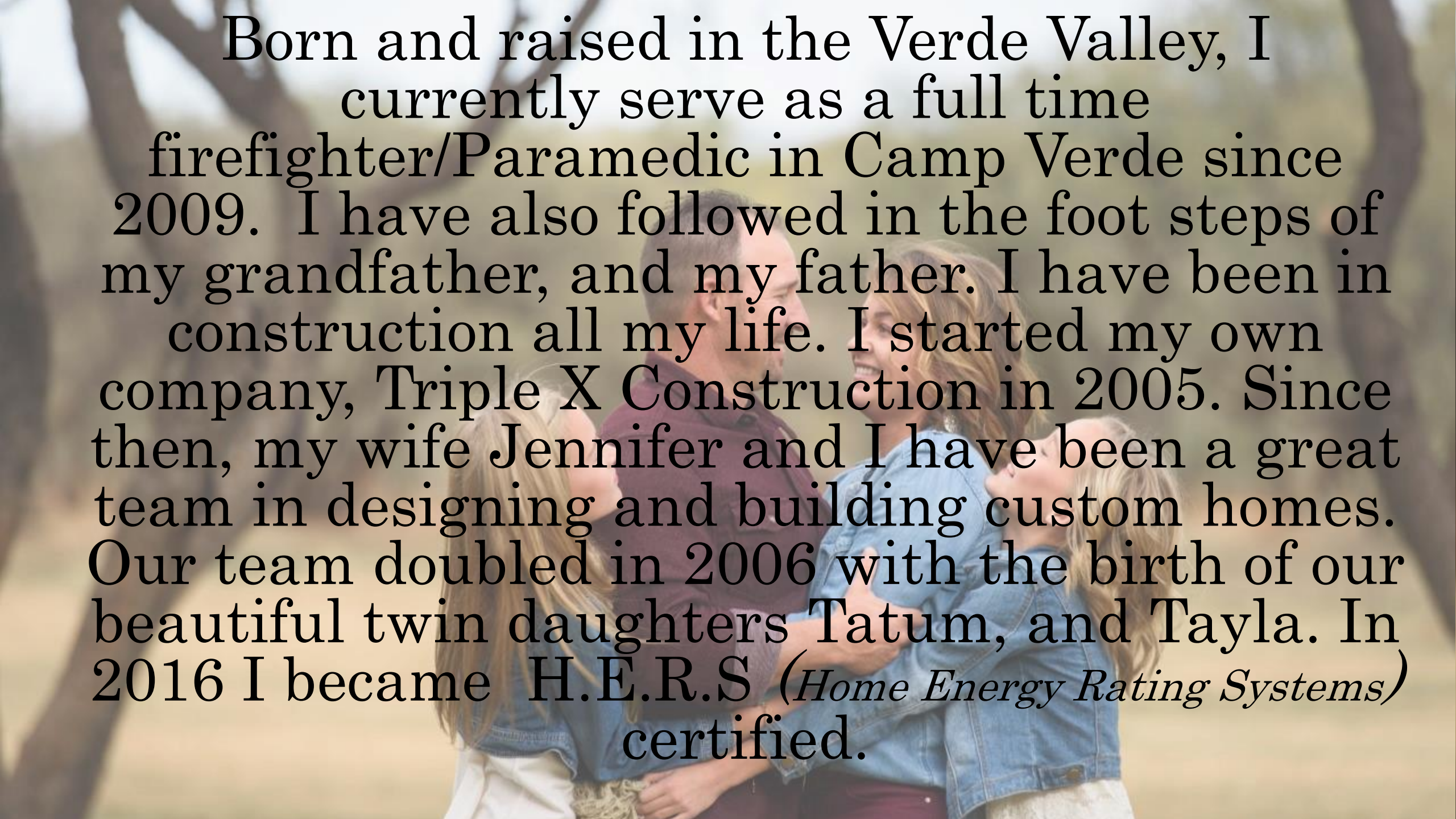
PATH TO ZERO

PRESENTED BY:
TANNER MCDONALD
TRIPLE X CONSTRUCTION



Born and raised in the Verde Valley, I currently serve as a full time firefighter/Paramedic in Camp Verde since 2009. I have also followed in the foot steps of my grandfather, and my father. I have been in construction all my life. I started my own company, Triple X Construction in 2005. Since then, my wife Jennifer and I have been a great team in designing and building custom homes. Our team doubled in 2006 with the birth of our beautiful twin daughters Tatum, and Tayla. In 2016 I became H.E.R.S (*Home Energy Rating Systems*) certified.

In the United States, tobacco smoke is a key factor in the progression of COPD, ***although exposure to air pollutants in the home and workplace***, genetic factors, and respiratory infections also play a role.

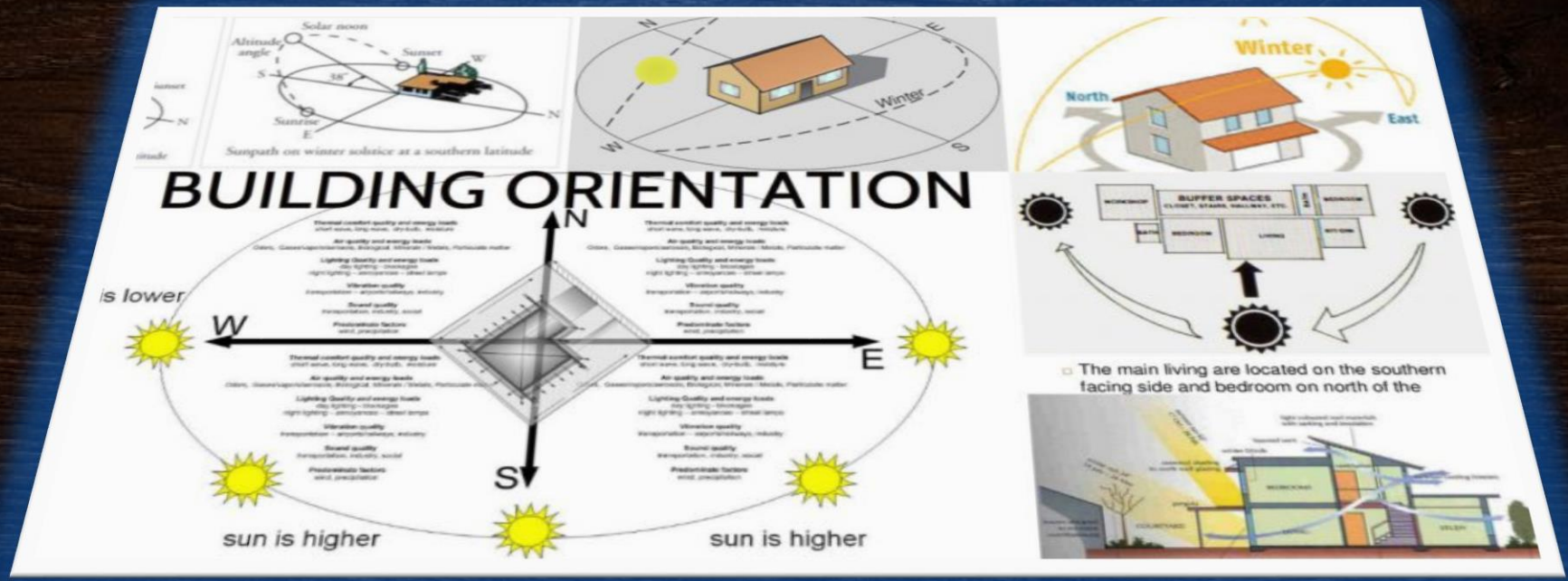
-American Lung Association


BILL
$$$$
YOU'RE
LOSING
HEAT.

PATH TO ZERO

Methods to building new homes more *efficient* and *healthy*

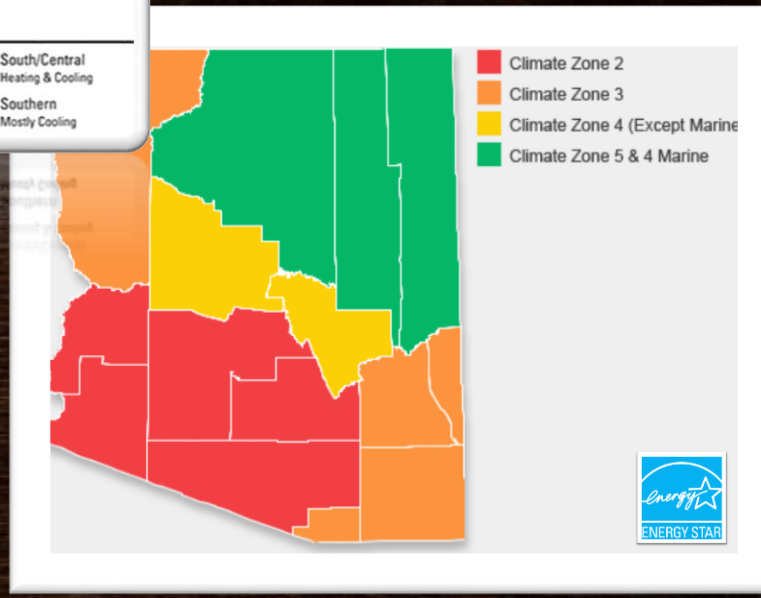
Starts in the Planning & Drawing



PATH TO ZERO

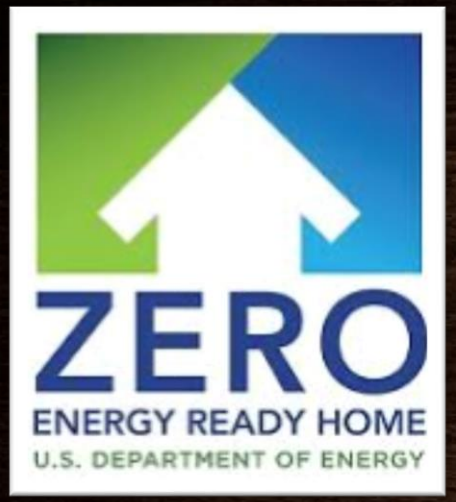
Meeting *Energy Star* Requirements

Identify the zone in which Construction will take place.



Utilize Energy Star guidelines designed for This specific zone.

www.energystar.gov



PATH TO ZERO

Mandatory Requirements

1. ENERGY STAR for Homes Baseline Certified under ENERGY STAR Qualified Homes Version 3 9, 10
2. Envelope11 Fenestration shall meet or exceed latest ENERGY STAR requirements 12, 13 Ceiling, wall, floor, and slab insulation shall meet or exceed 2012 IECC levels14, 15
3. Duct System Ducts located within the home's thermal and air barrier boundary16
4. Water Efficiency Hot water delivery systems shall meet efficient design requirements17
5. Lighting & Appliances18
 All installed refrigerators, dishwashers, and clothes washers are ENERGY STAR qualified. 80% of lighting fixtures are ENERGY STAR qualified or ENERGY STAR lamps (bulbs) in minimum 80% of sockets All installed bathroom ventilation and ceiling fans are ENERGY STAR qualified
6. Indoor Air Quality Certified under EPA Indoor airPLUS 10
7. Renewable Ready19 Consolidated Renewable Energy Ready Home (RERH) Checklist

PATH TO ZERO

Clean Air Filtration

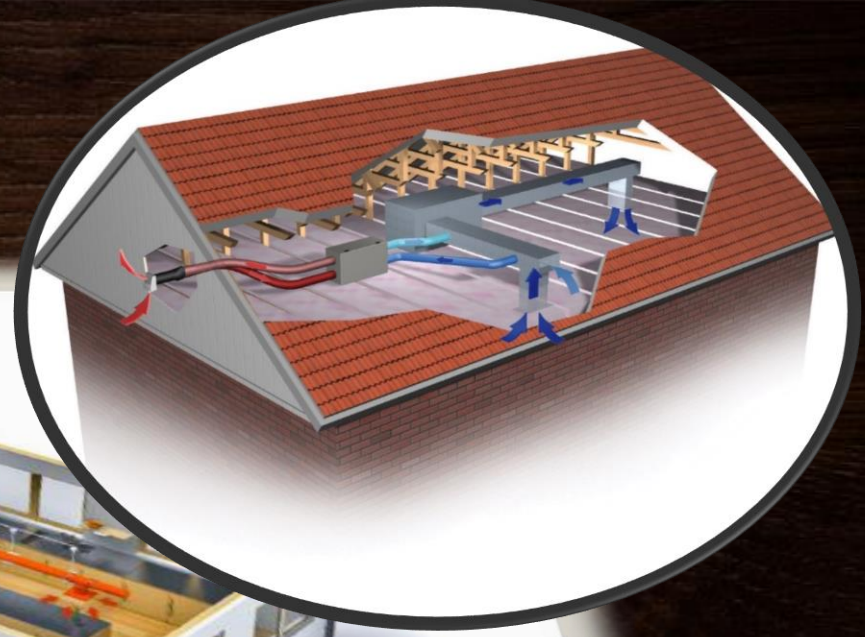
EPA Indoor airPLUS QUALIFIED HOME

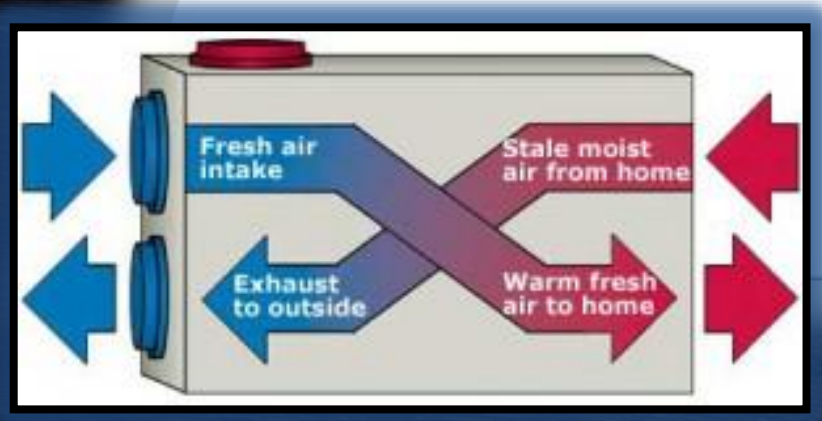
1.Biological Agents: such as mold, pollen, pet dander, and pests that may trigger asthma attacks or other respiratory symptoms; and

2.Chemical Agents: such as VOCs, formaldehyde, combustion products, and radon gas that can cause a wide range of health effects

PATH TO ZERO

Clean Air Filtration





PATH TO ZERO

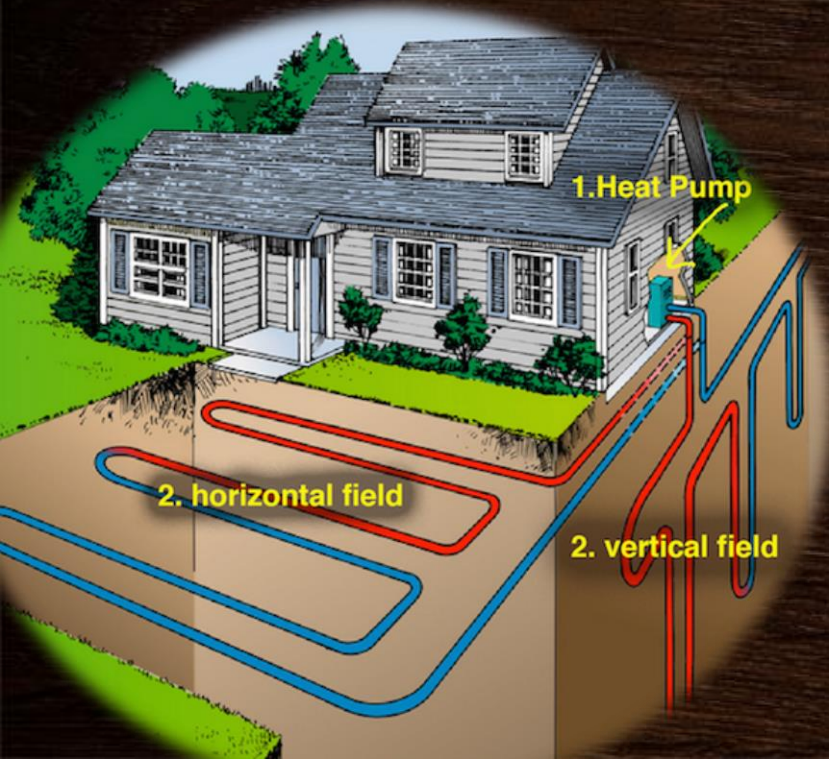
Renewable *Energy* Source

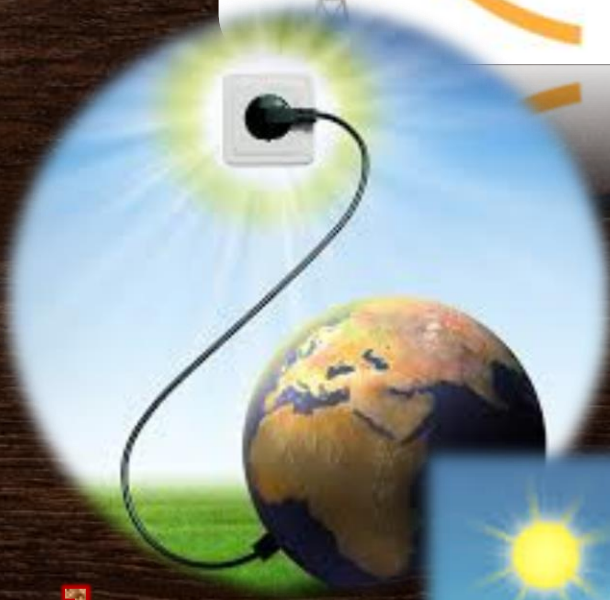
Sun

Water

Wind

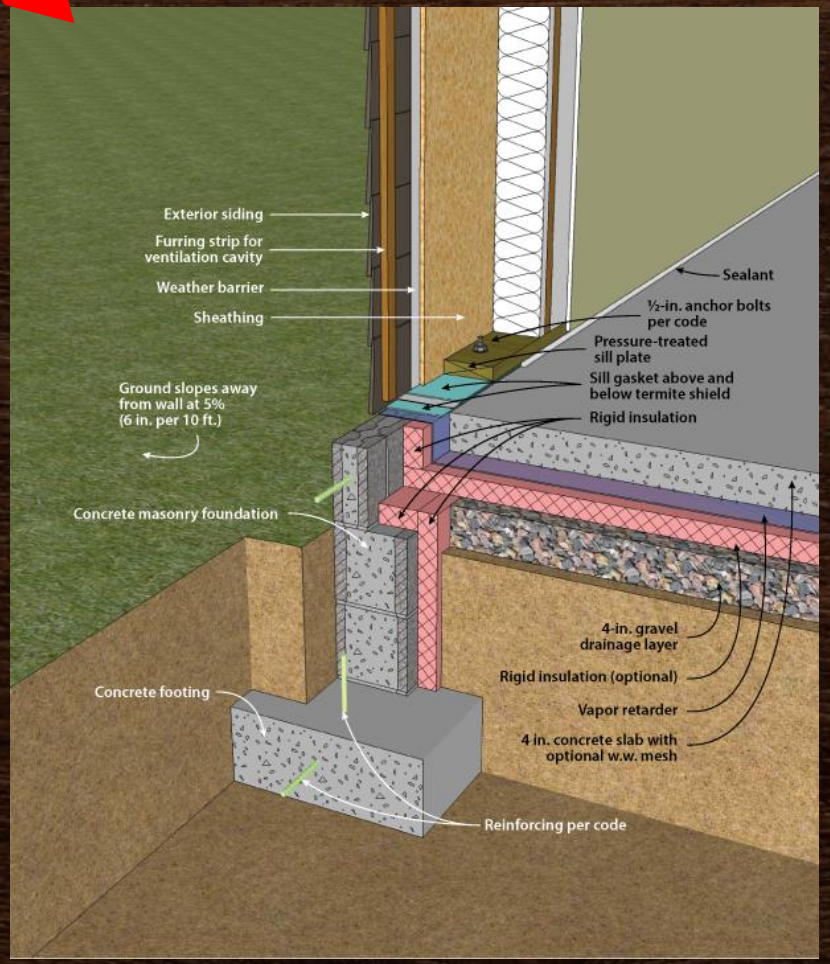
GEO Thermal





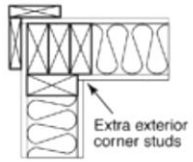
PATH TO ZERO

Controlling the Envelope Around the Structure

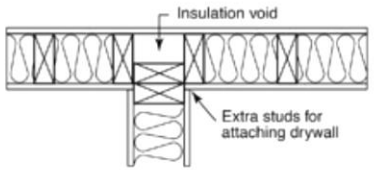


Standard Framing Versus Advanced Framing Cross-section

Standard corner

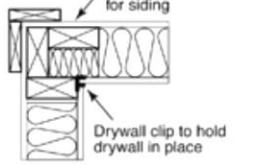


Standard T-wall intersection

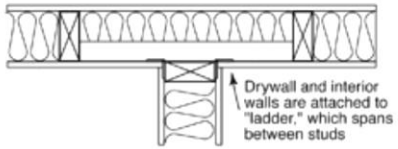


Standard methods use unnecessary studs

Advanced corner

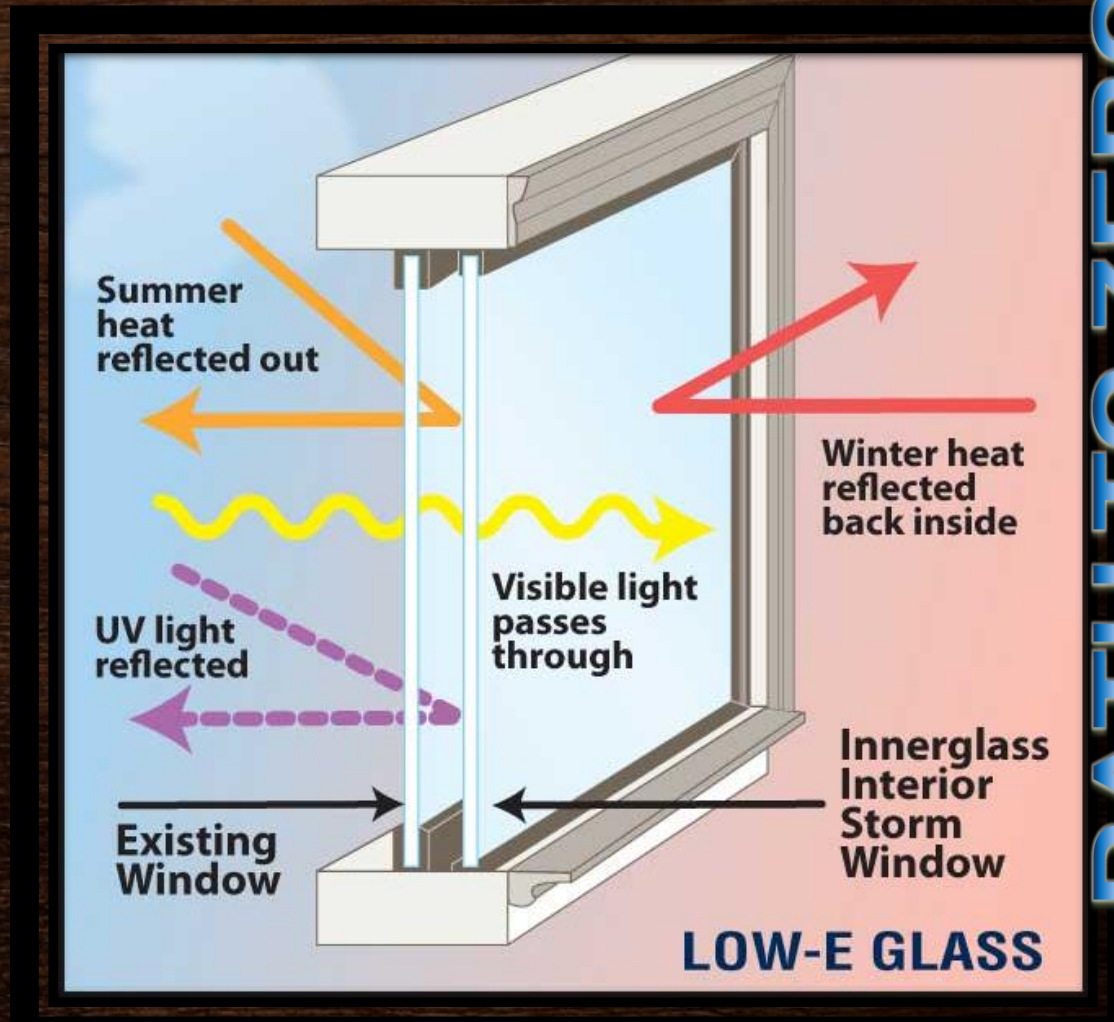


Advanced ladder T-wall intersection

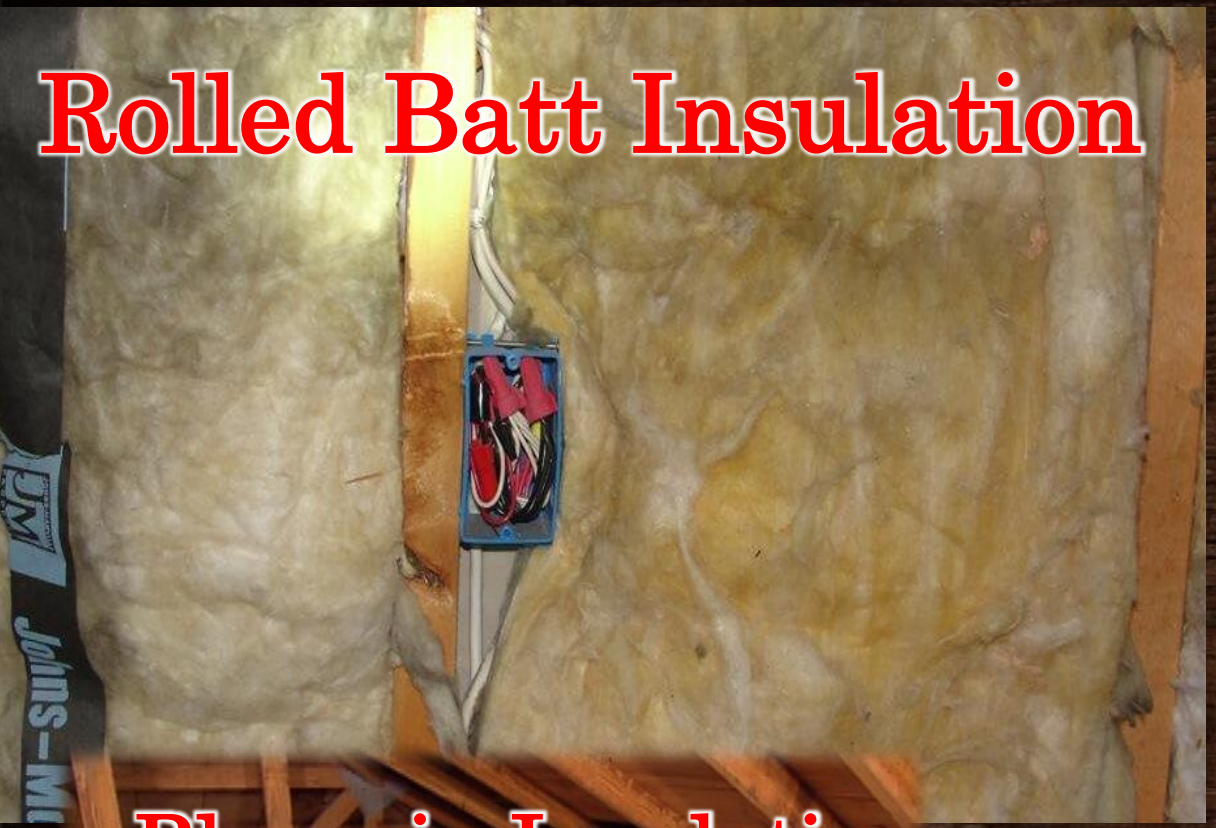


Comparison	Standard	Advanced
Insulation Voids	3%	0%
Framing factor	15-25%	10-15%
Batt R-value	R-13	R-13
Sheathing R-value	R-0.5 to 2.0	R-2.5
Effective Average R-value	R-11.1	R-14.6 (30% higher)

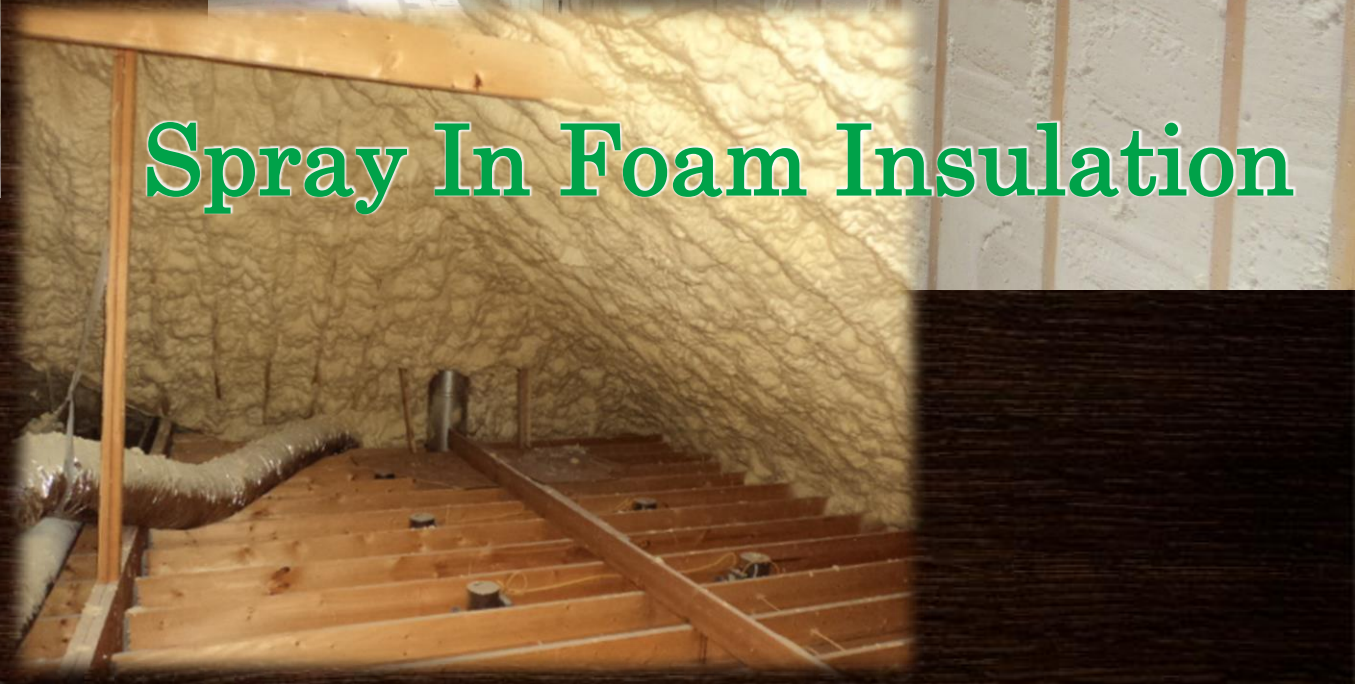
Controlling the Envelope Around the Structure



Controlling the Envelope Around the Structure

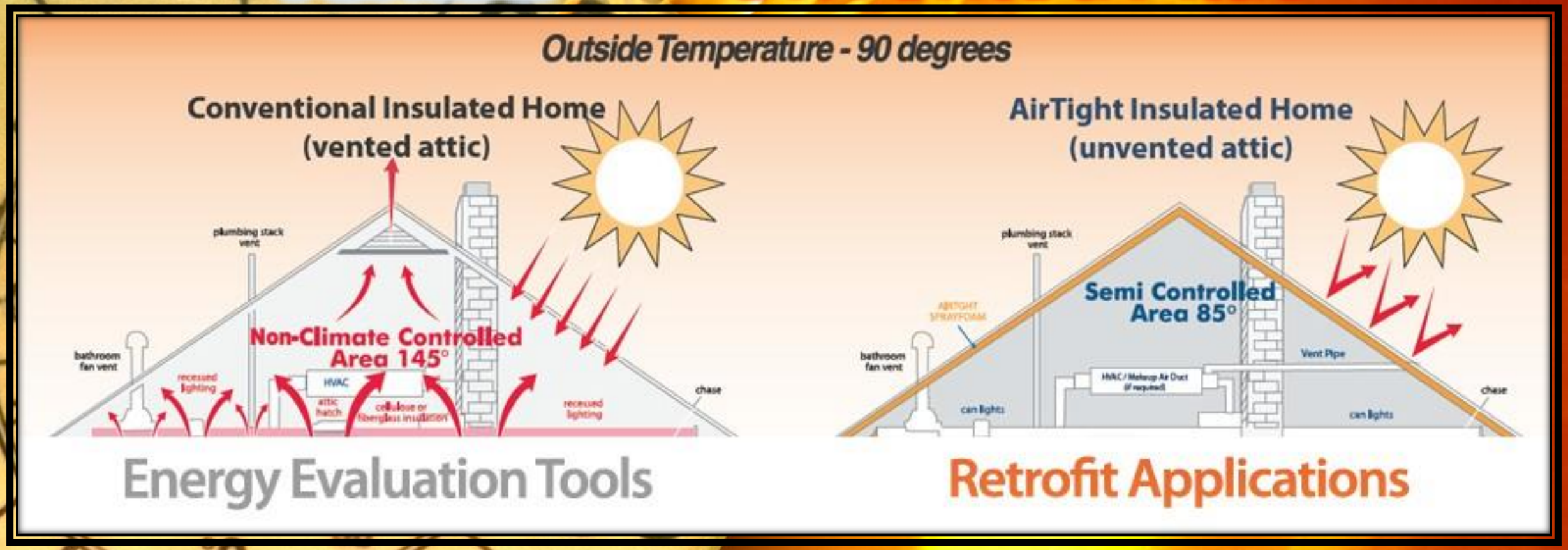

Rolled Batt Insulation


Blown in Insulation


Correct
Spray In Foam Insulation

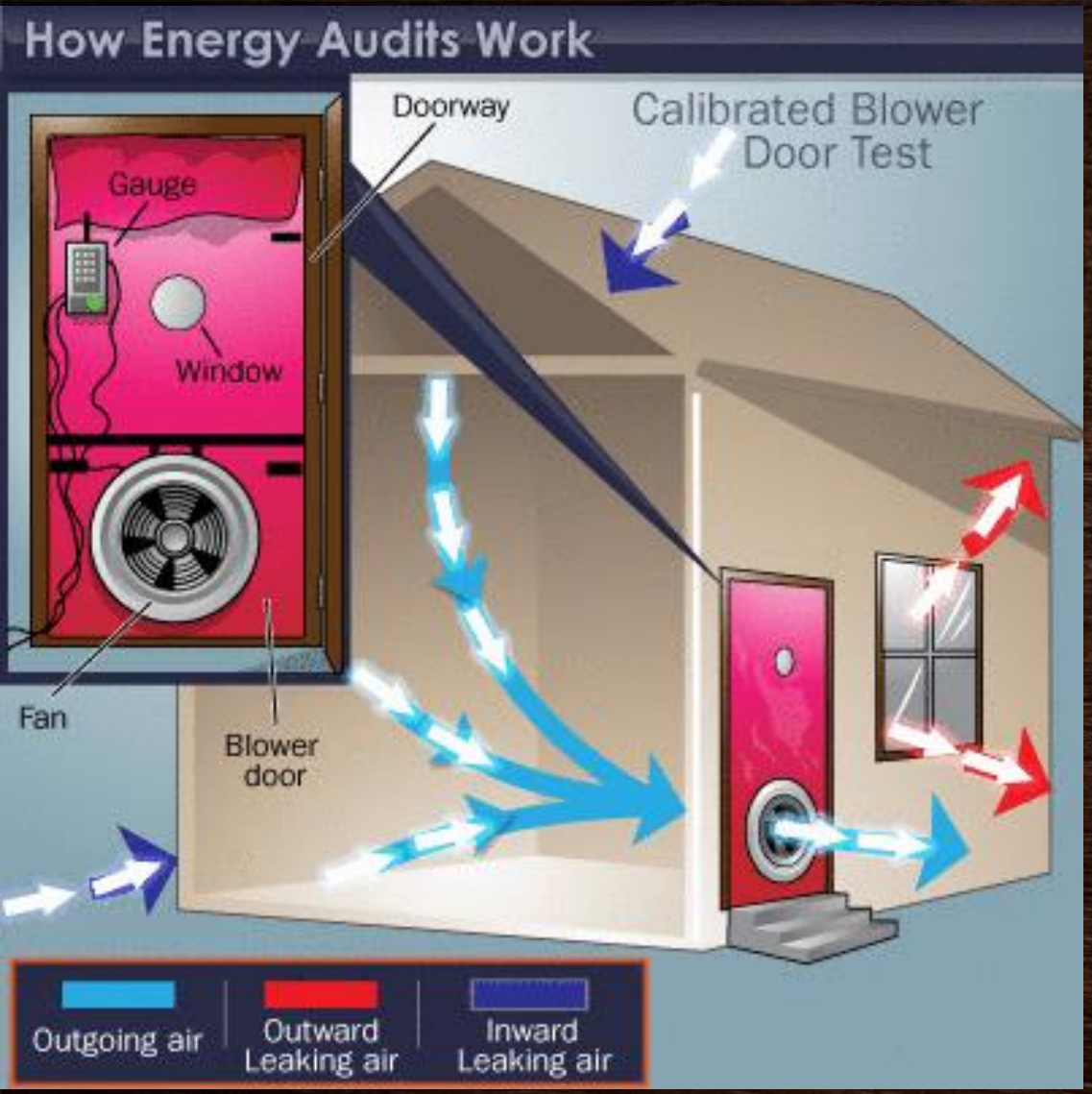
PATH TO ZERO

Vented vs. Unvented Attic



LED LightBulbs

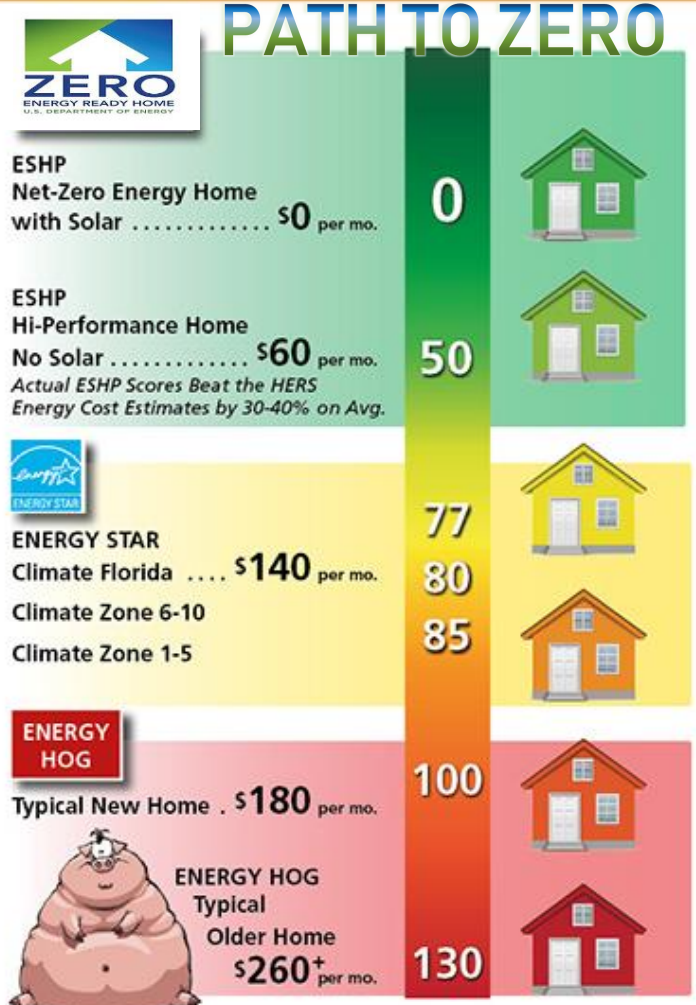
the new generation

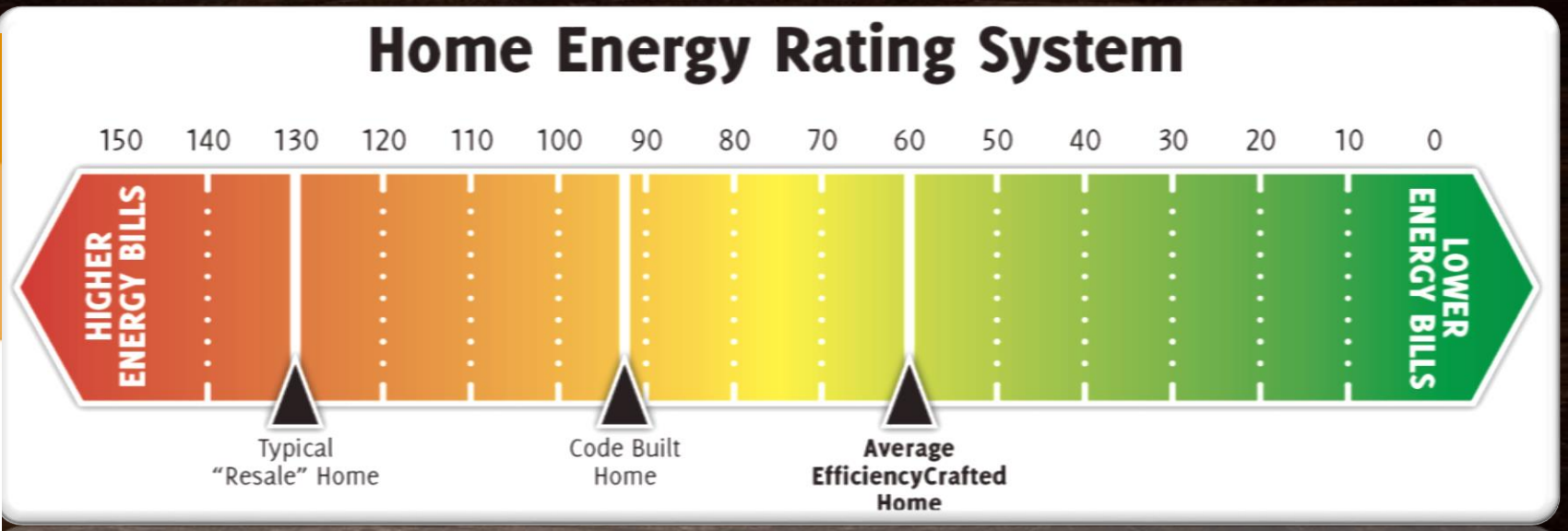

How Energy Audits Work
Doorway
Calibrated Blower Door Test
Gauge
Window
Fan
Blower door
Outgoing air
Outward Leaking air
Inward Leaking air

THE HERS INDEX
The MPG Rating for your Home

Average monthly energy cost comparison based on 2,000 sq ft of living area.

PATH TO ZERO

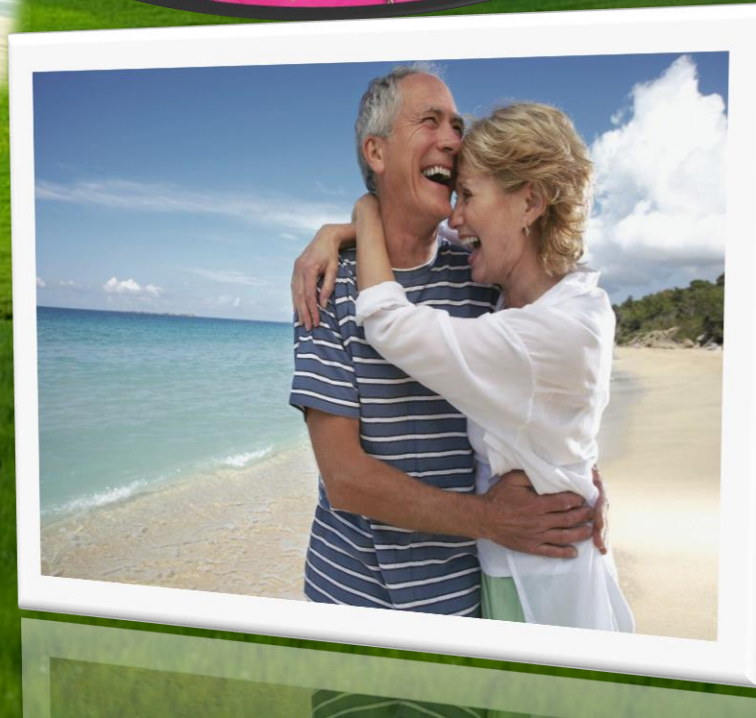




PATH TO ZERO

Average Construction Cost over Conventional
Construction to meet Energy Star
6% - 8%
Average Construction Cost Over Conventional Construction
For Zero Energy
12% - 15%

"The Path" leads you to energy efficient & healthier homes



TRIPLE X CONSTRUCTION

Thank You