

What is a Passivhaus

- Oriented to take full advantage of the sun
- Super-insulation: 2-3 times higher R-Value than code requirements
- Advanced Windows & Doors: High SGHC, Low-U, Low-E, triple or quadruple pane glazing
- Airtight construction: 0.6 ACH 50 or below
- Constant & balanced ventilation: High indoor air quality
- Minimized mechanical heating and cooling
- Energy efficient lighting and electrical appliances



The Warmest Man Cave

Do you ever feel cold feet on the ground floor of your home in the winter?

- ➔ If you do, that means the floor is not or inadequately insulated. We've insulated this floor to **R-33.5**
- ➔ We've also sealed the foundation with a 15 mil vapor barrier to protect it against moisture and radon migration

The foundation walls also need to be insulated to prevent heat loss.

- ➔ We've insulated these walls to **R-42.6**



Our Sandwich

How do we build our walls?

We start with a **8.25** Structural Insulated Panel (SIPs), we add a **2 inch** layer of Expanded Polystyrene (EPS) foam board, then vertical furring and siding

- ➔ The SIPs gives us a high R-value to start
- ➔ The EPS foam on the outside adds insulation value and eliminates heat loss through thermal bridging
- ➔ The furring provides a rain screen between the siding and the EPS foam
- ➔ TOTAL R-Value: **R-42.1**



Our Ridiculously Thick Roof

Roof structure

- ➔ **12"** of Structural Insulated Panels (SIPs)

Roof material

- ➔ **24 gauge** pre-finished steel standing seam roof

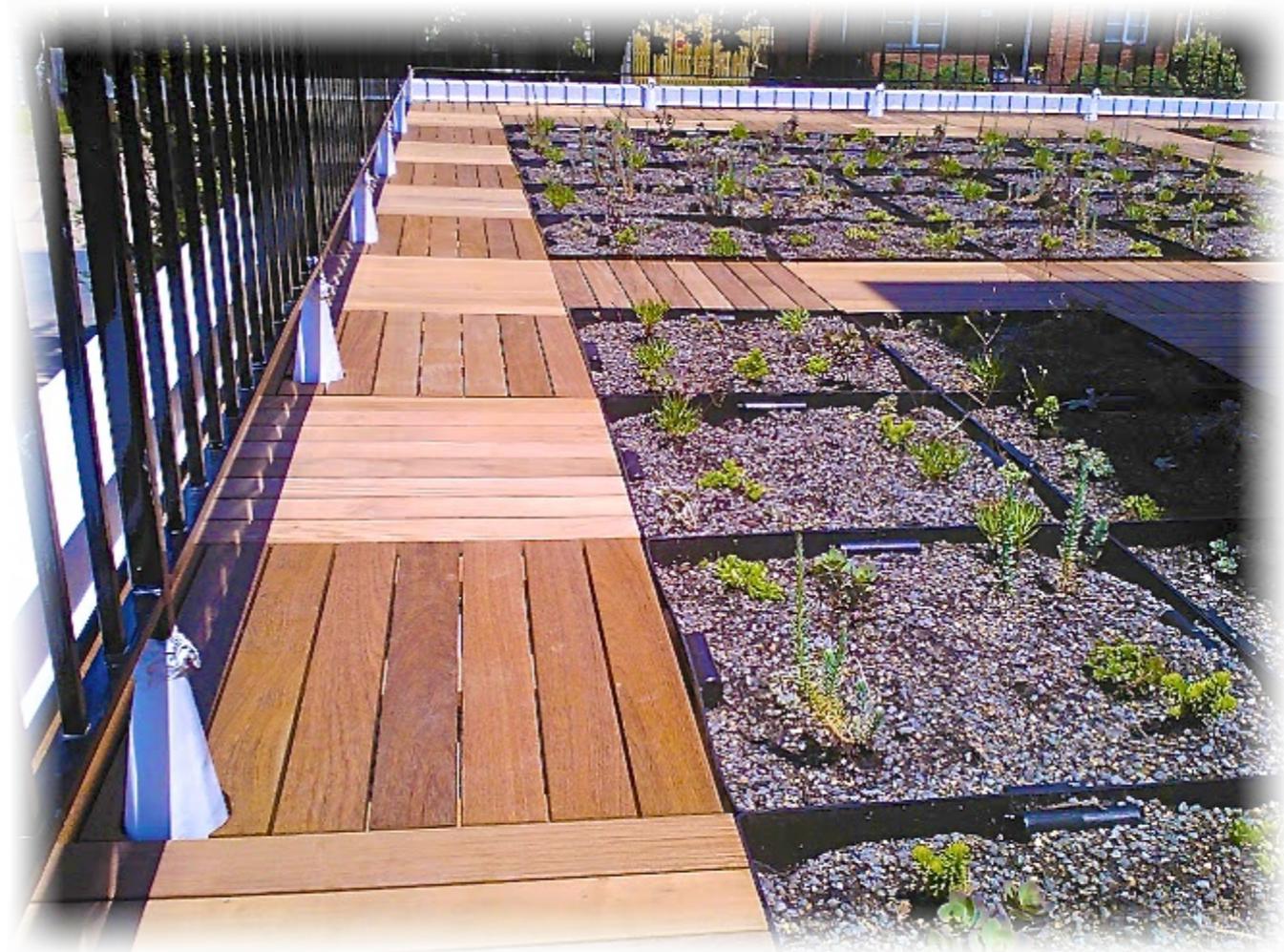
The SIPs roof provides **R-49.7** insulation. A SIPs roof means an instant cathedral ceiling.

The metal roof is built to last a life time. It is also perfectly suitable for future addition of photovoltaic panels.



Vegetative Roof

- ➔ Reduces storm water run-off
- ➔ Cools the roof surface
- ➔ Lengthens the life of a roof
- ➔ “Natural” roofing material
- ➔ Provides great outdoor space



Our World Traveling Windows & Doors

INTUS Windows sources the best materials from Germany, Switzerland and the U.S.A.

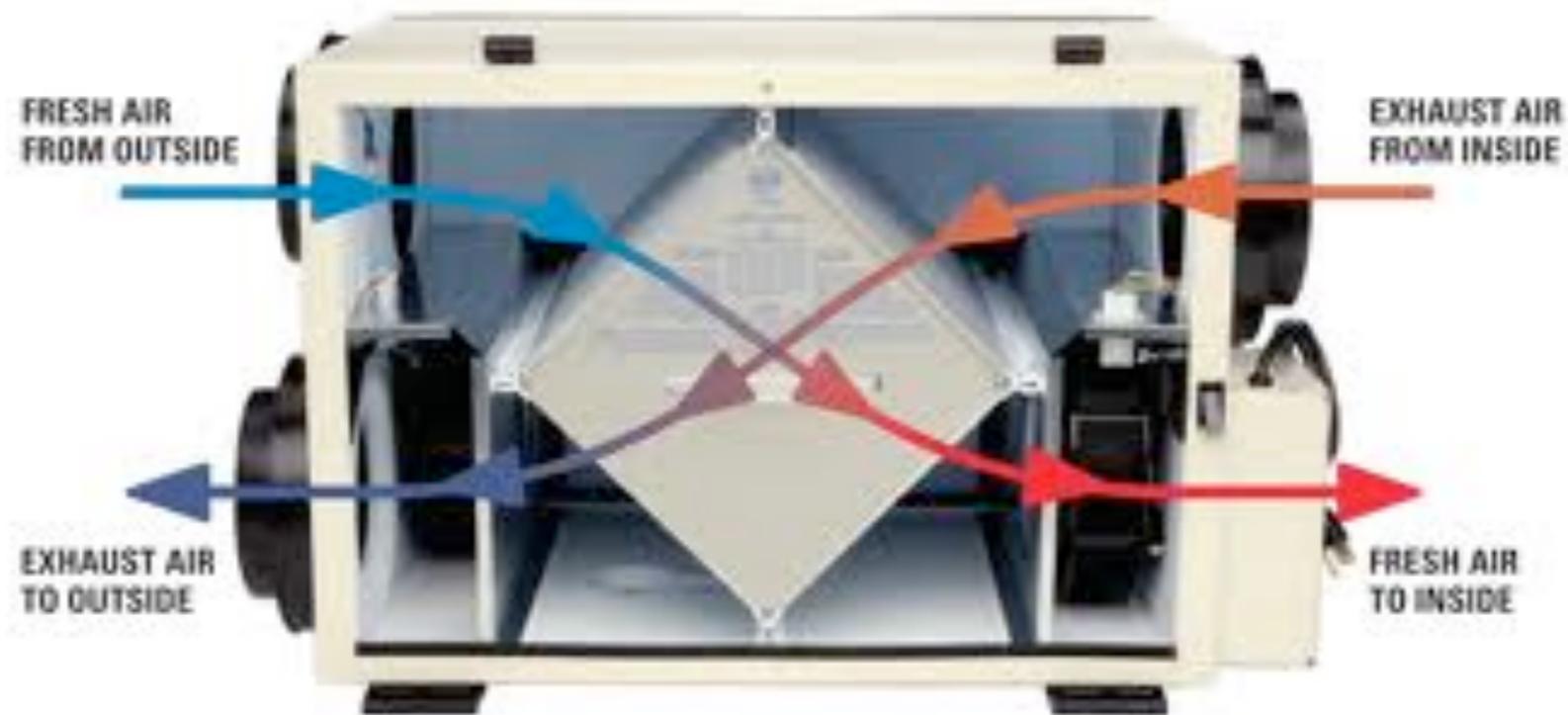
The Windows are assembled in Lithuania, then get on a slow boat to the U.S.A.

Glazing

- ➔ SHGC: 0.49
- ➔ U: 0.11
- ➔ Low-E triple-pane



This Home Breathes Like a Mammal!



- ➔ Dedicated whole house mechanical ventilation
- ➔ Constant fresh air **24/7**
- ➔ Heat recovery to prevent heat loss (**96%**)
- ➔ **MERV 12** filtration (Hospital Lab grade air)

Mr. Slim



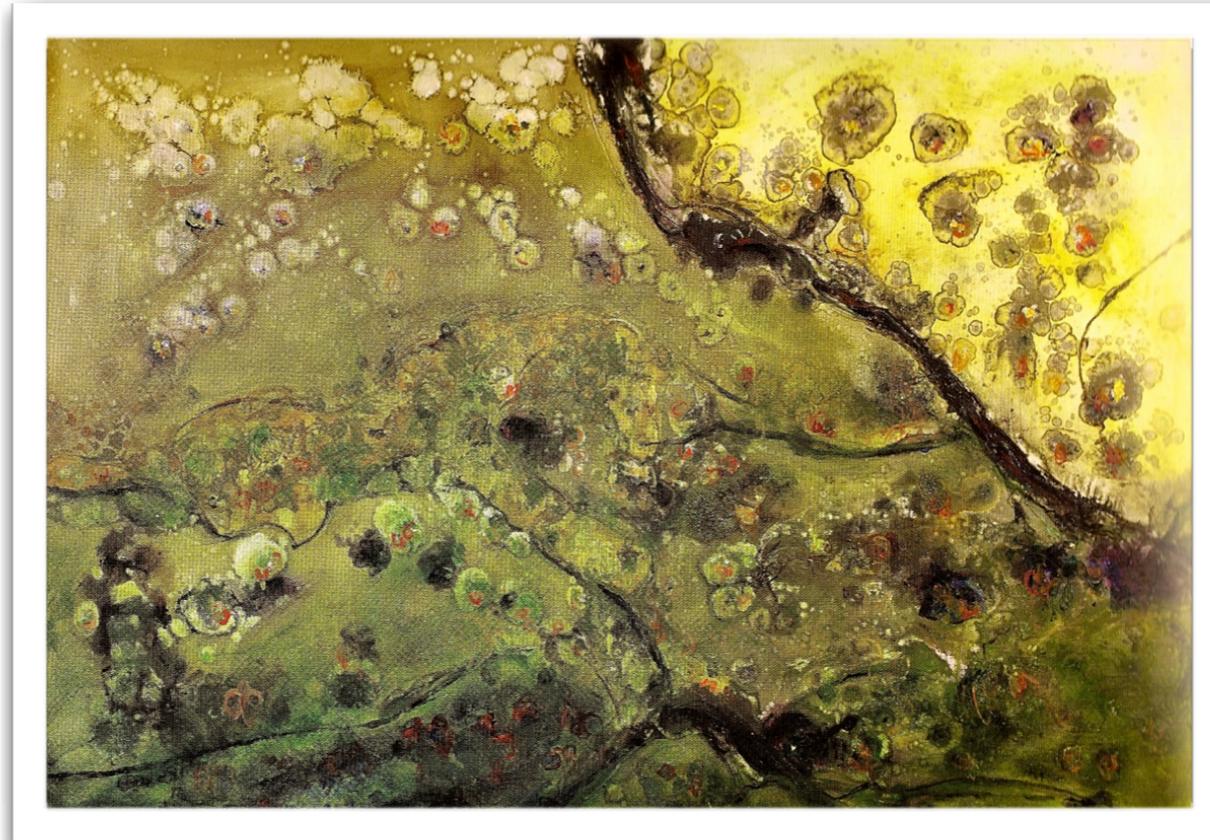
- ➔ The entire home is heated and cooled with a **1.5 ton** MITSUBISHI Mini-Split reversible heat pump

Don't Eat This Bamboo!



- ➔ Bamboo is a fast growing grass that can be harvested every 4-7 years
- ➔ It is strong and durable as a building material
- ➔ It can be sustainably grown and harvested

About the Art Work



- ➔ The arts in the home are replicas of oil paintings done by Jesun Lin, an abstract oil painter living in Taiwan
- ➔ His works of art have appeared in various exhibits in Asia and Europe, most notably, they have been exhibited at the prestigious Salon d'Automne and Salon du Printemps in Paris, France
- ➔ Originals are available for purchase

Cabinets You can Inhale

- ➔ **Zero** formaldehyde
- ➔ **Zero** Volatile Organic Compounds
- ➔ **Zero** Hazardous Air Pollutants
- ➔ **Zero** heavy metals

Now, feel free to smell the cabinets



A Hot Water Heater that Cools

- ➔ Absorbs ambient heat from surrounding air to heat water
- ➔ **2.4** Energy Factor
- ➔ **ENERGY STAR** certified
- ➔ Dehumidifies and cools space around it



Minimizing Combustion Gas

A tight home should not have dangerous combustion gas. We've minimized it by not using any gas appliances and creating an "air buffer" zone between the garage and the home.



The Shortest Path

Instead of hundred of feet of heating/ cooling ducts, we use these transfer fans to move conditioned air between floors and rooms, making our ducts 12 inches long.



Construction

- ➔ Panelized construction reduces on-site waste
- ➔ Thermal bridge free design and construction ensure extremely robust thermal envelope
- ➔ Air-tightness measures ensure a draft free home and prevent moisture migration into the home

