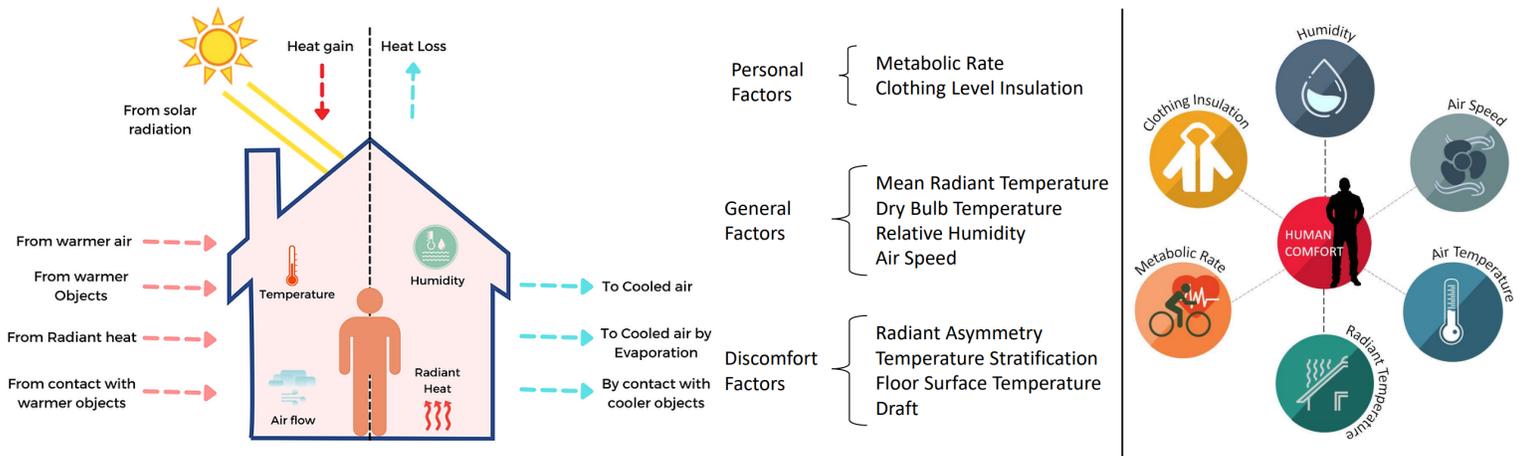


The Science behind the Comfort you feel & Performance you Deserve!

An Ultimate (ICF) Home

What is in an Ultimate Home? What features does it have? How does it perform?



Thermal Environmental Conditions for Human Occupancy, ASHRE Standard 55

6 Conditions that Provide Thermal Comfort

Metabolic Rate, Clothing Insulation, Air Temperature, Radiant Temperature, Air Speed and Humidity

All six factors can change over time. The first two are influenced by the occupant, while the other four are shaped by the building's thermal environment - systems we can design and build into your home.

The human body is highly sensitive to temperature. With roughly 20 square feet of skin and millions of temperature receptors, uniform thermal sensation becomes the key to real comfort. People feel best when about half of their body heat is released through radiant exchange with surrounding surfaces. Radiant floor heating and cooling enhance this natural process - warming gently in the winter and absorbing excess heat in summer.

Investment in your Home Comfort should never be compromised. Don't settle for outdated methods, like stick-frame construction or traditional forced-air systems just because your contractor is not yet familiar with smarter solutions.

Smart Solutions focuses on cost-effective, energy-efficient buildings using advanced ICF construction together with radiant floor heating and cooling, integrated plumbing, and high performance energy systems. We also provide training to help contractors successfully implement these advanced building methods.

Smart Solutions, Inc. is a wholesale distributor of High Performance Building Products. Through decades of research and development - and more than 30 years of collaboration with clients and contractors - we have developed a complete range of cost effective proven products, procedures and building methods that make structures healthier, more efficient, and more economical to operate. Our goal is simple: to help you create a building that works with you and for you. By selecting and properly integrating high performance components, we design exceptionally comfortable and energy efficient systems for heating, cooling, ventilation, plumbing and energy management. Smart Solutions provides high performance materials, specialty equipment rentals, on-site technical support, and contractor training to ensure these systems are installed and perform as intended.

Smart planning with High Performance Building Products rarely cost more than conventional construction and perform up to 4x more Energy Efficient.

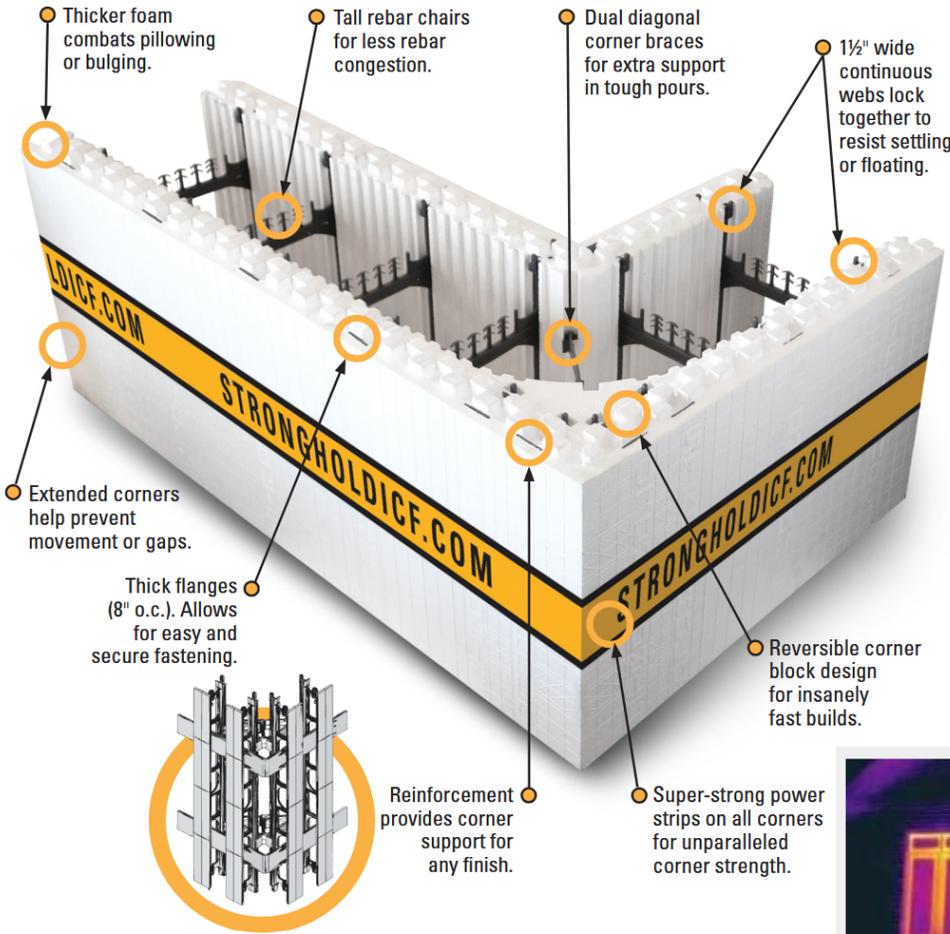
An Ultimate Home starts with a Near Air Tight High Mass Thermal Envelope

Most Advanced Insulated Concrete Form

Up to 4x more Energy Efficient than New Stick Frame Construction

**DESIGNED TO BUILD STRAIGHT,
TROUBLE FREE WALLS**

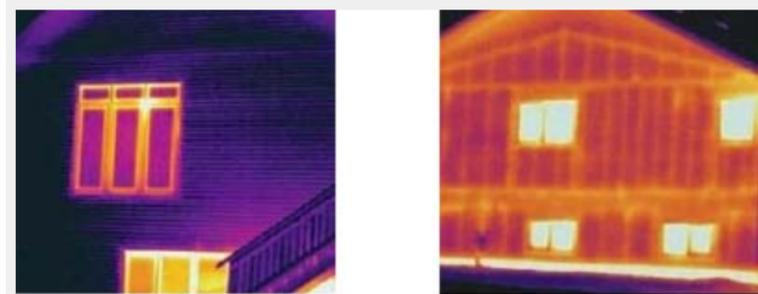
Smart ICF Buildings can be Upgraded to Better & Best Package Options, featuring enhanced thermal performance in the floors and ceilings with 10 Mil Vapor Barrier Protection and EPS Foam Insulation beneath slabs and trusses - Delivering up to 4x greater efficiency.



DESIGNED TO MAKE YOUR JOB EASIER AND LESS STRESSFUL

- Vertical locking webs keep blocks locked together.
- Standard 2.75" (70 mm) panels provide minimum R-Value of 25.
- Reversible interlock equals less waste.
- No left or right corners to track.
- Horizontal and vertical cut lines make cutting easier.
- Tall rebar holders allow for stacked contact splicing.

- * **3 Hour Fire Rated**
- * **Hurricane Rated**
- * **Bullet & Blast Resistant**
- * **2x Faster than Conventional Construction**



Thermal Image of ICF Home Vs. Stick Frame

HOW LONG DOES IT TAKE FOR THE HEAT TO TURN ON WHEN AN ICF WALL IS EXPOSED TO A FRIGID -31°F?

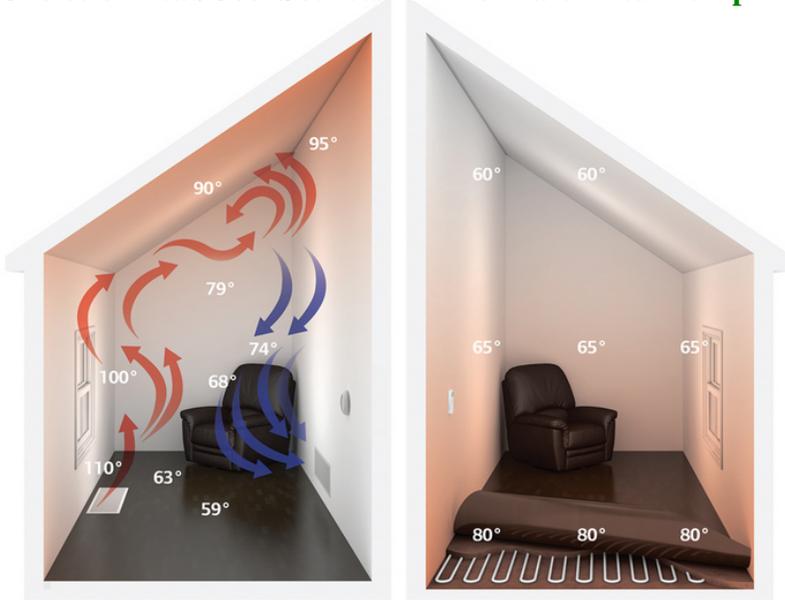
2 HOURS? 3 HOURS? HOW ABOUT 2 ENTIRE DAYS!

An Ultimate Home needs a comfortable Energy Efficient HVAC System

Smart Radiant Floor Heating & Cooling Benefits

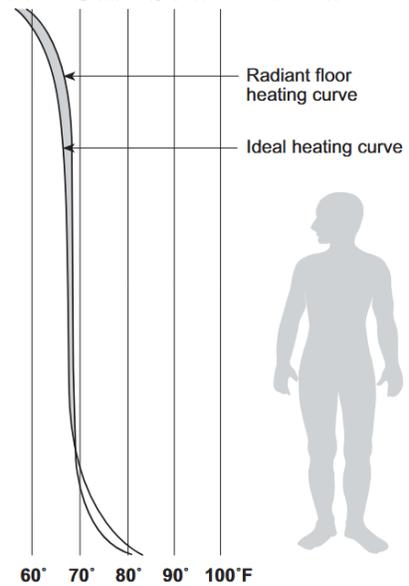
High Mass Radiant Floors, circulate Warm liquid in the winter and Cool liquid in the Summer

**Comfortable - Quiet - Energy Efficient - Best for High Ceilings - Uniform Distribution - Healthy - Design Freedom
More Usable Space - Aesthetically Pleasing - Clean Dry Floors - Low Maintenance - Increased Property Value
Choice of Heat/Cool Sources - Air to Water Heat Pump - Dual/Multi Fuel - Gas - Solar Thermal - Wood Boiler**



Forced Air System

Radiant Floor System



Winter, floor should be about 5F warmer than room air
Summer, floor should be about 5F cooler than room air

NO noise, NO ducts, NO draft, NO dust

Only Smart Radiant cooling and heating systems can control the surrounding surfaces' temperature, enabling the dissipation of our body's metabolic heat in the most comfortable and natural way, by radiation. These Smart Radiant Systems create a comfortable air temperature stratification, that is impossible for any air distribution HVAC system to accomplish.

Radiant in floor cooling is a new era for HVAC design promoting energy efficiency with superior thermal comfort. Sadly, much of the construction industry is still stagnant in outdated ways of thinking and practicing, some innovative thinkers have shown interest in focusing on design for the occupants that live in the buildings.

Studies by building technology experts, including DOE and UC Berkeley's Center for the Built Environment, recommend radiant cooling as the technology with greatest potential for energy savings at competitive costs.

Smart Radiant offers many upgrade options including superior Indoor Air Quality (IAQ), with MERV13 Filtered Heat Recovery Displacement Ventilation and Dehumidification. Radiant heated and cooled floors are zoned by areas, adjusted room to room by manifolds and controlled by simple precision wi-fi thermostats, placing the minimal energy required (because of the superior Thermal Envelope) where it is needed, when it is needed, the perfect comfortable climate all the time.

Comfortable Stratification - Healthy - Clean - Silent - Energy Efficient



An Ultimate Home needs a Radiant Floor Heater, Floor Cooler & Hot Water



Officially Certified World's Record Efficiency

5.5 Tons Heating (66.36 kBtu/h)
Seasonal Average COP / SCOP 5.36
Full Speed Heating COP 4.84
Cold-Climate Operation To -22F
Supply Outlet Up To 149F

3.7 Tons Cooling (45.140 kBtu)
IPLV.SI COP 6.751 (w/w)
Seasonal Average EER 23.03

World Record CX65X is an Air to Water Heat Pump for Radiant Floor Heating, Floor Cooling and Hot Water
More Efficient than Geothermal Systems, Fraction of the Cost



Logic Plumbing System Benefits

Hot Water at Every Fixture within Seconds - Lower Cost - Less Pipe - Fewer Connections
Smart Plumbing by Design, Superior Pex A Piping and ProPex Fittings, 40% Higher Flow

