Insulated Concrete Forms

Roughly 40% of a home's heat can be lost through the ground.

ICFs are a type of concrete formwork that provides a permanent layer of insulation. These prefabricated pieces can be used to form walls, beams, and floor slabs. ICFs are most commonly manufactured from polystyrene foam. A well insulated building enclosure can help create a more airtight and energy efficient structure.

Top: Lite Deck ICFs installed for concrete beams and floor slab. Bottom: Foundation walls installed with ICFs, concrete not yet placed.

Structural Insulated Panels

SIPs provide an airtight enclosure which creates a more comfortable and quieter space.

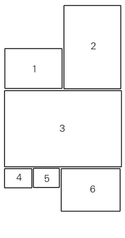
SIPs are prefabricated structural elements that can be used for walls, floors, and roofs. They are comprised of an outer layer of Oriented Strand Board (OSB) and a thick, interior layer of foam board insulation. SIPs are available in a variety of thicknesses depending on the desired R-value or insulated value.

Top: Installation of SIPs on a Timber Frame Barn. Bottom: Completed SIP Installation on the Engineered Saltbox House.

The Engineered House

The design process begins with a holistic view of all the building systems working together.

Built in 2007, the saltbox style house was engineered to incorporate the basic principles of design to create a comfortable and healthy living space. The front, two story space was built facing south to take advantage of natural day-lighting and passive solar gain. The foundations were composed of Insulated Concrete Forms and the house was constructed with a traditional timber frame. In addition, the walls and roof consisted of Structural Insulated Panels. This high performance building envelope makes it possible to maintain a thermally comfortable space without excessive amounts of energy. This house also relies on a Geothermal heating system.

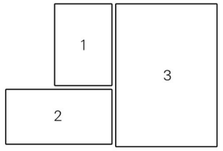


1 Interior View
2 Front Entry to Saltbox House
3 Timber Frame Superstructure
4 Timber Frame Superstructure
5 Back Porch
6 Interior View

The Most Sustainable Material: Wood

The average wood framed home will remove 28.5 tons of CO_2 from the atmosphere; that's the same amount a small car emits over 7 years!

Trees have a natural ability to absorb carbon dioxide from the atmosphere. When a tree is cut down, the absorbed carbon is sequestered or locked in. Additionally, no scraps of wood go to waste as improvements in technology have created a more sustainable manufacturing process.



1 Tree Farm
2 Variety of Available Engineered Wood Products
3 Timber Frame of the Engineered Saltbox House