QUAD-LOCK® LEED Platinum Residence

Winner - 2012 Best in Class Unlimited Residential

Located in upstate New York, this LEED Platinum Certified home is a **significant milestone in Insulated Concrete Forms construction**. From the onset, the homeowners set extremely high standards for the construction team: complex architecture, very fast build times, a "multi-generation" lifespan, the best in energy-efficiency, and a super comfortable indoor environment in upstate NY's harsh winters. The team did its research and chose Quad-Lock ICF walls, Quad-Deck ICF floors, SIP panels for the roof, geothermal heating, and photovoltaics. This allowed the home to meet and exceed all expectations: 1 year total construction time for this large & complex building, a very quiet and comfortable interior with no drafts and even temperatures, and the highest-ever 'LEED Platinum for Homes' rating worldwide. The President, CEO, and founding chair of the U.S. Green Building Council, Rick Fedrizzi, personally presented the LEED Platinum plaque to the owners.

Why Quad-Lock was Chosen

- **High energy efficiency** – A prime reason for Quad-Lock was its inherently low air infiltration combined with very high R-Values to excel in energy-efficiency and LEED, HERS, and Energy Star ratings. To optimize the thermal mass effect, the R-38 exterior walls have the 4" thick Quad-Lock Extra panels with 2¼" panels on the outside and 2¼" panels on the inside. Quad-Deck floors provide energy-efficient and comfortable radiant heating.
- **Fast construction times** – The Quad-Lock installer and products assisted in reducing the total construction time by 50% compared to similar custom homes.
- **Flexibility** – Quad-Lock's unique ICF panel system allowed architecturally complex features including radius walls, octagons, unusual wall intersections, large archways, and varying wall heights.
- **Reduced Waste** – Quad-Lock walls can be built with less than 1-2% waste in ICF materials and with internal window bucks that reduce unnecessary thermal bridging around the many wall openings. Quad-Deck ICF floors offered long spans with much less concrete and building weight.

Quad-Lock radius wall and Quad-Deck floors with radiant heating

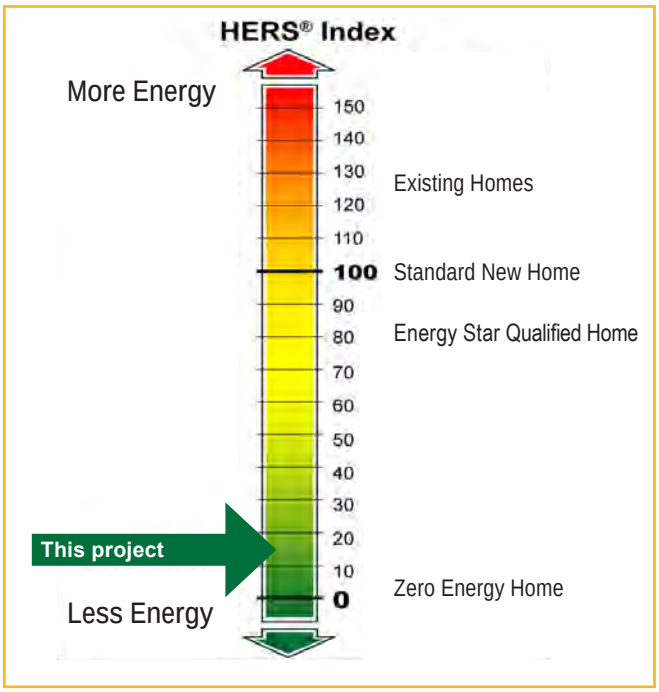
Flawless pour - 230 yds. of concrete in 14.5 hours by the ICF installation team from Homes American Made Co

Quad-Lock Project Profile - LEED Platinum Residence

The Design Vision

Architecturally, this custom built home has a number of unique design features. The circular main stairway - constructed with Quad-Lock ICF walls - is in the center of the home so it's never too far away in the large home. A prefabricated roof 'cone' on top of the stairway area required the Quad-Lock radius wall to not exceed a ½" tolerance, and the ICF installation team "nailed" it achieving a ¼"! The roof takes on a very unique feel with the main roof resting on the exterior Quad-Lock walls using a sill timber to start the roof lines. The home also features 3 different areas with octagons, tons of corners and windows, 8 archways, and wall heights varying from 4 to 14 feet. All of these architectural components were easily built on site with few special order parts or elements.

The Quad-Deck ICF floor system allowed the design team to get long spans very efficiently, using less concrete and steel (approx. 40%) than conventional concrete slabs. The resulting much lower total weight of the floors reduced the need for heavy supporting elements like thick walls, columns, and pilasters. The Quad-Deck insulation between the upper and lower floor reduces the uncontrolled flow of heat between levels. Quad-Deck also delivered in-floor radiant heating while minimizing labor, the construction timeframe, and material waste (pre-cut at factory).



This project achieved a HERS (Home Energy Rating System) Index of 16-18 which means the home uses only about 16-18% of the energy of typically-built, comparable, new homes.

"This project proves that through effective use of materials and systems a large home can reach the highest sustainability level recognized by the USGBC – LEED Platinum"

Interesting Facts

Air Infiltration:	0.91 ACH50 (Air-Changes/Hour @ 50 Pascal)
ICF Installation Time:	85 days for walls and floors

Project Partners

ICF Installer: Homes American Made Co. - Caro, MI

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