



## Working Together to Prove the Value of Insulated Concrete Forms

Benchmark Homes owner and founder Tim Nau wanted to prove that insulated concrete forms (ICF) was an efficient building alternative to traditional stick framing. He asked Ingo Stroup, President and CEO of Building Energy, Inc., to provide home energy ratings for his homes. Ingo connected Tim with Idaho Power and suggested they participate in BetterBuiltNW's Next Step Home Pilot to bring attention to Tim's projects and explore efficiency options that could complement Tim's current practices.

### Raising the Benchmark

Ingo was impressed by Tim's knowledge and passion for efficient building. "First and foremost, Tim is a pretty innovative builder. He came to us trying to find a way to get recognition for the above-code housing that he built," said Ingo.

Together, they worked with Idaho Power and the BetterBuiltNW technical team to analyze Tim's home designs and conduct field commissioning once the homes were constructed. They found that it takes about 10 BTU per square foot per day to heat one of Tim's ICF homes, which is about 56% less than a home built to code.

The results from Ingo's energy modeling and field tests will help Tim promote ICF building in Idaho. "It really proved what we wanted to get out of it. It validated what we've always known," Tim said.

### Efficiency as a Competitive Edge

The energy scores of the homes they built stand out in Idaho, where the building code is currently set to 2012 standards.

"In an area where energy codes are below the national standards, projects such as this one encourage other like-minded building professionals to move forward with building better homes," said Ingo.

### COLLABORATORS

Benchmark Homes  
Building Energy, Inc.  
Idaho Power

### LOCATION

McCall, Idaho

### HOME FEATURES

R-30 insulated concrete form (ICF) walls  
Heat-pump-driven radiant in-slab heating  
Heat recovery ventilation (HRV) provides fresh air throughout the home  
2,419 sq. ft.

**ESTIMATED  
HEATING/COOLING  
ENERGY SAVINGS**

12,463 kWh per year

**ESTIMATED  
HEATING/COOLING  
COST SAVINGS**

\$1,075 per year

**ENERGY USE INTENSITY**

24.7 KBTU per  
sq. ft. per year



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**“I love building houses for people who are energy conscious, and to give them a super high-quality envelope.”**

**TIM NAU, OWNER,  
BENCHMARK HOMES**

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With more than two decades of experience as an energy specialist, Ingo knows the importance of improving building code in Idaho. He helped bring the first energy efficiency rating programs to Idaho.

“The HERS Index and ENERGY STAR® create a competitiveness that draws attention from those code builders as they’re looking for new ways to outpace or outperform each other,” said Ingo.

Thanks to its ICF expertise, Tim’s company is receiving more inquiries than it can fill.

## **Pushing the Building Envelope**

Always a bit ahead of his time, Tim started working with a custom-home builder when he was 14 years old. At 21, he built his first home. A few years later, he started playing with ICF blocks.

The interlocking foam blocks are stacked to create the frame, the windows and doors are cut out, and then forms are filled with concrete. The foam sandwiches the concrete core, acting as a thermal energy reservoir and making the walls an active part of heating and cooling the house.

“Ultimately, we’re getting our insulation, our foundation and our framing in one shot,” explained Tim.

This way of building costs 2%–3% more upfront, but Tim likes to tell his customers that they’re basically reducing their energy bill for the lifetime of the house.

## **Happily Insulated Customers**

Both Ingo and Tim have heard from very happy customers, and for good reason. “A homeowner who purchases a Benchmark Home can expect a far more comfortable home, with better indoor air quality than most, and truly lower operating costs,” said Ingo.

Tim even asks homeowners what they like least about their home and still gets a positive response. “They say they don’t like leaving their home,” says Tim.

## **The Next Steps in Their Collaboration**

The Pilot program isn’t Ingo and Tim’s only collaboration. They’re partnering on a 10-unit condominium in downtown Boise that uses ICF. “Our common walls are all ICF, our envelope is all ICF, so it’s going to be really exciting to bring this to market,” said Tim.

Ingo joined the Idaho Energy Codes Collaborative and hopes to eventually bring building codes in Idaho closer to national levels. He’ll also continue to collaborate with the major players in the region.

“Alliances with Benchmark, Idaho Power and our community building partners have all contributed to success in Southern Idaho,” said Ingo.

**Make your next project a success.**

Visit **BetterBuiltNW.com** to see how you can collaborate with innovative professionals in your area.