A GUIDE FOR NORTHERN COLORADO HOMEOWNERS

Why how you build matters

Planning a home that works the way you live, from the walls in.

Kiefer Built Contemporary Ranch at twilight.

A home is more than its finishes. The walls and roof, ventilation, heating and cooling, and windows all work together.

This guide covers the questions to ask before you choose how to build, and how to tie performance goals to your site, budget and daily life.

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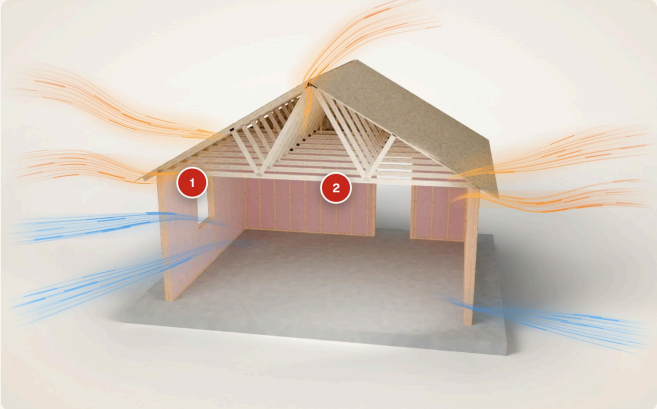
THE ENVELOPE

Start with the whole home

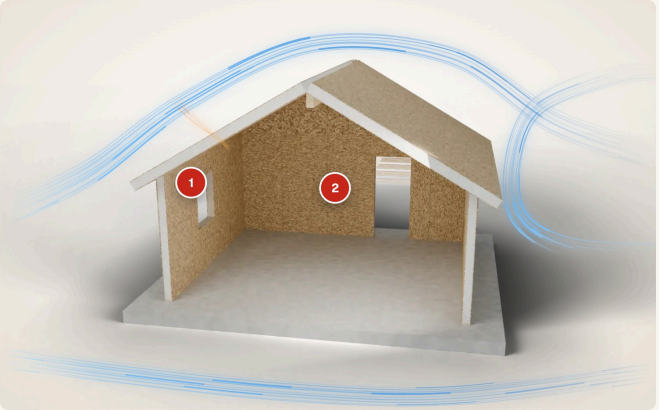
Insulation, air sealing, windows, ventilation and equipment affect one another, so plan them together rather than one at a time. Structural insulated panels (SIPs) put a foam core between two structural faces in one assembly. Compare the complete wall or roof, connections included, not just the insulation label. [1]

STICK FRAME



1. **Air leakage.** Joints, outlets and openings in a framed wall can let air slip through.
2. **Heat through framing.** Wood studs and plates interrupt the insulation, giving heat a path around it. [1]

SIP PANEL



1. **Air leakage.** Large panels mean fewer joints to seal. In ORNL's 2002 tests, the best-sealed SIP room leaked about 15× less air than the wood-framed room. [2]
2. **Heat through framing.** A continuous foam core reduces those breaks. Whole-wall performance still depends on panel thickness and connections. [1]

Illustration, not to scale. Real performance depends on the design, the air sealing and the home's own blower-door test.

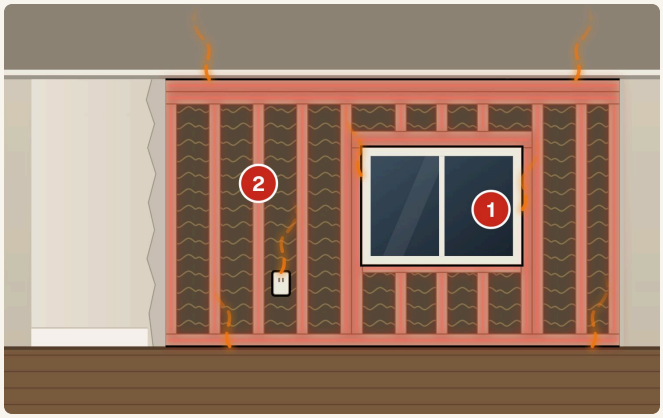
Define what success means

Talk about comfort, energy use, indoor air, maintenance and the rooms you use most. Ask which goals will be specified, how they'll be checked and what evidence you'll have at completion. Research and other builders' projects are useful context, not a measured result for your home.

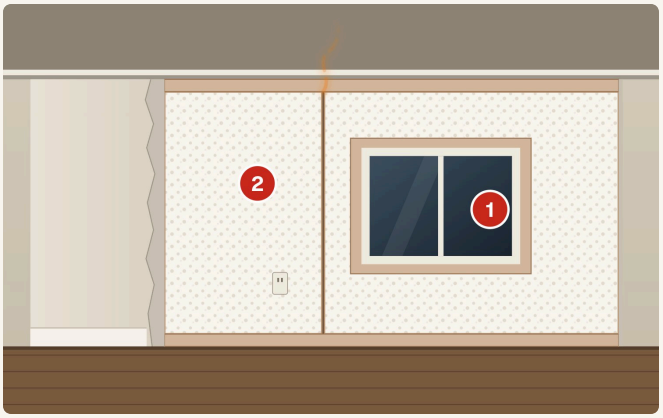
A CLOSER LOOK

Inside the wall

STICK FRAME



SIP PANEL



Drywall cut away. In the framed wall, air finds the joints around openings **(1)** and heat crosses the studs and plates **(2)**. The SIP wall's foam core runs unbroken between panel seams. Illustration, not to scale.

Plan for air and comfort

A tight house needs ventilation

Cutting air leakage should go hand in hand with good ventilation, moisture control, fewer indoor pollutant sources and equipment upkeep. Tight construction alone doesn't make the air cleaner. [3]

Make comfort a design question

Talk through room temperatures, equipment sizing, window placement and ventilation, and how the system will be checked. No material guarantees the same comfort in every room and season.

Read the research carefully

A peer-reviewed Austrian field study found that people in mechanically ventilated homes rated their indoor air and climate better. Overall health ratings were not significantly different between the groups. Reported health improvement and dry eyes were both more frequent with mechanical ventilation. [4]

Those findings describe the homes studied, not a health outcome promised for a Kiefer Built home.

PERFORMANCE

It depends on the project

Energy and operating costs

Compare whole-home specifications and the assumptions behind them: climate, floor area, air sealing, windows, equipment, how you live and energy prices. SIP industry guidance explains thermal bridging and whole-wall insulation. It doesn't set a bill reduction for any one home. [1]

Ask whether an estimate is modeled or measured, what it's compared with, and what could change it. We don't promise a fixed savings percentage.

Structure and weather

Wind, snow, connections, foundations and local code belong in the site-specific design. SIPA reports an impact test of one panel assembly. It is not a wind rating for every SIP home. [5]

Specify the actual assembly and get design information for your project. Another builder's storm story doesn't show how a different home will perform.

Is this approach right for you?

- You're planning a custom home or renovation in Northern Colorado.
- You want to talk comfort, energy and maintenance without a guaranteed result.
- You want to understand how it's built, not just the finishes.
- You value a clearly defined scope and practical communication.

A Kiefer Built great room.

Compare proposals on the same scope, and ask how materials, site conditions, selections and responsibilities affect the price. The right fit comes from an agreed plan, not a claim to be the cheapest or the best.

BEFORE YOU BUILD

Settle decisions early

Put expectations in writing

Use the first conversations to settle scope, priorities, constraints and who makes decisions. Agree what's included before you compare proposals, and how changes, allowances and surprise site conditions will be priced, explained and approved.

Agree how you'll communicate

Know who your main contact is, how often you'll get updates and when site visits make sense. Your project agreement should set the update schedule, pricing terms, timeline and communication commitments.

Your project conversation

01 **Explore**
Share what you want to build or change, where, and what matters most to your household.

02 **Plan**
Discuss the site, design priorities, budget range, timing and decision-makers, and flag what needs more information.

03 **Define the scope**
Review the proposed work, selections, allowances and any performance goals. Agree the scope, change process and communication.

04 **Coordinate construction**
Sequencing, access, protection, inspections, and how progress and issues are reported.

05 **Close out**
The walkthrough, open items, product information, and any maintenance guidance, warranty or support your project includes.

These are discussion stages, not an extra contract or a fixed sequence for every project.

Sources and their limits

1 **Structural Insulated Panel Association, R-Values in the Real World.** Industry explanation of whole-wall insulation and thermal bridging. Apply the actual assembly specification, not a universal savings claim. sips.org

2 **Christian and Petrie, Heating and Blower Door Tests of the Rooms for the SIPA/Reiker Project, Oak Ridge National Laboratory (2002).** The best-sealed SIP test room had about fifteen times lower leakage at 50 pascals than the wood-framed test room. Test rooms, with results that depend on sealing, not occupied Kiefer Built homes. ORNL report (PDF)

3 **U.S. Environmental Protection Agency, The Inside Story: A Guide to Indoor Air Quality.** Agency guidance on pollutant sources, ventilation and indoor air, not a Kiefer Built study. epa.gov

4 **Wallner et al., Health and Wellbeing of Occupants in Highly Energy Efficient Buildings: A Field Study (2017).** Peer-reviewed Austrian residential research that separates perceived air and climate findings from overall health outcomes. Study abstract

5 **SIPA, SIPs and the Hurricane Impact Missile Test (2021).** Industry reporting on one specific panel assembly. It doesn't give every SIP home the same structural rating. sips.org

Photographs show Kiefer Built work and illustrations come from the Kiefer Built website. Neither depicts the research homes or shows measured performance for a specific project.

Start with your questions

Tell us what you're planning: a custom home, renovation, commercial project or residential elevator. Share the location, rough budget and timing. You don't need a finished floor plan to start.

CALL (970) 515-5059

EMAIL info@kbuiltco.com

VISIT kbuiltco.com