

Step 3, Hassle-Free:

How homebuilders are cost-effectively delivering on the energy-efficiency requirements of the BC Energy Step Code

Case Study: Invermere

ENERGY
STEPCODE
BUILDING BEYOND THE STANDARD



CASE STUDY: Westside Park Residence, Invermere

This single-family starter home holds a secret: It exceeds the requirements of Step 3, yet costs roughly the same to build as a house built to existing code requirements.



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BUILDER:
thinkBright Homes
Paul Denchuk and Meredith
Hamstead, co-owners
Years of Experience: 25

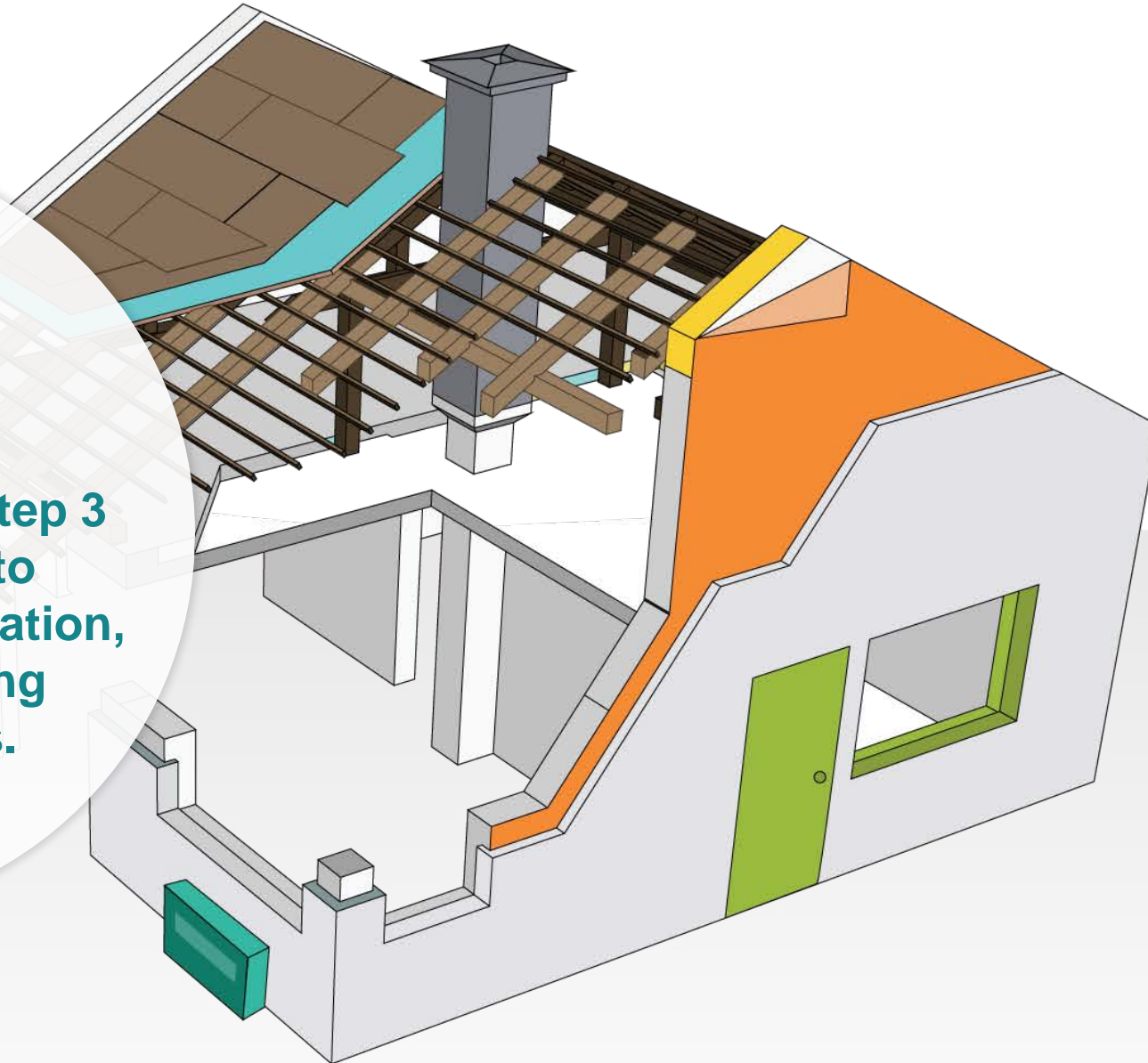


“ We will not build a house that is simply ‘code compliant.’ It’s not worth it for anyone – it doesn’t deliver comfort or cost efficiency, it doesn’t deliver any benefits. It’s little more than a roof overhead. - Paul Denchuk

A look inside a typical Step 3 Home

Six Proven Strategies

Builders can meet Step 3 by paying attention to details, adding insulation, and carefully planning mechanical systems.



The Six Strategies that cost-effectively boost performance

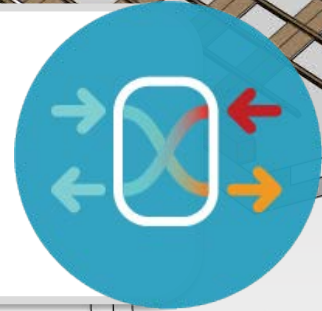
1. BOOST INSULATION

To reduce heat loss, increase insulation in walls, floors, roof, and foundation.



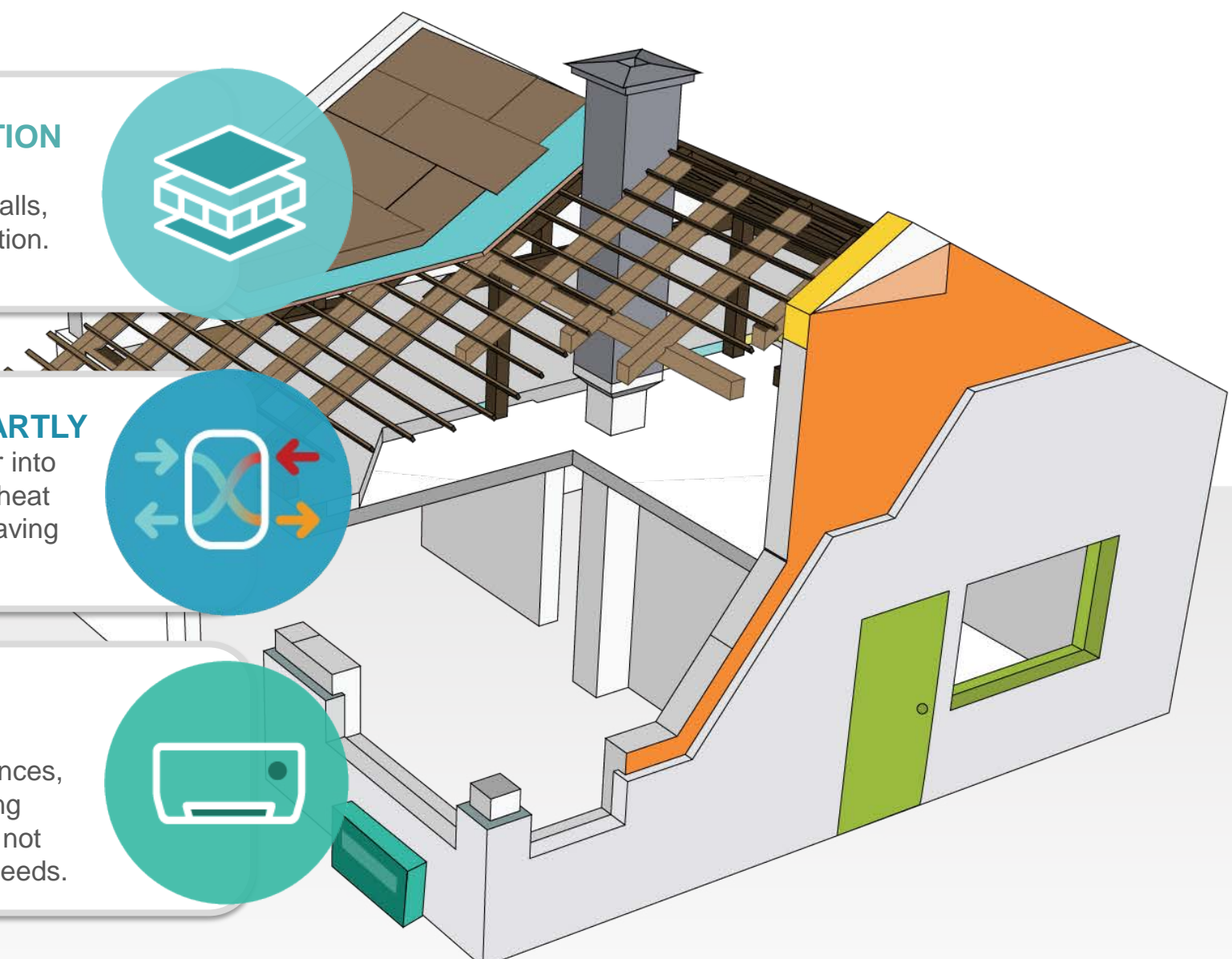
2. VENTILATE SMARTLY

Bring plenty of fresh air into the home and recover heat from the exhaust air leaving the building.

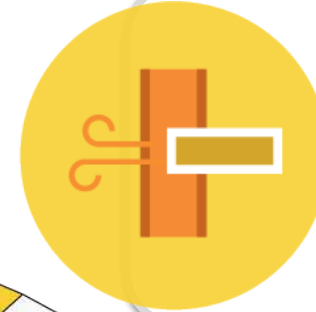
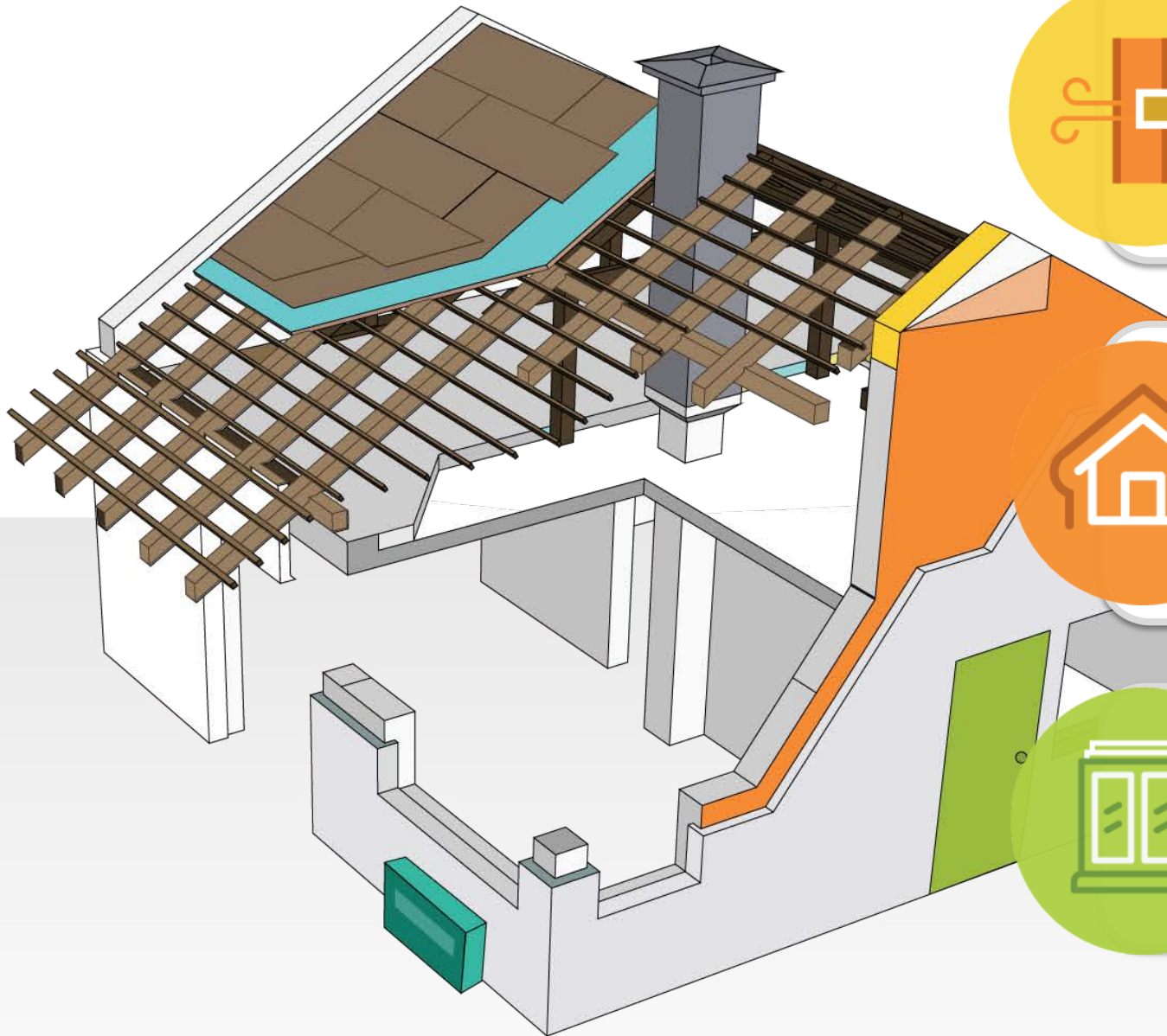


3. MIND YOUR MACHINES

Specify efficient appliances, and ensure your heating system will meet – but not exceed – the home's needs.



The Six Strategies that cost-effectively boost performance



4. MINIMIZE THERMAL BRIDGES A break in your insulation acts like a bridge that carries heat straight out of the house. Take care with corners, junctions, gaps and studs!

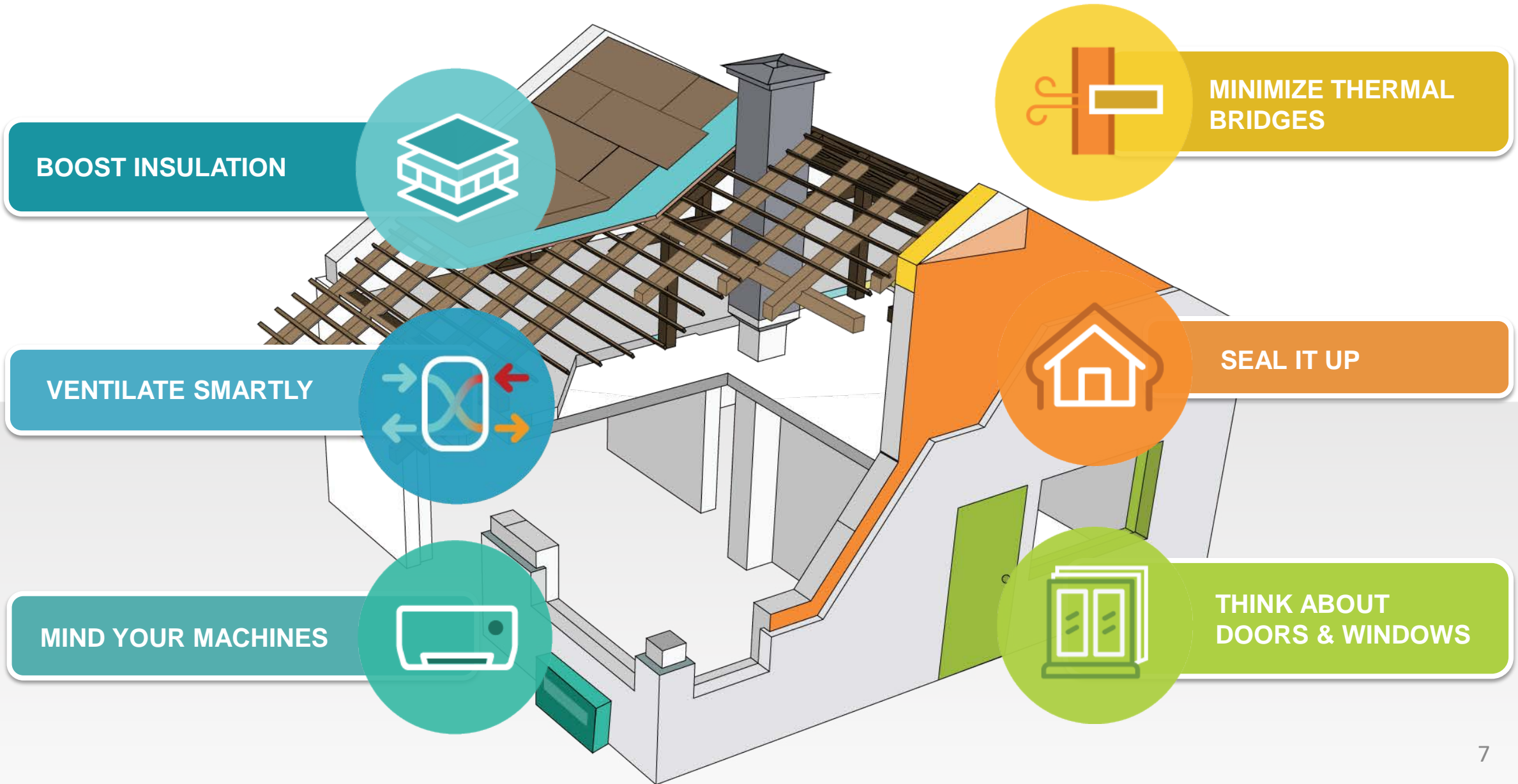


5. SEAL IT UP Air leaks are heat leaks. Wrap the home tightly, taking care to seal around ducts, pipes, fixtures, and wires that pass through walls, ceilings, and roof.



6. THINK ABOUT DOORS & WINDOWS Carefully consider their energy performance, size, and location.

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>2% above
cost to build to the code's
existing energy efficiency
requirements

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Project size: 1,536 square feet

Build cost: \$308,800 or \$201 per square foot

Step achieved: 4

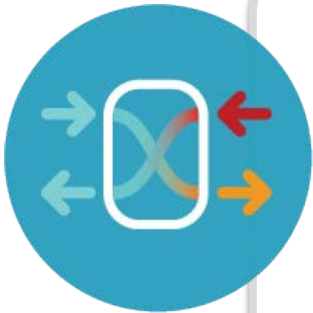
“ *To reach that build cost, they would have to be laser spot-on, really dialled right in. It's very impressive.*
– *Al Semple, another Invermere-based builder*

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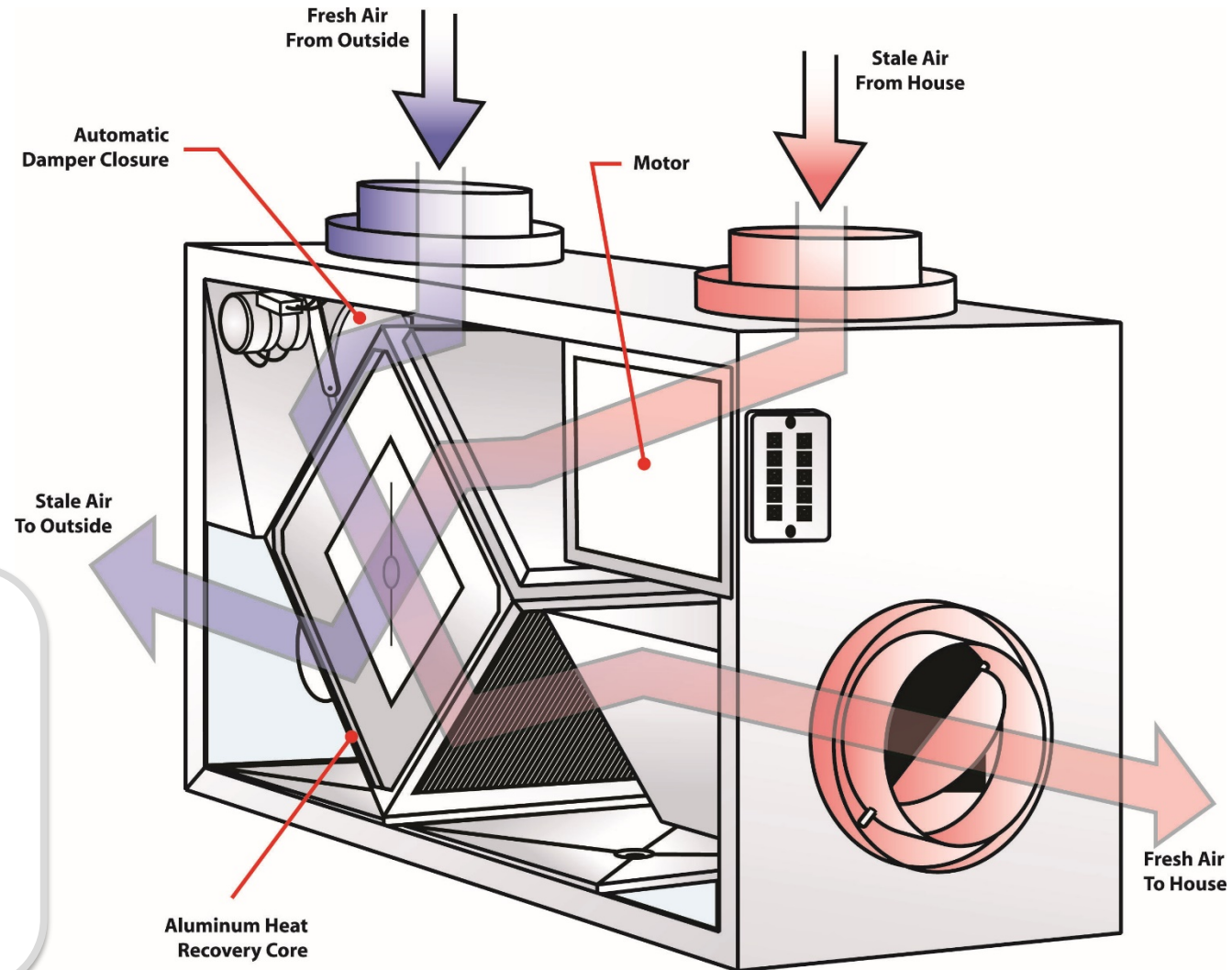
SEAL IT UP

Denchuk and Hamstead used **oriented strand board (OSB) sheathing**, taped at the joints, to seal the home against air leaks. When it comes to airtightness, “Make sure you have your sub-trades on board,” advises Denchuk, “so they are not destroying your home’s air barrier as they install their equipment.”



VENTILATE SMARTLY

A **heat-recovery ventilator** provides a steady supply of fresh air to the home, without sacrificing precious heat. Denchuk and Hamstead chose a Life Breath unit for this home, with direct duct runs to all living spaces.



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MIND YOUR MACHINES

One **mini-split ductless heat pump** keeps the home comfortable by extracting warmth from outside air and bringing it inside. Electric-resistance baseboard heaters like the one shown kick in on the very coldest days, when the heat pump is less effective.



MINIMIZE THERMAL BRIDGES

Denchuk **offset the exterior wall studs by 3.5 inches, creating an “air gap”** that he filled with **continuous fiberglass batts**. Further, ceiling and floor joists do not run all the way out to exterior walls.



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THINK ABOUT DOORS & WINDOWS

Denchuk and Hamstead limited the use of glass on the home's north side, and **selected triple-pane, Low E, argon-purged windows**. To control costs, the duo didn't go super high-end.



BOOST INSULATION

Denchuk and Hamstead tucked **six inches of R24 rigid foam insulation** under the slab, weaved R12 fiberglass batts in the spaces between offset studs in the exterior walls, and tucked R12 between the studs as well.

Thank You!

Questions?

energystepcode.ca