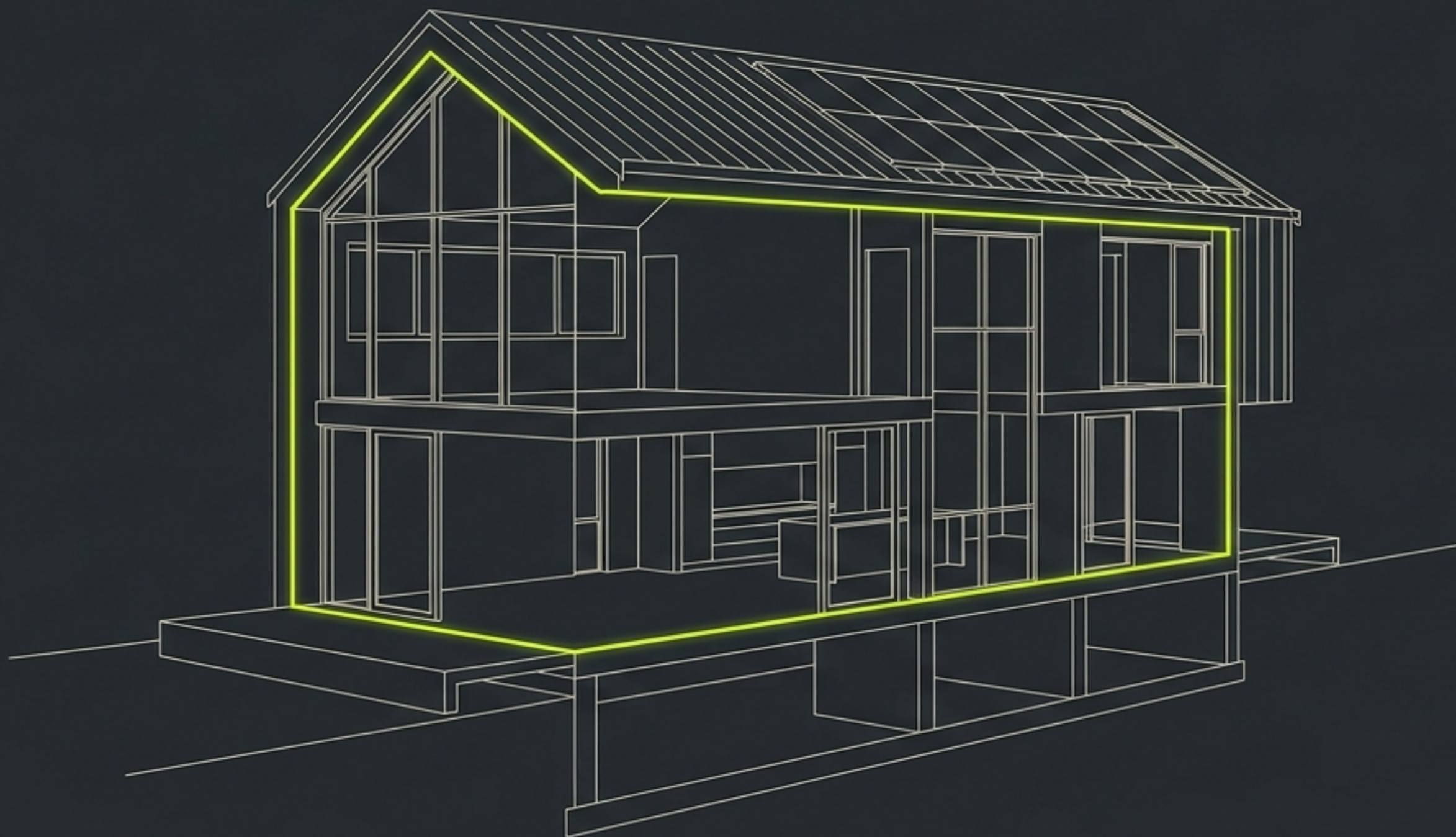


THE PHYSICS OF COMFORT

A modern approach to designing and building warm, dry, and fundamentally healthy New Zealand homes.



20%

of New Zealanders see their breath or shiver indoors.

50%

live with visible mould (11% larger than an A4 sheet).

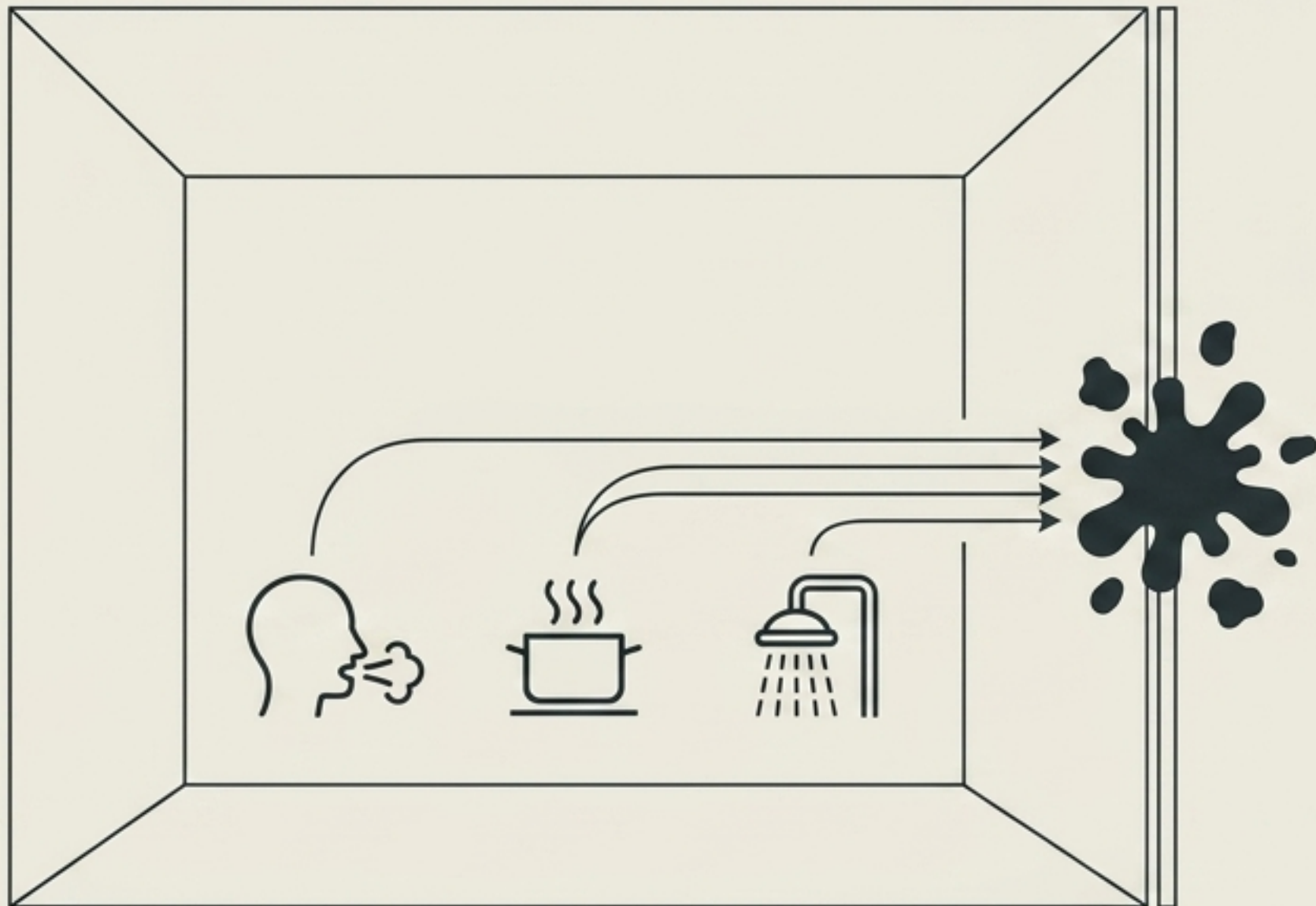
33%

report their home is consistently damp.

Despite these conditions, 90% of respondents consider their home a healthy healthy place to live. We have normalized a culture of **stoicism** over the basic physics of comfort.

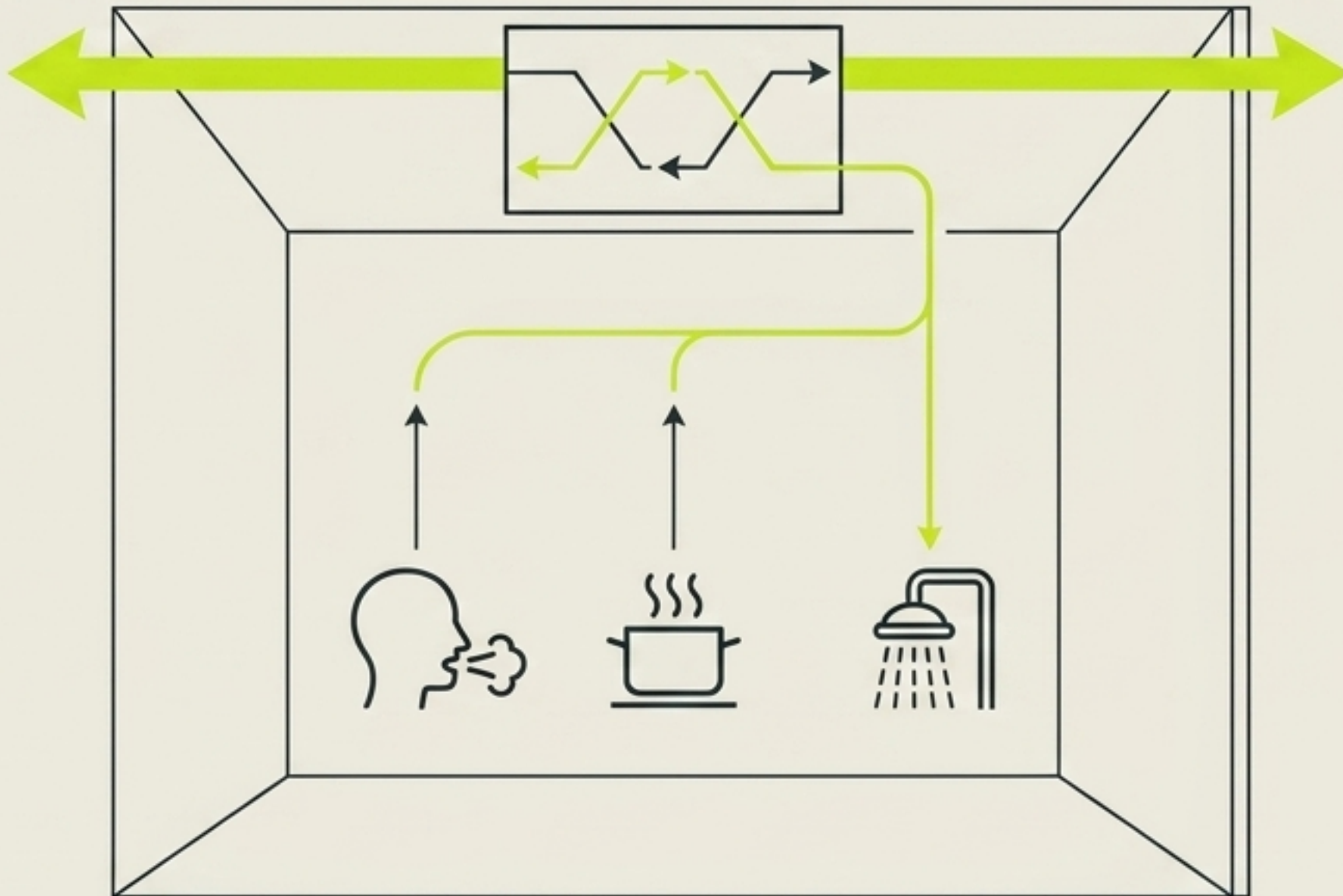
The Moisture Equation

Standard Temperate Home



Heating without ventilation guarantees dampness.

High-Performance Home



Continuous exchange removes moisture while retaining heat.

Redefining the Boundary



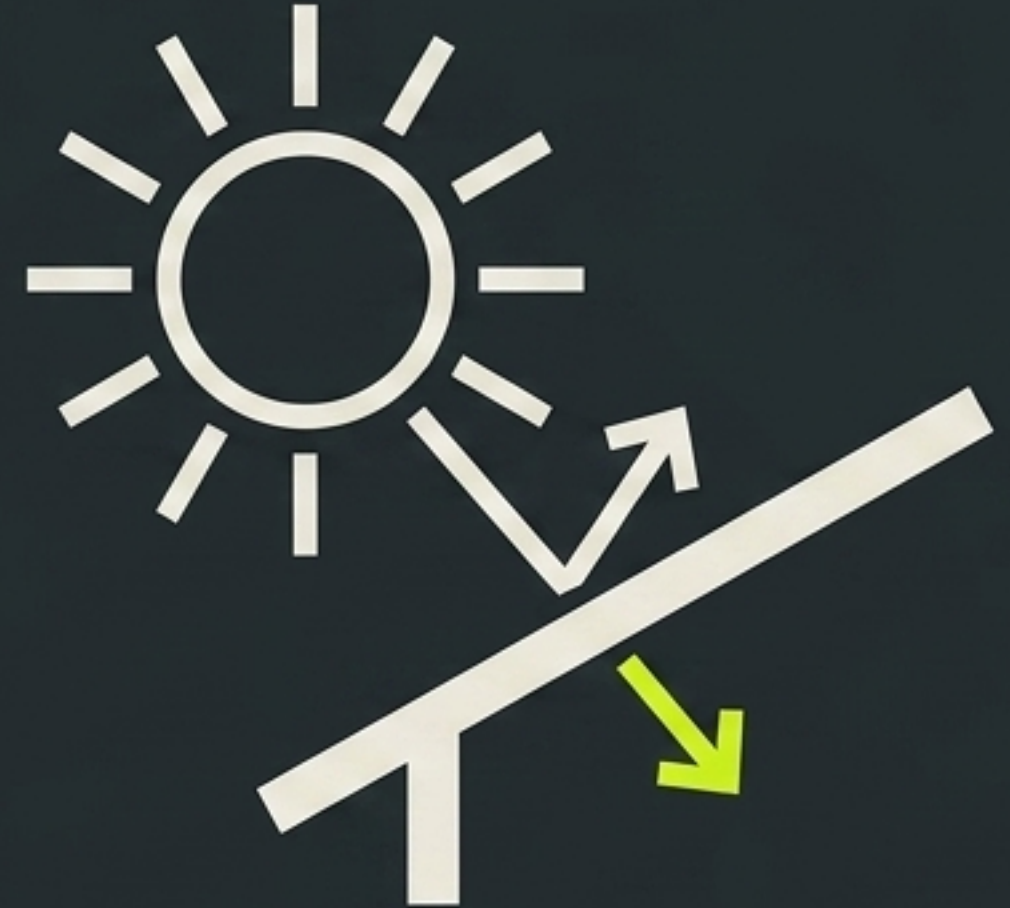
Thermal Bridging

Severing the conductive pathways that pull heat out of the structure.



Airtightness

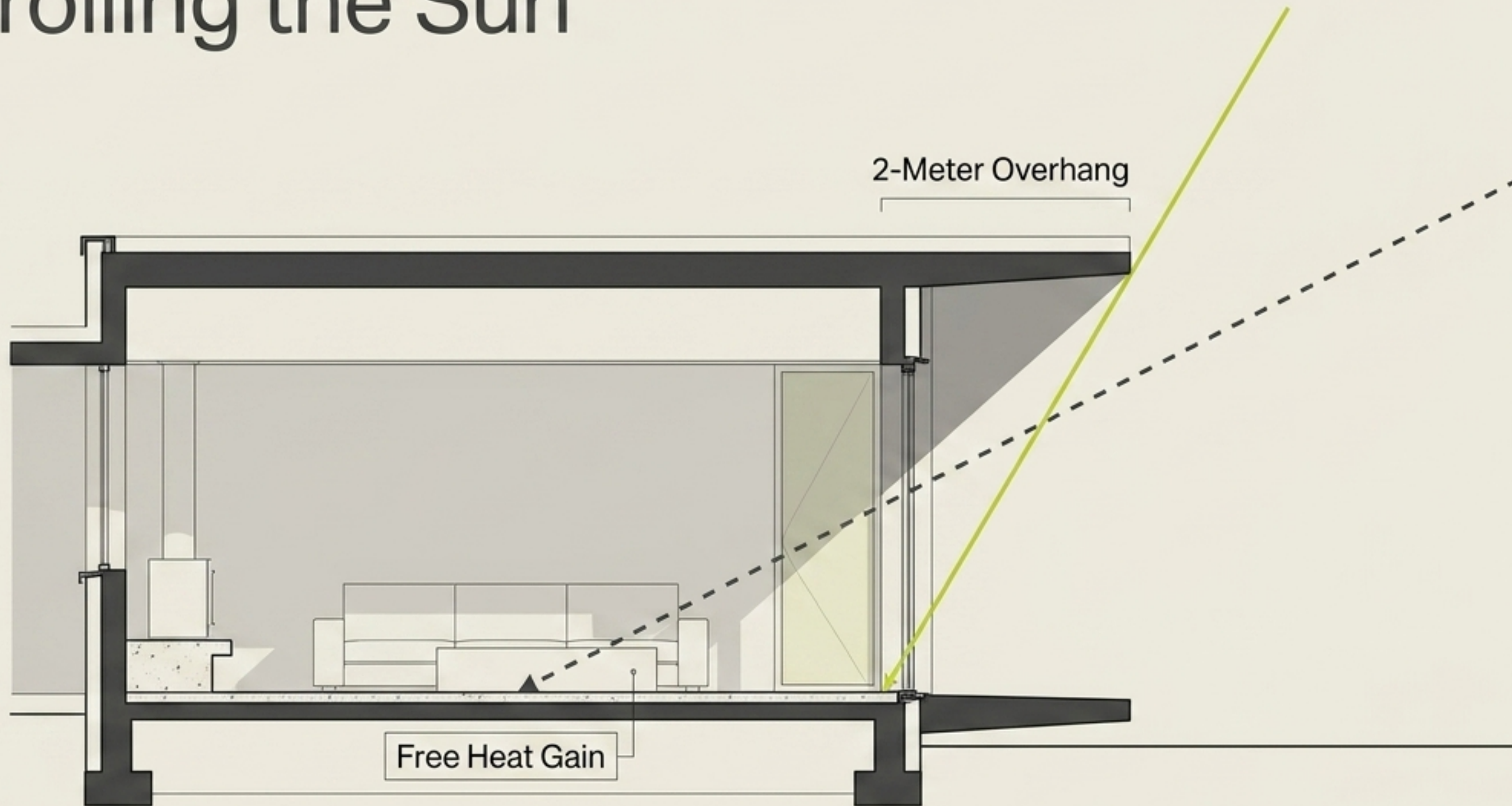
Stopping uncontrolled drafts to control moisture and energy loss.



Solar Gain

Harnessing free winter heat while aggressively blocking summer radiation.

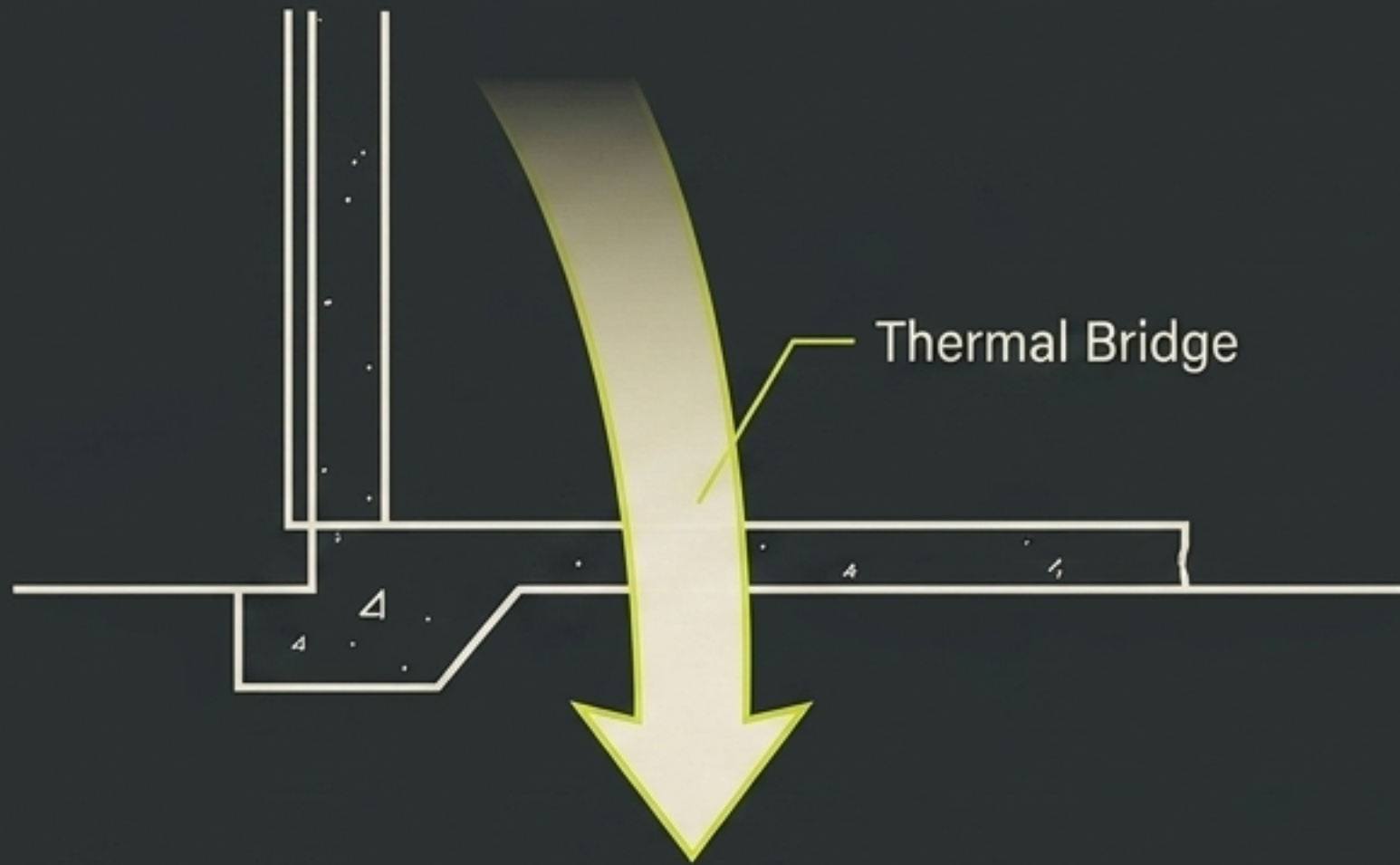
Controlling the Sun



Precision solar modeling dictates eave depth. In extreme climates like Central Otago, a 2-meter overhang balances essential winter solar gain with critical summer shading.

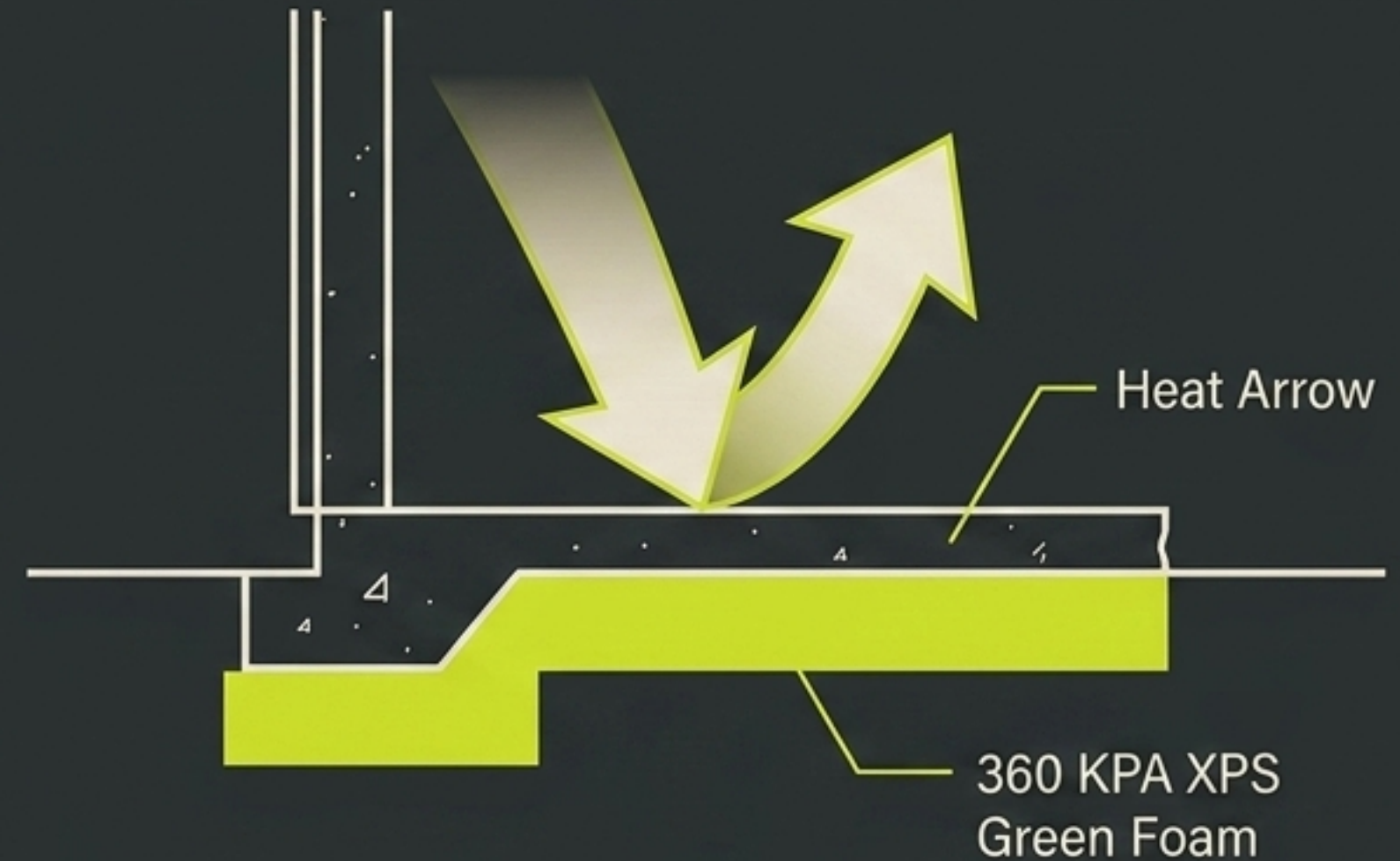
Severing the Heat Highway

Standard Code



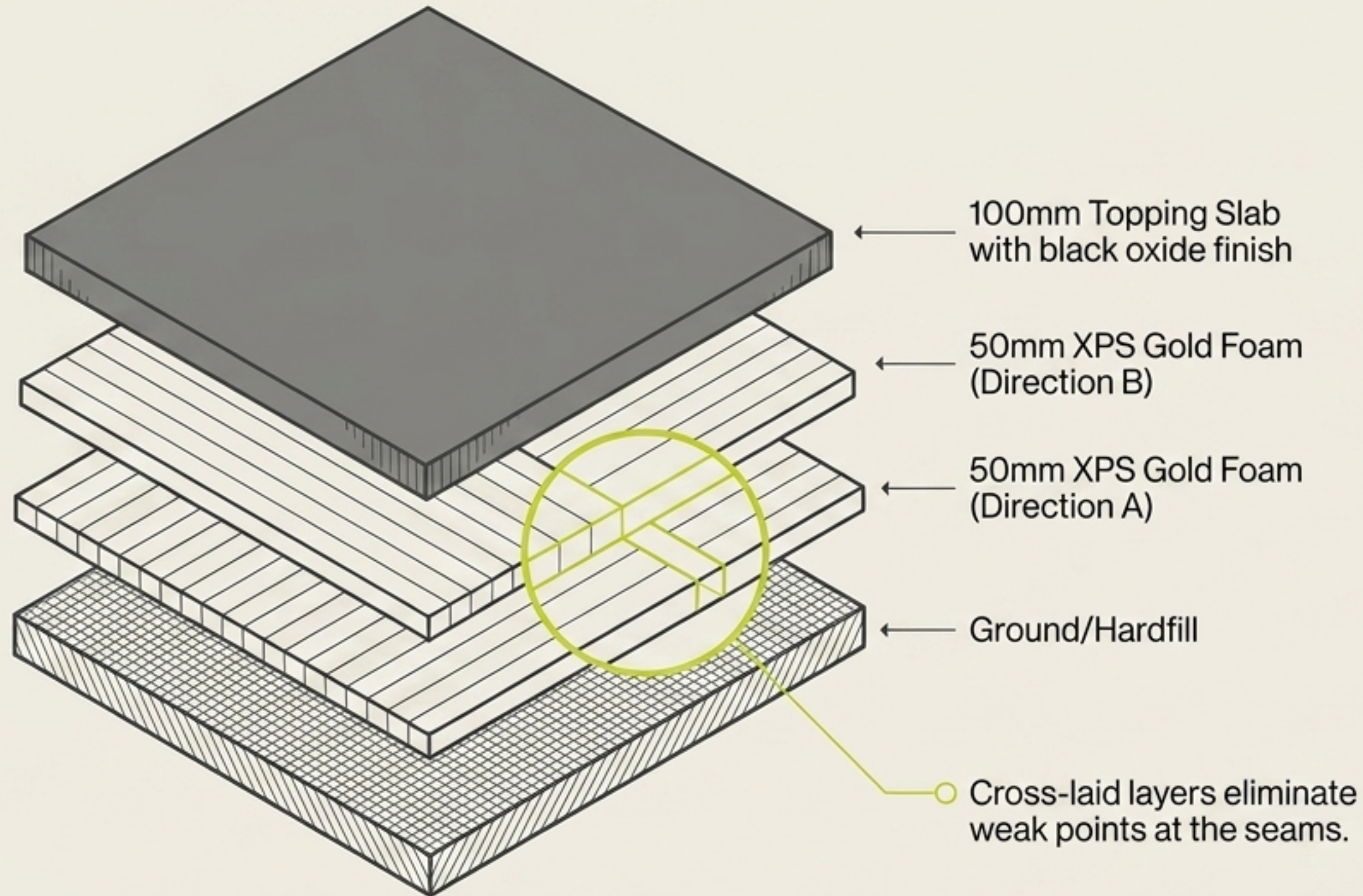
Concrete is a conductor. A standard slab actively pulls heat from your living room straight into the winter earth.

High-Performance



A continuous layer of high-compression foam acts as a total roadblock, isolating the thermal mass of the home from the cold ground.

The Insulated Foundation



R 3.6
Total Thermal Resistance

A fully insulated foundation acts like a thermos flask, storing solar heat in the polished concrete mass to radiate warmth long after the sun sets.

The Structural Anatomy Matrix

Dimension	Standard Timber Framing	Formance SIPs
Insulation Continuity	Fragmented by studs, sagging risk	100% continuous solid foam core
Airtightness	Relies on perfectly taped building paper; prone to leaks	Inherently airtight structural OSB facings
Thermal Bridging	High risk; timber studs conduct cold	Zero thermal bridges; continuous envelope
Construction Speed	Standard timeline	Pre-nailed panels accelerate enclosure

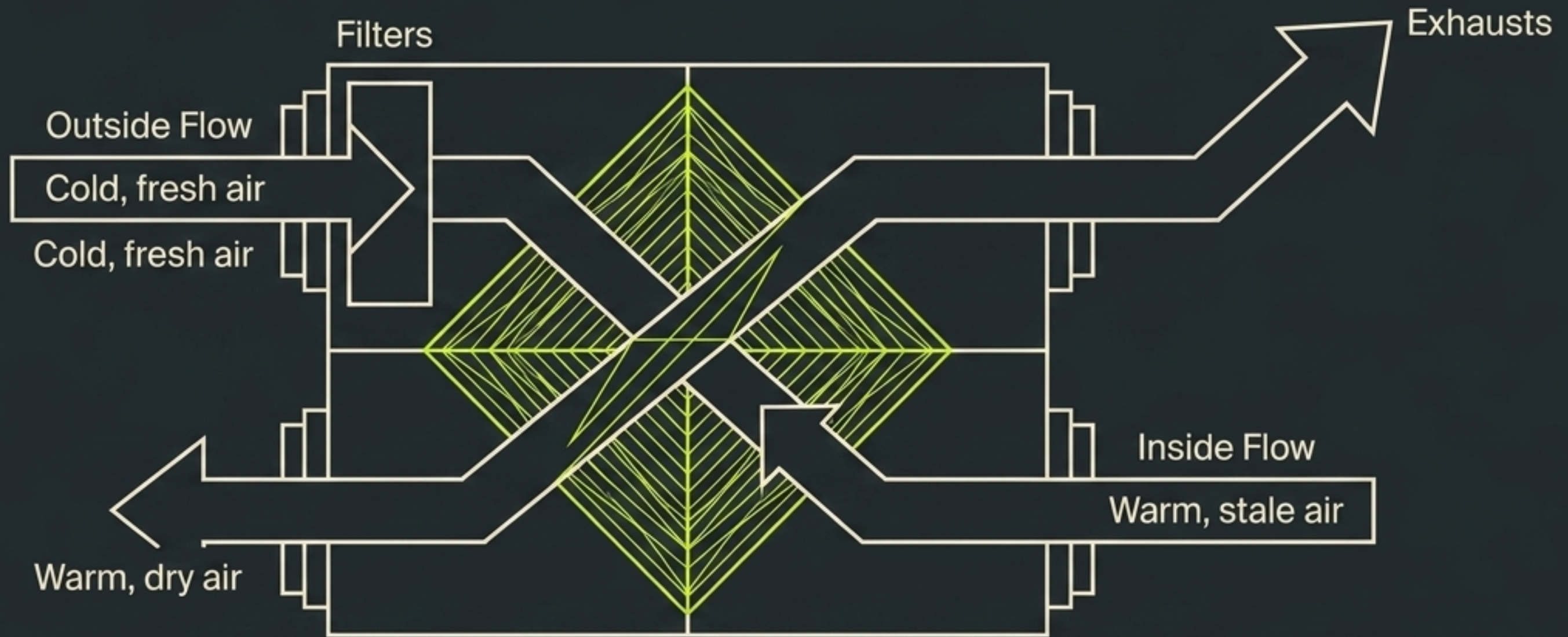
SIPs replace a complex assembly of error-prone layers with a single, highly engineered structural component.

The Glazing Matrix

Feature	Standard NZ Double Glazing	Koffman European Triple Glazing
Thermal Resistance	R-Value 1.1	R-Value 2.0+
Glass Spacers	Highly conductive Aluminium	Warm plastic, 2x18mm gaps with Argon
Frame Material	Thermally broken Aluminium	uPVC non-conductive
Installation Method	Flush with cavity; high heat loss	Recessed into the insulation line
Acoustics	Moderate reduction	Up to 80% noise pollution reduction

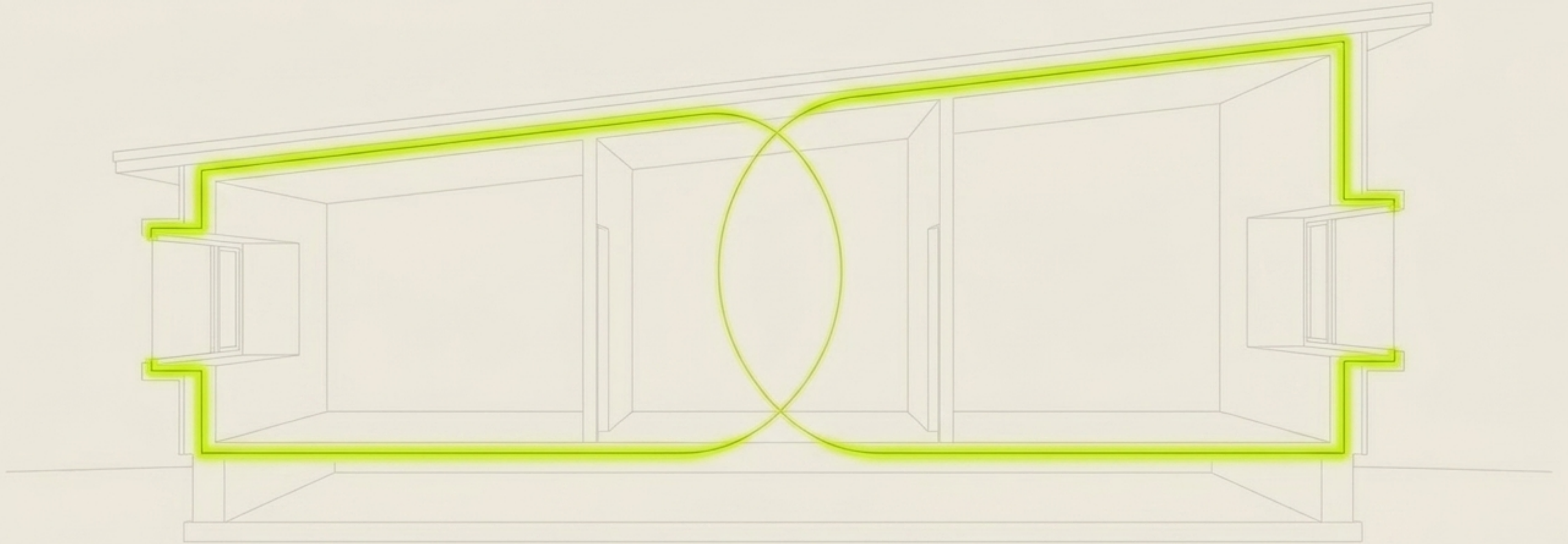
Through European economies of scale, premium triple glazing commands only an approximate 5% premium over a whole house build, while reducing heat loss by up to 59%.

The Lungs of the Home



In a high-performance home, opening windows is a choice, not a necessity.
An MHRV guarantees fresh, filtered air and a constant 20°C ambient temperature.

The Unbroken Line



A high-performance home is a singular, unified system. Breaking the insulation or airtightness line anywhere compromises the entire structure. Perfect execution of the boundary is non-negotiable.

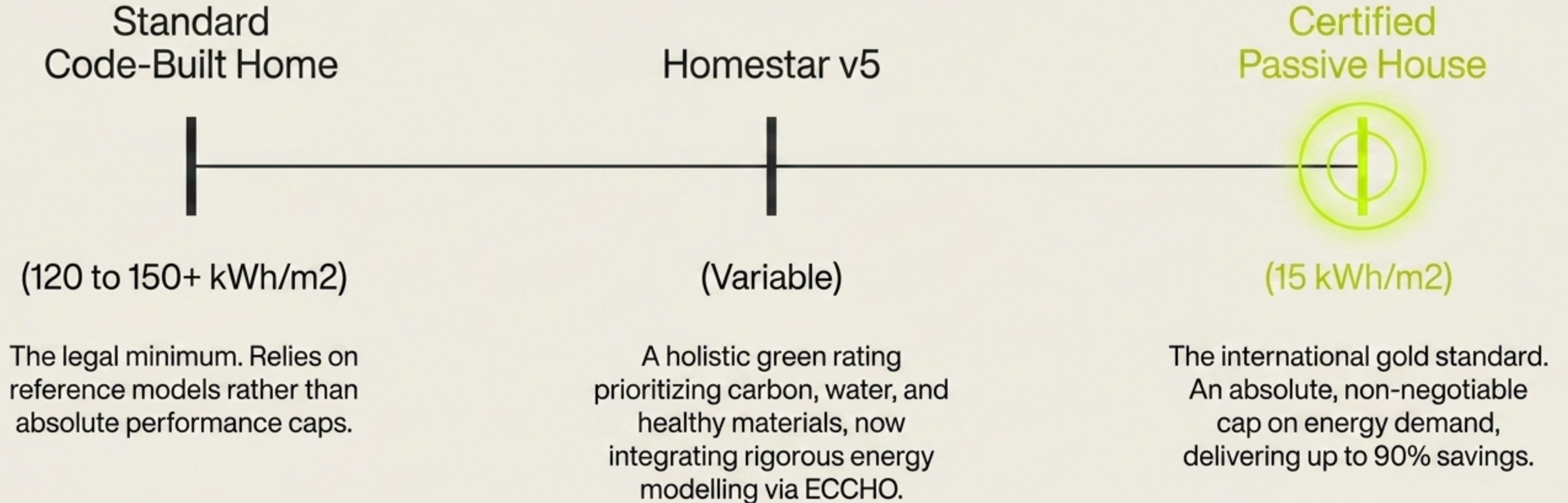
Demystifying Energy Modeling

Building science leaves no room for guesswork. Using PHPP or ECCHO software, we map every component—insulation density, window orientation, local climate data, and shading—before breaking ground.

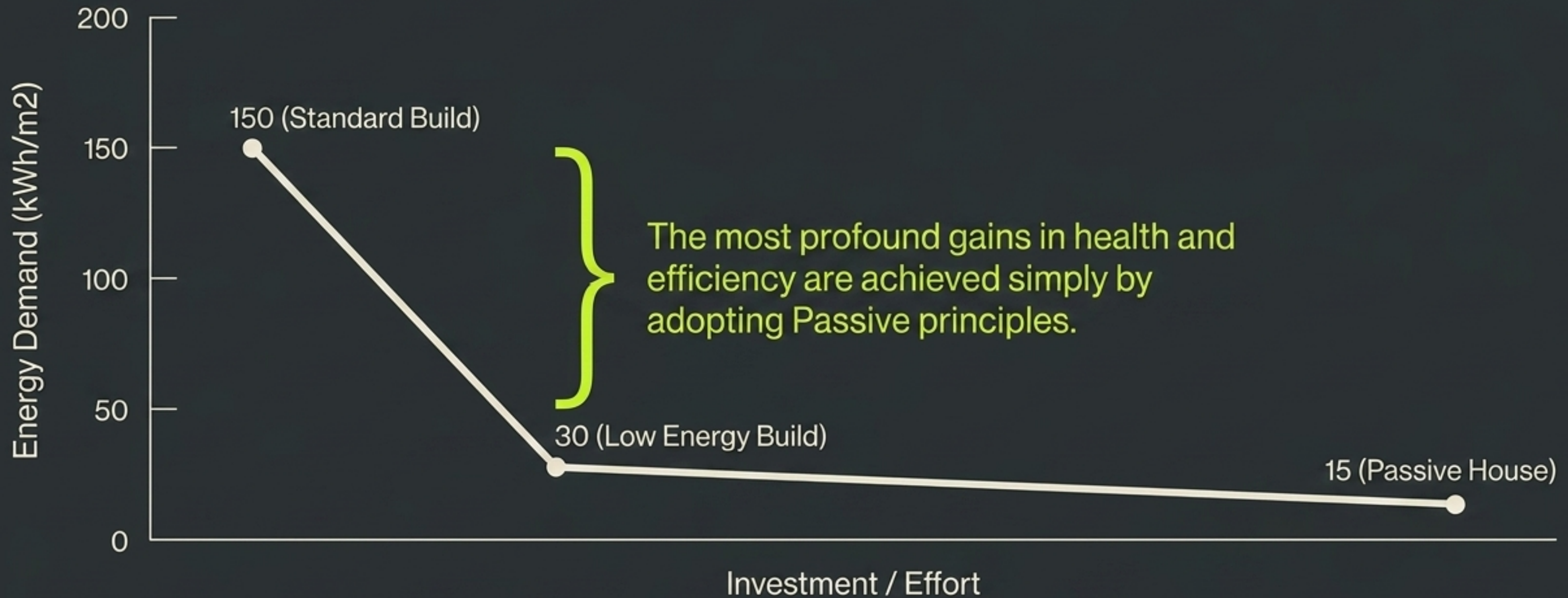
Energy modeling predicts your home's exact energy consumption and thermal comfort with unprecedented accuracy. You know how the house will perform before the foundation is poured.



The Energy Intensity Spectrum



The Diminishing Returns Curve



Certification is the ultimate proof of quality, but it is not the only path to a healthy home. Applying the physics of comfort to your budget yields extraordinary results, regardless of the plaque on the wall.

A New Paradigm for Living

We no longer need to accept cold, damp, and drafts as the inevitable cost of living in New Zealand. By honoring the physics of comfort, we can construct homes that are not just shelters, but precision-engineered sanctuaries.

