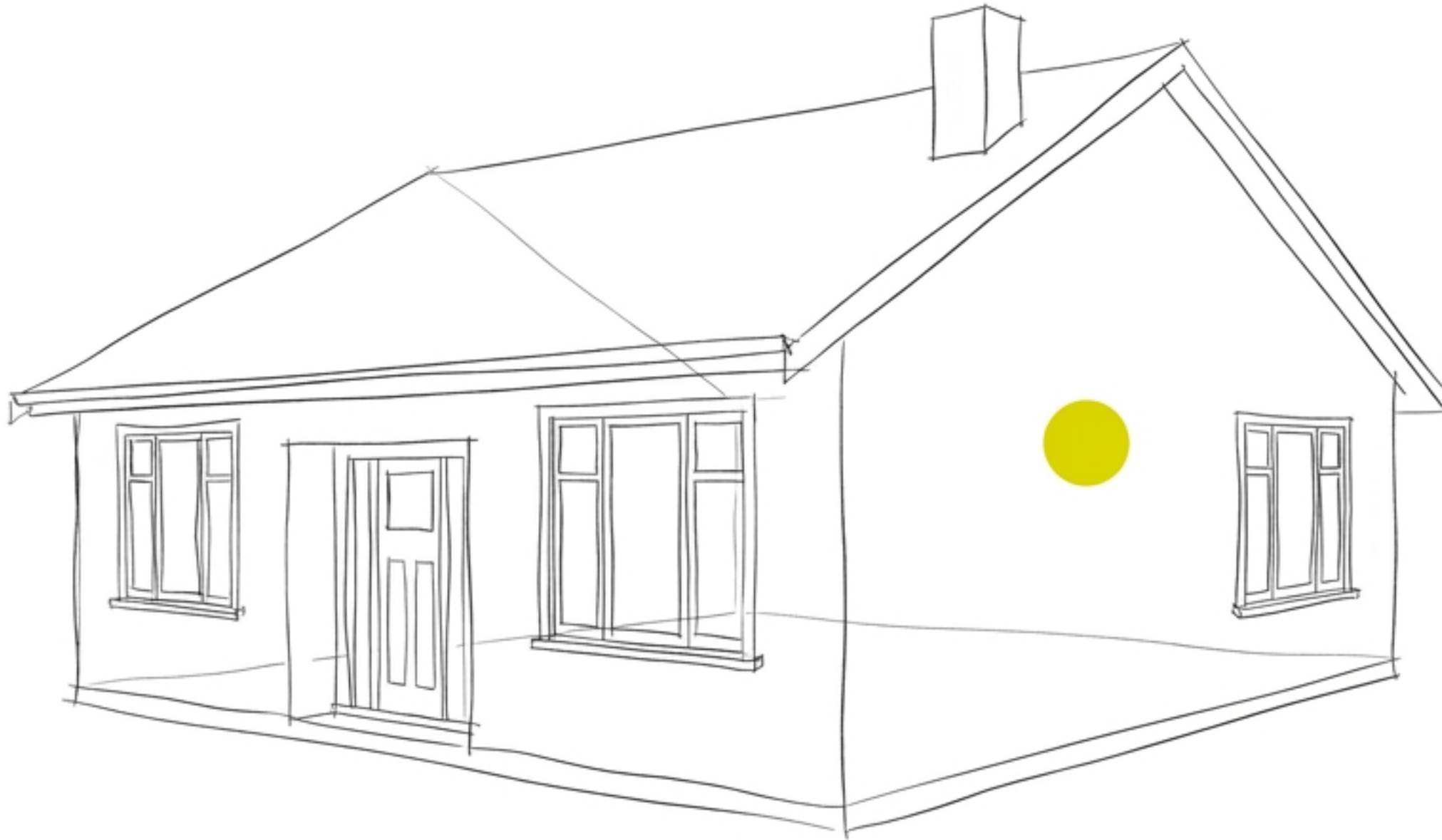


Is your home making you sick?

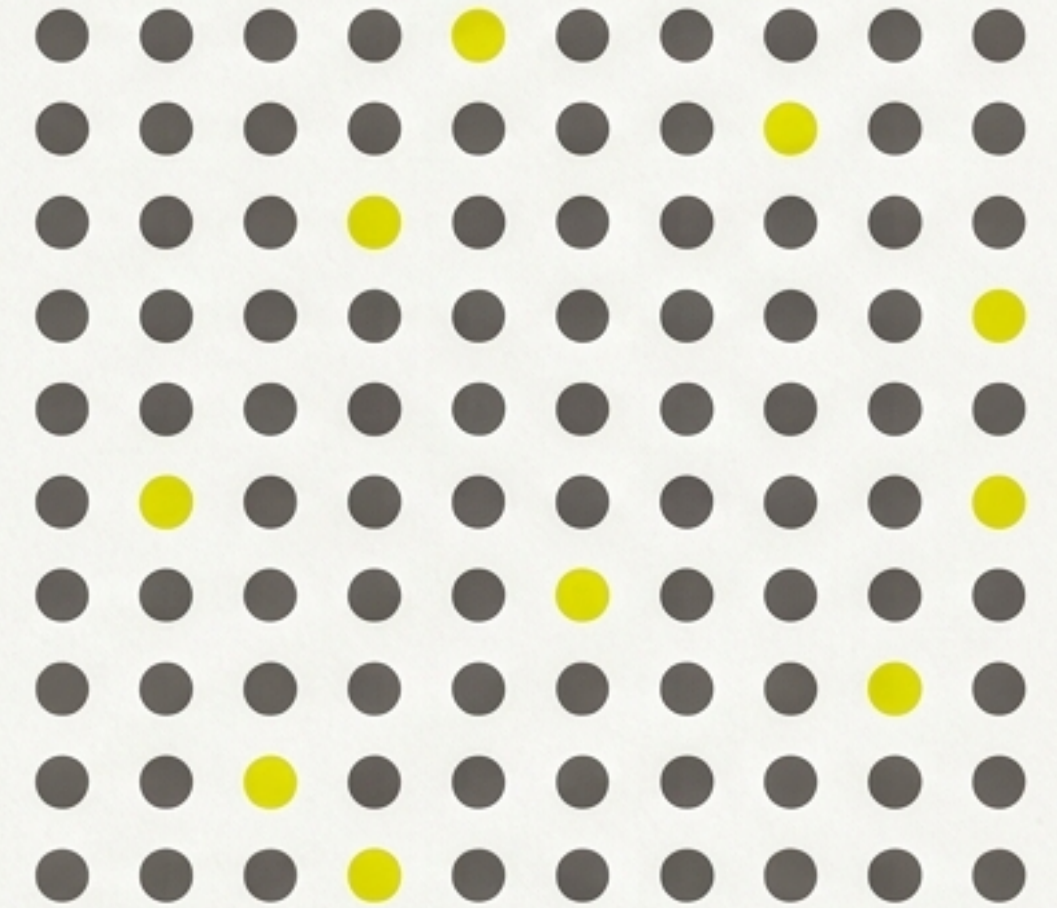
The building physics of indoor air quality, condensation, and the health effects of cold, damp housing in New Zealand.



Presented by Ecotectural Home Builders.

90%

9 out of 10 New Zealanders believe
their home is a healthy place to live.

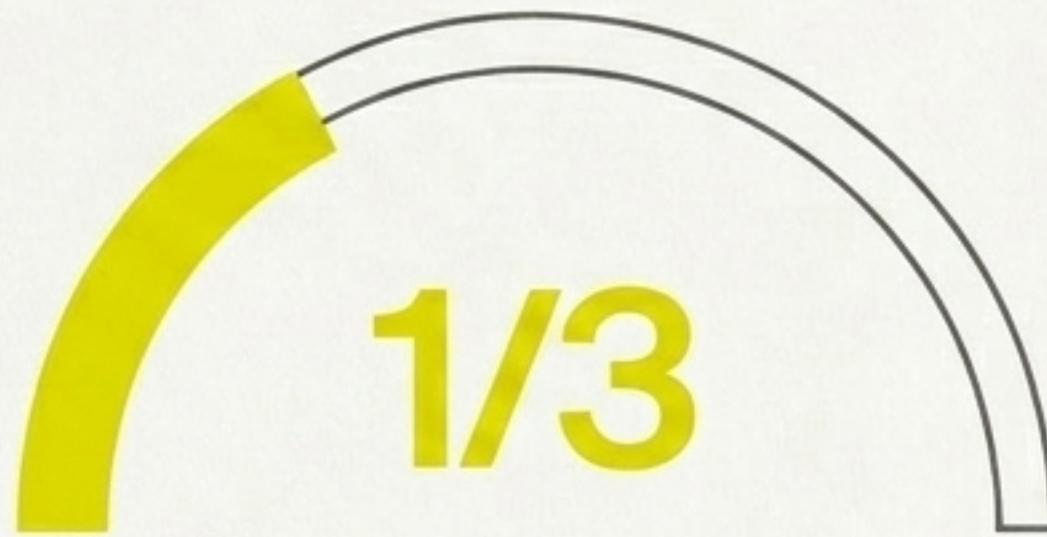


Yet, the data reveals a culture
that has normalised shivering,
condensation, and poor indoor
air quality.

The Reality of the New Zealand Winter



Nearly half of homes report visible mould, with 11% having patches larger than an A4 sheet.

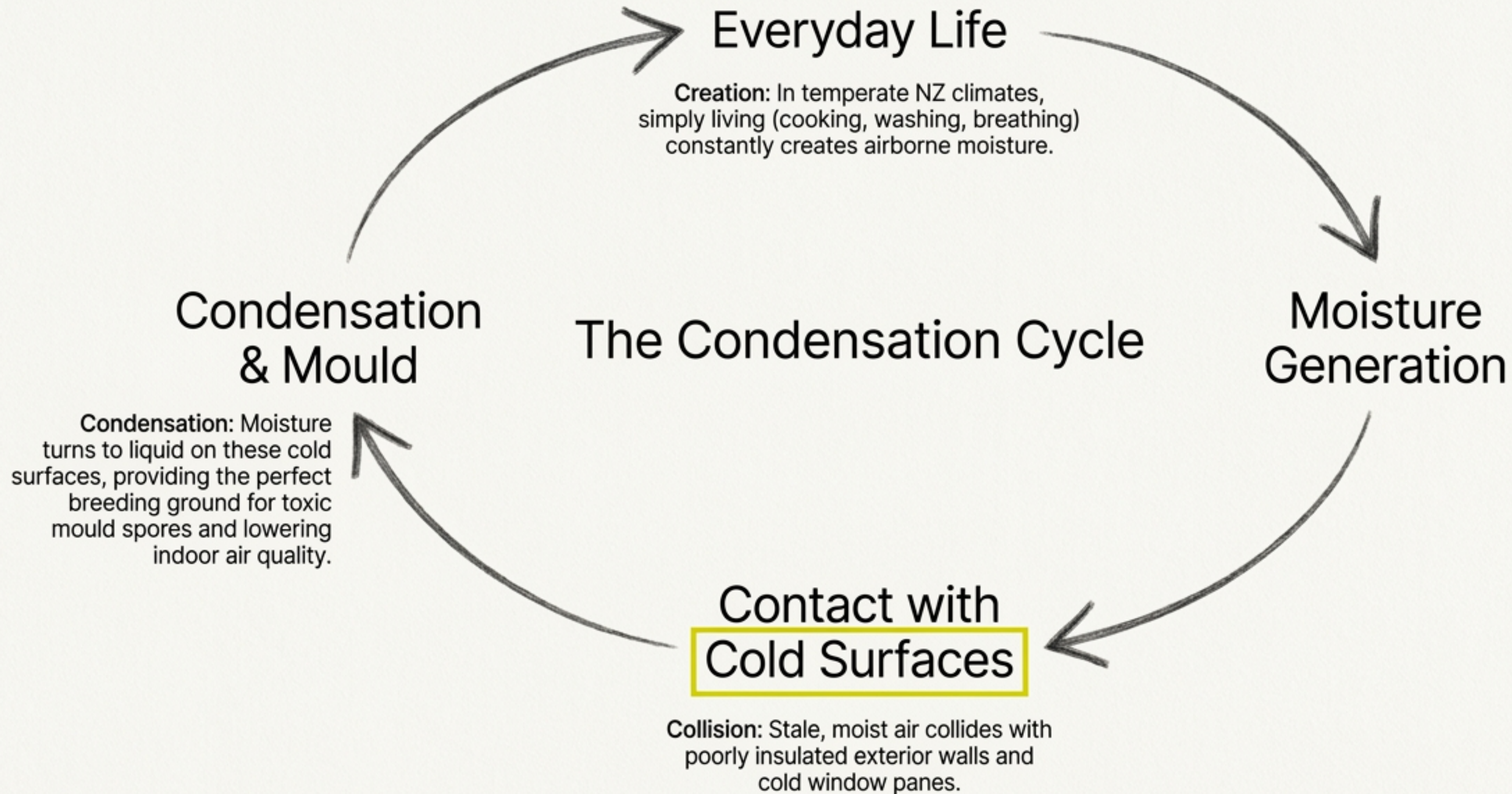


One third of respondents report their home is consistently damp.



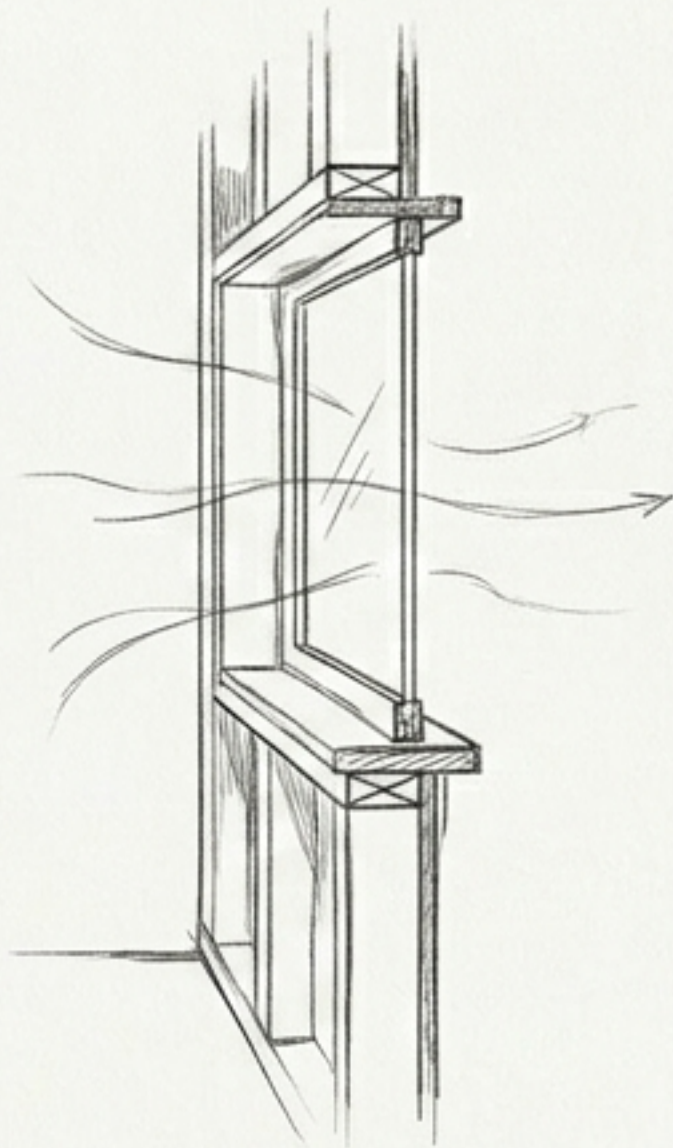
One fifth of residents can literally see their breath inside their own living spaces.

The Anatomy of a Sick Home



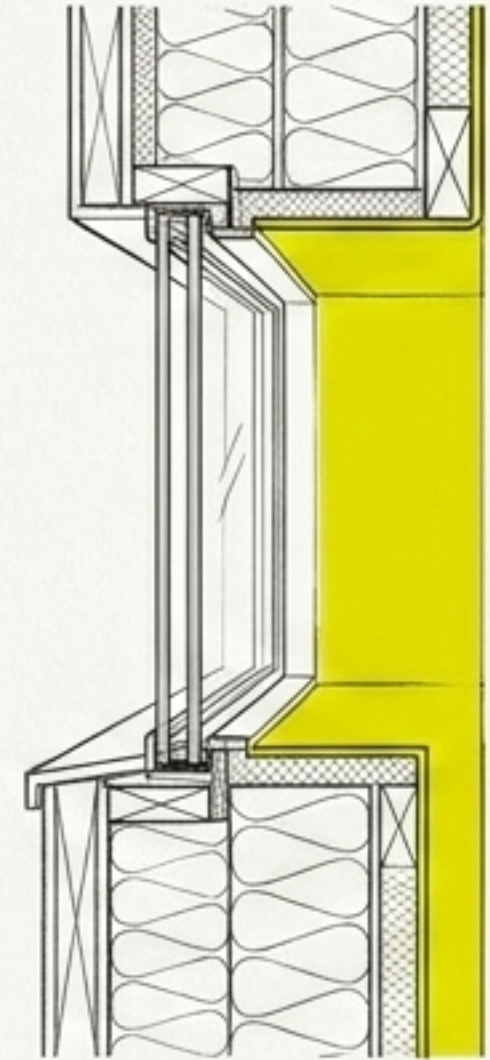
Code Minimum vs. Building Physics

The Old Paradigm



- Build to minimum code.
- Tolerate draughts.
- Rely on sporadic flush ventilation (opening windows).
- Treat mould with bleach.
- Use a dehumidifier for symptomatic relief.

The New Paradigm



- Engineer an energy efficient home.
- Prioritise absolute airtightness.
- Super-insulate.
- Mechanically ventilate.
- Eliminate thermal bridging.
- Cure the root causes.

Engineering a Health System

Symptom: Condensation & Mould



Cure: High-Performance Thermal Envelope (SIPs) & Recessed Glazing.

Symptom: Shivering & High Heating Bills



Cure: Absolute Airtightness (Stopping exfiltration of warm air).

Symptom: High CO2 & Stuffy Air



Cure: Mechanical Heat Recovery Ventilation (MHRV).

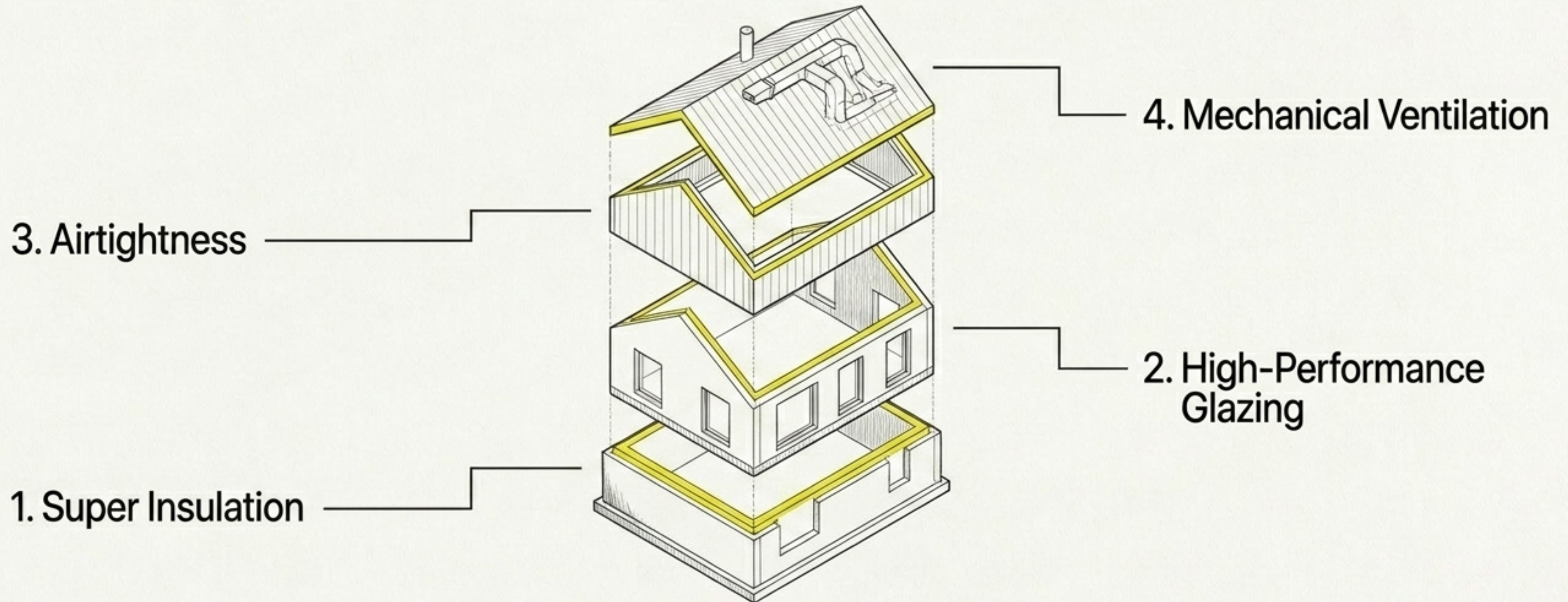
Symptom: Traffic & Urban Noise



Cure: Thicker, European-style Triple Glazing (up to 80% noise reduction).

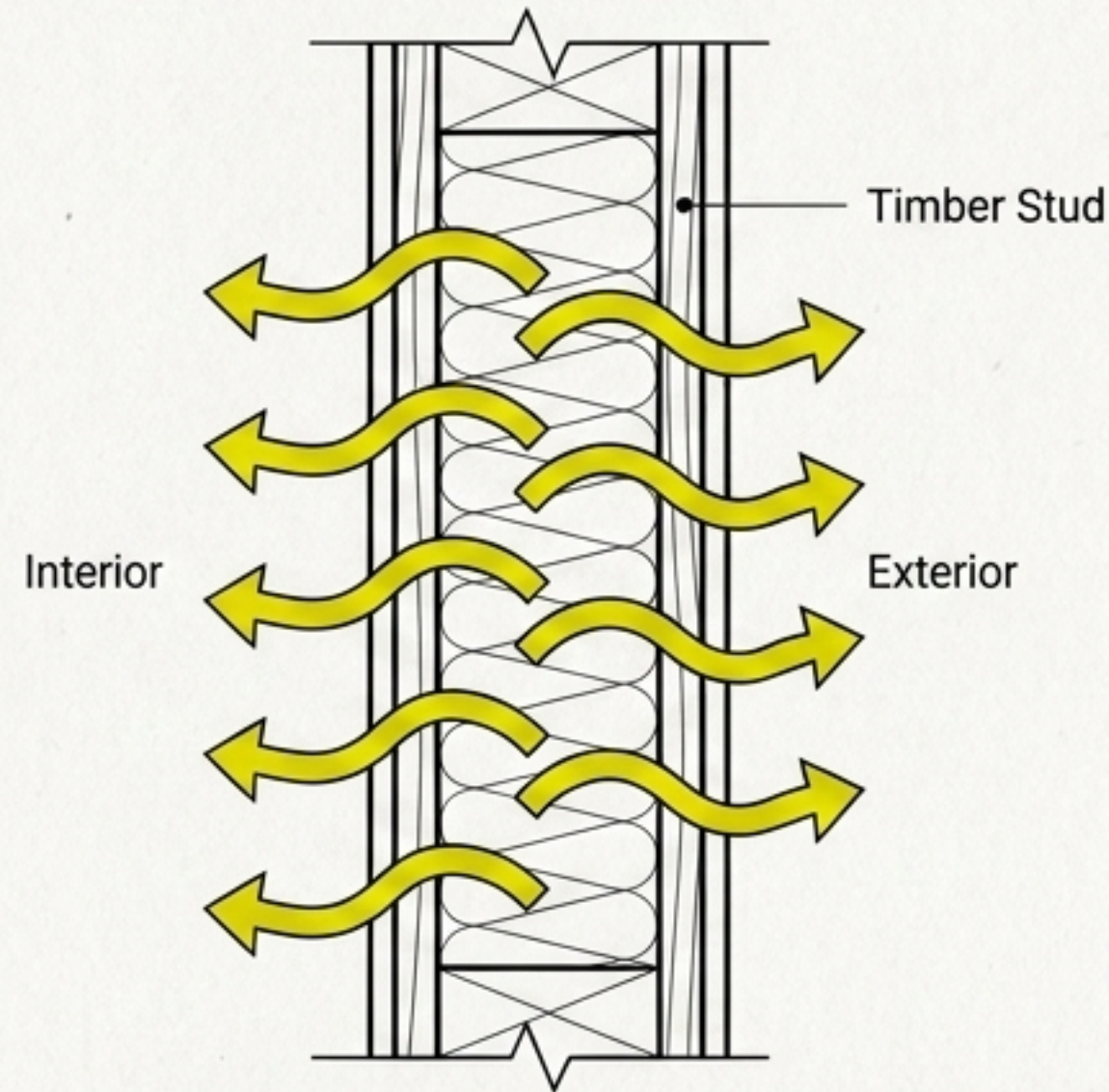
The Four Pillars of an Energy Efficient Home

An energy efficient home is not a single product. It is a harmonious, interlocking system designed around building science to maintain a constant 20–25°C temperature year-round using minimal energy.



Pillar I: Super Insulation & Thermal Bridging

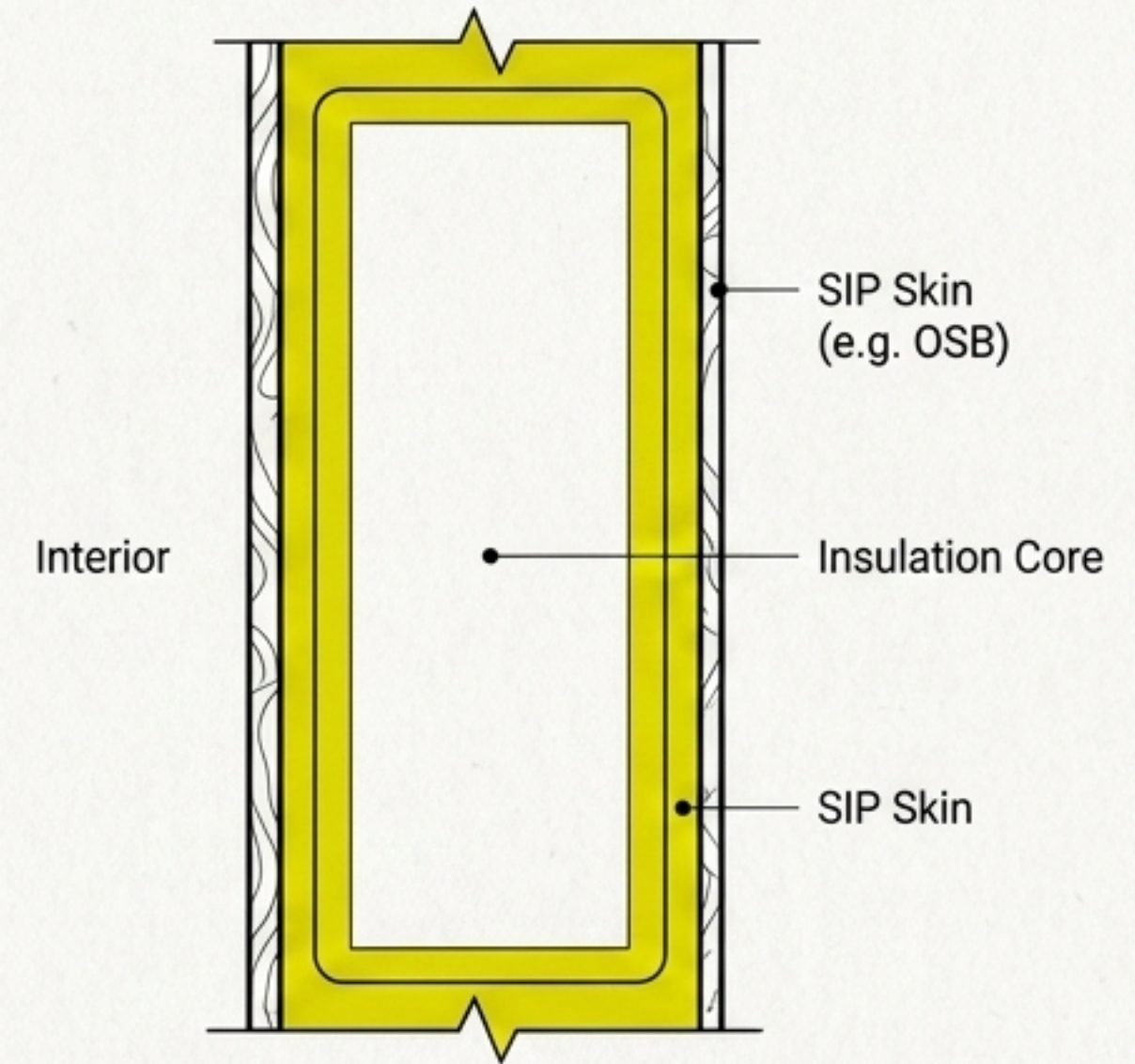
Timber Frame Cross-Section



Timber Frame Cross-Section

The Flaw of Timber: Traditional framing acts as a thermal bridge, conducting heat straight out of the home and creating cold spots where condensation forms.

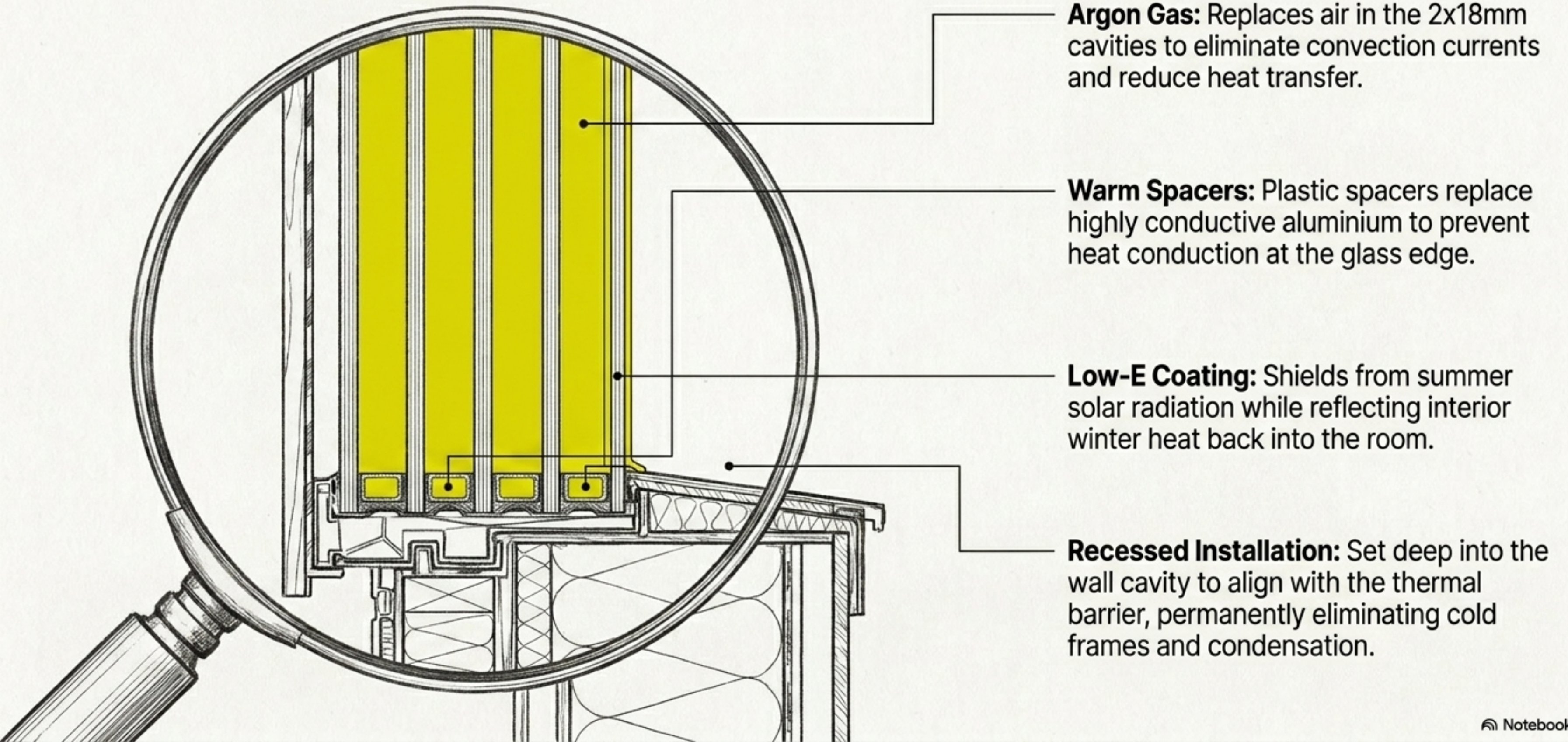
SIP Panel Cross-Section



SIP Panel Cross-Section

The SIP Advantage: Structural Insulated Panels (SIPs) provide a continuous, unbroken layer of high-performance insulation. The building is wrapped like a thermos flask, locking in healthy warmth.

Pillar II: High-Performance Glazing



The Math of Triple Glazing

+81%

Thermal Efficiency. R-value increases from 1.1 (standard double) to 2.0 (premium triple).

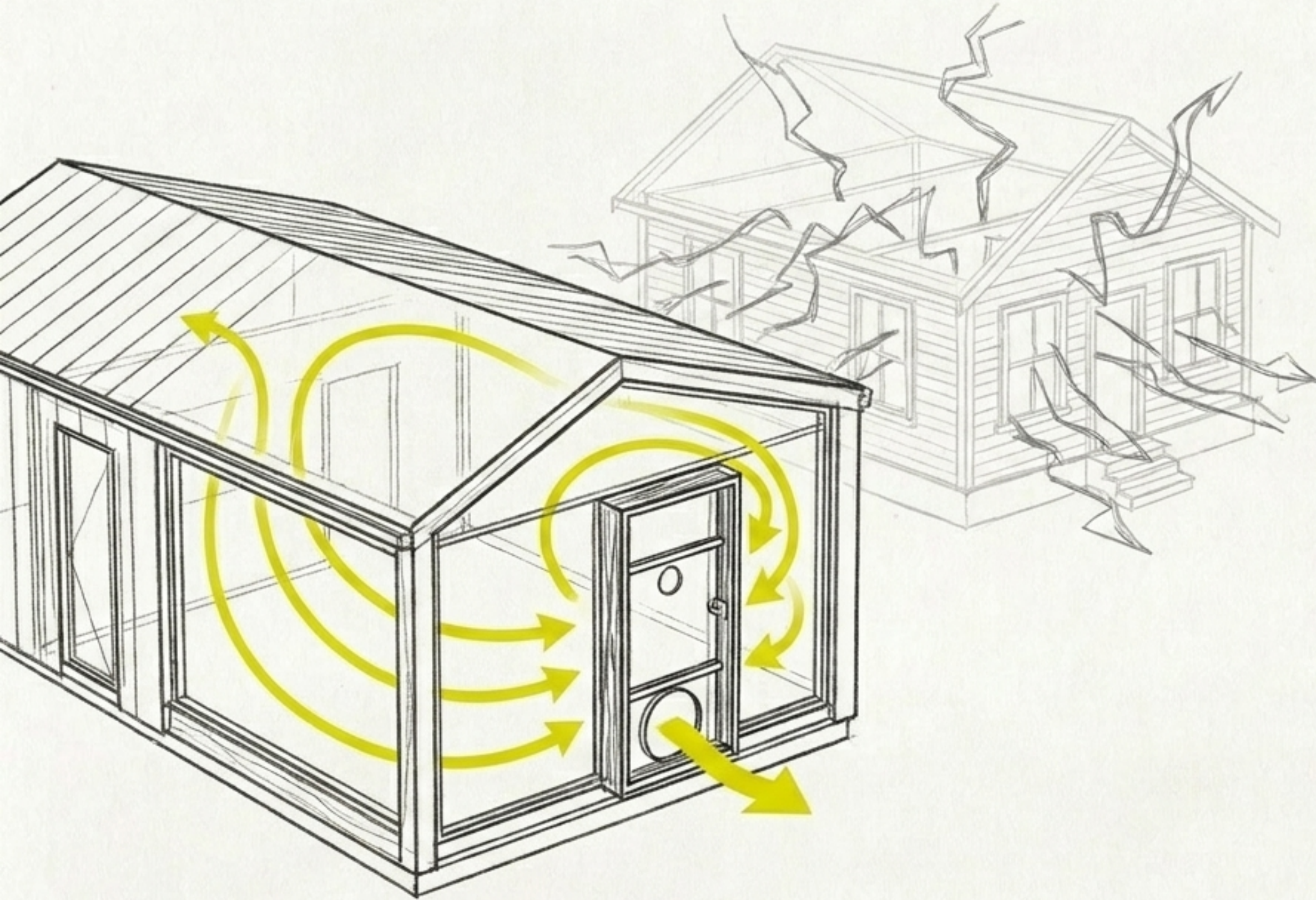
-80%

Noise Pollution. The extra pane and argon gas act as a dense acoustic buffer.

~5%

Investment. Due to European economies of scale, world-class triple glazing costs only marginally more than standard local double glazing for an entire build.

Pillar III: Absolute Airtightness

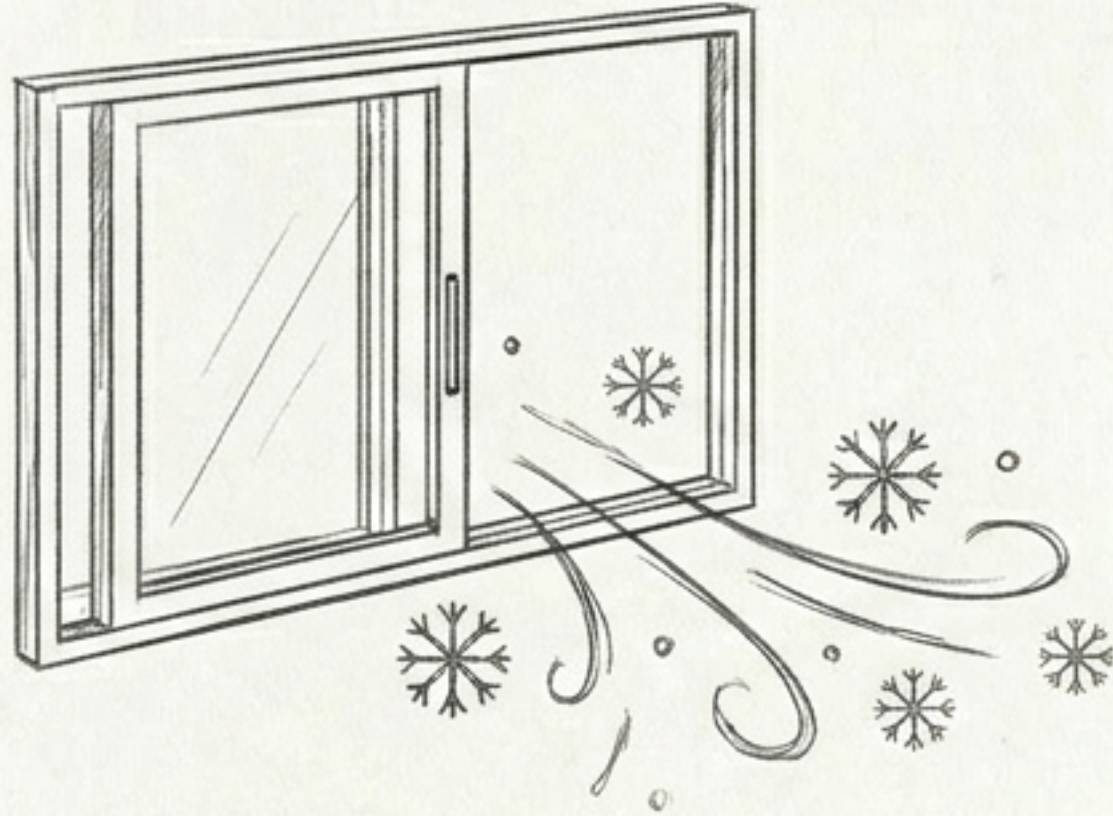


Traditional New Zealand buildings leak air like a sieve. This uncontrolled exfiltration strips the home of heat and draws in damp outside air.

By engineering an airtight envelope (verified by a Blower Door test), we stop draughts entirely. The building becomes a sealed vessel, allowing us to completely control the indoor air quality.

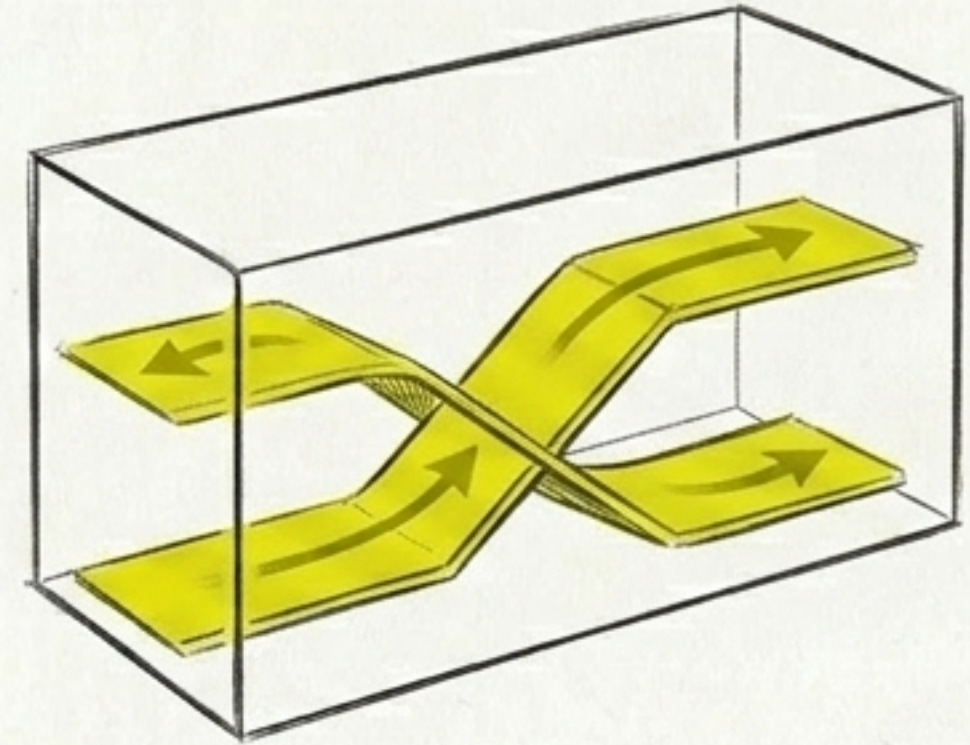
The 'Open a Window' Fallacy

Flush Ventilation



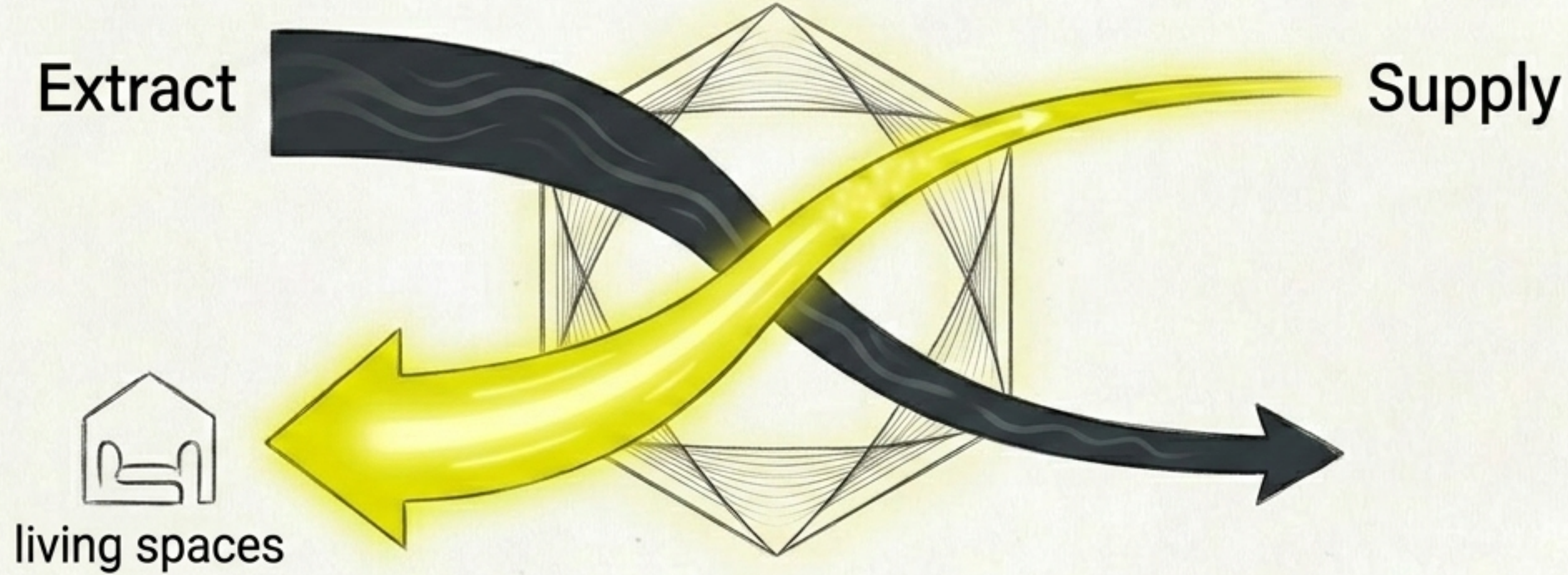
Relying on opening windows in winter is a flawed strategy. It brings in freezing, moisture-laden air that must be heated from scratch, costing money and resulting in shivering occupants who quickly shut the window, trapping CO₂ and dampness.

Mechanical Ventilation



The only scientific way to dry a home while maintaining temperature. Air is continuously exchanged, filtered, and pre-warmed without ever opening a window to the winter cold.

Pillar IV: The Lungs of the Home (MHRV)



Step 1: Extract

Stale, damp, CO₂-heavy air is constantly removed from kitchens and bathrooms.

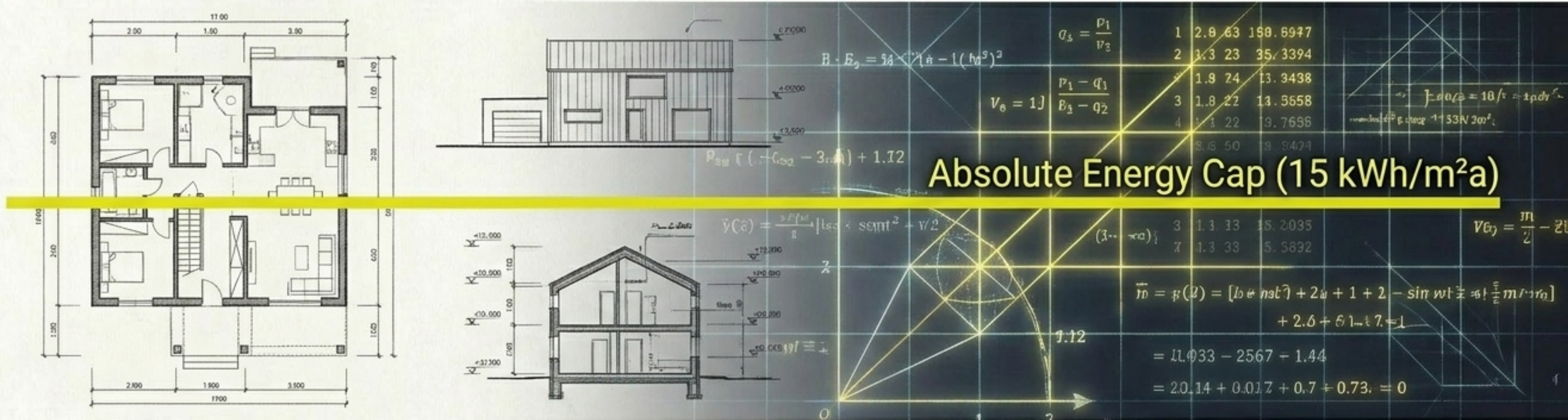
Step 2: Recover

The system extracts the heat energy from this outgoing air as it passes through the core.

Step 3: Supply

Fresh, filtered outdoor air is drawn in, pre-warmed by the recovered heat, and circulated to bedrooms. Result: Perfect air quality, zero heat loss.

Proof Before You Build: Thermal Modelling



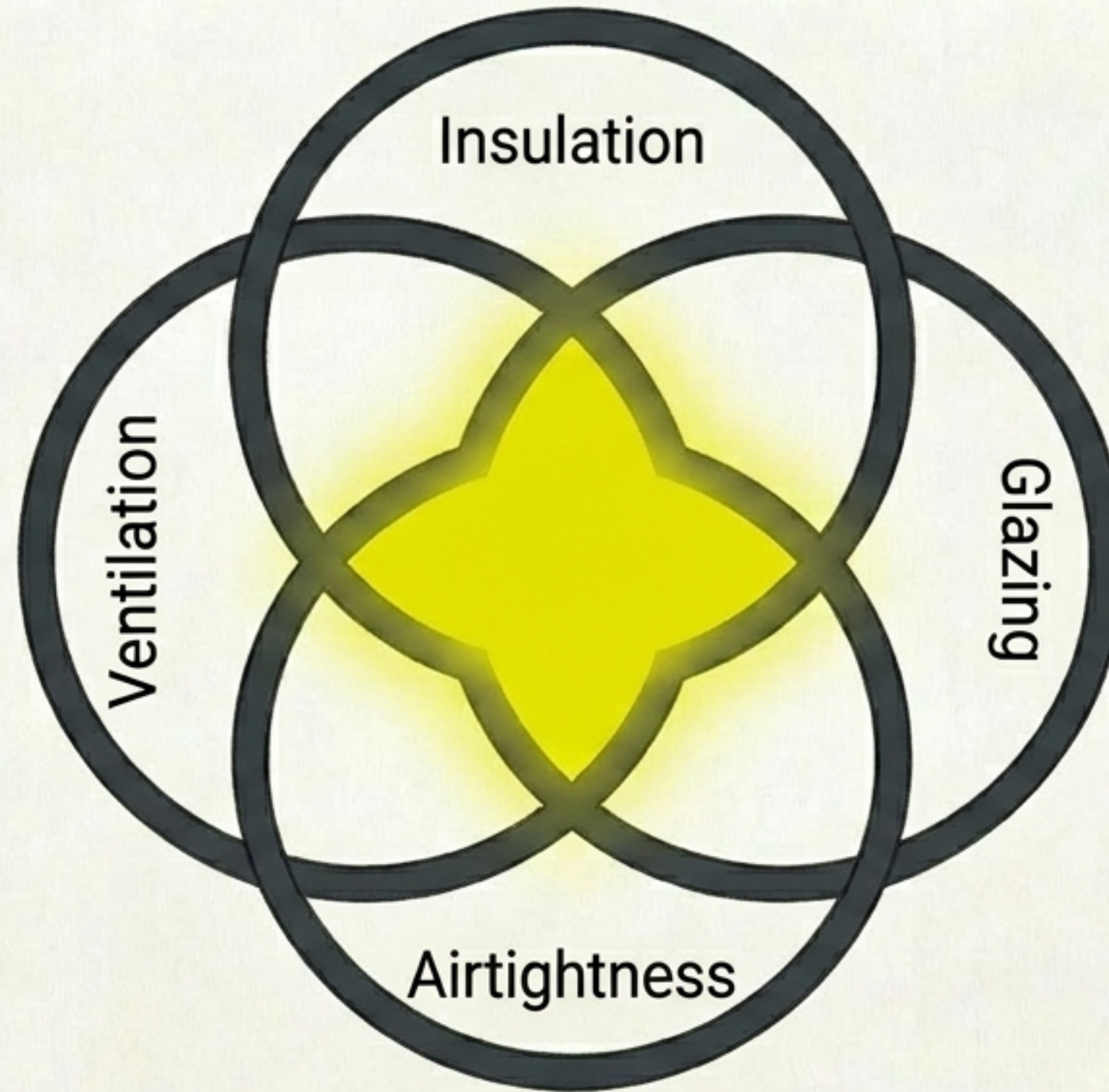
We do not guess. Using advanced software like PHPP (Passive House Planning Package) or ECCHO (Homestar), we construct a digital twin of your home.

Instead of relying on a flawed 'reference model' that just slightly improves upon minimum code, we design to absolute energy intensity caps. We know exactly how the home will perform before the first foundation is poured.

The Architectural Ecosystem

The Physics

Continuous thermal envelope + elimination of thermal bridges + controlled air exchange.



The Reality

A home that requires up to 90% less energy for heating, maintains an effortless 20–25°C year-round, operates in complete silence, and actively protects your respiratory health.

Your home should be a sanctuary, not a symptom.

By applying the uncompromising standards of building physics, an energy efficient home definitively cures the cold, damp, and mould that have defined New Zealand housing for generations.

Demand more from the walls around you.