



Your Ventilation Options Explained

A plain-English comparison of every solution available to NZ homeowners

IN THIS SERIES

Part 1 — Why your home needs better air

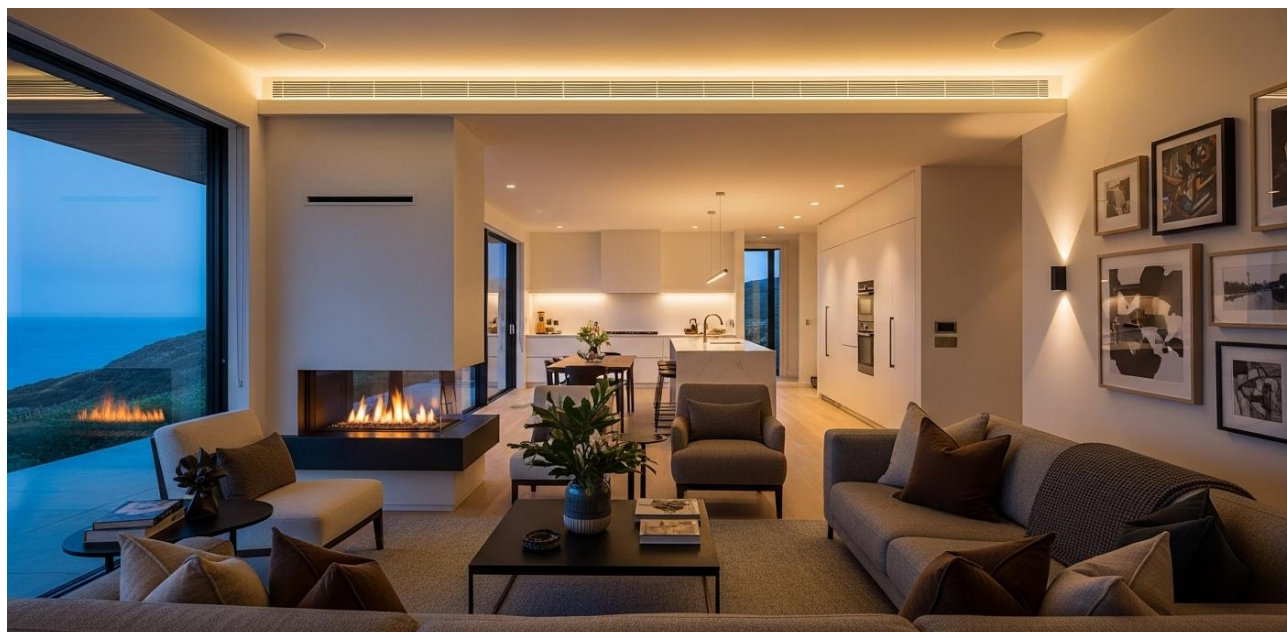
Part 2 — Humidity, heating & NZ's ventilation rules

Part 3 (this guide) — Your ventilation options explained

Part 4 — Choosing, costing & caring for your system

Walk into any New Zealand hardware store and you'll find bathroom fans. Browse online and you'll find HRV systems, positive pressure units, wall-mounted heat exchangers, and whole-house MVHR systems — each marketed as the solution to your ventilation problems. The options are genuinely confusing.

This guide cuts through the noise. We compare every major ventilation approach available to NZ homeowners — what each one does, where it works well, and where it falls short. By the end, you'll understand exactly what you have in your home right now, and what would genuinely make it healthier.



O P T I O N 1

Natural Ventilation: Opening Windows

The simplest and oldest approach: rely on wind pressure and temperature differences to move air through open windows and gaps in the building fabric. No energy required, no equipment to maintain, and no upfront cost.

In practice, natural ventilation is highly unreliable for year-round use in New Zealand. On still winter days — common across much of the country — air movement becomes negligible. Wide-open windows in winter cause significant heat loss, discomfort, and security risks. In modern airtight homes, where gaps in the envelope have been sealed, natural ventilation through opened windows is the only fresh air source — and most occupants leave them shut.

Natural ventilation provides no filtration, no humidity control, and no heat recovery. It is a useful supplement in mild weather, but not a ventilation strategy.

O P T I O N 2

Extraction Fans: Bathroom Fans & Rangehoods

Extraction fans address moisture at its source — bathroom fans remove steam after showers, rangehoods eliminate cooking fumes. They are inexpensive, widely available, and required under both the Building Code and Healthy Homes Standards.

The critical limitation is that extraction fans only remove air — they do not supply it. When a bathroom fan runs, it creates negative air pressure in the home. To equalise, unfiltered outside air is drawn in through every available gap: around windows, under doors, through electrical fittings and ceiling penetrations. This can introduce dust, pests, and outdoor pollutants, while also worsening energy efficiency.

Extraction fans provide no fresh air supply to bedrooms or living areas — where occupants actually spend most of their time. They are a necessary component of any ventilation strategy, but not a complete solution on their own.

O P T I O N 3

Positive Pressure Systems: HRV and DVS

Popular in New Zealand from the early 2000s, positive pressure systems draw air from the roof space — where it is often warmer and drier than outdoor air in winter — and distribute it through ceiling vents into the living spaces below. The logic is that pressurising the house pushes stale air out through gaps in the envelope.

“In modern airtight homes, positive pressure systems can force moist air into wall cavities — where it condenses on cold timber framing, invisible to occupants.”

The problems are significant. Roof space air often contains dust, insulation fibres, and potentially viruses or bacteria from bird and vermin droppings — particles too small for the basic filters these systems use. On cold winter mornings, when ventilation is most needed, roof air is very cold, and many homeowners simply switch the system off.

In modern, well-sealed homes, positive pressure systems carry a specific risk: by pressurising the interior, they can force moisture-laden air into wall cavities through downlights, power sockets, and ceiling penetrations. In cold wall cavities, this moisture condenses on timber framing — creating hidden mould that may only become apparent through smell, health problems, or structural damage. These systems are not recommended for airtight homes.

O P T I O N 4

Decentralised Heat Recovery Units

A relatively recent development, decentralised through-wall units offer a retrofit-friendly path to heat recovery ventilation without the cost and disruption of full ductwork. Each unit is installed directly through an external wall and contains its own fan and ceramic heat-exchange core.

The operating principle is elegant: the fan first extracts air from the room for approximately one minute, heating the ceramic core as the warm air passes through. It then reverses, drawing fresh air in from outside — pre-heated by the warm core. Multiple units in different rooms can be synchronised to run in opposite cycles, creating a basic whole-house airflow.

Decentralised units are a cost-effective upgrade for older homes or specific rooms, particularly when ductwork is not feasible. Their limitations: lower airflow capacity than centralised MVHR, standard filtration only, and the need for additional extraction fans in bathrooms and kitchens. Although they require thicker external walls than are typical of many New Zealand homes, Solutionair offers a market-specific installation kit, that can solve this issue, including retrofits.

O P T I O N 5

Balanced Ventilation with Heat Recovery (MVHR)

MVHR is the most comprehensive ventilation solution available. A central unit serves the entire home through two separate duct networks: one extracting stale air from wet rooms (bathrooms, WCs, kitchen, laundry), and one supplying fresh, filtered air to living spaces and bedrooms.

The extracted air passes through a heat exchanger, transferring its energy to the incoming fresh air. Critically, the two airstreams never mix — only heat is exchanged. A well-designed counterflow heat exchanger recovers 80–90% of the thermal energy from outgoing air, dramatically reducing energy losses compared to any other ventilation method.

**80–90%**

heat recovery efficiency

A quality MVHR heat exchanger recovers 80–90% of the heat from extracted air and transfers it to the incoming fresh supply — meaning you ventilate continuously without losing the energy you’ve spent heating your home.

MVHR systems operate continuously at low speeds — typically near-silent in living spaces — maintaining neutral air pressure throughout the home. Incoming air passes through filters that can range from basic dust filters to high-grade PM2.5 or HEPA filtration, removing pollen, fine particles, and other pollutants before they reach living spaces.

In summer, most modern MVHR units offer a bypass mode: the heat exchanger is bypassed, and cooler night air is drawn in directly, helping to flush out accumulated heat overnight. MVHR is the only ventilation solution that comprehensively addresses air quality, humidity, energy efficiency, and filtration in every room, throughout the year.

COMMON MISCONCEPTION

Air Conditioners Are Not Ventilation Systems

One of the most widespread misconceptions among New Zealand homeowners is that a heat pump or air conditioning system provides adequate ventilation. It does not.

Standard split-system heat pumps — the high-wall units found in most New Zealand homes — work by recirculating indoor air through a heating or cooling cycle. They do not introduce outdoor air. They simply modify the temperature of existing indoor air. Any pollutants, CO₂, or humidity already in the air will be redistributed, not removed. If someone in the household is unwell, an air conditioning system can actually spread airborne particles more widely.

Some premium ducted AC systems incorporate a fresh air intake, typically 10–20% of total airflow. While this is an improvement, fresh air only flows when the AC is actively running, bathrooms still require separate extraction, and most manufacturers recommend keeping the fresh air intake closed for maximum efficiency — prioritising energy savings over air quality.

KEY FACTS AT A GLANCE

Natural ventilation	Free, zero energy — but unreliable, no heat recovery, no filtration, causes heat loss
Extraction fans	Removes local moisture — but creates negative pressure, draws in unfiltered air, no fresh air supply
Positive pressure (HRV/DVS)	Can help in leaky older homes — risks mould in modern airtight homes, roof air quality concerns
Decentralised heat recovery	Retrofit-friendly, moderate efficiency — lower airflow, standard filtration, needs bathroom fans
MVHR (balanced ventilation)	Whole-house, 80–90% heat recovery, filters all incoming air, continuous, works in all seasons
Air conditioning	Improves thermal comfort — does not provide fresh air, recirculates indoor air only

COMING UP IN PART 4

Choosing, Costing & Caring for Your System

Now that you understand the options, Part 4 helps you make the decision: how to select the right MVHR unit for your home, what installation and ducting involve, realistic cost ranges for New Zealand, and how to keep your system performing well for years to come.



ADDRESS

1/27 Toiawaka Road, Drury 2579, Auckland

PHONE

0800 484 3269

EMAIL

enquiries@solutionair.co.nz

WEB

solutionair.co.nz