



# Passive Ventilation Solutions



# Let your building breathe

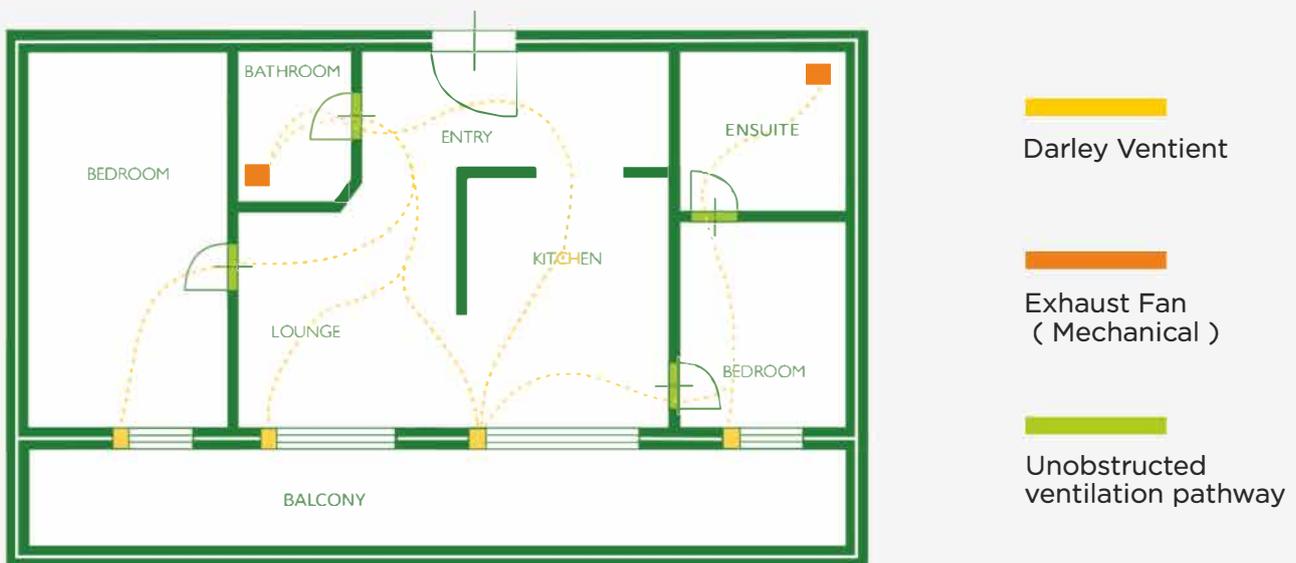
With changes to building standards and a greater emphasis on energy efficiency, buildings these days have become more air tight with fewer or no operable windows. This has led to a reduction in airflow and ventilation, resulting in poor indoor air quality.

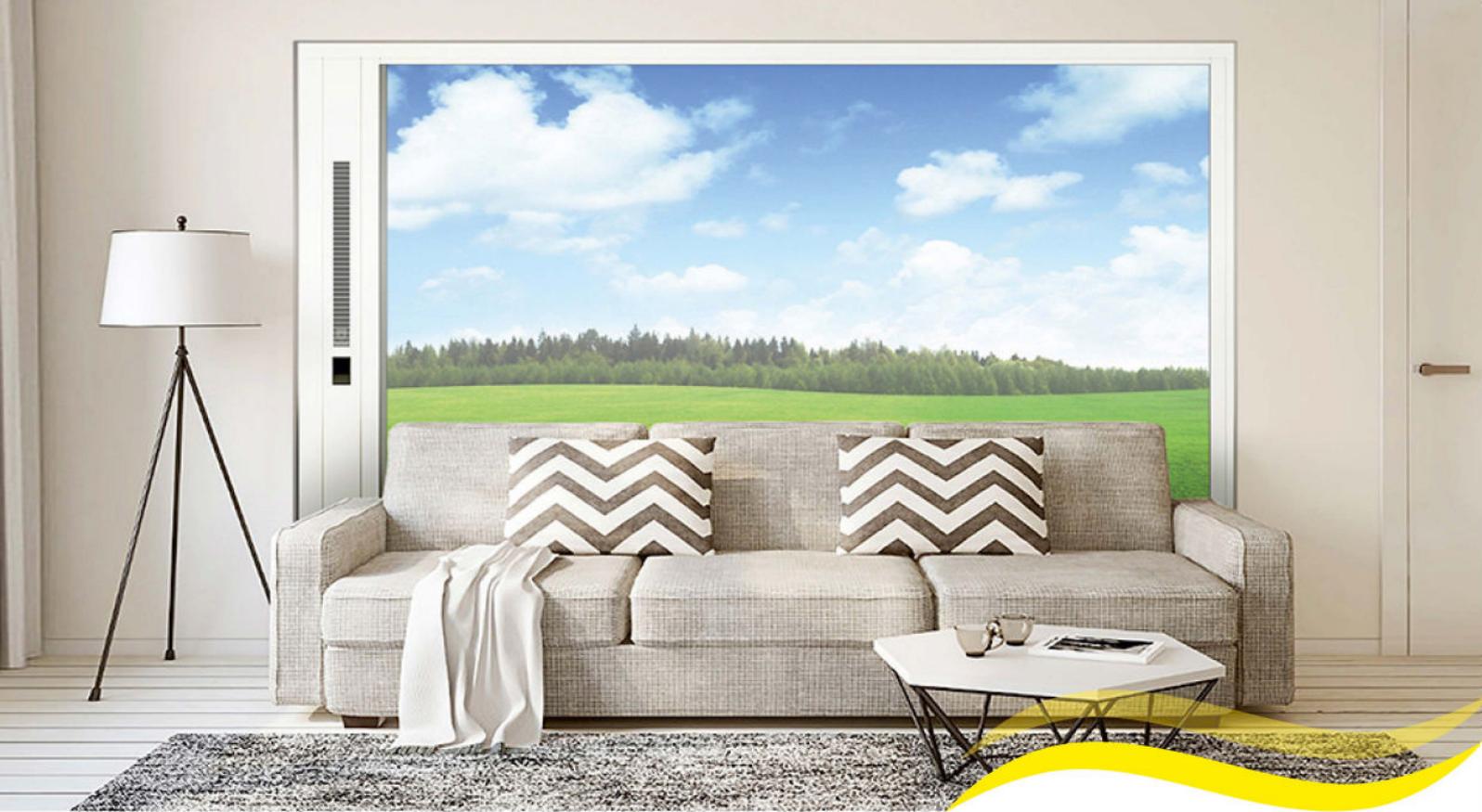
*Why not just open a window...*

As much as a window or door can provide fresh air and increase ventilation, it is not always practical to open a window or door due to noise pollution, security, or weather concerns.

These days we tend to rely on mechanical ventilation or air-conditioning systems to increase ventilation and airflow, which has led to an increase in the cost of energy consumption.

Darley's Ventient Trickle Ventilation System provides a low-cost energy efficient solution for managing passive airflow and ventilation.





# What is Ventient Trickle Ventilation System

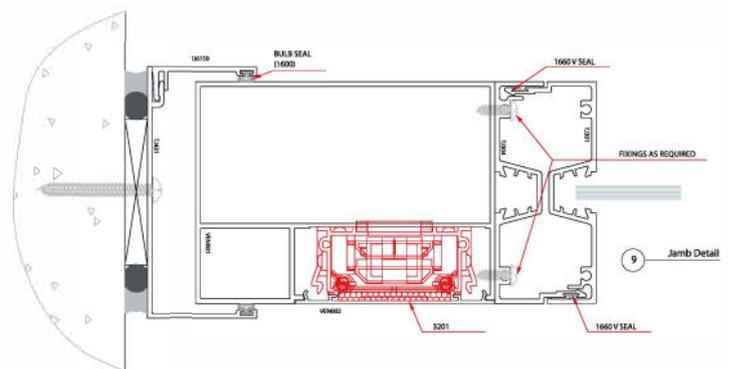
A trickle vent is a small opening in a building envelope component to allow small amounts of fresh air in spaces when major elements of design, like windows or doors are otherwise closed.

Darley's Ventient Trickle ventilation system provides fresh air from outside without the need for operable windows. It offers trickle ventilation through manual or automatic operation, and achieves a market leading 800 Pa water rating in both the open vent and closed vent position.

It can be used as part of a natural, mixed mode or other ventilation approach making use of outdoor/indoor pressure differentials to introduce fresh outside air.

All of which is done using an environmentally friendly technology that does not require an electrical power, sensors or human intervention.

By using state-of-the-art temperature perception technology, Ventient adjusts the volume of ventilation levels according to changes in ambient temperature.



# Applications



## Corporate offices

There is a strong link between poor indoor air quality and employee productivity and job satisfaction. Poor indoor air quality in corporate offices has been known to cause respiratory illness, headaches and fatigue amongst office workers.

Studies have shown that improved air quality significantly increases productivity and job satisfaction.



## Aged Care facilities

Poor indoor air quality is often blamed for asthma and other respiratory illness amongst residents in aged care facilities. Ventient is ideal for maintaining indoor air quality in situations where occupants are unable to or restricted from opening windows due to lack of mobility or fears relating to personal security.



## Residential

High levels of humidity can lead to increasing incidences of dust mites, mildew and mould in residential applications. Ventient can increase natural airflow in residential homes, making it healthier for the whole family.



## Schools & educational institutions

Higher concentrations of indoor carbon dioxide has long been linked to reduced concentration and productivity amongst students in schools and educational facilities.



## Hotels & Accommodation

It is important to provide adequate ventilation for rooms and spaces that are unoccupied for long periods of time. Ventient is the perfect solution for hotels and student accommodation.

# Key features and benefits



## Manual Override

Unlike other passive ventilation systems, the Ventient's unique vertical orientation means you can access the manual override function and customise the amount of airflow.

The Ventient also seamlessly integrates into the building envelope, making it easy to install into any conventional sub framing system.



## Unique Shape Memory Alloy Technology

Utilising a patented Shape Memory Alloy (SMA) technology, Ventient can automatically adjust the volume of ventilation levels according to the changes in ambient temperatures.

Its self-closing SMA springs operate seamlessly without the requirement of an external energy source. The springs also offer protection against harsh weather, with the vents automatically closing during fierce storms and unpredictable weather.



## Superior Air flow & Water rating performance

When compared to other passive ventilation systems on the market, Darley's Ventient has a higher water tightness rating of 800 Pa when closed and open. It also outperforms other ventilation systems when it comes to air flow rating. The vertical orientation of Ventient enhances gravitational pull, further increasing water and air flow ratings.



## Air Filter

Ventient is equipped with specialised dust and pollen air filters that can reduce up to 68% of typical airborne dust particles.



## Reduces Noise Pollution

Fitted with a proprietary sound absorption technology. Ventient absorbs sound and improves overall acoustical performance.



## Ease of Installation

With its vertical orientation, Ventient is easy to install and compatible with Darley's existing commercial and residential framing systems. Can easily be installed into any conventional sub framing system.



# Performance and testing

## Ventilation Rates Table

Specification	Result
Device Length (mm)	852
Open Ventilation Area (mm <sup>2</sup> )	13300
Effective Open Area (mm <sup>2</sup> )	5900
Ventilation Volume ( m <sup>3</sup> /hr at $\Delta P/9.8^{0.526}$ )	Q=46.3
Ventilation Volume ( l/s at $\Delta P/9.8^{0.526}$ )	Q=12.9

## 100mm WITH Dampener

Pressure Differential ( $\Delta P$ )	Ventilation Volume Result (l/s)
9.8 $\Delta P$	12.9
10 $\Delta P$	13.0
12 $\Delta P$	14.3
30 $\Delta P$	23.2
50 $\Delta P$	30.3
70 $\Delta P$	36.2
100 $\Delta P$	43.7

## Water Rating Table

System	Water Rating	Airflow
100mm DARLEY VENTIENT	800 Pa Open, 800 Pa Closed	14.3l/s @ 12 Pa

# Cross section of Ventient

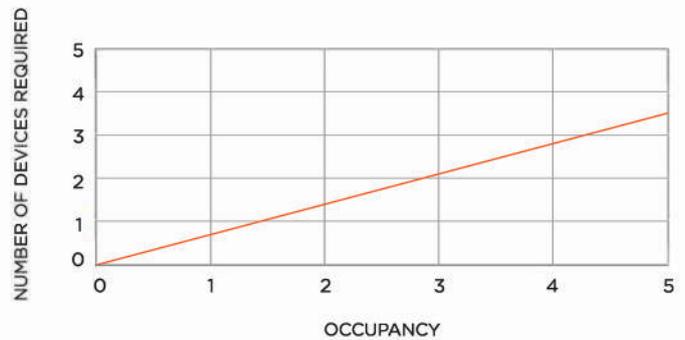


1 VEN001L LH Vent - 3m	1 VEN001R RH Vent - 3m
2 VEN002 Vent Cover 4m	3 3201 SCW-NS VENT 852mm Black
4 3206 Dampener	5 3207 Perforated Bent Mesh
6 3208 Ventient Foam Block Set	7 3209 Ventient Filter Mesh

## Litres per person table

Supply air at 10l/s per person design using (12Pa pressure differential)

 Darley Ventient  
100m, with Dampener





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Austral Lock

