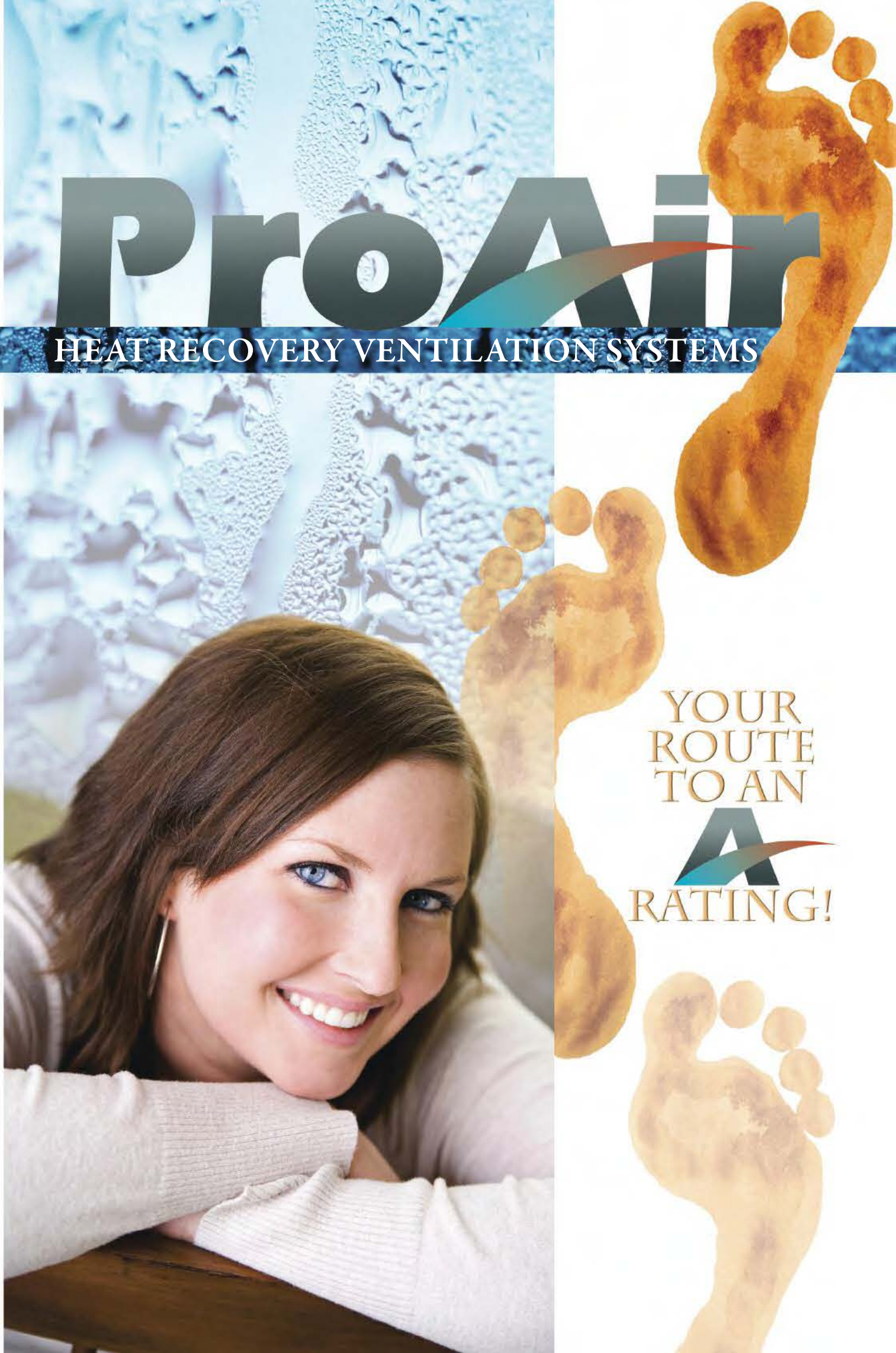
ProAir

HEAT RECOVERY VENTILATION SYSTEMS



YOUR ROUTE TO AN A RATING!

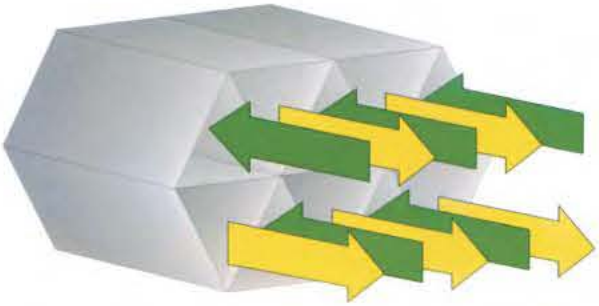


Figure 1. Counter-flow heat exchanger

Incoming fresh air

Outgoing exhaust air

The ProAir Whole House Ventilation System will provide you with a fresh, comfortable and healthy indoor environment, while saving you money constantly. Heat recovery ventilation technology recovers the heat energy in the exhaust air as it leaves the building and transfers it to the fresh air as it enters the building.

Heat Recovery Ventilation

People breathe by taking in air, using the oxygen and exhaling the waste. Buildings need to operate in a similar fashion, in order that they remain fresh and habitable. A certain amount of air needs to be continually taken in, and an equivalent amount exhausted to outside. The problem with this is that outside air is usually at the wrong temperature for consumption, and can prove costly to heat. An increasingly popular solution to this problem is to use the heat of the air being exhausted to warm the air being drawn in. As this is a process whereby heat is being **recovered** from the outgoing air, it is termed Heat Recovery Ventilation.

How does it work?

It works by enabling the two air streams (in and out) to move close to one another without actually mixing.

In this way, one air stream warms the other. This is done inside a counter-flow heat exchanger, which is made up of hundreds of individual air channels. A tiny section of the internal workings of the heat exchanger is shown above in Figure 1. This ingenious design is such that each incoming fresh air channel is surrounded by three outgoing exhaust air channels and vice versa. This means that there is a large heat exchange surface area and hence the high efficiencies.

The exchanger is a cleverly arranged collection of polystyrene sheets welded together, installed within a casing called an Air Handling Unit (AHU). This AHU also contains fans to drive the air in and out, and filters to clean it. The ProAir series of AHUs have been specially designed with this technology incorporated and can be sized to suit any residence, from the one bedroom apartment to your villa in the hills. ProAir's trained installation teams ensure that there is no disruption to the build process and magically make ducts disappear inside walls and ceiling spaces, with nothing visible except a small disc in each room.

Why ProAir HRV?

In these days of global warming and serious environmental issues we are urged to conserve energy in all aspects of our lives. We can contribute by making our homes as energy efficient as possible by ensuring insulation levels are as high as possible, and heat loss is minimised. This can only achieve so much because, as a practical unit, a house and its occupants will need to breathe, as we can't live in a sealed box. Without some ventilation, the many water sources within a home will cause condensation and the air people breathe can become stale and carbon dioxide laden. The answer to this is to have the air in your house regularly changed in a controlled, energy efficient manner, using a heat recovery ventilation system. This type of mechanical ventilation system has been around for decades, especially in the colder Scandinavian and Canadian climates, but has only achieved popularity in Ireland, the UK and mainland Europe in the last ten years or so. Our winter climate would not seem to be that cold but when we take our high humidity into consideration then HRV is a must. Like all technology, improvements are being made to the design all the time, and efficiencies have almost doubled in recent years. The ProAir System has efficiencies circa. 92%. This means that the fresh air being supplied to a building is virtually at the same temperature as that being exhausted, irrespective of outside air temperature. The fans in ProAir HRV Units are powered by new generation, high efficiency, Electronically Commutated (EC) motors.

All houses now require a Building Energy Rating (BER) certificate. Heat recovery is a key measure in achieving a high rating, i.e an A.rating.

Benefits

Economy

Reduces home heating costs

Health

Clean fresh air benefits everybody

Comfort

Closed windows and draught free ventilation

Energy Efficiency

Collects heat from the air leaving the building

Condensation Control

Continuous extraction from wet rooms

Security

Constantly locked windows means security

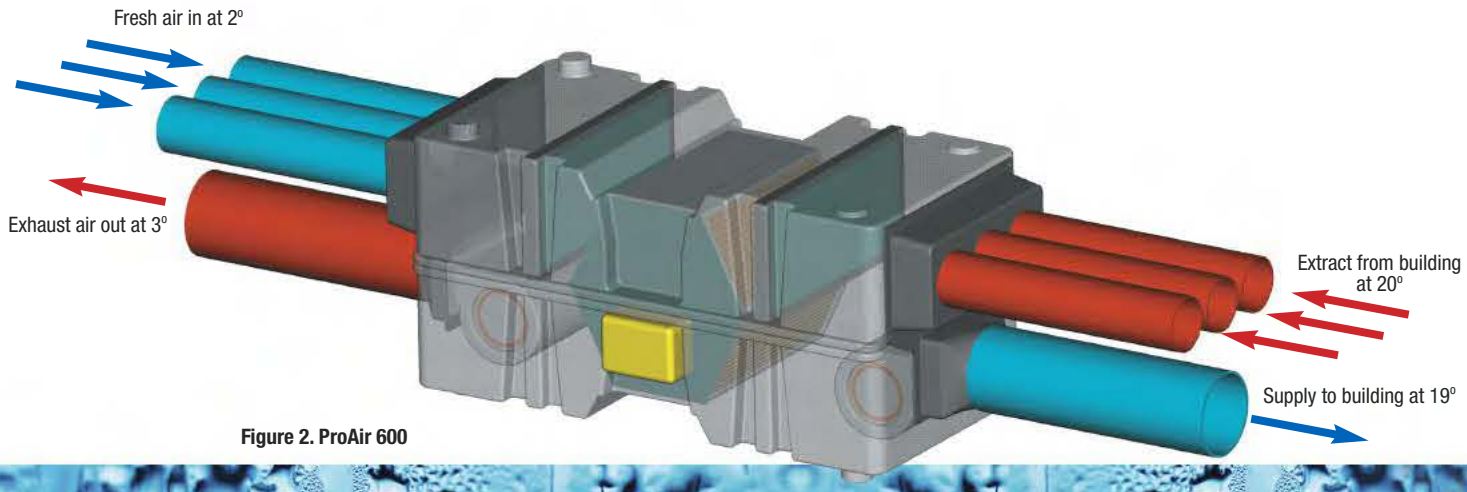


Figure 2. ProAir 600

Product Selection

Now that you have made the decision to adopt the high insulation – airtight – HRV strategy you will need to select your equipment with the following in mind:

- What size, in meters cubed, is your house?
- What kind of occupancy levels might you expect?

Our experience at ProAir is that one size will not fit all and as a result we are now in the process of producing the third unit in the series. The unit numbers are indicative of the size of the area they are designed to service in cubic meters.

Unit	Area Served M^2	Unit Dimensions MM	Power Consumption
PA200	40 - 75	L 400 W 400 H 400	15W - 35W
PA300	75 - 160	L 855 W 550 H 280	30W - 50W
PA600	160 - 300	L 995 W 490 H 495	45W - 90W

The Building Regulations regarding ventilation stipulate a minimum flow rate of 0.3 litres/sec/m² floor area, plus 4 litres/sec. extra for each person above a typical family of four. We at ProAir systems will design your system with this minimum rate in mind and will select the correct ProAir model or combination of models to provide you with the most cost effective and efficient solution.

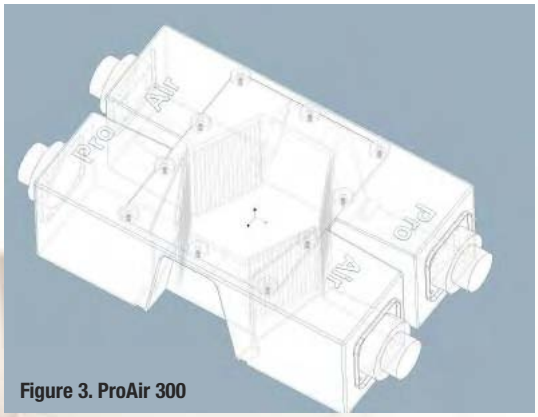


Figure 3. ProAir 300

ProAir Heat Recovery Ventilation Systems Ltd.
Weir Road Business Park, Tuam, Co. Galway.
Telephone: +353 (0)93 60892
LoCall: 1890 776 247 1890 PROAIR
Email: proair@proair.ie Website: www.proair.ie