Adroit™

adj. expert, intelligent, ingenious, adept

A NEW ERA IN WHOLE HOUSE VENTILATION

WELCOME

For over 60 years, Airflow has been forging a path of industry leading innovation in the design and manufacture of ventilation systems and air measuring instruments.

Airflow is committed to providing quality, reliable products for you and your family. Not happy with just maintaining the status quo, Airflow has developed the market changing Adroit Mechanical Ventilation with Heat Recovery (MVHR) unit.

During the course of this brochure, we will guide you through the many market leading features that you can expect by purchasing an Adroit. We believe in leaving no stone unturned and look to provide you with all the information that you will need for taking your first steps into installing our state-of-the-art Adroit unit.

Thank you for considering Airflow.

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HEALTHY HOMES

Protect you and your family by creating the healthiest home for all to live in

and reduce your carbon footprint

CLEAN AIR THINKING

Future proof your home with a state-of-the-art, internet controllable ventilation system and provide you and your family with the highest quality, warmed, fresh indoor air

Easy to maintain heat exchanger

HEALTHY HOMES

According to current predictions, the UK is set to fail to meeting 2020 European air quality targets, with poor air quality becoming a growing problem within the UK. Poor air quality is linked to health issues ranging from shortness of breath and fatigue, to aggravating existing respiratory issues such as asthma. It can also exacerbate more serious ailments such as heart disease and cancer. Over 40,000 premature deaths a year are linked to substandard air quality within the UK.

Poor air quality isn't limited to busy cities and industrial areas. There is a growing trend of poor air quality being found within modern homes. Currently, you are likely to spend up to 90% of your time indoors and numerous studies have found that indoor air can be up to 50% more polluted than outdoor air and can contain over 900 different chemicals.

Volatile Organic Compounds are organic compounds and chemicals that contain carbon along with elements such as oxygen, bromine, fluorine, sulphur, nitrogen, hydrogen or chlorine and are found in all living things. Sometimes referred to as VOCs, these can be emitted from paint, solvents, wood preservatives, aerosol sprays, household cleansers, disinfectants, fabrics and furnishings, air fresheners, scented candles, dry-cleaned clothing and pesticides. They can easily become airborne vapours or gases with particles that can potentially negatively impact your health.

The World Health Organization (WHO) takes the issue so seriously that in 2010 they issued 'Guidelines for indoor air quality: selected pollutants'. The report details WHO guidelines for the protection of public health from risks due to a number of chemicals commonly present in indoor air. The guidelines advise public health professionals involved in preventing health risks of environmental exposures, as well as specialists and authorities involved in the design and use of buildings, indoor materials and products. They also provide a scientific basis for legally enforceable standards around the world.

So why is this happening?

Poor indoor air quality is a result of the drive to improve energy efficiency of homes. The construction of new, modern homes has seen the buildings become increasingly air tight which limits the opportunity for pollutants and moisture to be removed from your home. Air tight homes experience an increase in damp and mould, which is a direct cause in the decline of the health in your home. Effective ventilation guarantees this excess moisture and airborne pollutants are removed from your home; leaving you with a clean and fresh air environment for you and your family.

Health experts recommend utilising an energy recovery system to ventilate your home; it is the modern, cost-effective whole house solution that provides an exemplary indoor air environment. Energy recovery is different from conventional extractor fans, as energy recovery units constantly ventilate your property by extracting stale air and replenishing the extracted air with fresh, clean air. Simultaneously energy is recovered from the warm outgoing air extracted from the cloakroom, en-suite, bathroom, utility and kitchen that would otherwise be lost. Used to warm the incoming supply air it helps reduce household energy bills over time. You can successfully install an effective energy recovery system from a small flat to a large detached property.

Your home only deserves the best, which is why we've developed Adroit MVHR units to provide you with unparalleled control so you can tailor your energy recovery system around your everyday life, enabling you to provide your home and family with the superior air quality that they deserve.

ENERGY RECOVERY

Continuously heat your incoming fresh, filtered air by warming it with the outgoing, extracted air. Recover the heat that would otherwise be wasted and recirculate it around your home in the fresh, filtered supply air. This also helps to reduce your energy bills whilst improving your indoor air quality

Fresh air in, pollutants out, heat recycled, excellent air quality for you

Fans perfectly balanced

IN BALANCE

Adroit helps you reduce your environmental impact by recovering up to 93% of the heat from the extracted air via a highly efficient conduction process. Energy rich extract air is passed over heat exchanger plates, which in turn warms the incoming supply air. The air streams remain separate during the heat recovery process so as to avoid any cross-contamination between the stale extract air and the clean incoming air. By recovering the warmth from the extracted waste air that would otherwise have been lost, you are able to reduce your household energy bills and minimise your carbon footprint. Protecting the environment doesn't come at the expense of performance, with Adroit able to ventilate up to 258 l/sec (DV245) air flow rate while being barely noticeable in operation at an extremely quiet 35dB(A) at the daily running rate (DV96).

Through recovering and reusing the heat from the extracted air, that otherwise would have been wasted, to warm the incoming air, heat recovery systems enable you to save energy by reducing the amount of time your conventional heating system is warming your home.

Adroit not only met the current 2016 ErP Eco Design Directive energy efficiency legislation but also complies with the much more stringent 2018 ErP requirements for reduced energy usage.

Adroit goes further by achieving the internationally recognised Passive House certification, based on;

- Outstanding thermal performance
- Effective heat recovery
- Efficient power consumption
- Air tightness of the casing
- Balancing adjustability
- Sound insulation
- Provision of superior air quality
- Frost protection

As a Passive House certified component, Adroit contributes to the design and development of an effective ventilation system in a highly energy efficient home.

Adroit is powered by the latest technology. Gone are the uneconomic AC motors and expensive DC motors. In are highly efficient Electronically Commutated motors. These speed controlled EC motors mean you do not use more energy than you need. Operating only "On Demand" they maintain their efficiency, what ever the application.

CLOUD CONNECTIVITY

Monitor and control your ventilation on the go, wherever you may be, with your smartphone, tablet or computer with ease and simplicity

Ability to fine tune airflow rates

CLOUD CONNECTIVITY

Airflow understands that everyday life is unpredictable, so Adroit is fitted with the latest in smart technology enabling you to monitor and even control your home ventilation with your smartphone, tablet or computer, wherever you may be. Connect to the Adroit Cloud to remotely control your ventilation through your internet connection. Accessible on any smart device, the convenient Adroit Cloud system assists you in providing the very best air quality to your family.

Plan ahead or change in an instant. With four user defined profiles, you can easily adjust your ventilation to match your spontaneity and maintain a healthy indoor air environment. By registering your unit with Adroit Cloud it is quicker and easier than ever to select the appropriate ventilation level on-the-go, allowing you to carry on with your daily routine.

Going out to dinner? Quickly log-in and easily switch Adroit to “Away” to guarantee you aren’t needlessly over-ventilating your home when nobody is at home.

Don’t want your children upsetting the air flow balance? You are able to minimize their access through password protection.

Support is never far away, as your dedicated Adroit support team can remotely monitor your unit, with your permission, to ensure that your Adroit is performing at its best and to provide assistance with any adjustments or operational changes that you may want to make.

CONVENIENCE

Be empowered to customise your ventilation around your everyday life

Sensors that control the Adroit

CONVENIENCE

Adroit can meet the demands of even the most rigorous ventilation installation requirements with ease, even those with longer ducting systems. This quiet power guarantees that there will be a constant stream of fresh air circulating around your home. When combined with the award-winning Airflex Pro semi-rigid ducting, Adroit provides your home with a zero-leakage, quiet ventilation system with outstanding performance.

Utilising a plastic cross-counter-flow heat exchanger the Adroit range (excluding DV245 and DV90) ensures that you recover exceptional levels of energy as part of the heat recovery process. Adroit's plastic cross-counter-flow heat exchangers can recover up to an incredible 93% of the thermal energy that would have been lost as part of the extraction process and recirculates it around your home.

Adroit is designed to fit around your home. No longer do you need to change the layout of your home to ensure you accommodate the system you deserve. With a variety of different installation options and a number of different sized units, Adroit is the perfect whole house solution no matter the dwelling size. Left hand, right hand, top entry and side entry models are available, ensuring Adroit provides a versatile and dynamic ventilation system for your home.

Automate your home's ventilation with the four user operating profiles:

Each user operating profile can be easily adjusted via your optional digital controller or manual switch controller or via the Adroit Cloud using a tablet, smartphone or computer.

Home - ideal for when the family are home from school and work and background ventilation is required

Away - perfect when everyone is out of the house or on vacation to avoid unnecessary energy use

Boost - cooking, bathing, hosting a party or having friends round? More ventilation, 'On-Demand' when you need it most

Fireplace - if you have an open flue, solid burner or stove, fireplace mode assists with lighting and ensures that the smoke and harmful fumes go up the chimney and not into the room. Alternatively, this profile can also be used as an additional ventilation setting

Note: For convenience of operation all Adroit units are supplied with an integral adjustable humidity sensor. Optional remote mounting Humidity and Carbon Dioxide (CO_2) sensors are also available for further control versatility.

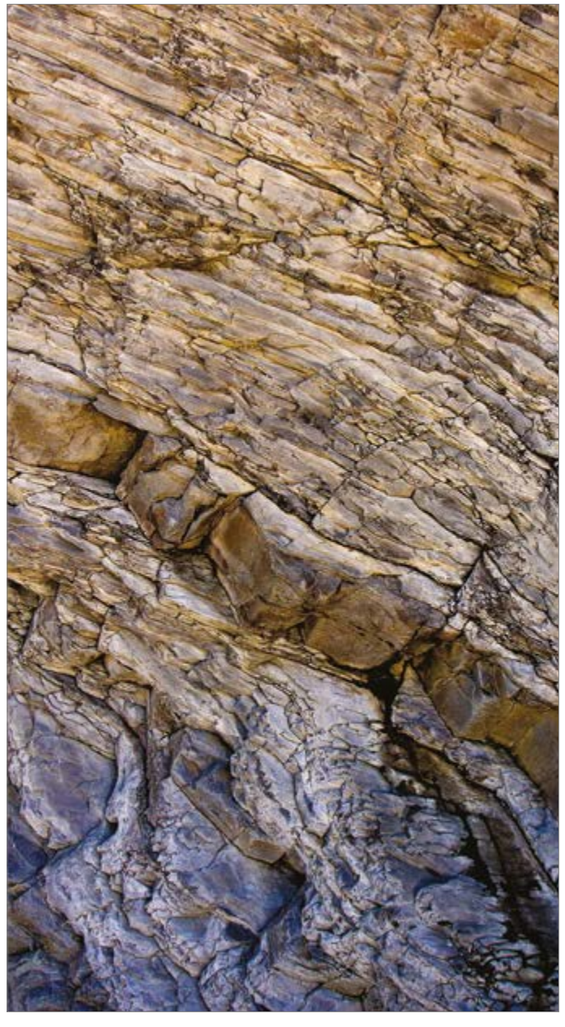
Your Adroit can also control your Brine to Air energy collector, should you choose this accessory. See page 42.

NATURAL FILTERING SOLUTIONS

Rhapis excelsa

Chlorophytum comosum vittatum

Chamaedorea seifritzii



2 x G4, 1 x F7 filters as standard

TRIPLE FILTER

Don’t suffer with polluted air entering your home. Thanks to Adroit’s standard triple filter design, you can guarantee that your indoor air quality remains at the highest levels at all times. All Adroit units contain two G4 filters and an F7 filter. The G4 filter also acts as a pre-filter to the fine grade F7 filter, extending filter life.

G4 coarse filters protect the unit’s heat exchanger from insects, leaves and other larger particles from entering and damaging the unit. G3 filters are typically used within the majority of MVHR units in the UK, Adroit uses the superior G4. However, they alone don’t protect you from pollen, dust and other airborne pollutants and irritants that can be commonplace.

Adroit puts your health at the forefront by incorporating an F7 fine filter to be used behind the G4 filter. This filter prevents even small pollutants from entering your home, to leaving you with a fresh and clean atmosphere. F7 filters are highly effective in filtering out small particles, such as dust and pollen, from the incoming air stream and improving the quality of air entering your home.

This superior triple filter system protects your Adroit unit and helps to prolong the life of your system and ensures you receive some of the freshest and healthiest air possible.

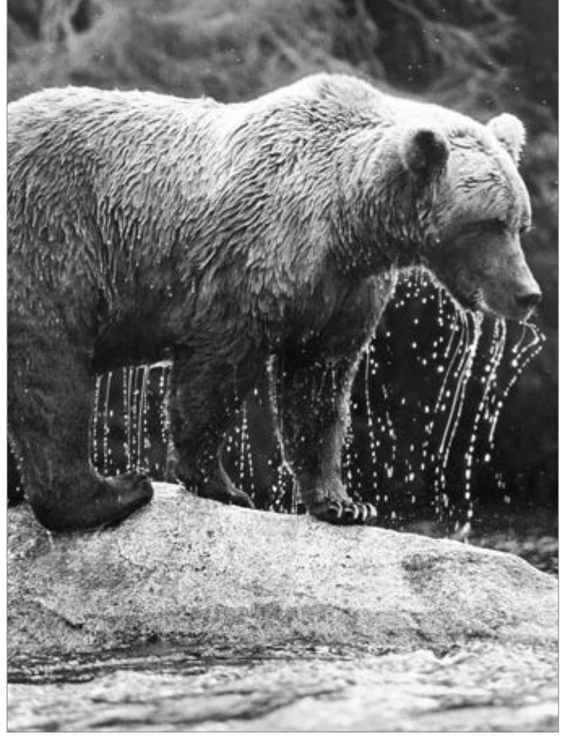
Adroit’s triple filter system is ideal for those with allergies and respiratory problems. When combined with Airflow’s award winning Airflex Pro ‘zero leakage’, semi rigid ducting system, with its antistatic and anti-bacterial lining, it will help reduce the airborne pollutants which cause the unwanted symptoms.

As with any mechanical filtration device to maintain optimum performance, filters should be inspected and checked regularly. Routine maintenance should be scheduled to clean the filters (vacuuming) or replacements as and when required.

Adroit is also perfect for those that just want the freshest air circulating around their home.

SUMMER BYPASS

Reduce the impact of overheating



Counteract overheating in your home

SUMMER BY-PASS

You want your home to be as energy efficient as possible. Part of this drive to improve the energy efficiency of homes has resulted in them being almost air tight, which improves the overall insulation of the home. Whilst fantastic during the winter, as you're able to keep more of the heat in, it may prove more problematic during the summer. This air tightness makes it more difficult for heat to escape from your home and when combined with large areas of glass panelling, with no shading, shutters or overhanging eaves to protect from direct sunlight, the net result can be a large amount of solar gain which will contribute to your home overheating. Closer attention to the building's design and the orientation of large windows can reduce or prevent over heating through solar gain.

However, you can reduce the effect of overheating within your home during the hot summer months thanks to Adroit's automatic, 100% summer by-pass. Adroit uses a sensor to continuously monitor the temperature of the incoming supply air. When the supply is detected above the maximum temperature threshold set, the by-pass activates and prevents the supply air entering the heat exchanger. By automatically bypassing the heat exchanger, Adroit prevents unnecessary heat recovery from taking place and circulates incoming air at the ambient outdoor temperature around your home, it is not a cooling system but it helps you maintain a more comfortable living environment during the summer. During the evening it can contribute to having some effect on cooling as normally the evenings are cooler during the warmer months of the year.

Further reductions of the incoming air temperature can be achieved during the summer months with the addition of an optional ground source temperature collector. Typically the temperature approximately 1.2m below the surface of the earth remains at a constant 8°C to 12°C. A Brine to Air energy collector working in conjunction with a heat exchanger can transfer this temperate effect into the incoming air of the Adroit unit, having a beneficial cooling effect on the air supplied to the dwelling. See more detail on page 42.

FROST PROTECTION

Pre-warm the incoming supply air and reduce energy and heating bills in the winter

Passive House and smart frost protection

FROST PROTECTION

Like lots of other MVHR units, Adroit stops the incoming air and uses the warm extracted air to defrost the heat recovery energy cell as and when needed for a matter of minutes.

Alternatively, Adroit's automatic smart frost protection feature protects both you and Adroit during the cold winter months and maintains the incoming air should the heat recovery energy cell become frozen (optional electric post-heater required).

Traditional electric frost protection devices use an electric heater to warm the cold incoming air as soon as the outdoor air temperature drops below zero. This can result in the heater operating for long periods of time, ramping up an expensive electricity bill.

Preventing the exchanger from freezing is an important consideration during the winter months but does not need to be a costly exercise. Through continuously monitoring the temperature of the supply air, your Adroit unit is able to automatically protect the heat exchanger by bypassing the exchanger when the temperature gets too low.

The smart frost protection system then heats the air and helps you maintain a healthy and warm indoor air environment during the cold winter months, whilst the extracted air then defrosts the heat recovery energy cell. By only activating when needed, Adroit's smart frost protection significantly reduces energy consumption in comparison to other defrosting systems.

This system can also be used to help reduce your energy costs during the cooler periods. It can be used to top up your heat when there is not yet a need to turn on your full heating system.

The smart frost protection system found within Adroit systems means the unit can be used to assist in achieving Passive House approval.

You could also, in addition or instead of the smart frost protection system, during the winter take advantage of the earth's constant under soil temperature with the addition of an optional ground source temperature collector. Typically the temperature approximately 1.2m below the surface of the earth remains at a constant 8°C to 12°C, even in cold European winters. A Brine to Air energy collector working in conjunction with a heat exchanger can transfer this free warming effect into the incoming air to the Adroit unit therefore having a beneficial heating effect on the air supplied to the dwelling. See more detail on page 42.

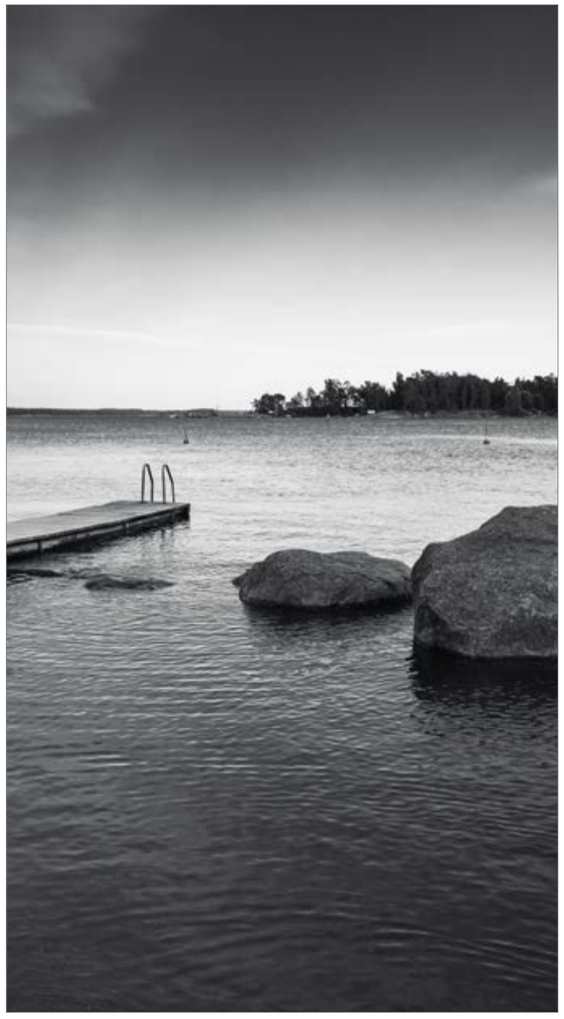
ADROIT POST HEATER

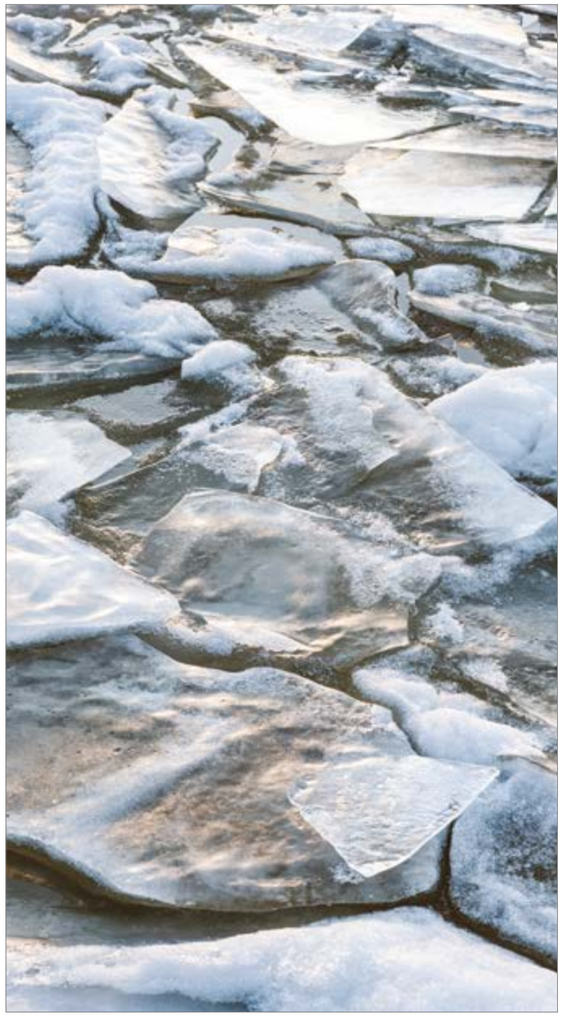
The Post Heater function works in two ways. Primarily it is an electric heater element (typically from 900w [DV96] to 3Kw [DV245]) positioned after the heat exchanger which automatically activates, at a user selectable temperature, to provide 'Top Up' warm air to the incoming (supply) air to habitable rooms. It boosts the heat input on particularly colder days when the process of recovering over 90% of heat via the exchanger does not achieve the desired internal temperature to maintain a comfortable indoor environment.

The Post Heater also acts as a Frost Prevention device to protect the heat exchanger from freezing due to low temperature incoming air. When such conditions prevail a valve is activated so that the cold incoming air bypasses the exchanger and is warmed by the Post Heater prior to entering the dwelling. In this mode the heat exchanger is further protected from freezing with the outgoing (extract)waste air diverted through the exchanger to maintain an above freezing temperature.

SILENCE IS GOLDEN

Create a relaxing and tranquil atmosphere





20 mm acoustic thermal linning

SILENCE IS GOLDEN

Modern life is becoming increasingly loud and stressful. Airflow has made it’s mission to not only curb indoor air pollution but to also reduce noise pollution too.

With daily noise almost unescapable, we set about ensuring that our household units were limiting noise ingress. Adroit was designed to not only provide clean and effective ventilation around your home but to also create a quiet, relaxing atmosphere within your home.

Thanks to its galvanised steel, double-skin casing with 20mm thick sound deadening insulation and no thermal bridging, between the panels, Adroit is able to offer a unit with superior noise suppression. The excellent insulation of Adroit helps to minimise the noise emanating from the casing and enables it to operate almost unnoticeably at a whisper quiet 35 dB(A) at the daily running rate (DV96).

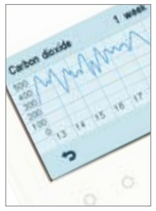
When combined with Airflow’s award winning Airflex Pro ‘zero leakage’ semi rigid ducting system, with its acoustically lined distribution boxes and direct duct to room connectivity, noise transmission between individual rooms is eliminated.

Virtually unnoticeably, Adroit is able to provide your home with the calming environment that you deserve.

RISE & SHINE

Prevent the build-up of pollutants even when you’re sleeping

100% adjustable ventilation, touch screen



RISE AND SHINE

Having purchased a new, modern property with excellent build quality for your family, you obviously want to give them the best home to live in. But did you know, the airtightness found in modern buildings, although great for energy efficiency, prevents airborne pollutants being removed from the property without adequate ventilation?

This trend applies to every room in the house, including bedrooms. If you shut any trickle vents, doors and windows when you're sleeping, you trap the airborne pollutants within the room. By trapping these pollutants within the room, you cause Carbon Dioxide to build up to harmful levels (over 1000ppm) during the night, which leads to a poorer night's sleep and even illness.

By ensuring that you have an effective air flow supply to your bedroom, you are able to dilute the pollutants down to healthy levels and as a result, improve your quality of sleep and minimise the health impact these pollutants cause to you and your family. You can rest assured, as Adroit is able to do this virtually silently so you will still get an excellent night's sleep whilst your Adroit system silently improves the quality of air in your bedroom.

Through using a ventilation system to supply fresh air to your bedroom, you are still able to keep your doors and windows shut when you're asleep and in turn minimise draughts and maintain the sense of security.

Simply combine your Adroit system with CO_2 sensors to enable your system to actively monitor the quality of the air in your bedroom and adjust the ventilation provided accordingly. This means that your ventilation system isn't over-ventilating your bedrooms when you're not using them and also guarantees that you have fresh, clean air being circulated when it's in use.

You can rest easy, knowing the air in yours and your family's bedrooms are healthy and also giving them a good night's sleep.

Airflex Pro 'Zero Leakage' Ducting

ROUND AND OVAL DUCTING

With the drive towards a more environmentally conscious world, the need to save energy and protect precious natural resources becomes ever more important.

Even at the residential installation level it makes no sense to specify eco-efficient ventilation with heat recovery appliances, if the benefits of regained heat are to be lost through a badly designed and poorly fitted ductwork system.

In 2010, the latest Building Regulations introduced a series of "Compliance Guides" to raise the standard of ductwork installations ensuring that the whole system, not just the appliance, is designed and installed to a high standard of integrity.

In particular, the "Domestic Ventilation Compliance Guide" details specific 'on-site' conditions that should be met as a means of achieving compliance with the ventilation requirements in the Building Regulations, Approved Document F and L independent guidance issued by the NHBC should also be considered.

Airflex Pro meets and exceeds all of the design expectations now placed on architects, consultants and installers of a ventilation system, by helping meet the challenge of saving energy and providing a 'Zero Leakage' system.

Semi Rigid ducting performance data is recognized by the U.K Government as an input for Standard Assessment Procedure (SAP) calculations via Appendix Q. It is also an important factor to incorporate in the overall Dwelling Emission Rate (DER) to achieve an energy efficient low carbon home.

Airflex Pro has been recognised for its outstanding technical design and 'Best Practise' installation capabilities by winning a prestigious ventilation industry 'Oscar', the H&V News Awards, Air Movement Product of the Year.

FREE ENERGY FROM THE EARTH

A Brine to Air Energy Collector assists with heating and cooling

A Brine to Air collector working in conjunction with a heat exchanger increases the efficiency of ventilation units, saves even more energy and reduces costs of heating and cooling to a minimum.

Advantages when used with Adroit ventilation units:

- Provides additional pre-heating during winter
- Adds a pleasant cooling effect on hot days

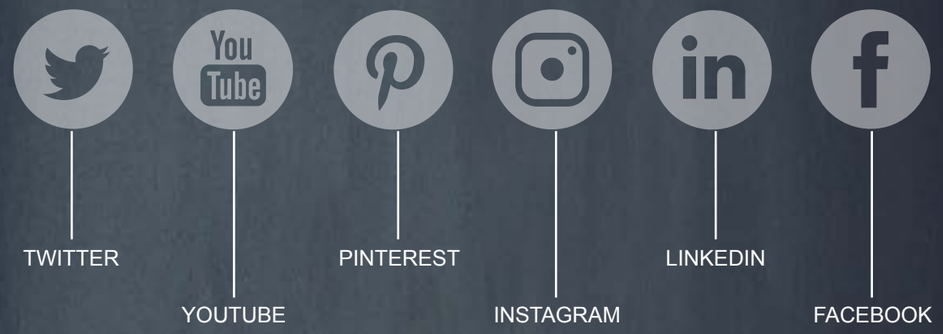
FUNCTION

The system uses the fact that the temperature below the ground is relatively constant over the year of between 8°C and 12°C, where a 32mm diameter undersoil collector hose is laid approximately 1.2m deep. A hydraulic pump circulates a brine liquid through the piping underground. The brine liquid serves as a heat transfer medium and delivers the liquid at the temperature underground to the supply air via a exchanger unit.

BENEFITS

- During winter it delivers a pre-heating of the cool outside air. This results in the intake air flowing into the ventilation unit usually above 0°C and therefore prevents the heat recovery energy cell from icing up. The benefits are a higher heat recovery factor and a higher supply air temperature. An additional heater is only needed on extremely cold days.

- During summer, the ground is significantly cooler at greater depths than the ambient temperature therefore it delivers cooling of the outside warmer air. On hot summer days, a cooling of the intake air leads to a noticeable effect on the room temperature. Used in conjunction with the 100% summer bypass ensuring the cooler incoming air is not warmed by the extracted air but supplied directly into the dwelling.



AIRFLOW CONNECTING

Stay up-to-date with the latest developments and updates affecting your Adroit unit via Airflow's social media channels

CONNECTING INTUITIVELY

Airflow believes in building long-lasting relationships with our customers. These relationships are key in understanding the needs of our customers and help us to improve our products and the services that we offer. One of the main methods Airflow uses to achieve this is through numerous social media channels.

With the world increasingly on-the-go and connected, our social media channels give you the opportunity to keep up-to-date with the latest developments surrounding air pollution and indoor air quality as well as being notified about software updates to your Adroit unit and updates about the rest of the Airflow product range.

Airflow provides regular updates across our channels so that you can keep abreast of the latest legislation changes that could have a knock on effect on you. There will be articles and blog posts shared that help you better understand some of the terminology used within the ventilation industry and also opportunities for you to provide your feedback about how we're doing.

Simply go any of the links below to follow Airflow and keep up-to-date with all things ventilation and air quality.

Hyperlinks:

Twitter	twitter.com/AirflowD
YouTube	https://www.youtube.com/user/AirflowDevelopments1
Pinterest	pinterest.com/AirflowD/
Instagram	https://www.instagram.com/airflowdevelopmentsltd/
LinkedIn	linkedin.com/company/airflow-developments-ltd
Facebook	facebook.com/AirflowDevelopments

Alternatively contact us on :

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Email:	info@airflow.com
www:	airflow.com

“Our focus is on what is valuable to our customer – a healthy and energy efficient indoor environment for their whole family”

OUR PRODUCT MANAGERS GUIDE YOU THROUGH THE PROCESS THAT LED TO ADROIT

On designing Adroit:

Krzysztof: “We put an emphasis on performance when designing Adroit and considered every detail that went into Adroit from the type of sensors, heat exchanger, filters and even the casing. We wanted to ensure that every aspect was technically as energy efficient as possible whilst still offering outstanding performance for our customer.

This starts with Adroit’s casing which keeps noise from the unit to a minimum, thereby ensuring a tranquil home environment for the family and also limits thermal bridging, guaranteeing outstanding performance of Adroit.”

Putting your health first:

Gregory: “With air pollution levels making the headlines for the wrong reasons, we made it our mission to manufacture a whole house MVHR system that will provide the highest indoor air quality possible. We have achieved this with Adroit, which has a unique triple filter system included as standard. This means that pollen and spores that aren’t filtered out by other systems are prevented from entering your home, leaving only the cleanest air being circulated around your home.”

On the design of the heat exchanger:

Krzysztof: “Cross-counter-flow heat exchangers were chosen to power our Adroit units as they offer market leading heat recovery performance. They are able to recover and reuse up to 93% of otherwise lost heat and are more compact than the other types of heat exchanger available. This enables us to design a more compact unit without compromising performance.”

Why empowerment is important:

Clive: “We understand that every customer is different. This includes their interpretation of what good ventilation and a comfortable living environment is. This is why we’ve designed Adroit Cloud and Adroit Digital Controller to interact with the individuals preferences for a comfortable environment.

Now you can tailor your ventilation around your life and not be dictated to by the ventilation unit. The Adroit Cloud and Adroit Digital Controller enable you to boost and decrease your levels of ventilation in an “On-Demand” manner whilst still guaranteeing excellent indoor air quality. You can even do this on-the-go via a smart device, such as your mobile phone or tablet.”

Krzysztof: “Adroits can also be integrated with Building Management Systems via the Modbus protocol; granting you even more control.”

On choosing a 100% summer by-pass facility:

Clive: “After comparing the two by-pass facilities available, thermal and 100%, we felt it was in our customer’s interest to have a by-pass facility that guarantees no unnecessary heat recovery takes place during the summer months. The 100% by-pass facility automatically re-routes the air stream around the heat exchanger when activated and guarantees that no unnecessary heat recovery takes place. This helps you maintain a comfortable indoor living environment.”

Practically automatic ventilation:

Gregory: “With CO_2 and Humidity sensors, you have fully automatic ventilation for your home. These sensors enable Adroit to adjust its levels of ventilation based on changes to the air quality found within the home. The sensors help to protect the health of you and your family by keeping CO_2 within safe, healthy levels.

By automatically adjusting the level of ventilation based on changes to humidity levels, Adroit ensures that excess moisture is swiftly removed from your home. This prevents the build-up of mould, damp and other issues that can seriously affect the health of your home as well as your own”

What is Smart Frost Protection?

Clive: “By incorporating the optional electric post-heater you receive energy efficient, smart frost protection. This protects Adroit from frost damage during the cold winter months. But unlike traditional frost protection, only activates when necessary. This saves you money and maximises the time which the heat exchanger of Adroit is in use.

Furthermore, you will receive a Passive House approved ventilation system by incorporating the post-heater into your Adroit unit. This will help you achieve outstanding levels of energy efficiency in your home.”

WE DESIGNED IT AROUND PEOPLE

Focus on the detail:

Krzysztof: “When designing Adroit we also wanted to think about the practical things in the way the user would use the unit. We know that from talking to users of MVHR units they don’t always turn the unit off when carrying out maintenance on the filters. What they don’t realise is that even a couple of minutes of not protecting the energy recovery cell with filters reduces its performance going forward, the filters are there to protect the energy cell as well as the family. Adroit does not allow you to change the filters without isolating the unit first, the unit stops as you remove the door. ”

Assisting the installer:

Clive: “One of the single biggest issues is when an install has not been balanced properly. Now that dwellings’ air leakage is very low it’s more important than ever to ensure that if, for example you need 50 litres of air an hour, both the fans are meeting that requirement. When the unit is delivered the fans are set at the same speed, I have not yet come across a situation where they should be left like this. Every install has at least 1 metre of extra ducting difference between the supply air and the extract air. Therefore, to keep 50 litres coming in and out of the dwelling one fan is going to have to work very slightly harder to achieve 50 litres than the other fan, with Adroit this can be done at the unit which can save many hours to the installer.”

Quality and warranty:

Krzysztof: “When Adroit was conceived we wanted to make sure that it delivered high standards, good quality and carried on the pedigree of the units that had gone before it. Airflow is part of a large international group that has been making MVHR units for in excess of 40 years unlike lots of other well known brands where it is recently new in comparison. Adroit has been certified by VTT Technical Research Centre of Finland Ltd which is the leading research and technology company in the Nordic countries, TÜV a European technical certification body, Passive House Institute, an independent research Institute from Germany, BRE (Building Research Establishment) In the UK, they exceed the requirements of the European Energy Related Product Eco Design Directive 2018. This means that a customer can be truly comfortable knowing that Adroit is designed to perform and last. That is why we give a 7 year warranty on Adroit.”

Please see page 55 for more detail on warranty terms and conditions.

Is there anything specifically unique in the range?

Clive: “Today lots of people want an MVHR unit but just cannot fit it into their home due to space availability. In towns and cities where storage space is so limited. Of course our health should be more valuable but unfortunately we don’t always look after the most important valuables in the way we should. We identified the space above a hob that is not maximised and in most instances just has an extractor hood or a recirculating hood. We designed an Adroit unit that can fit above the hob in the kitchen and still have an extractor hood. This is Ideal for apartments that still want good air quality but cannot afford to lose any storage space. Adroit is unique in that not only can it offer you a unit for above the hob but unlike some other units above hobs it does not stop extracting when the cooker hood is being used.”

Why do you recommend Airflex Pro with Adoit?

Clive: “We don’t just recommend Airflex pro with Adroit units, it can be used with any unit. Airflex Pro is a Semi Rigid Duct system that has many advantages over traditional rigid and flexible branch systems. Airflex Pro is a lot quicker to install (saving on labour charges), there are no joints that need to be glued and taped (unit does not need to be oversized to handle leaks), it is a radial system (no noise transfer between rooms), pipe bends easily (no need for expensive 90 degree elbows, that also add system pressure), smooth hygienic lining (reduces system pressure and dust collection), easy access for maintenance (Building Regulations state a requirement for access to ducting systems for cleaning). Airflex Pro can also be buried in concrete and comes in two sizes 75mm round and 110mm x 51mm. What is unique about Airflex Pro round and oval, is that it can be mixed as the hydraulic performance is the same therefore no gain in system pressure when mixing and matching. That said we always recommend using round where possible as it does not cost as much, then use oval only when you have to.”

STANDING OUT FOR ALL THE RIGHT REASONS

CREATIVITY & INVENTIVENESS ARE KEY IN AIRFLOW DESIGNS

“The double-skin casing minimises noise, maximises heat recovery and maintains long-term optimum performance.”

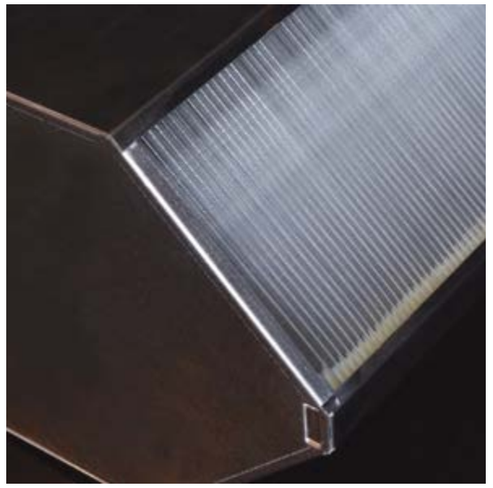
“The unique combination of G4 and F7 filters give you the highest air quality to breathe.”

“Reduce the impact of overheating in your home with the automatic, 100% by-pass ”

“Smart Frost Protection helps Adroit to keep you cosy during the winter.”

“An added value feature is the ability for you to “fine tune” the air flow rates during the initial commissioning process ”

“One of the most effective and easy to maintain heat exchangers can be found in Adroit.”



“Adroit does not allow you to change the filters without isolating the unit first, the unit stops as you remove the door.”

“The additional sensors automate your ventilation, leaving you to carry on with your day.”

TECHNOLOGY DEVELOPED WITH YOUR HEALTH IN MIND

Adroit™

Adroit units are high quality and efficient domestic mechanical supply and extract ventilation with heat recovery (MVHR) units. They are suitable for dwellings up to 400m² and can supply up to 258 l/sec (DV245). Adroit MVHR units have a number of different mounting positions including: wall, ceiling and floor.

The casing is made of a galvanised steel, double-skin that is powder coated (excluding DV50 and DV80) both internally and externally to meet hygiene requirements. It contains significant insulation that avoids thermal bridging and significantly reduces noise levels.

All units include an easily accessible and removable heat exchanger that recovers the heat from the outgoing airstream and uses this heat to pre-warm the incoming fresh air. At no point does the supply and extract airstreams mix.

The thermal efficiency of all Adroit units can reach up to 93%. When equipped with the electric post-heater, all Adroit models achieve Passive House approval.

KEY FEATURES

- For use in dwellings up to 400m²
- Extracts up to 258 l/sec
- Galvanised steel, double-skin casing
- Triple filter design with F7 pollen filter
- Up to 93% thermal efficiency and low SFP
- New smart frost protection*
- Automatic, 100% summer by-pass
- Auto electrical cut-out switch for extra safety
- Four speed digital control with LCD display** and BMS (Modbus / KNX) connection
- SAP Q and Passive House Institute certified
- Complies with Building Regulations
- 7 year warranty+

*when fitted with a post-heater **optional extra +see page 57 for terms and conditions

KEY DESIGN FEATURES TO CONSIDER

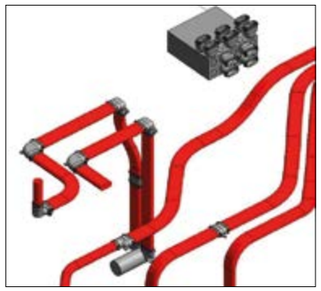
Attention to detail at the design stage will ensure your system performs effectively and efficiently year after year

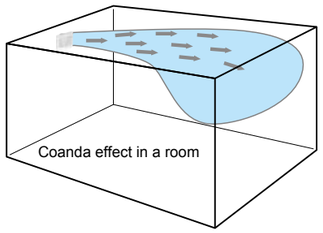
- **Unit Location** – Your unit must be accessible, so that you can carry out filter maintenance
- **Ideal Unit Locations** – Plantroom, Utility Room, Kitchen, Airing Cupboard, anywhere within the heated envelope of the dwelling
- **Internal Doors** – To meet Approved Document F regulations and to assist air movement around your home, a minimum gap of 10mm must be above the finished floor so after you have put down either a carpet, tiles, laminate floor etc.
- **Correct installation** – Remember to have your MVHR system installed and commissioned by a competent installer, a list is available from the NICEIC web site
- **Design change** – It is important that if the design changes when you come to install the system you check the change in system pressure (if increased) is still manageable for the unit that has been selected
- **Ducting** – Ensure it is kept inside the heated envelope of the dwelling to ensure maximum performance of the total system
- **Extractor hood** – The hood over the hob must be a RECIRCULATING hood and NOT an EXTRACTOR hood. You want it to capture grease only and let the heat be captured by the system
- **Extract and Supply Valves** – These should always be located as far away from the door as possible, unless using Coanda valves, this ensures that the room benefits to the maximum from the air being supplied or extracted
- **Windows & Doors** – These do not need trickle vents fitted, as per system 4 as the incoming air is supplied mechanically

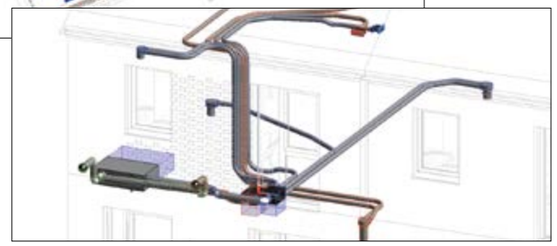
DESIGNING YOUR SYSTEM

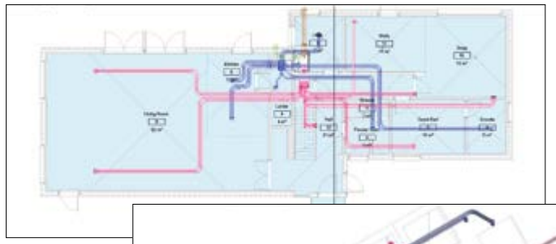
Our system designs use the latest CAD technology to create the perfect MVHR for your house.

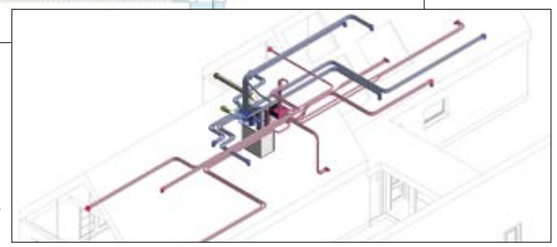
BIM (Building Information Modelling) files are available for all our units ensuring fast, accurate system design in the latest Revit software.











REMOVE HARMFUL INCOMING POLLUTANTS

High efficiency NO_x filters

Key features

- Filters particulate matter and gases to remove pollutants prior to the air entering buildings
- Additional filtration system above the air filters within the MVHR unit
- Filters up to 90% of harmful NOx particles out the incoming air
- Improves the indoor air quality
- Variety of sizes available to fit your MVHR unit

Nitrogen Oxide (NO_X) pollution, with other chemicals is linked to 40,000 premature UK deaths a year and is particularly prevalent in areas with heavy traffic such as industrial areas, busy roads and outside schools.

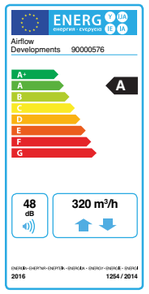
If you are living in a built-up area, it is important to ensure that you incorporate a NO_X filtration system as part of your wider ventilation system.

Airflow's NO_X filtration system works in conjunction with the unit's air filters to remove harmful air pollutants from the incoming air before it is distributed around the dwelling.

By ensuring that the incoming air is at healthy levels, you ensure that health and well-being of those inside is protected as well as improving persons concentration levels.

ErP RATING

Adroit units meet the requirements set out by the Energy Related Products (ErP) Eco Design Directive 2009/125/EC 2016. Adroit also complies with the more stringent 2018 ErP with models achieving an A rating for reduced energy usage. You can find more information regarding the ErP Directive as well as the Energy Rating technical data information reports (Fiche and Labels) for Adroit units at: **www.airflow.com**



PASSIVE HOUSE CERTIFICATION

All Adroit units are tested and certified by the Passive House Institute based on the following criteria:

- Outstanding thermal performance
- Effective heat recovery
- Electric power consumption
- Air tightness
- Balancing adjustability
- Sound insulation
- Indoor air quality
- Frost protection.

Adroit units achieve Passive House approval when equipped with the optional electric post-heater.

TUV

The Adroit range is certified by TÜV, a European technical certification body that offers independent third-party assessments to EN308. This technical standard defines test procedures for establishing the performance of air to air heat recovery devices in accordance with published criteria and provides the customer with the confidence that Adroit units have been independently verified to deliver outstanding performance with quality manufacture.

SAP

Adroit units are tested and certified by the BRE (Building Research Establishment) and are eligible for the SAP Q. Details about the SAP Q test results of all Adroit units can be found on their product page on the Airflow website: **www.airflow.com**

VTT CERTIFICATE

A certificate given by an independent organisation, such as VTT Technical Research Centre of Finland Ltd in Finland, is proof of the energy efficiency of a ventilation unit, i.e. on the annual efficiency of heat recovery and Specific Fan Power. It also shows that the defrost function of the unit operates reliably and that the characteristics related to heat, flow, tightness, filtering and sound fulfil the requirements set forth for the certification process.

The certificates given by VTT show that Vallox (Adroit) ventilation units have a top-class annual efficiency and SFP.

ISO 9001 2015

ISO 14001 2015

WARRANTY

All Adroit units come with a standard 7 year warranty (excluding motors which are for one year)

The warranty is only available by ensuring that your Adroit unit and Airflex Pro System is fitted by a qualified installer who is registered under the Competent Ventilation Installer Scheme operated by the NICEIC. Installers who are registered with this scheme have demonstrated a high degree of competence in MVHR Installation. They are audited annually and for you, as a customer, there is the peace of mind of a Platinum Promise Guarantee provided by NICEIC so that in the unlikely event of a problem with the installation NICEIC will, at their own expense, bring the installation up to the required standard.

Visit https://**www.niceic.com/find-a-contractor/platinum-promise**

ADROIT FAMILY

DV50 Adroit

169 m³/hr / 47 l/sec
Side entry.
Ceiling installation

DV80 Adroit

285 m³/hr / 79 l/sec
Side entry.
Ceiling installation

DV96 Adroit

295 m³/hr / 82 l/sec
Top entry.
Wall / Ceiling installation

DV110 Adroit

349 m³/hr / 97 l/sec
Top entry.
Wall / Ceiling installation

DV145 Adroit

542 m³/hr / 151 l/sec
Top entry.
Wall / Floor installation

DV245 Adroit

929 m³/hr / 258 l/sec
Top entry.
Floor installation

DV90K Adroit

252 m³/hr / 70 l/sec
MVHR unit equipped with
a cooker hood

GBA Heat Exchanger

Brine to Air highly efficient
heat exchanger

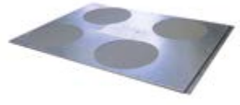
DETAILED INFORMATION
AT YOUR FINGER TIPS
airflow.com

ADROIT ACCESSORIES

Electric Post-Heater

Post heater used to top up
supply air temperature

Attic Floor Plate



For use with DV96,
DV110, DV145
Used to seal the ducts
connection between
dwelling and attic

Ceiling Mounting Plate

For use with DV96, DV110
Enables suspending Adroit
unit from the ceiling

Floor Stand

For use with DV145
For floor installation.
Adjustable legs ensure
proper levelling

Adroit Digital Controller

4 user profiles
100% adjustable
ventilation

Manual Controller

Wall mounted, four speed
(independently adjustable)
rotary switch controller

CO_2 Transmitter

Sensor used for detecting
and controlling carbon
dioxide concentration

Humidity Transmitter

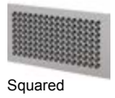
Sensor used for detecting
and controlling humidity
concentration

Floor Grille

Suitable stainless steel grille for outlets

Satin stainless steel air volume adjustable via setting disc fits

Wall Grille



Available as white powder coated grilles or brushed stainless steel

Extract Air Valve

Fire protection air valve, fuseable link releases when temperature reaches 72°C, seals from fire and smoke

Extract Air Valve

Adjustable air valve, fully adjustable with locking mechanism

Supply Air Valve

Suppied with guide baffles to direct the airflow in the direction of your choice. Fully adjustable with locking mechanism

Coanda Supply Air Valve

More even distribution of supply air across room. Can be used for extract without coanda effect

Supply Air Valve

Supply valve for wall or ceiling. Adjustable flow rate

Extract Air Valve

Extract valve for wall or ceiling. Adjustable flow rate

Aluminium Wall Grille

Air volume adjustable via horizontal and vertical fins fits with straight wall outlet and 90° Wall outlet. Also fits to 204mm x 60mm ducting

Supply / Extract Valve

Stylish supply / extract valve with filter. Replacements available

Supply / Extract Valve

Stylish supply / extract valve with filter. Replacements available

Round Cowl / Louvres

Outside stainless steel grilles for greater weather protection with aesthetic appeal

Round Cowl / Mesh

Outside stainless steel grilles for greater weather protection with aesthetic appeal

Regal Side Entry Cowl

Side entry cowl to suit 125mm, 160mm,180mm ISO ducting

Regal Front Entry Cowl

Front entry cowl to suit 125mm, 160mm,180mm ISO ducting

Roof Terminal &Adaptor

Universal roof terminal and adapter, available in 3 colours, Anthracite, Sepia and Terracotta

ADROIT QUALITY COMPONENTS

Actuator

A top quality component to move the by-pass damper

BELIMO

A worldwide leader in the manufacture of electronic actuators used in HVAC systems. Combining innovation with reliability and low energy consumption these actuators operate for many years giving trouble free service. Safety is also a feature of Belimo actuators ensuring Adroit summer by-pass functionality operates efficiently and effectively.

Fan

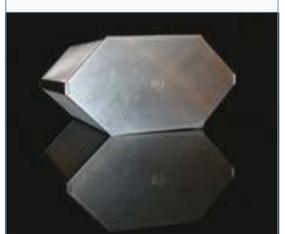
Excellent performance combined with low power consumption and quiet operation

EBM PAPST

A worldwide market leader manufacturing fans and motors with over 15,000 different products. Modular design centrifugal fans with galvanised casings, sound deadening supports and high efficiency impellers.

Adroit units are equipped with EC motors, which combine very good control characteristics and low power consumption.

Heat Recovery Cell



Highly efficient counterflow plastic heat exchanger

KLINGENBURG

Specialists manufacturers of heat recovery exchangers. Their products meet the highest quality manufacturers of, ensuring long life and maximum efficiency. Known as one of the most innovative heat recovery components supplier, whose policy is to maintain high quality standards and constantly innovate new product designs.

Components

Installation

FREE WARMTH FROM THE EARTH
A Brine to Air Energy Collector

A Brine to Air energy collector working in conjunction with a heat exchanger increases the efficiency of ventilation units, saves even more energy and reduces costs of heating and cooling to a minimum.

Advantages when used with Adroit ventilation units:

- Provides additional pre-heating during winter
- Adds a pleasant cooling effect on hot days

FUNCTION

The system uses the fact that the temperature below the ground is relatively constant over the year. A 32mm diameter undersoil collector hose is laid approximately 1.2m deep. A hydraulic pump circulates a brine liquid through the piping underground. The brine liquid serves as heat transfer medium and delivers the heat to the supply air via the heat exchanger unit.

CONTROL

When connected to Adroit, the operation of the pump is regulated by temperature sensors in the units control system.

In winter, when the outside air temperature falls below 5°C, the pump will activate to circulate a warming effect from the Brine solution through a heat exchanger, into the Adroits' incoming air.

In summer, when supply air temperature is higher than requested temperature, the pump will activate to circulate a cooling effect from the Brine solution, through a heat exchanger into the Adroits' incoming air.

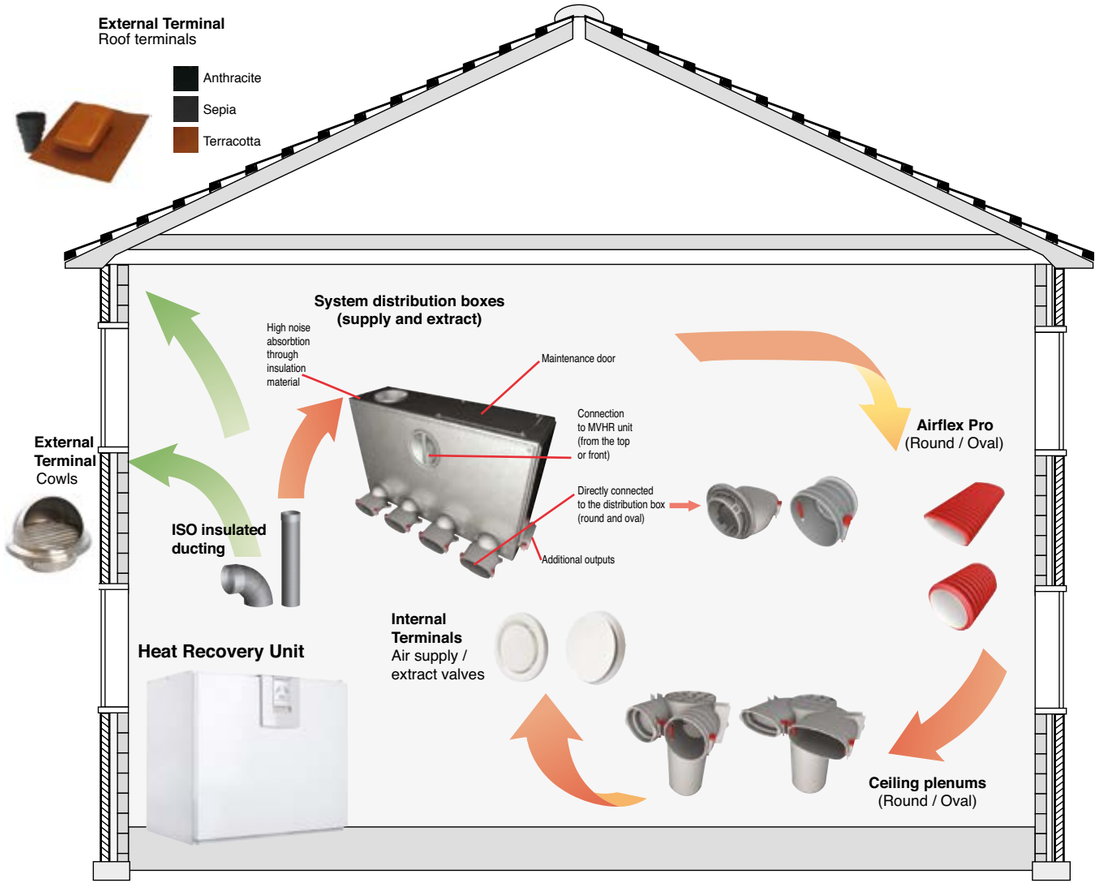
INSTALLATION

- To ensure the highest possible heat transfer, the undersoil collector hose should be laid in at least 1.2m depth as there is a constant temperature of about 8 - 12°C throughout the year. The soil temperature increases the deeper the ducts are laid and become constant.
- An alternative to laying the hose horizontally in a zigzag arrangement under the soil is a vertical bore hole which can be used.

COMPONENTS

- Brine-pump unit (230V)
- Automatic protection against reverse flow
- Temperature gauges for flow and return
- Pressure expansion tank – 12 litres including the wall bracket and stop valve for maintenance
- Brine to Air heat exchanger
- Ground to Brine energy collector hose

TYPICAL ADROIT AND AIRFLEX PRO SYSTEM SCHEMATIC



MORE ACCESSORIES FOR YOUR ADROIT UNIT

Condensation Pump

Your Adroit requires a condensation drain. This pump enables you to locate the unit conveniently while draining condensate up to 10m away.

Flexible Attenuator

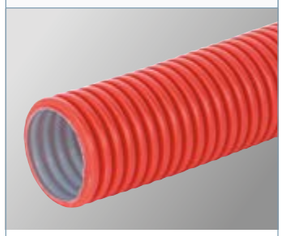
Reduce the possibility of noise even further with these flexible attenuators

Boost Switch

Remote boost switch should you want to manually increase the airflow for a period

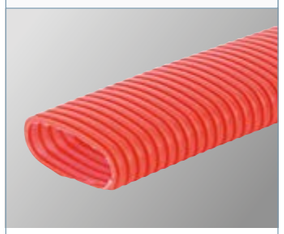
AIRFLEX PRO - DUCTING

Round Ducting



75mm round
50m coil round

Oval Ducting



51mm x 114mm oval
20m coil

AIRFLEX PRO - KEY FEATURES

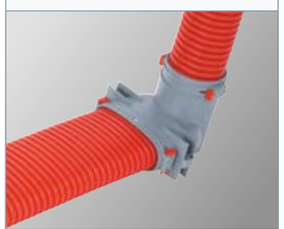
- Zero leakage ensures highest performance
- 70% time saving on installation saving labour charges
- Interchangeable ducting system (75mm round / 51mm x 114mm oval) without any hydraulic pressure loss
- Low system pressure
- Compact, suits narrow joists and low ceiling voids
- Durable with high crushability (13 kN/m²) withstands external pressure to EN ISO 9969
- Smooth bore with antistatic and antibacterial lining
- Easy to clean when installed
- SAP Q eligible ducting
- Radial system so no noise transfer between rooms
- Can be set in screeds for floor positioning
- Ducting comes in coils 75mm x 50mtr & 51mm x 114mm x 20mtr

AIRFLEX PRO DUCT PRESSURE LOSS (75MM ROUND / 51MM OVAL)

Air Volume Cubic Metres per Hour	6	11	17	22	28	30	33	39	45
Air Velocity Metres per Second	0.5	1	1.5	2	2.5	2.7	3	3.5	4
Resistance Pascal per Metre	0	0.5	0.8	1.5	2.2	3	4	5	6

HEVIEWS AWARDS 2014 — 20th ANNIVERSARY — WINNER

Round and Oval



Semi rigid ducting, mix and match, round and oval without loss of performance

Airflex Pro Distribution Boxes

Provides primary a distribution point for Airflex Pro Round and Oval ducting from the Heat Recovery or Ventilation unit from 5 to 15 ports with various dimensions and discharge positions.

ADROIT TECHNICAL DATA

Specification	DV96	DV110	DV145	DV245	DV50	DV80	DV90K
Suitable for dwellings up to m^2	130	170	250	400	80	120	120
Max air flow (m^3/hr) / (l/sec) at 100Pa.	295 / 82	349 / 97	542 / 151	929 / 258	169 / 47	285 / 79	252 / 70
Thermal efficiency (%)	Up to 90	Up to 90	Up to 90	Up to 90	Up to 90	Up to 90	Up to 83
Heat exchanger	Cross-Counter-Flow (Plastic)			Cross-Counter-Flow (Aluminium)	Cross-Counter-Flow (Plastic)		Cross-Counter-Flow (Aluminium)
Fans	EC						
Summer by-pass damper	100% automatic						
Integral humidity sensor (RH %)	0 - 100						
Frost protection	Smart Frost (optional)						Stops supply fan
Controls (optional)	Digital - 4 Profile, 100% adjustable, Manual - 4 Speed controller, adjustable						
Connection to BMS	Modbus / KNX optional						
Mounting	Wall / Ceiling		Wall / Floor	Floor	Ceiling		Wall
Sound Power Level (dB(A))	48	49	50	53	49	52	42
Duct Diameter (mm)	125 (4 ports)	160 (4 ports)	200 (4 ports)	250 (4 ports)	100 (4 ports)	125 (4 ports)	125 (4 ports)
Condensate discharge (ins)	3/4 BSP						
Electrical supply	230V / 1ph / 50Hz						
Max. Power Consumption (W)	182	213	310	314	96	158	184
Filter Class	2 x G4, 1 x F7						
Built-in Electric post-heater (optional) (W)	900	900	2400 (900 + 1500)	3000 (2 x 1500)	900	900	900
Protection class	IP34						
Casing insulation (mm)		20		50		20	
Weight (kg)	53	64	88	200	45	59	52
Dimensions (L x D x H) (mm)	600 x 430 x 545	638 x 472 x 678	717 x 578 x 748	1038 x 773 x 1226 - 1244	900 x 547 x 236	1026 x 626 x 293	597 x 346 x 798
Entry	Top Entry				Side Entry		Top Entry
Right Hand Unit **With optional electric post-heater**	**90000576** **90000576EPH**	**90000578** **90000578EPH**	**90000580** **90000580EPH**	**90000582** **90000582EPH**	**90000584** **90000584EPH**	**90000586** **90000586EPH**	**90000663** **90000663EPH** **Cooker hood: 90000669**
Left Hand Unit **With optional electric post-heater**	**90000577** **90000577EPH**	**90000579** **90000579EPH**	**90000581** **90000581EPH**	**90000583** **90000583EPH**	**90000585** **90000585EPH**	**90000587** **90000587EPH**	**90000664** **90000664EPH** **Cooker hood: 90000669**
Accessories							
Electric post-heater **Right hand unit** **Left hand unit**	 90000614 90000615	 90000616 90000617	 90000624 90000625	90000630	 90000626 90000627	 90000626 90000627	90000968
Attic Floor Plate	90000718	90000719	90000720	-	-	-	-
Ceiling Mounting Plate	90000716	90000717	-	-	-	-	-
Floor Stand	-	-	90000722	-	-	-	-
Adroit Digital Controller	90000610						
Manual Controller	9041219						-
CO_2 Transmitter	90000613						
Humidity Transmitter	90000612						
Condensation pump	90000951						
Flexible Attenuator	90000643	90000645	90000646	90000647	90000642	90000643	90000643
Boost Switch	90000542						

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All orders are accepted subject to our terms and conditions of sale which are available on request.

Choosing Adroit over another MVHR unit means you are investing in the quality of your indoor air and your family's health and well-being.

Your family and your home are the most important valuables in your life, Adroit will help you create a home to nurture and grow your family in an environment they can thrive in.

Your Adroit unit will deliver many years of high quality performance and service for you and your home.

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