INGENIOUS AIR

INGENIOUS AIR®

System Overview

DISCOVER HOW TO PROVIDE THE **ULTIMATE** INDOOR CLIMATE

2018

+44 1268 544530

www.ingenious-air.com

The Laindon Barn, SS15 4DB

info@ingenious-air.com

CONTENTS

3 Our Story

4 Improving Indoor Climate Quality

5 System Components

6 Discover How It Works

7 Optional Modules

8 Multiple Controls Options

9 Discreet Air Outlets

10 Induction Air Delivery

11 Small Flexible Ductwork

12 Modular Air Handling Unit

13 Renewable Energy Source

14 Ingenious Solar

15 Read to Learn More?

16 Contact Information

Our

STORY

Since 2010 we've made it our mission to not only improve the air conditioning industry but to change it for the better. This inspired our motto 'Change Is in the Air'. With over 35 years of industry experience, we are incredibly passionate about creating the ultimate indoor climate. In fact, you could say we live and breathe it.

It all started with our original goal: to eliminate thermal problems including being too cold, too hot or even 'over air-conditioned'. However, as time went on, we started to notice there was a more significant problem that wasn't being addressed; indoor air pollution.

With concerns only growing, we decided it was up to us to take action. Alongside our original goal, we set out to make poor indoor air quality a thing of the past. Our drive is to actively improve indoor climate quality, enhancing comfort and maximising welfare.

Throughout our journey, our ethos 'Enhance Well-being, Enable Performance, Enrich Lives' has remained at the root of everything we do.

Fast forward to today, our vision is to provide everyone with the opportunity to live and work in a healthy environment. This is achieved by the award-winning Ingenious Air® System; The all-in-one solution with a multitude of features and benefits.

Improving

INDOOR CLIMATE QUALITY

In alignment with Indoor Climate Quality's (ICQ) guidelines, The Ingenious Air Company's motivation is to create the ultimate indoor climate.

We actively improve indoor air quality and ensure a comfortable and productive environment.

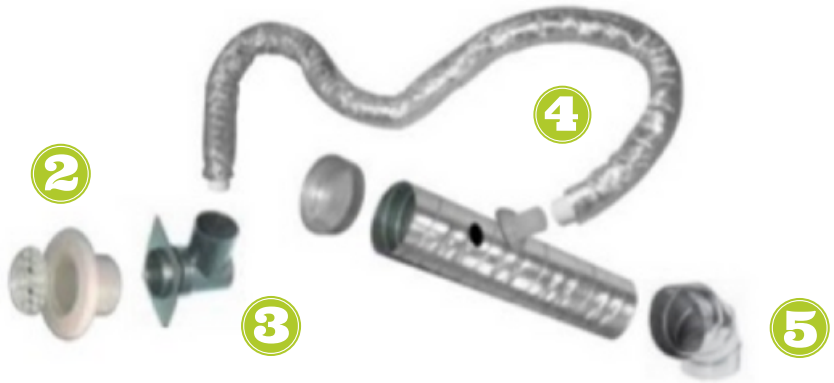
We strongly believe that everyone should live and work in a healthy environment.

We provide a safe haven through purification, dramatically reducing disease-causing viruses and bacteria, allergens and dust.

The advanced technology means air is completely purified, especially in those hard to reach areas.

System

COMPONENTS



1. Control Options
2. Discreet Air Outlet
3. Rough-in Boot
4. Flexible Mini Duct
5. Elbow Connector
6. Branch Take-Off
7. Plenum Duct
8. End Cap
9. Tee Connector
10. Return Air Box
11. Printed Circuit Board
12. Heating/Cooling Source

Discover

HOW IT WORKS

The innovative Ingenious Air® Small Duct System is a revolutionary induction indoor air distribution system, which solves all five factors of Indoor Climate Quality (ICQ) and more.

It creates the ultimate and holistic indoor climate solution, dealing with comfort problems of draughts, hot/cold spots and feeling 'over-air conditioned'. This is achieved by formulating draught-free, evenly temperature-controlled air.

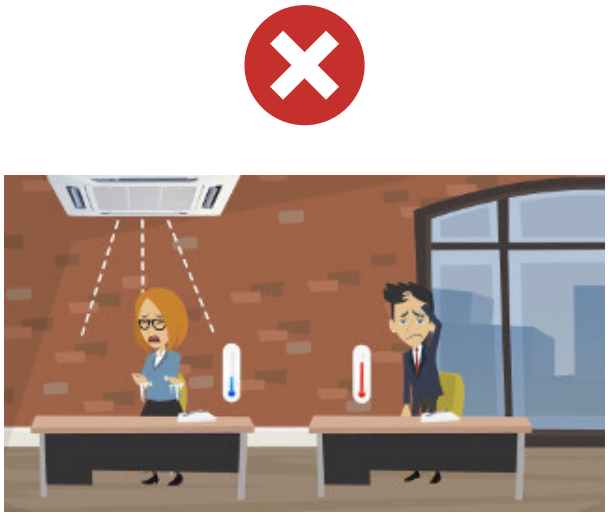
The induction air movement pattern works differently from other air conditioning systems to provide the ultimate thermal environment that all occupants can feel comfortable in.

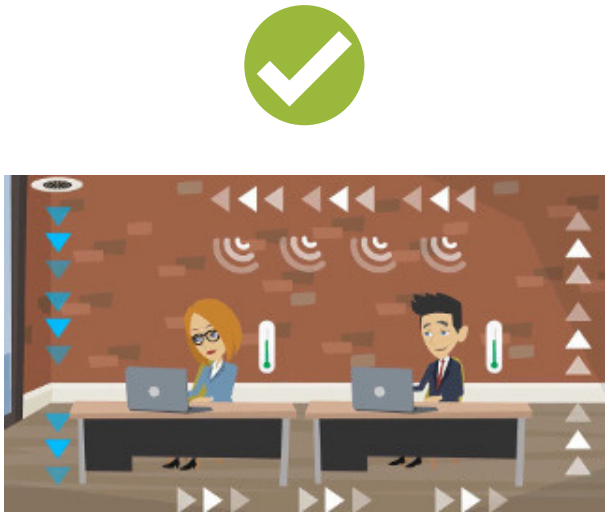
A modular air handling unit (AHU) is at the core of the system. The AHU connects to both a sustainable renewable energy source (usually a heat pump) and a static regain plenum ductwork. The AHU usually draws in room air through a return air grille and duct and treats the air as programmed.

The central plenum duct connects to a series of small, flexible ducts. These terminate in discreet air outlets positioned away from the centre of the room in 'out of traffic' areas in floors, wall and ceilings. These air outlets complement any interior design, with an extensive range or the option to design your own.

The system also creates a safe haven through purification, which dramatically reducing disease-causing viruses and bacteria, allergens and dust. The advanced technology means air, surfaces and objects are purified, especially in those hard to reach areas.

Furthermore, the system kind to the environment and significantly lowers carbon footprint. Just one system can provide individual temperature and time control for up to eight rooms, meaning one system can replace up to eight standard air conditioning (fan coil) systems.





Optional

MODULES

Five interchangeable modules can be used independently or in any combination. All of the modules can easily be added retrospectively. Choosing all five modules creates the ultimate clean and comfortable solution:

COOLING

Cooled air is circulated gently and evenly via discreetly positioned small air outlets. Temperatures are uniform and stable. There are no uncomfortable draughts or fluctuating hot/cold spots. Air movement is comfortable and imperceptible.

HEATING

Warmed air that usually rises and is wasted at ceiling level is re-distributed downwards, increasing energy efficiency. Temperatures are even, with no hot/cold spots. Each person is warmed at the same rate, without air being blown directly over them.

VENTILATION

Ventilation with induction air delivery helps to distribute the outside air evenly across the room, ensuring it is received by all occupants. The system can also work alongside an existing ventilation system to improve air distribution and indoor air quality.

PURIFICATION

High performance air purification significantly improves indoor air quality and creates a cleaner and healthier working and living environment. All serious airborne indoor pollutants – including viruses, bacteria, allergens, toxins, dust and odours – are dramatically reduced.

PROBIOTIC

Probiotics are released with a constant flow, nourishing any indoor environment. This creates an environment which is rich in beneficial bacteria, to support well-being. It cleans air, surfaces and objects especially in those hard to reach areas, promoting human health by balancing "good" and "bad" bacteria.

Multiple

CONTROLS OPTIONS

COMPATIBLE WITH INTELLIGENT CONTROLS

The system connects with the newest intelligent controls and smart buildings management system. Each system can be zoned to give individual times and temperature control for up to eight zones per air handling unit.

BUILDING MANAGEMENT SYSTEMS

The system can work with the majority of building management systems (BMS) via a control panel. Ingenious Air will supply the necessary wiring diagrams to enable BMS control companies to design the appropriate connections.

APRILAIRE 8620W

One Aprilaire provides multiple zoning to enable individual time and temperature control for up to eight rooms per system. The Aprilaire is Wi-Fi enabled and easy to programme. Response times are rapid and the area is cooled down/warmed up quickly. Wired remote sensors are available for the Aprilaire.

THE ECOBEE

The Ecobee thermostat is smart, Wi-Fi enabled and multiple zoned. It learns your schedules and provides stylish, intelligent cooling and heating control. It has a wireless remote air temperature sensor.

Discreet

AIR OUTLETS

POSITIONED AWAY FROM THE ROOM CENTRE

Induction allows unobtrusive air outlets to be positioned discreetly in 'out of traffic' areas in walls, ceilings, bulkheads, kick spaces and floors. There are three types of air outlets, depending on the finish and style required.

SMALL CIRCULAR OUTLETS

Circular outlets are stylish, unobtrusive and versatile. A wide choice of colour and compositions, including plastic, metal and wood, mean they complement any interior design. White outlets can be painted to perfectly match any colour scheme.

LINEAR GRILLES

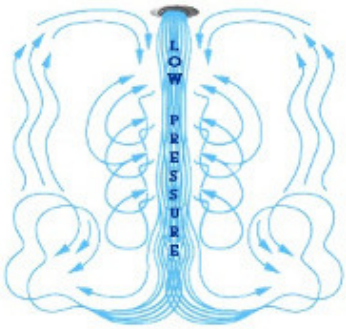
Linear grills give clean straight lines for a modern look to complement your interior design. Available in a range of sizes that can be as thin as 20mm, and work equally well positioned in high side walls, ceilings or floors. Rectangular slot frameless outlets are available on special order for thinner linear slots.

DRILLED OUTLETS

Drilled outlets create a more industrial look. They supply large areas with heating and cooling. They can also create a pressurised air curtain for bay doors, or large openings to the outside environment.

Induction

AIR DELIVERY



VIRTUALLY DRAUGHT-FREE

Induction has a different air delivery pattern from other air conditioning systems. Treated air (cooled, warmed and/or purified) is distributed evenly, gently and continuously. Air is not blown directly towards occupants and air outlets are not positioned in the centre of the room. This solves problems of uncomfortable draughts and feeling 'over-air conditioned.'

NATURAL DE-STRATIFICATION

Heat that is normally lost at ceiling level is re-distributed downwards to mix with cooler floor level air. Room coverage is equal, even and efficient. Temperatures are comfortable and stable, within +/- 1°C from the thermostat, with no hot/cold spots. In cooling mode, de-stratification prevents cold air sitting at a low level, becoming stagnant.

LESS AIR REQUIRED

Room occupants cannot feel the air leaving the outlets. This allows air delivery to be colder when the system is cooling and warmer when heating. Required cooling or heating performance can therefore be achieved by using up to 50% less air than other systems. Using less air plus slower movement over the cooling coils leads to a natural de-humidification action when cooling.

STOPS OFFICE 'AIR CON WARS'

Reducing the relative humidity helps men feel comfortable at higher temperatures when the system is cooling, which means the office thermostat can be set at a higher temperature. This can solve the arguments caused by men and women experiencing air conditioning temperatures differently. It also saves energy.

Small Flexible

DUCTWORK

SMALLER DUCT SIZES

The system has two duct types – a larger central plenum duct, which leads to smaller sized 'mini' ducts. The wider temperature difference of air over the coil requires less air to provide the same kW of cooling and heating compared with other systems.

EASIER NAVIGATION OF OBSTACLES

A choice of plenum duct shape – circular or rectangular – allows the plenum to change shape to navigate any obstructions. The supply plenum duct route is determined by the air outlet position requirements.

INCREASED DESIGN FLEXIBILITY

A static pressure, or regain, is maintained throughout the entire plenum duct. This makes designing duct layout much easier and increases the options for siting the air handling unit. There is no need to reduce plenum size to maintain duct velocity, for post-installation balancing or to locate air outlets on outside walls or central locations.

EASIER TO FIT IN RESTRICTIVE AREAS

The plenum connects to a series of flexible, small diameter, 3m long mini-ducts. These versatile ducts can fit into areas too restrictive for standard ducting. They deliver air through discreet air outlets positioned in walls, floors and ceilings.

CLEAN DUCTWORK

Due to airspeed, the self-cleaning action means only the filter and UV lamps require replacing, resulting in virtually no maintenance. This is further enhanced with the HEPS module.

Modular

AIR HANDLING UNIT

SIMILAR TO A LARGE FAN COIL

A modular air handling unit (AHU), similar to a large fan coil, is at the core of the system. The AHU connects to both a sustainable renewable energy source and the main plenum ductwork. Three sizes are available to suit your project and airflow requirements.

REDUCES MAINTENANCE COSTS AND DISRUPTION

The AHU has multiple mounting positions per model, so can be hidden in many locations. It can be positioned away from occupied areas allows maintenance to be completed with less disruption. Locations include ceiling voids, attics, storage areas, corridors, plant rooms or external, insulated weatherproof housing.

CREATES YOUR DESIRED ENVIRONMENT

The AHU usually draws in room air through a return air grille and duct. It treats the air as programmed to create your desired indoor environment: Cooling, heating, outside air ventilation, air purification and/or probiotic surface purification.

KIND TO THE ENVIRONMENT

The system has sustainability and many 'green' credentials. Just one Ingenious Air® System can give an individual temperature and time control for up to eight rooms. Just one system can therefore replace up to eight fan coils (standard air conditioning systems), significantly reducing carbon footprint.

Renewable

ENERGY SOURCE

WORKS WITH SUSTAINABLE TECHNOLOGIES

The system is paired with a renewable energy cooling/heating source. This reduces overall environmental impact and can reduce energy costs. The source required depends on the functions desired, the amount of cooling/heating required and any pre-existing supply services available.

USUALLY AN INVERTER AIR SOURCE HEAT PUMP

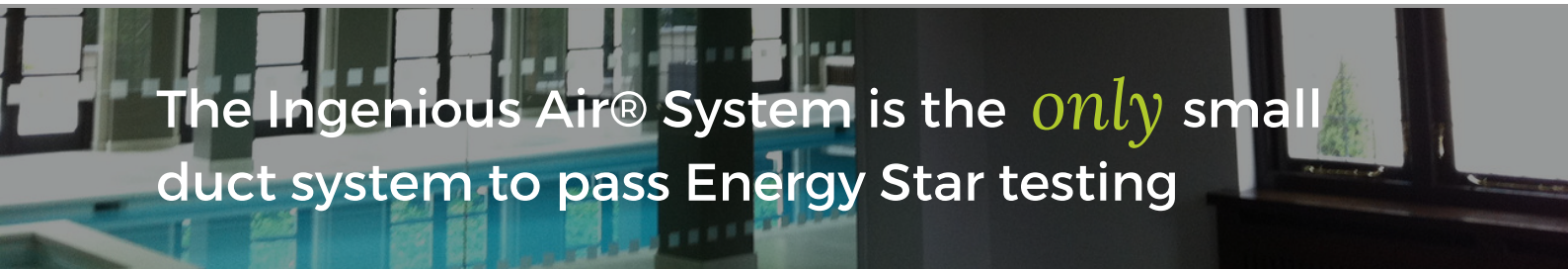
Heat pumps are extremely efficient for both heating and cooling. They do not use energy to create heat; they simply absorb existing heat from the outside air and move it to the indoor air/water/refrigerant. Ingenious Air's preferred partners are Samsung and Toshiba.

OTHER HEATING/COOLING SOURCE OPTIONS

Other options include air conditioning heat pumps – VRF or individual systems, chilled water systems, hot water systems, air to water heat pumps, ground source heat pumps and solar systems.

CAN CONNECT WITH MULTIPLE SOURCES

The system can connect with more than one heating source e.g. a heat pump can be used alongside the existing hot water supply. The modular design allows the system to adapt to future cooling/heating source technology. Additional modules can be developed to integrate new sustainable technologies as they become available.



Introducing...

INGENIOUS SOLAR

The most advanced renewable energy product available today.

Combines both solar panels and a heat pump.

Utilises energy in any condition, including the sun, wind or rain.

Patented features to ensure optimum performance in the UK climate.

DISCOVER THE ULTIMATE

RENEWABLE SOLUTION

ingenious-air.com/solar • solar@ingenious-air.com • @IngeniousSolar

Ready to learn more?

Visit the Ingenious iHub for more information on our full range of products:

www.ingenious-air.com/ihub

CONTACT

INGENIOUS AIR

Contact us and start living today

www.ingenious-air.com

info@ingenious-air.com

0800 731 6352 (UK)

+44 1268 544530 (INT)

The Laindon Barn
Dunton Road
Laindon, Essex
SS15 4DB, UK

Visit www.ingenious-air.com/references for all references.