



## The Natural Ventilation, Daylight & Cooling Specialists

MONODRAUGHT GENERAL BROCHURE



THE QUEEN'S AWARDS  
FOR ENTERPRISE:  
INNOVATION  
2018





**We are  
Pioneering British Greentech**



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Sunpipe / Battersea Power Station  
Photo credit: Battersea Power Station Development Company

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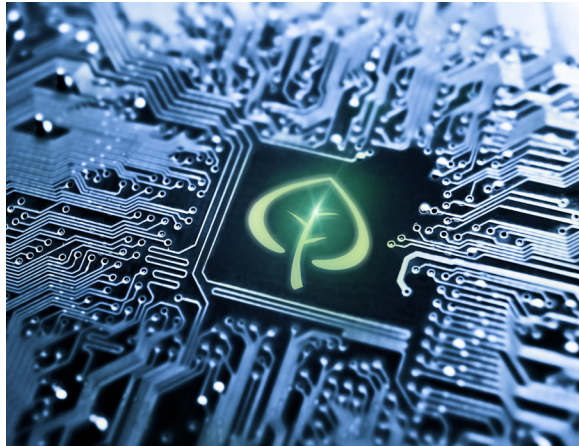


As a pioneering British Greentech company, we design, install and maintain ventilation, cooling, heating and lighting solutions to commercial buildings in the most sustainable way possible.

We believe that businesses like ours have a responsibility to invest in our community. We purchase our materials from local suppliers, recycle where possible and are proud to partner with a local mental health charity, Buckinghamshire Mind.

Monodraught are committed to minimising the carbon footprint of every building to which we supply our products and services. Our in-house design team model the building, select the most energy efficient equipment and design controls to maximise comfort whilst reducing running costs. We continue to monitor performance post-installation ensuring that it continues to be effective year after year. We can provide on-going service and maintenance of our installed products which ensures systems are all always running at optimum performance whilst keeping costs to a minimum.

Trading for over 45 years, we are proud of our record of awards for innovation from prestigious organisations. These include Ashden, CIBSE and the Queen's Award for Enterprise.



### Awards & Accreditations:

- Queen's Awards for Enterprise: Innovation 2018 - COOL-PHASE
- CIBSE Building Performance Awards 2017 Shortlist - COOL- PHASE Hybrid
- Best Product/Service Range Category at the 2016 Best Business Awards
- Company of the Year Award 2016 - Buckinghamshire Business First
- Best Business in Wycombe District 2016 Award - Buckinghamshire Business First
- Ashden - Award for Energy Innovation for COOL- PHASE
- ISO 9001 and ISO 14001: Established quality and environmental management certificates
- BSI (British Standards Institute) Members
- CIBSE Building Performance Award 2012 - COOL- PHASE







**We are  
With you all the way**



# Natural Ventilation

*Windcatcher X-Air / Cheddar Woods*



### Track Record



Our Victorian forefathers used natural ventilation extensively, as indeed did the Persians and Arabians before that. Today's natural ventilation systems have all the benefits of sophisticated controls but retain the well-established principles of the origins of natural ventilation. A concept which Monodraught have been utilising for over 40 years.

### Healthier



Natural ventilation brings a steady supply of fresh air into the building, topping up oxygen levels, whilst at the same time expelling stale air using the natural buoyancy of thermal forces. Fan noise, often associated with mechanical systems, is eliminated, to the benefit of the occupants.

### Best in Class



Monodraught Natural Ventilation systems have achieved an enviable reputation over the last 2 decades. They are consistently effective and reliable, performing in accordance with initial design criteria. The constant data feedback to our dedicated R&D team enables our products to be fine-tuned and improved for performance.

### Cost Effective



In the current climate with energy costs escalating at an unprecedented rate, there is no telling what energy costs will be in 5 or 10 years' time! Once natural ventilation is installed, **there are no running costs ever** for the life of the building.

## WHY CHOOSE NATURAL VENTILATION?

### Sustainable Energy in Action



By maximising the use of wind pressure and the natural stack effect of thermal buoyancy, natural ventilation does not use any fossil fuels. Instead it relies on harnessing wind power and the thermal rise of warm air, using it in a controlled way.

### No Maintenance



Since natural ventilation systems essentially have no moving parts, there is nothing to wear out, break down, corrode or indeed require replacement.



*Windcatcher Classic Circular / Kidderminster College*

### MORE THAN JUST PASSIVE STACK

Early Naturally Ventilated building relied purely on a passive stack approach to act like a “chimney stack”. The limitation of such an arrangement is that to work effectively, the temperature in the passive stack has to be some 10°C above the ambient temperature in the room, which in summer months may lead to overheating.

Monodraught systems overcome this problem by incorporating wind driven air intakes to generate a positive pressure in the room below, and combined with temperature differentials, this assists the passive stack element to exhaust the stale air.



*Windcatcher Classic Circular / Kidderminster College*



*Windcatcher X-Air / Takeley Primary School*





### NO LEAK GUARANTEE

Monodraught's patented WINDCATCHER X-Air natural ventilation system is offered with a 10 YEAR NO LEAK GUARANTEE. This unrivalled level of weather protection for a roof mounted ventilation system guarantees that Windcatcher X-Air units will not leak for ten years thanks to three unique layers of ACTIVLOUVRE weather protection.

1. Monodraught's patented modulating louvre technology allows the weather resistance of the external louvre blade to be increased dependent on weather conditions, even when closed at roof level to prevent snow being blown through its open louvre arrangement.
2. ACTIVLOUVRE uses a weather resistant double-step louvre profile that provides 25% more ventilation than a conventional classic louvre profile.
3. WINDCATCHER X-Air units feature a computer designed, profiled internal rain trap louvre fitted as standard.

Windcatcher X-Air systems carry a 10-year installation guarantee and the systems' control actuators are guaranteed for five years.

## FRESH AIR, LOW CARBON SOLUTION FOR MACMILLAN CANCER CARE CENTRE

- **Construction:** Buxton Building Contractors
- **Products Installed:**
  - 4 No. Circular ABS 550 WINDCATCHER natural ventilation systems
  - 1 No. iNVent 2 fully automatic control system with night time cooling facility

The East Surrey Macmillan Cancer Support Centre was developed through a partnership between Surrey and Sussex Healthcare NHS Trust and Macmillan Cancer Support. It was opened in February 2016 by a previous patient. The cancer support centre offers those affected by cancer additional holistic care in a friendly, informal and non-clinical environment.

The Circular ABS 550 WINDCATCHER systems were installed in 2 therapy rooms and 2 quiet rooms and provide natural ventilation for staff, patients and visitors. The simple, but effective design of the system provides fresh air during the daytime as well as night-time cooling.

There are a number of benefits for the Macmillan Cancer Support centre of using this system. By using a natural ventilation system the centre is able to reduce CO2 levels by expelling stale air and also maintaining a comfortable fresh environment. Natural ventilation ensures that the system will not be affected by changing energy costs and low maintenance means there is little need for disturbing the calm environment at the centre. The cost effective and low maintenance system means that funds can be focused on supporting staff and patients.



Windcatcher Classic Circular / Macmillan Cancer Care Centre





Sola-boost / Kentish Town Health Centre

## NATURAL VENTILATION CASE STUDIES

### SOLA-BOOST: KENTISH TOWN HEALTHCARE

- **Main Contractor:** Morgan Ashurst
- **Products Installed:**
  - 7 No. SOLA-BOOST square Monodraught Natural Ventilation systems
  - 5 No. SOLA-BOOST circular Monodraught Natural Ventilation systems

Kentish Town Health Centre (KTHC) a health building in central London, combines a large GP clinic and a wide range of health facilities. Delivered through the LIFT procurement programme, the building was designed to provide a new standard for modern healthcare facilities.

The project was initiated with a vision for integrating medicine, health and art within a community building. These views were embraced by the Architects, Allford Hall Monaghan Morris and the partnership with Camden & Islington Community Solutions. They have set an award winning standard for future generations of NHS development.

#### Award:

- Civic Trust Award 2010
- Building Magazine: Public Building of the Year 2009
- RIBA Stirling Prize-Shortlist
- RIBA Award for Architecture 2009
- LIFT Award for best Design for Healthcare Project 2009

## WINDCATCHER IN SAN FRANCISCO

- **Products Installed:**
  - 4 No. SOLA-BOOST X-Air 200 natural ventilation systems
  - 2 No. WINDCATCHER X-Air 200 natural ventilation systems

Monodraught WINDCATCHER systems have recently been installed by a local contractor in USA. The building will be used by a world renowned product design company called Fuse Project.

A refurbished industrial building; the offices will house nearly 100 designers who were seeking a low energy alternative to air conditioning. The San Francisco area, also called the Bay Area, has a particular micro climate which makes it almost ideal for natural ventilation. The UK based Consultants, Buro Happold, had recently opened up an office in San Francisco and therefore recommended Monodraught systems as a possible solution.



*Windcatcher X-Air / San Francisco, USA*





*Windcatcher Bespoke / St. Josephs College*

## NATURAL VENTILATION CASE STUDIES

### BESPOKE WINDCATCHER: ST. JOSEPHS COLLEGE

- **Architect:** Wincer Kievenvaar
- **Consultant:** Johns, Slater & Haward
- **Products Installed:**
  - 6 No. WINDCATCHER circular Monodraught Natural Ventilation systems
  - 1 No. WINDCATCHER oval truncated Monodraught Natural Ventilation system

A state-of-the-art Infants and Junior School characterised by the use of bold organic forms, natural light and bright colours designed to inspire its young pupils. The school provides a clear statement of environmental intent by naturally ventilating the 125 square metre hall, a circular library and a series of interlinked shared spaces. Greg Allen, Facilities Manager at St Joseph's College said, "The systems have regulated the internal temperatures without any outside assistance".

Using the fairly dominant appearance of WINDCATCHER systems, the Architect created a very striking design for their school building. Colours as well as shapes can be used to great effect as proved by this project.

# Hybrid Ventilation

HTM F / The Wren School





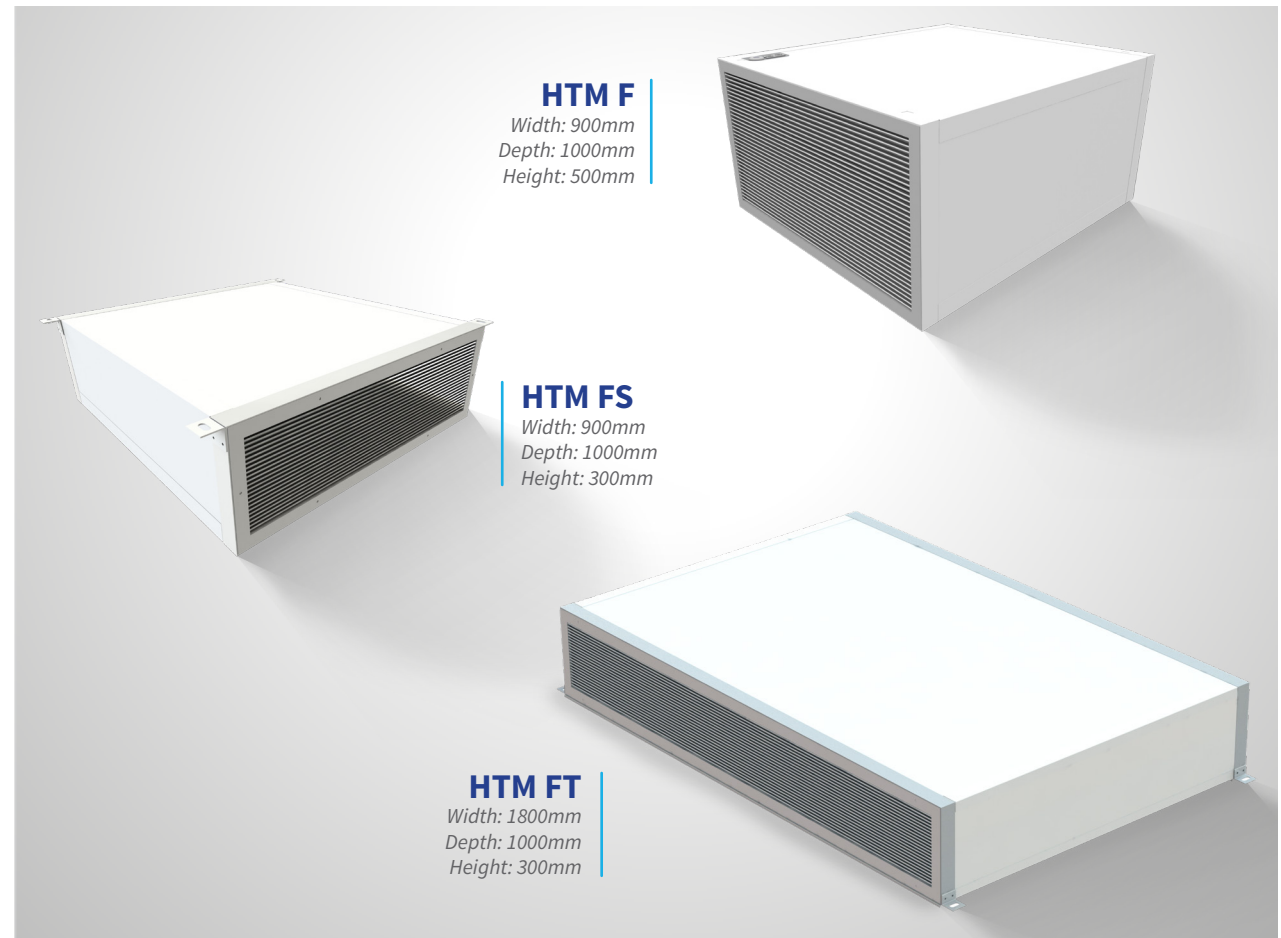
## WHY CHOOSE HYBRID VENTILATION?

### HYBRID THERMAL MIXING SYSTEM

Hybrid Thermal Mixing (HTM) systems are designed to provide natural ventilation and hybrid ventilation, incorporating mixed tempered air for winter periods. The systems have the ability to provide secure night time cooling, and boosted levels of ventilation during summer. The HTM systems are designed to work in conjunction with natural ventilation and can be used in single sided or cross flow ventilation strategies.

The system is comprised of an intelligent and fully automatic control coupled with a low energy ventilation system which switches between operational modes dependant on season, external/ internal temperature conditions and indoor air quality (IAQ).

The Monodraught HTM systems have exceptionally low specific fan power and feature intelligent controls supplied as standard, with full data logging facility, temperature and CO<sub>2</sub> control. With the optional BACnet module, each unit has the ability to output key performance data to a central BMS.



### Ideal Environment



- The HTM system is able to provide the ideal environment to school classrooms/ areas.
- The unit provides mixed tempered air during winter, boosted levels of ventilation during summer and secure night time cooling.
- The HTM system works in conjunction with natural ventilation provided by manual or automatic windows/louvres.
- HTM can be used in single sided or cross flow ventilation.

### Cost Effective



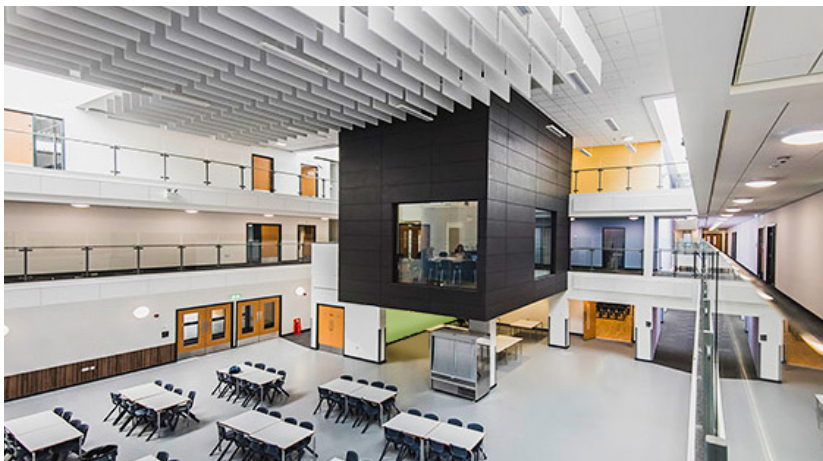
- The system has an exceptionally low specific fan power.
- The HTM system comprises an intelligent and fully automatic control system coupled with low energy ventilation system which switches between operational modes dependant on season, external/internal temperature conditions and indoor air quality (IAQ).
- The control system is supplied as standard with full data logging facility, temperature and CO<sub>2</sub> controls. With an optional BACnet module, each unit has the ability to output key performance data to a central BMS.

### PSBP Compliant



- CFD analysis and site verification have demonstrated compliance with PSBP criteria with one HTM F system per classroom.





HTM F & HTM FS/ Littleport Academy

### MULTI-MILLION POUND SCHOOL COMPLEX BENEFITS FROM WIDE RANGE OF MONODRAUGHT VENTILATION SOLUTION

- **Consultant:** Morgan Sindall
- **M&E Contractor:** Imtech G&H (Yorks)
- **Products Installed:**
  - 48 No. HTM F Monodraught Hybrid Thermal Mixing Systems
  - 1 No. HTM FS Monodraught Hybrid Thermal Mixing Systems
  - 16 No. WINDCATCHER X-Air 200 Monodraught Natural Ventilation Systems
  - 4 No. WINDCATCHER X-Air 170 Monodraught Natural Ventilation Systems
  - 3 No. WINDCATCHER X-Air 140 Monodraught Natural Ventilation Systems
  - 4 No. WINDCATCHER X-Air 110 Monodraught Natural Ventilation Systems
  - 74 No. VENTS AIR Wall Mounted Natural Ventilation Systems

A £37.5m pound school development was recently opened in Ely, Cambridgeshire. Morgan Sindall were appointed to build Littleport Academy in 2016. It includes a primary school, a 3 storey secondary school and a SEN school. It currently accommodates over 350 pupils with room for further growth.

Monodraught were specified to provide hybrid and natural ventilation across all three schools and the onsite sport centre including our HTM F and FS systems. These systems were designed specifically to meet the needs of the Priority School Building Programme and EFA regulations.

The HTM F and FS systems are designed to provide natural and hybrid ventilation (incorporating mixed tempered air for winter periods), with secure night time cooling and boosted levels of ventilation during summer.

### SIMPLE, INNOVATIVE SOLUTION IMPROVES SCHOOL BUILDING VENTILATION

- **Architects:** DLA Design
- **Contractor:** Galliford Try Building Ltd
- **Products Installed:**
  - 67 No. HTM Monodraught Hybrid Thermal Mixing Ventilation Systems
  - 7 No. iNVent Control Panels
  - 13 No. WINDCATCHER X-Air 200 Natural Ventilation Systems with axial mixing fans
  - 2 No. WINDCATCHER X-Air 170 Natural Ventilation Systems with solar powered LED Architectural Lighting Technology

Monodraught were specified as the hybrid and natural ventilation solution for Hessle High School in 2015. The flagship school for the PSBP scheme, and one of the first to be built, is the £18.6 million Hessle High School and Sixth Form College in East Yorkshire.

The school, designed by DLA Architects and constructed by Galliford Try, created a combined, fit-for-purpose school that operates from just one site, with new science labs, ICT and teaching areas and sport facilities.

Monodraught's systems were installed throughout the school in classrooms, halls and corridors. This was complemented by natural ventilation in the form of Monodraught's Windcatcher systems in larger spaces such as the sports, drama, main halls and dining rooms. Two of these units were further enhanced with our solar powered LED architectural lighting system. This can provide a striking view of the school in the night sky.



HTM F/ Hessle High School





HTM FS/ Grenfell Community Centre (DIY SOS)

### BREATH OF FRESH AIR FOR GRENFELL COMMUNITY CENTRE

- **Architect:** Featherstone Young
- **Consultant:** Hoare Lea
- **Products Installed:**
  - 6 No. HTM FS Monodraught Hybrid Thermal Mixing Systems

The Grenfell Community Centre is now fully open for use. A recent two part BBC DIY SOS programme showed the result of the Big Build Challenge to provide a new community centre and a boxing club to the community of Grenfell after the tragic fire of June 2017.

Monodraught were specified by Hoare Lea to install 6 No. hybrid ventilation systems (HTM) in the café area as well as meeting rooms. Our products will help fulfil the requirement for the building to be built to an exemplar environmental standard. As the site is under one of the busy main artery roads into London, the A40, we also fitted additional filters to ensure a high level of internal air quality. Our systems are by their very nature low energy, as they mix hybrid with natural ventilation. This was also an important factor in product selection.

Our HTM systems were also developed using our extensive knowledge, product testing, and building simulation skills. We developed these low energy ventilation systems that meet the FOS requirements in a cost efficient manner. The HTM systems are designed to provide natural ventilation and hybrid ventilation (incorporating mixed tempered air for winter periods), with secure night time cooling and boosted levels of ventilation during summer.

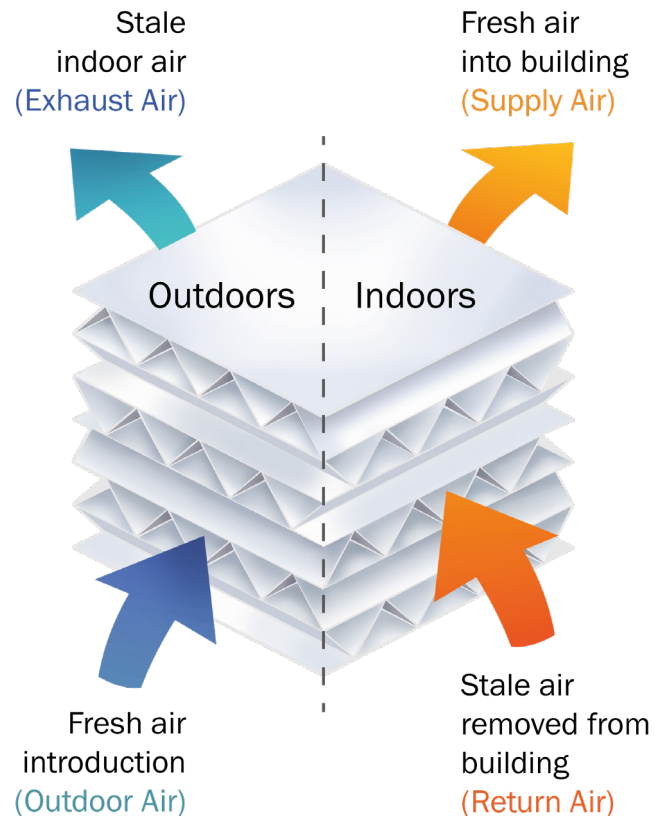


# Mechanical Ventilation Heat Recovery



*MVHR / Our Lady of Grace School*





### MECHANICAL VENTILATION HEAT RECOVERY (MVHR) SYSTEMS

Monodraught's MVHR systems are designed to simultaneously supply tempered fresh air to any built space ensuring the correct oxygen levels are maintained whilst expelling stale air.

By simultaneously recovering heating or cooling energy to temper incoming air, the systems are able to significantly reduce the power consumption and associated building running costs.

The system is designed to automatically provide trickle ventilation, heat recovery ventilation and secure night time cooling. It also boosts levels of ventilation during summer or during periods of high CO<sub>2</sub>. The MVHR system can complement natural ventilation provided by being integrated with manual or automatic windows/louvres, either via a single sided or cross flow ventilation strategy.

The system comprises an intelligent and fully automatic control system which switches between operational modes dependant on external/internal temperature conditions and indoor air quality (IAQ).

Monodraught provides a Mitsubishi Lossnay heat exchanger core with or without a high quality acoustic shroud. As a result, the MVHR system can be installed in a range of exposed or concealed locations, such as direct facade or ducted applications.

### KEY FEATURES

- Control options include: CO<sub>2</sub>, PIR, VOC, BACnet, MODBUS and BMS integration.
- Low temperature hot water (LTHW) heating available 2kW - 12kW
- Filter options including M5, F7, F9 (with G3 as standard)
- Pre-heater option for low temperatures
- Acoustic shrouds and fascias for below ceiling non-ducted applications
- Attenuation pods
- Colour options
- Weatherproof housings
- Ten models supplying air from 10 - 1,000 L/s
- High efficiency total heat exchange (sensible and latent)
- Low power consumption and SFP's from 0.30 W/(L/s)
- Modes include: Summer Bypass for direct ventilation, Trickle ventilation, secure night time cooling and Boosted ventilation.
- Can be located in exposed or concealed location with or without ducting
- No condensation drain required
- High efficiency variable speed fan motor
- Adjustable set points and weekly timer



MVHR / Our Lady of Grace School





MVHR / Our Lady of Grace School

## HEALTHY VENTILATION SYSTEM PERFORMING IN OUTSTANDING SCHOOL

- **Architect:** DLA Architect
- **Main Contractor:** Galliford Try
- **Consultant:** Silcock Dawson and Partners Ltd
- **Products Installed:**
  - 14 No. MVHR-100 Monodraught systems
  - 4 No. WINDCATCHER X-Air 170 natural ventilation systems with axial mixing fan and solar powered LED architectural lighting system

In November 2016, 14 Monodraught MVHR-100 systems were installed to the new built classrooms of Our Lady of Grace School in Charlton, London. The school was recently awarded an Ofsted “outstanding” rating.

The MVHR units provide trickle ventilation, heat recovery ventilation and secure night time cooling. They also boost levels of ventilation during summer or during periods of high CO<sub>2</sub>. The system comprises an intelligent and fully automatic control system which switches between operational modes dependant on external/internal temperature conditions and indoor air quality (IAQ).

These systems were installed by Monodraught on behalf of Galliford Try and were Monodraught’s first MVHR project.

The systems were supplied to simultaneously supply tempered fresh air to each classroom ensuring the correct oxygen levels were maintained whilst stale air is expelled. Air quality is maintained using Monodraught’s bespoke integrated CO<sub>2</sub> sensor.



# Natural Cooling



Cool-phase / Harrogate Civic Headquarters  
Photo credit: John Kees Photography



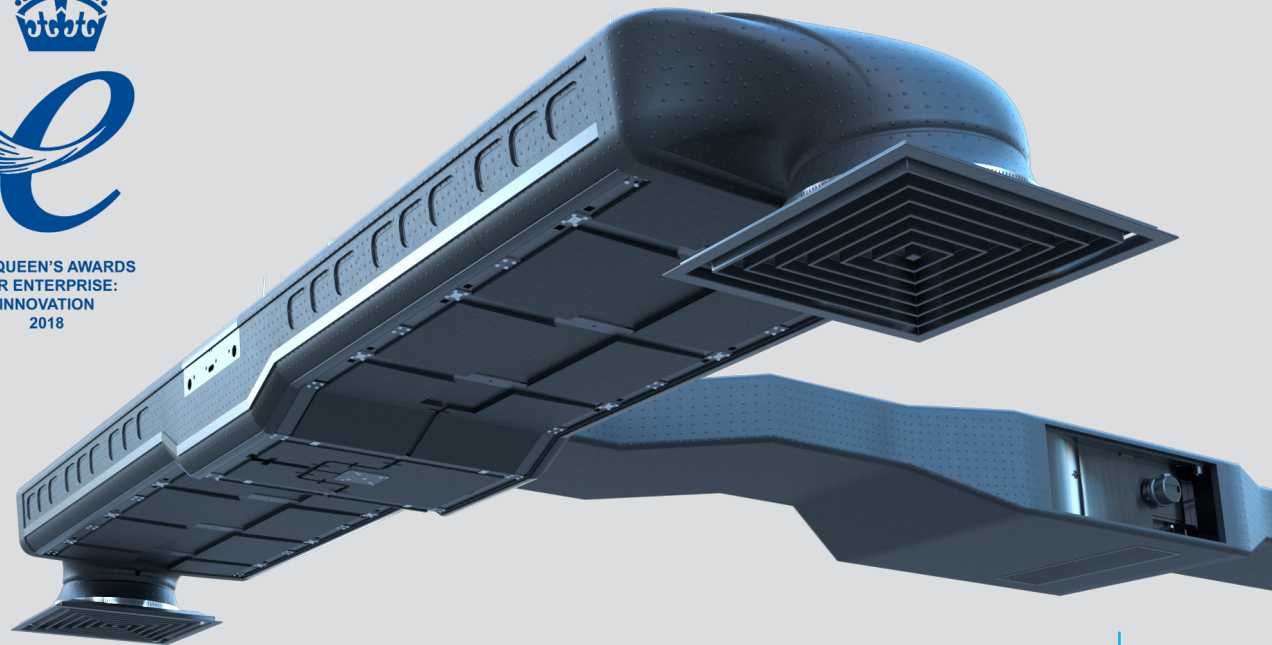
### COOL-PHASE SYSTEM

COOL-PHASE is an award winning, low energy cooling and ventilation system that creates a comfortable, fresh and healthy indoor environment and reduces the running cost of buildings.

COOL-PHASE uses a thermal energy store utilising a Phase Change Material (PCM) in combination with an intelligently controlled Air Handling Unit (AHU), to actively ventilate and cool the building. The COOL-PHASE system can maintain temperatures within the comfort zone, while dramatically reducing energy consumption by up to 90% when compared to an equivalent conventional cooling system. Furthermore, COOL-PHASE uses neither refrigerants nor compressors, unlike conventional systems, making it environmentally friendly both in its manufacture and operation.



THE QUEEN'S AWARDS  
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**COOL-PHASE**  
Natural Cooling System

### Low Running Costs



The system has low servicing, maintenance and energy costs, combined with a long life that provides an impressive payback on the capital cost of the system and enables the building owners and occupants to significantly reduce their carbon footprint.

### Healthy & Productive



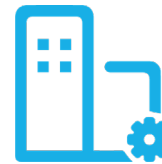
The COOL-PHASE system creates a healthy and productive environment by monitoring internal air quality and ensuring there is a supply of fresh air.

### Energy & Carbon Saving



The COOL-PHASE system uses an energy efficient variable speed fan with no compressors, pumps or other energy intensive components. A 5A single phase mains supply is all that is required.

### No External Units



The system does not require any external units. This makes COOL-PHASE particularly suitable in applications where access to outside space or planning constraints are an issue and has a positive impact in terms of external acoustics.

## WHY CHOOSE NATURAL COOLING?

### No Refrigerants



The system does not use the coolants often found in conventional cooling approaches. Therefore regulations controlling the use and disposal of refrigerant do not apply to COOL-PHASE.

### Modular Design



It can be installed in modular spaces or large open plan offices, above false ceiling or suspended below to suit a range of environments. It can also be installed and integrated with the new or existing mechanical ventilation and cooling schemes to offer local decentralised ventilation.





Cool-phase / Harrogate Civic Headquarters  
Photo credit: John Kees Photography

### HARROGATE CIVIC HQ SHORTLISTED FOR PRESTIGIOUS CIVIC DESIGN AWARDS

- **Architect:** Farrell & Clark
- **Construction:** Harry Fairclough Ltd
- **Consultant:** Ramboll
- **Products Installed:**
  - 30 No. COOL-PHASE Monodraught Natural Cooling systems
  - 2 No. WINDCATCHER 1800 Classic Bespoke Circular GRP systems
  - 1 No. iNVent Control system

The new civic headquarters for Harrogate Borough Council have been credited as a regional finalist in the 2019 Selwyn Goldsmith Awards for Universal Design and Civic Trust Awards. The new council offices were designed by Yorkshire based architects Farrell & Clark

Operating from a 1930's headquarters building and four administration offices, Harrogate Borough Council's brief was to provide a single site for staff, councillors and the public facilitating a "One Council" culture with reduced running costs and improved operational efficiency.

Monodraught were specified to provide natural cooling and ventilation to all areas in an open plan office arrangement, whilst a central atrium space is ventilated by our bespoke ventilation system. Monodraught's Cool-phase systems contribute credits towards BREEAM standards for lifecycle costs, indoor air quality and for the use of low and zero carbon technologies.

In 2018 Monodraught won the Queen's Award for Enterprise, Innovation for its Cool-phase systems.

## WOKING CIVIC CENTRE INSTALLS LOW-CARBON HIGH PERFORMANCE HYBRID COOLING SOLUTIONS

- **End Customer:** Woking Borough Council
- **Products Installed:**
  - 6 No. COOL-PHASE Monodraught Natural Cooling systems with LTHW heating modules
  - 4 No. SMART SCREEN Controllers

Monodraught hybrid cooling systems were recently installed at Woking Civic Centre. Cool-phase has been installed in the newly refurbished and relocated front of the house Job Centre Plus area, group session room and shared conference room.

By installing Cool-phase, Woking Civic Centre is able to provide a positive environment for visitors. They ensure that there is a fresh cool environment to enable visitors and staff to focus on their job search. In the winter months or during cooler weather, our LTHW heating modules will continue to maintain CO<sub>2</sub> levels and simultaneously warm the room without the need for radiators taking up valuable wall space.

Monodraught smart-screen controllers have been installed in the Job Centre Plus area. Through the capacitive touchscreen interface, the Facility Manager and employees at the Civic Centre can understand more about how Cool-phase works, adjust settings, and maintain a comfortable environment with minimal energy use.

Cool-phase is the ideal alternative to air conditioning for Northern climates like the UK and can be retrofitted into existing buildings or new builds.



Cool-phase / Woking Civic Centre





Cool-phase / Bournemouth University

### BOURNEMOUTH UNIVERSITY - COOL-PHASE

- **End Customer:** Bournemouth University
- **Sector:** Education
- **Contacts:** Steve Cox, Bournemouth University
- **Products Installed:**
  - 2 No. COOL-PHASE Monodraught Natural Cooling systems

The science lecture room at Bournemouth University was fitted with two new COOL-PHASE units discreetly positioned within the ceiling void to provide natural cooling within the room.

Two Monodraught COOL-PHASE systems were specified to provide intelligently controlled low energy ventilation and natural cooling via thermal batteries to the area to maintain thermal comfort and air quality levels throughout the year.

The design team at Monodraught carried out dynamic thermal modelling which were able to predict that 2 No. 8kWhr COOL-PHASE systems would fully dissipate the heat gains within all the areas of the building where the COOL-PHASE was to be installed.

The COOL-PHASE system has maintained an ideal temperature within the rooms of less than 25°C across the logged period for the majority of the time. With only a very small percentage of time being monitored at over 25°C and at no point exceeding 28°C, this more than meets the target for overheating in terms of either CIBSE guide A or BB101.



# Air Conditioning





## AIR CONDITIONING

### Climate Control



We take control at the design stage, using advanced software (such as IES) to model the performance that each system will deliver within a specific building project. This means that we can then select the correct size of units for indoor and outdoor use to optimise the efficiency targets and comfort levels.

### Enhanced Capital Allowance



Under the ECA scheme, all businesses liable for UK corporation tax are able to claim an Enhanced Capital Allowance on any qualified expenditure, meaning businesses can offset the full cost of specific technologies against taxable profits of the period of investment. This means you can claim up to 100% first year capital allowance on investments in energy saving equipment.

### Take Control of Costs



The right controls take building performance to the next level. With them, building systems become more responsive, easier to automate, monitor and maintain and less costly to operate in the long-term. For this reason, we believe in remote monitoring and recommend this to many of our customers.

### Leasing Options



Monodraught offer an innovative range of flexible financing options from Shire Leasing, eliminating large upfront payments.

This means you can manage your cash flow more effectively and spread your capital costs - using your budget elsewhere for business growth.

## WHY CHOOSE MONODRAUGHT AIR CONDITIONING?

### Legislation Compliance



Monodraught supplies fully compliant equipment and endeavours to ensure all suitable incentives are achieved by their customers.

F-Gas, MEES, Energy Related Products Directive (ErP), and Part L & F.

### Spare Parts



At Monodraught we have access to order spares online for our customers 24 hours a day.

As approximately 97% of critical spares are held in stock, getting your system working again is swift and pain free.

### OFFICE RELOCATION PROVIDES PERFECT TIME TO REFURBISH AND RE-FIT HVAC SYSTEMS

- **Sector:** Office
- **Contacts:**
  - **Design and build specialists:** [Loop Interiors](#)
  - **Air Conditioning Product:** Mitsubishi Electric
- **Location:** Reading
- **Products Installed:**
  - 3 No. Mitsubishi Electric Mr Slim P Series split air conditioning systems
  - 8 No. Mitsubishi Electric large capacity ducted systems
  - 1 No. bespoke K-CON control panel with alarm beacon

Monodraught are an [award winning](#) Greentech company, providing high performance competitive systems with low running costs.

Together with [Loop Interiors](#), the Monodraught team have recently supplied, delivered and installed Mitsubishi Electric Mr.Slim P Series Split Air Conditioning Equipment to 3 comms rooms and 1 patch room, in preparation for client takeover of the building at Arlington Business Park.

Monodraught were also asked to validate the existing Mitsubishi VRF and ventilation systems. The company devised a solution to re-use the existing equipment to fit in with the client's office modifications. The objective was





## AIR CONDITIONING



www.monodraught.com  
info@monodraught.com

## AIR CONDITIONING CASE STUDY

to ensure as little disruption as possible and maximise the value of previous investments.

The team further installed 8 large capacity ducted systems to the main comms room. These systems will operate on a N+1 basis controlled via a bespoke control panel with SMS E-mail Alert and Alarm Warning Beacon. The alarm beacon has been set up so it will activate if the high temperature set point has been reached or if a fault input has been activated.

On project completion, the premises at Arlington Business Park are fully resilient and reliable. Building occupants can enjoy a comfortable office environment when they relocate. Future performance of the system is fully supported by Monodraught's high-quality customer support and warranties.

Visit our [projects](#) pages to view the full range of installations.

## AIR CONDITIONING

### LONDON CONCEPT NIGHT-CLUB SELECTS MONODRAUGHT FOR COOLING

- **Sector:** Leisure
- **Contacts:**
  - **Supplier:** [Frigicoll/Kaysun](#)
  - **End-customer:** Opium London
  - **Location:** London
- **Products Installed:**
  - Amazon VRF Outdoor Units and a total of 22 Indoor Units
  - 1 No. Kaysun Air Handling Unit

Opium London have recently added to their international leisure group. Their latest acquisition in the heart of London's West End has a [Restaurant, Lounge and Nightclub](#). As part of the renovation and fit-out, Monodraught were selected to supply the air-conditioning systems to the 750m<sup>2</sup> indoor space. This attraction is ideally located for thousands of visitors per year as it is situated just off Leicester Square.

Monodraught are an [award winning](#) market leader in ventilation and cooling, providing high performance competitive systems with low running costs. Monodraught are proud winners of accreditations from the Queen's Awards for Enterprise, CIBSE and Ashden, amongst others. The highly reliable systems are designed for low maintenance, backed up with extended warranties. Monodraught actively promote remote monitoring to increase the lifespan of ventilation and cooling equipment and to ensure they are running at optimum efficiency.





## AIR CONDITIONING



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## AIR CONDITIONING CASE STUDY

A pioneering British Greentech company, Monodraught use advanced IES Simulation & CADMEP software to model the performance that each system will deliver within a specific building project. This bespoke solution provides a long term strategy aligned with financial and sustainability objectives.

For this project, Monodraught were engaged to strip out all existing air conditioning equipment and re-design new air conditioning and ventilation systems, re-using as much of the existing pipework as possible.

Kaysun (through Frigicoll) air conditioning equipment was selected because of its high efficiency and energy savings due to the DC inverter technology which varies the frequency of the compressor motor and fan motor of the outdoor unit depending on the total load requirement.

Monodraught supplied and installed a total of 22 No. Indoor units. The heat recovery VRF was provided to the main bar and club areas and ensures that the internal temperature is maintained throughout these areas to suit comfort levels in the most energy-efficient way. The systems are exposed and finished in matt black to offer an aesthetically pleasing finished look.

The company also supplied and installed a Kaysun Air Handling Unit, capable of providing 1500m<sup>3</sup>/hr of air to the entire nightclub, ensuring a constant fresh air supply and comfortable indoor climate. This system included all ductwork, grilles and diffusers, again finished to match the décor.

Visit Monodraught's [projects](#) pages to view the full range of installations and expertise.



# Natural Lighting

*Sunpipe / The Copper Box, Handball Arena*





## SUNPIPE - NATURAL LIGHTING SYSTEM

Sunpipe is a natural lighting system that maximises the concept of renewable energy by channelling natural daylight from roofs to indoor environments.

Sunpipes create healthier, cost-effective and more productive environments.

Sunpipes are suited to almost any application and have been installed anywhere from residential buildings to the Olympic Handball Arena in London. Sunpipe are also designed for optimum efficiency and long working life, offering a **10 year guarantee**.

### HOW DOES SUNPIPE WORK?

The Sunpipe system collects daylight using a patented high impact acrylic Diamond Dome, passing through a Super-Silver® mirror finished aluminium tube which reflects and directs the natural daylight to the diffuser.

The diffuser distributes the natural daylight evenly in the room.



**SUNPIPE**  
Natural Lighting System

## WHY CHOOSE NATURAL LIGHTING?



### Increased Productivity



Productivity in offices served by natural lighting shows a 20% increase in output from office employees along with reduced absences because of sickness.

It is considered that natural lighting systems have marked effect on the reduction of the incidence of Sick Building Syndrome (SBS) and provide a stress-free, soothing, and far healthier office ambiance by eliminating the glare and conflict of the electric lighting and computer screens.

### Improved Health



Studies have shown that people work and live better in a naturally lit environment and it has been shown to alleviate some of the symptoms of Seasonal Affective Disorder (SAD). Exposure to natural lighting is believed to have the following benefits by boosting the production of vitamins and hormones:

- Maintains the Circadian Rhythm
- Reduces fatigue and depression
- Alleviates pain
- Improves sleep pattern and mood

### Cost Effective



Energy costs can be saved as the need for electric lighting can be reduced by as much as 75%.

Sunpipe is sustainable energy in action, not only can reduce energy, it also leads to a considerable reduction in CO<sub>2</sub> emissions.





Sunpipe/ The Copper Box, Handball Arena

## THE COPPER BOX - HANDBALL SPORTS ARENA

- **End Customer:** The Copper Box
- **Sector:** Leisure
- **Architect:** Make Architects
- **Consultant:** ARUP
- **Products Installed:**
  - 88 No. SUNPIPE 1500mm diameter Monodraught Natural Lighting systems

Originally named the Handball Arena, the Copper Box was built to be the goal ball venue for London 2012 Olympics & Paralympics. As one of the legacy buildings of the Olympics, the Copper Box will be adapted to become a multi-sport arena for local community use, athlete training and other multi-use events.

Make Architects, responsible for the design set out a strict environmental criteria for the project of sustainable energy. Along with rainwater harvesting, the use of natural daylight systems would assist in reducing carbon and energy costs. Having used Sunpipe on previous projects, Make Architects entered in discussions with Monodraught in May 2008 to investigate the possibilities of using this technology on the project. Make Architects specified a system that could deliver a 4% daylight factor.

Working with ARUP the Consulting Engineer, Monodraught presented a scheme that included 88 number 1500mm diameter light pipes positioned strategically around the field of play. The systems also needed to be adaptable for when lower light levels were required so light shut off dampers were included along with special acoustic laminated glass.

## NEW BRENTWOOD RESOURCE CENTRE

- **End Customer:** South Essex Partnership NHS Trust
- **Sector:** Hospital - Offices
- **Architect:** Ingleton Wood
- **Contractor:** Hutton Construction
- **Products Installed:**
  - 6 No. SUNPIPE 450mm diameter Monodraught Natural Lighting systems
  - 4 No. SUNPIPE 300mm diameter Monodraught Natural Lighting systems

The centre is a modern purpose built facility, which houses mental health outpatient, day care and therapy services for adult and older people in the Brentwood Locality. The completion of the resource centre brought together a number of services which previously were operating in various buildings around the High Wood Hospital site.

Natural daylight was considered of prime importance on this new build development. Sunpipe natural daylight systems were utilised on the central corridors and in several of the treatment rooms, increasing the level of natural light.



Sunpipe / Brentwood Resource Centre





Sunpipe / Tsuen Wan West Station, Hong Kong

### POWERFUL EXAMPLE OF HEALTHY NATURAL LIGHTING DELIVERED INDOORS AT THE BAY

- **End Customer:** Tsuen Wan West Station Development TW6 Tower 2 - Hong Kong
- **Sector:** Leisure
- **Architect:** LWK & Partners (HK) Ltd
- **Consultant:** WSP Asia Ltd
- **Products Installed:**
  - 15 No. SUNPIPE 300mm diameter Monodraught Natural Lighting systems

As part of the TW6 development next to Tsuen Wan West MTR station, 15 No. Sunpipe systems have been installed in the Sports Hall, providing natural light directly to the hall.

Many of us are now spending up to 80% of our time indoors, whether that be for work, school or leisure. There is evidence that limited natural light can have a negative impact on mental health & physical health. For users of the sports hall, having natural light delivered indoors provides a positive sense of health and wellbeing.

There are many additional benefits of installing a Sunpipe natural lighting system. Once installed, the self-cleaning dome and lack of mechanical elements mean that they are extremely low maintenance. With a ten year guarantee, developers can be confident that the systems will perform just as well in year 10 as it does in year 1.

By introducing natural light indoors, it is possible to reduce energy usage and therefore carbon emissions. There is an additional positive impact on energy costs.



# Air Precision

Air-Precision / Alderman Knight School





### AIR-PRECISION

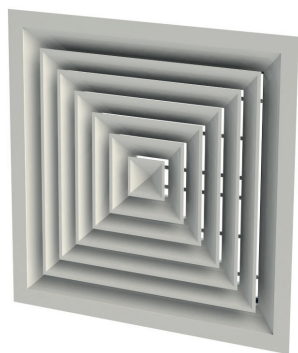
A recent addition to the Monodraught portfolio is an extensive range of Air-Precision products - Grilles, Diffusers, External Louvres and Volume Control Dampers. Marketing leading quality includes AA5 anodisation (ISO7599) and Belimo actuators used throughout. Bespoke manufacturing can be provided

with any standard RAL colour within 5 days. This range is supported with £1m of stock and a full 10 year guarantee. The products can be bought directly from the Air-Precision online shop or it is possible to call the sales team for advice.

### PRODUCT RANGE



Grilles



Diffusers



External Louvres



Volume Control Dampers



Ancillaries

## WE ARE WITH YOU ALL THE WAY



### R&D and Manufacture



Our large R&D team are continually challenging the boundaries developing new products to ensure customers continue to receive market leading products for which Monodraught are renowned. These products are all manufactured within our High Wycombe factory and as R&D is in the same location as production, then the highest levels of quality can be ensured.

### Building Simulation



To help architects and consultants deliver ultra low energy efficient designs, Monodraught and building performance analysis specialist IES have developed Performance Components. Our Project Design Engineers are able to work with you to create the right design for your building.

### Installation



We have a team of contract managers who will work with you and your clients from order creation through to delivery and maintenance if required. Our own team of installers work across England and Wales with partner agencies installing in Scotland, Ireland and worldwide. We will visit your site ahead of installation to ensure that everything goes smoothly.

### Maintenance



We can provide on-going service and maintenance of our installed products. This helps provide performance data for our customers and structured feedback that can assist product development, resulting in a system running at optimum performance whilst keeping costs to a minimum.





*Cool-phase / Newcastle University*





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