

AIRIUS[®]
saving you energy



**THE WORLD STANDARD FOR DESTRATIFICATION
REDUCING HEATING AND COOLING COSTS**

AIRIUS EUROPE | AIRIUS AMERICAS | AIRIUS OCEANIA

AIRIUS CLIENTS INCLUDE...



The **co-operative**



Lloyds TSB

Mercedes-Benz



HM Government



GE imagination at work



John Lewis

Waitrose



RICOH

Audi



JAGUAR



The world's local bank



TOYOTA



Volkswagen



Raising the Standard



MORRISONS

UNIVERSITY of NORTHUMBRIA at NEWCASTLE



BRITISH AIRWAYS



UNIVERSITY OF CAMBRIDGE



JUST DO IT.



PEUGEOT

Harrods

ALSTOM

TESCO

Every little helps



University of BRISTOL



Sainsbury's

SIEMENS

SCREWFIX



Swiss Re



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SAVE 20% - 50% ON YOUR HEATING AND COOLING COSTS



“Thermal Stratification - the single biggest waste of energy in buildings today”

Airius are air circulation experts specialising in thermal destratification systems. Airius has helped hundreds of businesses from SMEs to major Blue Chip companies make real reductions in their energy usage and carbon emissions with over 60,000 destratification units sold worldwide.

The Airius destratification system offers substantial annual energy savings on both heating and cooling costs, reducing consumption by 20% to 50% by maximizing the performance of existing heating and cooling systems and equipment. This is supported by research conducted by utility giant DTE Energy, which found that thermal stratification is the single biggest waste of energy in buildings today, as well as by the Carbon Trust, who recommend destratification as one of its top 3 carbon saving measures.



“Indoor Air Quality - paramount in maintaining a successful business and workforce”

The Airius PHI air purification and odour control system significantly improves indoor air quality (IAQ), reducing viruses, bacteria, gases, VOCs (Volatile Organic Compounds), sick building syndrome, mould and odours by over 90% whilst an advanced atmosphere oxidation technology gives indoor environments fresh, clean and odour free air. Contact Airius for further details.

Save 20% - 50% on your heating and cooling costs

- Reduces heating costs by 20% - 50%
- Reduces CO₂ emissions by 20% - 50%
- Reduces condensation
- Small, versatile, unobtrusive units
- Simple to install with no ducting required
- Minimal maintenance required
- Reduces wear on existing HVAC equipment
- Eligible for carbon reducing grants / loans
- Increases lighting lifespan
- Established and proven technology
- Reduces cooling costs by 20% - 40%
- Recycles heat from machinery, lighting, heat gain etc.
- Maintains optimum working / retail environment
- Minimal running costs (from £6 / pa)
- Stand alone or BMS integrated
- Rapid ROI - usually between 12 - 24 months
- Works alongside all types of HVAC systems
- Simple, inexpensive and efficient CRC solution
- Customers include FTSE100 companies to SMEs
- 3 year warranty



Destratification is the process of equalising air temperatures within internal spaces. Most buildings which are heated and/or cooled need destratification because warm air naturally rises up from floor level to the ceiling whilst the heavier cool air sinks to the floor. This causes massive differences in temperatures across the internal space and is called stratification. Stratification wastes massive amounts of energy and creates uncomfortable internal environments.

AIRIUS[®]
saving you energy

Airius offers a unique patented fan technology which is the most versatile and efficient system available to effectively reduce stratification in all types of buildings from offices to aircraft hangars.

Airius destratification fans can be installed alongside all types of heating and cooling equipment to optimise the heat and/or cool air produced to create uniform temperatures, reduce energy costs and carbon emissions.

PRODUCT TESTING & RESEARCH

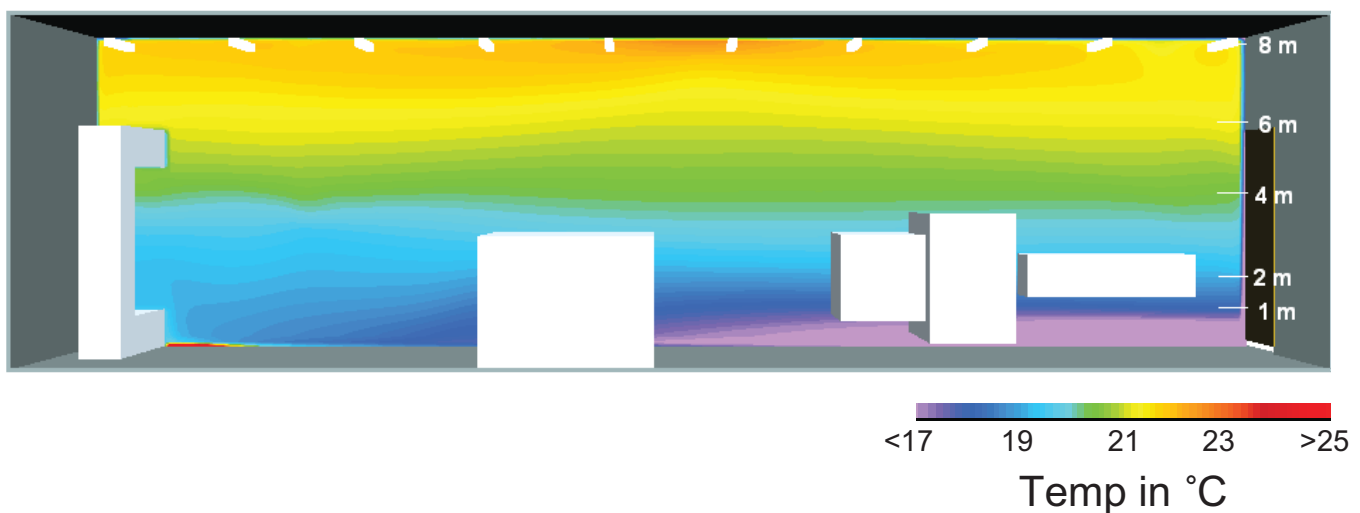
Airius and the Building Services Research & Information Association (BSRIA) together have produced a comprehensive testing and Computational Fluid Dynamic (CFD) report, the results of which support the efficiency of the Airius system and can be found on the BSRIA website at www.bsria.co.uk or the Airius website at www.airius.co.uk.



Independent BSRIA Testing & CFD Study

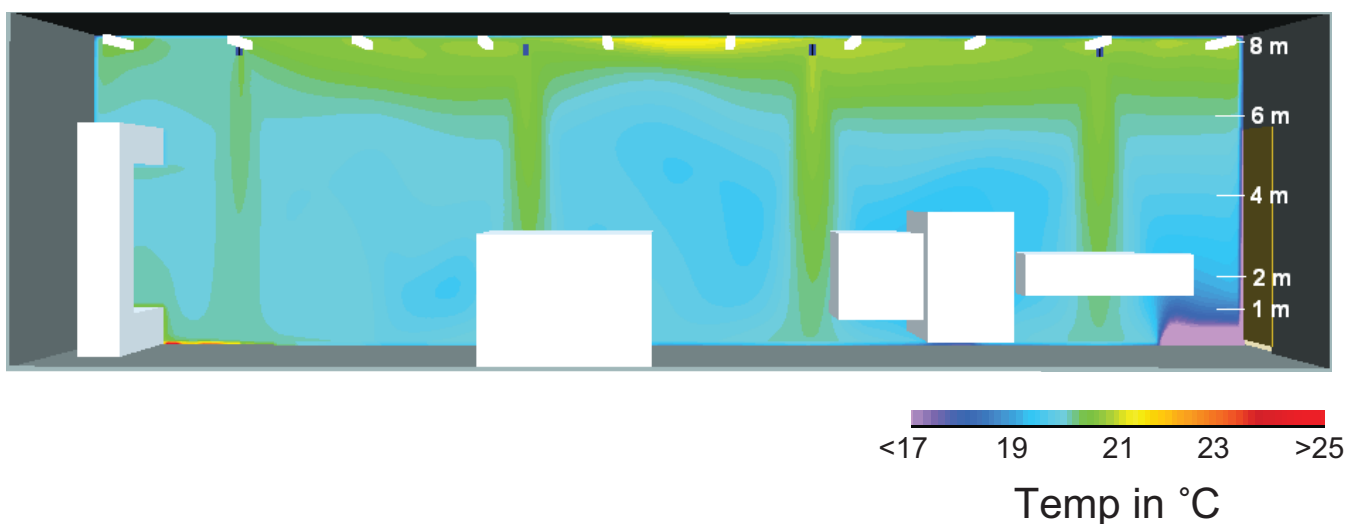
Room pre Airius installation

Figure 1



Room post Airius installation

Figure 2





Smoke machine used for air pattern visualisation. Model 45/PS-4 mounted at 9 metres.

The energy efficient Airius destratification fans are designed to continuously move a column of air to the floor. A typical installation includes a series of units mounted just below the ceiling, evenly spaced throughout a facility, working in conjunction to improve comfort, reduce heating and cooling costs and reduce carbon emissions.

Airius Destratification Systems



Free Hanging

The original Airius fan, first introduced in 2004, is available in several models with various motors/controls to accommodate ceiling heights from 2.5 to 31 metres, ranging from the short model 10 to the largest model 100. Free hanging units are available in off white, or can be custom painted to match any RAL colour code.



Suspended Ceiling Kit

Designed to fit standard European ceiling tile dimensions (600mm x 600mm) and accommodate ceiling heights from 2.5 to 12 meters, the Airius suspended ceiling kit is an additional piece of equipment that houses the Airius fan and allows easy installation into existing ceilings. Available in off white or can also be custom painted to match any RAL colour code.



The Designer Series

The Designer Series functions the same as the standard Airius fan unit, except it is enclosed in a cylindrical housing for architecturally sensitive installations. The custom made Designer Series is available with several motor/control options and can be custom painted to match any RAL colour code.

You can also visit the Airius website for further information including demonstration videos, technical data, installation guides, case studies, testimonials, installation gallery and much more at www.airius.co.uk.

Please contact us to arrange your free survey and quotation. Terms and conditions apply.

APPLICATIONS FOR THE AIRIUS SYSTEM

Any building that has a ceiling height from 2.5 to 31 metres and a heating or cooling system will benefit from the Airius system. In some cases even those buildings without heating or cooling will feel the benefits of a fresher environment and the natural cooling effect of moving air during the summer, as well as recirculating heat emitted from lighting, machinery, office equipment and body heat during winter months. Turn to page 9 for some selected installation images.



PHI - Air Purification & Odour Control

The Airius PHI air purification and odour control system significantly improves indoor air quality (IAQ) reducing viruses, bacteria, gases, VOCs (Volatile Organic Compounds), mould and odours by over 90% whilst an advanced atmosphere oxidisation technology gives indoor environments fresh, clean and odour free air. This is in addition to the standard features and benefits of the Airius destratification system.



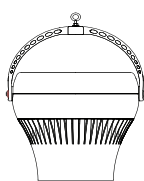
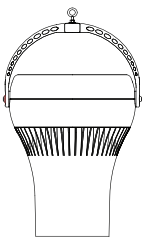

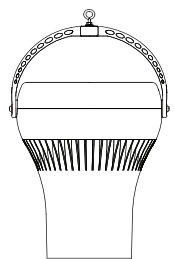
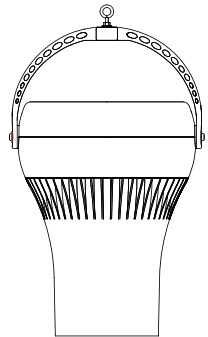
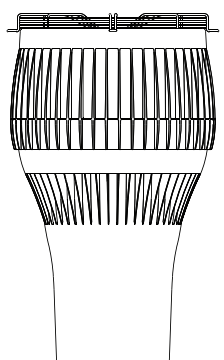
Features and Benefits

- Continuous air purification
- Kills over 90% airborne bacteria & viruses
- Clean & healthy care environment
- Reduces gases, vapours & VOCs by over 90%
- Advanced atmosphere oxidisation technology
- Simple to install with no ducting required
- Cost effective Indoor Air Quality (IAQ) solution
- 3 year unit warranty / 2 year PHI cell warranty
- Reduces odours by over 90%
- Reduces mould by over 90%
- Increases staff productivity
- Reduces staff absenteeism
- Reduces Sick Building Syndrome
- Small, versatile, unobtrusive units
- Minimal maintenance required
- Established and proven technology

TECHNICAL INFORMATION - DESTRATIFICATION SYSTEMS

The following data is accurate as of January 2013.

Please refer to our website at www.airius.co.uk for updated technical information.

Technical Drawings					
Model 10	Model 15	Model 25	Model 45	Model 60	Model 100
					
Height: 410mm Width: 330mm	Height: 560mm Width: 330mm	Height: 560mm Width: 330mm	Height: 610mm Width: 380mm	Height: 813mm Width: 464mm	Height: 845mm Width: 495mm

Airius units are available as free hanging fans applicable for ceiling heights from 2.5m to 31m, or can be installed into suspended ceilings up to 12 metres with our 600mm x 600mm suspended ceiling kit.

Technical Specifications							
	Model 10	Model 15	Model 25	Model 45/PS-4	Model 45/PS-2	Model 60	Model 100
Average Floor Area:	46m ²	74m ²	111m ²	111m ²	139m ²	186m ²	232m ²
Diameter Coverage:	7.5m	9.7m	12m	12m	13m	15m	17m
Ceiling Heights:	2.5m - 3.5m	4m - 5m	5.5m - 8m	8.5m - 12m	12.5m - 14m	15m - 18m	19m - 31m
Volts ¹ :	230	230	230	230	230	230	230
Watts @ 50 Hz ¹ :	12	15	31	42	125	120	390
RPM @ 50 Hz ¹ :	980	1230	1450	1400	2450	1390	1690
CFM @ 50 Hz ¹ :	318	406	460	595	1072	1667	3358
m ³ /hr ¹ :	540	690	780	1010	1821	2832	5705
AMPS @ 50 Hz ¹ :	.06	.06	.13	.19	.54	.57	2.5
Thermal Shut Off ¹ :	110°C	110°C	110°C	135°C	135°C	135°C	135°C
Noise Level ² :	0 - 25dB	0 - 30dB	0 - 34dB	0 - 34dB	0 - 49dB	0 - 47dB	0 - 43dB
Unit Weight:	3.2 kgs	4.1 kgs	4.1 kgs	6.4 kgs	6.4 kgs	10 kgs	20.5 kgs
Height to Rim:	305 mm	410 mm	410 mm	457 mm	457 mm	610 mm	845 mm
Height (inc handle):	410 mm	560 mm	560 mm	610 mm	610 mm	813 mm	N/A
Diameter:	330 mm	330 mm	330 mm	380 mm	380 mm	464 mm	495 mm

¹Motor data provided by motor manufacturer and is subject to change at any time.

²Noise levels recorded from installed units at floor level.

Each facility has unique fluid dynamics, please contact supplier to specify your system.

Technical Data & Product Features

With any blade fan, the spinning blades create turbulence, which reduces airflow distance. Airius' patented multi-vane stator (opposite) transfers this energy to create an airflow column, increasing throw distance. This is a standard feature on all Airius units.



Each Airius unit comes with an adaptable bail and eye bolt allowing it to be easily installed and angled up to 90° off vertical to deliver airflow precisely to where it is needed.



The leash anchor point is another standard feature on all Airius units acting as an additional safety point when installed.



Six foot cord length as standard, which can be wired onto a circuit or powered standalone by attaching a 3 pin plug (Not supplied).

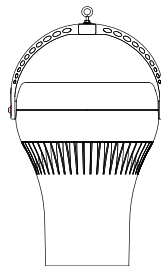


TECHNICAL INFORMATION - PHI AIR PURIFICATION AND ODOUR CONTROL SYSTEMS

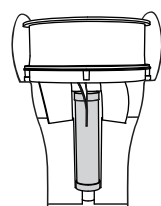


Technical Drawings

PHI - Models 15 & 25



External View



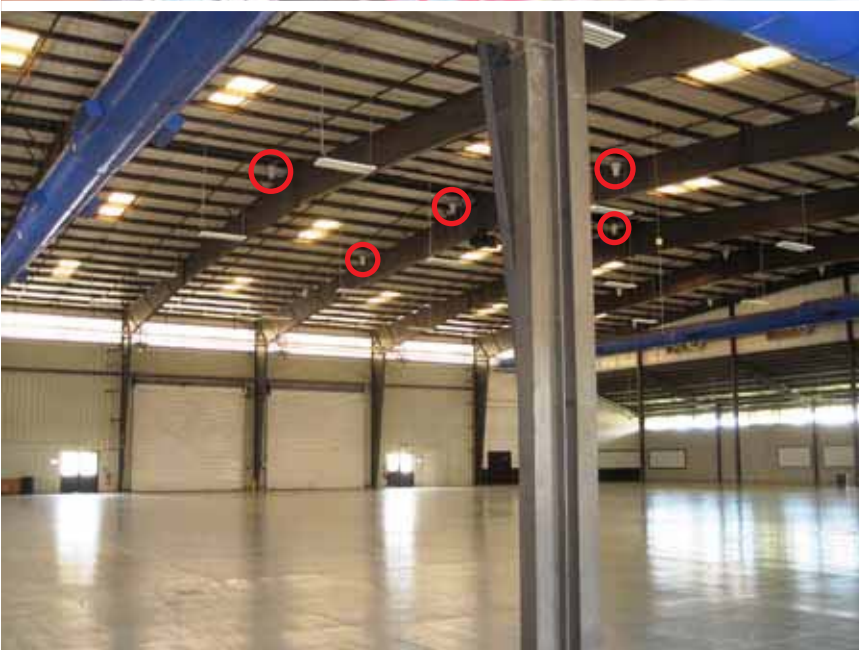
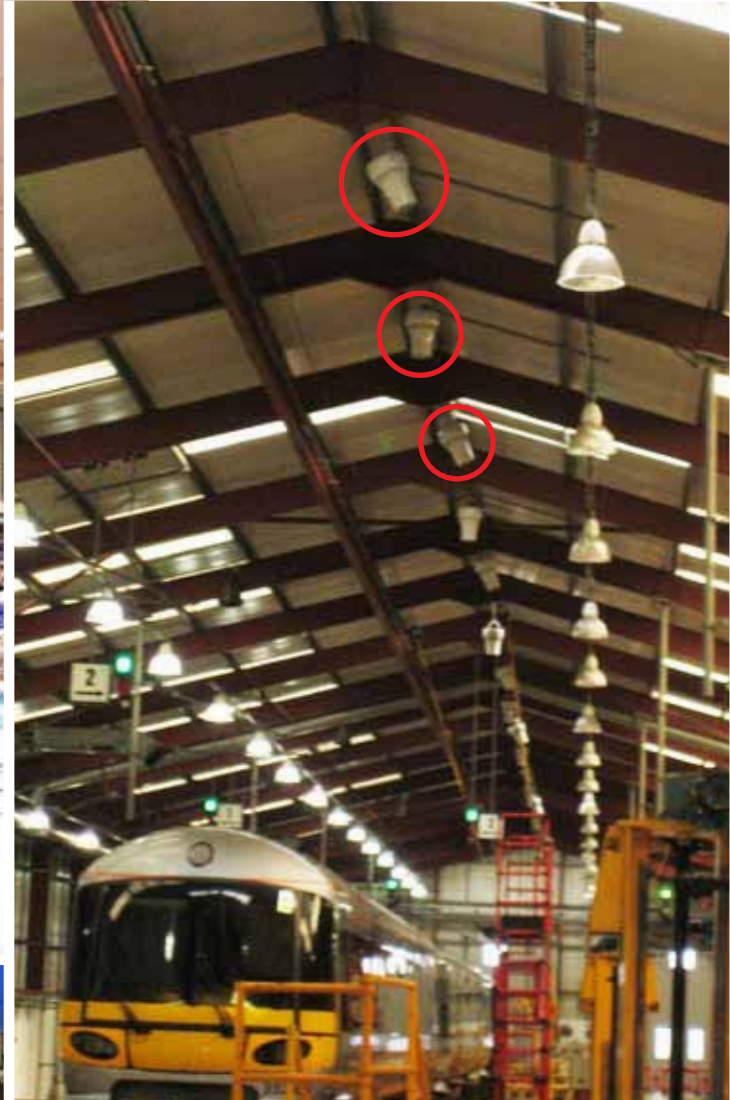
Internal View

Technical Specifications

	PHI Model 15	PHI Model 25
Average Floor Area:	74m ²	111m ²
Diameter Coverage:	9.7m	12m
Ceiling Heights:	4m - 5m	5.5m - 8m
Volts ¹ :	230	230
Watts @ 50 Hz ¹ :	25	41
RPM @ 50 Hz ¹ :	1230	1450
CFM @ 50 Hz ¹ :	406	460
m ³ /hr ¹ :	690	780
AMPS @ 50 Hz ¹ :	.06	.13
Thermal Shut Off ¹ :	110°C	110°C
Noise Level ² :	0 - 30dB	0 - 34dB
Unit Weight:	4.1 kgs	4.1 kgs
Height to Rim:	410 mm	410 mm
Height (inc handle):	560 mm	560 mm
Diameter:	330 mm	330 mm

¹Motor data provided by motor manufacturer and is subject to change at any time.

²Noise levels recorded from installed units at floor level.
Each facility has unique fluid dynamics, please contact supplier to specify your system.







Key Points:

- 45.07% - Overall Savings 08/09
- £62,351 - first winter savings
- £21,268 - full system & installation cost
- 3,000m² - floor area
- 5.7°C - mean temp 07/08
- 3.4°C - mean temp 08/09
- £793 - Airius running costs per winter season
- Installed into Can Assembly area
- System - 34 units
- Part of the Ardagh Group

"Overall savings taking into account lower temperatures and prices in winter 08/09 = 45.07%

The full cost of the Airius units is re-couped within a matter of months - first winter savings of £62,351 measured against a total spend of £21,268." - Paul Matten (Plant Engineer)

From: paul.matten@uk.imp-group.com
Sent: 26 August 2009 13:54
Subject: Report

Hello Airius,

Please find attached our analysis and data report. I have already forwarded the findings to our environment manager and i have spoken to two other plants in Germany and France.

Regards,

Paul Matten
Plant Engineer

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www.impressgroup.com

Oil prices dropped by an average of 9.5% in 08/09 compared to the previous winter period 07/08. This will enhance the actual savings.

The mean temperature for East Anglia during winter 07/08 was 5.7°C. The mean temperature for East Anglia during winter 08/09 was much cooler at 3.4°C.

The heating system thermostats are set to 16°, resulting in an increase in the requirement for heating in East Anglia of 22%.

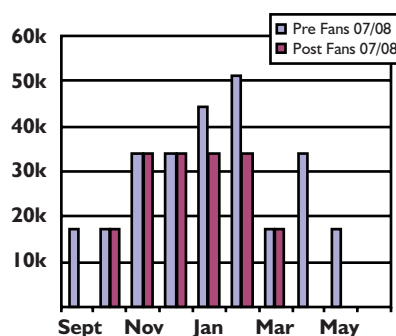
This analysis excludes the purchase and installation costs of £21,268 in the first year.

- Winter 07/08 (pre-fans) total oil usage = **£138,337**
- Winter 08/09 (post-fans) total oil usage = **£83,837**
- Oil use reduction & savings, winter 08/09 = **£54,500**
- Restated savings, inc lower Oil price 08/09 = **£49,322**
- Restated Oil use & savings, inc lower temp 08/09 = **£63,144**
- Airius System running costs per winter season = **£793**

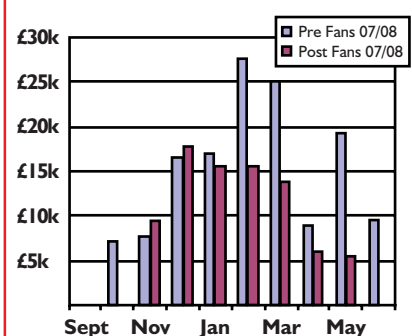
First Winter Savings = £62,351

	Qty (Ltrs)	Cost (£)
Aug 07	0	0
Sept 07	0	0
Oct 07	17,000	7,080
Nov 07	17,000	7,242
Dec 07	33,999	16,302
Jan 08	33,999	16,591
Feb 08	44,104	27,054
Mar 08	50,999	25,595
Apr 08	17,000	9,239
May 08	34,000	19,291
Jun 08	17,000	9,943
Jul 08	0	0
Aug 08	0	0
Sept 08	0	0
Oct 08	0	0
Nov 08	17,000	9,348
Dec 08	34,000	17,126
Jan 09	34,000	15,535
Feb 09	34,000	15,212
Mar 09	34,214	14,196
Apr 09	17,069	6,706
May 09	13,687	5,714

Oil Usage (Ltrs) 2007 - 2009



Oil Costs (£) 2007 - 2009



Morrisons Supermarket - Knottingly Store

Morrisons, the fourth largest supermarket chain in the UK, is always looking for ways to reduce their energy costs and carbon footprint and ways to increase customer comfort.

Supermarket operators and their HVAC consultants have been trying to resolve the age old problem of cold chiller aisles and uncomfortably warm clothing aisles for many years. Costly and inefficient ducting systems, under cabinet heaters and heat retrieval systems have failed to solve the problem to date.

Mitton Mechanical, a Morrisons contractor, approached Airius in late 2007 to conduct a trial in the Morrisons Knottingly store in Wakefield. Airius units were placed at 4 metre intervals in three chiller aisles in the hope of reducing the stratification from 6-8°C to 1-2°C thus making the chiller aisles more comfortable (without adversely affecting the chiller units). More comfortable chiller aisles should increase the aisle spend as less shoppers rush through a cold area. A side benefit is to eliminate freezer/cabinet "fogging".

The trial was hugely successful and over 100 Morrisons stores have now been retrofitted with the Airius units. The Airius units are now on the standard specification list for all new stores and will be retrofitted as part of the normal refurbishment program.

Morrisons and Mitton Mechanical are a pleasure to work with. Their eagerness to reduce energy consumption and increase the comfort levels for customers puts them at the very top of the Green supermarket list, which is why they were the first supermarket in the UK to be awarded the prestigious Carbon Trust Standard for making real reductions in their carbon emissions and energy usage.



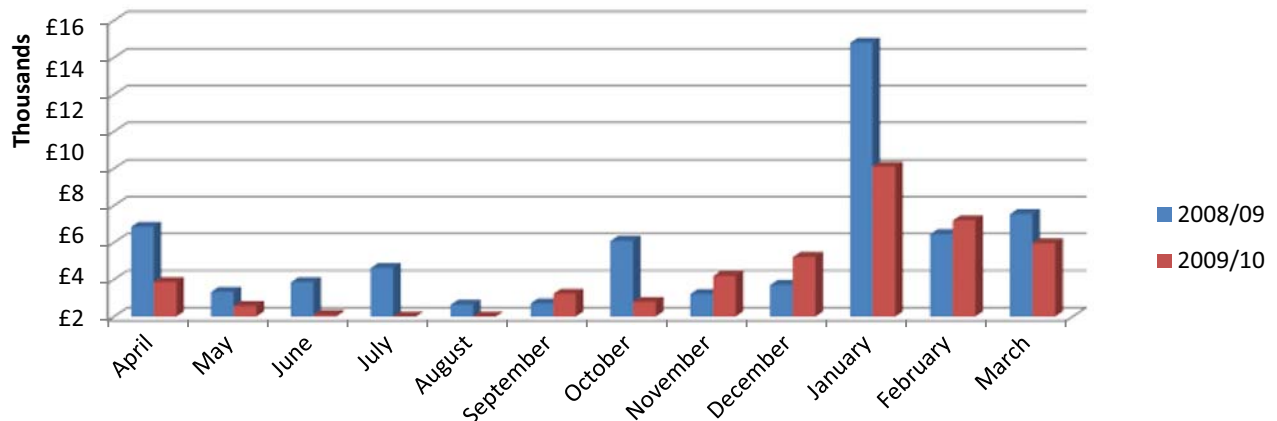
SIEMENS



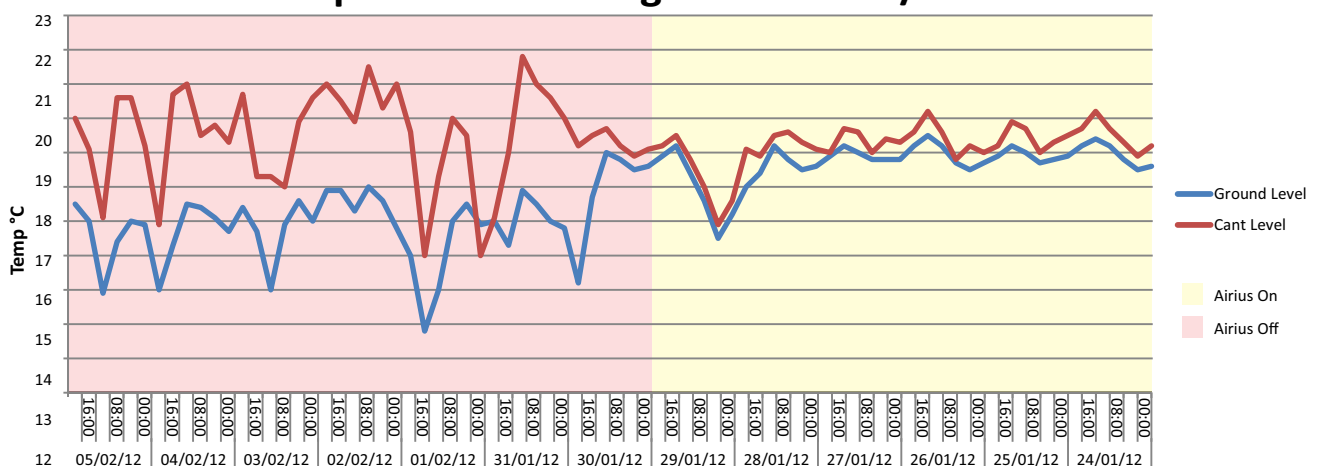
Key Points:

- ROI = Under 18 months
- £12,106 - First year saving
- £19,799 - Full system & installation cost
- 1,141,113.06 - kWh 08/09
- 709,956.00 - kWh 09/10
- Installed into Acton rail maintenance shed
- System - 26 Airius Model 45 units
- 75 tonnes - Approx. annual CO² reduction

Heating Cost Spend Pre/Post Airius



Temperature Readings - Jan & Feb/2012



The graph above shows the temperature differentials in the Acton rail maintenance shed at both ground level and cant rail level with the Airius system off during the week 30/01/12 - 05/02/12, and running during the week 24/01/12 - 29/01/12.



Newmarket Motors

- Cork Showroom

Newmarket Motors installed the Airius system into their Cork showroom through their licensed contractor Electrical Mechanical Controls Ltd.

They needed to resolve the uncomfortably high temperatures experienced on their first floor and the uncomfortably low temperatures found on their ground floor, which were creating unsuitable conditions for their staff to work in.

The Airius destratification system was simple and quick to install by their private contractor. It not only resolved the temperature imbalance, but also highly reduced the output, workload and operating times required from the A/C system, offering significant savings on their energy costs.

Key Points:

- Approx. 12°C heating reduction.
- A/C settings reset from 'high' to 'low'.
- Heating reduced by approx. 24 hours per week.
- First floor conditions resolved by recirculating the uncomfortably high temperatures to floor level where conditions were too cold, thus also solving the ground floor low temperature problem.



"We (Electrical Mechanical Controls Ltd - Ireland) surveyed the VW Showroom as the owner had expressed that he was having problems with uneven temperatures between the upstairs offices and downstairs offices and showroom. Staff upstairs were too hot and the staff downstairs were working with their coats on at times. The Showroom has 3 sides of glass, floor to roof. They have 4 combined heating/cooling units with the temperature set at between 30 – 33°C with 4 blowers set to maximum.

We installed 3 Airius Model 25s and we are awaiting the electricity bills to show definite reductions. In the meantime, the temperature on the A/C units have been reset at between 18 – 22°C with the 4 blowers on the low setting and 2 of these are turned off intermittently for approx. 2 – 4 hours per day.

Staff on both floors commented on the lovely comfortable temperature in comparison to before the system was fitted. These have been monitored during the cold spell of weather that we are experiencing at the moment."

Sean Browne - Director - Newmarket Motors



AIRIUS[®]

saving you energy

**120 DAY MONEY
BACK GUARANTEE**

We are so confident that the Airius system will benefit your building that we offer a full 120 day money back guarantee, no questions asked. Subject to terms and conditions.

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