



De-stratification is recommended
by The Carbon Trust*

AIRIUS IN MANUFACTURING & ENGINEERING

Save 20-50% on heating & cooling
costs with Airius - **The world leaders**
in De-stratification technology



Web: www.airius.co.uk

Tel: 00 (+44) 0 1202 554200



Manufacturing & Engineering

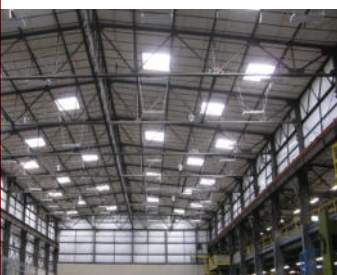
Architects, building owners and facility managers who work with large industrial buildings are under growing pressure to seek solutions which not only save energy and money, but also help achieve their green business goals.

In response to this Airius destratification systems are being increasingly turned to as the most cost effective method to reduce HVAC costs and carbon emissions by 20% - 50% (or more when used in facilities with process heat), whilst also ensuring comfortable conditions are maintained for staff in order to sustain productivity.



Features & Benefits

- **Increased staff productivity**
- **Hugely improved comfort levels all year round**
- **40%+ reduction in heating costs**
- **25%+ reduction in cooling costs**
- **25% - 40% reduction in carbon emissions**
- **Rapid ROI - Usually 12 - 24 months**
- **Reduced machinery start up time**
- **Reduced building heat up time**
- **Condensation reduced or eliminated**
- **Significantly reduced HVAC maintenance costs**
- **Minimal running costs (from £6/pa)**
- **Increases lighting lifespan**
- **Recycles process heat enhancing savings**
- **Eligible for carbon reducing grants/loans**

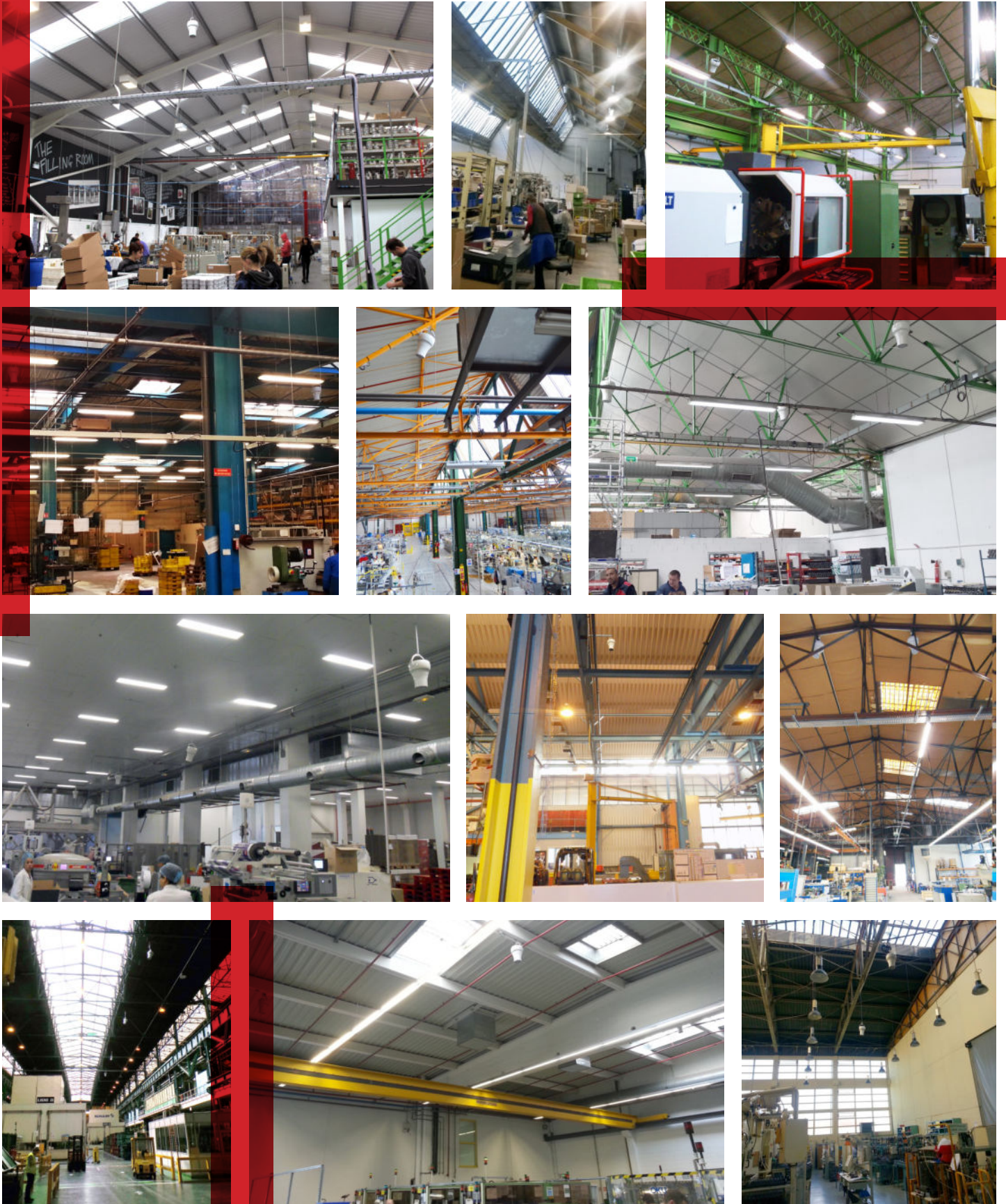


In winter months most industrial facilities are susceptible the cold, which reduces productivity, whilst in those buildings which are heated costs can increase significantly. As heating and/or cooling can account for over 50% of a buildings running costs in most cases, this represents a huge expense.

It is now recognised that stratification is the single largest waste of energy in buildings today and that destratification, which is recommended and endorsed by the Carbon Trust, is a low-cost, quick and simple means to reduce energy usage. By recycling and recirculating the heated or conditioned air in a building that has already been paid for, rather than letting it accumulate at the ceiling or escape through roof, windows or doors, workload is dramatically reduced on HVAC systems reducing wear and maintenance.

Regardless of a building's design or HVAC system; whether it has high or low ceilings, poor insulation, frequently opening doors or windows, radiant or infrared heating, an Airius destratification system will optimise comfort and productivity, whilst reducing your costs significantly.

Installation Images



Client Testimonials



“ First winter savings of £62,251 measured against a total system spend of £21,268! ”

"We installed the Airius system into the can assembly plant at our manufacturing site and I am very pleased with the results so far. The heating system in the building now comes on far less than it used to and the employees who work in this building are now much warmer.

The overall savings taking into account lower temperatures and prices in winter 08/09 = 45.07%. The full cost of the Airius units is recouped within a matter of months - first winter savings of £62,251 measured against a total Airius system spend of £21,268!"

Paul Mattin - Engineering Manager

“ I would highly recommend Airius systems for all factory and warehouse environments ”



"We now have Airius destratification fans in all of our main production facilities totalling 80,000 sq ft. Each installation was carried out professionally and to an excellent standard, with the minimum of interruption to our very busy manufacturing facilities. The main benefits for us are vastly improved air circulation, balance of temperature throughout the buildings, low running costs, silent and stress free operation and of course a fantastic saving on our gas utility bill per annum. I would highly recommend Airius systems for all factory and warehouse environments."

Mark Northy - Managing Director



“ Not only has the thermostat been lowered considerably but the heater kicks in much less ”

"With all that heated air now being pushed back down, not only can the thermostat temperature be lowered considerably but the heater itself kicks in much less. Having burnt our way through 6,000 litres of oil in the first five weeks or so, the same heater assisted by just three Airius fans, on average now uses about 3,000 litres – for the whole year!"

Roger Hewlett - Production Manager

“ [We’ve] switched one of our heaters off thus giving us a fantastic saving in heating costs! ”



"Since fitting the Airius destratification system in our storage warehouse we have been able to maintain a constant and comfortable temperature for our staff, whilst also being able to switch one of our heaters off thus giving us a fantastic saving in heating costs!"

Paul Stewart - Health, Safety & Environmental Manager

Selected Client List

SAMSUNG



rotork[®]



SIEMENS



ArdaghGroup



Unilever



TOYOTA



DS Smith Packaging

ALSTOM



CT Production
Electronics Manufacturing Services



RENAULT

Grantham
Manufacturing Ltd.

Impress Ltd

- Salhouse Road, Norwich



Impress installed 34 Airius fan units into their factory to save on heating costs and their investment was repaid 3 times over in the first winter they were installed.



Key Points:

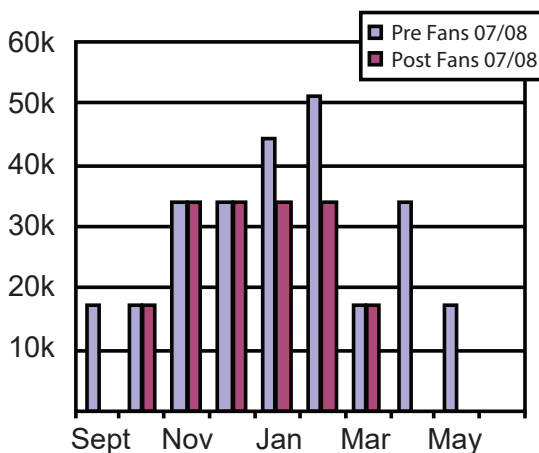
- 45.07% - Overall Savings 08/09
- £62,351 - First winter savings
- £21,268 - Full system & installation cost
- 3,000m² - Floor area
- 5.7°C - Mean temp 07/08
- 3.4°C - Mean temp 08/09
- £793 - Airius running costs per winter season
- Installed into Can Assembly area
- System - 34 units
- Part of the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

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

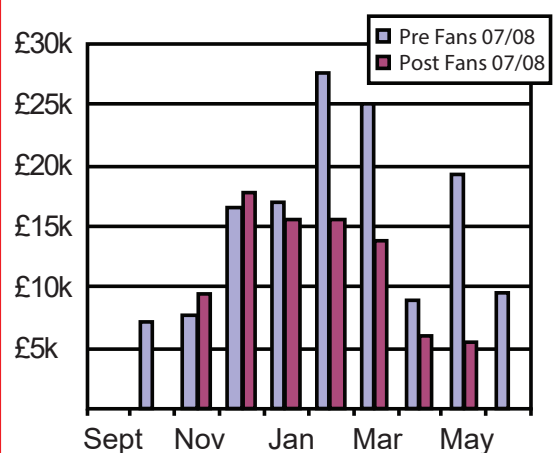
The full cost of the Airius units is re-couped within a matter of months - first winter savings of £62,351 measured against a total spend of £21,268.”

- Paul Matten (Plant Engineer)

Oil Usage (Ltrs) 2007 - 2009



Oil Costs (£) 2007 - 2009



Consumption & Weather Adjustments

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°C, 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.

	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

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

From: paul.mattin@uk.imp-group.com
 Sent: 26 August 2009 13:54
 Subject: AIRIUS PERFORMANCE 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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Lush Retail Ltd

- Hatch Pond Road, Poole



LUSH Retail Ltd contacted Airius to address the uncomfortable low temperatures and expensive costs for heating at their factory facility in Poole, Dorset. Originally it was estimated that this site would benefit from a minimum energy saving of 35%, however a far greater saving was achieved of over 60% following installation of the Airius system.



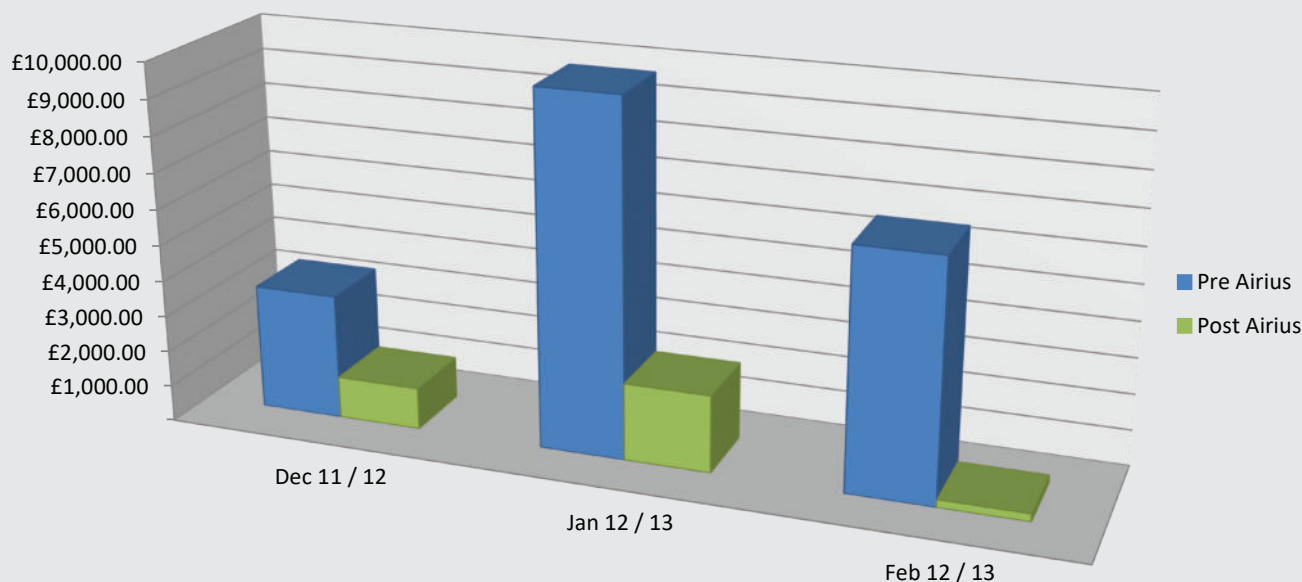
Key Points:

- **ROI = 26 DAYS!**
- **61% Energy saving on heating system**
- **Heating spend pre Airius = £26,638.83**
- **Heating spend post Airius = £7,333.38**
- **£2,967.50 - Full system & installation cost**
- **£68.75 - Airius system annual running cost**
- **Airius System = 4 x Model 25's**
- **Now recirculates process heat for free heating**

Lush Retail Ltd needed to improve internal conditions at their Hatch Pond Road factory facility in Poole, Dorset. Temperatures at floor level were uncomfortably cold as their heating system was unable to reach acceptable conditions. This also incurred high energy costs as the heating system was running constantly in an attempt to reach set parameters.

Following installation of the Airius system heating costs for the site were reduced by over **60%**. Lush are now installing the Airius system throughout the rest of their factory facilities.

Heating Spend Pre & Post Airius



Meter Readings, Consumption & Cost Data (Pre Airius Installation)

Pre Airius Installation	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	
Reading Date	30/11/11	03/01/12	01/02/12	01/03/12	03/04/12	03/05/12
Reading	71,745.53	85,576.19	97,829.50	109,581.20	113,795.59	116,319.31
Usage		13,830.66	12,253.31	11,751.70	4,214.39	2,523.72
Less 20% For Boiler		11,064.53	9,802.65	9,401.36	3,371.51	2,018.98
Less 330 Units Per Month For Process Gas		10,734.53	9,472.65	9,071.36	3,041.51	1,688.98
Total Usage		34,009.02				
Total Usage With Weather Effect		37,750.02				
Cost		£3,482.07	£9,816.64	£6,628.24	£2,046.23	£926.18
Total Cost		£22,899.36				
Total Cost With Weather Effect		£26,638.83				
Average Temperature		6.7°C	6.1°C	4.4°C	8.3°C	7.2°C
Usage Including Weather Effect		11,915.33	10,514.64	10,069.21	3,376.08	1,874.76

Meter Readings, Consumption & Cost Data (Post Airius Installation)

Post Airius Installation	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	
Reading Date	30/11/12	31/12/12	31/01/13	28/02/13	28/03/13	01/05/13
Reading	123,503.25	126,043.72	130,397.79	134,882.49	138,829.17	142,685.57
Usage		2,540.47	4,354.07	4,484.70	3,946.68	3,856.40
Less 20% For Offices & Hot Water		2,032.38	3,483.26	3,587.76	3,157.34	3,085.12
Less 330 Units Per Month For Process Gas		1,702.38	3,153.26	3,257.76	2,827.34	2,755.12
Total Usage		13,695.86				
Cost		£1,162.02	£2,148.62	£218.48	£1,926.99	£1,877.27
Total Cost		£7,333.38				
Average Temperature		5.7°C	4.5°C	3.6°C	3.3°C	6.3°C
Temperature Difference		-1.0°C	-1.6°C	-0.8°C	-5.0°C	-0.9°C
Temperature Effect On Weather		11.0%	17.6%	8.8%	55.0%	9.9%

Consumption & Savings Summary

CONSUMPTION & SAVINGS	WEATHER		AVERAGE
Usage Difference	Without	20,313.17	22,183.66
	With	24,054.16	
Percentage Saving	Without	59.73%	61.73%
	With	63.72%	
Total Saving	Without	£15,565.98	£17,435.71
	With	£19,305.45	
Total Cost Of Airius Units			£2,967.50
Return On Investment	Without	29 Days	26 DAYS
	With	23 Days	

*Consumption & savings data supplied by Jack Gale, Utilities Coordinator - LUSH.
MET office used for the mean Temperature data.*

Conclusion

USAGE for November and December 2012 calculated by dividing the COST by the average amount per unit throughout the year. COST for March 2013 calculated by multiplying units used by average amount per unit throughout the year. 20% of consumption allowed for heating the offices and hot water.

Gas used for production processes approx. £220 per month. Calculated from average amount used throughout June, July & August when the heating is off. This has been subtracted to leave only heating gas.

A drop in temperature of one 1°C increases a buildings heat load by 8% to 12%, mainly depending on the base temperature and the building fabric. With the low level of insulation at the Lush Hatchpond Road facility calculations are based on a very conservative 11% per 1°C. The overall adjustment for the temperature difference works out as a 16.33% increase to the pre Airius figures.

All the final outcomes are shown in the data above including; WITHOUT weather effects taken into account, WITH weather effects taken into account and an AVERAGE of the both.

The Airius units in the Hatchpond road site have far exceeded predicted savings. This is mainly due to the buildings extremely low level of insulation and the high level of process heat within the environment, which when recirculated provides a free source of space heating.

Siemens Transport

- Acton Rail Maintenance



Siemens Transportation Systems Ltd. contacted Airius to address the high energy costs in their Acton Rail Maintenance Shed, which was unable to reach acceptable comfort levels for staff despite the heating running continuously.

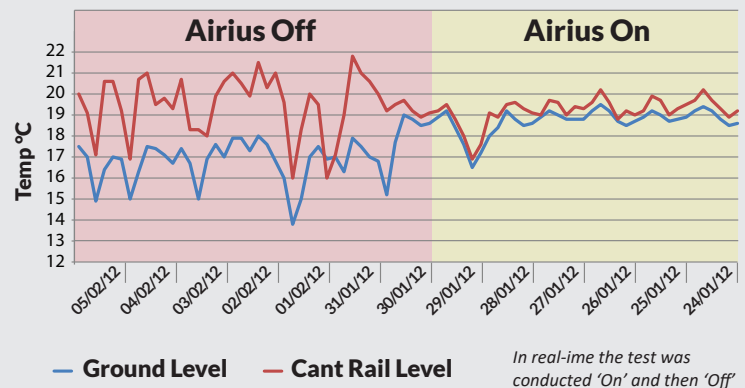
Following installation of the Airius system desired conditions were easily achieved and maintained, yet the workload from the HVAC system was also reduced, so much so that the system paid for itself in under 18 months.



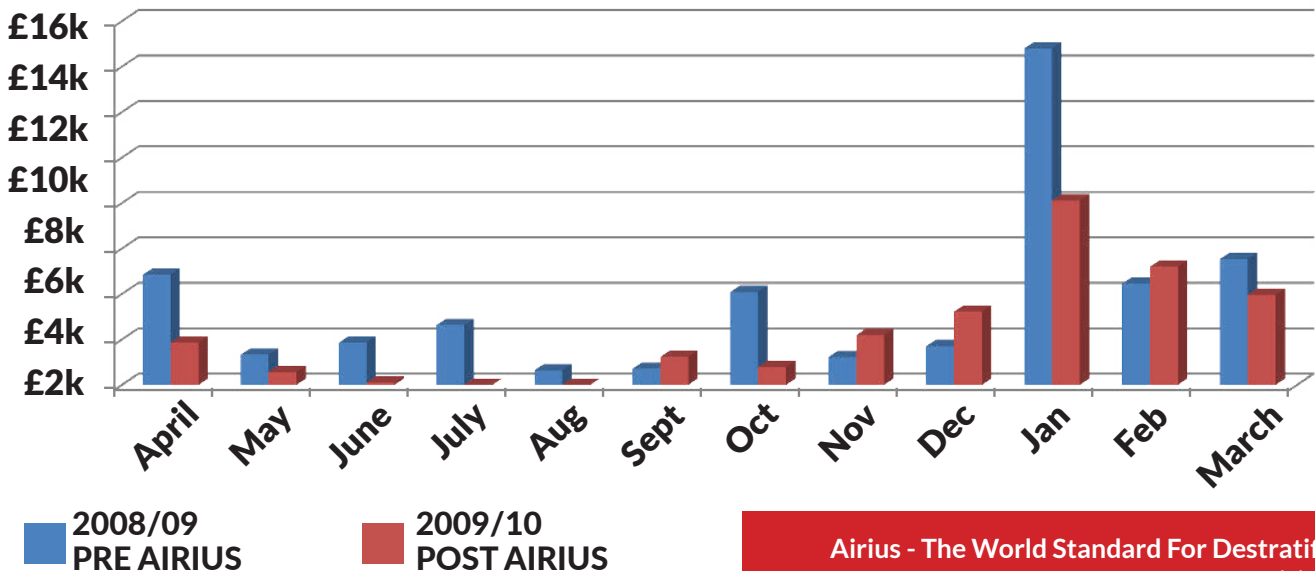
Key Points:

- 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
- System - 26 Airius Model 45 units
- 75 tonnes - Approx. annual CO₂ reduction

Temperature Readings - Jan & Feb/2012



Heating Cost Spend Pre/Post Airius



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Get in touch!

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