

Terracotta Army relies on Moducel AHUs

Moducel air handlers are providing a controlled environment at the British Museum for China's world famous terracotta army. The terracotta figures are housed in the historic Round Reading Room, the first time this space has been used for an exhibition.

The Chinese Authorities required tightly controlled conditions for the display of the artefacts with temperatures of $22^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and humidity levels of $45\% \text{ RH} \pm 8\%$. The challenge was to design a means of maintaining these conditions irrespective of the variation in load presented principally by display lighting and up to 400 visitors each hour.

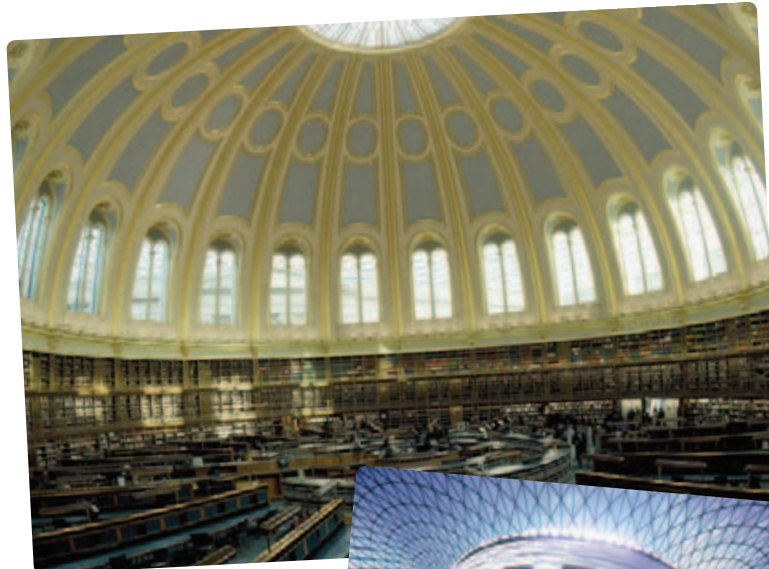
In the exhibition area, eight custom built Moducel LKP units are providing the air conditioning. Four units are identical fresh air units comprising filters, chilled water-cooling coils (with a bypass arrangement), supply fan and discharge plenum with an air volume of $1.0 \text{ m}^3/\text{s}$ for each unit. The other four air handlers are identical recirculation units comprising filters, chilled water cooling coils, LPHW heating coil, Vapac electrode type humidifiers, fan section, discharge plenum and air volumes of $1.55 \text{ m}^3/\text{s}$.



The cooling coils in the fresh air handling units make use of high bypass technology to maximise dehumidification without reheat. This achieves the necessary latent removal without undue dry bulb depression and a clever way of keeping costs down and saving energy.

The re-circulating units pressurise the void beneath the exhibition floor with air supplied via floor mounted swirl diffusers.

Return air is drawn back to the under-deck plenum through grilles around the perimeter enclosure via

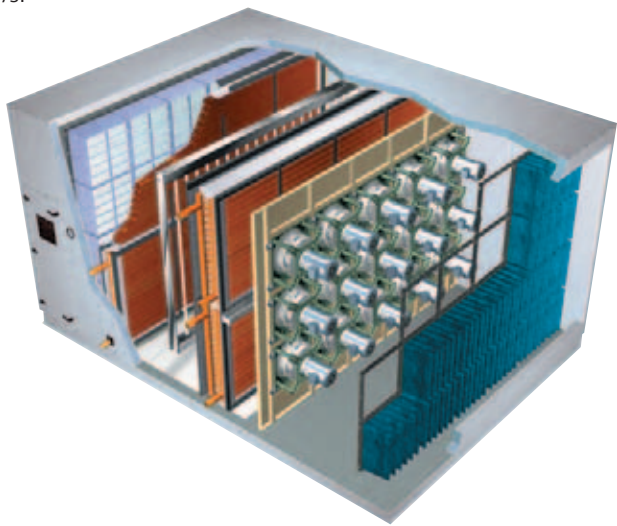


air handling units including cooling, re-heat coils and integrated Vapac humidifiers to achieve the necessary temperature and humidity control at all times.

Moducel worked closely with TGA Consulting Engineers and Romec who co-ordinated much of the work, to design the most appropriate solution.



For more information, please visit the museum's web site: www.thebritishmuseum.ac.uk



FANWALL TECHNOLOGY® arrives

As part of its Energy-Saver® programme, Eaton-Williams has introduced FANWALL TECHNOLOGY®, a new approach to air handler design in the UK.

FANWALL TECHNOLOGY® offers a new way of designing air handling units with many high efficiency small diameter direct driven fans that are mounted in an array within an air handler's intake. Benefits include a reduction in the footprint of the air handler, reduced noise, redundancy capability, simplified maintenance, greater design flexibility and saves energy.

"FANWALL® is ideal for specialised applications and air handlers using the technology are typically 6-10% more energy efficient," says Joe Wieckowski, Moducel's General Sales Manager.

Using the latest technology from its US based sister company Huntair, the system is being applied across Moducel's LKP range of air handlers and incorporates the latest energy saving design features.

Reduced energy consumption is a major benefit. The LKP FANWALL® array can be adjusted by turning one or more fans off enabling remaining fans and motors to be fully loaded at or near peak efficiency.

Other benefits include reduced noise levels, built in redundancy/reliability, smaller footprint and reduced maintenance costs.

"Engineers in the past have had to juggle placing a large air handler into a confined space with good airflow characteristics and the need for maintenance access. FANWALL® offers many advantages and should be considered for projects that warrant a customised solution," says Joe.

Ideal applications include concert and lecture halls, performing arts centres, libraries, museums, art galleries, hospital and clean room environments or for any other application that requires a customised approach to meet stringent criteria.

ServerCool® for data centres



Eaton-Williams has unveiled a range of products targeted at the growing blade server and data room cooling markets.

The advances of computing power and technologies are putting demands on temperature control systems. Some companies tackle the problem by reducing the amount of equipment housed in racks or the number of racks in a bid to run efficient data centres with low operation costs; whilst maximising space and overcoming heating problems.

Eaton-Williams has developed a range of ServerCool® products at rack and room level to address these issues and satisfy the demand for precision cooling for blade servers, and critical data room equipment.

"We have been working closely with the IT industry's leading companies including IBM, USystems and Intel to develop a range of products and turnkey solutions to tackle the heat problems faced in data centres." Says Mark Luxford, Eaton-Williams' New Technologies Executive.

The Eaton-Williams ServerCool® portfolio includes energy efficient chillers, grilles and diffusers, all backed up with a comprehensive installation, project management, service and maintenance package for optimum operating efficiency.

All of the products are specifically designed for high spec IT environments with maximum performance and reliability in mind. N+1 redundancy is a standard, built in feature of the products that have been developed with global blue chip IT equipment providers.

Comprehensive service and maintenance and M&E Services provides 24/7 support. With a national network of mobile engineers or by supplying residential engineers, Eaton-Williams has already received orders from Mencap, Warwick University and Mercedes Formula 1. Stateside, Eaton-Williams has signed agreements with Vette Corp and Panduit with whom they already have OEM agreements and IBM US where it has installed kit and made cooling modules for water cooled chips.

Contents

Terracotta Army relies on Moducel AHUs

FANWALL TECHNOLOGY® arrives
ServerCool® for data centres

Vapac humidity stands the test of time

CRAC units deployed

Edenaire helps Belgacom cut CO₂ emissions

Hospital benefits from energy saving IPACs

Flat pack solution for Japanese Gallery

Eaton-Williams' CDs help users

Colman's louvre solution for Hebrides

Continuous humidification

Midlands art gallery relies on Vapac

Breweries opt for Stainless Steel

EWS 40th Anniversary

Exhibitions play a key role

Air distribution gets a boost thanks to climate change

PPM is an insurance policy says EWS

Looking forward to RAC 09

Vapac®

Steam Humidifiers

EWPC®

Eaton-Williams Process Cooling

QUALITAIR®

Cooling Systems

edenaire®

Customised Air Conditioning

COLMAN®

Air Distribution

MODUCEL®

Air Handling & Fan Coil Units

EWS®

Service & Maintenance
M&E Services

Vapac humidity stands the test of time



When tobacco company Gallaher needed to replace its aged humidifiers, it called in Vapac Humidity Control who supplied the original units over 20 years ago.

The units were installed when Gallaher first built its facility in Weybridge, Surrey. An air conditioned and environment with humidification was part of the specifications from the outset to provide a comfortable working and close control environment for the 'Leaf Room' where Gallaher receives samples of tobacco from its plantations across the globe. Gallaher archives samples for up to three years to enable comparisons with previous years' products; accurate temperature control is crucial.

"Humidification has always been important to Gallaher," says Dave Harkman "When the humidifiers started to fail, our concerns focused on the comfort of employees and the stability of the tobacco's environment."

Three Vapacs from the LE range, two LE90PDs and one LE18D were selected to replace the existing five electrode boilers in the roof top plant rooms. Vapac's VIP installer Humi-Tech. carried out the installations.

Two of the units provide humidification to the offices as part of the comfort cooling system and run for 13 hours a day with set temperature of 21°C with 45% RH. The other unit provides humidification for the Leaf Room only and is operational 24/7. The required temperature is 15°C with 65% RH.

Few humidifiers can boast such longevity as those at Gallaher. "It was quite a surprise to discover that the units were 20 years old and an endorsement of the robustness and durability of our products," says Ray Crowle, Vapac Humidity Control's Sales and Project Engineer.

Edenaire helps Belgacom cut CO₂ emissions



Edenaire has helped Belgacom to cut its costs dramatically by reducing the telecommunications providers' carbon footprint, with a purpose-built energy efficient solution for cooling its telephone exchanges.

Close control air handling units were used in all Belgacom's exchanges, but the effects of climate change encouraged a review. Savings achieved by other European telecoms provided an additional incentive.

A pilot site involving 11 eBTX units, two BTX units and two IPAC units, based on a net cooling capacity of 338kW reduced yearly CO₂ production by 380 tons and produced yearly savings of 50,527 Euros.

"By keeping the amount of power to run the cooling system to an absolute minimum and by using fresh filtered outside air whenever possible; EC fan motor technology which generates up to 50% energy savings over standard curve forward curve DC fans and 'ECO' cooling technology which reduces the fresh air supply duty by 20%, the eBTX provides reliable energy efficient cooling." says Rob Jones, Telecoms Cooling Manager.

The pilot was part of Belgacom's Sustainable development strategy.

"Belgacom has shown that addressing energy issues can be good for the environment and good for business," says Rob.

Belgacom is now changing its policy to fresh air free cooling with DX wherever possible in its network development.



Hospital benefits from energy saving IPACs

Moducel is providing a close control environment for a critical resource at Salisbury District Hospital.

Salisbury's computing facilities are a key part of the hospital's infrastructure and the computer room, which is in operation 24/7, is dependent on a full function air-conditioned environment.

Two model 40 units from its Invicta Precision Air Control (IPAC) range have been installed in a master/slave combination. Both units were sized for extra duty to enable future expansion of IT facilities by 50%.

Moducel's regional office in Cardiff worked very closely with Terry Cropp, Salisbury's resident electrical engineer to design an effective solution.

"In addition to supporting a wide range of facilities that include general administration and health records the IT facilities also support digital x-rays that help speed up treatment and care of patients," explains Terry.

"The IT facilities are a critical resource, close temperature control is essential."

One of the IPACs key attributes is its energy savings. Salisbury NHS Foundation Trust selected Moducel's IPAC units because of the close control benefits and is keen to exploit its excellent performance in respect of energy efficiency. As a result, the hospital is looking at closer control of higher temperatures in the computer room and less reliance on cooling.

The computer room is unmanned therefore, comfort cooling is not an issue, substantial energy savings could be realised by raising the temperature and not cooling as much.

"We are assessing the demands of the facilities and looking to balance the heating load and cooling requirements," comments Terry. A BMS system and environmental alarms are also in the pipeline.

Flat pack solution for Japanese Gallery



Moducel air handling units and Vapac humidifiers are providing a fully air conditioned environment in the refurbished suite of galleries devoted to Japan at the British Museum.

A close control environment is essential for the collections both on display and those in storage.

The museum's consultants TGA Consulting Engineers, in close liaison with Museum's Services Specialists recommended the replacement of the existing single air handling system with a more flexible solution that enabled room-by-room close control.

Access to the roof top plant room was restricted. Internally the route comprised narrow corridors, lifts and stairwells and externally the museum's own grounds were not suitable for heavy cranes because of underground basements and weight restrictions.

David Reynolds, Partner at TGA and Moducel's engineers designed a solution that maximised the limited space and could be built in situ.

Nine flat pack LKS units were used to meet supply and extract requirements, with an equal number of Vapac LR resistive units with stainless steel cylinders to cope with de-mineralised, softened or normal tap water, two Vapac osmosis units and a water softener were also provided as the museum is in a hard water area.

LKS units are manufactured horizontally, but the units for the Japanese gallery feature a 'double tower' configuration, to reduce their footprint and take advantage of the plant room's high ceiling.

Ashley Pursey, Project Manager for Romec Building Services, was on site throughout and worked closely with TGA to ensure a seamless transition.

"The entire project took nine months and once installed the air conditioning system underwent five weeks of trials prior to the galleries re-opening to iron out any problems and ensure the correct temperature and humidity levels were maintained," comments Alan Johnson, TGA's Project Manager.

CRAC units deployed

Eaton-Williams is meeting the challenge of tackling heat loads generated by the rapidly growing use of blade servers in data centres, with the launch of a range of large data room (CRAC) units as part of its Cooling IT technology portfolio.

The Moducel DRU (CRAC) air conditioning units are available with 80, 100 or 120kW cooling capacities and available with chilled water, DX, DX with water-cooled condenser and glycol free cooling configurations.

Ease of installation, efficiency, resilience and integration are the key hallmarks of the DRU range. The entire range has been designed around a modular frame and panel design to provide maximum unit strength as well as all round access

for rapid service and maintenance.

The units are configured to take return air at a high level. The air is filtered and conditioned before discharging via the base fan section in the ventilated raised floor.

Multiple high efficiency direct drive fans provide even, efficient air supply and inherent redundancy. The units can also be fitted with speed controllable highly energy efficient EC fans if required.

Customised control systems provide ease of integration for existing site upgrades and fully programmable DDC controllers provide customised programming and network capabilities including Modbus and SNMP protocols and Web server capability.



Eaton-Williams' CDs help users



As part of an ongoing communications strategy to keep wholesalers and customers up to speed with product developments, Qualitair has produced a handy product disc packed with easily accessible information.

"Wholesalers often don't have time to wade through product catalogues or surf the net looking for information. We're also aware that while most wholesalers have PCs, many aren't able to access the web or our site, which puts them at a disadvantage," comments Tony Twine, Qualitair's Product Manager.

Qualitair has addressed the problem by putting technical manuals, brochures and a cellar sizing chart on a single CD that also includes a link to StockLine.

Qualitair has also supplied CDs to the wholesalers trade counters. The cellar sizing chart is in a handy pocket sized format for engineers to keep for future use.

StockLine enables wholesalers to maximise sales opportunities by ordering Qualitair cellar cooling, low temperature cassettes and air cooled condensing units from factory held stocks. Products can be despatched for next day supply either to the wholesaler or to the contractors own premises or site.

CDs are available free from Qualitair stockists or call Qualitair direct on 01782 597124.

Eaton-Williams has also brought out a group CD highlighting all elements of the group products and services including EWS. A link has been built in so that users with access to the internet will be able to access information on Eaton-Williams' web site www.eaton-williams.com



Colman's louvre solution for Hebrides

Colman knows no bounds when it comes to tackling an air distribution dilemma and one of its most recent and possibly remotest projects took place in Stornoway on the Isle of Lewis, gateway to the Western Isles.

The solution was a series of custom-built louvres using External and Penthouse louvres to provide protection against the weather for the An Lanntair arts centre.

A custom-built approach that integrated with the overall design of the building was adopted using extreme weather resistant louvres. A series of horizontal louvres were used to protect the points at which fresh air is drawn into the tower buildings and stale air is discharged, denying entry to wind, rain and snow. Fifteen louvre panels measuring 1.35 x 3.7 metres were designed to fit around the lantern shaped tower that is approximately seven metres in diameter.

The WMV series flanged for surface mounting within a depth of 100mm was selected. Comprising 'Chevron' style double-banked blades, this special louvre blade profile has several unique features, making it suitable for use in areas subject to the most severe weather conditions. The blades incorporate anti-cascade traps, integrated drainage channels and special cill sections to collect and drain the water away from the louvre assembly. They are set on a 70 mm pitch inclined at 45°.



Vapac humidifiers are playing a critical role in the preservation and presentation of displays at the Compton Verney Art Gallery near Warwick. The humidifiers along with the air handlers operate 24/7 all year long providing precise ambient environment for all the works of art and historical artefacts.

Close control air handlers supply conditioned air to the galleries, all equipped with chilled water and heating coils plus seven Vapac electrode boiler humidifiers allowing humidification, de-humidification, heating and cooling. In addition to this three of the exhibition galleries have a total of five close control units to give final trimming of temperature and RH levels to even finer limits. An average set point of 21°C and 50% ± 5% RH is attained. To maintain temperature control and

Continuous humidification



Vapac's new range of electrode boiler steam generators provide an uninterrupted output of humidification.

There are currently no other systems on the market that can deliver the quantity and quality of steam without using a combination of reverse osmosis (RO) units and softened water.

"There are many processes and environments where even small fluctuations in humidity levels and time spent on drain cycles are not acceptable," comments Paul Poulter, General Sales Manager for Vapac Humidity Control. "The VapaLab LEC range has been specifically developed to provide continuous steam output using raw mains water."

Five models are available offering 5-45Kg/hr of continuous steam. Each unit comprises a twin cylinder system that delivers and maintains humidification levels by instantly modulating to match changes in demand and controlled by the VapaNet LEC system.

When one cylinder enters a drain routine, the other automatically ramps up in capacity to cope with the increased demand. The result is a modulating close tolerance uninterrupted steam supply.

Up to four units can be networked to supply a maximum of 180Kg/hr for more demanding applications.

Breweries opt for STAINLESS STEEL

The drinks trade is putting its weight behind stainless steel cellar cooler systems with their decision being driven by a combination of price, durability and hygiene.

This is good news for Qualitair whose range of cellar coolers and condensing units are proving as popular as ever.

Qualitair's ICUS™ stainless steel condensing units and INVICTA™ (ICC) cellar coolers have been designed with reliability and performance whilst also addressing hygiene issues that are at the forefront of publican and bar managers' minds.

The ICC cellar cooler offers a neatly packaged system that can increase stock rotation by supplying ready-chilled drinks and wines to back bar cabinet coolers and so helping to manage peak demands.

"The impact of Climate Change is affecting the brewery trade as customers are looking for chilled drinks year round thanks to a milder climate. As a result the ability to chill large quantities of drinks is a prerequisite," says Tony Twine, Qualitair's Product Manager.

Two models are available in the range, a low temperature version operating between 4-23°C that comes with a full electronic LED display fitted and a standard 8-23°C electro-mechanical system. A standard 12°C is included in the range, ideal for general keg and real ale storage areas.

Qualitair's condensers, the popular ICU and bestseller ICUS ranges offer highly competitive units. The ICUS condensing unit has five models in the range offering nominal duties from 2.5kW through to 8.2kW and combines robust construction with excellent value for money. The ICUS is manufactured as is all Qualitair products, in the UK and is of the same 'refrigeration quality' standard of design and materials as the established ICU condensing unit.



Midlands art gallery relies on Vapac



levels of humidity many galleries simply couldn't exhibit."

humidity levels, SGMS' in co-operation with Vapac created a positive air pressure within the galleries and approached humidification issues by oversizing the humidifiers and upgrading some electrode boiler models, controlled by Vapac's own operating system VOS-6.

Boosted RH levels, enable closer control of humidity conditions in critical areas. Cost savings were also achieved owing to the fact that the cylinders in the over sized units were not operating at full capacity, and hence needed to be replaced less frequently, a benefit given the hard water area.

"Compton Verney is a classic example of a critical humidification application," says Dave Mortimer, Vapac Humidity Control's National Sales Manager. "Without the right



There aren't many companies in the HEVAC industry that can boast a long pedigree but Eaton-Williams Service (EWS) has just hit a major milestone and is celebrating 40 years in the industry.

One of its first customers was ICL in 1963 when EWS was providing support for Eaton-Williams when it first moved to Edenbridge. The company has changed dramatically since the swinging 60s and grown organically into one of the UK's leading specialist HVAC service and maintenance companies.

With blue chip customers across many industries the company is thriving and on an ambitious growth path that is seeing its capabilities encompassing Europe and the east coast of America.

"EWS' strength lies in the calibre

and skill set of its engineers who can deliver an extensive programme of maintenance all backed up with 24/7 support" says John Wright, EWS' General Manager.

With the onset of global warming and the need to offset the damaging effects of climate change, EWS ensures its customers maximise their plant investment.

"The more efficient a plant operates the more cost-effective it is to run" says John.

Building requirements have become far more sophisticated over the last 40 years with year round operation the norm for many. EWS has kept pace and can provide solutions for the most demanding of environments and provide ad hoc customised solutions from its own M&E Services company.

Exhibitions play a key role



Exhibitions are a key part of Eaton-Williams' marketing activities as they provide a valuable opportunity for the group to display its products, meet consultants, specifiers and end users.

The company is very selective and under the watchful eyes of Peter Dewdney, the group's marketing manager takes stands at a number of shows throughout the year.

"The group adopts a bureau approach at the HEVAR shows and this enables to reach a wider audience and provides existing customers the opportunity to see the latest developments and talk to our

engineers in an informal atmosphere," comments Peter.

Last year the company could be found at several of the regional HEVAR shows, Maintec along with a presence at the Energy show in Birmingham.

This year Eaton-Williams will again be taking advantage of a number of key exhibitions (including the Energy event in September at HEVAR) as it embarks on a number of product launches that are set to shape the company's future growth plans. For the latest news and exhibition dates, log onto Eaton-Williams' web site www.eaton-williams.com



Air distribution gets a boost thanks to climate change

"Now the pressure's on to be more energy efficient air distribution products such as grilles and diffusers are really coming into their own" says Joe Wieckowski, General Manager of Colman Modulcel and sales of Colman's products have seen an increase as a result.

With environmental concerns, reducing carbon footprints and capital costs high on the agenda, it is little wonder that specifiers and designers are taking a fresh look at grilles and diffusers. Often regarded as ancillary products these flexible devices can be sited almost anywhere hence the revival in their use for delivering fresh air for a building's occupants.

Grilles are manufactured in a variety of shapes and sizes depending on the application and a very practical method of distributing air in a building. They can be placed within floors, walls, ceilings and even doors to enable the air to pass through to other rooms.

Another very effective method of moving air around a building is displacement ventilation. This relies on using the natural buoyancy (thermal convection) of warm air to deliver improved ventilation and comfort.

Displacement ventilation systems are most suitable for environments that have high ventilation requirements typical applications include industrial environments, classrooms, airports, atria, retail, food service areas, concert halls and lecture theatres; systems are used in office environments. In many cases the reduced air volume requirements provided by displacement systems means that the costs in such environments would compare very favourably with a mixing system.

Selecting the right air distribution systems can determine the overall effectiveness of an air conditioning system. There are no other HEVAC products that are as versatile and can be used in any building project. More details can be found on our web site: www.eaton-williams.com

PPM is an insurance policy says EWS

EWS has issued a wake-up call, warning companies to take preventative action now and not leave maintenance to chance.

The likelihood of a system failure is far greater when temperatures rise but breakdowns can occur at **any** time and leave an FM or his company seriously exposed.

Many air conditioning systems are only designed to cope with temperatures up to 28°C or 30°C maximum, but when temperatures touch 32°C or more, systems struggle to deliver enough cooling either because they fall short of the specifications or service and maintenance has been neglected.

An added problem is the trend for open plan offices with hi-tech equipment continually being introduced into the workspace. Despite the advances of technology, heat is still a by-product and adds to work place temperatures.

"The F-Gas regulations which came into force last July are also a major consideration as it now puts the

onus on operators (owners) or installers of ACR equipment that is charged with 3Kg or more of HFC refrigerant (or 6Kg if hermetically sealed) and requires them to ensure periodical checks to identify leaks. Verifying containment is part of our routine maintenance," says John Wright, EWS' General Manager.

Alan Robinson, EWS' Regional Business Development Manager agrees that maintenance should not be viewed as a seasonal activity. "The trend for boilers to be maintained in the autumn or later and air conditioning systems when temperatures start to increase is illogical."

"It doesn't matter when a car is serviced as long as it is done at the appropriate intervals, the same applies to HEVAC plant," says Alan and adds "Investing in a PPM programme ensures that your plant is well looked after all year round. Relying on a reactive strategy is a short term fix and likely to prove costly in the long term."



Looking forward to RAC 09



Eaton-Williams had a great show at last year's RAC exhibition and is looking forward to an even better event in 2009 where energy saving will be a top priority for all exhibitors and visitors.

Underpinning Eaton-Williams own product development is its Energy-Saver® programme that encompasses all products including close control a/c units, humidifiers, cellar coolers, condensing units, grilles, diffusers and louvres.

With a raft of new products in the pipeline and taking full advantage of the latest technological

developments, R&D have their hands full over the coming months.

"This is an exciting time for Eaton-Williams and we are looking forward to RAC 2009 to providing us with a platform to highlight what we can offer group-wide in helping end-users reduce their carbon footprint," says Peter Dewdney, Group Marketing Manager, Eaton-Williams.

Information on all of Eaton-Williams products, brochures and latest news can be accessed by logging onto the company's web site www.eaton-williams.com

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