

# THE ACR JOURNAL

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Essential Information for the Air Conditioning and Refrigeration Industry

## NATIONAL ACR & HEAT PUMP AWARDS 2024

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21st MARCH 2024

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M60 2DS

### The ACR & HEAT PUMP Trainee Of The Year Awards

# 2023 REVIEW





## THE INTELLIGENT HEAT PUMP

### INTEGRATED DEFROST BUFFER

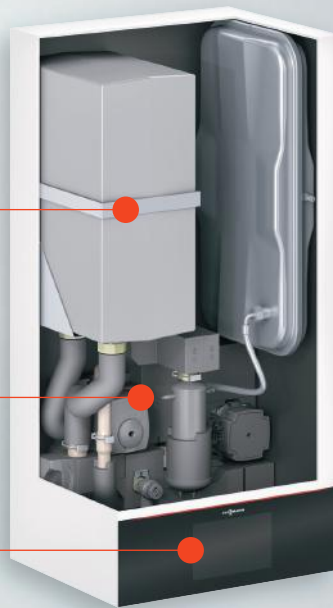
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Welcome to the latest edition of ACR Journal. I write this having had the pleasure of attending the relaunch of the ACR & Heat Pump Trainee of the Year awards in Manchester. Trainees and apprentices have such an important part to play in securing the future of any industry, and it is fitting that their success should be celebrated as much as possible. Being part of the judging panel made me realise how much a trainee role has evolved since I started working in the industry; it has moved from the mundane tasks that most apprentices would be expected to carry out to being actively involved in large, complex projects, with increased responsibility, and being guided along pathways to help establish and develop a successful career. There were some fantastic entries, and congratulations to all the finalists - you should all be very proud of yourselves.



Planning is underway for the 2024 National Air Conditioning, Refrigeration and Heat Pump Awards in Manchester on 21 March. If you have a product or project that could win a prestigious NACRA award, remember that the deadline for submitting entries is Jan 5.

With this, the last issue of 2023, I'd like to thank everyone who has contributed over the year. The opinion pieces of others allow ACR Journal to maintain varied, quality content across a broad range of topics. If anyone would like to contribute in the future, please let me know.

Merry Christmas and a Happy New Year,

*Andy*

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## Fujitsu and TF Solutions celebrate 10th anniversary

Fujitsu General Air Conditioning UK and wholesaler TF Solutions are celebrating a successful 10-year working partnership.

From the launch of its first branch in Stockport in 2001, TF Solutions has grown to 15 branches and is one of the UK's leading air conditioning, refrigeration and heat pump wholesalers. Now part of the Travis Perkins Group, the company has been selling Fujitsu equipment for the last decade.

Sales and Business Development Director Andy Cherrill said: "It's important in a partnership that you are working with a great business, great products and great people. With Fujitsu we are lucky to have all three and those are the reasons we have reached our 10-year milestone with them. I'm looking forward to an exciting future, collaborating together for success."

Ian Carroll, Chief Operating Officer at Fujitsu, said: "Congratulations to Andy and all the team at TF Solutions. This 10-year anniversary is a testament to the strength of our partnership. Their confidence in our products and services has helped us grow as a business. We are honoured to be part of this success story and look forward to building on that in the future."



Fujitsu Commercial Director Martyn Ives, right, marks the 10-year anniversary with Andy Cherrill of TF Solutions

## Hospital upgrades cooling and heating

A hospital trust in Devon is reducing its energy consumption and carbon footprint by upgrading its cooling and heat systems.

Mitsubishi Electric provided three e-Series EAHV1500 YCL modular heat pump units for underfloor heating in the winter months, and two e-Series EACV1800 YCL modular chillers for underfloor cooling in summer at the Devon Partnership NHS Trust Langdon Hospital site, which serves the Dewnans Centre – a medium secure facility based near the seaside town of Dawlish providing accommodation for men with mental health needs.

The units were connected using the e-Series' unique internal header, which removes the need for separate piping connections, valves and commissioning and reduces cost and installation time.

Collette Germon, Sustainability and Energy manager for the trust, said: "Our old system was not suited to building a greener future. The energy consumption and costs for the old chillers were increasing significantly year on year. We've already seen an overall reduction in energy consumption with our new sustainable system, so we are very hopeful that in addition to reducing carbon emissions, we will also be reducing our running costs."



## Stuart Head honoured at IOR Scotland Dinner

Stuart Head of Glasgow-based Atlas Air Conditioning was presented with the Kooltech Award in recognition of his 44-year career at this year's IOR Scotland Dinner.



Stuart Head, right, receives the Kooltech Award from Kooltech Commercial Director Kevin McMahan, centre, and IOR Scotland chair Danny Watson, left

More than 500 guests gathered at DoubleTree by Hilton Glasgow Central for the 43rd annual dinner, introduced by IOR Scotland chair Danny Watson and hosted



Nicky Ross of GA Services, centre, received the Apprentice of the Year award from Tony Deith of KB Refrigeration, right, and Danny Watson

by comedian and radio presenter Des Clarke.

Stuart Head joined the industry in 1979 as an apprentice at Hall Thermotank. He took the plunge and launched his own business in 1993 and has since built Atlas into a group of companies covering air conditioning installations, service, commissioning, refrigeration and ventilation. As the citation said, "not bad for a wee boy from Shettleston!"

IOR President Graeme Fox highlighted the importance of apprenticeships before Nicky Ross of GA Services was named 2023 Apprentice of the Year, with Kai Feeney of KB Refrigeration in second place and Scott Fosbury of Polar Air Conditioning third.

## EnviroVent boosts Big Build for Children in Need

James Garland, EnviroVent's Key Account Manager, with Pudsey Bear at the DIY SOS reveal event

Harrogate-based ventilation manufacturer EnviroVent donated six ventilation units to Treetops Hospice in Risley, Derbyshire, which featured on BBC One's DIY SOS: The Big Build for Children in Need.

The EnviroVent ECO DMEV units were used within a new counselling and therapy centre for traumatically bereaved children and young people. They will gently ventilate the home to transform a stagnant and stale atmosphere into a fresh, healthy and condensation-free environment.

In just 10 days, the DIY SOS team and volunteer tradespeople created the purpose-built counselling and therapy centre, which is expected will support hundreds of young people in difficult circumstances every year.

James Garland, EnviroVent's Key Account Manager – Specification, said: "It was fantastic to be able to provide assistance for such a wonderful cause. All parties who contributed to this project did some great work, which will benefit the lives of so many children and young people. Indoor air quality is so important in keeping people healthy and ventilation systems like these ensure condensation and mould is not able to form and cause an issue."

DIY SOS: The Big Build is the BBC's flagship home renovation programme; running for more than 20 years. The award-winning show, presented by Nick Knowles and his team, takes on Big Builds in limited time and relies on the generosity of the local community of tradespeople and suppliers, to help transform the lives of truly deserving projects and individuals.

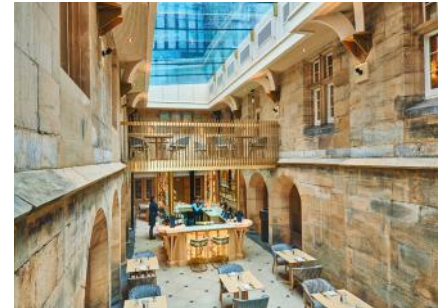
Every year, Treetops Hospice provides over 900 counselling sessions for local children, who are struggling after the death of a loved one. BBC Children in Need has supported its children's services for over 10 years, helping hundreds of bereaved children and families during that time through counselling and emotional support, along with crucial training for staff members. This year the hospice celebrates its 40 anniversary.

The programme was shown as part of this year's BBC Children in Need on 17 November. For more details, visit <https://www.bbc.co.uk/programmes/b006pnjk>



James Garland, EnviroVent's Key Account Manager, with Pudsey Bear at the DIY SOS reveal event

## Passivent makes the grade at historic hall



The Cloisters Bar at Matfen Hall

Ventilation solutions manufacturer Passivent has helped breathe new life into the Grade II listed Matfen Hall in Northumberland following an extensive refurbishment programme.

Designed by Doonan Architects, the refurbishment of the gothic hall, which dates back to 1832, has enhanced the hotel and wedding venue.

Passivent worked with building environment and services engineers Skelly & Couch to develop a natural ventilation strategy for the newly covered external courtyards. This led to the use of high performance Aircool wall ventilators beneath the rooflight in order to maintain a fresh air supply to the enclosed area.

In total, 10 Aircool wall ventilators were installed by Passivent's client, J P Westhall, in the lower courtyard, with seven in the upper courtyard. Passivent also supplied a two-zone iC8000 intelligent controller which monitors the internal and external temperature and carbon dioxide level to allow the facilities team to control the natural ventilation system.

Rosie Jones, associate at Skelly & Couch, said: "On such a complex restoration project as this, it was essential that we not only identified the right product but found the right supply chain partner. The Passivent team was extremely efficient and provided us with all the product information we needed in a range of formats so we could advance the technical design of the ventilation strategy effectively. The team's contribution ensured the specification process went smoothly and we would certainly look to use Passivent ventilation products again in the future."

## New home for BCIA Awards

The Building Controls Industry Association (BCIA) has launched the 2024 BCIA Awards, taking place on 2 May at a new venue, The Eastside Rooms in Birmingham's Knowledge Quarter.

The awards recognise innovation and talent in the building controls sector and entries can now be entered using the online entry system, which allows users to start, edit, view, and download an entry before submitting it. The closing date for entries is 26 January 2024 and organisers say there will be no deadline extension.

There are nine categories to enter, with sponsorship opportunities also available:

- Building Controls and BEMS Installer of the Year (sponsored by Trend Control Systems Ltd)
- Engineer of the Year
- Young Engineer of the Year (sponsored by Schneider Electric)
- Apprentice of the Year (sponsored by Group Horizon)
- Energy Management Award (sponsored by Priva UK Ltd)
- Best Service & Maintenance Provider (sponsored by Western Automation)
- Technical Innovation of the Year – Products
- Technical Innovation of the Year – Projects
- Contribution to Training Award



## Daikin and HSS in F-Gas training offer

Daikin has teamed up with HSS Training to offer its customers skills training, including F-Gas, at reduced rates.

The new partnership offers a 5-day F-Gas Cat 1 course for £836 + VAT, which Daikin says is much lower than the typical cost of £1200-£1600 + VAT.

HSS Training is the specialist training division of tool and equipment hire company, HSS ProService Group. It offers over 300 industry-recognised training courses, delivered via 80 qualified trainers to individuals and organisations throughout the UK and Ireland at over 60 fully equipped centres.

Martin Passingham, Department Manager Product and Training at Daikin,

said: "We're always looking for ways we can support our customers and the wider industry. This relationship with HSS allows us to provide a much more cost-effective means of recruiting more F-Gas registered engineers to help the transition to more sustainable heating systems.

"Additionally, customers can take advantage of reduced training costs on a wide range of other courses through HSS, making their businesses more versatile and valuable."

In order to apply for the training, customers will need a HSS account. For more information and to register, visit: <https://daikin.hsstraining.com/>



## Ken Logan on TIME100 climate List

Ken Logan, Group Sustainability and Regulatory Director of refrigerant specialist A-Gas, has been included on the inaugural TIME100 Climate List, recognising the 100 most innovative leaders driving business climate action.

Logan said: "I am honoured to be included on this prestigious list of leaders, all with a shared dedication to making a positive impact. I am proud of the work A-Gas does to build a sustainable future, harnessing decarbonisation opportunities through the effective lifecycle management of refrigerants. Preventing their release into the atmosphere is one of the most significant opportunities to tackle climate change, and I am proud to play a part in driving this forward."

A-Gas is recognised by TIME as "the world's largest refrigerant recovery and reclamation company".

The full list is live at [time.com/time100-climate](https://time.com/time100-climate)



## Mark Denford launches MD Cooling Solutions

Former Grimsby College lecturer Mark Denford has returned to his roots with the launch of MD Cooling Solutions.

When a four-year stint developing the next generation of engineers as senior trainer consultant came to an end, Denford decided to establish his own air conditioning and refrigeration contracting business serving Grimsby and the surrounding areas.

He said: "The aim is to offer outstanding service as standard to every customer. Whether working on an installation or bespoke service programme, our engineers care that the systems they work on are left running efficiently and compliant with the

latest legislation and regulations."

Denford himself trained at Grimsby College, entering the industry as an engineer with Refrigeration Concepts in the town. He went on to spend 12 years in various engineering roles with Scunthorpe-based contractor FEL Group, rising to the position of service manager before making the switch to training.

MD Cooling Solutions offers services including installation, service and maintenance of commercial and domestic air conditioning, commercial refrigeration, server room cooling and cellar cooling, as well as TM44 inspections.

<https://mdcoolingsolutions.co.uk/>

## Experts call for change to tackle ventilation crisis



Air quality experts have called for the creation of a new profession to address problems caused by poor ventilation in buildings including serious health conditions linked to damp and mould.

The group behind the World Ventil8 Day initiative (WV8D), which takes place on November 8 every year and is backed by international engineering bodies, environmentalists, academics and health bodies, also called for a public awareness campaign to focus attention on deteriorating indoor air quality (IAQ).

WV8D events were held worldwide including in Australia, China, the USA, Germany and the UK and there were more than 6,000 reports on social media. This year's theme was Breathe Better Live Better with organisers showing how investment in ventilation systems could help to tackle the rising number of premature deaths linked to IAQ, mould and damp in homes, and other sources of indoor pollutants including smoking and traffic emissions.

WV8 Day campaigners urged the UK government to support a proposed new Clean Air (Human Rights) Bill, which is also referred to as 'Ella's Law' in memory of Ella Kissi-Debrah – the first person in the world to have air pollution recorded as her cause of death.

The draft Bill was approved by the House of Lords and has now moved to the Commons where it is being sponsored by Caroline Lucas MP. More than 10,000 people have signed a petition in support of the new law and campaigners are pushing to raise that figure to 100,000 to trigger a debate in Parliament.

Ella's mother, Rosamund Adoo Kissi-Debrah, said the Bill would give the UK "the best air quality law in the world and improve the health of the nation". "Ella's Law would tackle air pollution and greenhouse gases together to improve public health, the environment and the climate," added Kissi-Debrah, who received the CBE for her services to public health from the King on WV8 Day.

BESA and Mitsubishi Electric launched a new guide, Mould and Damp Prevention in new and existing Homes, on WV8 Day and the vice chair of its specialist Indoor Air Quality Group said it was time to create a "whole new industry" to deliver much-needed solutions.

Adam Taylor, CEO of ARM Environments, pointed out that there were currently no competence requirements for people working in ventilation installation and maintenance. He added: "We are carrying out a lot more risk assessments and air quality monitoring, which has highlighted a massive problem caused by the huge number of systems which were badly installed and the complete lack of maintenance in many buildings. We need to create a new profession of specialists focused specifically on ventilation with formal qualifications, agreed standards and best practice."

## Chiller aims to open up ammonia cooling opportunities



The water-cooled ultra-low charge KGM ammonia chiller at Sterling Pharma Solutions

A new zero GWP/ODP compact ammonia chiller aims to future-proof end users against F-gas changes, while claiming excellent energy efficiency, low running costs and extended working life.

The AMChill packaged chiller, developed by natural refrigeration specialist KGM Refrigeration with support from BITZER UK, runs on an ultra-low charge of ammonia, made possible by a new design that overcomes the need for a flooded evaporator.

Based on open-drive BITZER W-series compressors optimised for use with ammonia, the chiller is designed for rooftop mounting without the need for expensive risk mitigation measures, such as high capacity exhaust ventilation, required in plant room applications.

Charge reduction is said to be key to the chiller's design. Flooded evaporators on conventional ammonia chillers require a large reservoir of liquid ammonia. The new chiller works with very low superheat, maximising efficiency. This approach, coupled with minimised pipework, reduces the ammonia charge by around 75%.

The chiller is available in three sizes, spanning capacities from 100kW to 150kW (based on an outlet temperature of +6°C), and is suitable for use in pharmaceutical and industrial process cooling, cold stores, plastics manufacturing and for cooling industrial machine tools.

In a UK pilot project, Sterling Pharma Solutions installed a 150kW AMChill packaged chiller at its site in Cramlington to provide supplementary cooling for existing process refrigeration plant.

"The cooling load at the test site is highly variable, and provided excellent validation of the chiller's ability to respond rapidly to changes in demand," said Amar Marwaha, Engineering Director at KGM Refrigeration. "To date, the unit has over 5,000 run hours, and has performed to design since being commissioned."

## ISO hat-trick for Campbell West



Directors Daniel West (far left) and Steven Campbell (far right) with members of the growing team

Bracknell-based HVAC specialist Campbell West has secured a triple seal of approval as it strives to enhance quality, environmental and health and safety performance.

The company has earned ISO (International Standards Organisation) 9001, 14001 and 45001 certification which demonstrate overall commitment to continuous improvement.

Director Steven Campbell said: "We are all very proud to have secured an ISO accreditation hat-trick which underlines our commitment to outstanding professionalism in everything we do."

Fellow director Daniel West added: "The company has experienced steady growth over the last six years due to the team's all-round commitment to delivering top-quality services and we have worked hard to build up a strong reputation."

Campbell West works with clients in both commercial and residential sectors, with customers including NHS Trusts, local government and education settings.

Recent projects include mechanical services for three new operating theatres at Ashford Hospital, installation of 'pop-up' water services for a new outdoor public space and street food area which form part of the Bishops Square development next to London's Spitalfields Market, and elsewhere in the capital city designing and installing mechanical building services at a high-end residential project in Chelsea.

A new electrical arm of the business was launched recently in response to client demand for an integrated approach to building services work.

## New IOR Trustees and President-Elect appointed

Lisa-Jayne Cook was confirmed as President-Elect and two new Trustees were announced at the Institute of Refrigeration (IOR) annual meeting.

Four members stood for the two Trustee vacancies, with Julie Murray and Dermot Cotter elected. John Skelton, whose term as a Trustee has now come to an end, was appointed as Treasurer, taking over from Nick Rivers.

IOR President Graeme Fox thanked all four candidates who stood for election for their willingness to volunteer. He confirmed that all who had stood would be encouraged to take part in IOR activities and committees.

Cook will formally step into the role of President when Fox's term concludes in November 2024. She has been a Trustee for three years and has been actively involved with ACRIB, INWIC (the International Women in Cooling Network), and is currently the IOR's Women in RACHP Chair.

A complete list of current Trustees and information about the role and elections processes are available on the IOR website at [www.ior.org.uk/board-of-trustees](http://www.ior.org.uk/board-of-trustees).



## MHIAE on board with Hackney Depot transformation

High-efficiency air conditioning equipment from Mitsubishi Heavy Industries Air-Conditioning Europe (MHIAE) is helping to transform a derelict former bus depot in London.

The Hackney Depot project, the first in London by 6AM Development, involves the revival of a long-abandoned 2000m<sup>2</sup> space above the depot which is now dedicated to local creatives, and aims to help redress the decline of maker space/light industrial facilities across the capital.

Kent-based Doveley Air specified and installed a system that was in keeping with the ethos of the project. Low global warming potential (GWP) products were selected that operate with R32 refrigerant and can still provide heating at -20°C ambient temperature.



MHIAE equipment at the Hackney Depot

System efficiencies are as high as ERP A++ with energy efficiency ratios and coefficient of performance rated as high as 4.49 and 4.37 respectively.

A collection of 4-way cassettes of varying capacities are spread throughout the building, each connected to an MHIAE RC-EX3A eco-touch screen wired remote controller. Ease of use is supported by the two programmable function buttons located on the front of the controller which allow quick access to functions such as energy saving setback modes and particular operating modes.

System efficiency is said to be improved and operating cost reduced with additional motion sensors that are installed in the cassette fascias. These motion sensors can be set to either adjust desired room setpoints depending on occupant movement or used to place the unit in standby.





## Golf day a winner for friends of Fujitsu

Fujitsu General Air Conditioning UK hosted its 2023 Invitational Golf Day at the Abbey Hotel in Redditch.

Guests from across the company's direct sales and distribution channels made up the six teams of four who competed in a Stableford format for individual and team prizes.

Fujitsu Chief Operating Officer Ian Carroll said: "It was so nice to get together with our customers and celebrate our long-standing partnerships. The whole day was a huge success and we will be certainly making this an annual event."

Andy Slater (HVAC Communications) took the individual honours with 39 points, ahead of Gary Hall (TQ Environmental) on 36pts and Viren Patel (CDL) with 35pts. Slater also figured in the winning team, alongside Scott Davies (Aspen), Dean Skerrett (Wolseley Climate) and Lawrence George (TF Solutions).

The evening meal and prize presentation also saw Fujitsu's recently appointed Commercial Director Martyn Ives presented with the Wooden Spoon award for last place.



Fujitsu's Ian Carroll, second left, with members of the winning team, from left, Dean Skerrett, Andy Slater, Scott Davies and Lawrence George



Guests celebrate a successful 2023 Fujitsu Air Conditioning Invitational Golf Day at the Abbey Hotel in Redditch, Worcestershire

## Chris Pedley RIP

TEV has announced the death of Chris Pedley following a battle with cancer. He was 63.

Chris began his career in the late 1970s as a Technical Apprentice with Prestcold SHUD (Semi Hermetic Unit Division) at its Theale factory near Reading, Berkshire.

During a decade with Prestcold he rose through the ranks to become a customer-facing Technical Sales Engineer and also captained the company's football and cricket teams.

He went on to work with companies including DAWMEC, Hubbard, Profroid, NRW and, most recently, refrigeration manufacturer EPCS, whose assets were acquired by TEV earlier this year.

TEV Managing Director John Dobson said: "We are very sad to announce the death of Chris Pedley. At TEV we only knew Chris for a short time but his help in transitioning EPCS to SC-Tec was invaluable."



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## Increasing demand for remanufactured transcritical CO<sub>2</sub> compressors

Demand for remanufactured transcritical CO<sub>2</sub>-based compressors is rising sharply in the UK, according to Green Point UK, the specialist services arm of BITZER UK.

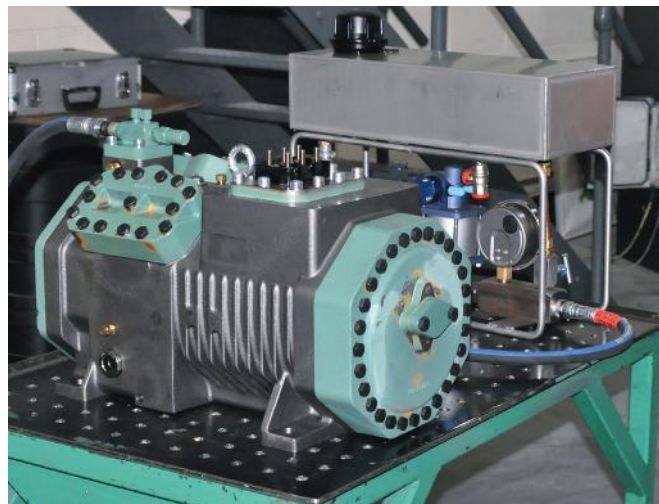
"Sales of remanufactured BITZER transcritical CO<sub>2</sub> units are up 40% year-on-year, with a quarter still to go," said Will Pribyl, Green Point UK General Manager.

A combination of factors is responsible, he says. "Following the initial take-off of transcritical CO<sub>2</sub> systems in mainstream refrigeration a couple of decades ago, the number of CO<sub>2</sub> compressors coming to the end of their natural working life is increasing rapidly."

Until recently, the obstacle to processing these units and returning them as-new into service has been the high pressures required for full quality assurance testing. Following recent technical advances, however, this is now possible using a high pressure hydraulic test rig — developed by Green Point UK — that is able to safely test compressor bodies up to 180 Bar, overcoming safety concerns related to use of conventional pneumatic-based test systems.

It has enabled the company to receive end-of-life transcritical BITZER units and return them to full original specification, with quality underpinned by the manufacturer.

The UK service covers all BITZER Ecoline 2, 4, and 6-cylinder transcritical compressors, which are deployed in thousands of applications across the UK, including supermarkets, food and drink manufacturers and industrial process applications.



A remanufactured unit under test at Green Point

The largest transcritical compressor remanufactured by Green Point UK to date is BITZER's 6DTE-50 unit. However, in principle there is no restriction on the size of compressor that can be reprocessed to as-new condition, including BITZER's recently introduced 8-cylinder compressor.

Remanufactured transcritical units are covered by a one-year warranty as standard, with an optional further one-year extension, as for new compressors.

## Samsung grows logistics partnership with XPO

Samsung Climate Solutions is extending and expanding its logistics partnership with XPO.

As part of the extended agreement, XPO is providing an integrated supply chain solution utilising its new shared user warehouse in Leicester and its in-house

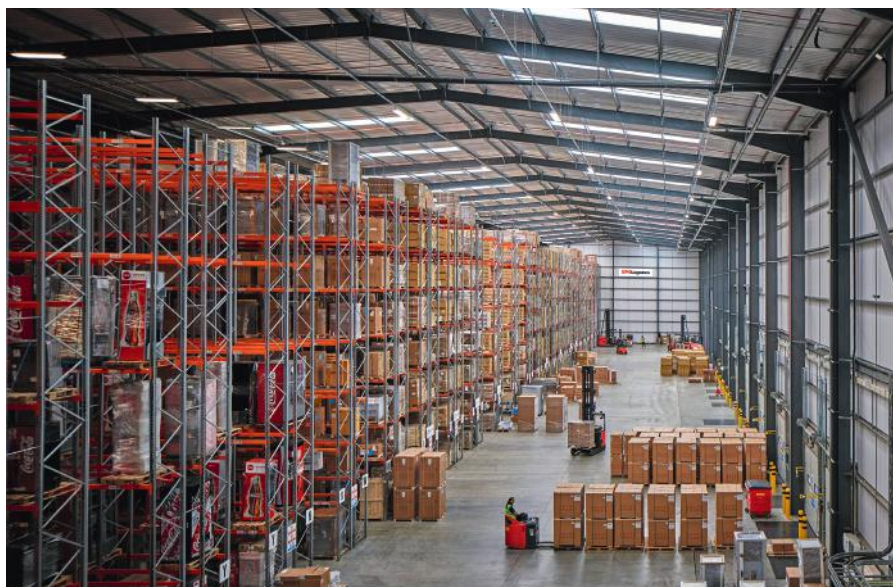
pallet network for nationwide distribution.

Samsung's storage requirements are said to have increased by 150% in the last three years due to business growth, with the XPO site in Leicester providing a consolidated storage solution for air conditioning units and heat pumps. It

now has four-times the inbound-outbound capacity of the company's previous locations, with 95% of stock received directly from the factories and 5% as a top-up from the European Union.

Steve Fleming, Head of Climate Solutions UK & Ireland at Samsung, said: "We are thrilled with the Leicester warehouse solution in partnership with XPO Logistics. It allows us to continue to grow our business in both the air conditioning and heat pump market across the UK. Our team has grown from 19 when I joined in 2019 to 67 by the end of this year. We want to provide the best end-to-end customer service possible to match our ambitious growth plan."

Dan Myers, Managing Director – UK and Ireland, XPO Logistics, said: "Samsung is an industry leader in the field of climate solutions, their passion and drive to innovate are our shared values and we look forward to working together in partnership to support their business' continued development through the energy transformation the country has embarked upon."



# Bend it like Hilmor!



The versatile world of Hilmor tube benders – shaping the future of HVAC/R, ASHP and plumbing.

In the ever-evolving fields of HVAC/R/ ASHP and plumbing, the tools used by professionals play a pivotal role in ensuring the efficient and reliable operation of systems. Among these indispensable tools, Hilmor tube benders stand out as essential instruments for shaping and manipulating tubing with precision. Hilmor, a renowned brand in the industry, has been manufacturing high-quality tube benders that simplify the bending process, enhance efficiency, and deliver exceptional results.

## THE ROLE OF TUBE BENDERS

Tube bending is a fundamental operation in the installation and maintenance of HVAC/R/ASHP and plumbing systems. Properly bent tubing ensures the efficient flow of liquids or gases and minimises the risk of leaks or blockages. Hilmor tube benders are designed to make this task easier and more precise.

## KEY FEATURES

### • Durability

Hilmor tube benders are constructed from high-quality materials, ensuring they withstand the rigours of daily use. Engineers can rely on these tools for years, reducing the need for frequent replacements.

### • Precision

Achieving the correct angle and bend radius is critical in plumbing and HVAC/R applications. Hilmor tube benders incorporate precision markings and features like arrow indicators, ensuring accurate bends every time.

### • Ergonomics

Hilmor tube benders are designed with user comfort in mind. The comfortable grip handles reduce strain on the user, making them ideal for long hours of work.

### • Versatility:

Hilmor tube benders are versatile tools that can handle a variety of tube sizes and materials, making them indispensable for professionals working with different systems.

## WHAT'S ON OFFER

**HIL-CM TUBE BENDER** – A-frame bender with calibrated markings for making accurate bends up to 1800. They feature a comfortable non-slip grip.

### HIL-GLM-15-22 HAND TUBE BENDER -

Compact bender suitable for copper, stainless steel, and mild steel. Ideal for the installation of small heating and refrigeration systems and are constructed out of lightweight steel making them a lighter and easier to carry tool.

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# A2L refrigerants 'still have key role'

A2L refrigerants still have an important role to play in the phase-down of high global warming potential (GWP) refrigerants, according to industry experts at the latest customer technical event organised by Climalife.



More than 80 guests at Wyboston Lakes Resort in Bedfordshire heard that although there is a significant industry focus on natural refrigerants, they often involve either a high initial cost in terms of CO<sub>2</sub>, or the use of fossil fuels to produce products such as propane.

Because of this, speakers suggested that A2L refrigerants with low GWP will still be required and widely used. Both Pawel Wisnik of Honeywell and Chris Chisman of TEV explained how changes in system design are helping negate some of the application restraints that safety standards such as BSEN378 create. Wisnik added that a balance of Capex, Opex, Total cost of ownership, energy consumption and total carbon footprint should all be taken into account when proposing new solutions, rather than just efficiency or GWP.

The difficulties of developing and manufacturing appropriate tools to be used with A3 refrigerants were discussed by Neil Stewart of Ritchie Engineering Company (Yellow Jacket). He said because there are currently no clear standards, liability had to be considered when a company decides to produce tools without such guidance.

Neil Roberts, senior technical sales manager at Climalife and recently appointed president of the British Refrigeration Association, felt that





regulation changes for F-Gas will shape the industry and not the PFAS limitations that have recently been suggested.

He added that while the F-Gas revisions were still in a draft state, the proposed phase-down acceleration means that installing new equipment with refrigerant above 1000 GWP is risky without provisions for drop-in refrigerants at a later date. It was also noted that the F-Gas draft suggests the importance of training and certification for natural refrigerants as a substantial benefit for the industry.

On a different note, Paul Newton of MentalTheft explained why cybercrime is not the only theft of data people need to protect against, and demonstrated how simple discussions with the wrong person can lead to password theft and substantial losses. 📡

**Presentations on the day came from:**

- Neil Roberts, Climalife
- Pawel Wisnik, Honeywell
- Chris Chisman, TEV Limited
- Mark Hughes, Chemours
- Francois Pericat, Mobil Exxon
- Neil Stewart, Yellow Jacket
- Tunca Kekban, Honeywell
- Paul Newman, MentalTheft



# Saluting the next generation

The ACR & Heat Pump Trainee of the Year Awards returned with a fresh format and a new venue at Emirates Old Trafford in Manchester.

New categories for 2023 included trainees in sales and support roles, while the event also covered the booming heat pump sector for the first time.

Hosted by ACR Journal and Heat Pumps Today publisher Juliet Loisselle and with Mitsubishi Heavy Industries (MHI) as main sponsor, the awards recognise the young people who represent the future of our sector.

Allcool NW enjoyed a double success, with Gold awards for Lewis Cook in the ACR Service Engineer and Harvey Talarczyk in the ACR Installation Engineer categories. Jordan Guy of GEA HRT struck gold in the Heat Pump

Engineer competition, while Claryhs Radford of Beijer Ref UK & Ireland was named Sales & Support Services winner and Megan Bradley of Vital Energi triumphed in the Project Engineer section.

In addition to a trophy and certificate, Gold winners received an Apple Watch, £500 cheque from the sponsors and a £100 cheque kindly donated by the Institute of Refrigeration (IOR). Silver and Bronze winners also received an Apple watch, plus a year's membership to the IOR.

Former Rangers and Scotland striker Derek Parlane was guest speaker.



## ACR Service Engineer

**Gold: Lewis Cook, Allcool NW**

Lewis Cook has been with Allcool NW since 2019 and has built up his experience by tackling challenging jobs and, in his own words, constantly asking questions.

Managing Director Paul Talarczyk said: “Lewis has become a well-respected service engineer for both refrigeration and air conditioning within the company. Lewis also works alone carrying out service, repair, and maintenance of refrigeration and air conditioning systems with his technical ability and confidence continuing to grow. He is regularly put into the position where he has to think on his feet and he possesses a positive attitude whilst remaining calm under pressure to complete the work in a timely and professional manner. Lewis has shown the kind of initiative and confidence which is necessary to become a fully-fledged refrigeration and air conditioning engineer.”

Senior Engineer Alan Hoy described Lewis as “a great asset to Allcool and the air conditioning and refrigeration industry in general”, while Jayne Stefani, General Manager (Service) added: “Lewis is a pleasure to have on the service team and is keen and eager to learn and grow in his role.”

Ian Cross, of Practical Refrigeration Training Centre, said: “Lewis is a very driven and extremely capable engineer. Whilst undertaking his diploma, he consistently worked to a high level and was exceptionally self-motivated, staying behind after class

to further his understanding and get the most out of his learning. Throughout his time with us, Lewis was always a very pleasant and affable member of the class. He could be relied on to complete work to a high standard individually and as part of a team. He actively encouraged other learners throughout their training, taking the initiative to help his peers and foster a supportive working environment.”



**Silver: Corey Surtees-Smith, J&E Hall**

**Bronze: Harry Gallagher, ACME Facilities Group**

## Heat Pump Engineer

**Gold: Jordan Guy, GEA HRT**

Since beginning his apprenticeship in 2020, Jordan Guy has never looked back. His learning journey has covered many areas of the industry and it is partly that variety that has developed his passion for his career.



Jordan, who studied at Grimsby Institute of Further & Higher Education, said: “One project that really stands out was the opportunity to work on the Gateshead Mine Water Heat Pump. It is a pioneering project, with sustainability at its very heart, something that I am keen to learn more about. While I wasn't involved in the design process for the project, I did form part of the team responsible for installation, testing and commissioning. My eyes have been opened by this project to the endless possibilities available to us as an industry if we consider more wholly the complete process, allowing heating and cooling demands to be balanced, reducing waste, and drastically reducing the energy spent to cool a process or area.”

Colleague Lisa-Jayne Cook, who made the nomination, said: “Jordan is an absolute credit to GEA HRT. He always takes pride in his work, ensuring that procedures are followed correctly and that any actions are recorded and reported to the relevant parties. He is always well turned out, punctual, polite, arrives with a positive attitude and a drive to ensure the task at hand is completed with a satisfactory outcome for both GEA and our clients. Jordan is, to put it simply, an ambassador for GEA HRT, constantly ensuring our reputation as the best in industry is maintained. I am proud to work with him and cannot wait to see where the industry will take him next (although I hope he will stay with us at GEA for a long time to come).”

## ACR Installation Engineer

**Gold: Harvey Talarczyk, Allcool NW**

Harvey Talarczyk decided to follow both his father and grandfather into the refrigeration and air conditioning industry. Colleagues and customers who supported his nomination for this award are in no doubt he made the right choice.

Allcool NW Technical Director Robert Acton said: “Harvey has always shown a willingness to learn and better himself and has grasped the industry and his chosen career with both hands, which in my opinion is a fundamental requirement for the young men and women entering our industry. Harvey is quickly becoming one of the “go-to” engineers at Allcool. He has the patience to deal with new apprentices coming through the system and has also been known to give up his own personal time to help colleagues when they have asked for help.”

Senior Engineer Alan Hoy added: “He has excelled in training and has carried out offshore maintenance and service on various platforms, achieving accreditations for this job type. His refrigerant handling and Health & Safety understanding is excellent and offers assurance when I am assigning him his jobs, alongside the ability to put across his knowledge to the younger apprentices in a pleasant and encouraging manner.”



Among the customer testimonials supplied was the following from Daniel Jones, of Alan Jones Chartered Surveyors in Blackpool: “I wanted to give you some feedback on Harvey Talarczyk who has recently completed two projects for me. The sites in question, Royal Lytham & St Annes Golf Club and Easthams Solicitors, both required extremely punctual and professional contractors, on site at all times and Harvey displayed these key skills. I was also absolutely delighted with the level of knowledge, service and professionalism that Harvey displayed during meetings with myself, clients and the feedback from site was also extremely positive and this reflects well on my own practice.”

**Silver: Adam Tweedle, Demeva Refrigeration**

**Bronze: Mckenzie Firth, LAC AC**

## Sales & Support Services

**Gold: Claryhs Radford, Beijer Ref UK & Ireland**

As a Trainee Sales Engineer with MHI Projects, Claryhs Radford has recently been involved in a number of significant projects.

These include multiple sites for Lidl alongside contractor HAS Electrical, where she worked with the technical team as well as



the local branch of wholesaler HRP to make sure all deliveries meet schedule.

She has also worked on a large AC project with contractor Summit Mechanical Services for a office refurbishment with a 3-pipe VRF system feeding individual office spaces for different tenants. The design consisted of 26 outdoor units feeding 108 indoor units which are made up of a mixture of compact and standard cassettes, and wall-mounted units. James Harding and Kris Bourne, Directors at Summit Mechanical Services, said: “We have been dealing directly with Claryhs for the last three years or so. She manages our chaotic jobs and schedules professionally and promptly and with a smile. Any issues that arise, Claryhs is quick to respond with answers, and on the occasions she isn’t sure Claryhs will be honest with you and come back with the correct answer quickly. We have total confidence and trust in Claryhs.”

Claryhs recently completed a case study with contractor DBS Group on another office refurbishment in Guilford. She assisted with the design for a 3-pipe system feeding two floors for a travel company, to allow them to have simultaneous comfort cooling and heating. Josh White, Project Manager at DBS Group, said: “I have found working with MHI very good. Claryhs and the internal team are incredibly helpful and they always come back with the best solution for any technical query. We would definitely use them again and recommend.”

**Silver: Sam Jones, SURE Solutions**

**Bronze: Jessica Long, SURE Solutions**



### Project Engineer

**Gold: Megan Bradley, Vital Energi**

Since joining Vital Energi, Megan Bradley has established herself as an instrumental member of the electrical design team and the lead on the production of essential documentation for installations.

Her employers say her work writing software for programmable logic controllers for refrigeration plant, with some heat recovery, has been far beyond the level they would expect from an apprentice. Her role has extended to pick up any errors being generated, work on improved programming and ensure KPIs are met. Additionally, She is involved in testing the products before they are sent to site, making necessary corrections and working with multiple departments.

Head of Construction Gary McKiernan said : “It is with great satisfaction that I reflect upon our decision to bring Meg on board at Vital. Since joining the team, Meg’s contributions have been invaluable and she has swiftly established herself as an integral part of our organisation. I am excited to witness Meg’s continued growth and development within our company. With her talent, motivation, and commitment, there is no doubt that she will make significant strides in her career and contribute significantly to the success of Vital Energi.”

In a glowing customer testimonial, Tom Marshall, Technical Director at JD Cooling, said: “Meg has brought great value to this project; she has been incredibly helpful and proactive in making sure everything is correct and operating as required. Meg is



always available to support us with the project and help with any issues with the electrical design and the controller software. She approaches problems with a positive attitude and goes above and beyond to help solve and correct the issue, viewing it as an opportunity to learn and improve. She has been an absolute delight to work with and I expect her to have a bright future in the industry.”

**Silver: Caitlan (Cat) Earle, WAVE Refrigeration**

The ACR & Heat Pump Trainee of the Year Awards are made possible due to the generous support of headline sponsor MHI.



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# Winter checklist: chiller glycol considerations, selection and concentration

During the winter months, a chiller system's pipework is exposed to ambient temperatures low enough to freeze cooling water. If the water is inadequately protected, blockages and leaks often occur, efficiencies are drastically reduced and of course there is the risk of burst pipes, potentially causing thousands of pounds worth of damage, unplanned maintenance, and costly downtime.

Systems that have not been properly maintained are particularly at risk, as well as those that have been altered or upgraded. It can be difficult to evaluate the quality and protection qualities of the heat transfer fluid following maintenance work. Often, cooling systems are topped up with uninhibited water, resulting in a risky dilution of antifreeze and inhibitors.

Incorrect glycol concentration during the winter months can impact hugely on any cooling system, potential issues include, system failure, flood damage, voided warranties, increased energy costs and reduced output.

## Types of glycol

The two major types of glycol used in chilled water and closed loop systems are Ethylene Glycol and Propylene Glycol. Ethylene glycol offers the most efficient heat transfer, is significantly less viscous than Propylene Glycol and unit cost is usually lower. The main drawback however is its toxicity to humans and animals.

Propylene glycol was developed to replace Ethylene Glycol for use in food and beverage processing systems or where there is a requirement for a non-toxic classification. Propylene Glycol has a much lower capacity for efficient heat transfer, compared with Ethylene Glycol based mixtures - It is also much more viscous at low temperatures and thus provides more of a challenge to pump.

## Coolflow DTX

In 2010 Hydratech added Coolflow DTX to their range of process cooling fluids. DTX is a high-performance non-toxic heat transfer fluid that is based on Ethylene Glycol, blended with a detoxification additive. The game changing fluid combines the thermal efficiency and low viscosity associated to Ethylene Glycol, with the non-toxic rating of Propylene Glycol. The list of DTX adopters is now extensive and includes Arla Foods, Müller Dairy, Waitrose, Airbus, Siemens and BrewDog.

The cost saving benefits of dosing a new or existing (retrofit) system with Coolflow DTX are particularly favourable in the current economic climate.

For example, given the current rates a potential saving of over 30% per installation could be made if DTX replaced Propylene Glycol in a proposed 20,000 Litre system (protected to -15°C).

## How much glycol will I need for my system?

Selecting the correct type and concentration of chiller glycol is very important. Too much glycol or too high a % will cause system inefficiencies - through reduced heat transfer ability and pumping capacity. Not enough glycol or too low a % can lead to the expensive freeze-ups previously mentioned and can become susceptible to biological fouling.

External systems that are susceptible to freezing over winter months will need anti-freeze protection down to the lowest expected ambient temperature, with some margin advised for safety of +10%\* (\*Lowest temps ever recorded in UK -26.1°C - January 1982).

Taking an average between Ethylene & Propylene Glycol (considering their differing levels of freeze protection per percentage), an installed concentration of 40% v/v (glycol by volume in water) will give you frost protection down to -25°C.



High chiller glycol concentrations can impact system efficiency, with a trade-off existing between anti-freeze protection and year-round performance and COP. Some therefore choose to run with glycol/antifreeze over winter months, and then plain water when the risk of ambient freezing is no longer an issue.

To prevent internal corrosion, scaling and biological fouling year-round, it is recommended that the glycol is fully inhibited and monitored every 6 months. Hydratech recommend a minimum concentration for their inhibited glycols of 25% v/v - this would provide a freeze protection average of -10°C.

For expert advice on glycol concentration levels, water quality, product selection, or fluid testing - to verify condition and frost protection, email: [info@hydratech.co.uk](mailto:info@hydratech.co.uk) or call 01792 586800.

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# EnergiVault trial delivers peak performance

Full-scale testing of the EnergiVault cold thermal energy storage system from Organic Heat Exchangers (O-Hx) has seen performance exceed expectations in areas including peak load support, resilience and reliability.



A 650kWh EnergiVault commercial demonstration unit with cloud dashboard and integration to a building management system was installed at the Alnwick facility of drug development and manufacturing accelerator Quotient Sciences earlier this year, with benefits to date including:

- Economic savings from charging with cheaper overnight electricity and from efficient trickle charge of the battery to replace inefficient chiller cycling.
- Continuity of operations under high temperatures / humidity, when previously cooling demand could not be supported by existing systems.
- Resilience from always having cold energy stored on site, in case of core system failure or shutdown.

Stuart Munro, Head of Facilities at the Alnwick site, said: "Quotient Sciences is committed to reducing its carbon footprint and energy consumption at every opportunity. It is innovations such as the EnergiVault and engineers committed to change that our planet needs now.

"The EnergiVault actually helped the business in a way we didn't foresee. This summer, one of the compressors went down in our chillers. We've got four compressors so we were 25% down on cooling capacity. Had it not been for EnergiVault, that could have caused us some issues; we would have had to start restricting our cooling to some of the lab and office areas. But because we had the redundancy of the EnergiVault in place, we started to pull down on that. The EnergiVault took the place of the broken compressor, while we waited for a replacement from Italy, and actually saw us through summer.

"During the winter months when cooling loads are lower, our compressors will run to a minimum of 25%. We can't slow it down any more than that so we're always going to be

using that energy, whether we need to or not. So instead of bringing that compressor on, EnergiVault is taking that small load for us during the day. If we don't have to fire up our chillers and can use the EnergiVault instead, that should bring substantial savings.

"If we have an off-peak tariff, we can charge up the EnergiVault at night and during the day during the winter months we don't have to bring our chillers online at all. We are using this cheaper energy source that we charged up overnight and we're drawing down on it throughout the day.

"I was fairly nervous at first about the EnergiVault coming in because this site is my responsibility and if we messed up the cooling it could bring down the business. But actually, the communication has been great and there's been zero negative impact to us. It's been a really fun, good journey and there's more to come."

Bob Long, Executive Chairman and founder of O-Hx, said: "EnergiVault revelled in the high summer temperatures, displaying the ability to deliver huge amounts of thermal energy in support of struggling cooling equipment.

"We continue full-scale testing at Quotient Sciences, where our

performance expectations were surpassed on many levels, including peak load support, resilience and reliability.

With high confidence from this unit, commercialisation plans are now in place to be able to meet anticipated demand."

O-Hx Director David Grundy added: "We are now ready to sell and install EnergiVault for commercial customers. Achieving this in such a short period of time, when product development normally takes many years and multiple millions, is testament to the quality of our team and the robustness of EnergiVault's design. This is game-changing technology that will have applications around the world."

## Summary of results

Quotient Sciences required EnergiVault to support its systems in three of the four standard operating modes:

- 1. Chiller optimisation** – discharging to avoid inefficient chiller cycling.
- 2. Peak demand support** – discharging when existing systems are unable to cope with cooling demand, or to replace existing chillers (eg for regular maintenance), with a range of instantaneous load support.

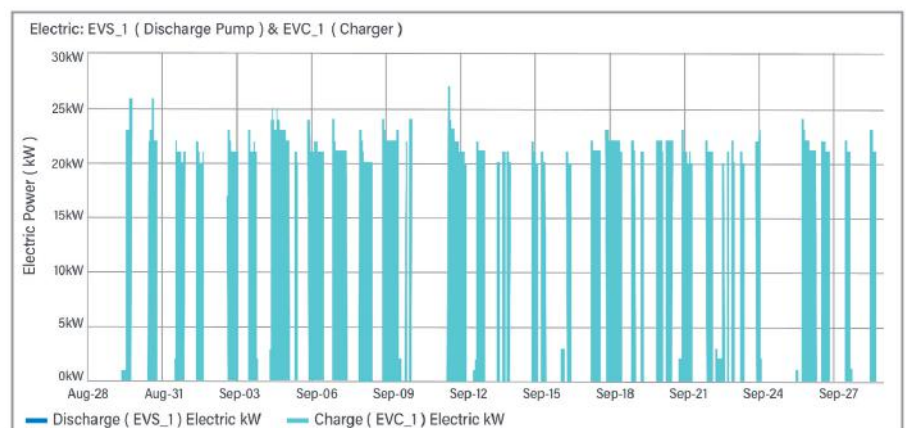


Fig 1: Speed and duration of charge for a four-week period

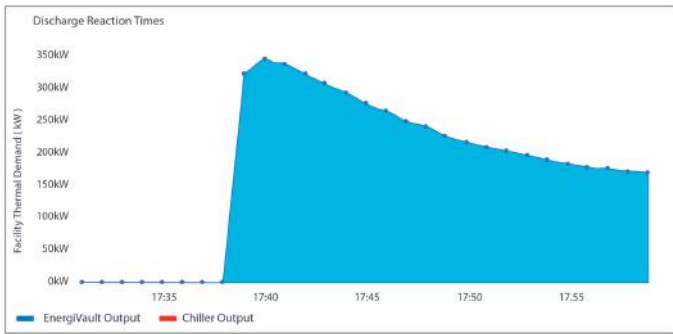


Fig 2: An illustrative 30-minute window from the Customer Dashboard, with peak discharge rate achieved after minute 2 of instruction to discharge

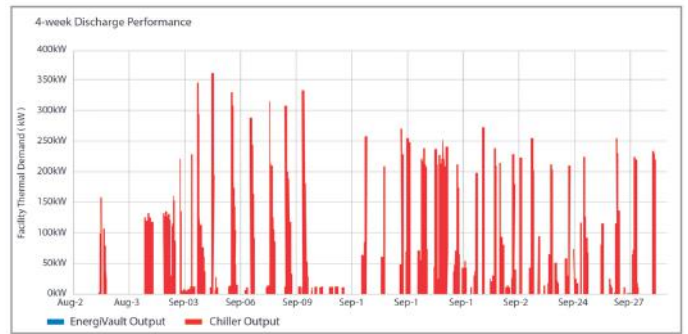


Fig 3: This graph mirrors the charger performance above, showing rate of battery discharge over a 4-week period

**3. Uninterruptible cooling** – retaining a proportion of available stored energy at all times, to cover any unforeseen chiller outages.

The fourth operating mode – load-shifting – has been tested via full charge-discharge routines but not directly tested on an operational basis due to Quotient’s operating requirements and tariff structures.

electrical supply, discharging to avoid high-cost or high-carbon supply. Typically characterised by load-shifting and chiller optimisation modes.

- **Operational resilience** – providing a store of energy to ensure operations can continue unhindered during periods of insufficient supply from core systems (eg breakdown, maintenance, inadequate

capacity). Can also be used as a supplementary chiller, with low electrical input, where site incoming supply is inadequate. Typically characterised by peak demand support and uninterruptible cooling modes.

Each of the modes of operation, with the exception of load-shifting, have been applied during the test period. 📖

**Energivault performance**

Energivault has been tested at various charging rates. To illustrate daily performance, Fig 1 shows electrical input to the charger for the 4-week period between 28 August and 24 September 2023, showing speed and duration of charge:

Charge rates have been consistent across the period, averaging input electricity of ~20kW. This low- input charge capability gives Energivault a significant advantage over on-demand chillers, which typically require much higher electrical inputs to deliver similar performance. Differences in charge duration reflect the demands placed on the battery depending on the amount of cooling support provided to the building at any given time. This ranged from an instantaneous 350kW load when the building’s chiller system could not meet demand or a chiller failure had occurred, to 10kW discharge rates supporting chiller optimisation and preventing additional chiller cycling.

**Illustrative operating modes and optimisation**

As noted previously, Energivault has four typical modes of operation. Each have intrinsically the same characteristic of delinking energy supply away from energy demand; the different profiles simply reflect different rates and duration of discharge. Choice of modes is influenced by:

- **Economic and carbon returns** – charging in times of low-cost or low-carbon

**Energivault: how it works**

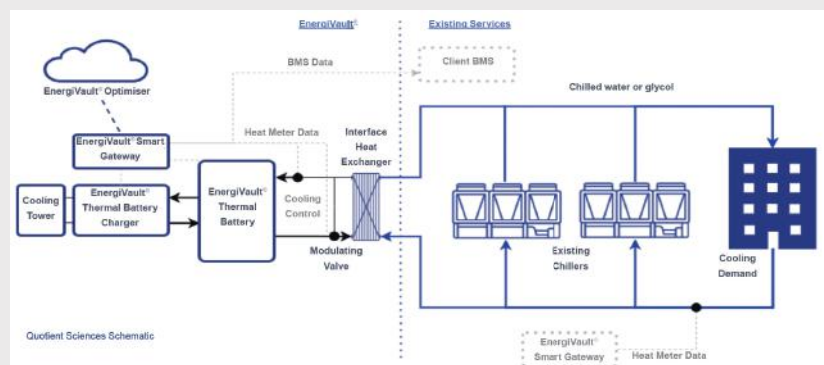
The patented Energivault system consists of a charger and thermal store, or battery, and can be used alongside an existing chilled water system, on its own, or in place of an additional chiller. As with a chiller added to meet increased peak cooling loads, it can reduce the risk of production or building shutdowns, while additional features such as time of use (ToU) shifting, chiller optimisation, heat recovery and energy monitoring can be applied across a site’s entire cooling plant. By utilising artificial-led intelligence it is able to access the electricity supply at low tariffs and at periods of low carbon intensity.

The system’s ice crystalliser charges the battery by converting the heat transfer fluid (HTF), typically a water/glycol mix, into spherical ice crystals a fraction of a millimeter in diameter, each surrounded by a film of organic material. This ice slurry acts as the phase change material (PCM), delivering a huge increase in the surface area over which the thermal transfer takes place.

Phase change batteries generally have the limitation of a low discharge rate because of the surface area to volume ratio, and cannot always meet a required load. By maintaining an ice slurry as its thermal store, Energivault significantly increases the range of energy transfer at any given time. Thermal energy batteries do not reduce in capacity over time and therefore avoid the resulting loss in energy capacity experienced by lithium-ion storage.

Most sites will have variable demand, with opportunities to deliver value across multiple operating modes and cost-effective variable tariffs. In these cases, the proprietary optimising software can unlock significant additional value.

For further in-depth detail from the demonstration unit and to learn more about the potential benefits of cold thermal energy storage, download the white paper at: [https://bit.ly/O-HX\\_heating\\_demand\\_low\\_carbon\\_solutions\\_whitepaper](https://bit.ly/O-HX_heating_demand_low_carbon_solutions_whitepaper)



Schematic of the Energivault installation at Quotient Sciences

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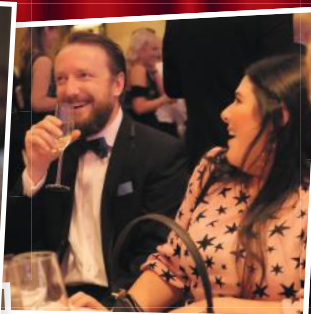
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- 3 REFRIGERATION PRODUCT
- 4 AIR CONDITIONING PROJECT
- 5 REFRIGERATION PROJECT
- 6 TRAINING PROVIDER
- 7 WHOLESALER/DISTRIBUTOR
- 8 HEAT PUMP INSTALLER
- 9 HEAT PUMP PRODUCT
- 10 GROUND SOURCE PROJECT
- 11 DOMESTIC AIR SOURCE PROJECT
- 12 NON-DOMESTIC AIR SOURCE PROJECT
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# Reclaimed gas takes centre stage

A-Gas Managing Director John Ormerod considers how the latest revisions to the F-Gas Regulation could affect the UK and further afield.

The cat is finally out of the bag on F-Gas. After months of discussion in Europe a picture is emerging of what might lie ahead for our industry. European regulators have spent many months grappling with the competing need to reduce the climate impact of refrigerants while supporting the decarbonisation of heating through the roll-out of heat pumps.

Following Brexit, the F-Gas Regulation remains in force as a carbon copy of the existing EU regulation. While DEFRA is carrying out its own independent review of the F-Gas Regulation, the revision in Europe is being closely watched for clues to what DEFRA might include in its revision.

Changes in the way our industry operates will continue to happen in the immediate years ahead as the F-Gas Regulation revisions take effect. Reports suggest that it is now clearer than ever that the use of reclaimed or recycled refrigerants will grow in importance as the phase down of fluorinated greenhouse gases gathers pace.

## More of the same

Among the F-Gas revisions to emerge from the European Council, reports suggest starting in 2027 a full ban on the use of F-gases with a GWP of more than 150 in small (under 12kW) monobloc heat pumps and air conditioning systems, and a complete phase out in 2032.

In the case of split air conditioning and heat pumps, the agreement is thought to include a full F-Gas ban starting in 2035, with earlier deadlines for certain types of split systems with higher GWPs. In both cases, an exemption will apply if building codes preclude the use of so-called natural refrigerants for safety reasons.

Broadly speaking, as a supplier of lifecycle refrigerant management services, the revised F-Gas regulation is more of what we have seen before with the push down the GWP curve through a mix of quota reduction steps and product bans, and in doing so encouraging reclamation and recycling of refrigerants along the way. Although, it does appear that the phase



John Ormerod

down steps will be more aggressive than we originally suspected; and that in turn could put more pressure on the supply of virgin refrigerants.

This will drive the use of reclaimed refrigerants to help balance supply and demand. The industry has always adapted well to periods of tightness in the supply of refrigerants mainly through reducing leakage rates and recycling gases. So I am confident that the industry can cope with these changes and innovate to deal with what's likely to happen down the line.

A-Gas is in a good position to build on the circularity of refrigerants. We have continued to invest in our infrastructure in Europe and the UK to ensure that we are ahead of the curve to allow us to produce more reclaimed refrigerants to fill the gaps in supply. This will also allow us to expand the life of some refrigerants where equipment has a lot of life left in it.

It has always been unwise to retire perfectly usable equipment early on the basis that as an end user you are unable to obtain the refrigerant necessary to keep it going. This is where reclaimed refrigerants play a valuable role in the mix.

## Effective lifecycle

Highlighting how reclaimed gases will play a key part in these changes is the news of the agreement that A-Gas has signed with refrigerant manufacturer Chemours. The company has announced a pilot programme to allow selected partners to reclaim two patent protected refrigerant blends and I'm pleased to announce that A-Gas is now authorised in Europe and the UK to process and return to the market reclaimed R-448A and R-449A.



A-Gas is on hand to help as we move further down the low GWP curve

R-448A and R-449A are refrigerants widely used in the commercial sector and viewed as go-to alternatives to high GWP gases. These interims will be much needed before the industry fully adopts low GWP alternatives.

We are delighted to support Chemours and the users of these refrigerants in creating an effective lifecycle refrigerant management solution by ensuring that the reclaimed refrigerant matches the equivalent specification and performance of virgin gas.

Tools that make refrigerant recovery easier and quicken the process are valuable. The A-Gas Rapid Recovery F-Gas compliant on-site recovery service is a good example of how having the right equipment can make a difference when it matters. The ease with which refrigerants are removed is made possible by the mobile A-Gas Rapid Recovery unit.

Refrigerant sent to A-Gas reprocessing centres becomes fully reclaimed product and is returned to the market in line with the AHRI 700 standard. A-Gas Rapid Recovery is an excellent example of the



A-Gas keeps a close eye on developments in our changing industry

Circular Economy at work – the opposite to the take, make and dispose business model – and this forces us to seek greater efficiencies and make better use of what we have already.

**Europe setting the pace**

For maintenance work or for the renewal of installations, A-Gas Rapid Recovery adds value for the customer in the recovery and disposal of refrigerants. The experienced A-Gas Rapid Recovery teams work with state-of-the-art technology to ensure a fast and efficient solution.

Under the likely revisions to the F-Gas Regulation there is no limit to the life of reclaimed gases and this is why they will become such a valuable resource. A-Gas is proud to support industry partners and customers on their journey towards net-zero and has pledged to reduce its own emissions by 50 per cent by 2028 and by 2035 will be a net-zero company.

Industry-wise looking from a worldwide perspective Europe is setting the pace in the fight against global warming. The UK is a little behind our European counterparts but on the plus side we have always had high recovery rates of refrigerant. The US is keeping a close eye on what’s happening across the pond and has similar ambitions to its European counterparts in following the low GWP curve.

My message to engineers is that these revisions to the F-Gas Regulation are likely to bring more of the same. There will be no big changes in the way you work but I would advise that you look to reclaimed gases where you can and in turn become trained formally in the application of natural refrigerants.

[www.agas.com](http://www.agas.com)



A-Gas is now authorised to process and return to the market reclaimed R-448A and R-449A

# Looking after your investment with professional maintenance

The Chartered Institution of Building Services Engineers (CIBSE) recently updated its guide to Maintenance Engineering and Management. Mark Richardson, General Manager at Batchelor Air Conditioning and Refrigeration, discusses the importance of choosing the right contract and contractor.

Widely viewed as an invaluable resource for anyone working in building services, Guide M is based on industry best practice. This third edition once again highlights the importance of professional maintenance, alongside the responsibilities of building operators.

Whatever the age of your air conditioning, HVAC or refrigeration system, the simple truth is that it needs looking after. Energy-efficient equipment can only remain that way for so long without the benefit of professional maintenance.

Most rational people would not splash out on an expensive car and then try recoup some of the cost by skipping major service intervals. Your system is also a significant investment, so it makes sense to take care of it. A regular maintenance programme also means that potential problems can often be identified and resolved before they have a serious impact on your business, in addition to adhering to legal requirements such as leak checking and system labelling.

The CIBSE guide identifies a variety of contract options available to building operators, including Planned Preventative Maintenance and Inspection and Maintenance options.

## Planned Preventative Maintenance

Often referred to as PPM, this type of contract involves the provider conducting service tasks as part of an agreed plan or programme. The intention is that correct completion of this programme will minimise the risk of loss of service from the plant and optimise its economic life. Maintenance tasks for a PPM contract should be both site and usage specific.

## Inspection and Maintenance

For a fixed sum, the service provider will visit a site and look at the item of plant to confirm if it is working correctly. If the plant can have any maintenance conducted on it (such as topping up oil, checking filters, etc.), this is also completed, with materials charged as additional costs. Any work of a more specific nature or any repair will have an extra cost associated with it. CIBSE adds that the choice of service provider should be influenced by their experience and familiarity with the specific plant.



Mark Richardson

## Choosing your contract

The guide authors point out that choosing the correct maintenance contract can be affected by factors including:


- The client's own in-house capabilities
- The future property/estate strategy
- The level of funding available

## Choosing your contractor

**Batchelor Air Conditioning & Refrigeration** has been supporting customers for more than three decades, offering advice on all types of service agreement. Every customer is different and we pride ourselves on tailoring our packages accordingly. We won't try to sell you something you don't need; nor leave you exposed to unnecessary risk of disruption.

- Issues we can help with include:
- Carbon emissions and leaks (F-gas)
  - Electricity consumption and operating costs
  - The integrity of pipework, filters or thermostats
  - The energy efficiency of your system
  - General repairs and updates

Visit [Batchelor.co.uk](http://Batchelor.co.uk) or email [info@batchelor.co.uk](mailto:info@batchelor.co.uk).

**Guide M: Maintenance Engineering and Management (2023)** is available free to CIBSE members, or for £150 to non-members. 





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# Best practice principles for chilled water system optimisation

Matthew Blackmore, Head of Business Development at Armstrong Fluid Technology, explains the key principles for design and operation of ultra-efficient chilled water systems for data centre applications.

Data centre applications present specific challenges in relation to the design and operation of chilled water systems. These challenges are driven by higher than average cooling loads, the need to design for over-capacity/modular expansion, and shorter upgrade cycles. This article discusses the key principles for ultra-efficient design and operation.

## Control and sequencing principles

Since a data centre cooling system is required to be reliable and efficient over a greater operating design envelope, meeting variable demand, performance of the system at part-load is critical. The most effective method to satisfy the continuously variable, critical cooling demands of data centres is to utilise all variable-speed components – chillers, pumps and fans – and a control strategy specific to the unique operating

characteristic of variable-speed devices. There are no exceptions to this, because constant-speed devices cannot solve the challenges of a varying application such as data centre cooling.

When a variable frequency drive (VFD) is added to a compressor, pump or fan to improve part-load efficiency, the energy savings potential is huge due to the pump fan laws which state: power is proportional to rotary speed cubed ( $P \propto N^3$ ). If a rotating device is allowed the flexibility to operate along its Natural Curve, a 50% reduction in flow would be equivalent to (.53) or 12.5% nameplate power draw.

This would equate to  $50\% / 12.5\% = 400\%$  increase in operating efficiencies. This efficiency is only possible if the pump fan law relationship between pressure and rotary speed, along the Natural Curve, is maintained at the decreased speed. A 50% reduction in flow would be equal (.52) or a 25% reduction in pressure.

Traditional control practices, however, often fail to optimise this potential. Pumps, for example, are often set to maintain a fixed or minimum differential pressure across the pump supply and return headers (see Figure 1). This means the pump will not have the freedom to operate along its Natural Curve and will consume more energy. Best practice is to utilise advanced integrated control across the system. In this scenario, with the pump placed at the CRAC unit, the flow/pressure relationship is maintained automatically for optimum efficiency. In the case of variable speed chillers, integrated control ensures operation along the chiller's Natural Curve for all operating scenarios, ensuring optimum efficiency at all loads.



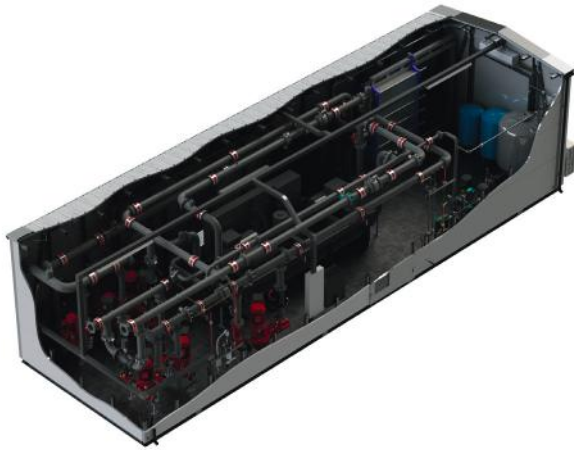
Another important design principle is the employment of capacity-based (rather than demand-based) sequencing. With capacity-based sequencing, each chiller would be taken up to 90% loading, for example, before the next chiller was introduced. Demand-based sequencing, however, balances the load across the system as a whole, unlocking additional energy efficiencies which might otherwise remain under-exploited.

## Modular/incremental approach to increasing building loads

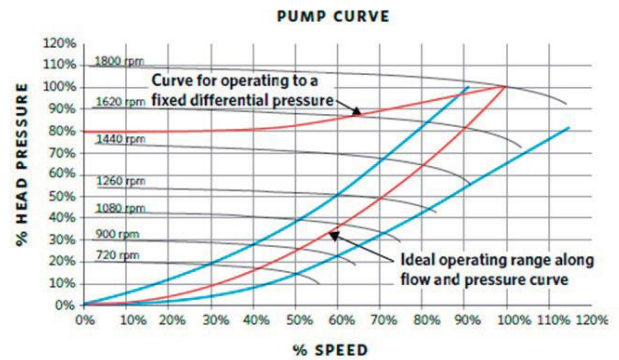
Chilled water system design also needs to reflect the specific incremental increases in demand relating to data centre operation. Heat load densities in IT-intensive facilities are typically increasing by 25% to 30% annually, and upgrade cycles for data centre processing and storage equipment are currently three to five years. This provides a challenge for the related critical cooling systems, which have 20-year potential lifecycles. Over-sizing at the outset in order to accommodate the full cooling load at a later date is hugely inefficient and does not align with the typical financing models employed in the data centre industry. The control and sequencing principles discussed



Armstrong's iFMS modular packaged pump solutions are capable of 'bolting-on' additional cooling in line with expansion of IT processing capacity



3D rendering of a chilled water plantroom



Comparison of pump curves. Pump operating at fixed differential pressure compared with pump operating along its natural curve

above are therefore central to optimisation of energy efficiency at each stage of the data centre's evolution.

Importantly, however, the design strategy also needs to harness the opportunities inherent in modular packaged plant solutions, to provide repeatability and ease of expansion. Modular all variable speed HVAC solutions, such as Armstrong's iFMS modular packaged pump solutions for example, are capable of 'bolting-on' additional cooling in line with expansion of IT processing capacity. In addition to avoiding the energy wastage of over-sized plant, this assists profitability by preventing the need to front-load capital investment, and guarantees reproducibility.

### Digital twinning and Active Performance Management

Finally, best practice chilled water design for data centres involves harnessing advanced technology, during the developmental phase and throughout component lifecycles, to optimise and maintain energy efficiency performance. Digital twinning, for example, is a powerful tool for effective chilled water system design. It involves the creation of a virtual representation which can function as the real-time digital counterpart of a process. Practical application of this technology was pioneered by NASA to improve spacecraft design, and the first physical-model simulation was announced in 2010.

Since then digital twinning has been introduced in a number of other technology sectors to continually improve product design and development. In data centre applications, for example, the Hysopt Hydraulic System Support technology employed by Armstrong delivers numerous benefits via digital twinning. In addition to the usual data such as room dimensions and building load, the Hysopt technology

creates simulations employing far more operational characteristics than before, from anticipated temperature, pressure and flow throughout the hours of the day, to the specific weather-related data for the specific location across the entire year.

Extremely detailed calculations of system operation, energy consumption and carbon savings can therefore be created. The technology is also powerful enough to allow alternative scenarios to be compared, by replacing key system components. For example, a system designer can rapidly receive a quantified report on the impact of replacing a specific pump model, with actual calculations of the resulting savings in energy consumption, energy costs and carbon reductions provided by the technology in minutes. Using these insights the simulation also calculates the payback period and return on investment.

After installation of new or upgraded systems, the performance and resulting savings can be verified/proven using the same digital twinning technology.

Advanced connectivity and visibility of system performance are also important throughout the lifetime of ultra-efficient critical cooling systems for data centres. Without information on fluid flow, across the system, it's difficult to diagnose and optimise efficiency. With accurate flow information, the picture changes entirely. The Active Performance Management developed by Armstrong Fluid Technology, for example, helps to optimise HVAC systems at any stage of a data centre's life-cycle, responding to changing cooling requirements. The combination of smart commissioning with real-time alerts and system transparency addresses performance drift and maintains occupant comfort. With Active Performance Management you can

make annual energy savings of up to 40%.

One of Armstrong's Active Performance Management solutions is Pump Manager, which ensures that pumps continue to operate efficiently and reliably throughout their complete lifecycles. Pump Manager is a cloud-based application that uses the embedded intelligence and connectivity of Armstrong Design Envelope pumps to provide performance reports to system operators. With this information, operators can make changes and address issues to optimise HVAC performance.

Online trending and analysis across multiple parameters on single pumps, or on an aggregated basis for multiple pumps, assists in identifying performance degradation and facilitates a predictive and proactive approach. Pump Manager will, for example, report issues such as excessive vibration, pump in hand, risk of cavitation or a dead head should they start to occur.

Compatible with industry-standard BMS, EMS or CMMS solutions, Pump Manager helps reduce operating costs by providing data to support continuous optimisation of pump performance. Pump Manager also increases pump availability and reliability, reducing unexpected failures and providing early problem detection. Lastly it helps organisations report their energy use and environmental performance.

### Summary

To conclude, ultra-efficient critical cooling involves specific challenges, but the application of the key design principles discussed here, and the utilisation of advanced technologies such as digital twinning and Active Performance Management, can meet and surpass the exacting standards demanded by the data centre industry. 🏠

# Seeley International appoint CPA Engineered Solutions as UK national distributor for Breezair evaporative coolers

Seeley International are pleased to announce that they have signed an agreement with CPA Engineered Solutions for the exclusive national distribution of Breezair evaporative coolers in the United Kingdom, effective from 15<sup>th</sup> October.

Breezair is world leading in evaporative cooling, the ideal solution to cool commercial and industrial spaces at a fraction of the cost compared to conventional A/C systems. Fully manufactured in Australia, Breezair is the most reliable and durable brand available in the market, with premium features that guarantee cool temperatures and improved Indoor Air Quality.

“This key appointment will expand Seeley International’s presence in the country, ensure improved support to the UK market and timely supply of products and spare parts.” Says Fabio Marioni, UK and Ireland Sales Manager at Seeley International. “CPA is a solid, long-standing company, with a capable and trained technical and sales team, covering the entire country”.

CPA Engineered Solutions, based in Central Scotland, will ensure total customer service to the current customer base. They will oversee site surveys, installation, and maintenance for any new and proposed projects.

“United Kingdom is a key market for Seeley International and it is critical that we have the right distribution arrangements in place to ensure we build on our local distribution network and provide wider access to the range of award-winning and market-leading Breezair brand,” said Sam Peli, Seeley International General Manager Sales EMENA. “This is a significant step in Seeley International’s global growth plans and represents a new level of commitment to the local market. Our objective is to realise the significant growth potential we see for Breezair



evaporative cooling products in UK in the years ahead, which will benefit us all.”

“This prestigious brand fits seamlessly into our Controlled Air Division, a dedicated business unit committed to offering products that enhance indoor air quality and energy efficiency. We are fully equipped to manage the national distribution and look forward to a long and successful partnership and their loyal customers” states Alan Collin, CEO of CPA Group.

“CPA have been our customers for many years” continues Fabio Marioni “we are confident that this is another step towards an even more tight partnership with them.”

More info on the announcement at: <https://www.seeleyinternational.com/uk/news/appointment-of-new-uk-distributor/>

If you are a contractor, end-user, consultant, or in general you wish to get more information on Breezair evaporative cooling, you can contact CPA Engineered Solutions at:

**T: +44 (0) 1501 825024**  
**sales@cpa-group.com**  
**www.cpa-group.com**







# GLACIÄR MIDI



## REFRIGERANT GAS DETECTOR

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We have used our extensive gas detection expertise to make it possible to detect all commonly used refrigerants with only 5 different sensor types, making it simple and easy to select the right detector for your application.

### **DESIGNED WITH YOU IN MIND**

SAMON has drawn on over 30 years' experience in the refrigeration industry to design a gas detector to meet the needs of every user. Providing interfaces for set-up, configuration, and maintenance, GLACIÄR MIDI can be used without the need for any special tools.

### **SYSTEMS INTEGRATION**

A range of connectivity choices are available for integration of GLACIÄR MIDI into refrigeration control systems and/or building management systems. Modbus, analogue output, and relay contacts are available as standard. Installation is made easy by the availability of multiple cable glands located for easy access.

### **RELIABLE PERFORMANCE**

SAMON products have a warranty rate of less than 0.001%. We understand how important reliability is to our customers and build it into everything we do.



# **SIMPLY RELIABLE**

[www.samon.se](http://www.samon.se)

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heating

*\*Graham Jones,  
Customer Service  
Manager* →



*Ecodan CAHV-R*

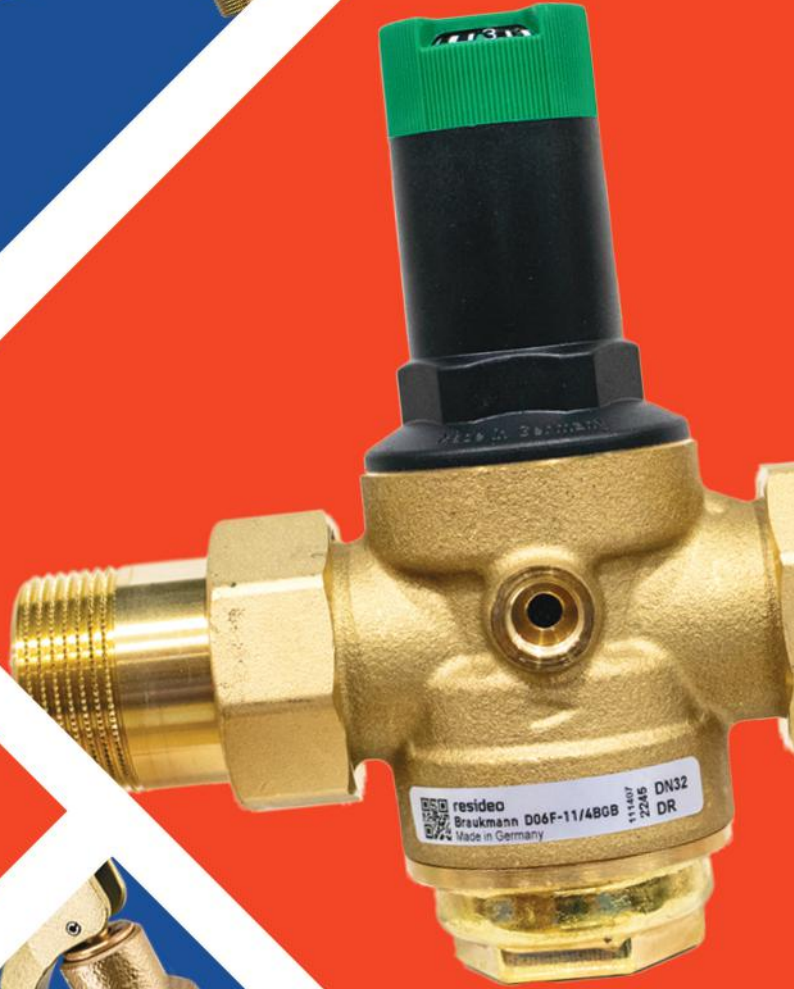
As we near the end of gas, contractors are already installing renewable heating in buildings across the UK. With the heat pump market doubling year on year, more and more installers are helping make the switch from traditional gas boilers.

It's now time to join them. Improving energy efficiency and reducing carbon emissions, our heat pumps are at the forefront of this decarbonising transition.

The award-winning **Ecodan CAHV-R Air Source Heat Pump** is your ideal low carbon system for sanitary hot water and space heating. Find out more about the UK's widest range of commercial heat pumps at: [heatpumps.me.uk](https://heatpumps.me.uk)

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# The Innovation Zone

The guide to what's new for ACR Journal readers, offering vital industry news.

To advertise your product in 'The Innovation Zone' section please contact [victoria.brown@warnersgroup.co.uk](mailto:victoria.brown@warnersgroup.co.uk)

## INNOVATIVE HEAT PUMP CONNECTION SOLUTIONS

Watts Industries UK is known for developing innovative products and technologies. Built on our HVAC knowledge and expertise, our new heat pump connection solutions range offers a wide range of components designed to seamlessly integrate air-to-water heat pump systems with heating and hot water networks.



Our solutions facilitate straightforward heat pump installation and are suitable for both new build and retrofit projects and aim to maximise both energy efficiency in the system and provide building occupants with desired comfort levels.

From the specifically designed Microflex HP which enables fast installation of the heat pump away from properties to smart home systems, hydronic heating and balancing valves, customers can select the exact components to deliver a highly efficient heat pump system.

"In the UK, we have seen the transformation of energy and environmental policies that are shifting the attention of consumers and suppliers to more effective and sustainable HVAC systems for both homes and commercial properties. Heat pumps have a key role to play in delivering the future of sustainable heating in the UK and we are thrilled to be launching our innovative range of heat pump solutions." said Kerry Harris, Sales Director UK of Watts Industries UK.

"By creating this dedicated range, we can support our customers to deliver efficient heat pump installation to their customers and, in many cases, cost savings thanks to the innovation in our Microflex pre-insulated pipe."

**For more information about any of our heat pump products or for support with your heat pump project, please call: 01480 407074 or email: [wattsuk@wattswater.com](mailto:wattsuk@wattswater.com)**

## CONDAIR UNVEILS SPARES WEBSITE

Humidity control specialist Condair is launching an ecommerce website, [www.condairparts.co.uk](http://www.condairparts.co.uk), offering humidifier spare part identification and online purchasing.

The website includes a wide range of parts for many Condair humidifiers, offers part identification from exploded diagrams, purchasing via credit card and rapid delivery from stock for most items.

Tony Fleming, Managing Director at Condair, commented: "Condair's dedicated spares department has been supporting our customers with consumables for many years so it's wonderful to be developing this side of our business with an online store. Our team are experts at helping customers identify what part is required, and we're still always on-hand to talk customers through the identification process, but [condairparts.co.uk](http://condairparts.co.uk) will make the ordering process even more convenient.

"The platform is already very well established, having been used by Condair in North America for many years, and we're looking forward to seeing it benefit our customers here in the UK." Tony concluded.

[www.condairparts.co.uk](http://www.condairparts.co.uk)

- The Condair Group is the world's leading specialist in humidity control and evaporative cooling, with energy efficient, hygienic and innovative technologies for commercial, industrial and heritage applications. Condair is represented in the UK by Condair Ltd, which offers system design, manufacture, supply, installation, commissioning, maintenance and spares. You can find out more by visiting the company's website at [www.condair.co.uk](http://www.condair.co.uk)



## CLIMALIFE ADDS SAMON GLACIÄR MIDI

Climalife has launched a new range, the GLACIÄR MIDI room controllers from SAMON for refrigeration applications (cold rooms, refrigeration units, ventilation systems, etc).

The GLACIÄR MIDI is a refrigerant leak detector for all air conditioning and refrigeration systems. It is available in two versions, one with an integrated sensor and one with a remote sensor.

The GLACIÄR MIDI is a sensor-transmitter fitted with a probe with two alarm levels, which can be used either as a stand-alone detector or connected to a control system (eg BMS) via a Modbus link.

It has two relay outputs for high and low alarm levels and an analogue output that can activate external safety equipment such as valves, fans and/or general alarms.

There are five detector types available depending on the refrigerant in use.

**Visit [climalife.com](http://climalife.com) for more information.**



**EXI-TITE DEVELOPS PACKAGED SYSTEM FOR POTABLE HOT WATER**

HVAC equipment supplier Exi-tite has developed a self-contained potable hot water system using the latest heat pump technology.

The packaged system can be installed as a permanent fixture or mobile 'plug-in' solution across various applications such as offices, hotels and student accommodation, with heating capacities ranging between 13kW and 240kW and low-GWP refrigerant options.

Prefabricated off-site, the system is designed to save time, avoid logistical complications, and reduce installation problems that occur with typical on-site works. It is constructed on a structural framework and designed to be wheeled or crane lifted into position.

Andrew Robinson, Managing Director of Exi-tite, said: "Heat pumps are being used increasingly for space heating and potable hot water, but the feedback from consultants and M&E contractors has been that when installed incorrectly, they became an expensive problem. We have managed to navigate around the majority of on-site issues and found a solution that provides peace of mind."

LG VRF heat pumps provide modular capacity control and redundancy, and are inverter-driven with both latent and sensible load monitoring. Each Multi V i system is connected to a high-temperature hydro kit, capable of producing water temperatures up to 80°C and provide 100% heating capacity down to -7°C, reducing the increase in capital costs associated with oversizing equipment to accommodate typical losses.

The method of hot water generation differs from typical systems that store potable water. When storing water, pasteurisation is required as



a legionella prevention method and this typically impacts the system's operating efficiency and requires additional control strategies. Because the packaged Exi-tite system heats cold mains water directly through a heat exchanger without storage, pasteurisation is unnecessary and the need for salt-based softeners is also eliminated.

The system is plug-and-play, arriving with its own localised control, but is also pre-wired for connection to a building management system and pre-piped with connections to the cold water main, hot water supply and optional circulation loop.

[www.exi-tite.com](http://www.exi-tite.com)

**AERMEC COMPRESSOR CONTROLLER CLAIMS UP TO 50% ENERGY SAVINGS**

Aermec has launched a smart compressor controller which it says can improve chiller efficiency and deliver up to 50% in energy savings.

The manufacturer says the Aersave technology converts any 3-phase fixed speed compressor to a variable speed compressor. Aersave can be used on any manufacturer's chillers, operates with any refrigerant and is compatible with all brands of BMS systems.

By enabling compressors to work smarter, Aersave eases reliance on the electrical grid, increases reliability, offers compressor protection, and can easily be retrofitted by any air conditioning or refrigerant engineer.

Aersave comprises two sensors instead of pressure transducers. One connects onto the suction line of the compressor, the other to the discharge line. Its unique compressor control gathers the temperature from the two sensors' points, together with gathering data via Modbus from the device via the compressor, which are then input to an algorithm, which calculates what speed and compressor capacity is required for the complete system to achieve its demand capacity.

While working on lower frequency for prolonged periods of time an oil return sequence brings the oil back to the compressor to protect it



[www.aermec.co.uk](http://www.aermec.co.uk)

**NEW 10-POINT GUIDE TO DEHUMIDIFIERS**

Humidity control specialist Condair is offering a free 10-point guide to specifying dehumidifiers. The document covers the main issues surrounding planning and installing a commercial dehumidification system. It includes information on system design, product sizing, drying psychrometrics, energy saving and much more.

Dave Marshall-George, Sales Director at Condair, explains: "This guide has been produced by experts in the field with experience spanning thousands of drying projects. It gives unbiased advice on both desiccant and condensing dehumidifiers. Written in an easy-to-follow style, the 10-point format makes it a very accessible reference tool for any HVAC consultant, installer or facilities manager."

"Planning a dehumidifier project can be a complex undertaking due to all the parameters that need to be considered. Dehumidifiers don't just remove moisture from the air but also generate heat during the drying process. Managing an area's humidity often involves consideration of its temperature control too, and this 10-point guide walks the reader through the psychrometrics of this, as well as strategies to deal with it."



**Condair's 10-point guide to specifying dehumidifiers is available free to download from: [www.condair.co.uk/dehum-guide](http://www.condair.co.uk/dehum-guide)**

**MARTYN IVES, STUART EAGLETON, FUJITSU GENERAL AIR CONDITIONING UK**

Fujitsu General Air Conditioning UK has made two key changes to its senior management team, with **Martyn Ives** promoted to Commercial Director and **Stuart Eagleton** appointed Sales Director.

Ives has spent almost 30 years with Fujitsu, including 14 years as Technical Manager before stepping up to become Distribution Sales & Technical Services Director in 2021.

He said: "I am honoured to be given the opportunity to head the commercial side of the business. Thanks to the efforts of the whole Fujitsu team, business has grown year on year and hard work will ensure this continues as we enter new markets and develop new products."

"I would like to thank all of our customers for their loyalty over the years. We have a strong customer base that has been instrumental in our success; they believe in both our customer service and products."

Eagleton has spent the past 10 years at Fujitsu, most recently heading up Applied Sales, Key Accounts. He joined from former Fujitsu distributor Wave Air Conditioning and previously had a 10-year spell at Wolseley, in branch manager, regional manager and external sales roles.

He said: "I have worked alongside Martyn and believe we are closely aligned on how we can move forward. My time at Fujitsu has given me a deep understanding of how the business operates and both the direct and distribution routes to market."

"I want to strengthen the relationships we have with our distributors as well as exploring new opportunities in the heating and applied markets. I also want to focus on end user growth and consultant specifications. This will in turn help grow our distribution network and increase our market share on core products (RAC/VRF), in addition to heating and applied."



From left, Stuart Eagleton, Ian Carroll and Martyn Ives

Chief Operating Officer Ian Carroll said: "Martyn and Stuart have been instrumental in building the business, and their promotions are richly deserved. With a strong team supporting them and exciting new products on the horizon, we are well placed to make the most of the opportunities that lie ahead."

<https://www.fujitsu-general.com/uk/>

**DAMIAN WISZNIEWSKI, UK SALES MANAGER, CARRIER DX**

**Damian Wiszniewski** has been appointed as UK Sales Manager for Carrier DX, responsible for promoting the company's VRF and DX products.

He joins Carrier from Samsung Electronics UK, where he held the position of Business Development Manager Climate Solutions for the south.

Prior to his time with Samsung, he spent four years as a regional branch manager with wholesaler HRP.

Wiszniewski is a Fellow of the Institute of Refrigeration, where he chairs the Membership Committee and sits on the Board of Trustees. He is also Vice Chairman of the Hampshire Refrigeration Society Board and Chairman of the South West and South Wales Refrigeration Society.

He said: "I am very excited to work with end users, consultants, distributors and direct channels to grow Carrier sales and support our UK customers and partners."



**NEIL ROBERTS, PRESIDENT, BRITISH REFRIGERATION ASSOCIATION**

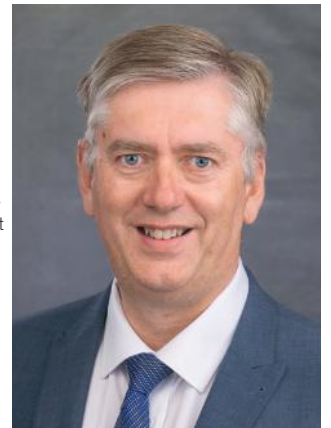
**Neil Roberts**, Senior Technical Sales Manager at refrigerant supplier Climalife, has been appointed President of the British Refrigeration Association (BRA), taking over the role from Past-President Mark Hughes.

Roberts has over 30 years' experience in the refrigeration industry and joined Climalife in 2021. He says he is determined to continue to support the industry through the next phase of transition to very low GWP refrigerants and moving towards a sustainable future.

He added: "With the F-Gas regulation under review, there is no doubt the next few years are critical for the refrigeration industry, and it is vital that as an association, we are at the forefront of everything that is going on. I intend to build on my predecessors' good work and continue to make the BRA a strong voice for the industry, bringing value to all the membership."

Mark Hughes said: "I would like to warmly welcome Neil to the role of President. His wealth of industry knowledge and experience will be instrumental in helping the BRA navigate the fast-changing refrigerant sector and keep the association at the forefront of the movement towards low emissions solutions."

<https://www.feta.co.uk/associations/bra/about-bra>



**CHARLIE LOCKWOOD,  
ENGINEER, A-GAS  
RAPID RECOVERY**

**Charlie Lockwood** has been appointed as the A-Gas Rapid Recovery engineer covering the London and south east area. His duties include recovering refrigerants on behalf of customers from equipment in the refrigeration and HVAC industries.

He is fully trained with regards to the F-Gas Regulation and Construction Skills Certification Scheme and has previous experience of working in the HVAC and marine engineering industries.

Lockwood said: "The importance of recovering refrigerants has never been greater. Reclaimed gases are quota free and refrigerants saved from disposal and returned to the market also reduce raw material usage, energy consumption and unnecessary transport normally associated with virgin production. All of this fits in well with the F-Gas Regulation and running a low carbon business."

Refrigerant sent to A-Gas reprocessing centres becomes fully reclaimed product and is returned to the market in line with the AHRI 700 standard.

[www.agas.com](http://www.agas.com)



**RACHEL DAVIDSON, DIRECTOR OF  
SPECIALIST KNOWLEDGE, BESA**

**Rachel Davidson** has been appointed to the new position of Director of Specialist Knowledge at the Building Engineering Services Association (BESA). She will have a particular focus on the Building Safety Act and its implications for BESA members and the wider specialist building services sector.

Davidson has worked at BESA for more than 30 years in a variety of roles most recently as Director of Certification. She was also Head of Technical Schemes and Knowledge for 10 years until 2013 and served as a board director of Piper Insurance, which provides critical illness cover for the building engineering industry.

Davidson said she was delighted to be taking on "this crucial work" which will involve building up in-depth knowledge of the Act and the secondary legislation that will be used to implement its measures. She will lead a dedicated in-house team who will produce advice, guidance, and tools to help contractors understand and comply with the changes.

She added: "It might take some time, but there is no doubt that the Act will bring about profound and positive change to our industry. Changes that will go well beyond safety. It will introduce a much more rigorous focus on competence and compliance, underpinned by strict legal requirements to provide digital evidence and improve record keeping that will have implications for all aspects of our work."

"However, to make this possible we need much better collaboration and communication between clients, designers, and partners on site – and everyone must be aware and take ownership of their responsibilities."

[www.thebesa.com](http://www.thebesa.com)



**DEDICATED COLD STORE  
TEAM AT ICS COOL ENERGY**

ICS Cool Energy has strengthened its hire division with a dedicated team to manage its fleet of low to ultra-low temperature containerised cold store solutions.

Major Accounts Manager **Ralph Howes** has worked in asset rental for 25 years, with the last 15 dedicated to portable cold stores, blast freezers and modular temperature controlled buildings.

Business Development Manager North **Kayla Shaw** has worked in sales for almost 16 years and has been in the refrigeration and cold stores industry for just under two years.

Business Development Manager South **Lisa Townsley** joins from sister company Trane UK and has seven years of experience in the refrigeration rental sector.

Senior Sales Engineer **Mike Elver** has been with ICS Cool Energy for over six years, and has over 20 years of experience in the HVAC hire industry.

The cold store container units can be used in food and beverage, pharmaceutical, warehouse and other industries, where raw or finished products require temporary or long-term temperature-controlled storage to preserve or increase shelf life.

Andy Delday-Roberts, UK Sales Manager Hire, said: "ICS Cool Energy is known for its capability to deploy hire units within 24hours to existing customers and for the back-up and service from experienced engineers. Our cold store team will ensure our customers are in good hands and receive solutions that precisely fit their needs."

<https://www.icscoolenergy.com/>



From left, **Andy Delday-Roberts, Lisa Townsley, Mike Elver, Kayla Shaw and Ralph Howes**

**PAUL TOBIN, CHRIS BULLEN, SALES MANAGERS,  
CLIVET UK**

**Paul Tobin** and **Chris Bullen** have joined Clivet UK as Sales Managers.

Tobin previously spent more than 10 years with Grant UK and brings extensive experience of the heat pump sector to cover an area including the east and west Midlands, Greater Manchester and Merseyside.

He said: "I am delighted to be joining Clivet and look forward to expanding our penetration of heat pumps and other products in the market."

Bullen joins the residential team and has previously worked with Jaga UK and Panasonic.

He said: "I chose Clivet as they are a forward-thinking company, always looking to the future, and I love the huge product range they bring to the market."

[www.clivetgroup.co.uk](http://www.clivetgroup.co.uk)



Paul Tobin



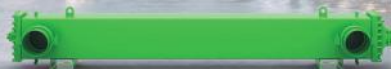
Chris Bullen



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