VOLUME 12 No1
DECEMBER2025/JANUARY 2026

THE ACR JOURNAL

ISSN 2058-4407

Essential Information for the Air Conditioning and Refrigeration Industry

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D-carbonise Partner

Welcome to the December/January edition of *ACR Journal*.

As the year draws to a close, this edition of ACR Journal brings together the last moments of 2025 and the early steps into 2026.

We go to press at the same time as the Trainee of the Year Awards which proudly retain their not-for-profit status thanks to the generosity and support of the wider industry. This event remains one of the most rewarding dates in the calendar, celebrating dedication and ambition across the trainee community.

With training and skills still front and centre, we also take a look inside the new Beijer Ref Academy in Glasgow in this issue's Out and About feature. Elsewhere, the F-gas Register provides guidance on leak checking in changing ambient conditions, while Vertiv examines how cooling demands are shaping edge infrastructure.

Enjoy the read – and very best wishes for Christmas and the New Year!

Andy

REGULARS

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PRINTED BY WARNERS 01778 395111

RACES aims to lead from front for engineers

Michael Smart speaks at the launch flanked by, from left, Dean Skerratt, Vanessa Bradshaw, Andrew Forest, Graeme Fox, James Bailey, Lee Downham and Howard Noble

Graeme Fox addresses guests at the launch event

A new society has been launched with the aim of representing engineers and installers across the refrigeration, air conditioning and heat pump sectors.

The Refrigeration & Air Conditioning Engineers Society (RACES) is the brainchild of engineer Michael Smart and Graeme Fox, F-Gas Schemes Director at the F-Gas Register. The co-founders say it has been created "for the people who do the work: installers, service engineers, design and sales engineers, educators, students and more".

Smart, who has spent nine years in the RACHP sector since leaving the Army, said: "I was frustrated by the lack of representation that ordinary refrigeration engineers had in the industry from the existing bodies. Ordinary engineers felt they needed a different approach to representation and I reached out to Graeme to help me turn this dream into a reality."

RACES believes a key role will be to support small businesses to develop the skills needed to prepare for the wider transition to alternative refrigerants. It says it has an up-to-date technical library already in place and plans to hold training courses across the UK.

Fox, a former Institute of Refrigeration President, said: "The industry these days has a huge majority of small and micro businesses operating as contractors – over 90% of contractors have less than five engineers per company – that's a massive change in the demographic from where we were 30 years ago when I learned my trade. The requirement to send your engineers away for even one or two day courses presents a comparatively huge financial and operational strain on small businesses as against the traditional larger contractors, and we have set out to provide free or reduced-cost access to the kind of training courses these engineers will be needing in the coming years."

RACES says it aims to represent the estimated 80–85% of the market made up of small firms and self-employed engineers, often those "in vans doing the job day in, day out." The group intends to bridge the gap between existing trade bodies and those at grassroots level by:

- Providing a unified voice for working engineers
- Offering access to training and continuous professional development
- Hosting networking and social events
- Creating an online hub of technical information and manufacturer resources

A not-for-profit organisation, RACES offers membership fees from £65 (plus VAT). It is backed by an advisory board drawn from a cross-section of the industry. In addition to the co-founders, the board includes Lee Downham and Howard Noble (Beijer Ref UK), Dean Skerratt (Wolseley Group), Vanessa Bradshaw and Andrea Burton (Derbyshire Refrigeration), Samantha Parris (Wave Refrigeration), Andrew Fraser (Forest Group), James Bailey (Omega Solutions) and Gregory Pelling (Miramar Engineering).

Howard Noble, Innovation & Marketing Director at founding sponsor Beijer Ref UK, said: "The Beijer Ref Academy is pleased to support the development of RACES. The founding principles of the society are aligned with our own passion to support engineers through training."

The session concluded with an invitation for members and businesses to get involved through membership, sponsorship, partnerships, hosting events, or contributing ideas and literature. The overall message was one of unity and optimism: a collective effort to strengthen and professionalise the refrigeration and air conditioning workforce from the ground up.

www.races.org.uk

Beijer Ref to merge wholesale brands in UK and Ireland

Beijer Ref is to unite its UK and Ireland wholesale operations into two brands – Beijer Ref UK and Beijer Ref Ire. This represents a move away from the existing DW, RW and HRP businesses in the UK, while DWG in Ireland becomes Beijer Ref Ire.

Since acquiring Dean & Wood (DW) in 2004, RW in 2011, DWG in 2012 and HRP in 2016, the brands have operated independently, although Beijer Ref has already achieved group synergies through centralised logistics, technical, finance and training academies. A further change in 2020 saw the external sales teams merged, with sector-specific specialists selling refrigeration and air conditioning equipment.

Hayley Cattell, Managing Director of Beijer Ref UK & Ireland, said: "The next planned and logical step is to merge the remainder of the businesses into Beijer Ref UK and Beijer Ref Ire. This will further increase efficiencies and strengthen customer support by streamlining processes.

"The consolidation of our successful wholesale operations marks the next stage in our ambitious growth plans. Our existing team is committed and enthused in the exciting future ahead of them."

The two brands currently operate a total of 47 branches across the UK and Ireland. The unification process has started and will include some branches merging into larger stock holding and distribution outlets.

Sales for Beijer Ref UK will be led by current DW Sales Director Alec Stilling; Warren Root, Head of HRP, will become OEM Commercial Director and Sarah Turner, Business Director of RW, will become Learning and Development Director. Róisín Daly will remain as Business Director for Beijer Ref Ire.

C.Hatchett@turretgroup.com

A-Gas launches Leaks Prevention Campaign

Refrigerant specialist A-Gas has launched an awareness campaign which aims to reduce refrigerant leaks and environmental impact.

The company said: "We are committed to achieving zero leaks and becoming a Net Zero company by 2035. To support our goal, we are proud to launch the A-Gas Leaks Prevention Campaign, a global initiative which aims to reduce environmental impact and strengthen our sustainability efforts.

"Through the Leaks Prevention Campaign, we aim to highlight the real-world impact of refrigerant gas leaks and why prevention matters, not just for our industry but for our communities and planet. We are also shining a light on the vital role of our frontline teams, who prevent leaks every day, sometimes with a simple action, like closing a valve.

"We invite you to join us in raising awareness. By sharing this message, you can help spread the importance of leak prevention and build a sustainable future."

First Aermec six-pipe install boosts college efficiency

Barnfield College in Luton has addressed air quality needs and environmental concerns with the first UK installation of Aermec's six-pipe CPS system and NRP chiller.

The CPS six-pipe multifunction unit delivers simultaneous heating and cooling and provides domestic hot water up to 73°C. It was launched in mainland Europe at the start of 2024 and is now contributing to the decarbonisation of the college campus.

In previous building projects Barnfield College had relied on VRF systems and traditional boilers for hot water. But it was keen to explore alternative solutions that could offer tangible energy-efficiency improvements in its buildings and the reductions in energy loads and carbon footprints that it was looking to achieve.

Aermec collaborated with its Irish distributor, Shilliday Refrigeration, Irwin M&E and building services consultants WP3, who focused on the college's environmental impact and the need to ensure the new building was resource and energy efficient.

WP3 Director James Everdell said: "Aermec's innovative 6-pipe solution aided us in resolving the trade-off between low-grade heat efficiencies and high-temperature domestic hot water production inherent in modern energy efficient systems. Aermec and Shilliday's input into our extensive and iterative energy and carbon modelling allowed us to optimise function and operational efficiency for Barnfield College year-round."

David Evans, Aermec's National Sales Manager, added: "We have delivered a cost-effective, intelligent HVAC solution that optimises the building's energy use and carbon emissions."

Along with the CPS multi-function unit, an NRP chiller, TRS heat recovery units and 64 VED fan coil units (FCUs) were specified due to the efficiencies, reductions in carbon emissions and the superior acoustics offered by the FCUs.

The multi-function unit provides high efficiency even with partial loads and provides a cooling capacity of 164.2kW to 491.1kW and a heating capacity of 175.6kW up to 504kW. This provides Barnfield with simultaneous medium temperature hot water for heating and low temperature water for cooling as well as direct hot water (DHW) at 70°C at the same time.

Calorifiers are used to store the hot water equalling 20,000 litres and produced without flame and smoke, significantly reducing the carbon footprint compared to using a traditional boiler.

Cath Gunn, Principal of Barnfield College, said: "Our new state-of-the-art building is designed to meet the needs of today's students while preparing us for a sustainable future. By incorporating cutting-edge technologies like Aermec's HVAC system, we're creating an environment that not only reduces emissions and energy costs but provides students with access to modern facilities that reflect real-world industry standards."

Air conditioning added to Boiler Upgrade Scheme

The UK Government has expanded the Boiler Upgrade Scheme (BUS) to include air conditioning technology for the first time.

Already offering grants of up to £7,500 off the cost of installing an air source or ground source system, this move means that air-to-air heat pumps (or air conditioning units) now become eligible for funding, as are heat batteries.

The scheme offers a £2,500 discount off the cost of installing an air-to-air heat pump, which can provide both heating and cooling. The grants are available to all households, and form part of the government's £13.2 billion Warm Homes Plan. Households will also be able to claim £2,500 off the price of heat batteries, which can store heat overnight for use during the day.

Iain Bevan, Daikin's Residential New Business Director, said: "The inclusion of air-to-air units is a clear recognition of the important role that this technology has in the UK's decarbonisation journey. Daikin has long championed sustainable heating and cooling solutions, and has lobbied the government to include it in the scheme."

Russell Dean, Residential Product Group Director at Mitsubishi Electric, said: "The announcement is a welcome signal that the UK is serious about making heat pumps mainstream, and expanding the Boiler Upgrade Scheme to include air-to-air systems is a smart step that will open the door for more households to adopt more environmentally friendly heating and cooling.

"But if we want real momentum, we still have to tackle the UK's energy pricing. In recent research we found that a third of homeowners would consider moving to a heat pump if running costs are reduced by removing levies from electricity. As long as electricity remains far more expensive than gas, many homeowners will continue to hesitate, no matter how attractive the upfront incentives are."

Minister for Energy Consumers, Martin McCluskey, said: "Air-to-air heat pumps offer the best of both worlds – keeping you warm in winter while cooling you down when summer comes along. With heat pumps more popular than ever, we want to make sure as many people as possible can benefit, especially those in flats or small homes without central heating, so they have greater choice when upgrading their property.

"We are also offering discounts for heat batteries and consulting on the role innovative, clean heating solutions can play, including thermal storage, infrared panels and renewable fuels."

The Government is also launching a consultation to explore alternative clean heating solutions that may play a role in some homes, such as infrared heating, solid biomass boilers using agricultural waste, and renewable liquid fuels, and to explore the role of innovative, clean heating technologies in homes.

PACAIR and Mitsubishi Electric extend relationship

Mitsubishi Electric and PACAIR have agreed a new contract which extends the relationship between the two companies to more than 20 years.

Andy Hart, Commercial Products Sales Director for Mitsubishi Electric, said: "Our relationship with PACAIR has grown stronger over the past 20 years and throughout that time Nigel and his team have consistently delivered the highest levels of professionalism and support.

"Changes to refrigerants and new products mean that the world of HVAC is changing rapidly, so customers need a reliable and trusted partner. PACAIR offers its customers dedicated technical support and expertise across our commercial line-up, which is a fundamental reason why we are delighted to have them alongside our own brand."

Andy Hart of Mitsubishi Electric with Nigel Palmer of PACAIR

Director and founder Nigel Palmer established PACAIR in 2003 and the business has since expanded to include branch offices in Birmingham and Wigan. The company became Mitsubishi Electric's only Applied Project Specialist (APS) in 2021, meaning it can can offer customers a full HVAC service across the manufacturer's range of commercial products.

Palmer said: "We have always sought to deliver a true customer-focused approach, which has really helped us stand out in the market. This new agreement reinforces the strength of our relationship and demonstrates our shared commitment to deliver sustainable HVAC solutions that help our clients navigate changes in both legislation and the market."

Linda McVittie honoured at IOR Scotland Annual Dinner

Linda McVittie of J&E Hall was recognised with the prestigious Kooltech Award at the Institute of Refrigeration (IOR) Scotland Annual Dinner 2025, held in Glasgow. The event brought together more than 500 guests from across the refrigeration, air conditioning and heat pump sector to celebrate achievement, professionalism and collaboration within the industry.

BBC Radio presenter Arlene Stuart hosted the evening, with IOR Scotland chair Jason Fraser addressing the room to welcome guests, industry representatives and members from across the UK. The evening also featured a keynote speech from Colin Maclachlan, former SAS soldier and motivational speaker, who shared insights from his career and experiences in leadership, resilience and teamwork.

The Kooltech Award was presented to Linda McVittie in recognition of her outstanding contribution to the refrigeration and air conditioning industry. Linda began her career at Star Refrigeration, working in sales administration before progressing into engineering and technical sales. Her commitment to continuous professional development led her to achieve Chartered Engineer status and become a Fellow of the Institute of Refrigeration. She later joined Trane as regional service account manager and now serves as sales manager for Scotland at J&E Hall International, supporting sustainable and energy-efficient cooling solutions across the region. With a career spanning more than 25 years, Linda is widely respected for her technical expertise, professionalism and mentorship. She has been named among the Women's Engineering Society Top 50 Women in Engineering and was previously awarded Woman of the Year at the National Refrigeration, Air Conditioning & Heat Pump Awards.

The Apprentice of the Year award, sponsored by Absolutely Chilled Ltd, was presented to Martin Oates of CPA Engineering Solutions. Oates was recognised for his technical ability, professionalism and commitment to learning and development during his apprenticeship. Judges commended his consistent performance and contribution to both his company and the wider industry.

IV Produkt expands production capacity

AHU manufacturer IV Produkt has completed a major expansion of its headquarters in Växjö, Sweden, with the addition of over 5,000m² of new production facilities. The extension strengthens the company's capacity to meet increasing demand for its sustainable and energy-efficient air handling solutions.

The new facilities include a completely new production line for AHU-integrated cooling machines and integrated reversible heat pumps, a product range currently experiencing growing popularity in the UK market.

Over the past five years, IV Produkt has invested over 400 million SEK in increased production and office space, new machinery and additional land as part of a long-term growth strategy.

"We clearly see how AHU-integrated reversible heat-pumps playing a more and more significant role in the UK building sectors energy efficiency and decarbonisation work, so to be able to increase our production capacity of these key products is of course very satisfying," said Manuel Swärd, Export Director West Europe.

"By expanding both our physical footprint and technical capabilities, IV Produkt continues to prepare for tomorrow's market needs while reinforcing our commitment to innovation and sustainable manufacturing."

https://www.ivprodukt.com/

Steve Gill wins IOR leadership race

Steve Gill will serve a second term as President of the Institute of Refrigeration after the results of the leadership race were announced at the Annual General Meeting.

The World Refrigeration Day founder, who also served as IOR President from 2016-2018, was confirmed as President-Elect with 156 votes, ahead of fellow candidates Rob Lamb (127), Paul Singh (105) and Paul Arrowsmith (102). He will now join the IOR Board and work with current President Lisa-Jayne Cook until he succeeds her as the next IOR President in November 2026.

Stephen Benton and David Bostock were elected as two new Trustees onto the IOR Board.

Lisa-Jayne Cook thanked all candidates for their willingness to put their names forward for election this year. She also thanked retiring Trustees Paul Singh and Damian Wiszniewski for their commitment and service.

Beijer Ref extends academy network

ACR Journal headed north for the official launch of the new Beijer Ref training academy in Glasgow.

Beijer Ref UK has underlined its commitment to raising industry standards with the official opening of its Glasgow training academy.

Lord William Haughey OBE, Chair of City Facilities Management Ltd, performed the opening ceremony, with the launch forming part of the wholesale group's ambition to offer convenient top-level training to engineers across the UK.

The strategy builds on the success of Beijer Ref's existing academies, which include two air conditioning training centres, an industrial refrigeration academy and an F-Gas/sustainable solutions academy in Wetherby.

Hayley Cattell, Managing Director of Beijer Ref UK & Ireland, said: "It was great to welcome so many visitors to Glasgow. Our aim is to provide engineers with the training they need, where they need it. The ultimate target is for no engineer to be more than two hours away from expert guidance."

The new facility, at 140 St Andrews Road in Glasgow, features a range of sustainable heating and cooling rigs, with a training room dedicated to renewable technology including CO_2 and A2L systems and a heat pump training area covering the latest heating products.

More than 50 people attended the event, with most taking the opportunity to book discounted training courses on the day.

Available industry courses include:

- F-Gas Category 1
- Introduction to CO_2 as a refrigerant
- Installing & commissioning CO_2 condensing units
- Basic refrigeration electrics & safe isolation
- Hydrocarbon & flammable refrigerants
- Basic introduction to industrial refrigeration.

For further information about any of the Beijer Ref academies, email **info@beijerrefacademy.co.uk**

Lord Haughey opens the new Glasgow Training Academy watched by Beijer Ref UK & Ireland MD Hayley Cattell, Business Support and Design Director Lee Downham, and guests

Guests were able to check out the wide range of training facilities now available in Glasgow

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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. Hilmor, a renowned brand in the industry, has been manufacturing high-quality hand tools that are efficient, deliver exceptional results and look good too.

DIGITAL ADJUSTABLE TORQUE WRENCH (1963826)
Tightening to true torque when working on mini splits is serious business. Under tightening could result in refrigerant leaks, while overtightening could mean burst tubing. That's why the Hilmor Digital Adjustable Torque Wrench is critical to perfecting your torque time. The 9-factory memory settings make it quick to set common torque values, while the digital display shows the amount of force applied to the flare nut. And if that didn't make the job easy enough, lights and buzzers illuminate and sound when the desired torque is achieved.

DELUXE COMPACT SWAGE TOOL KIT (1964041)
The Hilmor Compact Swage Tool is thoughtfully designed to fit into the smallest of spaces and can knock out the picture-perfect swage in just one shot. An innovative hydraulic mechanism and release button let you take care of any job single-handedly.

RATCHETING PLASTIC TUBE CUTTERS (1885393)
These ratcheting plastic tube cutters are rugged and durable, made with an ergonomic cast-aluminium body and a high-carbon steel blade. All of these features help increase productivity and the life and durability of the tools.

RATCHETING 9-IN-1 MULTI-TOOL (1891259)
It only takes a simple twist of the hand to drive a screw, nut or bolt in no time. Nine different bits are at your disposal. A ratcheting mechanism and an ergonomic rubber grip come as standard.
Bit sizes include: #1 & #2 Phillips, 3/16" & 1/4" slotted, #2 square, 1/4", 5/16", and 3/8" nut drivers, and valve core remover.

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LAST BUT BY NO MEANS LEAST ...
Whether you need adjustable wrenches, pliers (long nose, diagonal cutting, Lineman, quick-adjusting and refrigerant recovery), crimping tools, wire strippers, deburring tools, utility knives or fin straightening tools – Hilmor is the go-to supplier.
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These tools feature a Lifetime warranty and are sold by all leading wholesalers.

See entire Hilmor range:

See DiversiTech website:

or contact our sales team on sales@diversitech.com

Leak checking in changing ambient conditions

Welcome to the first in a series of guidance articles designed for engineers in association with the F-gas Register.

1 Procedure for testing with OFN

Before any work takes place, it is essential that a risk assessment is carried out. The refrigerant type for the system should be known and from that a maximum allowable pressure in the system and a leak test pressure can be determined.

The manual handling and use of compressed gases must be considered in the risk assessment, and the usual PPE (personal protective equipment) with this type of work shall be used: safety gloves, safety goggles, safety footwear, plus any site considerations required under local conditions.

NOTE: Nitrogen gas is an asphyxiant – it will suffocate in high concentrations. Pressure testing with OFN shall only be carried out in well-ventilated areas, and consideration shall be given to evacuating any area where there is a potential for high volumes of OFN to enter an occupied space which is not well ventilated.

Refrigerant manifold sets with sight glasses have been known to fail and cause injury under high pressure. The use of these manifolds shall only be used downline of an approved regulator set and the procedure for pressure testing shall ensure that the pressure is slowly increased into the system with no sudden rise in pressure in any part of the system.

- Ensure the nitrogen cylinder is secured or located in a position that it cannot fall.
- Ensure the regulator valve is fully wound out (anti-clockwise) before fitting to the cylinder.
- Connect gauges to the system to be tested and fit the common manifold hose to the OFN regulator.
- Use the high side valve and gauge of the manifold for testing to avoid damaging the low side gauge (if using compound gauges).
- Open the OFN cylinder valve and start slowly winding the regulator in (clockwise) using steps of no more than 45psi (3 bar) at a time.
- At each step listen for audible leakage and check for pressure drop on the gauge.
- When the pressure test level has been reached, the OFN cylinder valve shall be closed and a note taken of the time, temperature and pressure in the system.
- The regulator valve should be fully wound out again (anti-clockwise) and the common hose removed from the cylinder.
- A new system should be leak tested overnight, at least, and on checking the next day the pressure and temperature shall again be noted.

There should be no difference between the pressure test levels recorded at the start and end of the test.

NOTE: The pressure in the system may however have changed due to temperature change rather than a leak (see section 2).

2 Leak checking in low or changing ambient conditions

Gay-Lussac's Gas Law

This gas law states that if you change the temperature of a gas in a container with a fixed volume (such as an RACHP system, for example), the pressure inside the fixed volume will change in direct proportion to the temperature change.

(P1/T1) = (P2/T2) where:

- P is the gas's pressure in bar absolute (bar gauge pressure +1)
- T is the gas's temperature in Kelvin (°C + 273)
- P1 and T1 are the pressure and temperature at the start of the test,
- and P2 and T2 are the pressure and temperature at the end of the test.

This law then tells us that when we are testing with OFN, if the temperature of the test gas changes over the time during the test period, then so will the pressure. We can predict what the pressure should be by using the following equation:

P2 = (P1 X T2) / T1

For example:

You are pressure testing an R410A system at a design test pressure of 33 bar gauge (34 abs) and the temperature at the outset is 20°C, but when you return the following day to check on the test the temperature has dropped to 10°C then the expected pressure would be 31.8 bar gauge (32.8 bar abs): [(34 X 283)/293] = 32.8

This drop in pressure of 1.2 bar gauge (approx. 17.4 psi) may have occurred due to the drop in temperature NOT a leak. If time permits, then an extended test period is wise.

Any drop in test pressure exceeding this calculated allowable deviation must be treated as a suspected leak and dealt with accordingly.

Similarly, for the same scenario in the example above, if the ambient temperature rose from 10 to 20°C then the calculation would be: [(34 X 293)/283] = 35.2 bar abs (34.2 bar gauge) = 1.2 bar(g) (approx. 17.4 psi) higher than it was at the start of the test period.

Therefore, the test pressure not rising when the ambient has increased significantly may indicate a small leak and should be investigated further.

https://fgasregister.com/

The UK Launches Consultation on HFC Phasedown Reform

A Turning Point for the Refrigeration Industry

Refrigerant recovery, reclamation, and lifecycle management services, such as those provided by A-Gas, will be critical to maintaining supply continuity and supporting a measured transition to lower GWP alternatives.

The UK has long awaited an update to its F-Gas legislation. Following the EU's recent regulatory changes, the UK is now preparing its own roadmap for phasing out high GWP refrigerants. To accelerate and strengthen this transition, the Department for Environment, Food and Rural Affairs (DEFRA) has launched a public consultation, open until 17 December.

This consultation focuses solely on the phasedown schedule and does not include broader F-Gas policy reforms.

Its key objectives include achieving deeper emissions reductions, targeting a near-total phase-out of high GWP refrigerants by 2050, aligning with the UK's net-zero commitments, and ensuring fulfilment of international obligations.

What's on the Table?

The consultation, available on the DEFRA website, seeks industry feedback on the technical, economic, and operational impacts of a steeper HFC phasedown beginning in 2027 and extending to 2050

DEFRA's preferred option would accelerate reductions beyond the current 79% cut by 2030, reaching an ambitious **98.6% reduction by 2048**.

Stakeholders are also invited to consider three alternative pathways:

1. A medium phasedown schedule
2. A most ambitious schedule
3. Alignment with the EU trajectory, leading to a full phase-out by 2050

The consultation will remain open for private individuals and organizations until December 17th, and the survey can be completed by anyone interested in expressing their view on the proposal.

Enabling a Viable Transition

Under a steeper phasedown, effective recovery and reclamation will become increasingly vital as the supply of virgin HFCs tightens.

Demand for reclaimed refrigerants is expected to grow as companies seek ways to balance supply and maintain operational continuity.

Robust recovery, reclamation, and reuse practices, such as A-Gas Rapid Recovery, will be essential for supporting the HVACR sector through this transition. This F-Gas compliant on-site recovery solution is available 24/7 and scalable to systems of any size, it is delivered by qualified technicians who safely manage system discharge and recharge operations.

Using proprietary A-Gas technologies, such as high-performance pumps, and hoses up to 120 meters, Rapid Recovery can operate up to ten times faster than conventional methods, significantly reducing system downtime. It streamlines contractors' work while ensuring responsible refrigerant management

These activities help safeguard system reliability, minimise environmental impact, and ensure regulatory compliance. They also enable the continued use of existing equipment while supporting the adoption of new, lower GWP refrigerants.

Recovery and Reclamation is the **circular economy in action**. It sees our industry move away from the traditional "take, make, dispose" model and toward a practice that maximises resource efficiency and extends the life of valuable materials. A-Gas is leading the way towards improved circularity of refrigerants by supporting our industry to achieve Lifecycle Refrigerant Management (LRM), a circular economy solution on the journey towards net-zero.

The A-Gas LRM Model

A-Gas, a global leader in the Lifecycle Management of Refrigerants (LRM), has been enabling sustainable refrigerant use for more than 30 years. The company recovers, reclaims, and repurposes used refrigerants (to AHRI 700 standard), making them available for future reuse or ensuring their safe destruction. This approach reduces emissions associated with leakage and virgin production while helping customers keep existing systems in service. LRM demonstrates the circular economy principles that are currently in practice and concentrates on recovering, reclaiming and reusing existing refrigerants – critical for an industry operating under a declining quota mechanism.

Shaping the Future

DEFRA's consultation marks a pivotal moment for the future of refrigerant use in the UK. By proposing a steeper phasedown through 2048, the government aims to align the F-Gas framework more closely with national climate goals. The final direction will depend on stakeholder input and the ability to balance environmental ambition with practical implementation.

Whatever the outcome, recovery, reclamation, and lifecycle refrigerant management will remain central to ensuring supply continuity and supporting the transition to lower GWP alternatives.

For more information on recovery, reclamation and to learn more on Rapid Recovery visit:

A-Gas website www.agas.com/uk/

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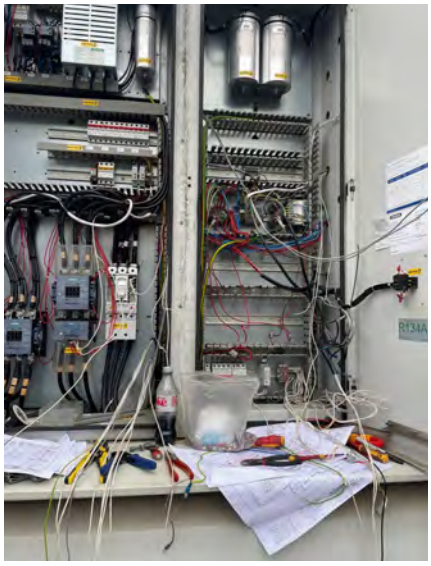
Taking control of your chillers

Trevor Dann, Technical Director of ThermOzone, explains the benefits of a retrofit solution to controls failure.

One of the most common service issues with a cooling chiller is service interruption due to controls failure. This can manifest as a direct electrical or electronics failure, general chiller unreliability, lack of manufacturer support, or simply obsolescence and old age. Occasionally a compressor motor failure can lead to a back surge via the motor protection circuit, compounding an initial problem.

Problematic issues with chiller control systems are surprisingly common, but often a difficult problem to resolve. Most control systems are either maker-specific or generic 'locked', eg a separate controls maker provides the controller, but the access and support is restricted by the chiller manufacturer. This then requires direct manufacturer support, which is both expensive and often protracted.

For example, we had an emergency project (we will call it "Savile Row") to completely replace the controller on two chillers simply because the manufacturer was quoting some three months for new controller parts. We understand the chiller failed after a heavy electrical storm, so it looked like the equipment had taken a lightning strike. This had rendered both chillers unserviceable, not an ideal situation in late June!



Controls retrofit taking place on a project in London

Invariably chiller control problems are compounded by the investigating engineers having no clue as to where to start. As a result, false diagnosis is common, so fixing the issue becomes a 'change this, no that didn't work; OK let's try that!' As such, the engineer and his/her firm are on a hiding to nothing and by the third fix attempt their credibility is being questioned. Such a haphazard approach is also undefined regarding both timescale and costs. Indeed, the firm applying the fix attempts will expect to be paid, but the Client funding the repair might be miffed that the equipment is at best still unreliable, or worse simply still not working. Not an ideal commercial situation.

Retrofit approach

The thought of literally ripping and cutting out vast quantities of wires and junking numerous control components from inside a control panel can seem very daunting. Let alone the task of replacing the hardware and achieving a safe and proper functionality.

However, taking this to basics allows us to consider each chiller as a blank panel: so simply a group of standard chiller components requiring a means to turn on compressors, control the refrigeration cycles, control condenser fans and sometimes the associated pumps etc.

In this regard, even the most complicated chiller has simply a whole array of parallel electrical circuits working in harmony, and generally the whole lot is coordinated by a single dedicated control system.

When this approach is taken the original complex problem gets broken down into a series of manageable aspects:

- Accurate control of the primary function
- Control of the compressor start/stop via the original switchgear (contactors and/or inverters)
- Control of multiple sub-systems or circuits
- Control of the condenser cooling fans
- Control of associated pumps (where not on external plant control)
- Time scheduling
- Sub-system rotation
- Co-ordination with external control demands such as the Building Management System (BMS).

Once these key elements are considered a control strategy re-design can also pay attention to:

- Flow and freeze protection
- Refrigerant optimisation and choice - energy efficiency and environmental concerns, eg Global Warming Potential
- Improvement of chiller operating efficiency: eg conversion to inverters
- Improved off cycle operation
- Power supply monitoring and protection against loss of phase
- Remote access and support, including fault alert via email

Some of these, eg inverter or refrigerant retrofit, will incur greater cost and downtime, but conversely for most projects modification to inverter will offer an attractive return on investment, certainly within three years and sometimes within one year.

The approach we apply when reviewing a fresh potential project is how many systems and what is the general status of the controls as found.

Are there any clear safety issues – loose unconnected wires; system/compressor failures; lack of panel door safety interlocks – typically ~ 90%+ of all the chillers out there have had the panel door isolator safety interlock disabled – it is there for a good reason!

Savile Row project, June 2024

We were contacted by an established customer but for a site we are not familiar with because both air-cooled chillers have failed on their controllers, which arose following an electrical storm. A site visit the following day revealed both controllers completely non-responsive, hence an expensive commercial building with tenants paying premium rents has been left with no cooling, and incidentally very few opening windows! This whole issue was made worse by the OEM advice of three months' delivery for the necessary controls parts!

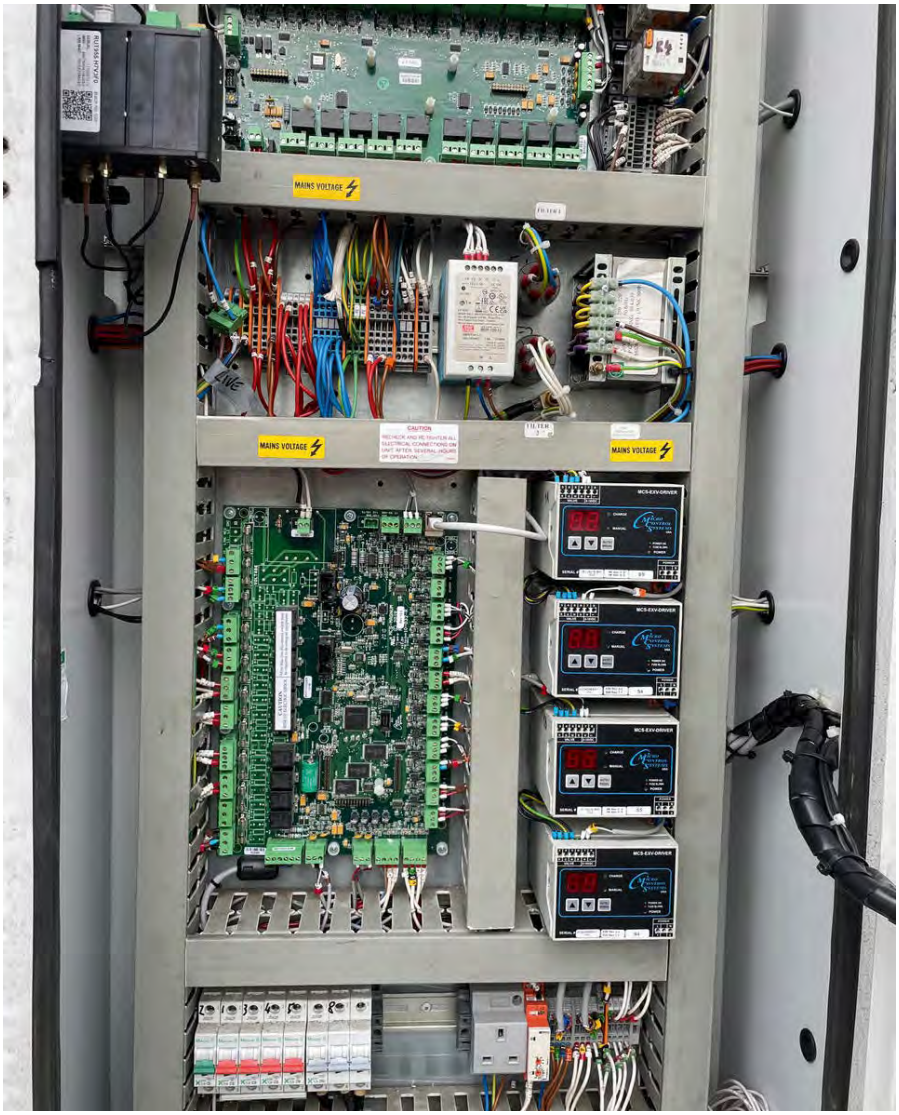
Hence very unhappy tenants threatening withholding of premium Mayfair area rental payments. Hardly surprising as it was stifling at >30°C throughout most of the offices.

We quickly assessed the chillers – simple dual circuit air-cooled units each with two scroll compressors, so 4 step stages of cooling. All the compressors were tested and found functional. There were also electronic expansion refrigeration control valves (EEVs), but their sub-controller drivers were also non responsive as these were integrated into the main controller electronics – a common Italian make, but 'locked' to the setting preferences of the chiller manufacturer – so not even the controls makers agents could directly assist without the chiller's strategy, to which they had no access.

We offered a package of new controller with service interface keypad, input/output expansion to provide up to 32 input channels, 20 output channels and 4 analogues outputs for the fan controller and EEVs. Supplementing the package was a full array of new pressure, temperature and current sensors, plus a dedicated strategy configuration to suit the overall application.

Our priced proposals were offered the following day and as these are routinely available sub-assembly components, we were instructed the commence the day after that. We had provided an estimate of ~ two weeks to achieve first start-up, so some 10 weeks better than offered by the OEM.

Our works at the site commenced on a Thursday, we worked over the weekend and achieved start-up of the first chiller by the Tuesday of the week following. So, after just six days cooling was restored, and we then paid attention to the second chiller. The second was operating the following week, so less than two weeks from instruction to full-service restoration.



The completed London project control panel

As part of the first chiller start-up, we also established remote access via the RODEM system and 4G mobile phone network. RODEM not only allows us to access and view, but to pro-actively adjust and monitor service 24-7. This set-up also tells us when a fault arises via email. Indeed, we know of a chiller issue before the client, and invariably (>85%) we resolve faults without a site visit just by applying a few adjustments.

This >85% fault resolution remotely enacted remains the norm longer term, with projects up to 10 or 12 years old still offering minimal call out, zero compressor failure (yes zero compressor failure on any project!), and well-established system reliability and confidence.

For most typical chillers undergoing a controls (heart) transplant we expect to achieve system operation within a week to 10 days.

None are that complex, although most will have a unique aspect of how to achieve best mode of control to consider and resolve, for instance the latest one under our jurisdiction has the chiller acting as a slave system with multiple start inputs each directly starting a compressor/sub-system.

So, if you have unreliable chillers suffering seemingly never-ending control problems then why not consider a defined and warranted solution. A site assessment and detailed proposal costs nothing.

Tackling condensation to protect buildings and occupants

By Holly Bramwell, Divisional Manager, Vents, at Zehnder Group UK

Condensation is a silent but widespread problem in UK homes. Often dismissed as a minor inconvenience on a windowpane, left untreated it can quickly escalate into damp, mould growth, structural damage, and serious health risks for occupants. For professionals in the industry, identifying and addressing the root causes is essential to protecting both buildings and the people who live in them.

The scale of the problem

Last year, during mould and condensation season, we conducted a research study that unveiled almost three quarters of British residents (73%) experience condensation on their windows and nearly a half (45.1%) say they experience mould in their homes. This is exacerbated even more in social housing where 99.2% of landlords report mould problems in their housing stock and almost a quarter (19%) of tenants say their homes have mould present in 5-6 rooms.

Condensation occurs when warm, moisture-laden air comes into contact with cooler surfaces. In winter, closed windows, cold surfaces, and running heating systems create ideal conditions for moisture to settle. A typical household produces up to 24 pints of water vapour daily through everyday activities such as cooking, bathing, drying laundry indoors, and even breathing. Without sufficient ventilation, this moisture becomes trapped, providing an ideal environment for mould, which can be toxic and harmful to health.

Why it matters

Condensation isn't just an aesthetic or maintenance issue. Persistent damp can compromise building materials, reducing structural integrity and the thermal efficiency of insulation. Exposure to mould, particularly black mould, has been linked

Condensation can quickly escalate into damp, mould growth, structural damage and serious health risks for occupants

to respiratory problems and can exacerbate conditions such as asthma. Vulnerable groups, including children and the elderly, are especially at risk.

Older properties are naturally more prone to condensation due to poor insulation, cold spots, and leaky building fabrics. But surprisingly, modern, more energy-efficient homes can face similar issues. While airtight construction improves energy performance, it can trap stale, humid air if ventilation is not considered as part of the design. This creates an 'airtight box' effect that can create unhealthy indoor environments despite advances in insulation and heating systems.

Practical measures for professionals

Managing condensation requires a multi-faceted approach, balancing heating, ventilation, and occupant behaviour. Upgraded insulation should be paired with effective ventilation to regulate indoor humidity and reduce conditions conducive to condensation. There are some simple steps that can be taken to help:

Check the current ventilation system is working effectively – look at the property's current ventilation system. Are extract fans and trickle vent systems turned off or closed? If so, this would compromise their ability to remove stale, humid air and allow fresh air to be brought in? They could also be obstructed or old and need replacing. If fans are over 5-10 years old you might find a newer model that will give better performance, less noise and increased efficiency. New fans on the market, like the Zehnder Unity CV2.1HT run constantly with an integrated humidity sensor to give a boost, or on-demand ventilation when it is needed, such as after showering or while drying clothes. They are whisper quiet and run at a minimal cost... less than £2 per year. Extract fans should also be cleaned regularly to keep them in good working order.

Make sure fans are installed correctly – we'd recommend that ridged or semi-ridged ducting is used for all extract fan installation where possible. Flexible ducting should be avoided, however if used it should be installed as straight and taught as possible, avoiding any bends or creases that might restrict airflow and affect the fan's performance. Check for clear air paths into the property for ventilation systems to work properly.

Modern fans can run constantly with an integrated humidity sensor to give a boost or on-demand ventilation when required

Trickle vents in windows or undercuts on the doors are good natural ventilation points but make sure these aren't blocked by new carpets or furnishings or closed.

Check the radiators – all radiators should be clear of obstructions and working properly, providing optimum heat output. If the system is free of air after bleeding but cold at the bottom, they might need flushing to get rid of any sludge that has accumulated and affecting performance. But also, be on the lookout for cold spots around the home. Are any of the radiators undersized or in the wrong position for the room to be heated effectively? If so, then upgrades might be required.

Talk to homeowners about their living habits – review or ask about occupier activities while at home. Are they drying washing inside? Do they have teenagers that take lengthy showers? How often are they cooking per day? All these things build up a picture of what humidity levels are like within the property and allow you to assess if the ventilation they have is sufficient. If necessary, you can then make recommendations on upgrades or provide advice on how to optimise the system they already have in place.

Collaboration is essential

Condensation is not solely a technical challenge; it requires collaboration across manufacturers, specifiers, builders, and installers. Ventilation must be integrated from the earliest design stages alongside insulation and heating. With the right systems, professional guidance, and occupant awareness, homes can be both energy-efficient and healthy.

Looking ahead, condensation management will become an increasingly important aspect of building design. Smart ventilation systems are redefining how homes are constructed and maintained. By embracing these innovations, the housing and construction sectors can deliver properties that are energy-efficient, structurally sound, and healthy for residents - transforming condensation from an overlooked nuisance into a benchmark of responsible, forward-thinking design.

Epta solution for Whole Foods Market Chelsea

Commercial refrigeration specialist Epta has worked closely with Amazon and contractors to deliver a tailored refrigeration package through every phase of the project for a new Whole Foods Market store in London.

Premium refrigeration for flagship store

After a decade-long pause on UK expansion, Whole Foods Market has opened a flagship store in one of London's most iconic locations, King's Road in Chelsea. At 21,800 sq ft, the new store is said to be one of the brand's most ambitious launches.

With a premium location and purpose-built design, the project demanded a refrigeration partner that could deliver on multiple fronts from energy efficiency, seamless performance, premium design and alignment with Whole Foods' brand standards.

Smart design meets storewide flexibility

Drawing on both Epta UK's manufacturing expertise and the group's specialist portfolio, the team was able to meet complex design requirements and delivery timelines, including a unique challenge to match custom Pantone cabinet colours across two manufacturing sites in Europe.

The full refrigeration scope covered chilled, frozen and hot food categories:

- UK-manufactured cases
  Lion Eco and Gazelle Eco - ultra-low energy and locally made
- On-brand aesthetics
  Custom Pantone cabinet finishes, colour-matched across two production sites
- Specialist counters
  Eurocryor Bistrot and Country units for meat, fish, and sushi, plus Pepper for ambient impulse or cross-merchandising opportunities
- Impulse units
  The Stage plug-in for seasonal and hot food zones
- Advanced engineering
  Custom-coloured GranBering freezers built to meet both visual and operational demands at scale.

Premium food retail experience

Delivered to brief, on time and to a premium standard, Epta says the project showcases how refrigeration can elevate store environments, not just functionally, but experientially. From local manufacturing to smart customisation, it believes the installation demonstrates the value of flexible design and close collaboration.

Simon Crook, UK&I Channel Manager, Epta UK, said: "It was a real team effort and a fantastic showcase for Epta's flexibility. We are proud to see it come to life."

Unrivalled Heat Transfer Fluids & Expert Fluid Management Services

Since 1998, **Hydratech's** key objective has been the establishment of technical partnerships with those responsible for cooling system design, installation and operation. By understanding their exact application requirements, **Hydratech's** team of chemical, mechanical and sales engineers can specify the optimum fluid solution, and provide a full suite of maintenance services to ensure partners such as Arla, Muller, Ocado and Lidl benefit from improved system efficiency, extended system life and considerable energy savings.

Hydratech Products

Hydratech's market leading heat transfer fluids, glycol formulations, antifreeze solutions, corrosion inhibitors and water treatment chemicals are proven to provide precise, stable temperature control and comprehensive system protection. **Hydratech's** specialist fluid solutions are trusted by the likes of Waitrose and Sainsbury's to help improve the performance, efficiency and energy consumption of their chiller systems.

Hydratech Services

The **Hydratech Services** division provides specialist engineering and maintenance services to customers installing, commissioning, operating or optimising closed cooling and heating systems. By combining expertise in water treatment chemistry, fluid thermodynamics and mechanical engineering, **Hydratech Services** delivers a fully integrated, holistic approach to process and hydronic systems management. This in-turn maximises the potential for optimised performance, reduced operational costs and significant return on investment gains.

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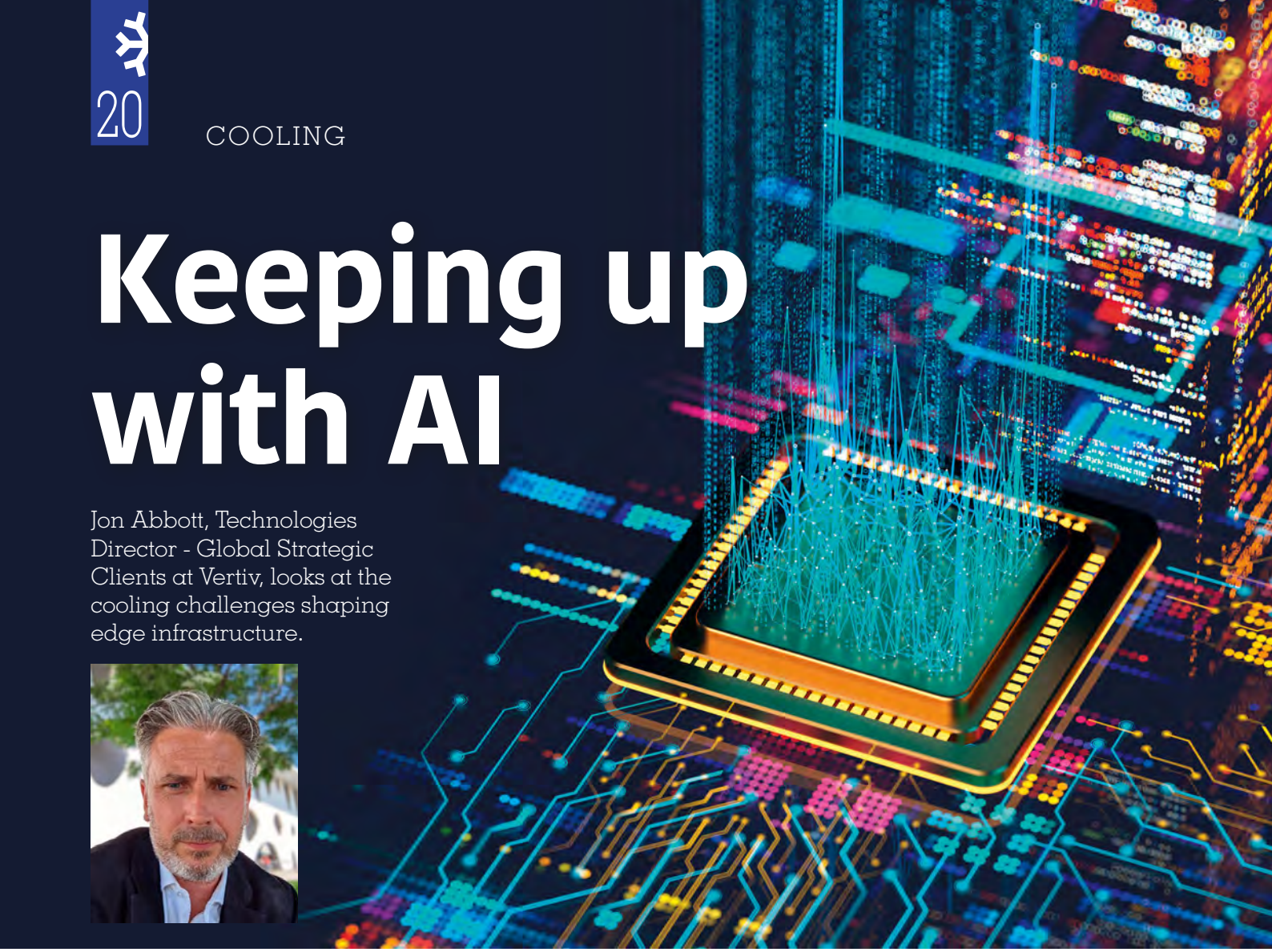
Keeping up with AI

Jon Abbott, Technologies Director - Global Strategic Clients at Vertiv, looks at the cooling challenges shaping edge infrastructure.



Artificial intelligence (AI) is changing the demands placed on critical digital infrastructure. As workloads evolve from centralised cloud environments to edge locations, facilities teams face a new set of cooling challenges. These are driven by high-density equipment, space constraints, and the need for round-the-clock uptime under unpredictable loads.

Cooling has always been a critical part of data centre design. But the types of systems being deployed today require a different approach. Well established methods often cannot manage the thermal intensity of modern hardware alone. Engineers and operators must now find smarter ways to control heat in environments that were never designed to handle high performance computing (HPC).

AI hardware is pushing thermal boundaries

At the heart of the shift is a new class of hardware. AI models are being run on dedicated processors such as graphics processing units (GPUs), tensor processing units (TPUs), and custom-built accelerators. These chips are far more power-intensive than conventional central processing (CPUs). In turn, they produce significantly more heat per rack.

In edge computing locations, where rack densities can exceed 30 kilowatts or even 50 kilowatts or more, thermal loads are created that overwhelm established air-based cooling systems. The challenge is not just peak temperatures, but how consistently the system can manage heat spikes, maintain stable conditions, and recover from operational stress.

In older facilities or retrofitted sites, there may be no margin to absorb this extra heat. This forces operators to rethink both the type and the layout of cooling infrastructure.

Air cooling has limits in AI environments

Air cooling remains the most widely used thermal management method in IT environments. It is familiar, relatively easy to maintain, and cost-effective in lower-density deployments. However, as thermal output increases, air systems begin to show their limitations.

Fans can only move so much air through a rack. As equipment becomes more tightly packed, airflow paths are restricted, temperature differentials rise, and hot spots become more common. This not only puts hardware at risk of hardware failures, data loss, reduced component lifespans, and system outages, but also reduces overall energy efficiency. Systems must work harder to maintain reliable conditions, consuming more power and increasing operating costs.

In many AI use cases, particularly those requiring constant inference or processing at the edge, workloads do not follow predictable patterns. Cooling systems must therefore respond dynamically to changes in usage. Air systems, especially those relying on passive or perimeter cooling, can be too slow to react.

Liquid cooling is becoming more practical

To handle these rising demands, many operators are now turning to liquid cooling. This can take several forms, including direct-to-chip cooling, rear-door heat exchangers, and fully immersive solutions. Each offers different advantages depending on the layout, density, and use case of the facility.

Liquid is more efficient at transferring heat than air. It allows systems to extract thermal energy directly at the source, rather than relying on airflow to move heat away from components. This makes it particularly useful for high-performance AI workloads that operate continuously or spike unpredictably. Liquid cooling also unlocks opportunities for waste heat reuse to support the circular economy.

Until recently, liquid cooling was mostly used in research settings or very large-scale data centres. But as AI becomes more mainstream, the business case for using liquid in smaller or distributed facilities is gaining ground. Advances in reliability, leak detection, and ease of installation have helped reduce perceived barriers to adoption.

Space constraints add complexity

Cooling at the edge presents specific challenges. Many edge facilities are housed in small, non-specialist buildings. They may occupy a corner of an office, a back room of a retail site, or a cabinet installed in an industrial environment. These locations often have limited access to utility infrastructure and physical space.

In such environments, deploying large-scale air handling systems is impractical. Liquid cooling, particularly in closed loop or compact designs, offers a viable alternative. Systems can be tailored to the site, with smaller footprints and more efficient thermal performance.

However, the design must account for environmental factors. Some edge sites are exposed to extreme ambient temperatures, vibration, or variable humidity. Cooling systems must be built with appropriate tolerances and protections, while still delivering consistent performance.

Energy use is under scrutiny

Cooling systems have long been among the largest contributors to energy use in data centre environments. As AI deployments expand and edge sites multiply, energy efficiency is even more of a priority.

Regulations are tightening across Europe and other markets. Operators are now expected to meet measurable energy efficiency targets. Power usage effectiveness (PUE) benchmarks are being applied to smaller sites, not just hyperscale facilities.

To improve performance, cooling systems must be integrated into wider energy management strategies. This includes the use of intelligent control systems, thermal analytics, and dynamic load balancing. In some cases, operators are also exploring waste heat reuse, using the output from cooling systems to provide heat to nearby buildings or facilities.

Maintenance and reliability remain critical

Cooling infrastructure must not only perform well, but also remain serviceable. At the edge, access to skilled technicians may be limited. Systems need to be easy to monitor, diagnose, and repair remotely where possible.

Designers should prioritise modularity and fault tolerance. If one component fails, the system should continue operating without service interruption. Remote sensors, predictive maintenance tools, and integration with facility monitoring platforms can all help reduce the burden on service teams.

In addition, the materials and components used must match the physical realities of the site. Cooling systems operating in outdoor enclosures or industrial zones must withstand dust, vibration, and fluctuations in ambient conditions.

Collaboration across disciplines is essential

Effective cooling design cannot be separated from the broader critical digital infrastructure. Power, cabling, network layout, and application requirements all affect thermal load and airflow.

Too often, cooling is treated as a standalone problem. In practice, it needs to be coordinated with IT, network, and facility teams from the outset. Equipment placement, airflow planning, cable management, and even lighting can all influence cooling efficiency.

The earlier these conversations happen, the easier it is to optimise the site without rework or downtime. As AI deployments grow more complex, this kind of cross-functional collaboration is becoming a competitive advantage.

Planning for change

AI infrastructure does not stand still. Workloads shift, models evolve, and usage patterns change. Cooling systems must be able to adapt. Designing for static loads or fixed rack layouts increases the risk of obsolescence.

Engineers should plan for future growth by building flexibility into the system. That might mean reserving space for additional cooling capacity, designing with scalable loops, or implementing smart controls that adapt to changing scenarios.

Choosing equipment that can be upgraded or replaced without full system shutdown is also a valuable consideration. In AI-driven environments, downtime can have a knock-on effect on operations, analytics, and customer-facing services.

AI has introduced a new level of complexity to critical digital infrastructure. Nowhere is that more visible than in the cooling systems that keep edge environments operational. Rising densities, unpredictable loads, and constrained spaces are challenging traditional methods and driving innovation.

Getting ready for heat pumps

We've just published our second report into the state of the heat pump market in the UK and, whilst there are still barriers to the mass-market adoption of heat pumps that we need to get anywhere near our legally-binding net zero targets, there were also a few pleasant surprises.

The report, titled: 'Heat Pumps: Accelerating the Switch' shows that, firstly, 80% of homeowners surveyed care about climate change, despite what a certain President, or any other climate sceptic may say or think.

https://library.mitsubishielectric.co.uk/pdf/book/Heat_Pumps_Accelerating_the_switch#page-1

I for one don't want to chance my children's future and would rather believe the climate scientists, when they say that we need to do all we can to mitigate man's impact on the climate.

Cheaper electricity = more heat pumps

Secondly, a third of homeowners would seriously consider switching to heat pumps if there was more parity in the prices of electricity and gas.

Research by Dr Ed Manderson, Lecturer in the Department of Economics at the University of Manchester, reveals a 7% fall in electricity prices (equivalent to a 10-point drop in the price index) would lead to about a 9% rise in domestic heat pump installations.

The same trend appears in the commercial market: rebalancing electricity prices could boost uptake by around 9%, of which the true effect across the whole market would likely be considerably larger.

Ben Bartle-Ross is a technical trainer at Mitsubishi Electric

The research reveals a critical tipping point in public sentiment, with the desire to reduce emissions being outweighed by the reality of energy bills.

Our report concludes that if we are to bring about considerable reform in how we heat our buildings in the UK, then we must look at reforming an electricity pricing system that disproportionately penalises those who opt for low-carbon alternatives.

Heat pump ready

The other thing about the report that I found pleasing is that both residential and commercial heating installers feel that they are ready to help accelerate the shift away from gas towards heat pumps.

A staggering 93% believe they already have the skills and experience to install heat pumps, which is an increase from 61% reported in last year's report.

Having trained heating engineers and air conditioning engineers on heat pumps for over a decade now, I would say that each group is probably about 93% ready, as there are nuances and subtle differences in how the technologies are designed, applied and operated.

It's easy to cover that 7% shortfall though and much of our own learning is online and something that engineers can conduct in their own time. If you'd like to know more and book a training course, please click here.

https://les.mitsubishielectric.co.uk/installers/installer-training

Time to hit the accelerator

In last year's report, we questioned whether there was a shortfall in qualified engineers to fit the amount of heat pumps needed, but this year's report shows that there really is a 'heat pump engineer on every street – they just happen to be called a gas engineer at the moment'.

So, whilst recruitment is a challenge in every engineering sector, one of the major barriers is not as insurmountable as previously thought.

The report concludes by calling for urgent action to remove the cost barriers holding back heat pump adoption. This includes:

1. Shifting green levies away from electricity to reflect the UK's net zero goals. **Current levies add £140 to electricity bills, but just £50 to gas**, making heat pumps more expensive to run than gas boilers.
2. Decoupling electricity from volatile gas prices
3. Expanding and promoting financial support schemes

Let's hope our politicians are listening!

You can read this fascinating report yourself by downloading a copy:
https://library.mitsubishielectric.co.uk/pdf/book/Heat_Pumps_Accelerating_the_switch#page-1

Revolutionising HVAC Installation with RLS Press Fittings

In the world of HVAC installation, safety and efficiency are paramount. Grant Phipps Managing Director of Rapid Locking System Europe explains that traditional methods such as brazing, while effective, come with inherent risks and challenges that can hinder productivity and compromise safety. Since patenting the RLS Press Fittings in 2016, Rapid Locking System - part of the esteemed Marmon Group of companies - has redefined the HVAC installation landscape by eliminating the dangers associated with open flames, thus creating a safer, more efficient work environment.

Mitigating Fire Risks

Brazing, the conventional method for joining HVAC pipes, involves using an open flame, which introduces several fire-related hazards. The presence of combustible materials, the risk of gas leaks, and the need for strict safety measures such as hot work permits, fire spotters, and extensive fire safety equipment are significant concerns. Moreover, the brazing process demands the transportation and handling of gases and heavy equipment, further complicating the installation process.

Zurich Insurance has calculated that over the course of a decade, hot work fires resulted in total losses of up to £70 million in the UK. Data published in 2023 revealed that fires caused by hot work accounted for 16% of all fires in buildings under construction.

Rapid Locking System's RLS Press Fittings remove these hazards entirely. By eliminating the need for an open flame, RLS Press Fittings negate the requirement for hot work permits, fire spotters, and additional fire safety equipment. This innovation not only enhances workplace safety but also simplifies logistics by removing the need for nitrogen purging and transporting brazing equipment to job sites. As the use of flammable refrigerants in HVAC and refrigeration continues to rise, the flame-free RLS Press Fittings offer a crucial safety advantage that will only grow in importance.

Faster, Easier, and More Cost-Effective Installation

Beyond the significant safety improvements, RLS Press Fittings revolutionise the installation process by making it faster and more efficient. Traditional brazing is a time-consuming task that requires meticulous preparation and execution.

In contrast, RLS Press Fittings enable technicians to make a permanent and reliable mechanical connection for working pressures up to 700 PSI (48.26 Bars) in just 10 seconds, without the need for brazing. This dramatic reduction in installation time translates to up to 60% faster project completion, yielding substantial time and cost savings.

The process of using RLS Press Fittings is straightforward: tube ends are prepped similarly to brazing, but the press tool performs the connection work in seconds. This efficiency not only accelerates the installation but also reduces the physical strain on technicians who no longer need to haul heavy brazing equipment from site to site. The simplicity and speed of RLS connections are demonstrated in our quick instructional video, showcasing how this innovative solution streamlines the entire installation process.

A New Standard in HVAC Installation

Rapid Locking System Europe's RLS Press Fittings represent a paradigm shift in HVAC installation, setting new standards for safety, efficiency, and reliability. By eliminating the fire risks associated with brazing and significantly reducing installation time, RLS Press Fittings empower technicians to work smarter, not harder. As the industry evolves and the use of flammable refrigerants becomes more prevalent, the adoption of flame-free, rapid connection methods like RLS Press Fittings will be crucial for maintaining safe and efficient operations.

For more information and to see the RLS Press Fittings in action, visit **www.rls-europe.com**

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WOMEN IN THE ACR INDUSTRY

Janice Bolton has spent more than two decades in the industry and is a Marketing Executive at communications specialist, HVAC Communications.

What was your first job?

After finishing my Fine Arts degree in 1998 (convinced I was destined to be the next great artist), I somehow ended up making a training film for the customer service team at Boots the Chemist. One minute I was sketching, the next I was behind a camera wondering how I'd wandered into corporate filmmaking.

By August I'd joined Boots HQ in Nottingham as an audio-visual associate – a very grand title for someone lugging products around, striking poses for photographers and keeping cables tidy enough to avoid a health and safety incident. I helped produce the Christmas Gift Guide, which, to my horror, starts its life in April.

I also worked on training films for new products and services, dashing around the UK until I knew Boots store numbers better than their postcodes. Alongside that, I was a runner for the AV and film crew, supporting early projects like the Advantage Card and the first wellbeing centres in larger stores.

What does your current role involve?

These days my role involves a delightful plethora of skills across marketing. I nurture strong client relationships and figure out the best ways to communicate each client's message without sounding like an AI robot. I craft clear messaging, design visuals that look like they belong to the brand, interpret what clients really want to say, and then turn that into something their audience will understand.

I handle graphics, social media, presentations and make sure everything gets delivered on schedule.

What attracted you to the industry?

My entry into the industry was... well, let's call it a very happy accident. My manager at Boots happened to be best friends with the wife of the owner of Pump House and, suddenly found myself in the HVAC/R world in 2002 as a Marketing Assistant for Pump House (now DiversiTech International).

I ended up staying nearly 20 years, during which I was encouraged to really get to know the industry, from how wholesale distribution works to diving deep into product launches, business growth and venturing into new market sectors. It was a huge learning curve for both me and the marketing manager at the time, and we saw the company grow from a small business to a medium-sized one with big ambitions and even bigger opportunities.

What excites/interests you about the industry?

This industry is full of passionate people, or maybe characters is a better word! It's wonderfully close-knit and everyone seems to know everyone, or at least knows someone who once helped someone they know!

If you ever need advice, a favour, a job lead, guidance for your first big trade show, or even just a recommendation on which magazine won't put your audience to sleep, the industry has your back. The support is genuinely golden.

I was lucky enough to spend nearly 20 years working for a company that sold into AC, heating, renewables, electrical and mechanical wholesalers. As you can imagine, the number of people I've met and the amount of knowledge I've absorbed has been nothing short of inspiring. It's an industry that keeps you learning, laughing, and constantly amazed by the people in it.

How would you like to see your career developing?

Honestly, I love what I do. The variety, the people, the madness and magic of the HVAC industry. I wouldn't change a thing. What I would love, though, is to inspire more women to join the industry. It's been one of the best decisions I've ever made and I've never regretted it for a second (not even during those chaotic product launch weeks back in the day).

What is the best piece of advice you were ever given?

"Trust your instincts." Simple, classic and it's never once steered me wrong. Unlike my sat nav.

What do you see as the challenges facing the industry?

The changes needed to meet Net Zero targets by 2050. There is still a huge amount of work to get through and at times it feels as though this industry is bearing more than its fair share of the burden. Fortunately, there are many talented and committed people who will do everything they can to get us where we need to be.

What would you say to other women who are considering coming into the ACR industry?

"Do it! The men and women in this industry will always be at the end of the phone if you ever need to reach out."

Is there a little-known fact about yourself that would surprise other people (secret skill, unusual hobby etc)?

Anyone who knows me knows I absolutely hate heights and I'm terrified of flying. Put me on a plane and I turn green faster than you can say "turbulence." But when I turned 30 (which feels like a couple of years ago, let's go with that), I decided to do something completely ridiculous for someone who can't even look over a balcony: a parachute jump.

I did it to raise money for New Start, a charity at Wythenshawe Hospital supporting babies needing transplants, a cause very close to home. So yes, I willingly threw myself out of an aircraft at 12,000 feet, screamed the whole way down, survived, and raised money for an incredible team who give children a second chance at life.

And just to be clear: that chapter of jumping out of airplanes is very firmly closed. Permanently sealed. Never again!

INSTANTOR STRENGTHENS TEAM WITH FOUR KEY MOVES

Press solutions and plumbing manufacturer Instantor has announced four key movements within its team.

Ken Donegan has been promoted to Service & Training Manager and will lead Instantor's customer after sales service and customer training in the UK and Ireland. Ken will also oversee an enhanced service structure including three field engineers, a dedicated internal technical support team and a network of service agents.

Neil O'Brien will take up the new role of Operations Manager at Instantor's head office and warehousing facility in Santry, Dublin. He will lead a strategic transformation project to enhance efficiency, reliability and order fulfilment, drawing on his experience in driving change across supply chain and business operations in the FMCG, pharmaceutical, utilities, engineering and contract logistics sectors.

John MacDermott has been promoted to Service & Training Engineer for the West of Ireland. Previously an Area Sales Manager and Product Demonstrator at Instantor, he consistently delivered technical insight and practical support to customers, laying a strong foundation for his expanded responsibilities.

Richie Roche will step into the role of Business Development Manager for Leinster, Ireland, to help further develop partnerships with key domestic contractors. He has worked with Instantor for over three years as an Internal Sales Executive and boasts more than 20 years of experience in the plumbing and heating industry.

Neil Gaffney, Managing Director at Instantor, said: "Customer service has always been the foundation of our success and, along with our innovation and product quality, differentiates us from others in the market. We're therefore delighted to announce these new roles, which will help ensure that we continue to deliver best-in-class aftersales care, seamless operations, technical expertise, and excellent support to our customers across the UK, Ireland and beyond."

"CUSTOMER SERVICE HAS ALWAYS BEEN THE FOUNDATION OF OUR SUCCESS AND, ALONG WITH OUR INNOVATION AND PRODUCT QUALITY, DIFFERENTIATES US FROM OTHERS IN THE MARKET."

https://instantor.co.uk/

CONOR EATON-SMITH, TECHNICAL PROJECT DIRECTOR, ABBEY DESIGN ASSOCIATES

Gloucestershire-based refrigeration consultancy Abbey Design Associates (ADA) has appointed **Conor Eaton-Smith** as its new Technical Project Director.

A Chartered Engineer with 20 years of sector expertise, Eaton-Smith has extensive experience in designing, specifying, manufacturing, installing and managing refrigeration, heat recovery and heat pump installations.

In his role at ADA, he will lead the CAD and design teams, oversee major projects and explore emerging technologies to deliver greater value for customers.

Eaton-Smith joins ADA after more than a decade at K2 Engineering, where his role involved focusing on low total cost of ownership systems, leading on the roll out of trans critical carbon dioxide for distribution centres, new builds, extensions and conversions.

He said: "I'm thrilled to be joining ADA at such an exciting time for the business and the wider industry. With innovation in refrigeration and heat recovery moving so quickly, I'm looking forward to working with the team to deliver smart, sustainable solutions that really make a difference for our customers."

Chris Chisman, Managing Director at ADA, said: "Appointing Conor Eaton-Smith is a major coup. His two decades of expertise in refrigeration design and project delivery bring exceptional depth to our team and strengthen our ability to serve customers across every sector."

https://abbeydesignassociates.com/

PAUL RYAN, PRESIDENT, EMEA, VERTIV

Vertiv's Karsten Winther will retire from his position as President, Europe, Middle East and Africa (EMEA) at the end of the year and will be replaced by Chief Procurement Officer **Paul Ryan**.

"Karsten has made impactful contributions to Vertiv during his tenure, particularly in strengthening our EMEA region through complex market dynamics," said Giordano Albertazzi, CEO of Vertiv. "His strong leadership and passion for growing our business and our people, combined with his deep understanding of the market and ability to build lasting customer relationships, have been critical to our success."

Ryan has more than 20 years of industry experience, including more than eight years leading Vertiv's global procurement and supply chain. For more than ten years, he provided leadership for Emerson Network Power (now Vertiv) as Vice President, Operations for EMEA, Vice President and Managing Director for Asia Pacific, and Vice President, Global Operations and Supply Chain for Data Centre Solutions.

Albertazzi added: "Paul's internal succession to this role is a reflection of his impressive results and the momentum of Vertiv's high performance culture. I am confident in his ability to further accelerate the region's success and drive continued growth."

https://www.vertiv.com/en-emea/

ANDREAS ESSMANN, CHRISTOPHE CHIHAOUI, AGGREKO

Aggreko has further bolstered its industrial HVAC and process temperature specialist support with two appointments across its European team.

With over four decades of experience at Aggreko between them, **Andreas Essmann** is now Business Development Manager for Temperature Control and HVAC in Europe North, while Christophe Chihaoui is Head of Temperature Control for France, and supporting Europe South.

They join recently appointed Head of Temperature Control for the UK, Chris Smith, on the Aggreko specialist industrial HVAC and process temperature control team working across a range of sectors, spanning manufacturing, data centres, petrochemicals and construction.

This includes providing temporary and supplementary cooling, heating and dehumidification solutions to support with on-site maintenance works, system upgrades, temperature spikes and unexpected outages throughout the year.

Robert Wells, Europe President at Aggreko, said: "As unpredictable European weather continues to pose challenges, the appointment of two experienced experts into a dedicated team aimed at supporting our customers with their evolving industrial HVAC and process temperature is a central part of this."

www.aggreko.com

DR SAMUEL F YANA MOTTA, GLOBAL REFRIGERANT APLICATIONS SIRECTOR, ORBIA

Orbia Fluor & Energy Materials has appointed **Dr Samuel F Yana Motta** as the company's Global Refrigerant Applications Director.

Yana Motta has spent 30-plus years in the refrigerant industry, and is recognised for contributing to the development of industry-leading low global-warming potential (GWP) refrigerants including R1234yf and R1234ze, and blends using HFOs such as R448A.

He will be responsible for aligning product development for the automotive and stationary markets and will also set the vision for the new Orbia Fluor & Energy Materials application laboratory in Houston, Texas.

Yana Motta served in various senior leadership positions at Honeywell for 20 years, first as Global Director of Applications and then as research fellow for the refrigerants business. Most recently, he served as a R&D scientist/engineer at Oak Ridge National Laboratory.

Before Honeywell, he worked for five years at Pontifícia Universidad Católica do Rio de Janeiro and was a postdoctoral researcher at the National Institute of Standards and Technology in Gaithersburg, Maryland.

https://www.kouraglobal.com/

ALEX BENDLE, CRAIG SMITH, DAVID JAMES, KOOLTECH

Distributor Kooltech has announced three appointments which it says are designed to support the company's sustainable growth objectives.

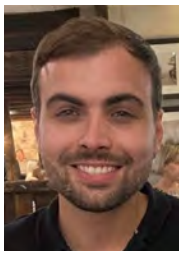
Alex Bendle joins as National Internal Training Manager, responsible for developing and delivering essential sales and operational training programmes internally. He previously spent 11 years at car hire firm SIXT as Sales Performance Manager.

Craig Smith is appointed Influenced Sales Manager. With over 16 years in the HVAC industry, he has extensive experience of system design, technical support and sales, particularly in VRF and air source heat pump solutions.

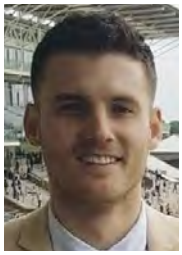
David James is appointed National M&E Sales Manager. With more than 17 years of experience in the sector, he will lead a team focused on strengthening relationships with M&E contractors.

Kooltech was recently named Distributor of the Year at the BESA Industry Awards and Commercial Director Jonathan Brown said: "These new appointments reflect our commitment to investing in high-calibre talent that directly benefits our customers."

https://www.kooltech.co.uk/



Alex Bendle



Craig Smith

David James

LIAM MAHER, STEVE PARSLEY, REGIONAL SALES MANAGERS, DAIKIN UK

Daikin UK has strengthened its commercial operations across the north with two key appointments.

Liam Maher becomes Regional Sales Manager for Manchester, having previously led the Yorkshire and North East region. Bringing over 25 years of experience with Daikin UK, he will lead the regional team, using Daikin's new Manchester office as a hub for customer engagement and training.

Steve Parsley takes on the role of Regional Sales Manager for Yorkshire and the North East following several years as a Daikin Business Development Manager and previous leadership positions within the HVAC industry. He will focus on expanding the dealer network, strengthening connections with key customers, and supporting the delivery of regional sales plans in collaboration with Daikin's specification and logistics teams.

Lisa Robey-Broome, Business Manager – Midlands & North Region, said: "I'm delighted to welcome Liam and Steve into their new roles. Their experience, local knowledge and passion for our customers will be invaluable as we strengthen our regional presence, empower our teams and build even closer relationships across the North."

www.daikin.co.uk

Liam Maher

Steve Parsley

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.liddington@warnersgroup.co.uk**

INSTANTOR R-PRESS: A NEW RANGE OF PRESS FITTINGS FOR REFRIGERATION AND AIR CONDITIONING

Providing a safer, faster way to join pipework, Instantor has developed a brand new range of press fittings that are designed for high-pressure applications, up to 48 bar, including refrigeration, air conditioning, heat pumps (refrigeration side) and variable refrigerant flow systems. Instantor R-Press fittings deliver clean, reliable joints without the hassle of flame-based methods.

The new R-Press range has already been recognised by industry experts, winning the 2025 Ireland Plumbing & Heating Award for Most Innovative Product of the Year, reinforcing its place as a standout advancement in ACR installation technology.

Transitioning to press fittings can be a game-changer for ACR installers, as they are flame-free, which eliminates the need for hot work permits or fire watches, and lengthy risk assessments are also reduced. This results in quicker installations, less downtime, and safer working conditions, especially in tight spaces.

Instantor R-Press fittings use a precision-engineered 3-point press design for strong, permanent joints that installers can count on. It's a permanent mechanical joint, so there is no need for nitrogen purging, which keeps systems cleaner and installations simpler. Built with the quality and reliability you expect from Instantor, R-Press fittings help reduce callbacks and keep projects moving efficiently. The new range also comes with a 15 year warranty on completion of competency training.

Neil Gaffney, Managing Director, Instantor, comments: "We're thrilled to introduce our first-ever range of press fittings developed specifically for refrigeration and air conditioning applications. The new R-Press fittings embody the DNA and core values of the Instantor brand and are engineered with premium materials, backed by advanced technical design, and created with installers in mind. Installers can trust R-Press fittings to provide no fuss, no flame, just reliable, high-performance results."

Key features and benefits of Instantor R-Press fittings:

- Press fittings designed for high-pressure applications, up to 48 bar, including refrigeration, air conditioning, heat pumps (refrigeration side), VRF, and VRV systems
- Quicker, easier and safer than brazing and no hot works is required
- R-Press fittings are installed with a press tool, which provides a consistent, permanent mechanical joint every time
- Can be used with Instantor press tools and those from other manufacturers
- The fittings are stamped with pink identification for ease of recognition
- Available in the following sizes (inches): 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1 1/8
- 15-year warranty on completion of competency training through Instantor

For further information on Instantor and its brand new R-Press fittings, please email sales@instantor.co.uk or visit the website:

www.instantor.co.uk

ATLAS COPCO ADDS TO TCS LINE-UP

Atlas Copco has expanded its TCS series of air-cooled industrial chillers in response to growing demand for process cooling technology among UK manufacturers.

With the launch of new 110–170kW and 350–610kW models, the company says it is making a decisive breakthrough into the mainstream industrial chiller market. The additions extend the TCS range beyond its original 190–310kW bracket to satisfy the most in-demand process cooling requirements and extend coverage across a broader span of applications.

The expansion marks an important step in Atlas Copco's process cooling journey following the acquisition of Eurochiller in 2019. The TCS range now spans 110–610kW and will be further extended in 2026 with larger models exceeding 1MW.

The new models incorporate multi-scroll compressor technology and intelligent fan control logic, delivering Seasonal Energy Performance Ratio (SEPR) values consistently above 6.

https://www.atlascopco.com/en-uk/compressors/products/industrial-water-cooling-systems/tcs-air-cooled-industrial-chiller

NEW RO WATER PURIFIER FOR HUMIDIFIERS

Condair has introduced the Condair RO-E, a reverse osmosis purifier designed specifically for humidifier applications. By removing minerals before water enters the system, it cuts limescale build-up, reduces maintenance and supports more stable humidity control, particularly in steam units where fewer dilution cycles are needed.

The RO-E delivers water with the ideal mineral content for each technology: around 95–98% mineral-free for steam humidifiers, and 99% for spray systems via the RO-E+ model, helping prevent dust, improve hygiene and avoid nozzle blockages.

Units offer 40–300 litres per hour, with internal or external storage depending on size, and an optional touch-screen controller or integration with compatible Condair humidifiers. Condair Ltd supplies full design, installation and support services in the UK.

https://www.condair.co.uk/news/new-ro-water-purifier-for-humidifiers

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