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ACR & HEAT PUMP
AWARDS
2023**

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EDITORS

Thrilled to be back in Manchester for the National ACR & Heat Pump Awards 2023

Hundreds of the best and brightest of the HVAC industry met at the Midland Hotel, Manchester on the 22nd of June to celebrate excellence within the industry.

The organising team and judges were absolutely thrilled to see over 100 excellent entries put forward for 13 categories.

We don't offer gold, silver or bronze or even a 'prize because we like you'. All our winners are shortlisted for a reason.

That's why it's a huge accolade for companies to become a finalist, highly commended and of course to WIN. The range and breadth of entries within each category are always strong and entrants are competing against the best in their field.

The evening was about rewarding the very best companies and individuals across the sector, those who are setting high standards for the rest to follow. In fact, in many cases there was only one or two points between winners and highly commended.

The night started off with some live music from the very talented Stephen Tanner, followed by the presentation of a few categories before dinner. This was followed by more music, comedy entertainment from the very funny Rod Woodward and finally the rest of the award presentations. Everyone appeared to be in great spirits and thoroughly enjoyed themselves.

Judges

We must recognise our 10 independent judges, in particular, for their diligence and time and subsequently arriving at clear and worthy winners.

We work very hard to ensure no bias with any of the judging, they are all chosen for their knowledge, technical abilities and experience within their fields.

However, most importantly, we do ensure that if they have any affiliation with ANY of the entries, they are excluded from the scoring processes within those particular categories.

Judges & their categories

- **Judith Evans** - Refrigeration Product, Air Conditioning Project, Air Conditioning Product, Refrigeration Project
- **Lisa Jayne Cook** - Refrigeration Product, Wholesaler/Distributor, Refrigeration Project, Air Conditioning Project
- **Mike Gittoes** - Refrigeration Product, Wholesaler/Distributor, Refrigeration Project, Air Conditioning Project, Heat Pump Installer
- **Mike Nankivell** - Heat Pump Product, Domestic Air Source Project, Heat Pump Installer, Non-Domestic Air Source Project
- **Graeme Fox** - Air Conditioning Product, ACR Contractor, Heat Pump Product, Training Provider
- **Nancy Jonsson** - Heat Pump Product, Domestic Air Source Project, Non-Domestic Air Source Project, Ancillary Product
- **Andrew Slater** - Ancillary Product, Domestic Air Source Project, Ground Source Project
- **David Dunn** - Training Provider, Heat Pump Installer, Ground Source Project, ACR Contractor
- **Damian Wiszniewski** - ACR Contractor, Wholesaler/Distributor,

- Ground Source Project, Non-Domestic Air Source Project
- **Juliet Loisel** - Air Conditioning Product, Ancillary Product, ACR Contractor, Training Provider

We are back at the Midland Hotel on the 13th of June, 2024.

Many of the sponsorship packages and tables have already been snapped up. However, if you would like to reserve your places and enquire about sponsorship, please contact;

hayleyc@warnersgroup.co.uk

Best wishes,

David, Hayley, Stephen and Juliet



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GALLERY



WINNER

Lisa-Jayne Cooke



Lisa-Jayne Cooke is an incredible source of support and encouragement for a huge range of people within her sector including mentoring numerous women from across the UK.

In addition to her day job which is in a highly stressful and competitive sector of the industry and having teenage children, Lisa somehow manages to find time to dedicate herself to the betterment of the industry and environment in a variety of voluntary roles which include:

- The Board of Trustees for the Institute of Refrigeration (IOR)
- Director of Air Conditioning and Refrigeration Industry Board (ACRIB)
- International Women in Cooling Network
- UK delegate to the UN Commission on the Status of Women

She has also just recently taken on the mantle of leading a

team on a Royal Academy of Engineering Inclusive Leadership project. Lisa is also an active STEM Ambassador, giving talks to school children of all ages to educate them in the practical side of STEM subjects and the diversity of careers they can lead to.

Juliet Loisselle, Publisher of ACR Journal, Heat Pumps Today and MBS at Warners said: “Lisa has a passion for making a difference and this is clear to anyone who she meets, she has a no-nonsense and straight-talking approach and is someone who gets things done.

“I have the great pleasure of working alongside Lisa as one of our NACRA judges, on the IOR Board, Women in RACHP Group and as Directors of ACRIB.

“She is one of the kindest ladies I know and a well-deserved winner of this award.”

TRAINING PROVIDER

WINNER

Beijer Ref UK & Ireland



BEIJER REF
Academy



Engineers on the front line are facing new technologies daily and Beijer Ref has a passion to arm them with the knowledge to remove any uncertainties of a change to sustainable solutions.

The first Beijer Ref Academy opened in Wetherby in 2022 with multiple objectives to physically introduce and train engineers on natural refrigerant products with a sustainable future. They are designed to take away the mystique of future refrigeration systems, allowing engineers to confidently and competently install and repair products with a sustainable future. To provide predominantly 'hands on' training in courses designed by engineers for engineers and to offer training that will benefit our industry and our planet.

At the start of this journey, it has always been their objective to listen to customers and design a 'hands on' training environment for engineers.

Traditional training through PowerPoint or similar media within a classroom environment is what they wanted to avoid if possible. The design of the Academy reflects this new effective training style with the majority of space and time dedicated to fully functional equipment and systems, and not a classroom. Beijer Ref is in an enviable position as a manufacturer and wholesaler of natural refrigeration product solutions to offer manufacturer accredited training. Attendees will always be trained on the most up to date state of the art products at

any given time. To qualify this statement, they are currently installing the new SEC unit (manufactured in-house by SCM Frigo in Italy) to enable engineers to be fully conversant with this new generation heat recovery system. There is also a fully functioning CO₂ pack from SCM Frigo connected to two multideck cabinets and various evaporator types, the latest A2L systems from Bitzer and Danfoss and MHI's CO₂ based Q-ton hot water heat pump system. The Academy in Wetherby is fitted with 17 fully functioning systems. The Beijer Ref Academy employs seven qualified engineers who are manufacturer-accredited trainers with in-depth knowledge in specialist areas. This wealth of knowledge covers commercial, retail, industrial and marine sectors. It is believed that this is unique and reflects their continued investment in supporting our industry. The investment continues with the next academy due to open in Glasgow this summer, followed by Sheffield, Walthamstow and Belfast.

After each course, every attendee is invited to provide feedback covering how they rank the training provided as a score out of 10 together with any positive, or negative, feedback. The majority of training provided since opening covers the 5 day F-Gas course and the Introduction to CO₂, which each earn a rating of 9.5/10 & 9.9/10 respectively.

HIGHLY COMMENDED

Grimsby Institute of further and higher education



The main focus at the Grimsby Institute of further and higher education has been Apprenticeship Standard 6090-50 level 3, also offering 6090-20 leading onto 6090-30. It also has also provided clients' bespoke training to suit their business needs, F-Gas 2079-11 cat 1-2-3 & 4 level 2; mobile air conditioning refrigerant handling; hydrocarbon handling & ammonia handling; air conditioning installation and commission and decommission training; basics in electrical fault-finding.

The Institute is innovative and amongst other things has introduced inclusive learning via Microsoft Office, allowing the students to customise their learning experience to suit individual needs. Now paperless with the introduction of class notebook which allows both the Institute and the employer to keep track of the student's progress remotely, it also allows the student and tutor remote access to go through anything that they require further assistance with, outside of block attendance.

SPONSOR

We would like to congratulate the winners of the Training Provider award, Beijer Ref Academy, plus Grimsby Institute of Further and Higher Education who were highly commended.

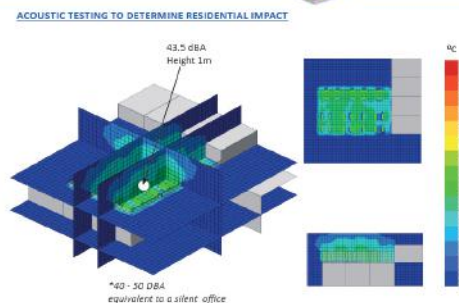
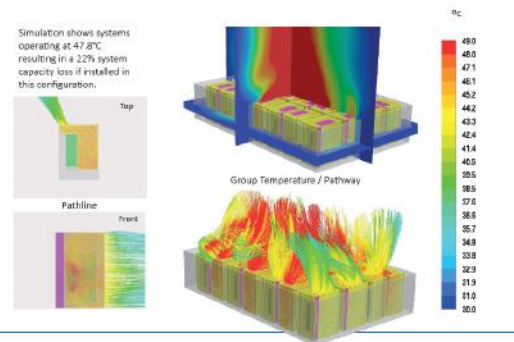
Training is high on our agenda at Climalife and crucial at all levels and roles within our industry, so it was a natural decision for us to sponsor this category. Great to see so many entries and support at the event itself. It's always a great night and an important occasion to recognise the achievements within our industry.



WHOLESALE/DISTRIBUTOR

WINNER

Exi-tite Ltd



HVAC supplier Exi-tite Ltd pride themselves on honesty and integrity. Their business model is built on three main pillars: Design, Supply and Support, and they believe that supporting customers and the suppliers working with them in these three areas is the key to their success.

Formed in 2013, Exi-tite has expanded from its initial home in Ballegawley, Northern Ireland, with UK and ROI coverage and regional headquarters in Glasgow, Scotland, and Carlow, Ireland, in addition to other offices in Belfast.

The team consists of 35 people, of which the majority have HVAC industry experience before joining the company. Their experience ranges from system design to in-field technical assistance and repairs across all our product sectors and allows the business to confidently offer a concept of aftercare service.

Working across the air conditioning, ventilation, heat pump (commercial and domestic) and chiller sectors Exi-tite offers a comprehensive range of solutions to meet the most challenging specifications. They interact with customers via email, Microsoft Teams, phone and face to face along with site visits.

The design takes place in-house with both manufacturer's software and specific programs such as CAD and Revit. They issue

technical submittals for each project, with clear guidance for controls integration and adhering to building certifications such as BREEAM and LEED where required with appropriate energy or carbon data. Adding depth and additional capabilities to their services, they can supply projects with Computational Fluid Dynamic (CFD) modelling.

More regular items are stocked locally but Exi-tite insist on arranging collection of project-specific items with their own logistical arrangements, including collection from regions across Europe, to negate delays at ports caused by others and further causes that may cause an issue. Most products are then delivered to their warehouses first, where products can be checked. Then, a more localised specific arrangement for delivery can be arranged, removing potential hiccups such as restricted access or physical space.

As a business, they recognise that the most important component of Exi-tite is its people and are proud that most of the senior positions are filled with team members whose capabilities have been recognised, nurtured with training, and progressed through the business.

HIGHLY COMMENDED

Cool Designs Ltd

CDL offer a wide range of services which start in the classroom with essential air conditioning training and go on to include air conditioning design and air conditioning health checks. A comprehensive range of courses is offered covering all levels of

technical ability, from introductory courses to advanced, enabling customers to progress and build the skills of staff.

There are three branches, at Gateshead, Warrington and Glasgow. These are open for normal hours of business, while an out-of-hours service for pre- and post-sale technical support is available 7am to 7pm, Monday to Friday.

CDL's approach from the start was to be customer-led. For them, this means listening to what contractors actually want, and not trying to force a solution on them that doesn't meet requirements, just because it's the easy option. It also means protecting the customers as they always position themselves on their side of the table.

A comprehensive resource for design and product specification is supplied, including air conditioning splits, VRF, chillers, air handling units, heat pumps, plus a full range of DX and hydronic indoor units, for use in industrial, commercial and domestic applications, sourced from their ranges of Toshiba, Carrier, CIAT and Fujitsu equipment.

Products can be bought via telephone, email, text and website (message) and delivered next day across the UK as standard, or same day by arrangement.



SPONSOR

Hitachi's vision is to deliver innovative global solutions, which is why we were delighted to sponsor this year's National ACR & Heat Pump awards celebrating the best of HVAC's best.

Our congratulations to Exi-tite Group, winners of the Wholesaler/Distributor category, and all this year's winners and finalists for their amazing achievements. We would also like to thank the team at Warners and everyone involved in pulling together another fantastic industry event.

HITACHI

REFRIGERATION PROJECT

WINNER

University of Salford - Energy House 2.0 - JD Cooling Systems Ltd



Completed in February this year, the University of Salford's new multi-million-pound energy performance test facility, Energy House 2.0, is the largest test and research facility of its type anywhere in the world. This unique facility is playing a key role in accelerating the progress towards low carbon and net zero housing design, including many other sectors. The brief was to provide a sustainable and energy efficient simultaneous cooling and heating plant capable of delivering the required temperature range of -20 to +40°C, thus simulating various global weather conditions within two test chambers, including wind, rain, snow and solar radiation. Requiring a tolerance of within 0.1°C across the entire 60°C temperature range, maintaining the specified humidity targets.

At heart of the installation there are variable-speed water cooled screw chillers, which can operate between -20 to +40°C. This uses energy efficient ammonia as the natural refrigerant, 0 GWP. It also uses inverter controls to provide maximum efficiency over the full operating range, coupled with a floating condensing and evaporation temperature. The evaporation target is calculated against the desired air temperature and dewpoint to maximise the system temperature, while the condensing target is modulated against the ambient to provide the lowest possible condensing temperature. Both of these

features increase the overall efficiency of the system, whilst still maintaining the optimum fluid conditions and sustaining the desired chamber conditions with the tight operating bands. Each chamber is served by three low temperature air handling units (AHUs), each with independent humidification controls, re-heat capability, and EC Fans. Each AHU has an independent valve and pump station to provide close control for air temperature delivery. The whole system is controlled by a complex bespoke PLC design providing optimal control to replicate environments from the Antarctic to Shanghai.

The project was delivered on time and on budget despite the challenges of a global pandemic. Other factors that were considered and designed for the sustainability criteria, was the harvesting of heat, either through the cooling process, or via the simulation process during air temperature trials to maximise efficiencies when heating demand is needed. While reviewing the environmental challenges of the refrigeration and controls, rapid climate variances were a huge part of the testing complexity in terms of the harvesting of rain, and defrosting cycles during frost and snow, which meant the requirement to recycle water through filtered means was vitally important to the overall sustainability of the project.

HIGHLY COMMENDED

Greencore FTG – Crosby Lemon Tree Expansion (Personal Refrigeration Ltd)



A bespoke refrigeration plant design was required to meet space and noise level restrictions on site in addition to withstanding an intensive cleaning regime of three refrigerated food processing areas.

A rooftop void-mounted condenser was selected for the main refrigeration plant and rated to operate in high ambient temperatures of 47°C with an 8K TD. All evaporators were of stainless-steel construction with specialised fin coatings. They were selected with a 6K TD with off-cycle defrost as an energy-saving benefit and to maintain higher humidity levels to maintain higher product qualities.

The low care, high care and defrost food processing areas are connected to a dual inverter Panasonic scroll compressor mini pack that provides energy-efficient operation through bespoke algorithms for load matching. Further energy-saving methods include EC fans, EEV control and variable system operating temperatures with load management. Furthermore, energy monitoring is also connected with Modbus integration for remote connectivity.

The installation took place in three stages and was completed and commissioned within 12 weeks.

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ANCILLARY PRODUCT

WINNER

Caleffi XF - Altecnic Ltd



altecnic
CALEFFI group

When it comes to the separation of impurities within the system, from the very first passage Altecnic Ltd's Caleffi XF has a combined filter and dirt separator to ensure maximum efficiency. It eliminates magnetite in the closed circuit, preserving the magnetic rotors of the circulators. The magnetic filter has been designed with heat pump installation in mind. So that the heat pump system can remain operational and flow rates can be maintained, the Caleffi XF has been designed to allow maintenance without having to shut-off the system.

No shut-off valves are required for maintenance as the device has a mechanism for cleaning the filter mesh with internal brushes. Turning the knob at the top makes the brushes clean the inside of the filter, and the impurities fall into the bottom of the component. Furthermore, the filter separates impurities in the system to minimise the problem of filter mesh clogging. Its operation is based on the action of three separate elements to continuously protect the generator and devices against any impurities that may form in the hydraulic circuit, both at system start-up and in normal operating

conditions. The water in the system first passes through the internal mesh element, which separates the coarse impurities by collision, causing them to precipitate into the large lower collection chamber. A central magnet then captures and retains ferrous impurities down to the smallest sizes. Finally, the water passes through the outlet strainer, which has a large filtration surface and very fine mesh (0,16 mm) to capture all the residual impurities not blocked by the first two elements.

The customer benefits centre around the efficiency that installing the Caleffi XF allows through keeping the system as clean as possible. The design of the filter, with mesh surface with a mesh size of 160 µm makes the device less prone to clogging and thus increases its efficiency through remaining operational.

The self-cleaning function minimises downtime and makes maintenance easy for installers, ensures the heat pump system is kept running, something that is essential, especially in colder months, to maintain the desired temperature output.

HIGHLY COMMENDED

The air-e in-ceiling nanoe X generator (Panasonic)



The air-e is Panasonic's first stand-alone nanoe X generator, which can be installed into a suspended ceiling, MF ceiling, or surface mounted (using the surface mount kit) to improve indoor air quality. Suitable for all types of application such as healthcare, leisure, fitness suites, hotels, schools and offices where indoor air quality are a priority, this maintenance and service-free fan unit produces hydroxyl radicals (OH radicals combined with water) which are delivered at a rate of 4.8 trillion per second. Abundant in nature hydroxyl radicals have the capacity to inhibit certain pollutants, viruses and bacteria to clean and deodorise the indoor air.

nanoe X technology has been independently tested and verified with very positive results with many viruses and bacteria being inhibited by 99%. A single device will provide effective cover for an area of approximately 20 m² (with a ceiling height of up to 3m). The product is virtually silent in operation and has an extremely low power consumption, with recent tests showing a yearly running cost of just £12.08 based on an energy cost of £0.35 per kW hour.

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WHERE EXPERTISE FLOWS

GROUND SOURCE PROJECT

WINNER

H Timmis Farm - Calibrate Energy Engineering



The client, H Timmis Farm, is near Telford and required immense amounts of heat for its poultry farm of 300,000 broilers. The farm installed a ground source heat pump and solar technology in/on farming buildings seven years ago. However, it was not working efficiently and was costing the client far more than it should to run, going against the purpose of a heat pump to be efficient, with multi-heat, chilling and energy-generating opportunities. Unmaintained, lacking upgrades and without the ability to control settings, it was becoming a financial drain rather than the asset it should have been. Poultry needs heat and it is time critical to get the sheds to the right temperature. The energy costs had doubled and were exceeding budget with annual costs being £440,000 and still climbing, meaning that the business was quickly becoming unviable.

Calibrate Energy Engineering developed Calibrate Analytics pre-Covid. This is a controller which will interrogate the pump and site's energy use and identify ways to save money. It was an ideal solution to optimise the system and significantly save costs. As part of the project it was important that the renewable technology was not obsolete and a different business strategy was required.

Data was gathered from the controller and a series of improvements were designed to heighten performance by adjusting and engineering a series of modifications, automating the client's assets, fine-tuning processes and improving mechanical and electrical systems. By reworking multiple inefficient settings, removing the buffer tank system and implementing some re-works to the heating loop, the heat pump's COP doubled to go above the standards expected by Ofgem, meaning the farm's RHI rebate was no longer threatened. The farm was also able to drastically cut energy costs and carbon emissions.

From plugging in Calibrate Analytics to interrogate the pump's efficiency, it took six weeks of engineering to improve the system to achieve instantaneous benefits for the client. Although the ground array and heat pumps were already installed, this project required the bulk tank system removed and a new control system integrated.

The farmer saved £117,000 p/a on electricity, so 25% kW usage on the past three years, and reduced carbon emissions by 136 tonnes CO₂ per year. It was established it would take 1.1 years to receive a return on the investment.

HIGHLY COMMENDED

Willow Garth (Viessmann and Matrix Energy Systems)



The clients at Willow Garth wanted a holistic heat and power solution that would seamlessly integrate different technologies to achieve their specific environmental and lifestyle goals in their new home: comfort, efficiency and being self-sufficient. They also specified the air to be free of dust and pollen.

Matrix Energy Systems were selected as they have the ability to take a whole-system approach and connect it all together to get the most out of each individual element. Using a software tool called CYMAP a full heat load calculation was conducted. They were able to visualise the building in CAD and apply insulation values to all the fabric elements, to design the optimum heating system and minimise potential heat loss.

A Viessmann Vitocal 222-G 8 kW ground source heat pump with integrated 220-litre hot-water cylinder is at the heart of the new system. Ground source heat pumps offer a year-round, eco-friendly, renewable source of energy for heating and hot water by using geothermal collectors to gather natural heat from the ground. The Vitocal has exceptionally low running costs thanks to its optimised seasonal efficiency and the fact its hot water cylinder sits on top of the pump itself. It has a coefficient of performance of 4.6 and an energy efficiency rating of A+++ / A++.



SPONSOR

Congratulations to Calibrate Energy Engineering, a valued member of the Ground Source Heat Pump Association (GSHPA), on their impressive win in the Ground Source Project category at the National ACR & Heat Pump Awards. The GSHPA takes great pride in supporting these prestigious awards, which recognise outstanding achievements in the industry. It was inspiring to witness many of our other GSHPA members excel on this special evening too, taking various awards in other categories, further emphasising the expertise and commitment within our Association. We remain committed to supporting the awards and our members and driving innovation in the ground source sector.



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FOR THE NEXT**



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GALLERY



GALLERY





AIR CONDITIONING PROJECT

WINNER

Panasonic, Grayer Services and South Lodge Hotel Maintenance - Panasonic



Panasonic

heating & cooling solutions

The South Lodge Hotel is a luxury 5 star country hotel and spa with 89 bedrooms, set in 93 acres of parkland in Lower Beeding, West Sussex. The property is a complex mix of the original 19th-century country house, with additions being built in 1911, the conversion into a luxury hotel in 1985, further accommodation was added in the Sussex Wing, and then in 2019, the stunning Spa was constructed, with particular attention being given to environmental and sustainability goals.

With the rising summer heat waves, the south-facing bedrooms needed reliable climate control technology to provide their notable guests with the ultimate comfort they expected. The hotel needed the solution to perform to the highest quality, fulfil their environmental goals and ensure indoor air quality for the well-being of their visitors. The internal and external units needed to be discreet enough to be easily disguised throughout the hotel and not disrupt the grand interior/exterior valued by the visitors. The client had no gas connection and no previous ductwork for cooling. This meant the hotel need all new ductwork hidden within the old 3ft thick walls and into the ceilings of the hotel. Without wanting to disturb its paying guests this would demand efficient installation done through well-thought-out phases. Work commenced on a two-room-per-week basis, as to

swiftly get the rooms fully equipped without disrupting the bookings or guest experience.

The Panasonic PACi 5kW condensing units were the ideal solution knowing it would meet and exceed the customer's expectations. It was essential that the new units were quiet in operation and whilst operating efficiently, made no detrimental impact on the fabric of the historic building, nor the luxury feel of the hotel. 19 of the rooms had the newly designed adapted ducted units installed, and one room had the ceiling cassette unit installed. With the building having never had any previous AC system, the solution had to offer easy installation which could help streamline the processes of knocking through the thick walls of the hotel. The Panasonic PACi split system is designed for easy installation, the indoor unit is connected to the outdoor with quick connection without over complicated ductwork. Additionally, the lightweight materials made the entire system much easier to move and install around the vast hotel.

The work was undertaken during 2021 over a six month period with rooms installed and fitted to coincide with occupancy at the hotel to minimise disruption.

HIGHLY COMMENDED

Flexible Business Interiors & AXD Environmental LTD – Element, Warrington (Samsung Climate Solutions)

Element, located in Birchwood, Warrington, is a multi-tenanted building providing 42,500 sq ft of office space across three floors. A key requirement for the remodelling of the building was that it should be sustainably built as an environmentally conscious workspace. The building needed a state-of-the-art heating and

cooling system. Specifically for this client developing a multi-tenanted building, it was a key priority that each system could be individually monitored, and provide the capability to determine the cost per kilowatt hour of each system i.e. tenant billing.

Samsung were selected as partners to provide this sophisticated and energy efficient system, the first installation of the Samsung b.IoT building management system in the UK, alongside the Samsung DVMS2 (VRF air conditioning system). Contracted by AXD Environmental Ltd and Flexible Business Interiors, the building also incorporates other leading Samsung technologies. Ten Digital Variable Multi S2 heat recovery VRF systems, 70 ducted fan coil units, 19 energy recovery ventilation (ERV) units with CO₂ sensors throughout and DMS2.5 central control with power integrated modules for energy meter integration. As the project progressed a mezzanine floor with a roof garden was added with a two-pipe VRF system, split system and additional ERV unit which are all linked via the Samsung b.IoT control platform.



DOMESTIC AIR SOURCE PROJECT

WINNER

ASHP installation in 200 year old rural home - R A Brown Heating Services



The 5-bedroom house was built in 1820s and had a 1970s extension which comprised a conservatory and a double garage. The house was in poor repair after many years of neglect and the customer knew it would need renovation and that they would need to replace the existing oil-fired heating system. They were looking to replace the outdated oil-fired heating system with a modern heating system that would be environmentally friendly, reliable and energy efficient, so it would be as cost effective as possible.

After conducting several site visits to their new home, the best solutions to the various problems they started to encounter were discussed as they started to make the necessary improvements. After completing necessary upgrades on the insulation of the house, including loft insulation and new windows plus floor, wall and roof insulation on the extension to current building standards, this ensured

the insulation levels would be suitable to claim the Renewable Heat Incentive. The customer also reconfigured the rooms in the extension part of the house. The house had a space heating requirement of 43,354 kWh per year and the hot water demand is 6,113 kWh per year, giving a total heat requirement of 49,467 kWh per year.

The recommended solution was a cascade system with 2 x NIBE F2040 12 kW air source heat pump, 300L cylinder & a 200L buffer vessel. In addition to this, they supplied and installed 15 new radiators and a new underfloor heating system in the reconfigured extension.

The reduction of CO₂ emissions on this project really sets it aside. CO₂ savings to be made with the recommended solution delivered an annual saving of 12,833 kgCO₂/kWh per annum. Over the 15-year comparison period, this project will save 192,498.30 kg CO₂/kWh emissions.

HIGHLY COMMENDED

Pulborough - Viessmann and Options Energy Solutions Ltd (Viessmann, together with Options Energy Solutions Ltd)

Former heating systems engineer Richard Folkes and his wife purchased an almost 150-year-old stone cottage in the highlands of Perthshire, Scotland. Although the 1500 sq ft property had been modernised to some extent, it was still heated by just a stove and fireplace.

As there was no mains gas they knew they had two viable options; a wet heating circuit of radiators, heated by an oil boiler, or the

renewables route. For many reasons they were drawn to the greener option. The customer initially planned to install the system himself but recognised that in order for homeowners to benefit from Government funding, both ground- and air-source heat pumps can only be commissioned by an MCS business.

MCS umbrella scheme, Viessmann Access, was identified by the homeowner. Viessmann specified the system, following a room-by-room heat loss calculation and the customer opted for a 16 kW Vitocal 222-A air source heat pump, which consists of both an indoor and outdoor unit, with water-carrying connection lines running between. Once purchased and installed, Viessmann commissioned the system under its MCS umbrella scheme, to verify that everything was safe and working as it should be, and processed the certification needed to claim funding.

Because of the location, the customer was able to claim £7,500 from the Home Energy Scotland (HES) loan, which currently provides more funding than the Boiler Upgrade Scheme (BUS) voucher available in England and Wales.

VISSMANN



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The National ACR & Heat Pump Awards is the only event in the year that Secon always attends. We have supported it for many years and it seems to go from strength to strength. We always take a mix of guests to thank them for their support and it's a great event for networking both for suppliers and customers.

We entered the Heat Pump Distributor category and won 2 years in a row so we let someone else win this year. The Award has certainly raised our profile and it feels as if people do take us more seriously. It's a great event and if your business is involved with the heat pump industry, you should be there.

secon

NON - DOMESTIC AIR SOURCE PROJECT

WINNER

Garratt Mills – High Temperature Hot Water from Renewable Energy - Exi-tite Ltd



A former gunpowder mill on the River Wandle in Earlsfield, London, Garratt Mills has been transformed into a new mixed-use development consisting of 315 co-living homes, common-use amenity spaces, roof terraces with growing areas and adaptable spaces.

Exi-tite was tasked to find a solution to supply potable hot water to all 315 co-living homes and common areas. The solution needed to produce water at least 65°C at -7°C ambient temperature, should be of a modular design, ensuring constant operation in case of failure and utilising renewable technologies in an efficient manner, ideally from an air source system. Dedicated outdoor plant space had been indicated on a plant deck adjacent to a plant room which had been identified to contain the primary services. No independent consumption monitoring was required because the tenant's rent included hot water considerations. Cooling, heating and ventilation systems were to be provided by a separate 700kW air conditioning heat recovery system and energy recovery ventilation.

The selected solution was to use LG High Temperature Hydro Kits which produce up to 80°C water using a refrigerant to refrigerant cascade system. This means that the energy exchange from ambient air to the water leaving the system undergoes two fewer stages of transfer than a traditional heat pump cascade, increasing potential efficiency gains over other designs. A singular high-temperature hydro kit connected to its respective VRF outdoor unit would

operate at a nominal efficiency of 2.16 COP with a 65°C leaving water temperature; this figure takes into account the power consumption of the integrated cascade compressor. LG also manufactures a 'mid temperature' hydro kit, which offers water temperatures of up to 50°C from a single-stage refrigerant to water circuit, at similar dimensions to the high temperature version. Its nominal efficiency is an increased 4.48 COP at a leaving water temperature of 45°C.

Designs were produced to consider serving the majority of the hot water usage load via the mid-temperature hydro kit, with the high-temperature hydro kit providing a rise in water temperature, reducing its respective load and therefore generating greater overall system efficiencies. To accommodate the two-stage design, the hydronic system required careful consideration. The mid-temperature and high-temperature primary loops would need to remain separated; they each would also need separation from the potable hot water, and the potable hot water would have to go through two stages of heating.

The system was commissioned by Exi-tite's own LG-certified engineers, with each system tested independently and as a complete entity. Control strategies were cross-checked with the BMS contractors, and handover packs containing operating and maintenance documents were issued with training for building management and associated service engineers.

HIGHLY COMMENDED

Paragon House - University of West London (Finn Geotherm UK Ltd and Panasonic Heating & Cooling Solutions Europe)

Paragon House is an 11-storey multi-discipline teaching block, part of the University of West London's (UWL) Brentwood campus. The university was looking to improve the building's energy performance in a more sustainable way and reduce its carbon footprint using a Salix funded government grant (Public Sector Decarbonisation Scheme) and the Low Carbon Skills Fund. A solution was required for the building's entire heating load.

Ground source heat pumps were considered, but initial surveys found boreholes would be impossible given the available ground

space and the building's proximity to the M4 motorway and busy London road networks. The client remained keen to retain the existing gas boilers as a back-up to the new heat pumps, so the system had to be designed to incorporate this requirement. The university ideally wanted minimum internal disruption and an energy efficient system that could link and work with their existing pipework, radiators, cassettes and fan coils. The new system also needed to link into the existing heating plant room, which was situated on the 11th floor. Works were to be undertaken without causing any disruption to the teaching at Paragon House or its neighbours in this busy part of London.

The project was delivered on time and within budget despite many challenges. One of these challenges was lifting 3x 210kW ASHPs onto an 11-storey rooftop and devising a new TCCS which links everything into the existing BMS. The project delivered significant savings for Paragon House including an estimated amount of energy to be saved per year: 1,058,000kWh



Panasonic
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FINN GEOTHERM
The renewable heating experts

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SAMSUNG

REFRIGERATION PRODUCT

WINNER

**Bora integral, open front, refrigerated, multi deck, display cabinet -
Adande Refrigeration Ltd**



Fundamental to the design of Bora is the incorporation of Aircell, which is a unique and patented airflow management system developed for open front refrigerated multi deck retail cabinets. Aircell segments the cabinet into a series of air flow managed cells with short air curtains. The smaller cells have a shorter air column and independent management of air movement, resulting in less pressure on the air curtain of each cell. This reduces cold air spillage, creating less duty on the refrigeration machinery to maintain holding temperature and significant energy savings. Crucially, Aircell does not require back panel flow to support the air curtain, so it does not over cool food at the rear of the cabinet.

The key feature of Bora is its energy saving characteristics. Critically, these energy savings are achieved without the need to fit glass doors on the cabinet. Some retailers have trialled glass door displays, but whilst they may work in small stores with low volume sales, they are not the answer for high volume grocery retailing and

food-to-go operations, where the frequent opening of doors causes chilled air to spill out and the cabinets fail to maintain operating temperature. There is also evidence to suggest that doors provide a barrier to shoppers with a detrimental effect on browsing and impulse purchases. It also ensures a tighter temperature bandwidth with accurate and stable holding temperatures, factors that help maintain perishable merchandise at optimum quality over extended periods.

By including Bora within their product portfolios, contractors will be demonstrating their commitment to new technology, which reduces energy costs, cuts carbon emissions and limits food waste. The protracted hike in electricity tariffs will also make the most energy efficient equipment more attractive to end users. Those companies who can meet the demands of retailers, seeking energy saving technology without compromising the shopping experience, are the suppliers who are likely to succeed in an increasingly competitive market.

HIGHLY COMMENDED

Beijer Ref SEC Controller (Beijer Ref UK & Ireland)

Beijer Ref's SEC (Sustainable Energy Controller) is a heat recovery module that harvests every last watt of energy from a system, converting waste heat that would normally be rejected into the atmosphere into hot water; effectively free heat. SEC merges heating and cooling systems into one heating network, similar to district heating systems, but on a localised scale. It is currently available in two sizes, is an autonomous module that contains all the necessary heat exchangers, pumps, controls and valving in one cabinet.



It is easily mounted between the evaporator(s) and condensing unit(s) and, while the fridge system is running, converts waste heat into hot water which is fed to a storage tank, just as most heat recovery systems are designed to do. However, when the fridge system has satisfied the target temperature in the cold/freezer

room (or refrigerated cabinet/cellar cooler) it still has residual heat within the system from previous cycles. SEC continues to operate drawing every last watt of heat energy from the system. Once this heat has been harvested, and providing there is still a demand for hot water, SEC starts to work like a VRF system, without the need for a 4 way reversing valve. Using a series of heat exchangers and diverting valves, SEC tricks the condensing unit into thinking there is a demand for cooling and as such provides heat to increase the water temperature within the storage tank using the condensing unit. Effectively changing the fridge system into an air to water heat pump.

BEIJER REF
— UK & IRELAND
SUSTAINABLE SOLUTIONS

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HEAT PUMP PRODUCT

WINNER

Ecodan CAHV-R450YA-HPB Commercial Air Source Heat Pump - Mitsubishi Electric



The Ecodan CAHV-R450YA-HPB is a new commercial air source heat pump from Mitsubishi Electric, it requires only water and electrical connections, for ease of installation, and offers designers and specifiers a robust, low carbon system for the provision of sanitary hot water and space heating. The production of the CAHV-R is completely scalable to cope with the growing demand for renewable heating. This will enable HVAC engineers to quickly respond to the growing demand for low-carbon, sustainable heating in the commercial sector, using proven technology, supported by a global brand.

The Ecodan CAHV-R updates and replaces the Ecodan CAHV-P. The CAHV-P has been supplied to hundreds of Salix-funded projects and, once the CAHV-P models have been exhausted, the CAHV-R will continue this trend to offer a powerful, flexible, renewable heat pump but use R454C with a GWP of 146, rather than R407C, which the CAHV-P uses, which has a GWP of 1,774.

There are many benefits for the customers from design flexibility to continuous heating provisions. These include 70 degrees

Centigrade outlet temperature down to -20 degrees Centigrade ambient temperature for continuous heating provision, multiple unit cascade control from 7.8kW to 640kW capacity provides design flexibility for a wide range of commercial applications, water flow temperatures from 24°C to 70°C without boost heaters results in cost and energy savings, advanced heat exchange design combined with the properties of R454C refrigerant enables a shorter defrost time, low frequency compressor control improves energy efficiency and product operation to the in-built rotation comes as standard, so that the CAHV-R alternates between different modules to maximise performance and product life.

For installers, they know that corporate social responsibility (CSR) targets are important so the use of the lower GWP R454C refrigerant and reduced embodied carbon helps businesses achieve their targets and demonstrate that they are taking action to limit their carbon footprint.

HIGHLY COMMENDED

NIBE S2125 Air Source Heat Pump (NIBE Energy Systems)



The NIBE S2125 is NIBE's most energy efficient air source heat pump (ASHP) yet and is combined with a new design for lower noise levels. It is an intelligent, inverter controlled ASHP that automatically adapts to household heating demand, providing optimised heating and therefore, savings all year round. It is available in two effect sizes, this heat pump is powerful and quiet with a supply temperature of up to 75°C, meaning that even in temperatures of -25°C, the heat pump works efficiently to deliver heating and hot water up to 65°C. Together with the NIBE S-series indoor module with a built-in Wi-Fi connection and the possibility of wireless accessories, it becomes a natural part of a connected home. The smart technology automatically adjusts the indoor climate and gives homeowners complete control of the system from their smartphone or tablet. High comfort and low energy consumption, at the same time as doing nature a favour.



SPONSOR

MCS was proud to present The Heat Pump Product of the Year award. The winners were Mitsubishi Electric, for their design of the Ecodan Hydrodan, a water-to-water heat pump that is designed for use in multi-residential apartments. The Ecodan Hydrodan is highly efficient in heating and hot water production, with an ultra-low noise output and low running costs for owners. MCS sponsored the awards to champion development in the heat pump industry and support innovation that benefits UK consumers and contractors. We were honoured to present Mitsubishi Electric with the award for their contribution to the renewables industry.

AIR CONDITIONING PRODUCT

WINNER

SHRM Advance VRF - Toshiba Air Conditioning

TOSHIBA



SHRM Advance VRF is the latest generation of Toshiba's heat recovery VRF system, and the industry's first full-scale VRF to operate on lower GWP R32 refrigerant. The combination of lower GWP and reduced refrigerant charge enables Advance to deliver a reduction of up to 80% in equivalent carbon emissions, compared with similarly sized R410A systems. The precise percentage depends on the design for each installation. In addition to the environmental benefits, as the price of R410A (the refrigerant traditionally used in VRF systems) rises and availability falls, R32 offers an attractive alternative, with significantly lower GWP, improved efficiency, lower carbon footprint and reduced running costs.

Advance incorporates several technical innovations that help enhance efficiency and comfort performance including a new twin-rotary compressor with liquid injection, developed in-house by Toshiba, that is even more efficient than Toshiba's previous twin-rotary a completely new DX refrigerant circuit design. It also includes a reduced holding charge 50% less than competitors, which delivers a

significant reduction in overall system refrigerant volume, a new split heat exchanger that optimises cooling throughout the thermodynamic cycle, and in varying ambient and load conditions. The ability to select either three-pipe heat recovery or two-pipe heat pump operation for a project, using the same system, use of a sub-cooling plate heat exchanger for enhanced efficiency and performance and also a new high performance fan motor for lower energy consumption and reduced running costs. Together, these innovations contribute to SEER up to 8.9 and SCOP up to 4.67, reducing carbon footprint and driving down running costs throughout equipment lifetime.

To assist installers, the new compact chassis height of just 1.69m helps integration on site, and simplifies logistics in terms of lifting and positioning. Up to 69 indoor units per system are possible, with a full range of 13 different types of indoor unit available, from 0.3 to 10HP, enabling Advance to meet the requirements of virtually any project. Advance outdoor units are available in 8 to 24HP capacity systems, giving the flexibility to meet diverse site requirements.

HIGHLY COMMENDED

CIAT Vectios R454B range

CIAT Vectios R454B is a range of efficient compact air-to-air rooftop units. The range includes the Vectios R-454B and VectiosPower.

Both models are compact, lightweight, horizontal, and autonomous air-to-air units. The Vectios is available in 14 sizes and



features cooling capacities from 23 to 91kW and heating capacities from 22 to 90kW, while VectiosPower extends the range with 12 sizes and cooling capacities from 98 to 273kW and heating capacities from 97 to 300kW. These new units really come into their own when it comes to reducing environmental impact. The Vectios range operates on a R454B refrigerant which is the optimum solution for rooftop systems in terms of total environmental impact, cost, safety, and ease of use. R454B is a non-ozone depleting blend and classed as an A2L refrigerant by ISO 817 with lower flammability and offers a useful efficiency improvement over previous rooftop units operating with R410A. With a GWP of 466, R454B's overall carbon footprint is more than 80% lower than HFC R410A.

The units are space-saving, quiet-running, deliver higher efficiencies and lower operating costs so saving potentially thousands of pounds over the product's lifetime.

When it comes to installation, the Vectios range is easy to lift and position on-site, and, once in place, simply requires air ducts and electrical connection.

SPONSOR



Cross Group

HEAT PUMP INSTALLER

WINNER

R A Brown Heating Services Ltd



R A Brown Heating Services has been installing ground and air source heat pumps since 2007. Prior to this Richard Brown had a successful plumbing and heating business initially with a more urban customer base in Norwich but moving out to barn conversions and other rural properties by being a specialist in underfloor heating. The decision to install heat pumps came from Richard's desire to work at the cutting edge of the industry in terms of offering the best technologies to customers. This ethos still continues and has been instilled into the current workforce from senior management down to new apprentices.

In 2012 the business moved into showroom premises having previously been run from a home office and steadily grew from 7 employees to 20 today. Richard felt strongly that prospective customers need to see these technologies and understand how the system will fit into their property. In the showroom they can see from mechanical ventilation heat recovery (MVHR) systems, radiators, underfloor heating (UFH) to ground source heat pumps (GSHP) from NIBE and Stiebel Eltron etc. The displays of MVHR, ASHP and UFH allow the customer to experience these products in action and try using the controls. The showroom adds credibility and shows that the business is a professional establishment.

With Richard's experience, he believes in developing the industry. Before the pandemic he was hosting industry development training and CPD events to other professionals. Along with support from suppliers, CPD sessions have been delivered to CIPHE members, architects and trade mornings enable plumbers to be trained.

Louise Howlett, Commercial Director at R A Brown Heating Services, has been invited by Chloe Smith MP to a local politicians' roundtable initiative on heat pumps, to discuss green jobs in north Norwich and across the region as it is recognised as one of the most important industries to enable us all to reach net zero. The business aims to support the industry by talking to relevant parties to ensure the industry views and needs are taken into consideration. In 2022, Jerome Mayhew MP, a member of the Environmental Audit Committee, visited the showroom to discuss the renewable heating industry and government incentives. This was welcomed and supported by local MP's who now invite the views of the business when installer consultation is required.

HIGHLY COMMENDED

Finn Geotherm UK Ltd



Established in 2006, Finn Geotherm are ground and air source heat pump specifiers and installers in the East of England.

Finn Geotherm Technical Director David Alston works with Finnish manufacturer Lämpöässä to bring its ground source systems to this country.

They are always happy to emphasise they are not a 'Jack of all trades' but are passionate about being a master of what they do. During their 15th anniversary in 2021, Finn Geotherm reached the huge milestone of securing £22million in Renewable Heat Incentive (RHI) payments, which is shared among the domestic and commercial customers for whom they have designed and installed ground and air source heat pump systems.

This is a business with a driven and enthusiastic team that continually strives to help grow and support the uptake of heat pumps in all manner of applications, from commercial premises to domestic properties. Heat pumps aren't just a job for Finn Geotherm, they are a passion.



SPONSOR

Grant UK was thrilled to attend the National ACR & Heat Pump awards and sponsor the category for Heat Pump Installer of the Year. Installers are a crucial part of the low carbon future of home heating and without their skills, experience and passion, the net zero carbon targets our industry is working towards will not be achievable.

The award recognises the excellent workmanship and innovation of heat pump installers and all the worthy finalists in this competitive category should be incredibly proud. Many congratulations to the winner, R A Brown Heating Services Ltd.



ACR CONTRACTOR

WINNER

SURE Solutions



SURE Solutions were incorporated in August 2016 and have now grown to a team of 39 with plans for further expansion to ensure they continue to exceed the needs of their customers. Since procuring their 8,100 sq.ft premises in August 2018, they have invested in the site facilities to ensure it is a safe and comfortable place of work for their employees. The fabulous building will be their home for many years to come and enables them to expand further in the near future. This will provide SURE with a strong platform to maintain their position in the market. Over the past 12 months, SURE have expanded their service team to add PLC and programming works, allowing them to bring more work in-house.

At SURE the key to success is the close attention they give to customers and their extremely proactive approach. They have three monthly contract reviews with all clients regardless of value and during weekly management meetings, these form part of the agenda. In addition to this robust approach, the sales team is in constant contact with clients. They feel this level of focus enables them to zero in on issues and create bespoke maintenance packages and solutions. In looking to develop this further, SURE have implemented a service management software that enables their customers to view

all aspects of the service they have provided to them online. All work reports, maintenance sheets, F-Gas Register etc go on the online system as it is completed by the engineering team, as well as their company certifications, accreditations and engineer qualifications. SURE's vision is that the customer can access everything instantly in case they need to respond to an onsite audit etc. As part of this offering, they have been able to build a service tracker so that the customer has improved service and maintenance visibility.

Sure are growing with their customers just as much as they are onboarding new clients. They have also become the main preferred supplier for a major UK food production company. The MD sits on the steering group for that customer, advising on key carbon and energy reduction initiatives, a true example of becoming a trusted advisor to that business. They feel building and maintaining their reputation is key and this focus has helped them to build to a turnover of over £12.9m in their most recent accounts. As part of expanding the offering to customers in the North East, an office branch will be opened in Hull this year.

The next step in SURE's development is to assess/develop in-house capability in welding/fabrication, electrical and mechanical services.

HIGHLY COMMENDED

JD Cooling Systems Ltd

Incorporated in 2000, JD Cooling Systems Ltd recognise the importance of providing the people at the core of their company with career development opportunities.

They pride themselves on their award winning apprenticeship scheme, which they actively recruit into each year. Internally they

have created a structure (accessible to all at any time via our staff microsite) allowing everybody to feel like they belong, while allowing them to see where their journey at JD may take them and how they can get there. They offer essential and continuous development training opportunities across the breadth of the company and

encourage and welcome everybody to discuss any training requests they may have.

Since May 2022, JD have a dedicated training fund specifically for the training and development of their team. They also have a number of focus skills across the company, which allows for other skills to be developed, aside from those required to do their day-to-day role. At JD they understand the invaluable concept of supporting and developing the whole person.



SPONSOR

The National ACR & Heat Pump Awards event provided an excellent opportunity to join with friends and colleagues to celebrate the industry's outstanding achievements of the past year and network with fellow professionals. We were delighted to win the Air Conditioning Product of the Year award for our flagship heat recovery R32 VRF system and look forward to next year's event.

TOSHIBA

GALLERY



The **ACR &**
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