

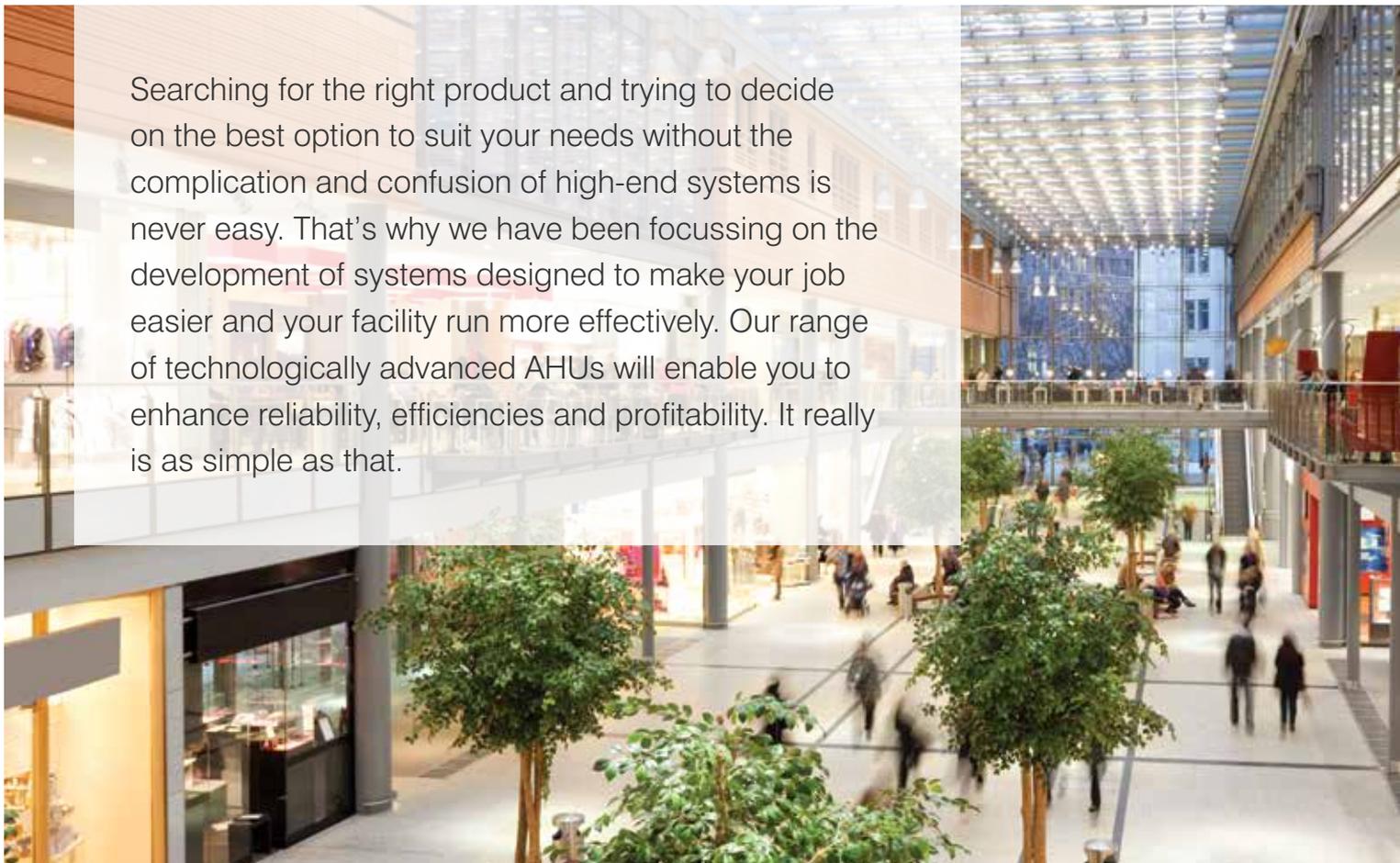


AHU & HVAC Services

Leading UK manufacturer of technologically advanced air handling units (AHUs), specifically developed for energy efficiency, reliability and operational performance

Delivering precision solutions

Our air handling units (AHUs) offer performance, efficiency and uncompromising quality



Searching for the right product and trying to decide on the best option to suit your needs without the complication and confusion of high-end systems is never easy. That's why we have been focussing on the development of systems designed to make your job easier and your facility run more effectively. Our range of technologically advanced AHUs will enable you to enhance reliability, efficiencies and profitability. It really is as simple as that.

Since our establishment in 1981, we have produced a range of AHUs specifically developed to meet customers' needs for uptime, energy efficiency and operational performance. Founded upon a culture of continuous improvement and innovation, our units provide precision solutions for leading organisations and critical applications worldwide.

Our systems serve a range of customers across healthcare, education, data centre, retail and commercial environments. We understand the importance of business critical cooling and through our versatile range of

products and using the latest technology, we offer bespoke and flexible solutions which provide increased efficiency, system reliability and reduced operating costs.

We have a proud history for developing industry leading technology and system innovations. Our range of roof and floor mounted AHUs, free-cooling and indirect adiabatic cooling products are installed throughout the UK in the private and public sector and our extensive aftersales, HVAC controls and spares divisions provide total support and optimal performance to our customer base, wherever you need us.

An Airedale International Air Conditioning Company

Integrated thermal management solutions, differentiated through innovation and service

In February 2014 we were acquired by Airedale International Air Conditioning. Airedale is a world leader in the design and manufacture of innovative, high efficiency cooling solutions with a total customer focused attitude.

Airedale's vision is to provide integrated thermal management solutions differentiated through innovation and service; an ethos that has a great deal of synergy with ourselves.

This acquisition has been a major development for us both, helping us to expand product lines and sales channels in the UK and Worldwide. In addition, the alliance has helped us to build on previous success in the growing data centre and retail sectors by providing innovative systems and expanding product and service solutions to new and current customers.

As combined HVAC and Building Energy Management System (BEMS) specialists, we offer products that help to improve the performance of cooling systems and other building services. From retail or leisure, hospitals or laboratories, small computer and server rooms, to expansive data centres or multiple buildings and facilities, our future-proof solutions are designed to:

- Make your facility more productive and efficient
- Reduce system total life-cycle costs
- Increase unit longevity
- Offer increased agility and power
- Maximise uptime with built in resilience features
- Provide flexibility and choice enabling growth as per your site requirements

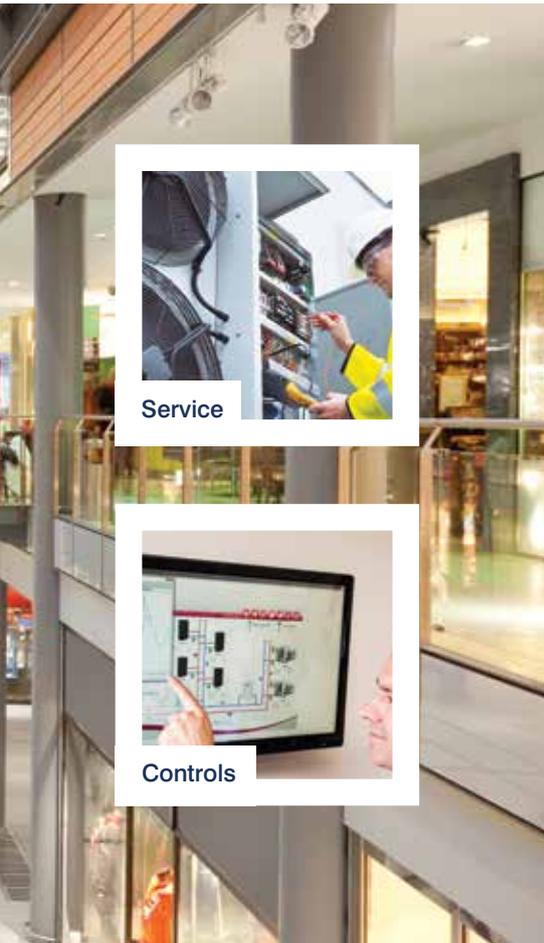
We deliver a variety of products for use across a diverse range of applications and sites, to a broad range of sectors including:

Applications

- Hospitals
- Clean Rooms
- Laboratories
- Universities
- Data Centres
- Server Rooms
- Offices
- Hotels
- Process Cooling

Sectors

- Healthcare
- Education
- Retail
- Leisure
- ISP / Colocation Providers
- Defence
- Industrial



Industry leading Air Handling Units (AHUs)

The right solution for your application

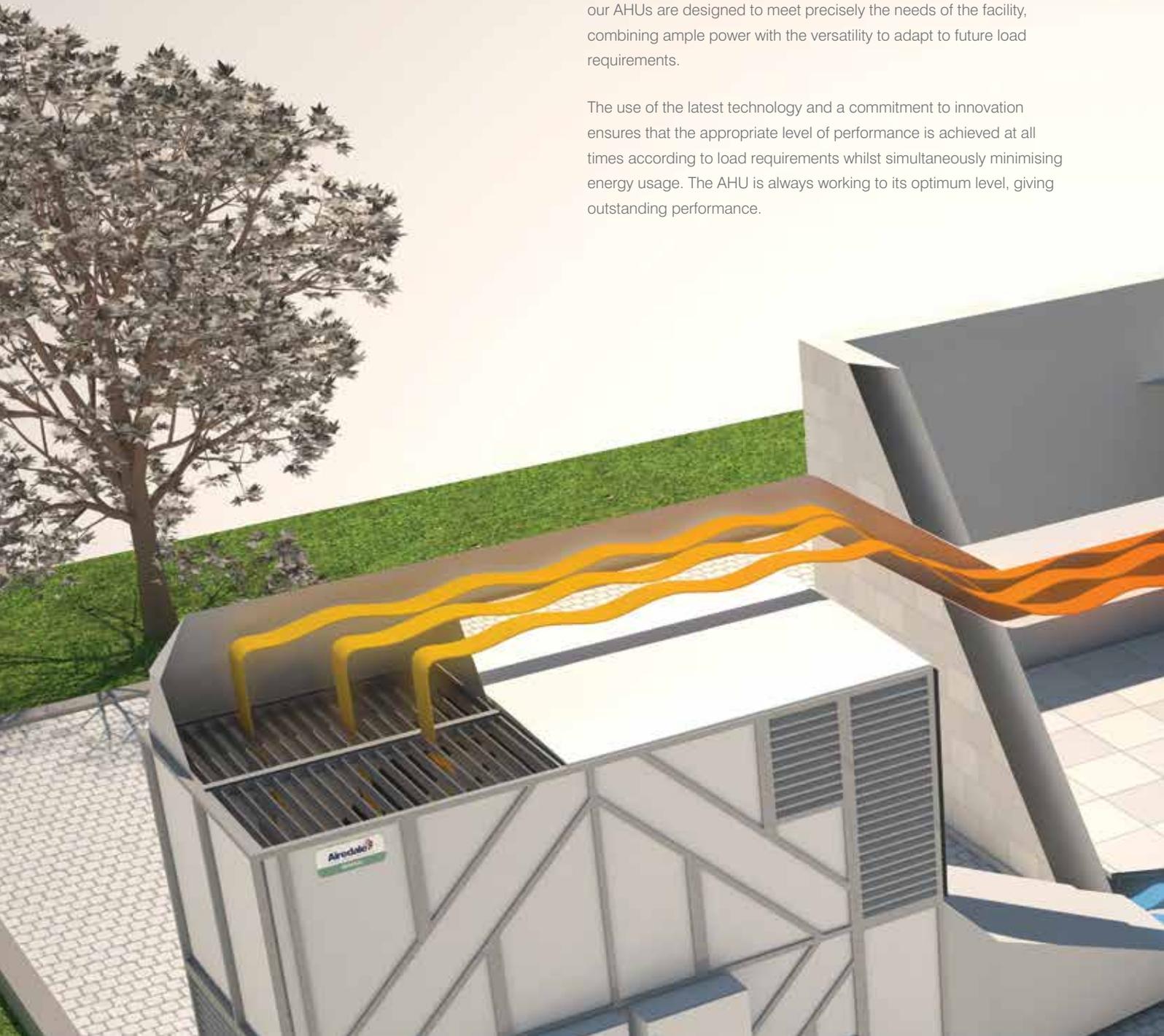
We manufacture innovative systems, products and services to ensure you get the right solution for your application. All our AHUs are developed to ensure that they are powerful, dependable and efficient.

Latest technology

We offer a comprehensive range of specialist high quality AHUs in different configurations from 0.2 m³/s to +50m³/s, ensuring we deliver the precise requirement for your application.

Whether single supply air or exhaust units, indirect and direct systems, adiabatic and free-cooling systems or complete units with heat recovery, our AHUs are designed to meet precisely the needs of the facility, combining ample power with the versatility to adapt to future load requirements.

The use of the latest technology and a commitment to innovation ensures that the appropriate level of performance is achieved at all times according to load requirements whilst simultaneously minimising energy usage. The AHU is always working to its optimum level, giving outstanding performance.



Optimal efficiency

We develop a range of features that enables operators to make their AHU work more efficiently, cutting energy consumption, getting the best out of the components and minimising service costs. Our AHUs are some of the most productive within the market. Components are designed to work in partnership, allowing top performance and low operating costs, and using intelligent controls for improved output and maximum efficiency.

Integration of systems ensures that the AHU can work in unison with the rest of your facility without losing performance or visibility.

Flexibility

A choice of configurations is offered to give real operating flexibility to suit different applications and operator preference.

Our Enviropack™ R410A refrigeration package is available throughout the range, providing the option for cooling (10kW – 235kW) and heating (9kW – 218kW). Available in single and dual circuits, Enviropack™ delivers up to

4 stages of cooling or heating across multiple skid platforms. A single control panel manages both the refrigeration package and the AHU.

System management

We offer technology solutions to help you manage your business more effectively. Monitor machines, operate and adapt unit capacity simply and effectively, analyse operations more closely and keep control of operating costs with our intuitive controls.

Dependable performance

Today, staying online is vital for virtually every business and organisation. Whatever your application requires, we will work with you to ensure 100% availability and uptime. We focus on the development of systems to enhance your working practices, efficiency and profitability.

We can offer full in-house and on-site testing of our equipment to ensure it meets the standards specified, delivering guaranteed performance.

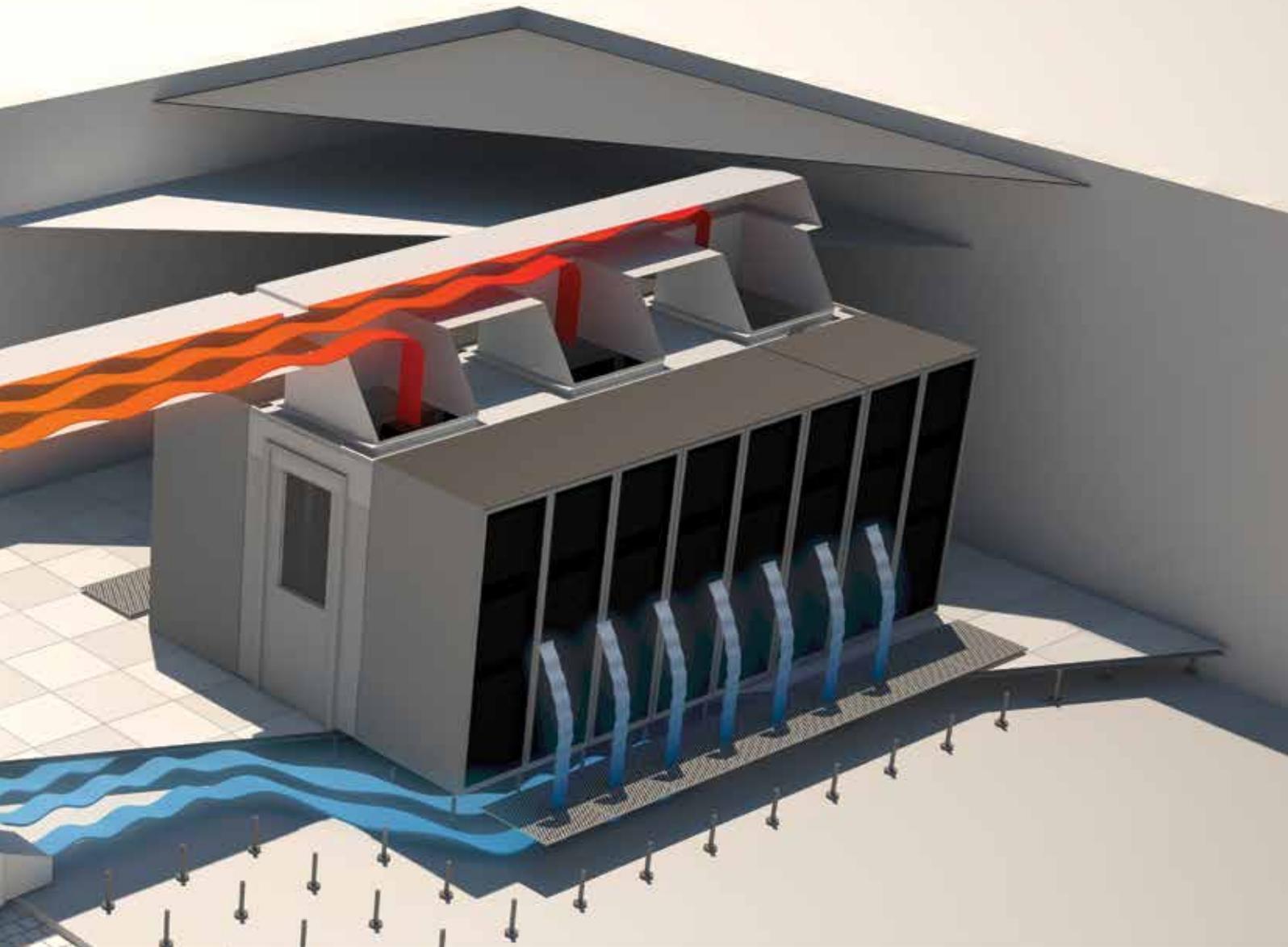
The perfect environment

Indoor air quality is paramount to every AHU that we manufacture. Within our systems we ensure air quality and quantity by ensuring temperature, humidity, noise, draught and fresh air quality are balanced for your application.

UK designed and manufactured

Our range of experienced engineers will work in partnership with you to ensure that we design the system to meet your specification. Each AHU arrangement and component selection is individually designed to your requirement.

Construction is dependent upon unit size and application. The majority of AHUs are made from a fabricated box section welded galvanised frame for stronger, robust construction. Stainless steel and aluminium frame construction is available and multiple forms of components can be incorporated into the specification so you are at the heart of your application design.



Service and Maintenance

Complete support, whenever you need it

With Barkell and Airedale, you can rest assured that help is never far away. Our 24/7 emergency helpline and call out service is available 365 days of the year, ensuring that we are always on hand to provide expert advice and immediate help, day or night.

With our nationwide network of highly skilled Construction Skills Certified service engineers, we are here to ensure your air handling unit (AHU) or Building Energy Management System (BEMS) is maintained and running in its ideal state with no disruption to business performance, whilst keeping running costs to the minimum. A guaranteed emergency response time means that a qualified engineer will be with you when you need them, maximising system uptime.

Service plans

Our service plans provide a planned, preventative maintenance solution to sustain the optimum efficiency of your cooling system or BEMS, enabling you to see real savings in energy costs and reduced carbon emissions. Another key component of our services is ensuring you are aware and compliant with any legislative requirements, e.g. F-Gas Regulations.

Planned maintenance not only assists in preventing unit and system breakdowns, but also helps to improve system resilience, increase energy efficiency and enhance system optimisation for improved performance and increased profitability.

Benefits

- Reduced running costs
- Shorter payback periods
- Increased system or unit longevity
- Reduced carbon emissions
- Fixed pricing within the contract duration
- A minimum 25% discount on all spare parts
- Service plans ensure legislative compliance

We offer a full range of service and maintenance plans for AHUs, cooling equipment and BEMS. These contracts offer varying levels of support and cater for both our and all third party manufacturers' equipment.

Contracts can also be customised to suit individual requirements, ensuring that you receive a maintenance package which is tailored to meet your specific site and application requirements. Choose from five comprehensive standard packages:

	BRONZE	SILVER	GOLD		SILVER	GOLD
Cooling and AHU Plans				BEMS Plans		
Maintenance 4 x maintenance inspection visits pa	●	●	●	2 x Maintenance inspection visits	●	
24/7 Support On call engineer, 24/7 support	●	●	●	4 x Maintenance inspection visits		●
Travel All travel and mileage expenses related to maintenance visits	●	●	●	24/7 Support On call engineer, 24/7 support	●	●
Cleaning Materials All cleaning materials and lubricants required for maintenance visits	●	●	●	Travel All travel and mileage expenses related to maintenance visits	●	●
Consumables All consumables (filters, belts, etc.)		●	●	Software Software backup	●	●
Parts All parts during contract period		●	●	Updates Critical software changes and updates	●	●
Costs All costs related to service callouts and repairs during contract period		●	●	Parts All parts during contract period		●
Refrigerant All refrigerant (if applicable)			●	Costs All costs related to service callouts and repairs during contract period		●

Quick replacement spares

You can count on us for the parts you need

Specialist parts and accessories

For when downtime costs money, we supply quality, genuine components for ours and other manufacturers' equipment from all the leading brands at extremely competitive prices. We also hold extensive stocks, from trusted global brands for immediate distribution direct to site.

Maximising system uptime

Whether you require a replacement component due to operational deterioration or you prefer to keep spares in stock, most parts can be provided on same day or next day delivery.

It cannot be underestimated how important fitting the 'right' component is. We guarantee to send the genuine part, tested and approved, ensuring uptime is maximised into the future.

Benefits

Choosing to use our dedicated spares service means that you will maximise system uptime and benefit from:

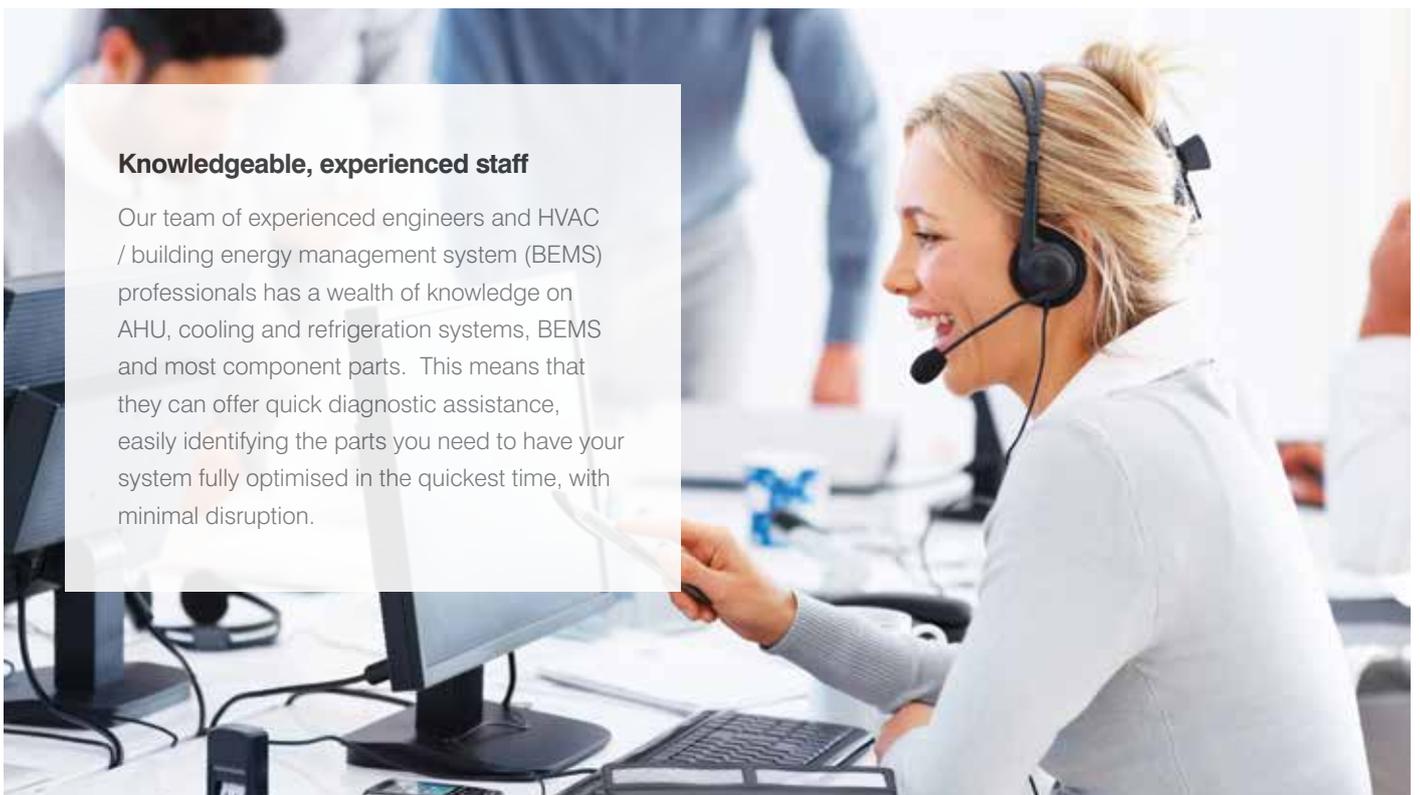
- A well-stocked spares department with genuine components for both ours and other manufacturers' equipment
- Same day or next day delivery direct to site
- Competitive pricing
- Immediate response
- Rapid part identification

Sample of brands stocked

Alco	Daikin	Johnson Controls	Nicotra	TAC
Alfa Laval	Danfoss	Kraus & Naimer	Parker	Torin
Bitzer	Ebara	Lowara	Ranco	Sifan
Camfil	EBM-Papst	L'Unite Hermetique	Refcomp	Trend
Carel	Flakt-Woods	Luvata	Schneider	Vapac
Carlo Gavazzi	Fu Sheng	Maneurop	Siemens	Vokes
Copeland	IMO	Meitav	Solar & Palau	Wilo
Cylon	IRCA	Moeller Electric	SWEP	Ziehl-Abegg

Knowledgeable, experienced staff

Our team of experienced engineers and HVAC / building energy management system (BEMS) professionals has a wealth of knowledge on AHU, cooling and refrigeration systems, BEMS and most component parts. This means that they can offer quick diagnostic assistance, easily identifying the parts you need to have your system fully optimised in the quickest time, with minimal disruption.



Building Energy Management Systems

Smart, integrated solutions making your facility more productive and efficient

ACIS™, Barkell and Airedale's exclusive Building Energy Management System (BEMS) is an innovative, scalable and future-proof solution which has been specifically designed to enhance system performance, drive down operational costs and aid decision making for a wide range of building services.

ACIS™ provides total visibility and control of the facility. A simplistic and intuitive interface allows you to manage smart cooling and other building services from any manufacturer across multiple sites through a single integrated system. ACIS™ offers a wide range of monitoring, reporting and diagnostic tools which enable total system efficiency to be evaluated, putting the user in complete control.

ACIS™ enables powerful facility and site control, remote monitoring, reporting and diagnostics, scalable, future-proof building management and personalised controls experience with your people, software and sites.

An extensive range of ACIS™ products are available, with each offering a different level of support and functionality to provide increased flexibility and choice for you. ACIS™ products can be retrofitted and wholly integrated into existing BEMS or can be customised for specific sites.

Air Handling Unit Control Panels

Flexible control, optimised performance

To complement your custom built air handling unit (AHU), we have a range of technology based controls solutions to enhance the facility's performance. An AHU can only be as good as its weakest link. We ensure via intuitive controls that the performance and efficiency of your system is optimised to minimise energy use and maximise output without compromising the environment.

We offer controls packages specific to each application, installed and wired into the unit at our factory prior to delivery on site to minimise installation and commissioning time.

Our aim with every controls package is to make the facility more versatile, productive and efficient, delivering both output and quality, we have a wealth of experience and use the latest technology to help you get the most from your system, by managing workloads and using performance data to greatest effect.

Our AHU control panels feature the latest technology ACIS™ controllers with user friendly interface allowing monitoring and control of each component of your AHU including fans, heating, cooling, dampers, humidification and heat recovery. All major Building Management System (BMS) protocols are available, including SNMP, BACnet and Modbus.

Total design flexibility is offered with each application with variable sizing options and a wide range of component choices available.



Further control panel features include:

- **Completely customisable**
- **Higher availability with full visibility across the facility's physical infrastructure**
- **Timezone management and alarm handling**
- **Full control of remote devices**
- **Temperature, humidity, CO₂, air quality and pressure sensors (on request)**
- **Advanced control algorithms maintain required conditions**
- **Integration with remote electronic expansion valves**
- **Ease of service – design, installation, commissioning & maintenance all in one place**
- **Increased reliability due to factory mounted controls**
- **Fully standalone system or part of the BMS**

HVAC controls

Managing your business more efficiently

We utilise our unrivalled experience to deliver controls solutions for a vast range of products including air handling units, chillers, precision air conditioning units (PAC), dry coolers, adiabatic and comfort solutions.

The control centre of each of our cooling systems is a sophisticated electronic microprocessor. The microprocessor uses sensors which allow active components to interact. By integrating and sequencing components, our controllers manage and optimise system performance, availability and power draw, giving the operator complete system control.



Air handling unit controls

Our bespoke control panels for air handling units (AHUs) are available in a variety of sizes for different applications. These are designed to integrate a full range of components from inverters through to heat wheels. Greater control options drive improvements in efficiency and total system lifecycle costs, improving system optimisation of existing or new AHUs.



Chiller controls

Our chiller controls system is an intelligent control solution that has been designed to meet present day demands for the efficient operation of air-conditioning systems which utilise stand-alone or multiple units and require a high degree of management and flexibility. The pre-programmed controller contains a range of control parameters that can be individually modified, enabling units to be specifically configured to suit customer requirements.



Precision air conditioning and IT cooling controls

We offer precision air conditioning controls which are designed for critical applications where exact control of temperature and humidity is vital. Ideal for resilient low, medium and high density data centre cooling to maximise uptime and optimise efficiency.



Dry cooler / adiabatic control panels

Dry-cooler control panels can be customised for a variety of sizes and applications. The control system uses a built in PID loop which calculates the exact fan requirement based on the ambient temperature. Adiabatic cooling control panels are also available and increase plant efficiency by enhancing thermal performance.



Cassette unit controls

Our cassette unit controllers can incorporate multiple configurations including 2/3 stage fan control, EC 0-10V fan control, chilled water and hot water valves or electric heating. Master/slave zone configuration and full building management system integration means that controllers can be easily retrofitted to existing applications.

Case studies

Dependable, proven performance



EXHIBITION CENTRE LIVERPOOL

In 2015, the doors open on a brand new 8,100m² state of the art Exhibition Centre. The centre becomes the latest addition to ACC Liverpool and makes the only purpose-built interconnected Arena, Convention Centre and Exhibition Centre in Europe.

Twelve new packaged rooftop air handling and refrigeration units with integrated controls were required for the project - but it was essential that production and installation costs were kept minimal.

With this in mind, we carried out all assembly work and subsequent testing at our factory. Only final commissioning of the controls and refrigeration equipment was carried out on site. The units were also treated to protect against corrosion.

Aside from the cost savings gained from carrying out much of the work off site; by installing units with integrated controls, the units now offer improved and efficient performance with increased reliability and control.

ASTRAZENECA (PHARMACEUTICAL DEVELOPMENT FACILITY)

AstraZeneca is the UK's second-largest pharmaceutical company. At Macclesfield, AstraZeneca has opened a Pharmaceutical Development laboratory building to support the development of new medicines.

AstraZeneca required a cooling solution adept at dealing with their critical laboratory environment; where precise temperature, humidity and air quality control is required.

We delivered a high precision unit with integrated controls. The unit was configured to suit their operational needs where performance, reliability and precision are essential; ensuring that equipment remained in optimum working condition and that research and development was not compromised.



NEW SOUTHERN GENERAL HOSPITAL

The development of the New Southern General Hospital complex in Glasgow is Scotland's biggest ever hospital building project and one of the largest in Europe. Due to open in 2015 the entire complex will treat around 725,000 patients a year.

During 2012, we supplied and fitted Air Handling Units with integrated controls, across the entire site.

As the controls use sensors, which allow for active components to interact, we were able to ensure temperature, air flow and pressure could be optimised to match the hospital's requirements. This will also result in increased efficiency and a reduction in operating costs when the site opens in 2015.



An **Airedale** Company

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All specifications are subject to change without prior notice | **ENG-BARKELL-AHU-11-14**

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