DAIKIN

DAIKIN APPLIED (UK) LTD

Technically better...

Healthcare

Clean air solutions

Experts by experience

Daikin Applied UK is the main supplier of HVAC equipment to healthcare facilities. We have supplied over 1000 hospitals in the UK and internationally.

Follow us on LinkedIn

MADE IN BRITAIN

AHUs

CHILLERS

PROJECTS

SERVICE

Daikin Applied

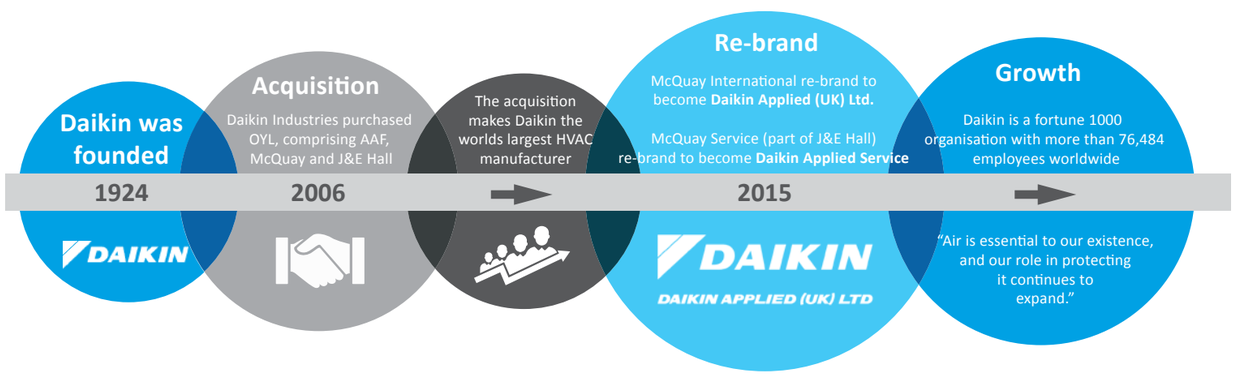
Technically better...

Daikin Applied UK is the market leader in the design and manufacture of efficient heating and cooling systems for healthcare. Our standard and bespoke products including air handling units, chillers and heat pumps offer precise temperature and humidity control with zone-by-zone comfort settings and intelligent energy savings; Ideal for complex healthcare environments.

Exceptional indoor air quality (IAQ) is just one of the prerequisites that healthcare facilities can expect from Daikin Applied HVAC equipment. Our products also ensure low noise level, reliability, and low running costs; achieved without compromising on performance.

Daikin Industries

As a global company, Daikin has over 76,000 employees, with a turnover or over £35 million within Europe. Daikin is the only manufacturer involved in all facets of air conditioning products; including Daikin's own market leading compressor and inverter technologies.



Specialist solutions

for healthcare facilities

Experts on **HTM 03-01** standard

Expertise

Daikin Applied UK have supplied over 1000 AHUs to healthcare facilities nationally and internationally, giving us a wealth of knowledge and expertise. Our Health Technical Memorandum HTM 03-01 standard experts ensure that our solutions comply with the regulation, and lead the way on innovation for specialised ventilation equipment for healthcare premises.

Book our latest CPD - AHU Compliance to HTM-03-01 (2021) via our website at daikinapplied.uk/cpd

Sustainable products

low **GWP**

We design products that take the entire product life-cycle into account; to minimise carbon emissions, energy usage and running costs, offering high seasonal efficiencies and surpassing environmental targets set by the European Union. We have manufactured our chillers to use lower GWP and reclaimed refrigerants, complying with environmental and F-Gas legislations.

Service, maintenance and rental solutions p16

Daikin Applied Service offers a comprehensive service packages tailored to your needs. Our expert engineers provide a rapid response on maintenance, repairs, upgrades, refurbishments and support, covering Air Handling Units, chillers, split air conditioning and VRV. Including ALL brands of HVAC systems and applied system solutions.

Daikin Rental UK delivers reliable temporary cooling and heating rental solutions and responsive support 24/7. Whether that be for planned outages or unplanned emergencies. Our complete support includes everything you need – from chillers and Air Handling units to heat and power.

Active remote monitoring p18

DAIKIN ON SITE

Daikin on Site (DoS) is an intelligent remote monitoring system that collects complex operational data from the AHU or chiller control system 24/7/365. The data is used to report useful information to the user via a web platform. This platform allows Daikin professionals to remotely optimise and schedule maintenance of the equipment to reduce energy consumption and running costs and to increase the lifespan of your equipment.

Trust in
Daikin's experts

Research and development

Our in-house research and development team ensures we stay at the forefront of technology used in HVAC in line with new and developing legislation and technologies, including updates to the Healthcare Technical Memorandum (HTM) . More importantly it allows us to offer our customers the flexibility of bespoke project design and development to suit individual building specifications.

Design

Our Engineering and R&D teams are made up of highly skilled mechanical and electrical engineers, specialising in the healthcare estate sector, who are experienced to help you meet complex specifications and requirements. All projects are supported with SolidWorks 3D models and BIM files for precise design, fast execution and improved computational analysis.

Manufacture

We have over 30,000m^2 of manufacturing and testing facilities across our dedicated plant for AHU manufacturing located in Northumberland.

With recent investment of £1.5million into our manufacturing machinery, we have been able to further improve the quality of our products and increase production capacity to over 1000 units per year.

Witness testing

Our state of the art factory testing facilities are located in Northumberland (AHUs) and Rome (chillers) offering full performance witness tests, simulating design conditions. Our testing procedures are compliant with industry standards ISO 3744/5136 and BS EN1886:2007; offering a comprehensive report of product performance before delivery, ensuring ultimate peace-of-mind.

Daikin Applied
Air Handling Units

Why choose Daikin Applied Air Handling Units?

Made in the UK
› Manufacturing and testing facilities from our dedicated AHU plant in Northumberland

Design
› Bespoke designs with inherent flexibility. All our AHUs can be configured to meet the specific needs of any building or application.
› The most energy efficient on the market
› Each AHU is customised to maximise technical output in the smallest physical footprint.

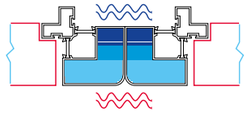
Shipping
› Flexible shipping options available. As standard all AHUs are shipped in modular sections and bolted together on site.
› Dependant on size we can ship units fully assembled in a single piece for easy on site install.
› For spatially restrictive projects, we offer shipping of units flat packed/kit-form to be built up on site by our engineers.

Panels
› All AHU's include for dual panel skin construction.
› All panels insulated with high density 100kg/m3 rockwool rated to Euroclass A.
› Internal & external panels corrosion resistant (C5) pre-coated sheet steel as standard.
› External skins are available in a variety of colours - RAL9002 as standard.
› Options for SS304 & 316 panel skins also available.

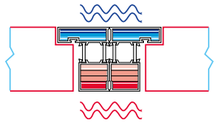
Frame
› Anodized aluminium with the highest corrosion resistance
› Unique Daikin thermal break (35mm or 27mm thermal break). Polyamide bars enhance the thermal bridging performance of the AHU
› Distinctive section to section profile to ensure thermal break design on the whole unit (see image)
› Rounded profile for increased ease of cleaning

IAQ
› Flush internal surface and rounded corner flush surface to avoid the retention of dirt and to be easily cleanable
› Wide filtration possibility to reduce pollution & meet high IAQ requirements.

Certifications
› **Eurovent certified performances**
› Exceeding 2018 ErP - ECODESIGN requirements
› Certified according to the Hygiene Directive VDI 6022 (Modular L and Professional ranges)
› Certified according to the Hygiene Directive DIN 1946 (Professional range)
› RLT certified performances



Conventional design



Daikin design

Air handling units

Our professional range

Our professional range of air handling units is completely bespoke and can be tailored to meet the exact needs of the project specification providing you with an entirely flexible solution & compliant solution.

Overview

- HTM 03-01 compliant solutions›
- Air flow up to 39.5 m3 /s›
- Unlimited flexibility in size>
- Dual skin construction with anodized frame Euroclass A compliant & up to C5M corrosion resistance›
- High efficiency EC motors with plug & socket connections ›
- BS EN 1886 T2/TB2 Thermal bridging/transmittance›
- AHU casing with leakage rate up to BS EN 1886 L1 (-400pa/+700pa).
- Eurovent certified solution.
- Manufactured in the UK.

Quality construction

As standard, all our AHU's include for a corrosion resistant thermal break anodized aluminium framework with internal rounded profile. Our panel construction includes for dual skin precoated sheet steel (C5 corrosion resistance) with rockwool insulation to Euroclass A. Option for SS304 & 316 internal skins & parts also available.

EC fans with IE5 motor technology

As standard, our AHUs utilise the latest EC fan technology which offer the highest fan efficiencies without the need for external VSD's (inverters). The lightweight construction & typical mounting arrangement allows for the easiest on-site maintenance of any fan technology on the market, reducing overall downtime. For critical applications, we offer multiple fan array or even duty/standby EC fan configurations to increase resilience.

Filtration - indoor air quality

We offer a wide range of high efficiency bag, panel, carbon and HEPA grade filters that meet the latest ISO 16890:2016 and ISO 10121-2:2013 standards - supplied by our sister company AAF (p11). We have filters available that have up to 99.9% removal efficiency of PM1 to prevent microbiological contamination and eliminate infectious airborne contaminants. In all HTM applications, we utilise (at a minimum) 2 stages of filtration (pre filter and final bag filter) to satisfy the IAQ expectations.

Filter class	PM1	PM2.5	PM10
M5	<20%	<40%	>50%
M6	<40%	50-60%	>60%
F7	50-75%	>70%	>80%
F8	75-85%	>80%	>90%
F9	>85%	>90%	>95%

*Typical efficiencies of air filters against particulate matter PM1 and other fine dust mass concentrations.

High efficiency

Our AHU's consist of low pressure drop mechanical components and low consumption electrical components to ensure the highest efficiency and lowest operation costs are achieved. High quality and durable materials used in the construction of our units ensure endurance and longevity. All of our units have expected life cycle in excess of 20 year provided they are maintained in accordance with our guidelines. In addition, our units satisfy optimal thermal properties (T2/TB2) and the lowest deflection rates (D1) all tested and verified by Eurovent. We also ensure maximum recyclability and limited landfill waste in the production and life cycle of our products. Our state-of-the-art manufacturing facilities, and care in production ensure premium quality for all our products, achieving the lowest air leakage rates up to L1 (BS EN 1886).

Air pressure and air leakage tests

Air-pressure and air-leakage tests on ventilation ducting are carried out in accordance with the methods set out in compliant to BS EN 1886 & the BESA DW143 – 'Ductwork leakage testing' to ensure leakage rate under 3% (results recorded in the commissioning manual).

Warranty

Daikin Applied offer a comprehensive 12 month warranty on all AHU's and chillers. This will be extended by a further 12 months warranty on parts when you take out service and maintenance with Daikin Applied Service (chillers only). We also offer a range of extended warranty packages tailored to your requirements.

Cleanliness and cleaning procedures

All our units are designed to with optimal internal cleaning and hygiene in mind. A rounded frame profile, suitable access and corrosion resistant washable internal panels ensure that our units meet the standard BS EN 15780 requirements which applies to both new and existing ventilation and air-conditioning systems and specifies the assessment criteria of cleanliness and cleaning procedures. In addition our units conform to the principles set out in HSE Approved Code of Practice HSG274 - 'Legionnaires disease: the control of Legionella bacteria in water systems' and HTM 04-01 – 'Safe water in healthcare premises'.

HTM 03-01

Key features

General

› All materials used must not support the growth of microorganisms.

› External skins must be corrosion resistant.

› Internal wiring should be suitably contained in a mechanical protection system & ensure no air bypass at filters.

› Suitable labelling adhering to CH13 of the guidance must be provided.

Construction

› Dual skin construction with insulation to Euroclass A.

› Internal surfaces to be powder coated with no galvanized steel.

› No protruding spires or tek screws allowed.

› BS EN 1886 T2/TB2 construction.

› BS EN 1886 D2 deflection.

› BS EN 1886 L2 leakage.

Fans

› EC fans to be used – preferably dual/multiple fans to increase resilience – 80% duty output on single fan failure.

› Direct Drive AC fans can be used where EC fans are not suitable.

› Fans must be installed in such a way to facilitate 20 minute withdrawal.

Access

• All access to critical components to be via hinged doors.

• Non-critical components (attenuators) can be via lift of doors.

• All hinged doors to have port hole & LED Lights.

• Doors must be minimum 500mm, 600mm when AHU deck height is <1m.

Filters

› Primary pre & extract filters to be ePM10 ≥50%.

› Secondary filters to be ePM1 ≥50%.

› Access must be upstream to filter bank.

› Compact type filters are preferred.

Cooling Coils & Drift Eliminators

› CHW is preferable solution, DX can also be considered.

› Fin spacing must be ≥2.5mm.

› Face velocities >2m/s require an eliminator.

› Eliminators must consider alternative materials to plastic.

Construction should be copper tube/copper fins electro tinned after manufacture. Aluminium vinyl fins are also acceptable.

Energy Recovery Devices

› Energy transfer devices must comply to EU1253 efficiencies.

› Plastic PHE's or bladed dampers are not permitted.

› Thermal wheels can be utilised if sensible rotors & come complete with purge sector and enhanced tightness seals.

Heater batteries

› Fog coils to replace frost coils and raise incoming air by 2k.

› Fog coils to be plain tube construction.

› Main heater batteries to be Cu tube/Cu fin construction.

› Access required both sides of coil.

Drainage

› All items that can produce moisture must include for a drainage system complete with glass trap.

› All drain trays must be corrosion resistant with 1 in 20 slope.

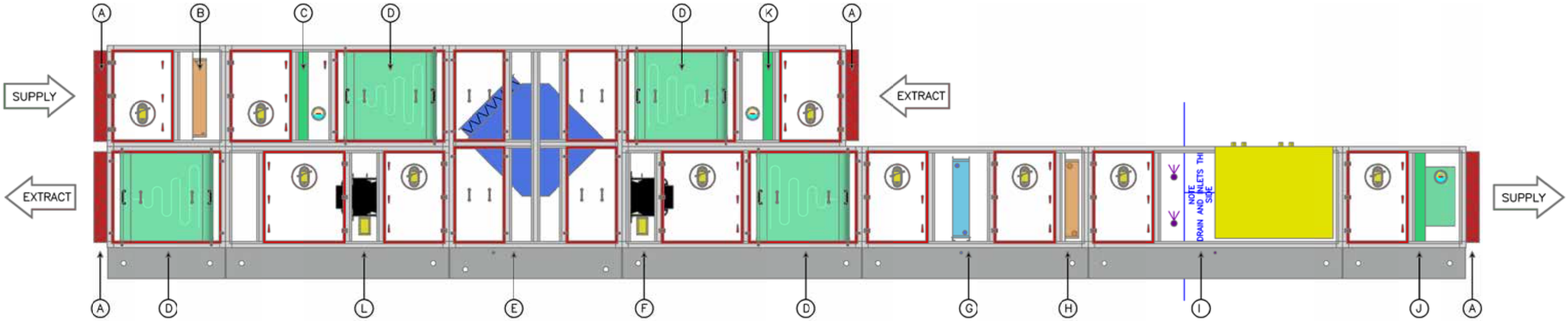
› Access doors much be large enough to permit inspection & cleaning.

Humidifiers

› Only steam injection type humidifiers are permitted.

› All humidifier sections must include for drainage.

› All humidifier elements must be manufactured from corrosion resistant materials.



D-AHU Professional

HTM 03-01 solutions

General Construction

› 42mm/62mm (airflow dependant) anodized aluminium, thermal break framework.

› Corrosion resistant precoated granite internal & external skins (double skin construction) with 100kg/m3 density rockwool insulation to Euroclass A. SS304 & 316 skins are also available.

› Washable internal skins - RAL9002 (grey/white) to ensure dirt accumulation is easily displayed.

› All access doors complete with gasket seal & adjustable hinges to eliminate leakage.

› 500mm hinged access doors to AHU deck heights >1m. 600mm hinged access doors to AHU deck height <1m.

› All hinged access doors complete with viewport & LED bulkhead light (IP65 rated) wired to a single switch per deck.

› Suitable base height to facilitate borosilicate glass trap depths & section lifts. External AHU supports by others.

› Hyspec antimicrobial hygienic sealant to prevent growth of microorganisms.

› No projecting spires or tek screws within the AHU.

› BS EN 1886 T2/TB2/D2/L2 compliant solution.

MADE IN BRITAIN

EUROVENT CERTIFIED PERFORMANCE

TÜV SÜD

CE

ISO 14001 Environmental Management

ISO 45001 Occupational Health and Safety Management

Component overview

A: Minimum class 3 (BS EN 1751) Aluminium opposed blade low leakage dampers with no plastic parts, suitable for motorisation & included to all openings. Spring return actuators with end switches by others. SS304 & SS316 construction also available.

B: Bare tube fog coil designed to increase incoming air by 2K to protect filters. Primarily, the construction will include for copper headers, copper tubes & SS304 casing/coil mounts as standard. Access will be provided both sides of the coil.

C & L: ePM10>50% pre-filtration mounted in SS304 front withdrawal frames with access upstream to satisfy BS EN 1886. Magnehelic gauges available when specified, otherwise, pressure & condition monitoring assumed via the BMS.

D: Metal cased rockwool lined attenuation available on request. Situated as close to the fans (noise source) as possible whilst also considering the most spatial effective solution.

E: High efficiency heat recovery to satisfy the latest ERP EU1253 regulations. Where PHE's are to be utilised, they will be all metal construction and include for no plastic parts to plates or dampers. Drain pans will be fixed with suitable access for maintenance. HTM-03-01 compliant RAR coil & thermal wheel solutions also available.

F: Dual high efficiency EC fans complete with plug & socket power connections. All fan arrays will be sized to cater to 80% duty output upon a single fan failure unless otherwise stated in our proposal. Fan doors are extended to ensure rear fans can be accessed and withdrawn without the need to maintain/withdraw the front fan. In all smaller AHU's where only single fans are proposed, a direct spare complete with a plug & socket will be provided. All fans will be mounted on the bottom deck as per the ideal arrangement to facilitate maintenance.

G: CHW or DX cooling coils complete with extended drain pan on the air off-side to ensure all moisture from coil fins, headers & eliminator are captured. Primarily, all cooling coils will be copper header/copper tube/aluminium vinyl fins/SS304 casing as standard with a minimum fin spacing of 2.5mm. Coils above 1200mm in height will include for intermediate drain trays. All coil mounts & drain pans will be minimum SS304. Access will be provided both sides of the coil. Drain pans will be fixed with suitable access for maintenance. Slide out moisture eliminator in its own cassette for applications >2m/s face velocity or where specified. All moisture eliminator elements will be minimum SS304 construction. No plastic will be utilised in line with the clause to reduce the use of plastics.

H: Main heater batteries will be sized in accordance with the heat recovery/specification. They will be copper header/copper tube/ copper fin & SS304 case construction. Access will be provided both sides of the coil.

I: Steam injection type humidifiers (where specified). All humidifier distribution parts within the airstream will be manufactured from stainless steel. Electrode type humidifiers will include for stainless steel electrodes (Hygromatik), resistive type to include for heaters made from Incoloy® 825. All humidifiers will include for extended stainless drain within the required absorption distance. Where space only for future install is required, the drain pan, and access will be provided.

J: ePM1>50% final filter mounted in SS304 front withdrawal frames to satisfy BS EN 1886 with access upstream. The filter will be a compact rigid bag type. Magnehelic gauges available where specified, otherwise, pressure & condition monitoring assumed via the BMS.

Eurovent
certified performance

Daikin Applied UK Limited participates in the Eurovent Certified Performance programme for Air Handling Units - certified under 14.05.003

Check ongoing validity of certificate: www.eurovent-certification.com or www.certiflash.com

What is Eurovent?

Established in 1993, Eurovent Certita Certification is recognised as a world leader in third-party product performance certification in the Heating, Ventilation, Air Conditioning, and Refrigeration fields.

Eurovent Certita Certification is accredited as a certification body compliant with ISO/IEC 17065:2012 standard by COFRAC (Accreditation Nb 5-5017). This accreditation is internationally recognised by the signatories of the International Accreditation Forum (IAF).

Main certified characteristics

Mechanical characteristics:
a - Casing strength (CS)
b - Casing air leakage (CAL)
c - Filter bypass leakage (FBL)
d - Thermal transmittance of the casing (TT)
e - Thermal bridging factor (TBF)
f - Acoustical insulation of casing

Performance characteristics:
a - Air flow - Available static pressure - power input
b - Octave band in-duct sound power level
c - Airborne sound power level
d - Heating capacity*
e - Cooling capacity*
f - Heat recovery*
g - Pressure loss on water side*

BSEN1886 ratings for Daikin Applied UK air handling units

Results for D-AHU Professional, Modular R and Modular P		Eurovent Classification according to EN1886				
D1(M)	Casing strength (CS)	D1	D2	D3		
	Max. relative deflection mm x m^{-1}	4.00	10.00	EXCEEDING 10		
L1(M)	Casing air leakage (CAL) at -400 Pa	L1	L2	L3		
	Max. leakage rate (f_{400}) l x s^{-1} x m^{-2}	0.15	0.44	1.32		
L2(M)	Casing air leakage (CAL) at +700 Pa	L1	L2	L3		
	Max. leakage rate (f_{700}) l x s^{-1} x m^{-2}	0.22	0.63	1.90		
F9(M)	Filter bypass leakage (FBL)	F9	F8	F7	F6	G1 TO F5
	Max. filter bypass leakage rate k in % of the volume flow rate	0.50	1	2	4	6
T2	Thermal transmittance of the casing (TT)	T1	T2	T3	T4	T5
	(U-value) W x m^{-2} x K^{-1}	U <= 0.5	0.5 < U <= 1	1 < U <= 1.4	1.4 < U <= 2	No requirements
TB2	Thermal bridging factor (TBF)	TB1	TB2	TB3	TB4	TB5
	(kb)	0.75 < K_b <= 1	0.6 < K_b <=0.75	0.45 < K_b <= 0.6	0.3 < K_b <= 0.45	No requirements

Filter range
From our sister company

AAF has an in-depth understanding of the challenges for healthcare facilities making them our preferred partner for air filtration. AAF products are designed with energy efficiency in mind, offering you the highest efficiency products with the lowest energy requirements.

HEPA and ULPA filters

HEPA and ULPA filters are the most efficient air filters commercially available and are used in applications requiring ultra-clean air. AAF HEPA filters are available in a variety of efficiencies.

Pleated panel filters

High performance, high capacity filters, including specialty and standard capacity options. offers consistent air quality, improved process performance and optimised Total Cost of Ownership. Pleated filters can be used as prefilters to protect and extend the life of higher efficiency, more expensive final filters.

High efficiency extended surface filters

Ideal for use in all high efficiency applications, including ICU, treatment rooms, laboratories and minor surgical suites.

ISO16890 - The standard for air filter testing and rating

The world's leading health-related organizations consider PM10, PM2.5 and PM1 fine dust fractions as the most important and dangerous for humans. Their official documentation to the public always refers to these PM levels. It is therefore logical that filter test methods and classifications follow this approach to demonstrate filtration performance towards the most harmful fine dusts.

International Standards Organization issues a new standard for filter testing and rating

ISO coarse	ISO ePM10	ISO ePM2,5	ISO ePM1
ISO coarse – filters allocated to this range capture less than 50% of PM10 particles.	**PM10** – Refers to the particle size fraction in the range from 0,3 µm up to 10 µm.	**PM2,5** – Refers to the particle size fraction in the range from 0,3 µm up to 2,5 µm.	**PM1** – Refers to the particle size fraction in the range from 0,3 µm up to 1 µm.

The precise definition of PM10, PM2,5 and PM1 is quite complex and not simple to measure. Public authorities, like the US EPA or the German Federal Environmental Agency (Umweltbundesamt), increasingly use in their publications the simpler denotation of PM10 as being the particle size fraction less or equal to 10 µm. Since this deviation to the above-mentioned complex "official" definition does not have a significant impact on a filter elements particle removal efficiency, the ISO 16890 documents refer to this simplified definition of PM10, PM2,5 and PM1.

HTM-03-01
Factory acceptance testing

Factory acceptance testing (FAT)

Daikin Applied UK understand both the critical nature of healthcare applications and the need for thorough factory testing of AHU's to take place prior to delivery to verify our solutions.

As such, every AHU package will include for a comprehensive FAT of each unit type. This will take place at our factory in Cramlington, UK.

Our FAT scope can include for the following:

› AHU Volumetric Testing (standard)
› AHU Leakage Testing to BS EN 1886 Class L2 (-400pa/+700pa) (standard)
› AHU Deflection to BE EN 1886 Class D2 (priced on request)
› AHU Acoustic Testing (priced on request)

Results

All of our test results will be accurately recorded at the time of the test and will be provided as a completed test pack on completion of the FAT.

Site works
and services

Site works and services

At Daikin Applied UK, we understand that not all hospital sites are easy to navigate when considering the need to procure & install new ventilation equipment, that is why we have a range of site services that we can offer to ensure a hassle free installation & maintenance every time.

The range of site services available is as below:

› General site surveys to understand potential scope of works.
› Offload & positioning (subject to site survey)
› Site bolt up of AHU sections
› Site leakage testing of AHU's to BS EN 1886 Class L2 (-400pa/+700pa)
› Flat-pack & kit form build up of AHU sections.
› Build up of segmented heat recovery sections.
› Installation of upgraded components to existing AHU's (fans, coils etc)
› Interconnecting pipework of DX coils to external condensers (proximity dependant)
› Static maintenance
› Thermal wheel commissioning (where applicable)
› VSD Inverter commissioning (where applicable)

AHU Refurbishment

Be smart! Replace components, not systems

If your equipment is more than 10 years old, it probably isn't running as efficiently as it could. This impacts indoor air quality, outdoor pollution, running costs, energy efficiency and equipment life-cycle

Why refurbish your AHU?

› Deterioration of components
› Outdated technology
› Space restrictions
› Accessibility restrictions

Benefits

› Cost savings – capital costs, running costs and component costs
› Improved performance
› Reduced downtime
› Environmental reasons – pollution levels and indoor air quality

Why upgrade to an EC fan?

AC fans are fraught with issues. They contain more components and materials which lead to increased issues and failures. Combined with old technology that can lead to nuisance breakdowns. EC fans = less space, less noise, higher efficiency, better monitoring and control, fewer components...

EC fan advantages:

› High efficiency (up to 90%)
› Lower running temperature leading to increased life expectancy
› Quiet operation, even at low operational speed
› Monitoring – operating data and statuses
› Control – demand ventilation (adjustable air performance)
› Plug and play – fast installation and commissioning
› Compact – low space requirements
› Fewer components = less maintenance requirements

Daikin **PRO**tect - Service & Maintenance

Daikin PROtect is a three year maintenance package (option to extend to five years) designed to protect and optimise your HVAC equipment. Because your maintenance is directly from the manufacturer, you can have peace of mind knowing that your assets are in the hands of the experts.

With Daikin PROtect maintenance package we can offer:

- Fast and reliable remote diagnostics with Daikin On Site active monitoring
- Rapid fault identification and resolution
- Protected three year parts warranty (option to extend to five years) plus labour in the first year
- Up to four hour response time for emergency call-outs
- Factory trained technicians (F-gas registered)

Daikin Rental UK

Weather the unexpected

Whether you have long or short-term cooling needs, Daikin Rental UK delivers reliable rental solutions, applications expertise, and responsive support. As a building owner, facilities engineer or manager, you are always planning for "what ifs." Not to mention grappling with actual building emergencies. Daikin rental UK equipment and temporary heating/cooling capabilities are at your service 24/7 throughout the UK. We offer complete support that includes everything you need – from chillers and Air Handling units to heat and power.

We've got your back - Emergency rentals

We supply everything you need with your rental including pumps and other equipment:

When your equipment fails, limiting downtime is mission critical. That's why Daikin Rental UK provides quick delivery and installation of reliable rental products to help you weather the outage. We're here to help get you back up and running, and can provide a full turnkey solution.

- Industry-leading efficiency and proven technology
- 24-hour turnaround on available inventory
- 8-hour average set up with on-site experts
- Comprehensive package, including pumps, flexible water piping connections, and electrical hookups

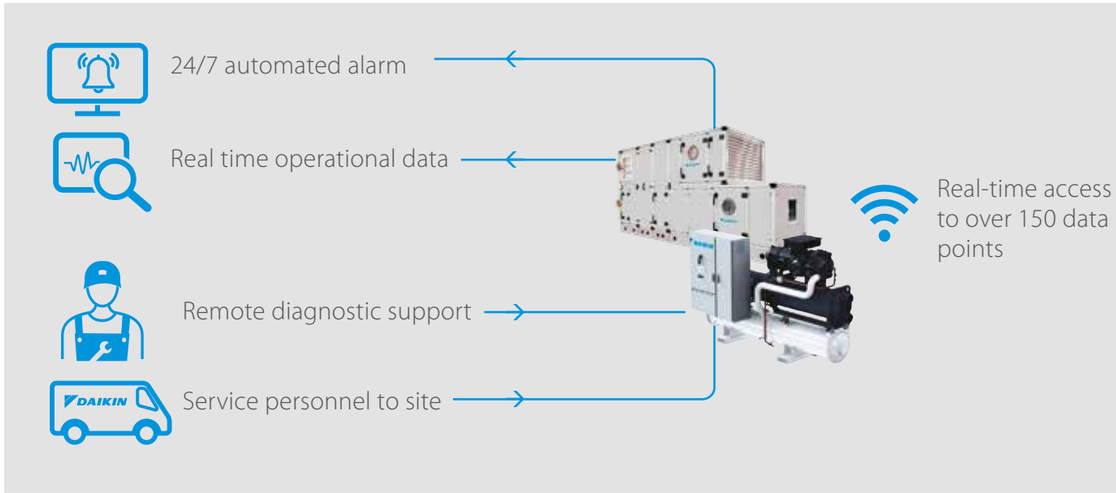
Temporary pre-planned rentals

Forming a contingency plan for an outage can help you quickly get operations back to normal, limit financial loss, and help you breathe easier when the unexpected happens. Selecting the right-sized equipment is just one part of the process. The best contingency plans start by assessing and understanding your financial risk, and then using this information to drive the rest of your plan. Our Rental Solutions experts can specify the supplemental cooling system required to support any situation you're experiencing.

- System maintenance
- Building expansion
- Heat generation from server rooms and IT equipment
- Seasonal load swings from weather or staff changes
- Contingency plans

Daikin on Site

active remote monitoring



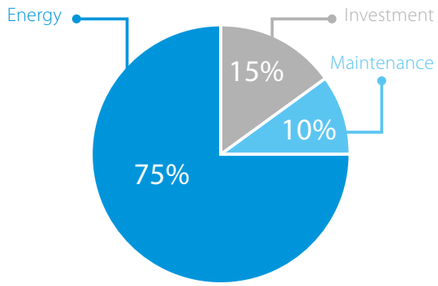
What is Daikin on Site?

Daikin on Site (DoS) is a web-based 24/7/365 active remote monitoring system that collects complex operational data from the AHU or chiller control system.

Daikin's Smart Centre turns the operational data into useful information that allows the user to remotely monitor performance. It also allows Daikin professionals to remotely optimise and maintain the equipment.

Lifetime cost of your system

Energy costs and maintenance typically account for 85% of the system's total lifetime cost. With DoS we can provide a preventative maintenance schedule to ensure maximum efficiency and reliability of your equipment, preventing costly downtime and major repairs and keeping your energy costs to a minimum.



Typical Life cycle Cost of a chiller (15 years)

What you get with Daikin on Site

Active monitoring and assistance

- 24/7/365 automated alarm via email
- Remote diagnostic support from Daikin experts
- Quick site assessment
- Smart mobilisation of service personnel to site if necessary

User friendly

- Access to DoS web app
- Remote software upgrades
- Interactive personalised dashboards

Control and measuring

- Master / slave functionality
- Real time operational data and trend insights 24/7/365
- Life-cycle data log
- Automated and tailored reports

Efficiency and reliability

- Reduced operational costs
- Optimised energy efficiency
- Reduced waste
- Reduced carbon footprint
- Enhanced system reliability
- Reduced system downtime

How it works

Cloud technology to hand

Using cloud technology, process data is collected automatically in real time and stored centrally.

Simple, effective connection

Most Daikin Applied Chiller and AHU controllers allow connection through LAN or with a wireless modem.

Insight into operational data for enhanced control and reliability

Through enhanced operational data, Daikin engineers are able to remotely monitor system performance, run diagnostics and software upgrades. If an on-site visit is required, the service engineer will arrive already informed of the issue, reducing system downtime.

High security

Secure in all aspects such as data privacy, data storage security and data transport.

- All connections are encrypted (HTTPS) to prevent wire-tapping and man-in-the-middle (MITM) attacks
- CSA security attestation - security level 2.
- EU General Data Protection GDPR compliant
- Geo-redundant data storage in Northern Europe

Case study

Royal Papworth Hospital

Cutting-edge technology and unprecedented sustainability underpin one of the UK's biggest health sector construction projects.

The Challenge

Daikin Applied UK successfully bid to work with Skanska on the design and build of 60 Air Handling Units (AHU) plus 3 water cooled chillers, totaling 1MW of cooling for one of the biggest health sector construction projects in the UK. The contract included design, build, on-site installation, commissioning and maintenance.

Solution

The early appointment of Daikin Applied as the specified manufacturer allowed our engineering team to custom design each AHU unit to provide a bespoke solution and satisfy multi-space air conditioning requirements.

Daikin Applied's unique modular design has provided complete design flexibility with no restrictions to satisfy a bespoke solution to meet tight building and plant space limitations internally and externally.

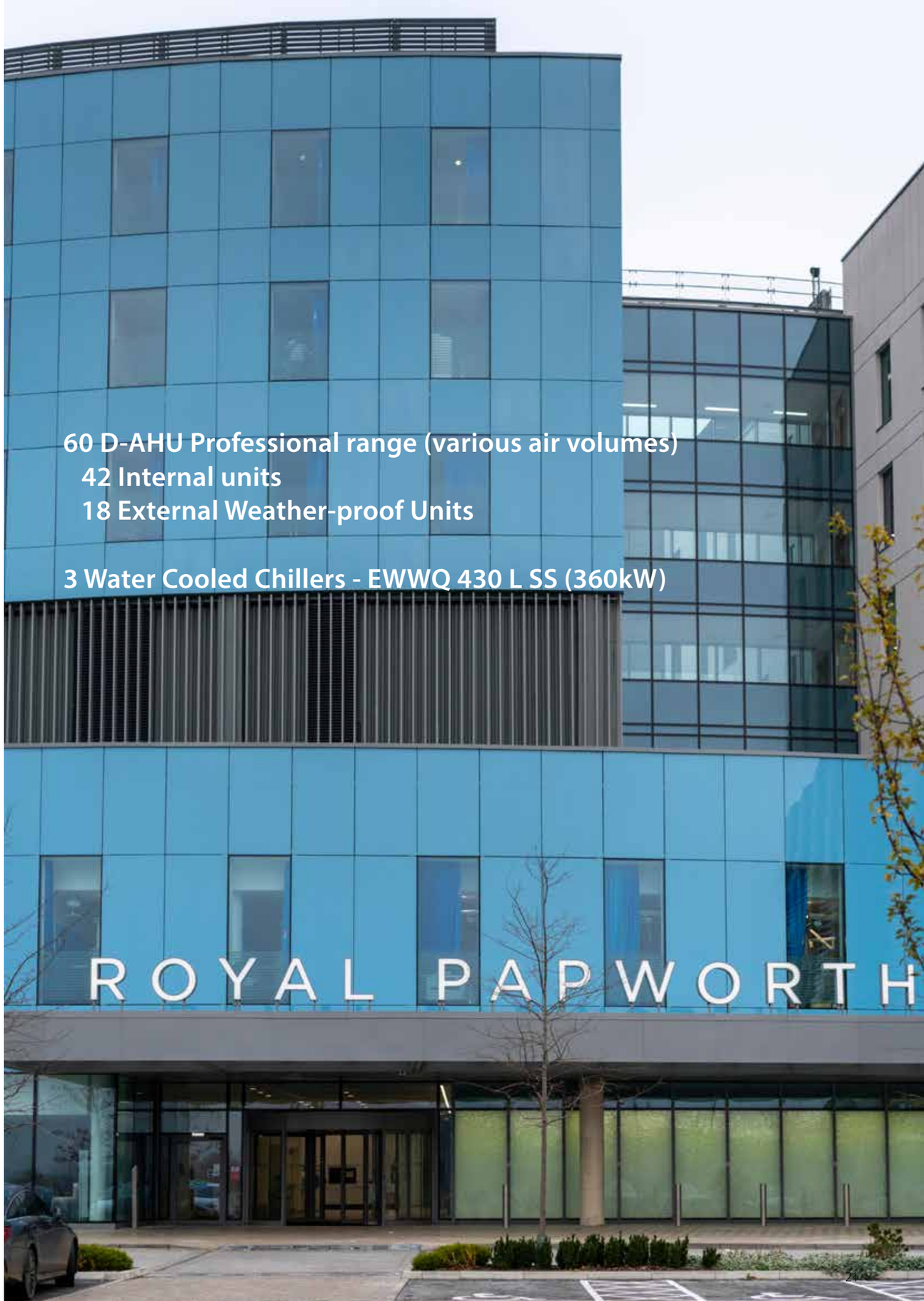
To provide 1MW of cooling, Daikin Applied Engineers collaborated with the Skanska design team to modify the original design of air cooled installation, achieving a lower cost and improved efficiency water cooled solution.

Spatial restrictions are always an issue for plant rooms, particularly in hospitals where strict HTM maintenance requirements must be met.

Use of the latest high efficiency EC motor, low pressure drop and low maintenance components were the key features of the proposal by Daikin Applied. This was adopted by the Skanska design team as it exceeded the clients' expectations in unit size, performance, efficiency and budget.

During the commissioning period, further design restrictions imposed by the site mechanical installation have created additional challenges for our site commissioning team.

Our highly qualified site team responded to these issues by modifying the AHU designs in collaboration with our manufacturing facilities located in the UK, while our experienced project manager ensured the delivery and commissioning of the units were completed within the original time scale and budget.



Case study

UK hospital

D-AHU Professional air conditioning units with integrated internal corridor used for service and maintenance

At Daikin Applied UK, the D-AHU Professional can be configured to meet the exact specification of your premises. Opened in 2021, this spacious, state-of-the-art UK hospital had a requirement to house its air handling units on the roof of the building, negating the need for additional plant room space.

Daikin Applied UK supplied 9 x fully HTM compliant D-AHU Professional units with an integrated internal corridor used for service and maintenance, addressing access requirements and allowing the AHU units to be housed externally. Each internal corridor is 2000mm wide, with access doors at each end and internal lights.

11 x HTM compliant D-AHU Professional
2 x internal units
9 x external units with internal corridor

Case study

Grange University Hospital

Specialist and critical care centre opened its doors four months ahead of schedule to respond to winter pressures and Covid-19

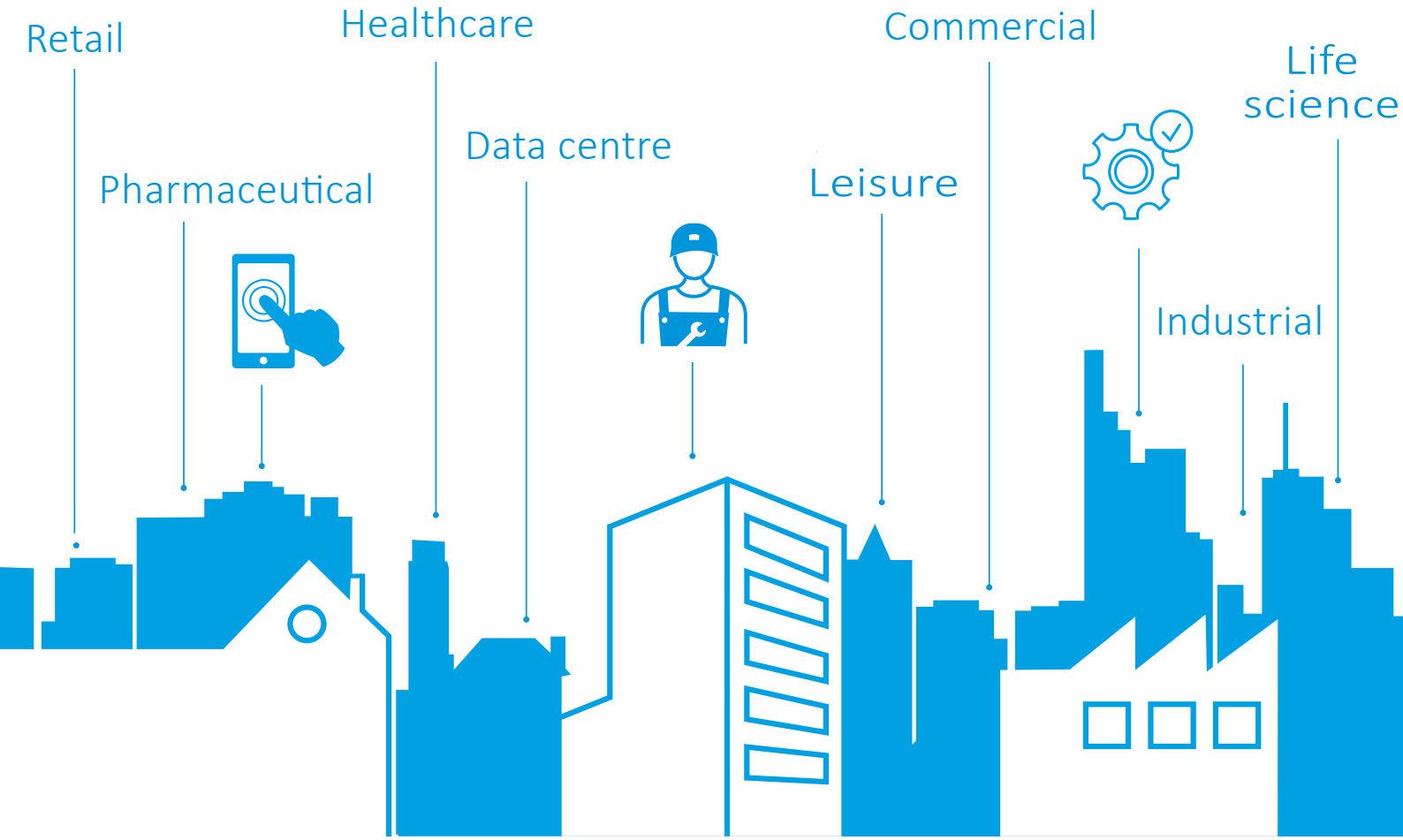
This new £350 million state-of-the-art hospital has 560 beds within 55,000m2 to provide complex specialist and critical care for over 600,000 people in South-East Wales. Construction by the main contractor, Laing O'Rourke began in 2017 with the hospital originally due to open in Spring 2021. The project team were asked to accelerate delivery due to covid-19, and the hospital was handed over, able to take patients four months early.

Mike Lewis, Laing O'Rourke Project Director said: "Early hand over was possible because we used Modern Methods of Construction (MMC) from the outset and in doing so were able to deliver 50% of the building to Aneurin Bevan University Hospital Board back in April – a year earlier than originally scheduled. This project marks a pivotal point in healthcare delivery, paving the way for future hospital builds."

He went on to thank all those involved in the successful delivery saying: "I am extraordinarily proud of the team of people who have delivered GUH four months ahead of schedule amidst a global pandemic."

Daikin Applied UK was contracted to supply 57 HTM compliant, packaged Professional air handling units, each designed and delivered on one common base, meaning less on-site work and lifting equipment and a subsequent cost saving for the client.

57 x HTM compliant
D-AHU Professional



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