

AHU MODERNISATION & REFURBISHMENT

EXTEND ASSET LIFE. IMPROVE PERFORMANCE



Prolong the lifecycle of your AHU with Daikin Applied turnkey solutions for ALL brands of HVAC equipment

Applied HVAC specialists for complex, large scale projects
Manufacturing AHUs, Chillers, and Heat Pumps for HVAC systems in the UK
Formerly McQuay

AHUs

Chillers

Service

Rentals

Spares

WHY MODERNISE

YOUR AHU

Improve performance. Extend asset life.

Avoid unnecessary replacement.

Ageing air handling units do not always need to be replaced.

Where the existing AHU casing and structure remain serviceable, targeted modernisation can provide a cost-effective way to improve performance, efficiency, reliability and maintainability while extending the useful life of the asset.

Fans, coils, filtration, controls, dampers and other components can be assessed and upgraded individually or as part of a wider refurbishment – allowing investment to be focused where it will deliver the greatest benefit.

For older AHUs, this can provide a practical alternative to complete replacement, particularly where access, plant space, disruption or capital investment are significant considerations.

UP TO

**10-15
YEARS**

**ADDITIONAL ASSET
LIFE THROUGH
AHU REFURBISHMENT
AND COMPONENT
REPLACEMENT**

‘If equipment is more than 10 years old, it is likely not running as efficiently as it could’

MAINTAIN. MODERNISE. REPLACE

The right intervention depends on the condition, performance and future requirements of the asset.

MAINTAIN

Where equipment remains in good condition and continues to meet operational requirements.

MODERNISE

Where targeted upgrades can improve performance, efficiency or reliability and extend useful asset life.

REPLACE

Where condition, performance requirements or the extent of required works make replacement the more appropriate long-term solution.

AHU MODERNISATION

ACROSS CRITICAL APPLICATIONS

AHU modernisation can provide a practical alternative to complete replacement across a wide range of buildings and applications – particularly where ageing equipment, restricted access, operational continuity or the cost and disruption of replacement are key considerations.

Our engineers can assess AHUs from Daikin and other manufacturers to identify opportunities to improve performance, reliability, efficiency and asset life.



HEALTHCARE

Supporting critical ventilation systems where reliability, indoor air quality and continuity are essential.



DATA CENTRES

Improving the performance and resilience of air handling systems supporting critical infrastructure.



COMMERCIAL AND PUBLIC SECTOR

Extending the useful life of existing HVAC assets while reducing the cost and disruption associated with complete replacement.



PHARMACEUTICAL AND LIFE SCIENCES

Modernising ventilation equipment in environments with demanding operational and environmental requirements.



INDUSTRIAL AND PROCESS

Upgrading ageing AHUs to improve reliability, efficiency and maintainability.



FOOD AND BEVERAGE

Supporting ventilation and air handling systems operating in demanding production environments.

WHAT CAN WE MODERNISE?

TARGETED UPGRADES TO IMPROVE THE PERFORMANCE OF YOUR EXISTING AHU

AHU modernisation can range from individual component replacement to a more comprehensive refurbishment programme.

Following a site assessment, we can identify opportunities to address deteriorating components, outdated technology and changing operational requirements – focusing investment where it can deliver the greatest benefit.



FANS

- › Upgrade older belt-driven centrifugal or AC plug fans to modern EC fan technology.
- › EC fan arrays can improve energy efficiency while providing greater redundancy and easier maintenance through multiple, individually replaceable fan



FILTERS

- › Upgrade filter housings and filtration to improve indoor air quality and reduce system pressure drop.
- › Existing filtration arrangements can also be reviewed against current requirements, including ISO 16890.



COILS

- › Replace damaged, deteriorated or incorrectly sized coils to restore or improve system performance.
- › Coil requirements can also be reassessed where operating conditions, loads or temperature requirements have changed.



DAMPERS

- › Repair or replace damaged or inefficient dampers to help restore airflow control and minimise unnecessary pressure drop.



PANELS AND CASING

- › Repair or replace damaged panels to improve casing integrity, air leakage and thermal performance.
- › Casing sections can also be upgraded where required to support current project or application requirements.



CONTROLS

- › Review and upgrade existing controls to improve system operation, control strategy and overall performance
- › Controls modernisation can be combined with recommissioning and, where appropriate, connected monitoring to support ongoing optimisation..

**Fan
upgrades
can offer
one of the
strongest
opportunities
for energy
and
performance
improvement
– see overleaf.**

THE BENEFITS

OF AHU MODERNISATION



IMPROVED EFFICIENCY

Upgrading filter, fan and coil solutions can significantly improve overall AHU efficiencies

CO²

REDUCED CO₂

Replacing components to energy efficient solutions can reduce CO₂ emissions by up to 50%



MAINTAINABILITY

Upgrading fan and filter solutions can significantly reduce periodic maintenance requirements, in turn reducing long term maintenance costs



REDUNDANCY

New solutions can provide additional resilience on component failure (EC fans, condenser coils)

£

LOW UPFRONT COST

Cost to replace components is significantly less than that of entire systems



ENERGY SAVINGS

Increased efficiencies from upgrading components can lead to significant energy savings – up to 50% per annum



IMPROVED IAQ

Upgrading filter and filter housing solutions can significantly improve indoor air quality (IAQ)



EXTENDED LIFE CYCLE

AHU refurbishment through replacing components can extend the life cycle of AHUs by up to 10-15 years.



COMPLIANCE TO REGULATIONS

New solutions can help align existing AHUs with the latest regulations

EC FAN UPGRADES

IMPROVE EFFICIENCY, RESILIENCE AND MAINTAINABILITY

Replacing ageing belt-driven centrifugal fans or older AC plug fans with modern EC fan technology can provide one of the most effective upgrades within an AHU modernisation programme.

Where the existing AHU remains structurally serviceable, upgrading the fan system can improve performance without the cost, disruption and access challenges associated with complete AHU replacement.

REDUCE ENERGY CONSUMPTION

Modern EC fan technology can significantly improve fan efficiency, helping reduce electrical energy consumption and associated operating costs.

IMPROVE RESILIENCE

EC fans can be configured in an array, providing multiple individual fans rather than relying on a single fan assembly. If one fan becomes unavailable, the remaining fans can continue to operate, helping maintain airflow until maintenance can be carried out.

SIMPLIFY MAINTENANCE

Smaller individual fans are easier to access, remove and replace, helping simplify maintenance and reduce system downtime.

OPTIMISE PERFORMANCE

Modern fan technology and control can help match airflow to system requirements, supporting efficient operation across changing demand.

CASE STUDY COST ANALYSIS

£0.34 per kWh, 0.309 kgCO₂/kWh

22.7m ³ /s @839pa	Original fan (1 off)	EC fan array (9 off)
System efficiency	41%	70.6%
SFP (W/m ³ /s)	2202	1264
Absorbed Power	50	28.7
Discharge sound power (dBA)	105	95
Fan weight (kg)	319	54

Energy savings	Original fan (1 off)	EC fan array (9 off)
Estimated energy usage (kWh)	503,706.5	250,711.2
Estimated annual cost	£171,260.21	£85,241.81
Estimated CO ₂ (tonnes)	155.65	78.18

MODERNISE THE FAN - KEEP THE AHU

A TARGETED EC FAN UPGRADE CAN PROVIDE A PRACTICAL ROUTE TO IMPROVING THE EFFICIENCY, RELIABILITY AND MAINTAINABILITY OF AN EXISTING AIR HANDLING UNIT.

THE AHU MODERNISATION PROCESS

FROM INITIAL ASSESSMENT TO COMPLETED UPGRADES

Every AHU and site is different. Our engineers assess the existing equipment, operating requirements and site constraints before recommending the most appropriate modernisation approach.

01 | ASSESS

A site survey evaluates the condition of the existing AHU, its components, performance and accessibility.

02 | IDENTIFY

Opportunities for improvement are identified, focusing on areas such as efficiency, reliability, maintainability and changing operational requirements.

03 | PROPOSE

A tailored scope of works is developed, identifying recommended upgrades and the most appropriate route to modernisation.

04 | MODERNISE

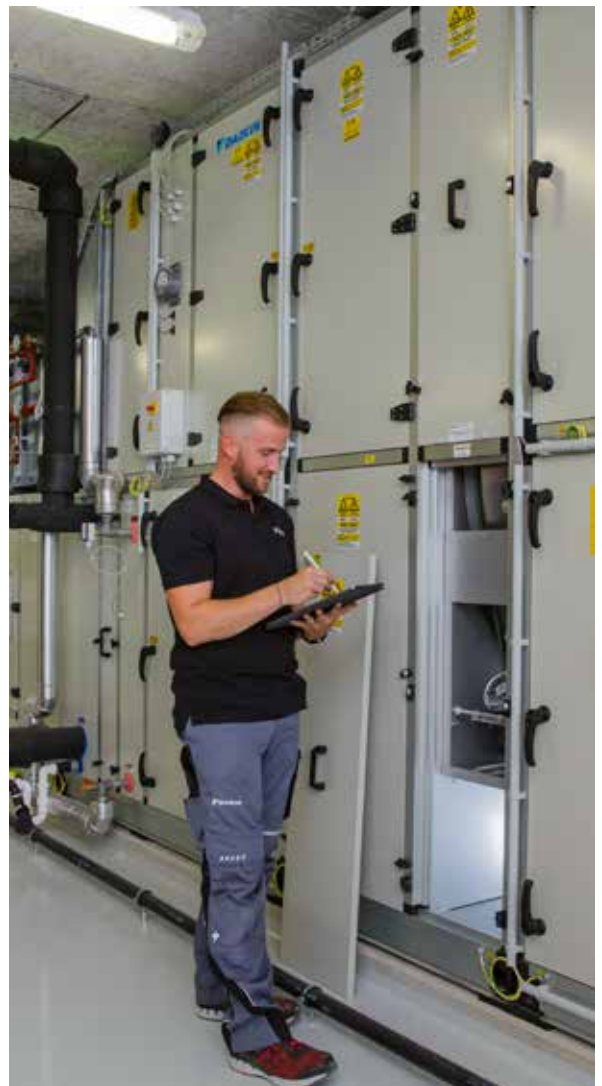
Existing components are repaired, replaced or upgraded, with works planned to minimise disruption to site operations.

05 | COMMISSION

The upgraded system is tested and commissioned to verify operation and performance.

06 | SUPPORT

Ongoing maintenance, monitoring and optimisation can help protect performance throughout the extended life of the asset.



REMOTE MONITORING

IDENTIFY DEVELOPING ISSUES. IMPROVE PERFORMANCE. REDUCE UNPLANNED DOWNTIME.

Modernising an AHU improves the condition and performance of the asset. Connected services can help maintain those improvements by providing greater visibility of how the equipment performs over time.

Remote monitoring and performance analysis can help identify changing operating conditions and developing issues, supporting a more proactive approach to maintenance and optimisation.

MONITOR

Continuous visibility of equipment performance and operating conditions.

ANALYSE

Use operational data to identify trends, anomalies and developing performance issues.

OPTIMISE

Use performance insights to support maintenance decisions, improve operation and protect long-term efficiency.

DAIKIN ON SITE

Daikin on Site provides remote monitoring for connected HVAC equipment, giving customers and Daikin specialists greater visibility of equipment operation and performance.

Combined with ongoing service and maintenance, connected services can help move AHU management from reactive maintenance towards proactive lifecycle management.



24/7 automated alarm



Real time operational data



Remote diagnostic support



Service personnel to site



Real-time access to over 150 data points



DAIKIN ON SITE - HOW IT WORKS



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



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

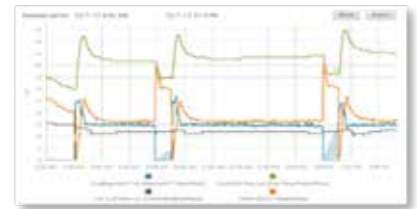


Through enhanced operational data, Daikin engineers are able to remotely monitor system performance, run diagnostics and software upgrades. If an on-site visit is required, the service engineer will arrive already informed of the issue, reducing system downtime.



Secure in 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



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

DAIKIN 360

INTEGRATED SERVICE SOLUTIONS

COMPLETE LIFECYCLE SUPPORT FOR YOUR HVAC ASSETS

HVAC asset management is not simply a choice between maintaining ageing equipment and replacing it.

Daikin360 brings together our service capabilities to help customers make informed decisions throughout the equipment lifecycle – maintaining performance, identifying opportunities for improvement, extending asset life where appropriate and planning replacement when it becomes the right option.

THE RIGHT INTERVENTION AT THE RIGHT TIME



MAINTAIN

Protect reliability and performance through planned service and maintenance.



MONITOR

Use connected services and equipment data to provide greater visibility of asset condition and performance.



OPTIMISE

Identify opportunities to improve operation, efficiency and equipment performance.



MODERNISE

Upgrade ageing equipment and components to improve performance, reliability and maintainability while extending useful asset life where appropriate.



REPLACE

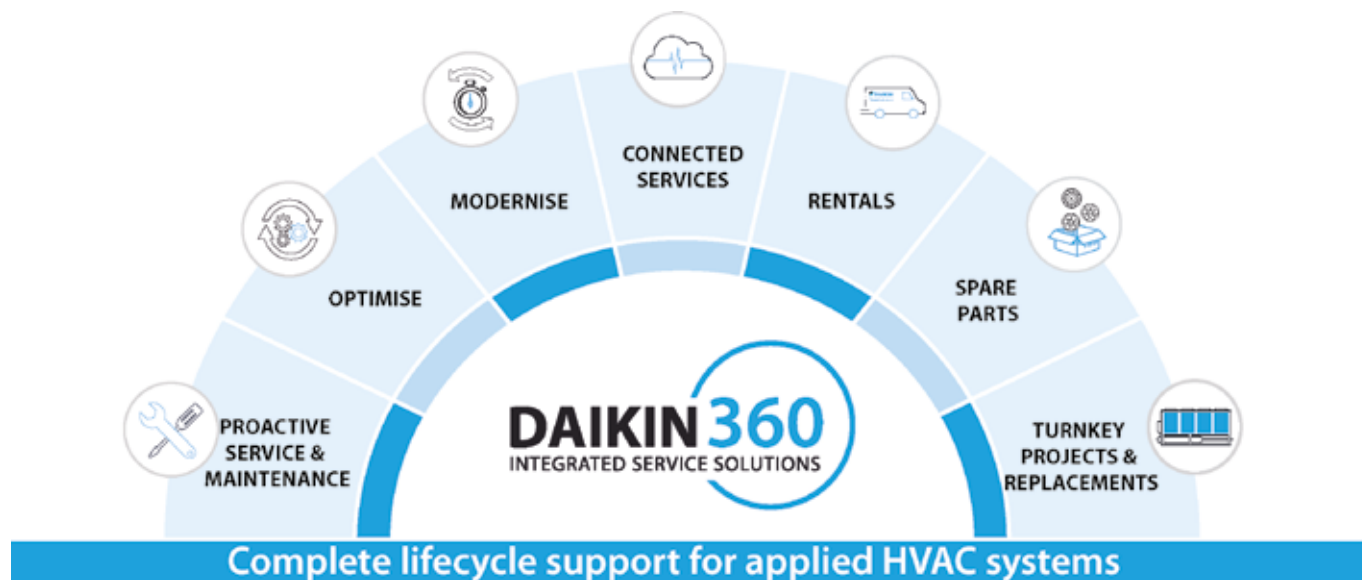
When continued investment in existing equipment no longer represents the best lifecycle solution, plan and deliver replacement.

**MAINTAIN → MONITOR → OPTIMISE →
MODERNISE → REPLACE**

A LIFECYCLE APPROACH TO GETTING MORE FROM YOUR HVAC ASSETS.

SUPPORT THROUGHOUT THE LIFECYCLE

Daikin360 combines engineering expertise, service capability and asset insight to support HVAC equipment from ongoing maintenance through to modernisation and eventual replacement.



PROACTIVE SERVICE & MAINTENANCE

Planned maintenance and engineering support to help maintain performance, reliability and equipment condition.



CONNECTED SERVICES

Remote monitoring, diagnostics and performance insights to support more proactive maintenance and informed asset decisions.



OPTIMISATION

Identify opportunities to improve system operation, energy efficiency and overall equipment performance.



MODERNISATION

Targeted upgrades and refurbishment to address ageing components, improve performance and potentially extend asset life.



TURNKEY PROJECTS & REPLACEMENT

Engineering and project support when major upgrades or complete equipment replacement become the appropriate lifecycle decision.



RENTAL & CONTINGENCY

Temporary cooling, heating and air handling to help maintain continuity during planned works, modernisation, replacement or unexpected equipment failure.

FROM REACTIVE MAINTENANCE TO PROACTIVE ASSET MANAGEMENT

DAIKIN360 HELPS CUSTOMERS MOVE BEYOND INDIVIDUAL MAINTENANCE INTERVENTIONS TOWARDS A MORE INFORMED, LONG-TERM APPROACH TO HVAC ASSET PERFORMANCE AND LIFECYCLE PLANNING.

GET MORE FROM YOUR EXISTING AHU

NOT EVERY AGEING AHU NEEDS REPLACING

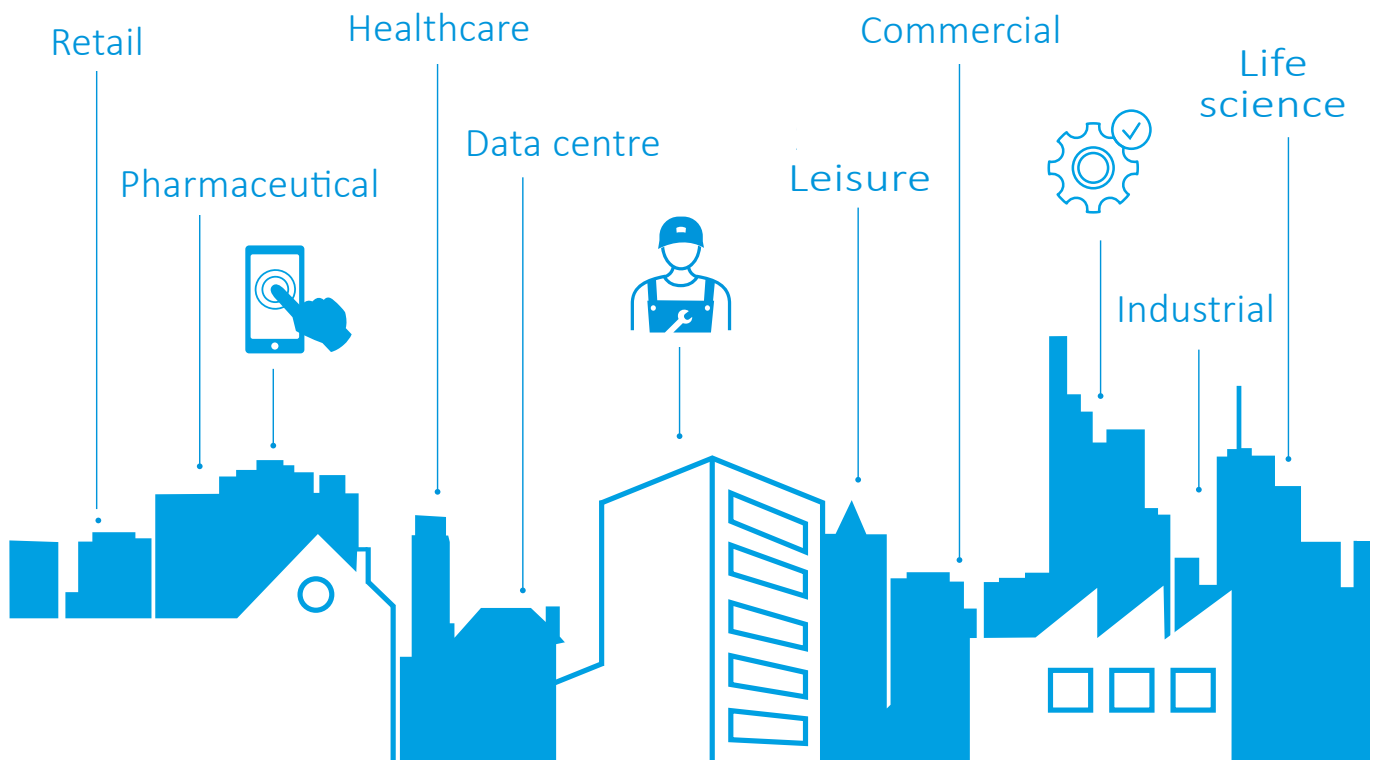
WHETHER YOU'RE LOOKING TO:

- IMPROVE ENERGY EFFICIENCY
- ADDRESS DETERIORATING COMPONENTS OR
- EXTEND EQUIPMENT LIFE...

OUR ENGINEERS CAN HELP ASSESS YOUR EXISTING AHU AND IDENTIFY THE MOST APPROPRIATE MODERNISATION OPTIONS..

DISCUSS YOUR AHU MODERNISATION REQUIREMENTS

ARRANGE AN INITIAL CONVERSATION WITH OUR SERVICE TEAM TO EXPLORE THE OPPORTUNITIES FOR YOUR EXISTING EQUIPMENT.



For Product, Service & Maintenance,
Rental and Spares enquiries:



0345 565 2700



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www.daikinrentalsolutions.uk



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