DAIKIN

DAIKIN APPLIED (UK) LTD

*Technically better...*

# HTM 03-01

## AHU Product 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.

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MADE IN BRITAIN

AHUs

CHILLERS

PROJECTS

SERVICE

# HTM-03-01 (2021)

## AHU Overview

### Overview

Due to the critical nature of healthcare applications, it is essential that robust, reliable, and resilient ventilation solutions are designed and procured to ensure that needs of the application are met. DAPUK's HTM-03-01 AHU solutions are all bespoke with careful consideration of the HTM-03-01 guidance, ensuring the highest quality, energy efficient and maintainable AHU solutions that meet the ventilation and IAQ needs of the project are supplied.

DAPUK have been manufacturing and supplying AHU's to UK hospitals for over 50 years, with over 60% of our AHU's supplied in the last 10 years going to hospital or healthcare applications. Our engineers are well versed in the stringent requirements of the latest HTM-03-01 AHU, and are able to design bespoke, cost-effective AHU systems to meet your needs. We also offer the availability of full life cycle care of our products, from manufacture and supply, to site support and long-term maintenance contracts.

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EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

ISO 14001 TÜV SÜD ISO 9001

Environmental management system certificate Nr. 50 100 9310/4. Quality management system certificate Nr. 50 100 9493/3 and 9493/4

bsi. ISO 45001 Occupational Health and Safety Management

CE

## AHU features

› 42mm/62mm (airflow dependant) anodized aluminium, thermal break framework with rounded profile for easy internal cleaning.

› Corrosion resistant precoated granite internal & external skins (double skin construction) with 120kg/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.

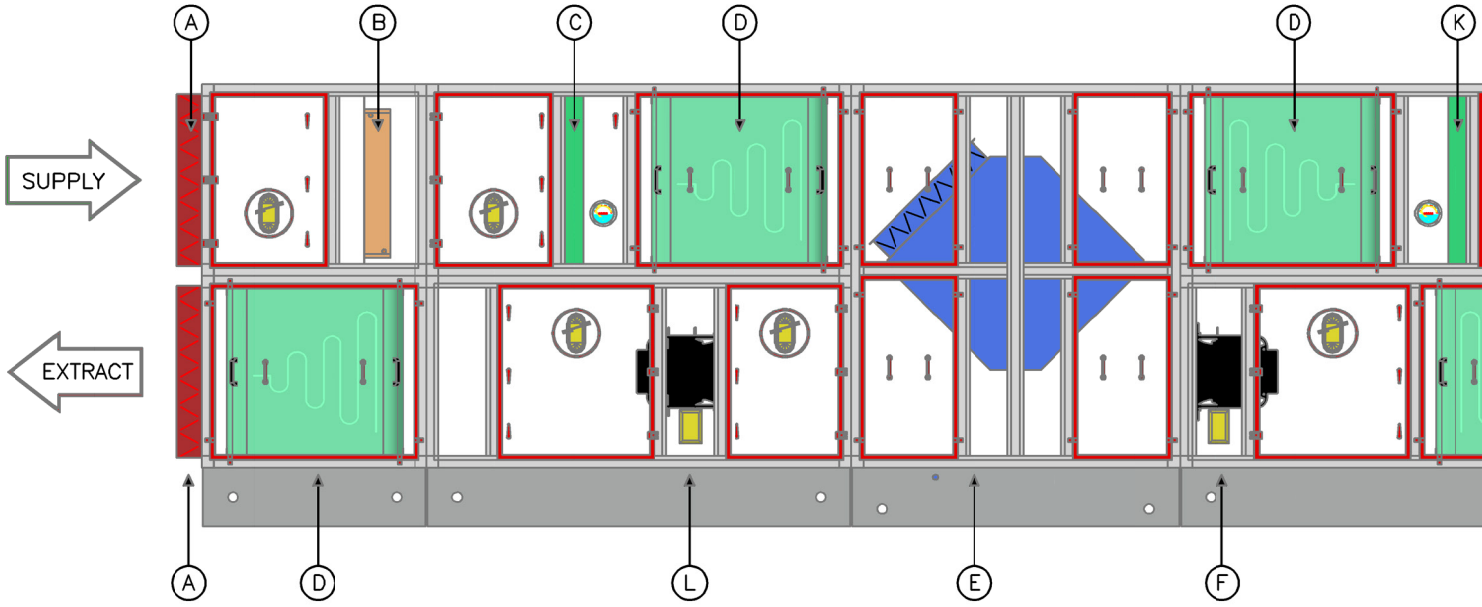
› No projecting spires or tek screws within the AHU.

› No galvanized steel internals in line with HTM-03-01 .

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

# HTM-03-01 (2021)

## PHE solution




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 provided both sides of the coil.

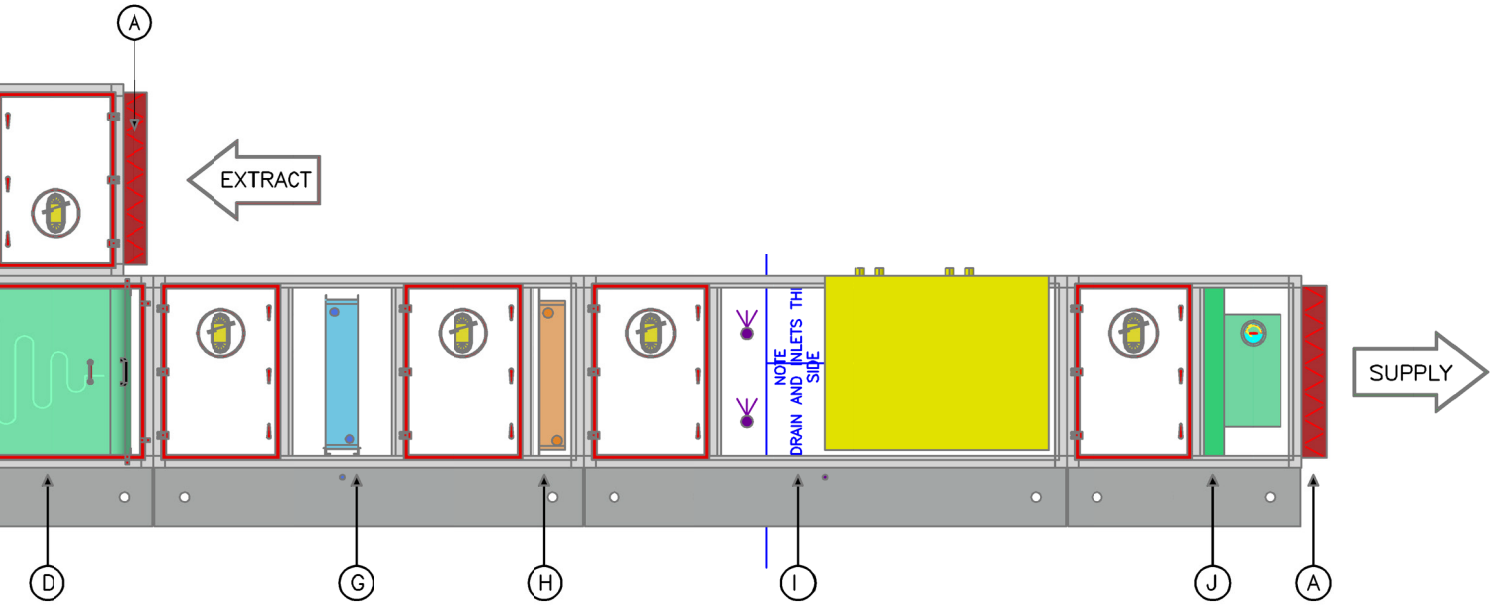
C & L: ePM10>50% pre-filtration mounted in SS304 front withdrawal frames with access upstream to satisfy BS EN 1886. Magnehelic gauges available when specified, otherwise, pressure & condition monitoring assumed via the BMS.

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. PHE's include for an all-metal construction with no plastic parts to plates or dampers. Drain pans will be fixed with suitable access for maintenance.

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 SS316. Access provided both




sides of the coil. Drain pans will be fixed with suitable access for maintenance. Slide out moisture eliminator in its own cassette will be provided for applications >2m/s face velocity or where specified (not shown above). 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 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.

## Design benefits

- ☑ Low levels of leakage & cross contamination between airflows.
- ☑ Highest energy recovery efficiencies.
- ☑ Easiest solution for maintenance.
- ☑ Spatially effective.

# HTM-03-01 (2021)

## RAC solution


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 provided both sides of the coil.

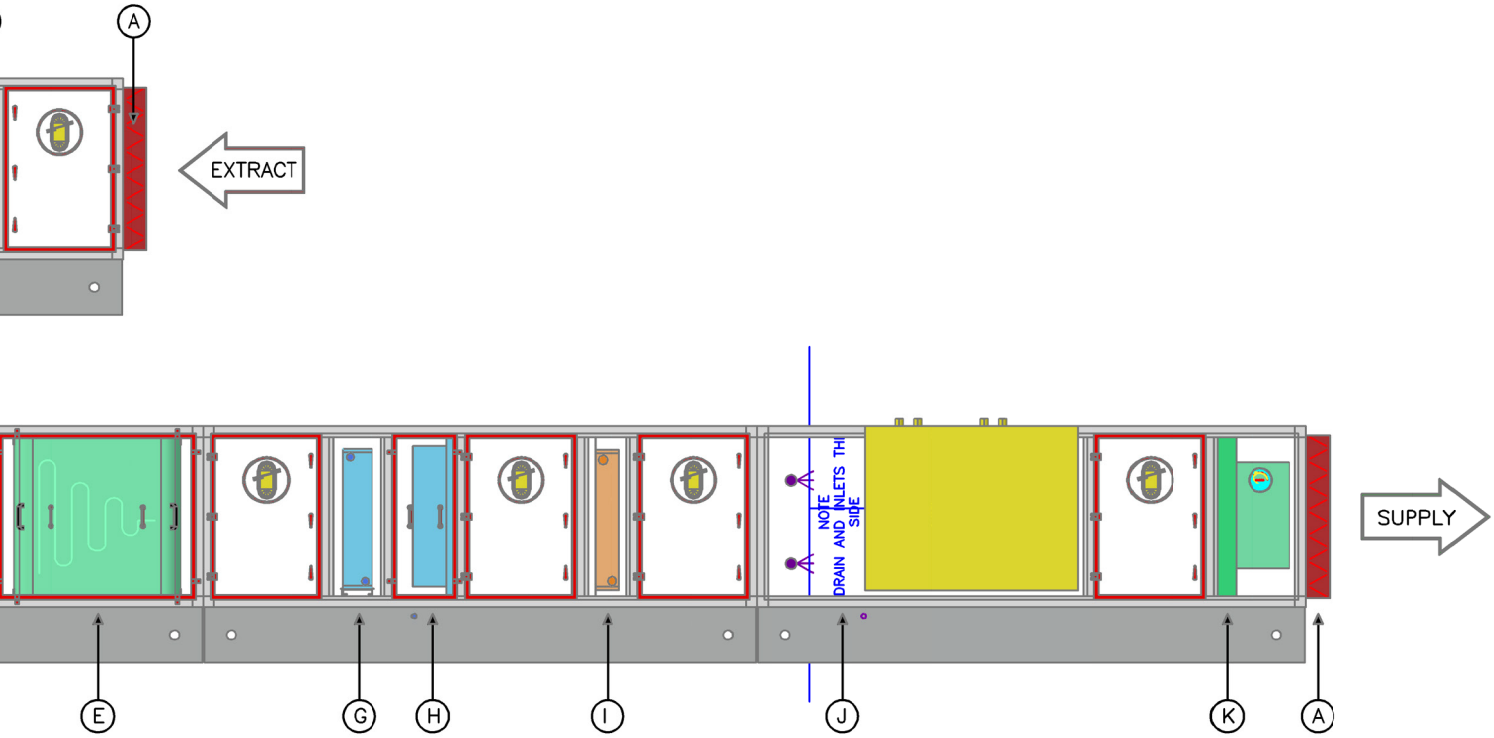
C & L: ePM10>50% pre-filtration mounted in SS304 front withdrawal frames with access upstream to satisfy BS EN 1886. Magnehelic gauges available when specified, otherwise, pressure & condition monitoring assumed via the BMS.

D & O: EU1253 compliant heat recovery coils with hinged access provided to both sides of the coils. The supply side (primarily heating) construction will follow the same guidelines as the main heater batteries with copper tubes & copper fins. Similarly, the extract side coil (primarily cooling) will follow the same construction guidelines as the main cooling coils, with 1 in 20 slope extended drain pan, 2.5mm minimum fin spacing, eliminators to velocities >2m/s & a copper tube/aluminium vinyl fin construction. The casing and coil mounts to both supply & extract coils will be SS304.

E: 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.

F & M: 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.

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 SS316. Access provided both sides of the coil. Drain pans will be fixed with suitable access for maintenance.

H & P: Slide out moisture eliminator (shown above) 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.

I: 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 provided both sides of the coil.

J: 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.

K: 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.

## Design benefits

- ☑ **Isolated decks ensuring no cross contamination between supply & extract.**
- ☑ **Extract can be mounted remote from supply.**
- ☑ **Easily maintained.**

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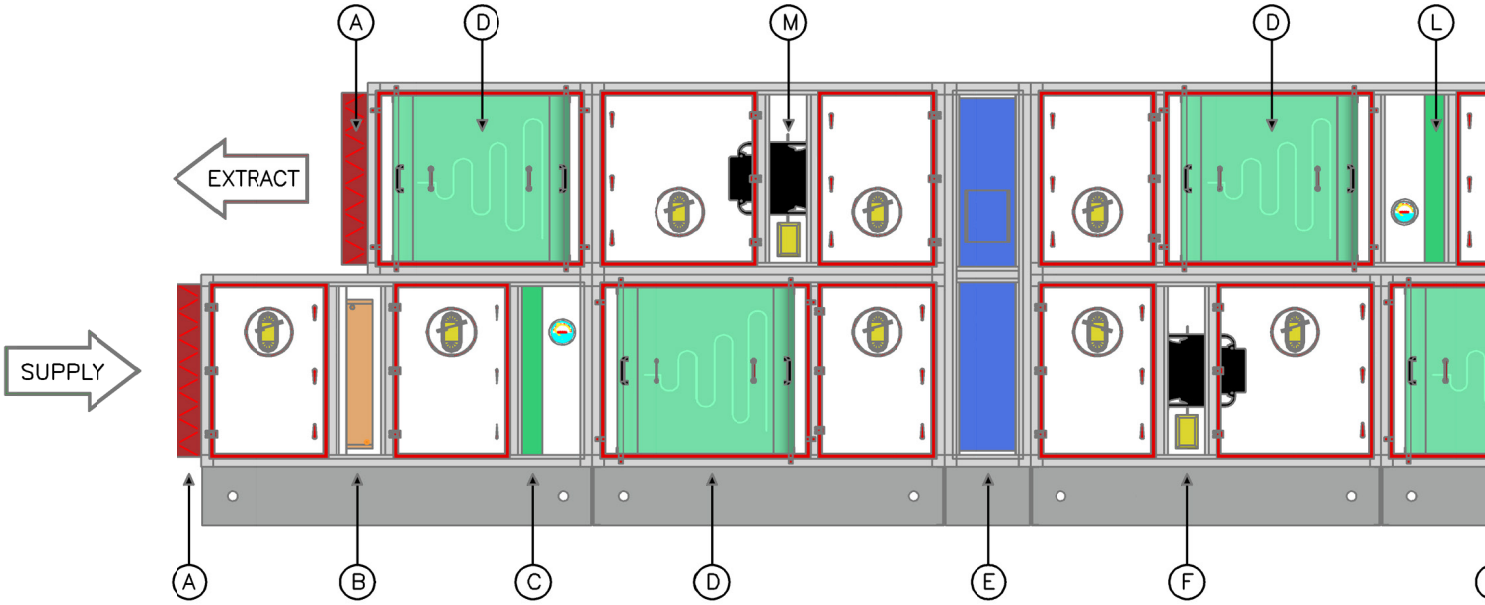
## TW solution




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 provided both sides of the coil.

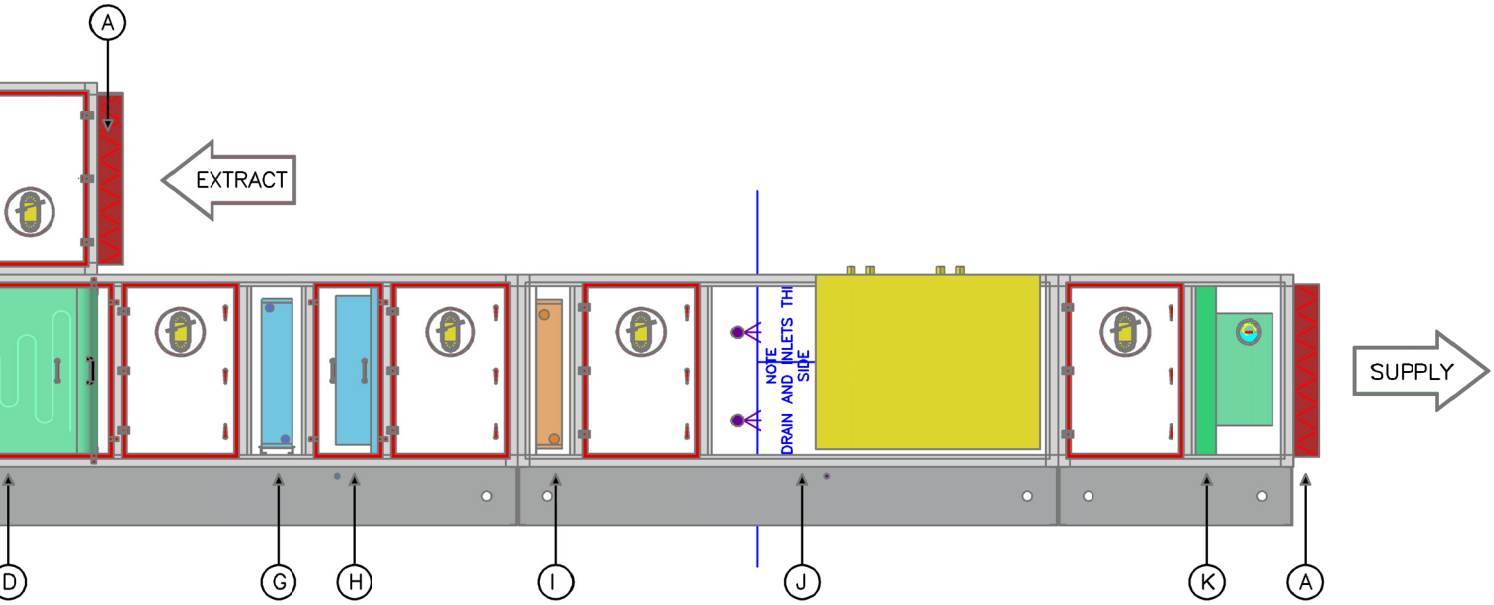
C & L: ePM10>50% pre-filtration mounted in SS304 front withdrawal frames with access upstream to satisfy BS EN 1886. Magnehelic gauges available when specified, otherwise, pressure & condition monitoring assumed via the BMS.

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. Thermal wheels will include for a 1 in 20 slope drain pan local to the section, and will be comprised of an aluminium construction, complete with purge sector & enhanced tightness seals. Only sensible type rotors will be utilised in line with the guidance. Access will be provided both sides of the thermal wheel on both supply & extract to facilitate maintenance and cleaning.

F & M: 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.

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 SS316. Access provided both sides of the coil. Drain pans will be fixed with suitable access for maintenance.

H: Slide out moisture eliminator (shown above) 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.

I: 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.

J: 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.

K: 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.

## Design benefits

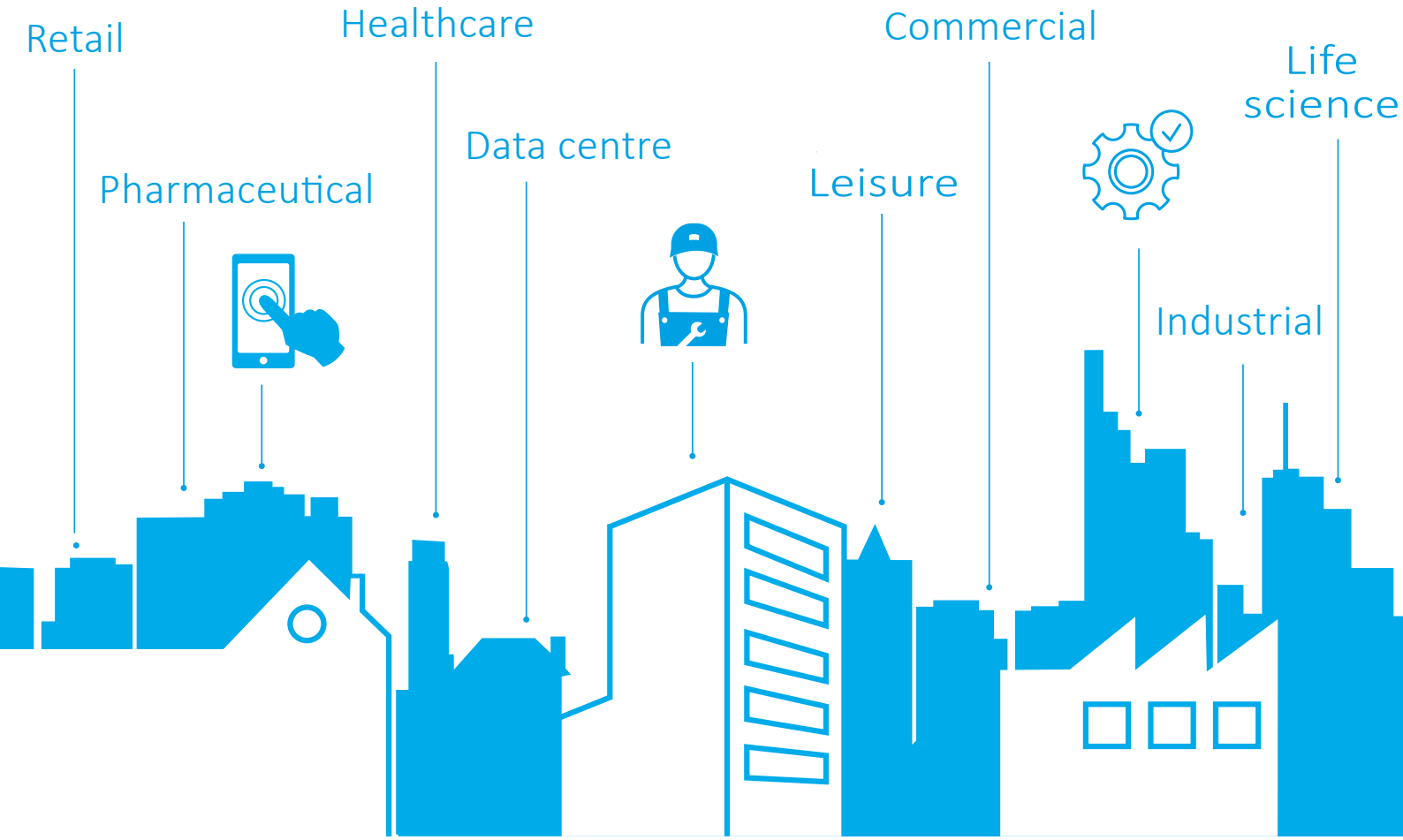
- ☑ **Most spatially effective solution.**
- ☑ **High efficiency heat recovery availability.**
- ☑ **Easily maintained.**

# HTM-03-01 (2021)

## Item material list

| Item | Material |
|---|---|
| External Panel Skins | Pre-coated Steel |
| Internal Panel Skins | Pre-coated Steel |
| Dampers | Aluminium |
| Coil Slides/Mounts | SS304 |
| Fan Bulkheads | Aluzinc |
| Block off plates | Aluzinc |
| Drain Trays | SS316 |
| Filter Frames | SS304 |
| Coil Headers | Copper |
| Coil Tubes | Copper |
| Heating Coil Fins (Incl RAC Supply) | Copper |
| Cooling Coil Fins (Incl RAC Extract) | Aluminium Vinyl Coated |
| Coil Casings | SS304 |
| Plate Heat Exchanger | Aluminium |
| Thermal Wheel | Aluminium |
| Fan Frame | Powder Coated Steel |
| Fan Support Plate/Inlet Nozzle | Galvanized Steel (supplier standard) – Painted available subject to additional cost & lead time |


Fire exit

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