

To refurbish your air-handling units or not to refurbish?



Building Ventilation Solutions

These are the questions

Refurbishment in situ is usually the most economic solution to the problem of ageing air-handling and ventilation equipment.



Cost reduction

Refurbishment will always be a lower cost than replacing with new without the cost of new plant and works are less likely to require the cost of cranes, road closures, builders work, etc and yet you still get the results you need.



The greenest solution

It's certainly the **greenest solution**. Very much embracing the 're-use' mantra from Reduce, Re-use or Re-cycle. Certainly if you consider the embedded energy in manufacturing and transporting all the new equipment.



Reduce energy consumption

Refurbishment can also be a **great opportunity to reduce the amount of energy consumed** by retrofitting items such as; new fan technology, better controls and control over existing plant, lower energy forms of heating or cooling.



Review a potentially out-of-date system or technology

It gives designers the **opportunity to review the system**. For instance: The air volume could be changed if the building usage has changed. Or could this be an opportunity to reduce **the risk of transmission** during refurbishment by adding UVC or other virus reducing technology? All these questions and more can be considered at this point.



Compliance with Part L2

New units must comply with Part L2 of the building regulations. This means they will become much larger and more expensive. Refurbishment may circumvent the need for this.



A fully refurbished AHU completed on time to the client's satisfaction by us and now fit for another 20 year's life.



The team on site at a major London hospital evaluating a unit to potentially refurbish.

A winning combination

The option of refurbishment is often a **WIN, WIN, WIN** situation.

Win on cost

Win on less disruption

Win on energy-savings

To help you decide whether to refurbish or replace, ask yourself the questions **on the following page...**

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What is the condition of the casework?	Before proceeding with refurbishment corrosion of the casework needs to be carefully assessed. Whilst more likely on weatherproof units, internally located equipment may have had leaks from heating or cooling coils. Or from incorrectly trapped cooling coils causing water to remain within the case. However, units with corrosion can be treated or plated and we would advise on this.
What life term is needed from the unit?	We would consider that refurbishment will extend a unit life by at least 10 years and with good maintenance, indefinitely.
Is there space for a new unit with heat recovery that complies with Part L2 (2018) of the building regulations?	New units now require high-efficiency heat recovery devices, such as thermal-wheels, crossflow plate heat exchangers or runaround coils. This means that they can be up to 25% larger than original units.
Are the supply and extract ducts located at the unit position?	If the supply and extract airflows do not come together. Then the only option for heat recovery will be to fit runaround coils and then pipework needs to be run between supply and extract AHU's.
What access is there to the unit location?	Can the old unit actually be removed? Will the new unit fit? Units in tight plantrooms or with restricted access routes, or possibly those on the roofs of tall building may better lend themselves to refurbishment options.
Do you need a higher degree of filtration or different means of heating/cooling than is provided by the existing AHU?	Poorly fitted or incorrect filters are common on old equipment, leading to contaminated air bypassing and clogging up heating and cooling coils and atmospheric staining around grilles. However, during refurbishment, filter frames can be replaced with new to prevent bypass. Refurbishment will also be able to upgrade filters or reconfigure and upgrade of an existing AHU. For instance, potentially replacing an electric heater with gas or DX heat pump.
What condition are the controls in?	Control technology moves on at a pace and the original unit controls may well not integrate with a new BMS. The old controls can easily be replaced or integrated during a refurbishment.
What condition are the heating and cooling coils in and also the valves controlling them	Bent fins can be combed. But if the fins are rotting, then the coils need to be replaced and so disconnected and drained. Space for coil removal needs to be considered. But old coils can be cut up and removed and new coils replaced in sections and even flat-packed. So these can still be economically replaced.
Are there any noise level issues you need to consider?	Any noise breakout from either the equipment or ductbourne noise can be investigated and measured. We can the design and retrofit acoustic solutions if required.
Are existing DX coils running on old gases?	Old coils running on gasses such as R22 can easily be replaced, along with their associated condensers during a refurbishment.

The above are the most common questions we ask when assessing an existing AHU for refurbishment. Acted on correctly, refurbishment will extend the life of existing plant **by at least another 10 years.**

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