

Specialist Site Services

ENERGY EFFICIENT HVAC SOLUTIONS

Air Handling Unit Refurbishment

Solutions for HVAC Problems on site

Site Assistance for Contractors

**Kitchen Ventilation
and Heat Recovery**

**Swimming Pool Ventilation
and Heat Recovery**

**Post Installation,
Spares and Maintenance**

Flat pack Installation



VES Specialist Site Services

*are specialists in energy efficient repair and refurbishment of
air handling, packaged air conditioning and ventilation equipment*

Specialist Site Services

Why choose VES?



Specialist Site Services



VES has been supplying products and services to the HVAC industry for over 40 years, and has the in-depth knowledge and resources to provide solutions to all ventilation related requirements.

- ▶ A substantial British manufacturing company with over 250 employees.
- ▶ Full national coverage from regional offices and site engineers.
- ▶ Over 12,000 m² of manufacturing and storage space with full manufacturing and powder coating facilities.
- ▶ Recommended by many of the country's blue chip companies and local authorities.

VES brands include:



VES operates a Specialist Site Services division, which is a market leader in the repair and refurbishment of any make or model of air handling equipment.

For buildings with faulty and deteriorating ventilation plant, the obvious choice may appear to be replacement. However there are many reasons, not least economic ones, why the repair or refurbish alternatives should also be explored. VES recognised that building owners, managers and engineers wanted that choice and formed the Specialist Site Services division in 1992. Over twenty years on, the division has expanded and continues to provide high quality site assistance.

As well as repair and refurbishment, VES Specialist Site Services offers an AHU flat packing service for sites that have restrictive access.

Assistance in all Market Sectors

Specialist Site Services assists all market sectors, below are just a few examples of applications where services have been provided.



▶ Retail



▶ Restaurant Kitchen Ventilation



▶ Healthcare



▶ Industrial and Process Applications



▶ Banking and Finance



▶ Swimming Pools and Leisure

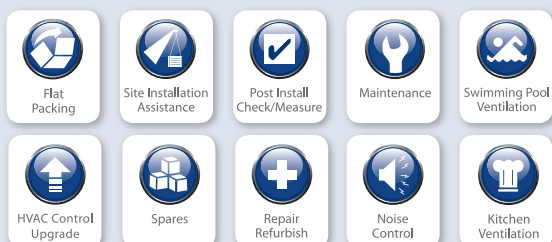


▶ Government and Armed Forces



▶ Education

Features of Specialist Site Services



Site Assistance By Specialist Site Services

Market leaders in on-site HVAC solutions – regardless of make, model or application. Energy efficient solutions from a supplier you can trust.

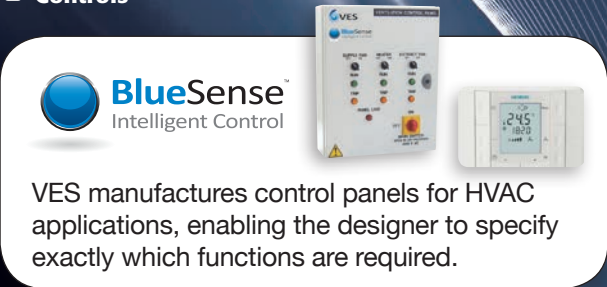
Products

The VES product range encompasses all types of ventilation products including those required for commercial, industrial, public and domestic buildings.

▶ Air Handling Units and Heat Recovery



▶ Controls



- ▶ High Temperature Extract Fans
- ▶ Axial and Plate Fans
- ▶ Roof Units
- ▶ Wall and Ceiling Fans
- ▶ Heater Batteries
- ▶ Light Industrial Fans
- ▶ Silencers

For full product specifications please visit
www.ves.co.uk/information-centre

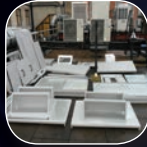
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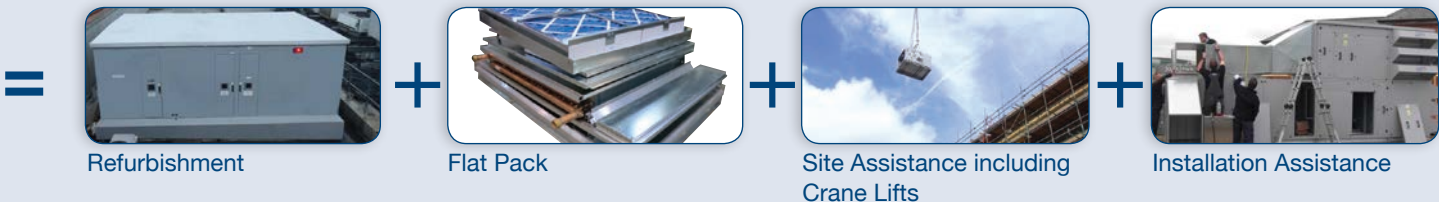
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Specialist Site Services

Refurbishment



Specialist Site Services can refurbish any make or model of existing air handling or packaged air conditioning equipment, including those supplied by any other manufacturer.



Before



After



Before



After

Why Refurbish?



AHU Before



AHU After

The refurbishment of existing air-handling and packaged air-conditioning equipment whilst remaining on site is practical at so many levels that it is considered by many engineers as the first option, rather than strip out and replace with new. Those with experience of on-site refurbishment quickly realise the benefits, which include;

Cost

Typically, the refurbishment cost of an existing unit is between 35-50% of the cost of new equipment, and this excludes the removal and re-installation costs. In addition quotes can be provided to give an itemised list, so only essential works can be completed if the budget doesn't stretch very far. New components can often be flat packed to further save craneage and road closure costs.

Less disruption and more flexibility

Works can be scheduled so as not to interfere with a clients business and their neighbours and carried out overnight or at weekends, particularly useful with noisy works.

Refurbishment is usually a much quicker option from start to finish than replacement, and also gives the choice of separating the necessary works and completing out at different times for much greater programming flexibility. For instance, a gas burner can be replaced one weekend, casework and other components on another and then a controls upgrade that can integrate with BMS carried out at a later date, with other equipment on site.

Improving an existing unit specification

This could include adding a cooling coil, heat recovery, higher grade filtration or upgrading fan performance. Efficiency and therefore running costs can be improved by a considerable margin.

What can be Refurbished



This is the starting point when deciding whether to refurbish, as much can be achieved with units in poor condition. An example of what can be done with a unit in very poor condition is shown below and illustrates the in-depth refurbishment process that VES offer.



Unit before



Condition of condenser coil when removed.



Unit before



True condition of casework with condensor coil removed



Treating corrosion and chequer plating of floor



Rust prevention



Repainting



Completed refurbished unit

If properly maintained, Specialist Site Services can give another 15 years working life to existing equipment.

Specialist Site Services

Roof Replacement

The roof panels are often the main cause of deterioration of an expensive AHU and depending on budget, this can either be treated or replaced. On units with high suction pressures, water is often drawn in through gaps and roof joints causing rusting.



Roof Before



Roof After

Specialist Site Services can easily replace damaged top panels and add an external covering.

For large roofs, particularly those with irregular shapes, Specialist Site Services offer a polybutyl seamless roof, which is offered with a 10 year guarantee. This is particularly useful on units with high suction pressures that tend to pull water through roof section joints.



AHU Before



AHU After

Heating and Cooling Coils

For units with restricted access, replacement coils can be provided in sections which are then joined on site, replacing valves and actuators as required.



Unit before with old coils in situ



New coils installed

Coils can also be flat packed to suit further restricted access situations.

Gas Burners

Specialist Site Services can repair or replace any make or model of gas heater in AHUs.



Old gas heater



New gas heater

Dampers

Jammed dampers are one of the biggest causes of incorrect AHU operation and can easily be repaired or replaced.



Seized damper



Replacement dampers installed

Filters

Many older units now have poorly fitting filters allowing bypass of unfiltered air. Specialist Site Services can replace filter frames to prevent this and often fit higher grade filters as required.



Old filters



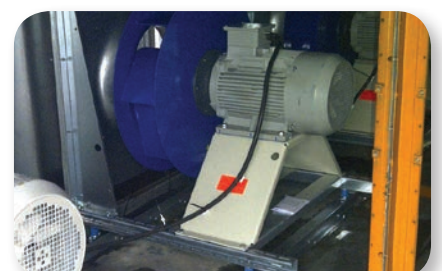
New filters

Fans

All fan types can successfully be repaired or replaced. Also fans can often be replaced with the latest energy efficient direct drive fans as below and inverter controlled. Replacing old forward curved fans with new plug fans can use between 15-20% less energy.



Unit with old belt driven fan



New energy efficient plug fan

Specialist Site Services

Refurbishing Packaged Air Conditioning Units



Refurbishing packaged air conditioning units always includes refrigeration components, condensor fans and on-board controls. Specialist Site Services have been successfully refurbishing these for many supermarkets and retail clients for a number of years. In addition to the standard air handling components within these units Specialist Site Services also:

- ▶ Replace or rebuild faulty compressors. Very large expensive compressors can be removed (often requiring craneage provided by VES) re-built and replaced, including re-gasing with the latest drop-in gases.



1 AHU Before with failed compressor



2 Compressor removed from unit



3 Brazing new filter dryer



4 Unit charging and testing

F-Gas Regulation affecting Refrigeration and Air-conditioning

Users of these systems have numerous obligations to prevent leakage of F gas refrigerants, especially for any equipment containing 3 kg or more of refrigerant.

Systems using refrigerants such as R22 need to address a ban on the use of this refrigerant which came into force in 2010 for virgin refrigerant and in 2015 for recycled fluid.

There are also many obligations that apply to AC systems, especially related to the use of appropriately qualified personnel and certification of suppliers. We can offer advice and guidance on how to comply with your legal requirements and what your options are with your existing equipment.

For more information please email info@ves.co.uk

Integrated Controls

- ▶ Repair, Replace, and Upgrade

Specialist Site Services can work on all controls and packaged units and manufacture controls to integrate to all makes of BMS including

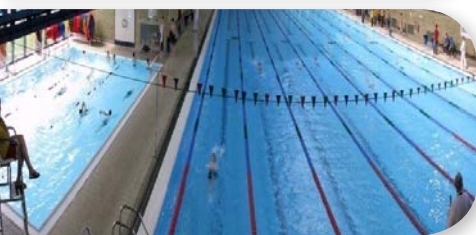
TREND and **SIEMENS** Building Technologies. Open protocol is a standard option on VES controls.



HVAC Solutions



Survey
Reports



There are other valuable reasons to call on VES. Not only can Specialist Site Services refurbish equipment, but can also take the opportunity to view the existing installation and make recommendations to improve system design. Specialist Site Services have helped many customers solve problem systems by looking at the fundamental design with them and offering alternative solutions.

Specialist Site Services have also been called in by many large contractors to consider supermarkets, offices, swimming pools, kitchens and process applications where there were issues with:

- › Temperature - too hot or too cold.
- › Air Distribution - usually insufficient.
- › Process Issues - such as pharmaceutical factory areas where correct humidity is critical to prevent product damage. Specialist Site Services can investigate, assist with design, manufacture and install if required and commission purpose made solutions, including all controls.

Case Study: Aerospace

VES manufactured and commissioned special portable AHUs to give close control of temperature and humidity within the confined spaces of aircraft during production.



HVAC Acoustic Solutions



Noise
Control

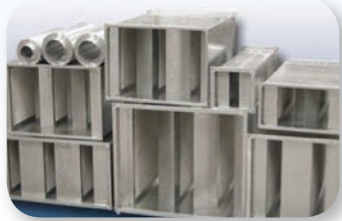
VES design and manufacture acoustic solutions for HVAC noise problems.



Acoustic Reports



Acoustic Surveys



Silencers

Case Study: BT Tower, London

Working on the 37th floor and at the base level, Site Services Engineers stripped out redundant equipment and fitted new AHUs. Purpose designed VES silencers, to meet stringent noise requirements were also installed, which included Specialist Site Services undertaking acoustic tests to prove noise levels.



Specialist Site Services

Restrictive Site Access Solutions



Flat Packing

Where access to a plant area is restricted Specialist Site Service engineers can either build units placed in situ by others or deliver, off-load and build as required.

- Save on craneage, road closures and builders work
- Minimum disruption on site

Case Study: Flat packing

Shown below is a typical flat pack installation of an air handling unit. This site is on the second floor roof above a busy London street. Flat packing was chosen here because of the savings it offered over craneage and road closure costs. VES engineers fully assembled and sealed the unit for a guaranteed installation.



Sections delivered



Unit location



Casework being assembled



Unit components being installed



Unit fully installed

Site Installation Assistance for Contractors



Site Installation Assistance

Specialist Site Services employ over 40 specialist engineers nationwide who can assist with AHU installation, including off-loading, craneage, flat-packing, refixing unit sections and ductwork connections. Many contractors around the UK also include VES services as part of their packages.



Sectional installation of VES AHU



VES AHU craned into position

Post-Installation Checks for HVAC Electrical Controls



Post Install
Check/Measure



Specialist Spares



Spares



Specialist Air Handling Maintenance



Maintenance



VES manufacture approximately £3million of HVAC controls every year including the efficient BlueSense demand base ventilation system. Prior to turning a system on, contractors arrange for a trained VES engineer to:

- ▶ Check the system and ensure that there are no errors
- ▶ Set the unit to work, checking that it operates correctly
- ▶ Measure air volumes, providing that there is a suitably accessible pitot traverse point
- ▶ Issue a Commissioning Report



VES Specialist Spares can supply spares for all VES products dating back 40 years and for many other manufacturers units.

For more information please contact:

VES Specialist Spares on +44(0)23 8046 1153.



- ▶ VES can provide Specialist Maintenance for air handling systems made by any manufacturer.
- ▶ Regular maintenance is essential on critical air movement plant in kitchens, hospitals and process work.
- ▶ For duct cleaning, a free survey prior to quoting can be carried out or a budget can be given and then a firm price offered.

For more information please contact:

VES Maintenance department on +44(0)23 8046 1153.

Specialist Site Services

Kitchen Ventilation Solutions



Kitchen Ventilation

Gas interlock panel with emergency shut off button



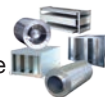
Canopies for every application, complete with baffle or high efficiency Grease Grabber filters, plus lighting, stainless steel cladding and fire suppression as required



Control panel for the supply air unit and extract fan, plus gas interlock and airflow proving sensors



VES unique cleanable silencers

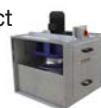


Make-up air supply units with filter, heating, cooling and attenuation as necessary

VES will ensure correct balance of supply air between restaurant and kitchen, designed to avoid draughts and noise

Odours and fumes can be removed from the air with electro-static, ultra-violet and carbon filters

Kitchen extract fans for high temperature polluted air



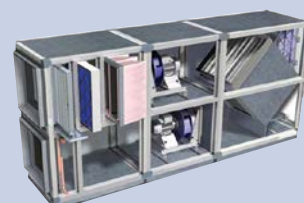
Case Study: Hard Rock Cafe

VES retrofitted the high efficiency patented 'Grease Grabber' filter system to existing kitchen hoods, to substantially reduce the amount of grease entering the ductwork system.



Case Study: Kempsey Primary School

VES installed an Ecovent-K unit, with high efficiency fans and grease filters, at Kempsey Primary School. The kitchen system was designed together with Worcester County Council Design Department.



Kitchen Heat Recovery

Swimming Pool Solutions



Swimming pool halls are critical ventilation areas. Insufficient airflow, poor or incorrect air distribution, incorrect air temperature and humidity can all contribute to damage the fabric of your building. Specialist Site Services have the knowledge to check the fundamental design of your existing equipment and implement suitable improvements as required.

VES also manufactures heat recovery air-handling units specifically for swimming pools. Heat recovery is vital for the economic running and operation of a swimming pool. Specialist Site Services can assist designers, manufacture new units and offer as much installation assistance as is required.

Case Study: Millfield School

An unfortunately designed system in this building led to severe condensation issues. VES manufactured two large air handling units to replace existing plant. Both units were internally and externally coated to protect from chlorine damage at this prestigious swimming pool. Specialist Site Services assisted the mechanical services contractor with the strip-out and reinstallation of the units.



Case Study: Stantonbury Campus Swimming Pool

The ventilation system installed at the campus was poorly designed and had fallen into disrepair. VES were asked to design an air handling unit and system that would not only maintain conditions in the pool hall but would save the client money with significant energy savings. The design incorporated the latest fan and inverter technology along with a sophisticated heat recovery and control package. VES was involved at every stage from early design principals to installation and commissioning.



Case Study: Bluestone Leisure Park, Haverfordwest

Specialist Site Services supplied and installed the main heat recovery air handling units, each supplying 20 m³/s of air, and providing 600 kW heat recovery per hour. The units were located in extremely confined spaces.



Specialist Site Services

Energy Efficient Upgrades: Fans, Controls and Integration to BMS

Demand Based Ventilation



Retro-fitting and Reconfiguration of Existing Equipment

Refurbishment gives the opportunity to replace older forward-curved fans with the latest energy-efficient plug fans and inverters.



Unit with old forward curved belt driven fans



New energy efficient plug fans

The new energy efficient fans can be fitted with the latest BlueSense intelligent demand-based controls to further increase energy savings. These can be linked to CO₂, air quality or PIR sensors and then integrated into an existing BMS system with any communication protocol including Bacnet[®], Modbus[®] or Trend[®].

Existing air handling equipment can be reconfigured by VES in-situ and upgraded to include any of the following items.

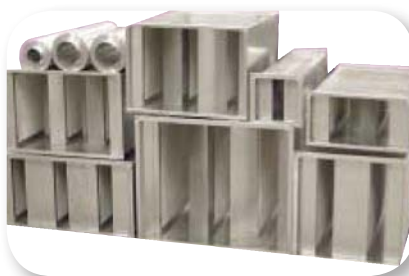
- ▶ Heat recovery
- ▶ Cooling
- ▶ Higher grade filters
- ▶ Control upgrades
- ▶ Silencers
- ▶ Humidifiers



Humidifiers



DX Cooling Coil



Silencers



Higher grade filters

Frozen Coil Repairs



With the advent of winter comes the risk of freezing both heating and chilled water coils within air handling units. This is usually due to the failure of the existing safety frost thermostat. Incorrect installation of controls will usually reveal itself during the first year of operation, but the more common failure of existing controls can happen at any time.

Specialist Site Services can quickly replace coils that have been damaged, such as the one shown in the picture, and also thoroughly check the system to prevent a repeat performance happening again. Site Services can also check AHUs prior to the onset of winter to ensure correct operation of frost protection.

Temporary Ducted Heating

To give a complete solution, Specialist Site Services can fit temporary ducted heating.

Fitted on site by Site Services and integrated into existing ducted systems. This alleviates needing heaters blasting hot air only locally and is ideal for supermarket applications. These units are fully installed on site by Site Services, including all electrics, controls, ducting and crange.



VES Temporary Heating AHU on Site



Temporary Ducted Heating System

VES Products

VES manufactures standard and bespoke products for the built environment.



For more information please visit www.ves.co.uk

Other products and services from the complete range of VES HVAC solutions

Air Handling Units

- Supply and extract, combined or separate
- Heat recovery including crossflow plate heat exchangers, thermal wheels and run-around coils
- Plantroom or weatherproof, flat or stacked
- Fitted silencers, inverters and controls
- Matching DX condensing units
- Various case constructions including EN 1886 certified units

Duct Fans

- In-line centrifugal, with forward or backward curved impellers
- Round, axial and mixed flow fans
- Fitted silencers available on all units
- Manual and automatic speed controllers available

Twin Fans

- For ceiling void, plantroom and weatherproof
- Many models and configurations
- Fitted auto-changeover system

Roof Extract Units

- Three ranges for volume and pressure
- Curb and soaker sheet bases

Wall and Ceiling Fans

- All types for commercial, industrial and domestic premises

Kitchen Hood Extract Fans

- Heavy duty high temperature fans for hot greasy air
- Motors out of airstream
- Single inlet fans, in-line and vertical jet roof units

Control Panels

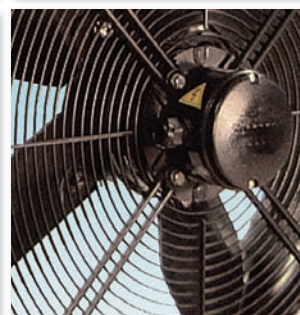
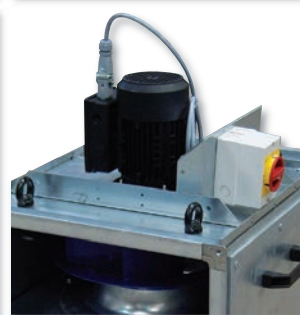
- Off the shelf and built to order panels
- Air quality sensors and energy savers
- Intelligent control software
- A range of remotes including touch screen

Noise Control

- Matching silencers available for all ventilation products
- Silencers designed to meet noise criteria
- Cleanable silencers
- Weatherproof silencers

Specialist Site Services

- Plant refurbishment
- Energy saving upgrades
- Noise reduction
- Site surveys
- Kitchen ventilation
- AHU flat pack installation
- Maintenance
- Spares



VES Head Office

Eagle Close, Chandlers Ford Industrial Estate, Chandlers Ford, Eastleigh, Hampshire SO53 4NF
Tel: +44 (0)23 8046 1150 Fax: +44 (0)23 8026 1204

Offices in London, Manchester, Glasgow and Birmingham

www.ves.co.uk

www.vesdirect.co.uk

sssales@ves.co.uk

VES reserves the right to amend product specifications and details without notice.



Better air for the built environment

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