Better air for the built environment

Barnet Hospital

Case study

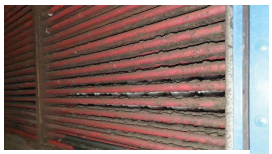
Increasing the AHU's life expectancy and improving the air quality served to patients and staff

VES successfully secured the works at Barnet Hospital through Bouygues UK. Many of the existing AHU's components were at the end of their recommended CIBSE lifespan and required replacement/upgrades. In accordance with HTM 03-01 guidelines VES successfully increased the life span of Barnet Hospital's air handling units as well as improving the air quality served to patients and staff.

Client	Bouygues UK
Sector	Healthcare
Challenge	Increase the life span of existing out-dated air handling unit
Success	Refurbishment of existing AHU and replacement of inefficient components

Challenge

As market leaders in AHU refurbishment, VES were approached by Barnet Hospital to work with them under the Health Technical Memorandum (HTM) which gives comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology to update Barnet Hospital's existing AHUs in line with this.

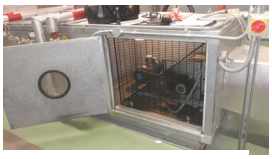


Frost coil contamination

Healthcare providers have a duty of care to ensure that appropriate governance arrangements are in place and are managed effectively to achieve patient comfort, ease of maintenance and inspection. VES undertook a full site survey for the client and identified a few key challenges that needed addressing including replacing end of life components, building redundancy into systems where necessary and reducing the maintenance tasks.

Out-dated AHU

In addition to the deterioration of the non-HTM 03-01 compliant AHUs and the space restraints caused by the AHUs being installed within internal plantrooms and the hospital being permanently occupied and in use, it was essential VES minimised shutdowns so that as much of the site could remain in operation at all times, whilst effectively replacing the AHU's components.



Out-dated fan and motor

Solution

Upon completion of VES' survey, VES provided customer insight into the existing AHUs and identified the need to replace out of date, worn and obsolete components, with new higher efficiency modern components.

Working in accordance with the HTM 03-01 specification and liaising with Barnet Hospital to minimise shutdowns, VES refurbished 6 AHUs. The majority of the existing AHUs were in operational condition but consisted of out of date components.

The project involved refurbishment of dampers, coils, plate heat exchangers, eliminators and drain pans, including applying a corrosion treatment. Replacement of out of date belt driven fans and motors with newly installed EC plug fans and IE4 super premium efficiency EC motors and integral speed controllers were also installed, designed to improve efficiency and reduce energy consumption. VES also installed new fan guards, as well as lockable hinged access doors.

Installed EC plug fan

New fan guard

New access panel

Refurbed AHU

Healthcare providers have a duty of care to ensure that appropriate governance arrangements are in place and are managed effectively to achieve patient comfort, ease of maintenance and inspection.

Results

VES' project managers and technical engineers worked closely with Bouygues UK's operations and logistics department throughout the duration of this project to ensure components were delivered on time to ensure a seamless completion of this project.

The unit alterations closely aligned to full HTM 03-01 compliance, as well as minimising the hospital's shutdown periods to ensure continued operation of all hospital areas. Removal of the existing belt driven fan and motor assemblies and upgrading to new energy efficient direct drive EC plug fans, eliminated losses created from the belt and pulleys being removed and increased energy efficiency and reduced ongoing maintenance costs.