Atelier House

Creating a modern office environment with VRV HR

A highly efficient Daikin VRV heat recovery climate control system was at the heart of a project to modernise an office building in north London, delivering higher efficiencies and forming an integral part of the interior design.

Public and private organisations are increasingly seeking highly efficient whole building solutions for climate control. The energy needs of modern buildings are becoming ever-more complex, with multiple requirements for lighting, internal climate control, hot water and refrigeration. However, these systems often operate separately, which can mean a huge amount of energy is wasted.

Daikin's VRV III heat recovery solution was chosen for Atelier House, a six-storey office building in Camden Town, north London. The multi-tenanted building, built in the mid 20th Century, has been updated with a full air conditioning system to improve energy efficiency and make it more appealing to potential tenants.

Daikin VRV heat recovery systems integrate heating, cooling, ventilation, air curtains and hot water, recovering "free" heat from areas requiring cooling and using it to heat other areas and provide hot water. The benefit for end users is that it can deliver high levels of comfort, while dramatically lowering running costs and carbon emissions in both new and refurbished buildings, driving savings on energy bills and surrendered carbon allowances.

The Daikin system was ideal for Atelier House, as it's flexible and cost effective system enabled the landlord to cope with future changes in building use, internal layout and tenant needs. A benefit compared to a conventional central heating system was a system that would reduce energy bills by half and can be installed with minimum disruption.

As well as providing a highly efficient climate control system, Daikin's VRV system also had to suit the look of the building – all the indoor units and pipework are exposed in the building's high ceilings and form part of the offices' interior design scheme.

James Chapman, Building Services Engineer at building services consultancy Watkins Payne, said: "We have specified the VRV system on previous projects and were happy with how it performed. We knew that it would work in the space available and that we could integrate it with other building services. Also, because we didn't want to put in false

ceilings that would partially block the building's high windows, the system also had to be a design feature, with a clean, polished finish."

Daikin's FXSQ concealed ceiling units were chosen. Ironically, one of the main benefits of these highly efficient units is that they are designed to blend unobtrusively with any interior décor: usually only the suction and discharge grilles are visible. At Atelier House, however, they are completely exposed.

Before the new VRV system could be installed, the original air conditioning system serving the top and first storeys, as well as the gas-fired central heating supplying the other floors, were all removed. Atelier House's windows were also replaced to improve the building's thermal performance, and the electrical system was upgraded.

Installation was carried out by Advent Ductwork Systems Ltd, on behalf of Morgan Lovell. Managing Director Peter Smith explained: "We installed 64 FXSQ units for heating and cooling, with secondary ductwork fitted behind aluminum cladding. Eight external condensing units were craned up onto the roof and these were connected to the internal units."

Daikin VAM heat recovery units were also installed to supply fresh air to the building, helping to improve air movement and create a healthier working environment.

The entire system is controlled using Daikin's iTouch Manager (iTM), a building management system that allows climate control to be adjusted in line with usage patterns to improve efficiencies. As well as making servicing and maintenance easier, iTM is particularly useful in multi-tenanted buildings as it enables building managers to calculate energy usage on a room-by-room basis, so tenants can be billed individually.

Unique to the iTM is its ability to control lighting, alarms and other systems using the WAGO I/O Modbus interface. This feature was used at Atelier House, with Daikin UK supporting the Advent team in commissioning the control system to ensure the building's mechanical systems were integrated fully.

One iTM control unit was installed on each floor, with three on the ground floor. The intuitive touch screen controls make it easy for tenants and the building manager to control and monitor the building systems and identify areas where energy is being wasted, to further improve efficiency.

Atelier House is an excellent example of how a whole building solution with heat recovery can create a comfortable office environment, even in older buildings. Integrating heating, cooling, hot water provision and ventilation in this way can improve energy efficiency dramatically, lower CO_2 emissions and save on energy bills and surrendered carbon allowances.

Atelier House now provides modern office space that appeals to potential tenants as it offers individual and intelligent control of tenants' working environments and energy bills.

VRV III units

Intelligent Touch Manager

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