

Case Study - 'Generator' formerly known as Shakespeare House, Cambridge



Smith's Aegean fan coil units installed to upgrade the heating and cooling system



Background

Generator has undergone a major refurbishment to provide fitted and furnished CatA office space. The whole building has been comprehensively redesigned and redeveloped to provide an enhanced office environment. As part of this comprehensive upgrade the heating and cooling provision needed to be extensively upgraded to provide both a high-quality environment but also to maximise the sustainability credentials.

The Challenge

The project was a complete refurbishment of an existing office building across 4 floors. Smith's worked with the Consultant, David Bedwell Building Services Consulting Engineers at the request of CPS Building Services. The requirement was to design the fan coil unit system to deliver the required thermal outputs at NR 35 or quieter. Smith's provided the full sound power test data for the consultant to carry out their own NR calculations. An important factor in the project was the availability of BIM files which Smith's provided as part of their service to the consultants. These were used to incorporate the fan coil units into the 3-D modelling of the HVAC services.

The design of the fan coil unit system was balanced and optimised to deliver the required thermal outputs at NR 35 or quieter.

The Solution

Smith's supplied 46 Aegean fan coil units in total with factory fitted controls and PICV (Pressure Independent Control Valves). Aegean SFC 235H EC horizontal fan coil units were selected and mounted below the ceiling and exposed in the open plan offices as a feature

of the building. Aegean SVFC 500 vertical wall mounted units with architectural casings are installed in the meeting rooms and kitchenette areas.

Products

A range of fan coils suitable for all kinds of commercial applications, from restaurants and hotels to office developments, with the ability to rapidly heat and cool large areas with much greater efficiency than other similar heating and cooling systems.

Aegean has been thoroughly updated incorporating some key features to future-proof the design and its capabilities:

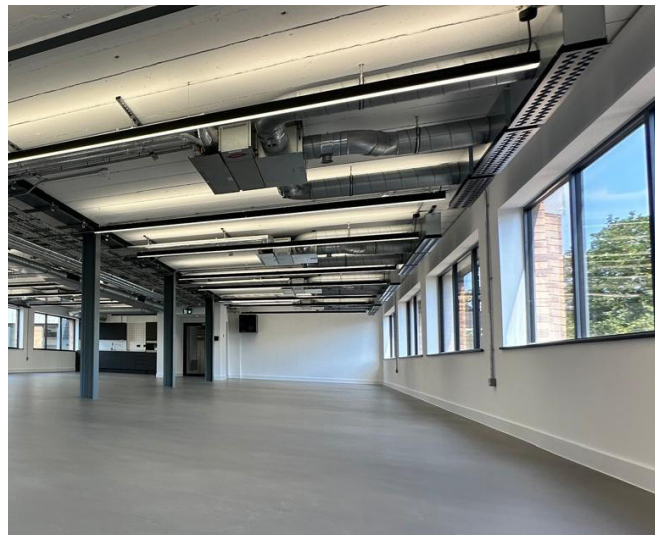
1. New updated Aegean has **5-row coils which can be adjusted for low LPHW temperatures**. Other fan coil units have a 4-row deep coil block with 3½-rows of cooling and ½-row of heating. Aegean has a 5-row deep block so it can have up to 1½-rows of heating. This futureproofs Aegean and ensures its suitability for the very low LPHW temperatures that are now being used for carbon reduction.
2. **Flexibility to change coils** Smith's has their own coil line that means that we can quickly change coil codes to alter pressure drops and outputs as required.
3. **Shallow units** Smith's has been able to incorporate Ø160mm Torin© fans into the Aegean 260mm version.
4. **Pod fans** Aegean is fitted with DIDW centrifugal pod fans. These fans are much more flexible than the more commonly used deck or tangential fans.

As part of the product update for Aegean the full range underwent independent performance testing at BSRIA and noise testing at SRL.

The standard inclusion of BIM files was an important factor in the success of the project



Incorporating the latest EC motor technology, which can result in running-cost savings as high as 80%, and with variable speed control as standard, the Aegean fan coils deliver heat quickly and quietly. Aegean with its EC fans are very efficient and fully comply with the Part L of the Building Regulations (2010). By using the variable fan speed, unoccupied setbacks etc. using the precise control provided by the BMS interfaces further energy consumption can be achieved. The Aegean range of fan coils is compatible with most types of renewable heat sources.



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