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Variable speed drives replace blade pitch control in City office HVAC system

Controlling air flow with ABB drives, instead of using variable pitch fans, has helped improve the reliability of the HVAC system in one of the City of London's architectural landmarks, the 55 Bishopsgate building.

"An upgrade was needed as the fan impeller units had worn and were causing numerous breakdowns," comments Ian Cannell of CSM UK, the company that provided the solution on behalf of the property owner, Deka Immobilien GmbH. "Stiff components within the fan impeller units would cause the positioning actuator to come under severe strain, damaging drive gearing and burning out control boards within the actuator. On several occasions the actuator had to be replaced, at a cost of £800.

"Spare parts were also becoming hard to find and often had to be transported from continental Europe, causing severe downtime, up to eight months. With no air conditioning on the affected floor, the tenants were then expecting a refund, as they were not receiving air conditioning as per contract.

"We contacted CSE Industrial Electrical Distributors an ABB dedicated HVAC partner. They supplied seventeen ABB variable speed drives, with IP54 enclosures, fourteen at 15kW, one at 11Kw and two at 22kW," Cannell says.

The impeller units were locked in optimum flow position and two variable speed drives were installed on each floor, matching the airflow requirement by varying the motor speed. All works were performed out of hours over a period of weekends.

"The drives have radically reduced maintenance by improving the reliability of the system. The system also draws less energy now that the fan speed is controlled by a variable speed drive," Cannell adds.

"CSE were chosen for their knowledge of the industry. We have an excellent relationship with CSE and have been using their equipment for many years."

The 55 Bishopsgate building is a city landmark prominently located next to Tower 42 (formerly NatWest Tower) and 99 Bishopsgate.

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Caption: Variable speed drives from ABB have drastically cut the HVAC maintenance costs at the 55 Bishopsgate building in the City of London.

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