GOAL

Identify over-ventilated areas where outside air can be reduced to save energy without compromising the ASHRAE Ventilation Standard

APPLICATION - FEDERAL OFFICE BUILDING

Under a short-term diagnostic project funded by GSA and DoE, the manager of a large Federal office building used an AIRXPERT multipoint monitoring system to identify air handling units (AHUs) that held energy-savings potential. This was accomplished by monitoring CO_2 to determine when excessive ventilation was being provided to occupants.

BENEFIT

Initial readings of CO_2 in four areas served by AHU-13 suggested that it was a candidate for energy savings. This assumption was verified when four additional monitoring points were set up in areas served by AHU-13 to obtain more conclusive data. Calculations based on CO_2 levels in the supply, return, and outside air at AHU-13 indicated that occupants were receiving an average of 24.0 cubic feet per minute (cfm) of outside air per person. This value is 20% above the minimum specified in the ASHRAE Ventilation Standard.

To further document the performance of AHU-13, its ventilation rate was gradually decreased to 12.3 cfm over several weeks. The data showed the ASHRAE standard no longer being met at the end of that test. The data also revealed that the overnight purge of the facility was incomplete.