Measured Air
PERFORMANCE

SETSAFE® – Case Study

"Idle Fume Hood Management"

Lab ventilation is one of the largest areas of energy use in lab buildings. It also poses the greatest opportunities for energy reduction and meeting sustainability goals. Significant efforts to save energy in laboratories often focus on reducing room ventilation rates, but these efforts are frequently constrained by fume hood airflow requirements. However, fume hood airflow settings often determine how low room ventilation levels may be set. These settings are often the cause of higher ventilation levels and excessive energy use. Hood related energy consumption during idle periods can be substantial, even with the hood sash closed. This is primarily due to the high minimum airflow settings used to ensure proper dilution of any contaminant spills. These settings are specified by ANSI Z9.5 and may be as high as 250 CFM for a 6-foot hood, excluding leakage. Most fume hoods go unused for over 70% of the time and, in many cases, they remain unused for even longer periods. The need for high minimum airflows decreases substantially after a hood has been in an "idle" for just a fraction of an hour. **SetSafe®** provides a safe, cost effective, and reliable way to monitor fume hoods and drive tremendous energy savings by reducing a hood's minimum flow once it has been idle for a short period of time.

The **SetSafe®** system reduces fume hood minimum airflow by implementing "idle fume hood management," a strategy that safely lowers hood ventilation during periods of inactivity while maintaining the laboratory's minimum ventilation requirements.

The critical parameters that **SetSafe®** monitors to reliably determine that a hood is inactive, and flows can be safely lowered, include:

- Sash Opening
- Hood Electrical Status
- History of Hood Access
- Reach Detection (optional)

Fume hoods can be idle up to 70% of the time- wasting tremendous amounts of energy. SetSafe® captures the savings during these prolonged periods

Case Study

A pilot implementation at a large pharmaceutical company in Cambridge of **SetSafe®** "idle fume hood management" technology achieved significant energy savings with an impressive return on investment of approx.12 months. By automatically managing airflow in two 135" horizontal sash fume hoods, the system reduced energy consumption by 700 CFM annually.

Implementation Details

Facility: Pharmaceutical Research Facility – Cambridge

- Equipment: Two 135" fume hoods with horizontal sashes
- Installation Timeline: 2 hrs. per hood
- Implementation Approach: Pilot program to validate technology and quantify benefits

The **SetSafe®** systems were installed on existing fume hoods without disrupting laboratory operations. The technology integrated seamlessly with the facility's existing Phoenix Controls system.

Key Results:

Annual Energy Savings: 700 CFM total (350 CFM per hood) assuming a conservative $8/CFM for conditioned air

- Annual Cost Savings: $5,600
- ROI under 2 years (without utility incentive)

SetSafe® Controller

SetSafe® is **easy to install with no on-going maintenance.** Installation is typically 2 hrs./hood with minimal impact on lab operations.

SetSafe® easily integrates with most fume hood controls to reduce hood minimum flows when the hood is determined to be idle.

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