

Emerging Energy-Saving Technologies Researched by the University of California

Presented by Debbie M. Decker
University of California, Davis
Environmental Health and Safety
American Chemical Society Fall 2009 National
Meeting, Washington, D.C.

Energy Saving Technologies

- Usage-based controls
 - Aircurity
 - Air Change Rate
 - After-hours set-back
 - Fume Hood Technology
 - Low flow hoods – 100fpm vs. 80fpm vs. 60fpm
 - Sash full open or 18"?
 - Autosash positioner
 - Zone presence sensors
 - MBCx – monitoring-based commissioning
 - Daylight harvesting
 - Backup systems and recirculating refrigeration systems
-

Usage-based controls

- Demand Control Ventilation System
 - Air change rate
 - After-hours set-back
-

Fume Hood Technology

- Low flow hoods – 100 fpm vs. 80 fpm vs. 60 fpm
 - Do you design for a sash full open or 18"?
 - Autosash positioner
 - Zone presence sensors
-

MBCx – monitoring-based commissioning

- For the existing building
 - Making sure the building laboratory airflow control system is operating as designed
 - Monitor the ventilation system to discover opportunities for energy efficiency
-

Daylight harvesting

- Not just motion detectors
 - Smart sensors that adjust lighting to meet a design criteria
 - Siting buildings to take advantage of natural light
-

Backup systems and recirculating refrigeration systems

□ Back up systems

- Emergency Lighting
- Freezers

□ Refrigeration systems

- Cooling water recirculation
 - Coolant-based cooling systems
-

Summary

- Usage-based Controls
 - Fume Hoods
 - MBCx
 - Lighting
 - Emergency Power
-

Acknowledgements

- Rebecca Lally, University of California, Irvine
 - rlally@uci.edu
 - Russell Vernon, University of California, Riverside
 - russell.vernon@ucr.edu
-

Contact Information

Debbie M. Decker

University of California, Davis

Environmental Health and Safety

167 Hoagland Hall

1 Shields Ave.

Davis, CA 95616

(530)754-7964

dmdecker@ucdavis.edu
