

Better Buildings By Design Conference
Burlington, Vermont February 11-12.

The Role of Controls in Commissioning *Green Buildings*

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Green Guidelines–LEED

- Commissioning Mandatory Prerequisite
- Energy Consuming Systems
- HVAC
- Lighting
- DHW



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*All of These Are
on the
BMS!*



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Use the BMS to Commission New Construction

- Use BMS Commands to Operate Equipment
- Observe Equipment Operation
- Change Set-Points



Use the BMS for Energy Optimization EA-1

- Air Side Economizer
- Water Side Economizer
- Scheduling
- Monitoring
- Alarms



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Use the BMS for Flush-Out—EQ-3.2

- 14,000 CF of OSA / SF Floor Area
- Interior Temperature at Least 60 dF
- Relative Humidity 60% Maximum
- Use Display for Set Points
- Trend Log for Submission



Use the BMS for Continuing Logging

- One to Several Dozen Key Parameters
- Boiler/Chiller Lockouts
- Free Cooling



Use the BMS for Continuing Logging

- VFD Speeds---Great Stuff
- HVAC Schedules—After the Storm
- Supply Air Temperatures



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BMS==EA Credit 5, M&V

- Break Down Power Consumption
- If You Can't Measure Waste You Can't Diagnose It
- Juvenile Correction Model



Use the BMS for Remote Monitoring

- Manager Access From Home—
Lockouts?
- Enterprise-Wide Access



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Automated Fault Diagnosis (AFD)

- The Next Big Thing
- Set Historical Alarm Points (Model Type)
- BMS Performs Calculations (Math Type)
- Pro-Rata Energy (Use Type)



Combine AFD and Remote Access

- The Next Really Big Thing
- 1000 Facilities
- Automatically Scan Key Parameters
- Pro-rate Current Energy Use
- Dispatch Service Personnel



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BMS for Water Consumption Tracking

- Construction Trend Logs Check for Leaks
- Occupancy Trend Logs Check for Leaks/Failures



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BMS Lighting Tracking

- Remote Monitoring of Lighting
- Tracking of Off-Hours Over-ride
- Task Lighting Usage
- Efficiency Does Not Mean Pain



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Outdoor Air Delivery Monitoring—EQ-1

- CO2 Concentrations
- OSA Delivery Volumes
- Naturally Ventilated Spaces—CO2—
The Next Big Thing



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And Don't Forget to Commission the BMS!

- Mandatory Requirement of LEED Programs
- NC, CI, CS, Hospitals, etc.
- R. Wilkinson article—February HPAC

<http://www.hpac.com/GlobalSearch/Article/78304>



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Thank You for Your Time!

This concludes the American Institute of Architects
Continuing Education Program

**AKF010 Commissioning
For New and Existing Buildings**



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Thank You For Coming!

**COMMISSIONING for
*LEED***

New and Existing Buildings

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