CCC PIER Research Program:

Program Advisory Committee (PAC) Meeting

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Agenda

- Update from CEC PIER
- CCC PIER Team
- Project Updates
- What Next?
CEC PIER Update
The PIER team

• PECI
• AEC
• QuEST
• Enovity
• Additional support:
  – Heschong Mahone Group
  – Eaton
  – EnerNOC
Project 2: Building Operations Assessment for Commercial Real Estate Transactions

- Research complete
- Pilots complete
- Optimized approach developed
- Final report complete
- Toolkit being finalized
- Outreach 2012
Project 3: Development of EBCx tools (1 of 2)

- ECAM v2.0 available
- Video tutorials
- New user guide

http://www.cacx.org/PIER/ecam/
Project 3: Development of EBCx tools (2 of 2)

- Calculation tool 95% complete
- Internal testing ongoing
- Outreach planning in progress
Project 4: Building Performance Tracking (1 of 2)

- Research complete
- Handbook published online
- Hard copies available
- 1,100 Downloads to date, 111 hard copies mailed
- Presented at BOMA Conference
- Article drafted for Buildings Magazine

www.cacx.org/pier/handbook
Building Performance Tracking Success Story
The Aventine

Glenborough’s Aventine facility in La Jolla, California, is a living example of how analytical tools and strategic planning can be combined to create a successful building performance tracking program. The results are an ENERGY STAR®-certified UCSD UCSD Leadership in Energy and Environmental Design (LEED) Platinum certification, and increased energy savings across the portfolio.

Glenborough uses the following tools and services to support its building performance tracking goals:

- **Benchmarking**: ENERGY STAR Portfolio Manager tracks greenhouse gas emissions and energy use, setting targets and monitoring progress.
- **Early Detection**: Using KPIs, the tool quickly identifies potential energy savings opportunities.
- **Performance Management**: A comprehensive approach to managing building performance and ensuring continuous improvement.
- **Automated System Optimization**: Using advanced analytics, the system automatically adjusts the building’s operations to improve efficiency and reduce energy consumption.

Glenborough’s Aventine facility features a state-of-the-art Building Automation System (BAS) that monitors and controls all aspects of the facility’s energy use, from lighting and HVAC systems to water usage. This system is integrated with the building’s energy management system, allowing for real-time monitoring and control.

4 case studies now online

©California Commissioning Collaborative
Project 5: Verification of Savings Guidelines

• Guidelines 99% Complete
  – Method 1: Engineering Calculations with Field Verification
  – Method 2: Equipment or End-Use Energy Measurement
  – Method 3: Energy Models with Interval Data
  – Method 4: Calibrated Simulation

• Pilots / Case Studies

• Workshops Planned
Project 6: Title 24 Enforcement / Effectiveness

• Research Report Complete
• Findings shared with code development stakeholder group
• Presentation to Western HVAC Performance Alliance
• Report highlighted during code development public workshop
• Findings are feeding into code compliance improvement task under AB 758
If he does it, so will I.
Contractors, Competitive Bidding and Code Compliance

Title 24 acceptance testing struggles

Contractor Responses
55% have had no training on Title 24
30% include acceptance testing in bids

Barriers to Compliance
- Any additional cost is significant in a competitive bidding process.
- Contractor training is insufficient.
- Technicians are not aware of reference materials.
- Uneven enforcement, with Orange County and Sacramento providing stronger models for enforcement.

The Path to Boosting Compliance

Developed Plan
Research report informed outreach plan.

Webinar
Utilize public relationships to recruit contractors for webinar trainings.

Tool Libraries & Bid Sheets
Promote tools available to contractors that facilitate the compliance conversation with building owners/managers.

Which produces the best result?
Implement “close-out” marketing campaign to encourage ongoing compliance after prior outreach campaign ends.

Show Off Your Skills!
Which do you think contractors will respond to the strongest?

MESSAGE 1: YOU'RE MISSING OUT!
“Building owners and managers are positively responding to our bid sheet. Are you one of the few who have not downloaded it yet? Click here for details.”

MESSAGE 2: COMPARE TO PEERS
Thank you for the overwhelming response to our Title 24 bid sheet! Not using the bid sheet yet? Demonstrate added value in your bid to potential clients by using this sheet to help build your case.”

MESSAGE 3: PROVIDE SPECIFIC TIPS ADDRESSING MISCONCEPTIONS
“Concerned your bid appears costlier than competitors? Include ‘Title 24 Acceptance Testing’ as a lane item, and provide our bid sheet for added value.”

Help Spread the Word
We are looking for additional associations, companies or publications interested in partnering for awareness.

Cast Your Vote!
Include your e-mail address with your vote for a post-conference update on how your selection fared.
The big picture

History
- Variable application
- Providers have own tools
- High level of QC
- Steep learning curve for new Cx providers

Now
- Consistent application of process
- Standardized toolset
- Reduced QC
- Easier entry for new Cx providers

Future
- Whole-building approach
- Increased use of advanced monitoring
- Small commercial
- Integration with DR / retrofits / cogen
What Next?

• Whole Building Savings Approach
  – Best practice / standards for rigor of monitoring tools
  – Cost-effective process for calculating whole-building savings
  – Accuracy of whole-building M&V
  – Implications of monitoring-based programs and utility program frameworks
What Next?

• Zero Net Energy
  – Develop ZNE case studies; highlight Cx
  – Needs assessment: Cx for ZNE buildings (Cx process and training needs)
  – Identify gaps in emerging tech that need special attention
    • Cx for submetering and advanced monitoring systems?
    • Envelope Cx using high tech diagnostics?
    • Daylighting Cx protocols?
What Next?

• Integrated Demand-Side Management
  – Recommendations for better integration of commissioning in integrated audit protocols
  – Technical implementation of IDSM (staged implementation of measures, commissioning of retrofits and DG, O&M considerations)
  – Commissioning of distributed generation systems
What Next?

• Title 24 Training & Development
  – Refine and deploy existing training materials and increase marketing efforts to boost participation in training offerings
  – Address code enforcement issues by developing streamlined and simplified enforcement protocols and/or influencing future revisions of codes that streamline or simplify requirements
What Next?

• And…?
  – Small commercial?
  – Cx training & certification?
  – Industrial / Agricultural?
Thank You!

http://www.cacx.org/PIER