

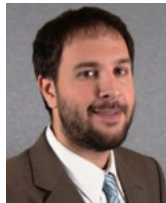


## Preliminary Technical Program

The fourth annual *CxEnergy Conference & Expo* provides more topical, in-depth educational presentations than ever for commissioning and energy management professionals. The following is a preliminary presentation lineup of speakers and topics. Check this link often for additions and the final schedule.

### Wednesday, April 26

#### Energy Performance in the new “LEED Normal”



**Mark Gelfo, P.E., LEED Fellow, CxA, EMP**  
**Justin Mulhollan, P.E., TLC Engineering for Architecture**  
**Christina Sprows, LEED Green Associate, U.S. Retail Architecture & Design Manager at TD Bank**

This session reviews how energy modeling and renewable energy analysis guided TD Bank’s prototype redesign to improve energy performance and meet new LEED v4 certification goals. Focuses include using energy modeling, and understanding the differences between LEED v2009 and LEED v4.

#### ISO 50001 Self-Reporting & Assessment Tool



**Jay Wrobel, Department of Energy**

The ISO 50001 energy management standard is a proven framework for industrial facilities, commercial facilities, or entire organizations to manage energy. The growth of ISO 50001 is expected to accelerate as an increasing number of companies integrate ISO 50001 into their corporate sustainability strategies and supplier requirements. This session provides a demo of DOE’s new self-paced tool for instituting ISO 50001.

#### Maintaining Temperature & Humidity in Critical Zones



**Mark Ritz, Rheem**

The battle to maintain temperature and humidity within critical zones is constant for HVAC engineers. This presentation discusses differences between the standard designs of humidity and temperature control versus the “predictable indoor

environment” humidity and temperature control. Learn how technology can provide neutral air zone in the most sustainable and efficient manner while providing real world, third-party validated data.

**Discover how much Water You’re Using and Use that Information to Optimize Your Facility**  
*Brent Baird, Instruments Direct*



The question all balancers need to answer is “how much water are we using.” Without this critical data, there is no basis to adjust or balance a hydronic system. This session explores the different water applications in a typical facility and breaks down the technologies on how to monitor the flow and energy from both a flow survey discovery process and a long-term dedicated metering solution.

**After Hours Cx – Lessons Learned from K-12 Schools**  
*Jim Magee CxA, EMP, LEED AP, Facility Commissioning Group*  
*Bob Knoedler P.E., CxA, EMP, Hanson Professional Services Inc.*



Reducing energy costs is one of the few ways in which a school system can save money without affecting classroom instruction. Studies have shown that commissioning in the education sector can save 10-15 percent in energy costs. This presentation examines lessons learned from commissioning K-12 schools as well as the challenges presented by the owners, A/E teams and contractors.

**Converting CAV to VAV in Florida: What does this really mean?**  
*Steven Harrell, CxA, LEED AP, SSRcx*  
*Tom Davis, BayCare Health Systems*



This presentation defines the steps necessary to truly convert all non-sensitive zones in a hospital facility from constant air volume control to variable air volume control and the procedures necessary to comply with AHCA requirements and receive Agency approval in the state of Florida. A case study will be presented highlighting St.

Joseph’s Hospital North where this conversion has occurred and been approved by AHCA. Energy benefits and complete results to date will be discussed in detail.

**Using Online Commissioning Tools to Save Time & Money and Add Value**  
*Joshua Gepner, Environmental Systems Design Inc.*



Project management, documentation management, and data-transfer activities within the construction industry are continuously becoming more reliant on advanced digital technology. This is especially true in the commissioning sector. This presentation provides information on the selection of an online commissioning tool that matches the intended use, budget and complexity, and rolling it out to internal and external stakeholders.

## **Optimizing Chilled Water Systems for Energy Efficiency and Occupant Comfort**

*Mark Benevides, Siemens*



A chilled water (CHW) system is often the most energy-intensive, occupant-satisfaction related component in a facility. This presentation provides information on implementing a holistic approach to CHW system management and the fundamental thermodynamic principles that will lead to reduced energy consumption, improved occupant comfort and extended equipment life.

## **Tracking Standards Developments and Best Practices in HVAC Air Distribution Systems**

*Neal Walsh, Aeroseal LLC*

*Michael Lorion, Airmax Service Corporation*



This presentation reviews key updates to the ASHRAE 189.1 Standard impacting air duct performance, ASHRAE SPC 215's work to determine leakage airflow and fractional leakage of operating HVAC air distribution systems, a case study on resolving air duct leakage in Florida multi-family condo complexes, and reviews best practices related to ductwork testing, installation and repair.

## **Existing Building Commissioning in Health Care Facilities**

*Saverio Grosso, CEM, ENERActive Solutions, an Edison Energy Company*



Drawing on technical examples, lessons learned, and best practices from a recent award-winning healthcare facility project, this presentation comprehensively explores the key components necessary to execute successful existing building commissioning (EBCx) projects in mission critical buildings.

## **Acceptance and Testing for a Quality Turnover to Sustainable Operations & Maintenance**

*Paul Raschilla, EMP, CHC, LEED AP, AKF Group*

*Jules Willinger, CxA, AKF Group*



This presentation demonstrates how to use commissioning to supplement the planning, design and construction process to achieve a better systems outcome. Attendees will learn the key closeout steps necessary for better operations and maintenance; how to line up the project contract responsibilities for a quality turnover to operations; and the basic tasks required for a quality acceptance and turnover process.

## **Building Enclosure Commissioning: Growing Trends in Higher Energy Performance & Operational Excellence**

*John Runkle, P.E., Intertek*



Ensuring the integrity of building enclosures has become increasingly complex. Over time specialty Cx disciplines, such as building envelope commissioning (BECx), have gained momentum as effective processes in achieving high performance. Using case

studies, this presentation explores real life examples of how BECx provides comprehensive quality assurance that can save time and money while simultaneously increasing a project's worth.

### **Energy Modeling as a tool for Retrocommissioning**

***John Bixler, P.E., LEED AP, Sebesta***



Energy modeling and retrocommissioning can effectively share information to aid in building investigations. The session provides an overview of the mechanics of energy modeling, specific energy model inputs that can be enhanced by RCx information, examples of how to include RCx findings in energy models, and discussion of the insights gleaned from an energy model that should be used in RCx, strategies to capitalize on synergies between the services.

### **GSA Project Nets \$48 Million Savings: A Case Study**

***Kevin Brown, EMP, ABM***



The GSA needed to replace aging building systems and regulate energy use in its Southern California portfolio. By utilizing an energy performance contract that leveraged future savings for financing this comprehensive energy retrofit is expected to cut these buildings' energy consumption by 38%, yielding a near \$50 million savings to taxpayers.

### **MBCx: The Next Wave of Energy Savings in Utility Incentive Programs**

***Ruairi Barnwell, DLR Group***



Monitor-Based Commissioning (MBCx) is the fastest growing form of commissioning, and utility companies are increasingly aligning incentive programs to fit the trend. The speakers provide a series of case study examples drawn from the ComEd MBCx program that illustrate the opportunities, challenges and best practices associated with implementing MBCx.

### **Your Control Systems Have Been Hacked, Now What?**

***Michael Chipley, PhD, LEED AP, The PMC Group LLC***

***Eric Nickel, Chinook Systems***



It's imperative that control system owners, facility managers, engineering, physical security, information assurance and others involved with the design, deployment and operation of control systems learn to detect, contain, eradicate and recover from a cyber-attack specifically targeting Control Systems. This presentation is an overview of the Advanced Control System

Tactics, Techniques and Procedures (TTPs) developed by the U.S. Cyber Command.

## **Fundamentals of Test & Balance for Engineers, Cx & Energy Providers**

*Jim Hall, P.E., TBE, CxA, Systems Management & Balancing, Inc.*



This practical, information-packed session explains many of the key test and balance issues—from precise specifications, to duct leakage testing, to pump- and fan-curve considerations—that if properly addressed in cooperation with an independent TAB firm can ensure that any project goes smoothly.

## **Development of an Energy Roadmap for Orlando International Airport**

*Nate Boyd, P.E., LEED AP, Hanson Professional Services Inc.*

*Jeff Daniels, CEM, LEED GA, Orlando International Airport*



A large airport authority sought to develop an “energy roadmap” for its growing campus. Gathering the requisite information, establishing benchmarks and targets, and performing condition assessments and audits were critical steps; along with collaborating to forecast demands, costs, budgets and goals.

Since these were phased efforts, it was vital to establish the sequence and prioritize the steps. This presentation will examine the development of the roadmap and how it will be used and periodically re-evaluated.

## **§179D Energy Efficient Commercial Building Tax Deduction**

*Nelson Marin, Walker Reid Strategies, Inc.*



Section 179D is an engineering-based tax incentive available for the reduction of energy costs in commercial buildings. The incentive allows for a tax deduction of up to \$1.80 per square foot. The deduction specifically applies to commercial buildings that notably reduce their interior lighting energy costs, as well as heating, cooling, and building envelope. This provides essential information required to utilize this incentive on behalf of commercial building owners.

## **Thursday, April 27**

### **Case Studies: Saving Energy without Large Capital Projects**

*Eric Weber, P.E., CEM, LEED AP, Emergent Solutions*



When people think of Energy Efficiency, they think of LED Lighting, central plant replacements and other large capital projects. Oftentimes, small and rural hospitals do not have the budget for state of the art equipment or systems. How is it that two such hospitals have gone from ENERGY STAR scores in the teens to the verge of ENERGY STAR certification? Find out how these facilities used people rather than equipment to achieve massive energy savings through creativity, systems and processes and having top down buy in from the c-suite.

## **DLC Networked Controls Specification Enables Utility Incentives**

***Howard Wolfman, P.E., Lumispec Consulting***



Industry standards for lighting control technology are lagging as tremendous innovation is occurring at the manufacturer level to reduce the cost and complexity of installing and commissioning the systems. Attendees will learn how to use the non-profit DesignLights Consortium (DLC) and its networked lighting controls qualified controls list as a tool in implementing and commissioning lighting control systems.

## **Measurement and Verification of Heat for Thermal Energy Credits**

***Thomas D. Prevish, Ph.D., P.E., NorthWest Engineering Service, Inc.***



The prevalence of Combined Heat and Power (CHP) distributed generation systems has fostered an interest in verifying both the electricity and heat utilized by customers receiving tax incentives offered by state and federal energy efficiency and renewable energy programs. This presentation discusses typical system configurations, accuracy considerations, and regulatory guidelines for counting thermal energy credits, including the role of third-party verification and

commissioning.

## **Preserving the World's Art and Artifacts through Existing Building Commissioning**

***Ryan Lean, P.E., LEED AP, Jaros, Baum & Bolles***

***Molly Dee, LEED Green Associate, WELL AP, Jaros, Baum & Bolles***



Installing a cutting-edge HVAC system goes a long way in successfully controlling temperature and relative humidity in any space, but complications may still arise. The Brooklyn Museum, one of the oldest and largest in the US, experienced the challenges associated with gallery climate control following a phased renovation project. To diagnose the cause of unstable temperature

and relative humidity in gallery spaces, an EBCx process was successfully implemented on their gallery HVAC systems.

## **ASHRAE 90.1-2016, Energy Standard for Buildings – Review of Changes**

***Richard Lord, Sr Fellow/ASHRAE Fellow, ASHRAE 90.1 co-vice chair***

***United Technologies – Climate Controls and Security (Carrier)***



The presentation will focus on the updates to the ASHRAE 90.1-2016 Energy Standard for Buildings including envelop, mechanical, lighting and performance modeling changes relative to ASHRAE 90.1-2013. It will also include some overall background on the standard and its overall impact on Building Energy Efficiency and Design.

## Performance Testing for the Enclosure

*Elizabeth Cassin, RA, LEED AP, Wiss, Janney, Elstner Associates, Inc.*

*Fiona Aldous, BECxP, CxA+BE, Principal, Wiss, Janney, Elstner Associates, Inc.*



Field performance testing is an integral part of the Building Enclosure Commissioning process. Testing helps validate that the enclosure meets the performance requirements for the project, and is generally performed to verify air tightness, water tightness, adhesion, energy efficiency, among others. This session discusses typical industry-established test methods in detail to demonstrate the level of effort required for the testing as well as why the tests are performed.

## The Energy/Water Nexus: Seeking Opportunities for Savings

*Melissa Darr, Arcadis*



This presentation examines the strong interconnection between water and energy use at the municipal and building level. Strategies to identify inefficiencies and to increase opportunities for savings will be discussed. Attendees will gain an understanding of water demands of various energy production technologies and the energy demands of various water treatment methods and the true cost of water at a site.

## Commissioning Lighting Control Systems

*Jesse Felter, SSRCx*

*Tom Divine, P.E., SSRCx*



The Requirements for lighting controls become more complex as energy-conservation codes evolve. With each level of increased complexity, the benefits of formally commissioning lighting control systems increase. There are many steps to examine when commissioning lighting controls, following energy code requirements. This presentation examines the applicable codes, designing the project scope and best practices associated with

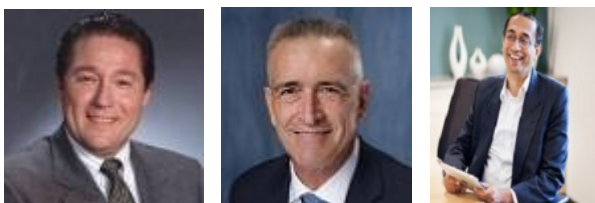
commissioning lighting control systems.

## Building Systems Commissioning – An Owner’s Approach to Maximize Benefits of the Cx Process

*Bradley Pollitt, AIA, UF Health Shands Hospital*

*Mark Dykes, UF Health Shands Hospital*

*Sanjyot Bhusari, P.E., CEM, LEED AP Affiliated Engineers*



The overall objective was simple—create efficient, high-performing buildings and save money on the resulting utility reductions. Getting there was tougher. The UF Health facilities Vista Rehab and Cancer Hospital (South Tower) both received recognition from the American Hospital Association for their efforts. This session outlines their journey, its challenges, lessons learned and successes.

## **Controls Verification + Test & Balance = A Smoother Commissioning Process**

*Justin Garner, P.E., TBE, CxA, Engineered Air Balance Co., Inc.*



When properly specified, Total System Balance of HVAC systems includes verification of controls. Focusing on terminal units and AHUs as examples, this session presented by AABC will explore how complete verification of control configurations and sequences by the test and balance agency can save significant commissioning time.

## **Commissioning of cGMP and Laboratory Systems**

*Michael Conway, CEM, CxA, exp U.S. Services Inc.*



This presentation focuses on commissioning unique systems associated with pharmaceutical, bioTech and manufacturing facilities. Its emphasis is the importance of the commissioning process for FDA regulated systems and environments – from installation verification and start-up, to operational verification and turnover packages – noting all steps must be completed and documented to follow the conditions required of these critical applications.

## **Effective Building Automation Controls Integration**

*Jeremy Bartlett, CxA, RMF Engineering*



This presentation focuses on design and construction phase design review with an emphasis on ensuring controls integration between traditional building automation systems and packaged control technologies. Laboratory facilities present unique challenges for traditional building automation systems and packaged laboratory controls. We cover the steps necessary to ensure functional, safe and efficient controls integrations across building systems.

**Presented by:**



**We hope to see you in Orlando!**