



## Preliminary Technical Program

The third 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.

### Tuesday, April 12

#### **Safety & Commissioning: Practical, Regulatory & Ethical Issues**



***Doug Ekstrom, PE, CxA, Jacobs Engineering***

This presentation provides a review of an overall safety culture, how it impacts the commissioning practice, and how it relates to industry efforts in a climate that encounters greatly varied scopes, locations, and systems being commissioned with equally varied levels of care conducted during the process.

#### **The Future of Building Optimization & Commissioning Services: Market Drivers, Barriers & Trends**



***Benjamin Freas, LEED AP, Navigant***

The author of Navigant's widely cited 2015 research reports on future trends in demand for building optimization and commissioning services provides a primer on what's driving growth. Topics range from building envelope commissioning and onsite energy generation to demand for new technology from building owners and operators.

#### **Standard 211P: Taming the "Wild West" of Commercial Building Energy Audits**



***Jim Kelsey, PE, kW Engineering***

Standard 211P will change the way that ASHRAE defines Level 1, 2 and 3 energy audits, including energy auditor qualifications and options for online audit delivery and data exchange formats. The chairman of the committee developing the standard provides vital insight for energy auditors and those with plans to hire one.

## The Role of the Commissioning Authority in Public Private Partnership (P3) Projects



**Scott Gordon, PE, LEED AP, CxA, TTG Commissioning**  
**Ron Sheldon, PE, TTG**

The Public-private partnership (P3) model offers a promising method of financing public infrastructure projects by using private capital. These projects create unique challenges for the commissioning team. Using its role in the award-winning Long

Beach Court House project as a case study, TTG Commissioning provides insights into the roles of the CxA and commissioning oversight personnel in a P3 project.

## Managing Completion: A Practical Guide to Getting Projects Done On Time



**Scott Wells, CxA, Alderson Engineering**  
**Mike Locke, MechTech Inc.**

You've been there more than once: final completion is just around the corner and many systems have not been tested completely.

This presentation will review a variety of field-developed tools and strategies to successfully manage the commissioning of the project

from inception, through completion, to occupancy.

## The Next Big Things: Energy Performance and Renewable Energy



**Mark Gelfo, PE, CxA, EMP, TLC Engineering for Architecture**

This presentation will trace the modern history of buildings, technology, and energy performance, before looking toward the future of commissioning and energy management: greater focus on energy performance and renewable energy sources.

## Automated Equipment Data Analytics to Detect Issues, Trends, Faults & Anomalies



**Paul Bergquist, SkyFoundry**

Using real world examples, this presentation reviews the method of application and the capabilities of automated analytics for smart devices. The session shows how applying analytics to data from sensors, meters and building equipment systems enables operators to identify operational faults, deviations from expected performance, and opportunities for energy and cost savings.

## AABC National Standards for Total System Balance, 7th Edition: A Guided Tour



**Gaylon Richardson, TBE, CxA, Engineered Air Balance Co., Inc.**

Don't miss this guide to the most important changes in AABC's all-new, just-published National Standards, the organization's first ANSI approved standard. The comprehensive rewrite includes new material on testing energy recovery systems and chilled beams, expanded material on hydronics, a chapter on TAB of healthcare facilities and much more.

## Completing a Global Enterprise Building Commissioning Program in Six Months



**Michael Chimack, PE, QCxP, PMP, CEM, LEED GA, Siemens**  
**Steven Dodd, EMP, LEED AP, Siemens**

Six months to complete an existing building commissioning program at 12 facilities in 8 countries is daunting. This, real-world case study with lessons learned shows how with coordination, global resources and a proven approach, it was completed and

exceeded Cx Objectives.

## A Deeper Dive into ENERGY STAR for Commercial Buildings



**Nils Klinkenberg, LEED AP, The Cadmus Group on behalf of EPA**

More than 40% of the buildings across the U.S. have benchmarked energy performance in EPA's ENERGY STAR® Portfolio Manager® platform. This session delves into related topics such as weather normalization, analytical models behind the ENERGY STAR score, EPA's Water Sense Program, upcoming changes to Portfolio Manager and resources available to energy service providers.

## Compliance with Lighting Standards and Management Systems



**Howard Wolfman, PE, Lumispec Consulting**

This session features a discussion and explanation of the standards development work being done by the new ANSI C137 Lighting Systems Working Group and how these comprehensive lighting standards will impact building and structure commissioning processes.

## Commissioning Emergency Power Systems in Healthcare Settings



**Justin Garner, PE, CxA, Engineered Air Balance Co., Inc.**  
**Dan Chisholm, Sr., MGI Advisory Services**

Emergency power systems are critical to life safety codes and continuous operations in healthcare, research and mission critical facilities. This presentation focuses on the unique aspects and challenges that are present when commissioning emergency electrical power systems, both new and existing and meeting code and regulatory requirements.

## How-to: Commissioning Design Reviews for the Building Envelope



**Stevan Vinci, LEED AP, Morrison Hershfield**  
**Maurya McClintock, Associate AIA, LEED AP, MCC Facades**

This session provides an overview of the standards relating to BECx, from design phase activities to design reviews, providing full-wall elevation examples showing the transition from below grade to above grade and to the roof. Attendees will learn how to trace the various enclosure barriers (air, thermal, moisture, and vapor) to ensure continuity throughout the whole enclosure.

## Energy Modeling Tools - Solutions for Creating an Intelligent Building



***Neil Maldeis, PE, CEM, Trane***

This session shows how energy modeling software tools can identify specific energy saving opportunities for old and new buildings by using a sophisticated software tool to re-create building systems in a simulated environment. This provides a powerful resource for making infrastructure changes in a virtual environment and testing various solutions to determine which would function best in the building.

## 99.999% Uptime: Beyond the Numbers in Datacenter Reliability



***Tor Kyaagba PE, CEM, Google***

Datacenters are at the apex of mission criticality. “99.999% uptime” is more than a hope or target, it’s a management system. Attendees will learn how to balance the benefits and costs associated with trying to achieve greater energy efficiency, reliability, and lower operating costs as well as the requirements of the applicable codes and standards, including The Green Grid: PUE (power usage effectiveness) Metric.

## Evolution of Commissioning: Yesterday, Today and Tomorrow



***Robert Knoedler, PE, CxA, EMP, Hanson Professional Services Inc.***

***Jim Magee, CxA, EMP, Facility Commissioning Group***

This presentation will provide a brief history of the Cx industry, along with recent initiatives regarding standards, codes and related changes to LEED’s requirements and credits for Cx. In addition, the presenters will discuss concerns regarding some of the language

and requirements being proposed in draft codes and standards; as well as their forecasts for the industry going forward.

## The Internet of Things (IoT): A New Generation of Tools for Energy Management & Ongoing Cx



***Daniel McJacobson, PE, CPMP, LEED AP, McGuire Engineers***

The IoT is creating a huge buzz in energy management, but remains a somewhat nebulous concept. This presentation will start with the foundation of what the IoT is, and how it relates to buildings. Topics will cover tools available on the market, examples of their features, benefits and pitfalls and how the IoT can enable ongoing Cx.

## PACE Financing as a Tool for Efficiency Upgrades for Commercial Buildings



***Jonathon Blackburn, Texas PACE Authority***

The property-assessed clean energy (PACE) model is an innovative mechanism for financing energy efficiency and renewable energy improvements, allowing local or state governments and other authorities to fund up-front costs of energy improvements from HVAC to building envelope upgrades to solar and more. This session provides real-world examples of how to leverage this financing to initiate an

energy retrofit project.

## Ultrasonic Flow Meter Best Practices for Commissioning and Balancing



***Brent Baird, Instruments Direct***

This presentation provides balancers, commissioning authorities, facilities managers, contractors and engineers step-by-step best practices for common applications, installations and solutions on how to optimize their use of ultrasonic flow meters. This also includes a review of the evolution of ultrasonic technology, the science behind it, and an overview of the new technologies of today and tomorrow.

## Wednesday, April 13

### What Was Hiding in the BAS: Horror Stories & Lessons Learned



***Ed Ritter, PE, CxA, LEED AP, Barton Associates***

This review of energy audit and retrocommissioning findings covers issues such as simultaneous heating and cooling, short cycling, incorrect economizer cycles, occupancy schedule issues, ventilation problems, and more, illustrating how deficiencies looked on the BAS, what was found at the equipment, and the impact on operating costs, safety and occupant comfort.

### BIM for Facility Management: Case Studies



***Tony Rinella, Associate AIA, Strategic Building Innovation • bimSCORE***  
***Calvin Kam, PhD, AIA, PE, LEED AP, Strategic Building Innovation • bimSCORE***

Many organizations struggle with incremental experimentation in BIM, while some building owners develop a comprehensive plan addressing needs as diverse as linkage of asset and facility management data with facility operations systems, BIM library management, and stereoscopic 3D visualization. The presenters will use case studies to demonstrate orderly methods and practical results owners can employ to optimize the value they derive from BIM investments.

### OLEDs – The Other Solid-State Lighting Technology



***Dr. John (Jack) W. Curran, LED Transformations***

LEDs dominate the conversation in lighting. However, Organic Light Emitting Diodes (OLEDs) offer new and exciting capabilities where the light becomes the luminaire. Dr. Curran provides an introduction to the technology, including a comparison with LEDs, highlighting the advantages and disadvantages of OLEDs and what the future holds for this unique technology.

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



***Jim Hall, PE, 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.

## Commissioning Research Laboratory Buildings: Case Studies



**Mark Leafstedt, PE, CxA, EMP, TMCx Solutions**

This presentation covers the commissioning of four different research facility projects with laboratory fume hood systems. Critical issues discussed include: integration of the lab control system with the BMS, consideration of a lab space as a single system, fire alarm shutdown / life safety, lab exhaust, redundancy, graphics, chilled beams, sequence of operation details, and space/building pressure considerations.

## Ensure Customers are Prepared to Maximize Investments in Data Analytic Tools



**Brandy Moore, CEM, PMP, Schneider Electric**

Automated fault detection, data analytic tools and optimization software are being adopted in facilities worldwide. This session provides an understanding of how operational change can maximize the impact of these investments through case studies of customers that successfully integrated technology into their building management operations to realize measurable, sustainable improvement in energy spend, staff optimization and vendor management.

## Case Study: Commissioning Fleet Maintenance Facilities



**Jared A. Higgins, PE, CEM, Parkhill, Smith & Cooper Inc.**

This session explores the nontraditional systems and equipment that are commissioned for operations and transit facilities. The presentation will follow a case study of a recent project consisting of 135,000 square feet of operations, maintenance, fueling, and vehicle washing. Discussion will also include how to develop commissioning processes for equipment that has difficult-to-find information needed to test operationally.

## School District Retrocommissioning Project Shows Evolution/Future of Commissioning



**Ruairi M. Barnwell, BEAP, HBDP, QCxP, LEED AP, DLR Group**

**Peter J. Turek, CxA, DLR Group**

DLR Group's retrocommissioning and building performance assessment of 45 school buildings in the Rockford, Ill School District provides an educational experience in the evolution of the commissioning profession. Goals of elevating the human experience through occupant comfort, productivity, health and wellbeing, are parallel to achieving carbon and energy reduction goals for optimization of building performance. This requires a different approach to the commissioning process, recomposing of the commissioning team and rethinking strategies and performance metrics.

## Understanding Hot Water Consumption, Energy Use & System Efficiencies in High Use Facilities



### ***Shaun Thomas, Rheem Manufacturing***

This session shows how to estimate hot water demands and determine the requirements for calculating the capacity for the water heating system in high use facilities. Topics include the effects of efficiency on the consumption of energy in water heating systems, how those efficiencies calculate into actual costs, how specifying higher efficiency equipment can reduce energy consumption and operating cost (with realistic ROIs) and emerging technologies.

## Exploring Data Analytics to Calculate ROI on Energy Storage



### ***John Merritt, Ideal Power***

This session explores the data analytics, system capabilities, cost drivers and best practices for evaluating and sizing energy storage systems for demand management applications using real-world building load profile data. Peak demand management is a principle concern for commercial and industrial building owners and operators. Payback analyses for energy storage are more complex than calculating savings for onsite energy generation because they require a larger set of data points based on utility peak demand charges and a building's energy consumption profile.

Presented by:



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