

The background of the entire page is a photograph of a city skyline at sunset. The sky is a mix of orange, pink, and purple. Several skyscrapers are visible, with the most prominent one on the left being a tall, dark building with a grid-like facade that reflects the sunset light. To the right of this building is another tall, dark building with a more complex, stepped top. In the foreground, there are several shorter buildings, including one with a white facade and vertical lines. The overall scene is a dense urban landscape.

CX

ENERGY

2016

CONFERENCE & EXPO

DALLAS, TX | APRIL 11 - 13

www.CxEnergy.com

Welcome to CxEnergy

The #1 Commissioning and Energy Management Event of the Year!

The renowned **Hilton Anatole**, located just minutes from downtown Dallas, is this year's venue. Conveniently located near Dallas/Fort Worth International Airport (15 miles) and Dallas Love Field (4 miles), we know you will enjoy the luxury and many amenities this classic location has to offer.



PROGRAM HIGHLIGHTS

Monday, April 11



CxA Workshop & Exam

8:00 am – 5:00 pm *Batik Room*

The CxA Workshop is conducted prior to the CxA exam. The exam is a four-hour closed-book exam that tests candidates on their knowledge of the commissioning process, as well as a

general understanding of building systems and how commissioning fits into the full construction process.



Validation Exam

1:00 pm – 5:00 pm *Batik Room*

In addition to workshop attendees, volunteers to validate the new exam for compliance with ANSI/DOE accreditation are welcome to take the exam. Those who pass the exam will earn 25 credits toward their three-year recertification requirement of 50 credits.

Welcome Reception

5:30 – 7:00 pm

Join us in the Exhibit Hall for the official opening of CxEnergy 2016. Enjoy complimentary cocktails and hors-d'oeuvres and network with your colleagues while looking over the latest tools and technologies for commissioning, TAB and energy management.

Tuesday, April 12



Plenary Session

8:00 am *Stemmons Ballroom*

Update on ANSI/DOE Accreditation for CxAs

Concurrent Technical Presentations

10:00 am – 12:15 pm

Choose from one of four concurrent one-hour technical sessions led by experts on commissioning, TAB and energy management. (See program descriptions, schedule beginning page 3.)



Lunch in the Exhibit Hall

12:15 pm

Concurrent Technical Presentations

2:00 pm – 5:30 pm

Reception in the Exhibit Hall

5:30 pm – 7:00 pm

Wednesday, April 13

Concurrent Technical Presentations

8:00 am – 11:30 am

Brown Bag Lunch

11:30 am – 12:30 pm

Thursday & Friday April 14-15

EMP Seminar

8:00 am – 5:00 pm *Batik Room*
(Thursday)

EMP Seminar

8:00 am – 12:00 noon (Friday)

EMP Exam

1:00 pm – 5:00 pm



The Energy Management Process Seminar serves as preparation for the EMP exam. The EMP Seminar is conducted over a day and a half, followed by a four-hour closed-book exam that tests candidates on their knowledge of energy management principles and the EMP process.



Continuing Education Credits

Attendees of all certification and concurrent technical sessions will earn continuing education credits toward CxA recertification as well as AIA requirements.

PROGRAM AT A GLANCE

Monday, April 11

6:00 am Registration opens for CxA Workshop (*Batik Room*)
7:00 am Breakfast, CxA Workshop
8:00 am CxA Workshop
12:00 noon Lunch, CxA Workshop
1:00 – 5:00 pm CxA Exam
5:30 – 7:00 pm Welcome Reception in Exhibit Hall

Tuesday, April 12

6:00 am Registration
7:00 am Breakfast (*Atrium I*)
8:00 am Opening Plenary Session (*Stemmons Ballroom*)
8:45 am Meet & Greet in Exhibit Hall
10:00 – 11:00 am [Technical Sessions
11:15 – 12:15 pm]
12:15 pm Lunch in Exhibit Hall
2:00 – 3:00 pm [Technical Sessions
3:15 – 4:15 pm]
4:30 – 5:30 pm [Technical Sessions
5:30 – 7:00 pm Reception, Exhibit Hall

Wednesday, April 13

7:00 am Breakfast (*Atrium I*)
8:00 – 9:00 am [Technical Sessions
9:15 – 10:15 am]
10:30 – 11:30 am [Technical Sessions
11:30 – 12:30 pm Brown Bag Lunch
& Roundtable Discussions

Thursday, April 14

7:00 am Breakfast for EMP Seminar (*Batik Room*)
8:00 – 5:00 pm EMP Seminar (*Lunch Included*)

Friday, April 15

7:00 am Breakfast for EMP Seminar (*Batik Room*)
8:00 am EMP Seminar
12:00 pm Lunch
1:00 – 5:00 pm EMP Exam

PRESENTED BY



CxENERGY PROGRAM

TUESDAY, APRIL 12, 2016

7:00 am - 6:00 pm

Registration

8:00-8:45 am

Opening Plenary Session Stemmons Ballroom

7:00-8:00 am

Breakfast

8:45-9:45 am

Meet & Greet in Exhibit Hall

10:00-11:00 am

STEMMONS I

Safety & Commissioning: Practical, Regulatory & Ethical Issues

*Doug Ekstrom PE, CxA, Jacobs Engineering
Ted Kuzel, 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.

STEMMONS II

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.

STEMMONS III

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.

CARPENTER

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

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

The Public-private partnership (P3) model is a promising method of financing public infrastructure projects by using private capital. These projects create unique challenges for the Cx 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 Cx oversight personnel in a P3 project.

11:15 am - 12:15 pm

STEMMONS I

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.

STEMMONS II

Building Trek: The Next Big Thing in Energy Performance

*Mark Gelfo, PE, CxA, EMP, LEED Fellow,
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.

STEMMONS III

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.

CARPENTER

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.

2:00-3:00 pm

STEMMONS I

Completing a Global Enterprise Building Commissioning Program in Six Months

Michael Chimack, PE, QCxP, 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.

STEMMONS II

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.

STEMMONS III

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 commercial building space in the U.S. has benchmarked its 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 WaterSense® Program, upcoming changes to Portfolio Manager and resources available to energy service providers.

CARPENTER

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.

3:15-4:15 pm

STEMMONS I

Commissioning Emergency Power Systems in Healthcare Settings

Justin Garner, PE, CxA, TBE,
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.

STEMMONS II

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.

STEMMONS III

How-to: Commissioning Design Reviews for the Building Envelope

Stevan Vinci, BECxP, LEED AP, Morrison Hershfield
Maurya McClintock, 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.

CARPENTER

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.

4:30-5:30 pm

STEMMONS I

STEMMONS III

Case Study: Commissioning Fleet Maintenance Facilities

*Jared Higgins, PE, CEM, CPMP,
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 in order to test operationally.

STEMMONS II

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.

School District Retrocommissioning Project Shows Future of Commissioning

*Ruairi Barnwell, BEAP, QCP, LEED AP,
Peter Turek, CxA, LEED EB, DLR Group*

The retrocommissioning and building performance assessment of 45 school buildings provides an educational experience in the evolution of the commissioning profession. Goals of 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 the commissioning team and rethinking strategies and performance metrics.

CARPENTER

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.

5:30-7:00 pm

Reception in the Exhibition Hall

WEDNESDAY, APRIL 13, 2016

7:00-8:00 am

Breakfast

8:00-9:00 am

STEMMONS I

STEMMONS III

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 like simultaneous heating and cooling, short cycling, incorrect economizer cycles, occupancy schedule issues, ventilation problems, and more. The presenter will illustrate how deficiencies looked on the BAS, what was found at the equipment, and the impact on operating costs, safety and occupant comfort.

STEMMONS II

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.

BIM for Facility Management: Case Studies

*Tony Rinella, Associate AIA,
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 receive from BIM investments.

CARPENTER

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

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

This practical, information-packed session will explain 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 more smoothly.

STEMMONS I

Commissioning Research Laboratory Buildings: Case Studies

Mark Leafstedt, PE, CxA, EMP, TMCx Solutions

This presentation will cover 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.

STEMMONS II

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.

STEMMONS III

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.

CARPENTER

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.

10:30-11:30 am

STEMMONS I

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

*Daniel McJacobson, PE,
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.

STEMMONS II

Commissioning Case Study: University of Iowa's Bowen Science Building HVAC Modernization Project

John G. Bixler, PE, LEED AP, Sebesta

The presentation includes a case study of a project to modernize the mechanical systems of the University of Iowa's Bowen Science Building. It covers the advantages of a whole building testing approach prior to the design of a project, the challenges of transitioning all the identified deficiencies to contract documents, the role of the commissioning team, and lessons learned from the in-depth examination of a 40 year old lab building.

STEMMONS III

Commercial Duct Systems: The State Of Regulatory Compliance, Design & Best Practices

Neal Walsh, Aeroseal

This presentation will review key updates to the ASHRAE 62.1 standard for ventilation and indoor air quality, the SMACNA duct design manual for energy efficiency and other related industry guidelines. Additionally, this presentation will review best practices related to ductwork testing, installation and repair, using several fieldwork examples of U.S. school buildings that realized significant energy savings and improved indoor air quality through duct remediation.

CARPENTER

The Critical Role of Cx in Biosafety Level 3 Labs

*Mike Brueggerhoff, CxA,
Brian Bennick, CxAP, CPMP, EMP,
Bob Emerson CBCP, LEED AP, WSP + ccrd*

BSL-3 labs in hospitals are used for diagnosing agents such as drug resistant TB (MTB), anthrax and Ebola. Safety is paramount and many aspects of BSL-3 lab construction success are dependent on the CxA. This session draws upon the presenters' broad experience in working with architects, engineers and hospital owners to ensure these labs meet specifications and are safe for occupants and the facility.

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