Join us for the #1 Event in Commissioning, Energy Management, and Building Technology!

San Diego, California
HILTON SAN DIEGO BAYFRONT

“The highest quality Cx and energy conversation I’ve ever attended.”
- Thomas Sockwell, TBE, CxA, TAB Commissioning Services, Inc.

www.CxEnergy.com
Join Us at CxENERGY 2020!

PROGRAM AT A GLANCE

TIME | MONDAY, APRIL 6 | TUESDAY, APRIL 7
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7:00 am - 8:00 am | Registration for CxA Workshop & EMP Seminar | Registration & Breakfast
8:00 am - 5:00 pm | Commissioning Authority (CxA) Workshop & Exam | Concurrent Technical Presentations
8:00 am - 5:00 pm | Energy Management Professional (EMP) Seminar & Exam | “Meet & Greet” with Sponsors & Exhibitors
8:30 am - 3:30 pm | Breakfast and lunch will be provided for all pre-conference workshops and seminars. | San Diego Airport Technical Tour
8:30 am - 4:30 pm | Mission-Critical Workshop | UCSD Utility Plant Tour
5:00 pm - 7:00 pm | Welcome Reception in the Expo Hall |

TIME | WEDNESDAY, APRIL 8 | THURSDAY, APRIL 9
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7:00 am - 8:00 am | Registration & Breakfast | Welcome Reception in the Exhibit Hall
8:00 am - 8:45 am | Opening Plenary Session |
8:45 am - 9:45 am | “Meet & Greet” with Sponsors & Exhibitors |
10:00 am - 12:15 pm | Concurrent Technical Presentations |
12:15 pm - 1:45 pm | Lunch in the Expo Hall | 8:00 am - 11:30 am | Concurrent Tech Presentations
1:00 pm - 3:00 pm | San Diego Airport Technical Tour | 11:30 am - 12:30 pm | Brown Bag Lunch
2:00 pm - 5:30 pm | Concurrent Technical Presentations |
3:30 pm - 5:00 pm | UCSD Utility Plant Tour |
5:30 pm - 7:00 pm | Reception in the Expo Hall |

PRE-CONFERENCE PROGRAM

Commissioning Authority Workshop & Exam
Monday, April 6 – Tuesday, April 7
8:00 am – 5:00 pm, $950
This highly interactive workshop covers both new and existing building commissioning, and includes many group breakout activities where attendees will use project case studies to develop and discuss samples of key commissioning deliverables. The 4-hour, closed-book CxA exam is offered at the end of the second day to prequalified candidates.
Note: Individuals interested in CxA certification must submit a completed CxA Application 21 days in advance.

Energy Management Professional Seminar & Exam
Monday, April 6 – Tuesday, April 7
8:00 am – 5:00 pm, $950
The New EMP Seminar & Exam were developed to align with the new requirements for ANSI/DOE accreditation. The EMP program is a commissioning-based approach that maximizes energy savings and optimizes building performance. It also provides relevant information about existing building commissioning.
Note: Individuals interested in EMP certification must submit a completed EMP Application in advance.

New EMP Seminar
8:30 am – 3:30 pm, $250
The New EMP Seminar is designed for CxAs, Engineers, and TAB Professionals. This seminar will introduce the concepts and special considerations associated with managing mission critical data center projects. Beginning with an overview of Uptime Institute’s Tier Standard, the industry benchmark ensuring data centers are designed, built and operated to meet specific business needs, the course will also cover how to identify and communicate data center needs to upper management and how to properly select performance levels based on intended applications.
Note: attendees will receive credit toward a full accreditation courses in 2020, see www.uptimeinstitute.com for more information.

Uptime Institute Introduction to Mission Critical Environments
Scott Good, Global Senior Consultant, Uptime Institute
Tuesday, April 7
8:30 am – 4:30 pm, $500
This seminar will introduce the concepts and special considerations associated with managing mission critical data center projects. Beginning with an overview of Uptime Institute’s Tier Standard, the industry benchmark ensuring data centers are designed, built and operated to meet specific business needs, the course will also cover how to identify and communicate data center needs to upper management and how to properly select performance levels based on intended applications.
Note: attendees will receive credit toward a full accreditation courses in 2020, see www.uptimeinstitute.com for more information.

Optional Post-Conference Activities

San Diego International Airport (SAN) Technical Tour
Thursday, April 9
1:00 pm – 3:00 pm, $79 (transportation will depart hotel at 12:15 pm and return by 4:00 pm)
After a brief presentation at the Airport Authority’s administration building, the group will tour a number of unique operational features at SAN including:
- Central Utility Plant operations
- 100,000 Gallon Stormwater Capture and Reuse System
- Terminal 2 Parking Plaza’s Sustainability Features
- On-Site Photovoltaic Solar System
- 4 MWh Battery Energy Storage System
- Airside/Runway Operations and Sustainability

Minimal walking is required.

University of California, San Diego (UCSD) Utility Plant Tour
Thursday, April 9
1:00 pm – 3:00 pm, $79 (transportation will depart hotel at 12:15 pm and return by 4:00 pm)
This VIP tour of the East Campus Energy Park begins with a brief facility overview followed by a walking tour of:
- 2.5 MW/SMWH electric energy storage
- ARPA-E battery storage demonstration facility
- 2.8 MW fuel cell utilizing surplus methane from Point Loma Wastewater Treatment plant and CHP with 350-ton absorption chiller
- Vehicle to grid demonstrations
- Shell’s Level II EV chargers demo
- EDI/PowrFlex EV chargers demo
- Absorption chiller and 6 MW of diesel gensets

Minimal walking is required.

CxENERGY OPEN Golf Tournament
The Energy Management Association cordially invites you to join us for an exciting day at the CxENERGY Open at the Steele Canyon Golf club on Tuesday, April 7. Please see pricing information below:

- Single Player: $150
- Foursome: $600
- Beverage Cart Sponsorship: $1000
  - (Two opportunities)
  - Entry for One (1) Single player
  - One (1) beverage cart sign displayed on roaming beverage cart
  - Recognition (company name and logo) on course
- Team Sponsorship: $2000
  - (multiple opportunities)
  - Entry for One (1) Foursome
  - Recognition (company name and logo) on conference and tournament marketing collateral
  - Signage on Welcome Table at tournament site
  - One (1) Goodie Bag insert

*Note: Rental clubs are available for $70 onsite.

Closing Happy Hour
Thursday, April 9, 4:00 pm – 6:00 pm
Relax. Unwind. Enjoy. Join us for a farewell cocktail at the Hilton Bayfront before we all go our separate ways.

REGISTER AT: https://www.cxenergy.com/golf  •  For questions, contact Anna Kosova: Anna@Commissioning.org
SAPPHIRE E

2:00 p.m. – 12:15 p.m.

Conserving Energy through Building Enclosure Commissioning: What Commissioning Providers Need to Know

Elizabeth Cassel, P.E., CxP, LEED AP & Fiona Addous, CxA, Jansen, Elster Associates

This presentation will discuss what a Commissioning Provider should know to undertake Building Enclosure Commissioning (BECx) with the goal to conserve energy. The presenters will introduce the BECx process and will outline key quality-based tasks that help to achieve a durable, resilient and successful building enclosure to reduce risk and energy use. The speakers will present published guidelines and standards as references for saving energy and provide design and construction phase tasks to address energy usage.

8:45 a.m. - 9:45 a.m.
Meet & Greet with Sponsors & Exhibitors - Expo Hall

Critical Facilities - Reaping the Rewards of Building Commissioning

Tony DiLeonardo, CxA, Wick Fisher White
Paul Shoback, Verizon Wireless

The session discusses commissioning of Verizon Wireless’s Network Equipment Center buildings, with particular attention to VZW’s strict commissioning standards, functional test procedures and method of procedure (MOP) to ensure the nationwide data center network is operational 24/7. Verification and monitoring provide significant value for energy savings and maintaining a good power usage effectiveness (PUE). This interactive session will cover situational commissioning, construction, and dealing with issues in a critical environment, as well as VZW’s expectations of commissioning in the future.

11:35 a.m. – 12:15 p.m.
Lunch In Expo Hall

Evaluating Hybrid Distributed Energy Projects

Peter Lilienthal, Ph.D., HOMEY Energy

The cost, performance, and regulatory environment for distributed energy systems have improved of late, and depending on location, reliability requirements, and load profiles, onsite generation using these systems may now be a financially attractive option for many facilities. Hybrid systems are most common, and multiple options contribute to difficulties in analyzing and reducing demand charges. This presentation will describe how to simplify that analysis, climate analysis and psychrometry principles can help ensure quality and compliance to code requirements. The cost, performance, and regulatory environment for distributed energy systems have improved of late, and depending on location, reliability requirements, and load profiles, onsite generation using these systems may now be a financially attractive option for many facilities. Hybrid systems are most common, and multiple options contribute to difficulties in analyzing and reducing demand charges. This presentation will describe how to simplify that analysis.

2:00 p.m. – 3:00 p.m.

Role of Building Performance Analysis & Whole Building Air Barrier Testing in BECx

Krishnan Gowri, Ph.D., BEMP, ASHRAE Fellow, Intertec Inc.

Building performance analysis during early design reviews can help ensure quality and compliance to code requirements on commissioned high performance building enclosures. This session will highlight the use of THERM, static diffusion analysis, climate analysis and psychrometry principles to identify potential thermal bridging, condensation, and compliance to mandatory energy code requirements. Examples from recent design reviews and whole building air barrier testing will show how BECx provides value.

12:15 p.m. – 1:54 p.m.
Lunch In Expo Hall

How Does Cybercrime Impact My Business?

Derek Hedrick, Amherst Data Solutions

Why has Cybercrime become so prevalent? Because it’s easy. It’s hands-off, and it’s a growth industry. From the Singtel data breach, to the Equifax breach, to the WannaCry outbreak, to the 2018 global cyberattack, it has cost the global economy a conservative $1.5 trillion in 2018 alone. Meanwhile, cybercrime damages for corporations are predicted to reach $6 trillion annually by 2021, with 78% of surveyed organizations affected by a successful cyber attack in 2018, and a typical recovery cost ranging between $10,000 and $100,000 – enough to sink many small and medium-sized businesses. This session will explore how to protect your company from becoming one of them.

3:15 p.m. – 4:15 p.m.

Optimized Potable Water Systems: Preventing Legionella in New & Existing Facilities

Greg Swafford, CDP, GFG Pipeline Systems

Utility companies are only responsible for drinking water quality up to the domestic water service entrance (water meter). Once inside the building, drinking water quality is the owner’s responsibility. Bacterial growth within the building water supply system is a good indicator of potential health risk. This session will explore the growth range for bacteria, stagnation associated with water conservation efforts, and usage patterns that lead to biofilm formation. Drinking water installations in buildings therefore must be carefully planned, designed, installed, and commissioned to ensure safety through the life of the system.

12:15 p.m. – 1:54 p.m.
Lunch In Expo Hall

 Hussain, LEED AP, BEMP, CP Club

This presentation will discuss how to identify and prevent potential thermal bridging, condensation, and biofilm formation. Drinking water installations in buildings must therefore be carefully planned, designed, installed, and commissioned to ensure safety through the life of the system. The program will explore the growth range for bacteria, stagnation associated with water conservation efforts, and usage patterns that lead to biofilm formation. Drinking water installations in buildings must therefore be carefully planned, designed, installed, and commissioned to ensure safety through the life of the system.
**SAPPHIRE E**

**Overcoming Reality: Planning for Successful Lighting Control Commissioning**

John Busch, LEED AP BD+C, CCLET, Leviton Manufacturing Co., Inc.

Successful lighting controls commissioning begins with properly developing design intent and owner requirements. In reality, energy codes are complex and corporate specifications often exceed or are at odds with code mandates. These issues must be clarified and resolved for successful commissioning.

This presentation will explore commissioning’s role in identifying appropriate commissioning strategies for smoke control systems. Case studies from Michael Mantai, Commissioning Smoke Control Systems: Lessons Learned - 10:30 a.m. - 11:30 a.m.

Michael Mantai, P.E., CCP, System WorCx

- Has huge consequences, and owners of critical facilities — including hospitals — must prepare for this eventuality.
- Have used commissioning to help ensure safety and discuss strategies for commissioning services.
- This presentation will explore commissioning’s role in identifying appropriate commissioning strategies for smoke control systems. Case studies from Michael Mantai, Commissioning Smoke Control Systems: Lessons Learned - 10:30 a.m. - 11:30 a.m.

**Healthcare Emergency Power Supply Systems Commissioning: Clearing Coordination Hurdles**

Jason Perigo, CxA, SSRcX

Case studies from four different hospital commissioning projects will illustrate identifying and managing obstacles when planning and implementing functional performance testing of emergency power supply systems for new and existing hospitals. The coordination effort to achieve successful functional testing of a large hospital system can be overwhelming and time consuming, but with the right planning and attention to detail it can be rewarding and valuable to clients.

- Make ORPs Great Again

Stevan Venci, CET, LEED Fellow, Morrison Hershfield

Michael Fleming, P.E., CxA, CEM, Interface Engineering

- Owner's Project Requirements (ORPs) that result in accurate design and construction specifications for the safety of building occupants.

**Healthcare Commissioning: Building Resilience**

Wayne A. Dunn, P.E., E.W. Dunn

This session describes technical advances and challenges for commissioning modern security systems, and how they are evolving. Today’s systems promise wireless communications, visual recognition and audio acuity sensed by a variety of triggers. To get a signal and react to it, how much what kind of “noise” information is necessary, and how much is tolerable? How do we plan for security, and develop Owners’ Project Requirements (ORPs) that result in accurate design and construction specifications for the safety of building occupants?

**SAPPHIRE F**

**Evolution of MBCx in an IOT Enabled Environment**

Dewanye Collins, CEM, Siemens

The role of technology within an Existing Building Commissioning strategy continues to evolve, with Monitoring-Based Commissioning emerging as a differentiator to traditional EBCx projects. The strategic benefit of analyzing large volumes of historical data to identify proper performance improvement opportunities and implement solutions that are both clear and successful program deployment can be challenging. This presentation will focus on FDD, EBCx, and lessons learned that equate to successful implementation of an MBCx program.

**Ensuring High Performing Pre-Engineered Metal Buildings Through Rigorous BECx**

Cathleen Crabb, AIA, City of San Antonio TDI, Vertical Division

Mike W. Lackey, P.E., CxA, LCX, LLC

- The City of San Antonio has a voluntary program, beyond code, to ensure high performance of even utilitarian structures.
- Five pre-engineered metal buildings on two campuses were built to demonstrate the value of implementing a commissioning program.
- This presentation will focus on FDD, EBCx, and lessons learned that equate to successful implementation of an MBCx program.

**VFD Motors: Induced Shaft Voltage, the Causes, Effects, and Solutions**

Tom Hedrick, P.E., CxA, EMP, International Commissioning Engineers, Inc.

- This session will focus on the shaft voltage that is induced via variable frequency drives, the main cause of this phenomenon, the problems and possible solutions to this issue, which reduces the life expectancy for VFD motors.

**Building Energy Efficiency Standards Roundtable: California Title 24, Next in Commissioning & Energy Management (2 hour)**

Moderator: Jim Kelsey, KW Engineering

Building Energy Efficiency Standards have been integral to California’s energy efficiency success, weathering massive change over the past 40 years. The legacy approach to code development faces new marketplace challenges, as more renewable energy dollars are deployed, and building professionals demand future-proof codes to keep up with evolving technology.

This session offers a highly interactive roundtable, bringing together attendees and a range of building professional stakeholders to explore the challenges and opportunities in future California energy code development. Special attention will be devoted to the commissioning provisions of Title 24.

**Using Your Data for More Than M&V**

PANEL DISCUSSION

Craig Ochoa, Building Standards Office, California Energy Commission

- Building Energy Efficiency Standards have been integral to California’s energy efficiency success, weathering massive change over the past 40 years.
- More renewable energy dollars are deployed, and building professionals demand future-proof codes to keep up with evolving technology.

**SAPPHIRE I**

**Children’s Hospital of Atlanta Case Study - Highly Effective Commissioning**

John McFarland, CxA, Epsten Group

- This discussion of an “above and beyond” commissioning effort on two new medical office buildings for Children’s Healthcare of Atlanta puts special focus on how additional effort did not sacrifice program profitability. The session will show how the commissioning firm exceeded stakeholder expectations.

**How Monitoring-Based Commissioning Changes the Cx Business Model**

Darren Draper, P.E., CxA, Epsten Group

- Derek McCurry, P.E., PointGuard

- Dewanye Collins, CEM, Siemens

- When deploying automated fault detection on a university campus to deliver Monitoring-Based Commissioning services, this presentation discusses how MBCx changes the business model for Cx services providers.

- Hallmarks: represents a Cx provider, a software firm and a controls company; the session will review how MBCx compares to traditional Cx or RxC approaches.
The AABC Commissioning Group (ACG) is dedicated to the advancement of independent, third-party commissioning professionals. ACG strives to promote a better understanding of the commissioning process and to educate, train, and certify qualified individuals.

The Energy Management Association (EMA) is dedicated to advancing the quality of energy management for the benefit of the building owner. EMA is committed to the certification and training of Energy Management Professionals (EMPs).

The Associated Air Balance Council (AABC) is dedicated to the advancement of independent, third-party testing and balancing. The association’s mission is to certify highly qualified, independent test & balance agencies, and their personnel.