

April 29-May 2 | Town & Country Resort | San Diego, CA

CxENERGY

2024

CONFERENCE PROGRAM

PRESENTED BY:



Welcome to CxENERGY 2024!

PRESIDENT'S WELCOME



Troy Byers, PE, CxA
ACG President

Dear Colleagues:



On behalf of ACG, EMA and AABC, I am excited to welcome you to CxEnergy! Our three organizations and our members continue to thrive, and we can't wait to see all the tremendous professional development and networking that we know will happen at the industry's premier event for commissioning, energy management, and testing professionals!

Many thanks to our members, sponsors, speakers, exhibitors and staff who help make this conference so special – we hope you enjoy **CxEnergy 2024** and that we see you again in the future!

Sincerely,

Troy Byers, PE, CxA, Cx Solutions, LLC,
ACG President

PROGRAM AT A GLANCE

TIME	MONDAY, APRIL 29	TUESDAY, APRIL 30
7:00 a.m. - 8:00 a.m.	Registration for CxA Workshop & EMP Seminar	
8:00 a.m. - 8:30 a.m.		Registration for TAB & Cx Seminar
8:00 a.m. - 5:00 p.m.	Commissioning Authority (CxA) Workshop & Exam	
8:00 a.m. - 5:00 p.m.	Energy Management Professional (EMP) Seminar & Exam	
8:00 a.m. - 12:30 p.m.	 Breakfast and lunch will be provided for all pre-conference workshops and seminars.	CxEnergy Open Golf Tournament
8:30 a.m. - 3:45 p.m.		TAB & Cx Seminar
5:00 p.m. - 7:00 p.m.		Welcome Reception in the Expo Hall
TIME	WEDNESDAY, MAY 1	THURSDAY, MAY 2
7:00 a.m. - 8:00 a.m.	Registration & Breakfast	
8:00 a.m. - 8:45 a.m.	Opening Plenary Session	8:00 a.m. - 11:30 a.m. Concurrent Tech Presentations
8:45 a.m. - 9:45 a.m.	"Meet & Greet" with Sponsors & Exhibitors	11:30 a.m. - 12:30 p.m. Brown Bag Lunch
10:00 a.m. - 12:15 p.m.	Concurrent Technical Presentations	2:00 p.m. - 4:30 p.m. Tour of J. Craig Venter Institute (JCVI)
12:15 p.m. - 1:45 p.m.	Lunch in the Expo Hall	 Buses will depart from the Town & Country Conference Center promptly at 2:00 p.m. for the JCVI tour. \$75 Pre-registration is required; first-come, first-served, space is limited.
12:30 p.m. - 1:45 p.m.	CxEnergy Technology Theater	
2:00 p.m. - 5:30 p.m.	Concurrent Technical Presentations	
5:30 p.m. - 7:30 p.m.	Grand Reception in the Expo Hall	

CxENERGY OPEN Golf Tournament

Tuesday, April 30 8:00 a.m. – 12:30 p.m.

Riverwalk Golf Club

The Energy Management Association cordially invites you to join us for an exciting day on the links.

- Meet in the lobby at 7:00 a.m.
- Breakfast and two drink tickets will be provided
- \$245 (individual); \$70 rental club fee
- Shotgun start / Scramble format
- Pre-registration is required

Contact ACG Headquarters at events@commissioning.org



Download the App!

- Track CEUs
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PRE-CONFERENCE EDUCATIONAL & CERTIFICATION OPPORTUNITIES



Commissioning Authority Workshop & Exam

Monday, April 29 – Tuesday, April 30
8:00 a.m. – 5:00 p.m., \$1,050
Room: Town & Country Ballroom D



Energy Management Professional Seminar & Exam

Monday, April 29 – Tuesday, April 30
8:00 a.m. – 5:00 p.m., \$1,050
Room: Sunset 1



TAB & Cx Seminar

Sponsored by **Ameritech**
DATA SOLUTIONS
WHERE DATA AND IDEAS COME TOGETHER

Tuesday, April 30, 2024
8:30 a.m. – 3:45 p.m., \$345
Room: Town & Country Ballroom B

Earn up to **6 AIA LUs** | AIA Continuing Education Provider

These practical, one-hour presentations will cover a broad range of topics and provide TAB professionals, Cx providers, engineers, and others with actionable information to help improve project performance.

Preventive Medicine: Commissioning for Healthy & Safe Buildings – 8:30 a.m. – 9:30 a.m.



Joe Hardy
TBE
Augusta Air Balance Company, LLC



Mike Kelly
TBE, CxA
American Testing, Inc.

Recommendations for Periodic Testing, Adjusting and Balancing of Existing Buildings – 9:45 a.m. – 10:45 a.m.



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

Healthcare Airflow Design: TAB/Cx Partnership in Auditing for Compliance and Efficiency – 11:00 a.m. – 12:00 p.m.



Mike Schowengerdt
CxA
RSAnalysis, LLC



Eric Grundmeier
TBE
RSAnalysis, LLC

Balancing a Medical Research Building After Three Years – 1:15 p.m. – 2:15 p.m.



Jimmy Pelezo
TBE
Engineered Air Balance Co., Inc.



Justin Garner
PE, TBE, CxA
Engineered Air Balance Co., Inc.

AABC Fume Hood Standard Update 2:30 p.m. – 3:00 p.m.



Mike Morwin
TBE, CxA
Mechanical Testing, Inc.



Josh Green
TBE, CxA
Environmental Test & Balance Company

Doing More With Your Mechanical Plans 3:15 p.m. – 3:45 p.m.



Derek Hedrick
Ameritech Data Solutions

CxEnergy Technology Theater

Wednesday, May 1 • CxEnergy Expo Hall

12:30 – 12:45 p.m.

12:50–1:05 p.m.

1:10–1:25 p.m.

1:30–1:45 p.m.



7:00 a.m. Registration Open | 7:00 a.m. - 8:00 a.m. Breakfast | 8:00 a.m. - 8:45 a.m. Opening Plenary Session

Town & Country Ballroom A

ACG Guideline Spotlight: Cx Tests & Observations, Functional & Otherwise

Jim Magee, CxA

Method Analytics Commissioning Process (MACx)

10:00 a.m. -
11:00 a.m.

The protocols for observing and testing the variety of specific building systems are continuously evolving due to system advancements, software tools, and even AI. This session will explore and identify current methodologies as presented in ACG's newest Cx Guideline, focusing on what is, what is coming soon, and what tools are available to Cx professionals.

The Best Bang for your Buck: Factory Acceptance Testing

John Hitsos, PE, CxA, Jacobs

11:15 a.m. -
12:15 p.m.

Factory acceptance testing (FAT) is often considered not worth its expense and omitted from project testing, or relegated to a non-monitored, high-level performance check by the vendor. A properly detailed FAT can significantly reduce installation and field testing time. By sending the correct project team/personnel to witness the FAT, important issues can be identified that could not be picked up in the submittal review process.

Town & Country Ballroom B

Building Performance Standards (BPS): A Golden Opportunity for Commissioning Providers

Alex Dews, LEED AP, BD+C, Institute for Market Transformation

Joshua Kace, Lawrence Berkeley National Laboratory

Emerging Building Performance Standards (BPS) will drive increasingly stringent performance targets for existing commercial buildings, representing a substantial market opportunity for commissioning providers. This session provides an overview of current/future BPS policies and implementation programs and describes how commissioning supports BPS compliance at various stages of a building's life cycle. You will also learn how to get involved in a national 'Cx Catalyzer' effort.

LEED v5 O+M: This is Definitely not Your Father's Buick

Al LaPera, CxA, EMP, Kimley-Horn

LEED v5 for Operations and Maintenance (O+M) rating system for existing buildings has been changed radically. The newest version of LEED, it marks a transformative milestone in the built environment's alignment with a low-carbon future and addresses critical imperatives such as equity, health, ecosystems and resilience. This session will start to peel this new onion, one layer at a time.

12:15 p.m. - 1:45 p.m. Lunch in Expo Hall

Pre-Functional Checklists...Is There a Better Way?

Steve Leight, PE, CxA, EMP, Commissioning Excellence, LLC

Derek de Jesus, CxA, ACG Education Committee Chair

2:00 p.m. -
3:00 p.m.

Since the development of ASHRAE Guideline 0, pre-functional checklists have been a key component of the commissioning process. For almost as long, commissioning authorities have been challenged with obtaining pre-functional checklists that meet their intended purpose. This presentation will discuss the history of quality processes, the differences between QA and QC, and ideas on how to manage the pre-functional checklist as a tool that benefits the installing contractor as much as the CxA.

Combining Distributed Energy Resources, Load Management and Utility Programs to Achieve Sustainability, Resiliency and Economic Goals

Itamar Lopes, MBA, PMP, Siemens Smart Infrastructure

David Latour, CEM, Siemens Smart Infrastructure

This session will provide a real-world example from a microgrid project implemented in Princeton / NJ where a combination of DERs implemented together with a service agreement and dynamic load management by the Building Management System (BMS) enabled achievement of resiliency and sustainability goals while lowering energy costs.

MEP Coordination and the Commissioning Process: Extraordinary Success or Horrible Failure?

Justin Garner, PE, CxA, TBE, Engineered Air Balance Co., Inc.

Mark McGlathery, McCarthy Building Companies

3:15 p.m. -
4:15 p.m.

As the building industry moves toward new technologies and more complex control strategies, the commissioning (Cx) process as defined by ASHRAE is critical to the energy performance and operational goals of the facility. The success of Cx depends on proactive planning between the Cx provider and the contractor's team. This seminar will demonstrate how a general contractor and Cx provider should work together to ensure a successful (and profitable) project delivery.

Support Your Decarbonization Plan with Retro-Commissioning

Clifford Alberts, AESC, Inc.

Susan Freed, County of San Diego

The County of San Diego is expanding their sustainability efforts to include carbon savings. Electrifying natural gas equipment is a priority, though solutions can be unexpectedly challenging. This presentation presents early findings and efforts to solve challenging electrification efforts.

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

Town & Country Ballroom C

Leveraging Technology to Automate the Commissioning and TAB Processes in Healthcare Facilities

*Frank Shadpour, PE, CxA, SC Engineers
Sasan Asadyari, Scripps Health
Hollis Gentry, Sharp HealthCare*

10:00 a.m. -
11:00 a.m.

Implementing innovative technological strategies to automate the commissioning and TAB processes can save time and money and enhance quality and performance. Join owners, engineers, and commissioning authorities representing California's leading healthcare organizations to review cutting-edge tools and practical applications, and explore future capabilities of artificial intelligence.

Commissioning for Owners: A Roadmap to Success

*Derek de Jesus, CxA, ACG Education Committee Chair
Darren Draper, PE, CxA, Epsten Group,
Salas O'Brien Company*

11:15 a.m. -
12:15 p.m.

This presentation will delve into the critical decision of when commissioning is essential, unpack the variables that shape scope definition, and provide insights into pricing variations among CxA firms. Moving beyond the selection stage, we'll equip you with effective strategies for managing and collaborating with your CxA. Remember, hiring a CxA is not the finish line; it's just the start.

12:15 p.m. - 1:45 p.m. Lunch in Expo Hall

Case Study: The Vital Role of the Building Owner in QA and Cx Programs at the University of Rochester Emergency Department Expansion and Patient Care Tower Project

*Alex Kozinets, Facility Grid
Rachel Stuckey, University of Rochester*

2:00 p.m. -
3:00 p.m.

Join the University of Rochester (UR) and Facility Grid for a discussion on the vital role of the building owner in QA, QC, and Cx programs for this significant emergency department expansion and patient tower project.

Finish with Confidence: How to Leverage Automated Testing and FDD to Close Out Projects

*Kenny Reed, LEED AP, SES
Derek McGarry, PE, OTTO*

3:15 p.m. -
4:15 p.m.

Traditional construction turnover and closeout can be a frustrating process for project teams and present many challenges. Leveraging technology for automated testing and utilizing remote monitoring, fault detection, and diagnostics can improve timelines and fine-tune systems. This presentation will define a roadmap to leverage technology to relieve the pain of the final weeks of your projects.

Town & Country Ballroom D

The Challenges of Labor Management and Talent Acquisition for Commissioning Providers

Tony DiLeonardo, CxA, LEED AP, Wick Fisher White
Juggling multiple projects' Cx becomes increasingly complex when faced with the uncertainty brought about by equipment supply chain issues. Managing the labor force effectively under such circumstances requires adaptability. This presentation will dive into the details of commissioning challenges, such as managing labor, retaining, and recruiting talent for commissioning, and explore potential solutions.

Test, Adjust & Balance: Lessons Learned for Engineers, Cx & Energy Providers - 2024

Jim Hall, PE, Systems Balancing

There are project design and construction-related challenges that are encountered during the testing, adjusting, and balancing (TAB) process. A few examples are equipment selection, system layout for testing and maintenance access, and project scheduling. This presentation offers solutions and ideas to help overcome these and other challenges that will help optimize system performance and prove that design intent has been met.

Diverse Visions & Sustainable Solutions: A Panel Discussion by Leaders in Commissioning and Energy Management

*Michelle Shadpour, President-Elect, ASHRAE San Diego Chapter
Leah Goldman, Illumina
Ariana D. Axelrod, PE, Control Technologies
Sarah Matson, Colliers Engineering*

Join our exciting all-women panel discussion as leading experts explore the cutting-edge advancements in automated commissioning, artificial intelligence, and decarbonization for building applications. The panelists will additionally address how they became industry experts in a male-dominated field regardless of gender.

Demand Flexibility: The Must-Have Skill for Future Facilities Professionals

*Jen Szaro, Association of Energy Services Professionals
Armando Casillas, Lawrence Berkeley National Laboratory*

Realty investment groups, utilities, and disaster resilience experts who are looking out to the next ten years all have one subject on the tips of their tongues: demand flexibility. The U.S. Department of Energy & AESP are creating public educational courses to help you get ready for the next big thing. Come find out how demand flexibility helps you marry renewables, efficiency, pricing and more to make your buildings resilient and efficient assets.

An Exploration of Progress Tracking Approaches in Commissioning

Jacob Terry, CxAlloy

4:30 p.m. –
5:30 p.m.

For the past year, CxAlloy has been collecting and reviewing approaches to tracking and reporting on commissioning progress. In this session, we'll explore real-world examples of commissioning progress trackers. We'll discuss tradeoffs to levels of detail, effective presentation options, methods for keeping progress up to date, and more.

High Efficiency Elementary School: A Case Study in Making it Work

Vince Sage, P.E., CxA, EMP, LEED AP,
Northwest Engineering Service, Inc

As the building industry moves toward new technologies and more complex control strategies, the Commissioning Process (Cx) as defined by ASHRAE is critical to the energy performance and operational goals of the facility. The success of Cx depends on proactive planning between the Cx Provider and the Contractor's team. This seminar will demonstrate how a general contractor and Cx provider should work together to ensure a successful (and profitable) project delivery.

5:30 p.m.- 7:30 p.m. Grand Reception in the Expo Hall

THURSDAY, MAY 2, 2024

7:00 a.m. Registration Open | 7:00 a.m.- 8:00 a.m. Breakfast

Commissioning and Special Inspections for Smoke Control Systems

Michael Mantai, PE, System WorCx

8:00 a.m. –
9:00 a.m.

This presentation will discuss the role of a commissioning provider in testing smoke control systems and acting as a Special Inspector as required by Code. It will present the three basic types of smoke control methods, provide examples of the systems used to accomplish each method, and discuss how to commission these systems and avoid many of the pitfalls and common problems, using real-world examples from prisons, hospitals, and atria.

ASHRAE Standard 241 – Control of Infectious Aerosols and its Impact on Cx

Wade Conlan, PE, CxA, LEED AP,
Hanson Professional Services Inc.

ASHRAE Standard 241, "Control of Infectious Aerosols," discusses the HVAC system's ability to provide equivalent clean air in Infection Risk Management Mode. The assessment, planning, and implementation, by a CxA or EMP, should be completed for new or existing spaces and HVAC systems that serve those spaces. This session will review the contents of the standard and use case studies to highlight the impact commissioning providers have on this process.

Empowering Commissioning Agents: Navigating Healthcare Facility Codes and Standards, with a Focus on ASHRAE 170-2021 and Beyond

Amit Bhansali, WSP

Robert Langford, CxA, HCA Healthcare

9:15 a.m. –
10:15 a.m.

Ensuring patient safety in healthcare demands strict adherence to comprehensive codes and standards governing facility design and operations. Commissioning Agents must not only comprehend system intricacies but also be aware of relevant codes. ASHRAE 170, crucial for healthcare ventilation, is adopted in some form in more than 43 states. This presentation's goal is to empower agents with insights into ASHRAE 170-2017 versus 170-2021 and anticipate 2025 trends.

Battery Energy Storage Systems and Hazards To Be Aware Of [NFPA 855]

David LeBlanc, PE, FSFPE, Jensen Hughes

Battery Energy Storage Systems (ESS) is part renewable energy, but also contains hazards. NFPA 855, Standard for the Installation of Stationary ESS, includes requirements for Hazard Mitigation Analysis, fire protection systems, systems integrations, and system commissioning. This presentation will provide an overview of chemistry of lithium-ion batteries, hazard evaluation including real-world incidents, and how NFPA 4, Integrated Testing of Fire and Life Safety Systems, is utilized.

Building Better Plants: How Energy Management Helped Consolidate Two Manufacturing Facilities and Reduce Costs, Energy and Carbon Emissions

Sandeep Modhvadia, Atrius | Acuity Brands

Chelsea Davis, Atrius | Acuity Brands

10:30 a.m. –
11:30 a.m.

By utilizing software for energy management, emissions reporting and AI-enabled location data, Acuity Brands consolidated two of its regional facilities in Illinois. This discussion will dive into this case study and share how the project, in partnership with the DOE Better Plants program, led to cost savings, energy savings, and emission reductions.

Evolving Energy Codes and BECx

Stephen Shanks, CxA, BECxP, NDT Level III, Salas O'Brien

Energy codes and recent updates to IECC and ASHRAE 90.1 include detailed design, construction and documentation requirements for building enclosure commissioning. These include field verification and installation of insulation, fenestration and air sealing of the building envelope to ensure improved thermal performance. This presentation will review evolving energy code requirements, assessment techniques to identify and mitigate thermal bridging, moisture, and air barrier performance issues, and strategies for energy code compliance.

11:30 a.m. - 12:30 p.m. Brown Bag Lunch & Adjournment – See You Next Year in Charlotte!

Commissioning for Sustainable Indoor Air Quality: University of Georgia Case Study

*Erik Malmstrom, SafeTraces
Gordon Stead, University of Georgia*

4:30 p.m. –
5:30 p.m.

This session will consist of an overview of major cost, compliance, and capital market drivers for energy efficiency and IAQ; description of sustainable indoor air quality commissioning strategies, including those leveraging emerging technology, in building portfolios; and a deep dive into the University of Georgia's technology-enabled efforts to improve health, energy, and financial performance and leverage resulting data for energy utility rebate programs.

Integrated System Testing: Electrical

Jesse Felter, Smith Seckman Reid, Inc.

As equipment and system technology become more complex serving client needs for interconnectivity, so does the practice of integrated system testing (IST). The purpose of this presentation is to identify standards driving the needs for IST's, identify guidelines that provide information useful to the Commissioning Team, and consider specific examples of possible IST from the perspective of the electrical CxA.

5:30 p.m.- 7:30 p.m. Grand Reception in the Expo Hall

THURSDAY, MAY 2, 2024

7:00 a.m. Registration Open | 7:00 a.m.- 8:00 a.m. Breakfast

Case Study: Automated Commissioning of Scripps Health Towers

*Steven Shadpour, CxA, SC Engineers
Sasan Asadyari, Scripps Health*

8:00 a.m. –
9:00 a.m.

This presentation explores the transformative journey of building commissioning over the past decade at Scripps Health in La Jolla, offering insights into its future trajectory. Annually treating more than 600,000 patients with the dedication of 3,000 affiliated physicians and over 16,000 employees across its five acute-care hospital campuses, Scripps Health stands as one of the largest non-profit and most prestigious healthcare organizations in Southern California.

Harnessing Untapped Energy Savings Through Building Plugged Outlet Automation

*Siddhartha Chatterjee, MBA,
Honeywell Building Technologies and Automation*

Discover how new plug outlet technology makes it possible to gain full visibility, control and management of a commercial building's plug-in equipment, making significant untapped energy savings and insights available to energy and building managers. These new developments in building automation enable energy control and saving down to a single receptacle or on the scale of a modern hospital, and even allow multiple estates globally to be connected.

M&V + MBCx = Lower Operational Costs

Victor Saeh, CxA, LEED AP, Smith Seckman Reid, Inc.

9:15 a.m. –
10:15 a.m.

Measurement and verification (M&V) is a simple and effective service that can be utilized to set the foundation for an energy project and/or validate its results. Today there is a myriad of government legislation, media news, and corporate marketing surrounding energy and decarbonization. This presentation will simplify the process for any owner that is planning or has completed this type of project.

Building to Meet Dynamic Environmental Standards, Including Water Efficiency Construction Standards

Patrick Watson, Southern Nevada Water Authority

West Coast buildings are required to meet set earthquake standards; Gulf Coast buildings are required to meet hurricane standards. The desert Southwest should not be any different: drought and the aridification of the west is just a slower-moving disaster. Southern Nevada has taken steps to influence cooling methods in buildings that are more water efficient. This presentation will cover legislation that restricts evaporative cooling, commercial development's reaction, and the result.

Guaranteeing Optimal Lighting Control System Performance [OPRs and Title 24]

*Michael Scalzo, NLCAA
John Busch, Leviton
Sam Hin, Performance Lighting Systems
Charles Knuffke, Legrand*

10:30 a.m. –
11:30 a.m.

This session is an examination of the role, methodology, and impact that a commissioning agent, who can be a certified Acceptance Test Technician, makes on California projects by helping ensure optimal lighting and lighting control system performance in alignment with OPRs and Title 24, Part 6 standards.

Commissioning Workforce Development

*John Herboth, CxA, Affiliated Engineers Inc. (Moderator)
Roger Ebbage, Lane Community College
Adam Mangrich, Systems West Engineers
Steve Mayou, CEM, QCxP, South Seattle College
Troy Byers, TBE, CxA, Cx Solutions, LLC*

The need for an experienced commissioning workforce continues to grow, while the routes for new personnel to enter the workforce have not expanded enough to fill industry needs. This panel will discuss the current state of the profession, workforce development needs, routes to becoming a Cx provider, necessary changes to meet the needs of the industry, and more.

11:30 a.m. - 12:30 p.m. Brown Bag Lunch & Adjournment – See You Next Year in Charlotte!

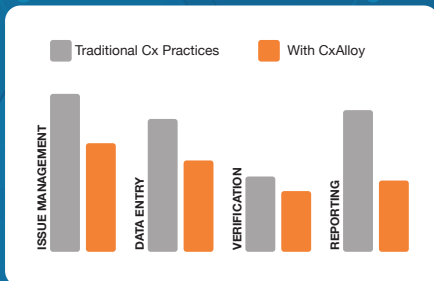


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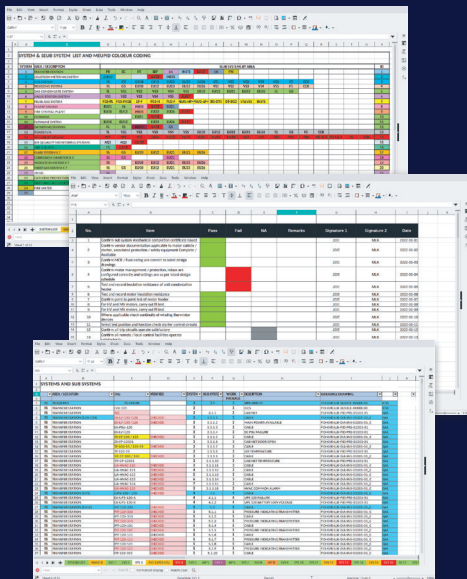
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System and Test view

Name	Status	Info	Category	Responsible	% done	Total
Mechanical complete	Open				20 %	
Cooling systems	Open				23 %	
Cooling Supply System	Open	Not started	Cooling		0 %	55
Cooling Supply System Backup	Open	2023-07-05 Emergency backup for servers	Cooling	Thomas T. Jarlov	100 %	17
Cooling F001	Open	2023-07-09	Cooling	Thomas T. Jarlov	10 %	21
Cooling F002	Open	Not started	Cooling		0 %	21
Cooling F003	Open	Not started Server room	Cooling		0 %	21
Cooling F004	Open	2023-07-03	Cooling	Thomas T. Jarlov	100 %	21
Cooling F005	Open	Not started	Cooling	Thomas T. Jarlov	0 %	16
Cooling F006	Open	2023-07-07	Cooling	Thomas T. Jarlov	50 %	16
Cooling F007	Open	In progress	Cooling	Thomas T. Jarlov	10 %	1
Electrical	Open				0 %	
Motors	Open				25 %	
Motor generator	Open	Not started	Motor		0 %	55
Motor Supply System Backup	Open	In progress Emergency backup for servers	Motor	Jens C. Jensen	75 %	20
Motor F001	Open	2023-07-05 Redundancy for supply	Motor	Jens C. Jensen	10 %	21
Motor F002	Open	Not started	Motor		0 %	21
Motor F003	Open	Not started	Motor		0 %	21
Motor F004	Open	2023-07-03 Pipe drive for oil	Motor	Thomas T. Jarlov	100 %	21
Motor F005	Open	2023-07-22 Roller in line	Motor	Jens C. Jensen	100 %	16
Motor F006	Open	2023-07-07	Motor	Thomas T. Jarlov	100 %	16
Motor F007	Open	In progress	Motor	Thomas T. Jarlov	10 %	1

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Collect field information once



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AVAILABLE FOR



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Android



Windows



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and control



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supervision and
remote management



SAFETY
Temperature
monitoring and
power alarming



CRITICAL ASSETS
Key equipment
security and
visibility



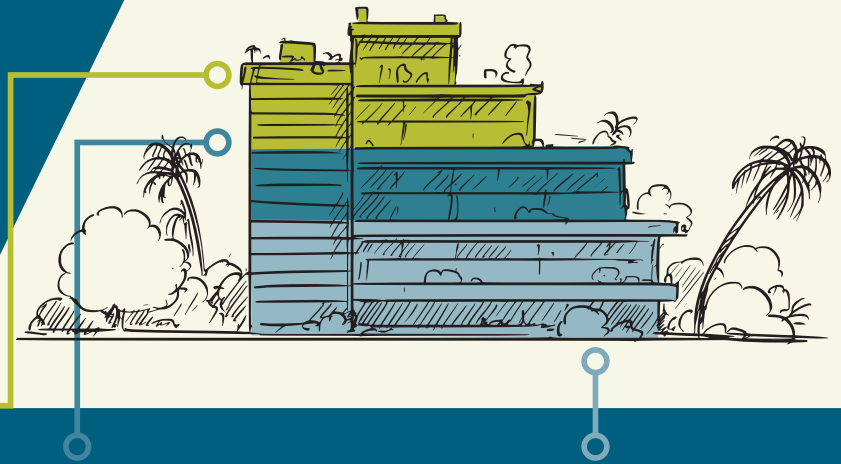
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- » Daylight/Glare Analysis Modeling
- » Master Planning
- » Deep Green Consulting
- » LEED Consulting
- » Fitwell Certification
- » WELL Building Standard Consulting
- » Health + Wellness Assessment
- » Energy Star Certifications/ Assessments


COMMISSIONING



- » New Building
- » Existing Building
- » Recommissioning and Retro Commissioning
- » Monitor-Based/ Continuous Commissioning/FDD
- » Code-Required
- » LEED
- » Infrared/Thermography
- » System Troubleshooting

INFRASTRUCTURE

- » Mechanical, Electrical, Plumbing (MEP) Design Services
- » Building System Upgrades
- » Central Energy Plant Design
- » Utility Coordination
- » Peer Reviews
- » Construction Administration

WE CAN HELP YOUR EXISTING AND FUTURE PROJECTS ACHIEVE:

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-  Improved Indoor Air Quality (IAQ)
-  Improved Occupancy Wellness + Productivity

-  Risk Mitigation
-  Performance Benchmarking
-  LEED + WELL Certification



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Ranked nationally among the largest engineering and commissioning firms, TLC is an industry leader with expertise in diverse markets that range from education to healthcare, to aviation. We are growing and seeking talented commissioning and energy experts to join our team! Interested in learning more? Scan the QR code below to connect with one of our talent specialists today!

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Nationally



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Certified
Projects

19 Offices
Nationally

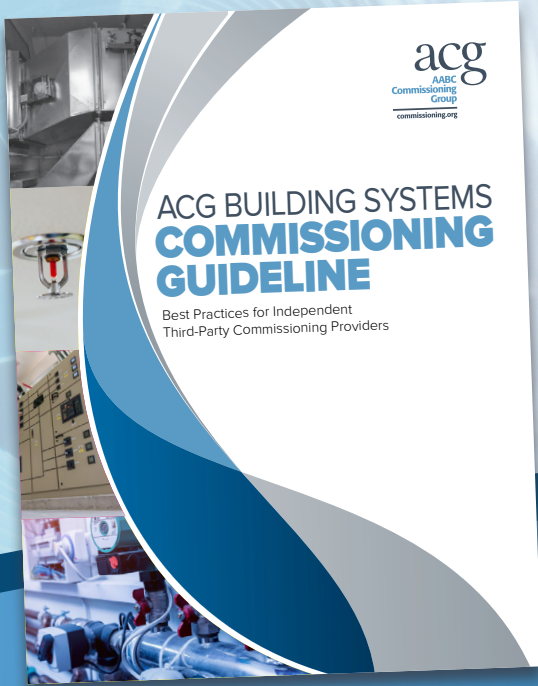


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AND LEARN MORE
TODAY

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