
AABC Commissioning Group

AIA Provider Number 50111116

acg

Commissioning Research Laboratory Buildings: Case Studies

Course Number: CXENERGY1620

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

April 13, 2016



Credit(s) earned on completion of this course will be reported to **AIA CES** for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

This course is registered with **AIA**

Copyright Materials

This presentation is protected by US and International Copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.



TMCx Solutions, LLC
8205 W Warm Springs Rd, Ste 110
Las Vegas, Nevada 89113
800-815-1162

www.tmcxsolutions.com



COURSE DESCRIPTION

This presentation covers the commissioning of multiple 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.

LEARNING OBJECTIVES

At the end of the this course, participants will be able to:

1. Learn about considerations for the design of variable flow lab exhaust systems.
2. Understand the fire alarm system impacts in a building with fume hoods.
3. Learn about considerations for HVAC equipment selection and redundancy in design.
4. Consider the important sequence of operation details to include.

AGENDA

- Introduction
- Design Review Considerations
- Installation Verification Considerations
- Operational Verification Considerations
- Acceptance & Closeout

INTRODUCTION

[*Case Study Projects*]

- STEM (Science Technology Engineering & Mathematics) Education Initiative
 - Loyola Marymount University – Life Sciences Building
 - LACCD East LA Area College – Math & Science Complex
 - SOCCCD Saddleback College – Sciences Building
- CSMC: Biobank & Translational Research Core Facility
- CSMC: Advanced Health Sciences Pavilion (Medical Research)
- Caltech: Jorgenson Laboratory (Clean Energy Research)

INTRODUCTION

[*Research Lab HVAC Systems*]

- Air Valves
- Fume Hoods
- Lab Supply
- Lab Exhaust
- Non-Lab HVAC Systems

DESIGN REVIEW CONSIDERATIONS

- Exhaust
- Fire Alarm
- Redundancy
- Pressurization
- Chilled Beam
- Sequences of Operation

INSTALLATION VERIFICATION CONSIDERATIONS

- Cx Meetings
- Test & Balance
- Lab Controls
- BMS Controls
- Network

OPERATIONAL VERIFICATION CONSIDERATIONS

- BMS – Lab Controls Integration
- Fire Alarm Integration
- Staging – Failover – Shutdown Transitions
- Temp & Static Pressure Resets
- Pressure Controls
- Dewpoint Control

ACCEPTANCE & CLOSEOUT

- Graphics & Trending
- Optimization

This concludes The American Institute of Architects
Continuing Education Systems Course

**Commissioning Research Laboratory
Buildings: Case Studies**

Course Number: CXENERGY1620

Contact Information:

TMCx Solutions, LLC

Mark Leafstedt

Cell: 702-604-4685

Email: tma@tmcxsolutions.com

acg

