# NECA • BICSI
## SUMMIT 2023

# Technology Commissioning (TECx) as a Service

Randal Gruberman PE, RCDD, CxA
randal.gruberman@commenceengineering.com

---

## AIA Quality Assurance

The Building Commissioning Association is a Registered Provider with The American Institute of Architects Continuing Education Systems (AIA/CES). Credit(s) earned on completion of this program will be reported to AIA/CES for AIA members. Certificates of the Completion for both AIA members and non-AIA members are available upon request.

This program is registered with AIA/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.

---

## Learning Objectives

- Explain how technology commissioning is applied to MEP commissioning.
- Discuss technology commissioning as a design and construction service.
- Show that properly designed, and installed systems can save energy and operating budgets.
- Discuss technology resources (people and tools) and the lack thereof in the AEC industry.
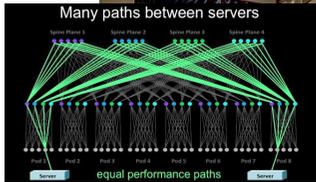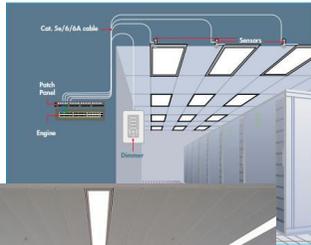
---

## Technology Cx Disciplines

- Telecom and Structured Cabling (Network, PoE, and Lighting)
- Wireless (WiFi, DAS, ERRCS, LMR)
- AV systems (Control systems and Fire Alarm)
- Security Systems (Access Control and CCTV)

---

FOR REFERENCE OF 2023 NECA-BICSI SUMMIT ATTENDEES ONLY

Telecom and Structured Cabling
(Network, PoE, and Lighting)

Wireless (WiFi, DAS, ERRCS, LMR)

Wireless
(WiFi, DAS, ERRCS, LMR, continued)
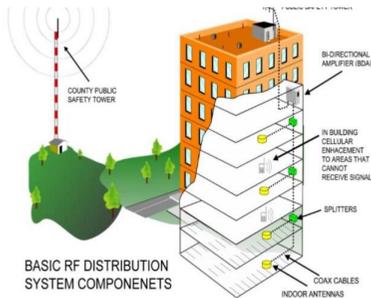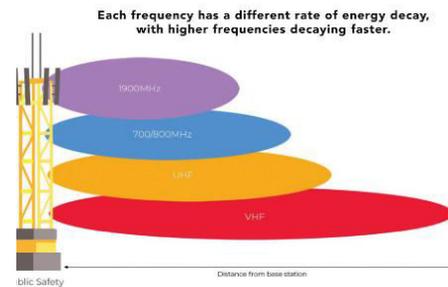
Audio Visual
(Control Systems)

## Security Systems (Access Control and CCTV)

### Access Control with Elevator Destination Dispatch



### Not So Simple CCTV and Intrusion Systems

---
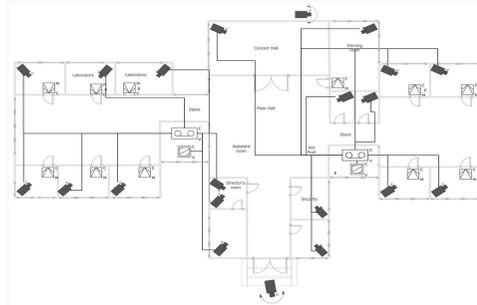
## When to Engage with Technology Cx Professionals

### Conceptual to Construction Documents

- Early to ensure Technology scope is contemplated
- Owner's Project Requirements
- Basis of Design
- Technology Cx Specs
- Programming requirements and testing, <u>interoperability</u>
- QA/QC and review of documentation
- Coordination cross discipline

### Construction Administration

- Contractor tasking
- Review of Shops
- Alternative product reviews
- Report writing
- Programming review
- Physical integration adherence
- Black Starting

---

## Cross-discipline touch points with Technology

### Mechanical, Electrical, Lighting, Fire Alarm, Plumbing

- Programming requirements and testing, <u>interoperability and APIs</u>
- Energy Touch points
- Physical or logical separation of networking
- Code required connections
- Single pane of glass or operations efficiencies
- Physical security

### Operational Efficiencies

- Reduced call backs for network related outages
- Reduced operational time for tasks in the Technology related space ex. (WHY DOESN'T MY PRESENTATION WORK?)
- Healthcare security and other medical systems
- Day 2 installations

---

## Construction benefits with Technology Cx engagement

### Uptime, coordination of systems that need to run before Day-1

- Temp or permanent power
- Room ready. What does this mean?
- Connectivity to the outside (ISP)
- Monitoring and logging of system performance.
- Secure site sooner.
- Construction operations and punch lists easier to coordinate.
- Turnover of Building and Systems

---

## Lessons Learned in Technology Cx

**What has gone wrong and how to help prevent it?**

- Cyber Security, Largest Personal Credit Card data Breach through BAS System
- Moved schedules and compressed installation therefore reduced quality
- Increased budgets for operations and Capital Expenditures.
- Increased Change orders
- Frustration and lack of communication



Open Compute Project Data Center
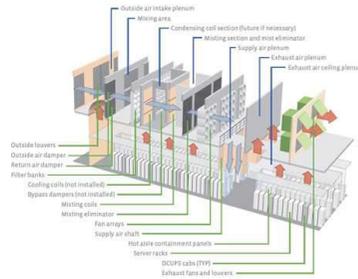
## Questions?

Randal Gruberman PE, RCDD, CxA
randal.gruberman@commenceengineering.com

FOR REFERENCE OF 2023 NECA-BICSI SUMMIT ATTENDEES ONLY