

GUIDELINES and REQUIREMENTS for COMMISSIONING



Presented To:

ASHRAE

Rochester Section

2007 Spring Seminar

April 26, 2007

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Presentation Overview

- Overview of Commissioning
- Commissioning Guidelines
- Commissioning Certification
- Commissioning Requirements
- Incorporating Commissioning into Projects

Building Systems Commissioning

- Nearing 20 Years of Application
- Encompassing many Markets
 - Museums
 - Higher education
 - Healthcare
 - Government
 - Commercial



Objectives of Commissioning

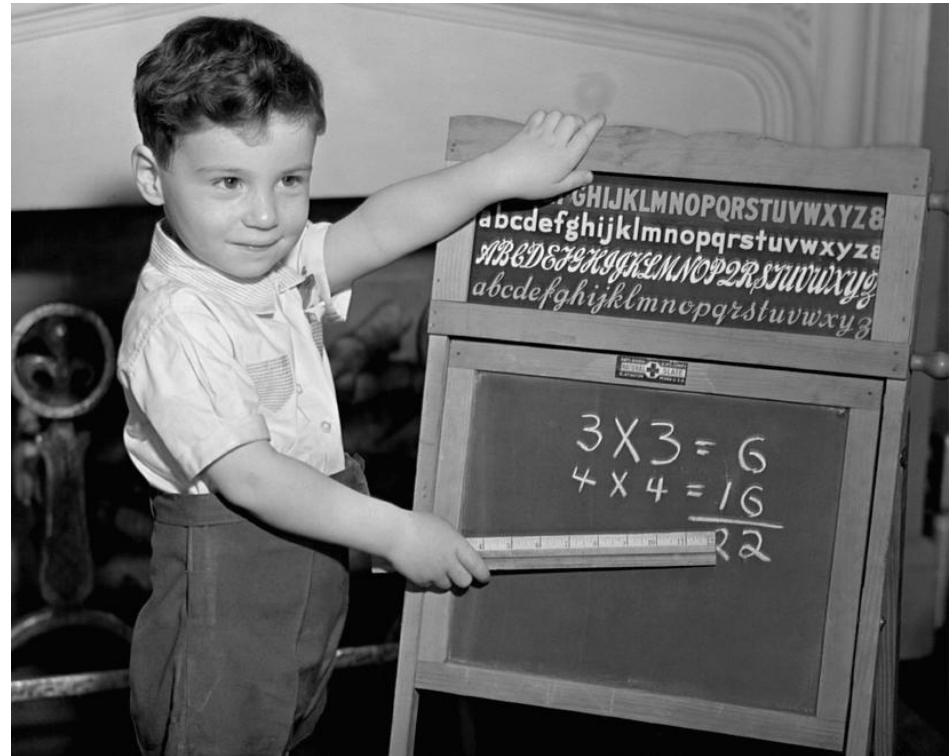
- Improve Building Turnover Process from Contractor to Operator
- Verify System Performance
- Reduce Contractor & Designer Call-Backs
- Long Term Proper Operation
- Energy Conservation



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What is Commissioning?

- Documentation
- Testing
- Training



What Systems are Commissioned?

- HVAC
- Electrical Power
- Life Safety
- Lighting Controls
- Plumbing
- Building Envelope
- Etc.



Commissioning Guidelines

- *ASHRAE Guideline 0, 2005*
- *ACG Commissioning Guideline*
- *PECI Model Commissioning Plan and Guide Specifications*
- *APPA/BCxA The Building Commissioning Handbook*
- *SMACNA HVAC Systems – Commissioning Manual*
- *NEBB Procedural Standards for Building Systems Commissioning*
- *Energy Design Resources Building Commissioning Guidelines*
- *Etc., Etc., Etc.*

Commissioning Certification Programs

- Building Commissioning Association
- AABC Commissioning Group
- National Environmental Balancing Bureau
- Association of Energy Engineers
- University of Wisconsin

Commissioning Requirements

- LEED Fundamental Commissioning
- LEED Enhanced Commissioning
- Minnesota Sustainable Building Guidelines
(Buildings, Benchmarks & Beyond = B3)

LEED Commissioning

- Systems to be Commissioned
 - HVAC systems & associated controls
 - Lighting & daylighting controls
 - Domestic hot water systems
 - Renewable energy systems (wind, solar, etc.)



LEED Fundamental Commissioning

- Energy & Atmosphere Prerequisite 1
 - Commissioning plan
 - Owner's project requirements document
 - Basis of design document
 - Commissioning specification
 - Installation verification
 - Performance verification
 - Commissioning report

LEED Enhanced Commissioning

- Energy & Atmosphere Credit 3 (1 point)
 - All fundamental commissioning requirements
 - 50% design review & backcheck
 - Shop drawing review
 - Systems manual
 - Training verification
 - Installation verification
 - 10 month operations review

MN Sustainable Building Guidelines

- Design & Construction Commissioning
- Operations Commissioning



MN Sustainable Building Guidelines

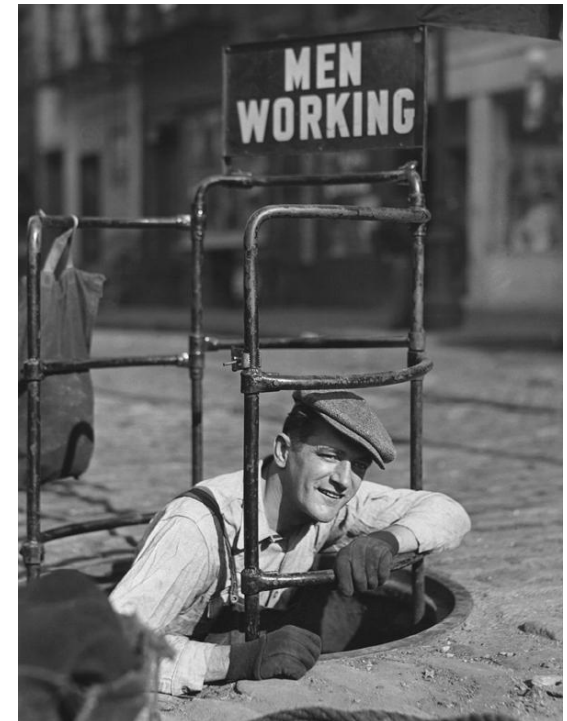
■ Systems to be Commissioned - REQUIRED

- HVAC systems including TAB
- Power & electrical systems
- Lighting & daylighting controls
- Indoor air quality elements & systems
- Renewable energy systems (wind, solar, etc.)

MN Sustainable Building Guidelines

■ Systems to be Commissioned - RECOMMENDED

- Plumbing systems
- Indoor materials
- Building envelope integrity
- Noise & vibration control



MN Sustainable Building Guidelines

■ Design & Construction Commissioning

- All LEED fundamental & enhanced commissioning requirements
- Schematic design review
- Design phase input/output control points review
- Coordination with operational commissioning requirements, including measurement & verification planning

MN Sustainable Building Guidelines

■ Design & Construction Commissioning “Management Plans”

- Construction phase air quality management plan
- Correction period air quality management plan
- Construction waste management plan
- Correction period use comfort & satisfaction assessment

Incorporating Commissioning into Projects

- Predesign Phase
- Design Phase
- Early Construction
- Late Construction
- Post Construction



Discussion

