

What Architects Need to Know About:

Commissioning and the 2016 California Building Code

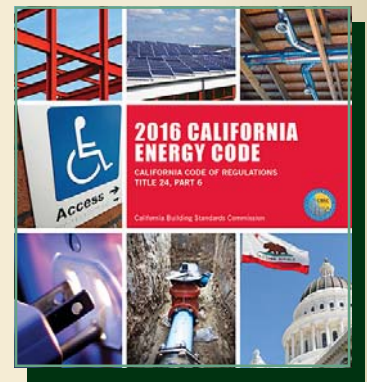
Overview

The 2016 California Energy Code (CEC) requires ALL new buildings in the State of California to be commissioned by a certified commissioning agent. There are NO exceptions for size or function. The code becomes effective for projects submitted for permit after January 1, 2017. This requirement is independent of the existing CalGreen Commissioning requirements for larger buildings.

So what exactly does the code say?

Nonresidential buildings with conditioned space of less than 10,000 square feet shall comply with the design review requirements specified in Sections 120.8(d), and shall include any measures or requirements necessary for completing this review in the construction documents in a manner consistent with Section 120.8(e).

(e) Commissioning measures shown in the construction documents. Complete descriptions of all measures or requirements necessary for commissioning shall be included in the construction documents (plans and specifications). Commissioning measures or requirements shall be clear, detailed and complete to clarify the commissioning process.



Note that there are additional and more extensive commissioning code requirements for buildings OVER 10,000 square feet (see 2016 California Energy Code 120.8).

So What Does This Mean for Your Projects?

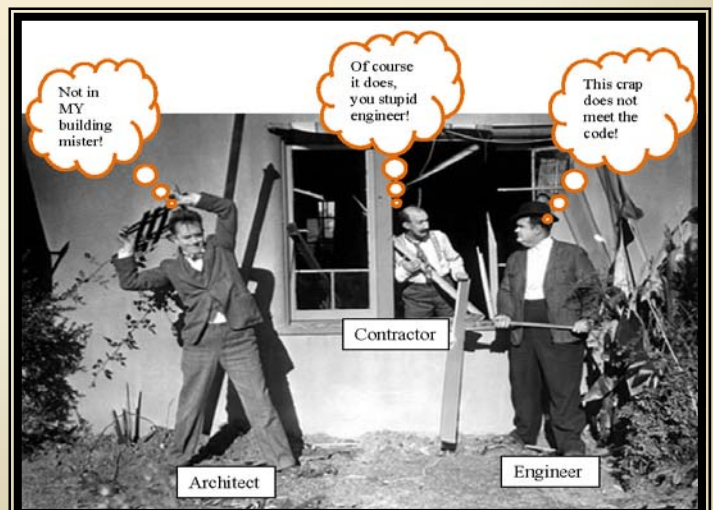
Additional Fees: Commissioning a building takes a significant amount of time and fees. Commissioning agent fees can range from \$2,500 for a small tenant remodel to \$9,000 for a winery and barrel storage facility. A complete high school campus can run up to \$40,000 or more. These commissioning fees will need to be included in all architectural proposals for projects that go into permit after January 1, 2017.

Coordination: While the commissioning agent will lead the process, the architect will need to be involved as part of the coordination and scheduling process. This will begin with the Design Review Kickoff Meeting and continue through the permitting and construction phases of the project.

So What Exactly has to be Commissioned?

The CEC states, "All building systems covered by Sections 110.0, 120.0, 130.0 and 140.0 shall be included..."

These sections include essentially all mechanical and plumbing equipment and systems, windows and doors, building insulation, lighting controls and electrical equipment.



What's Involved in Commissioning the Systems and Equipment?

Owner's Project Requirements: The first step is for the commissioning agent to develop a document that covers the energy efficiency goals, ventilation requirements, facility operations, equipment and system expectations and the building envelope performance expectations. This document is called the **Owner's Project Requirements**.

Basis of Design: The commissioning agent must first determine the appropriate means for testing and verifying each system component. This begins with the development of the **Basis of Design** document which explains the building systems and how they meet the Owner's Project Requirements.

Design Phase Review: The code requires the commissioning agent perform various reviews during the design stage of the project. This is to clarify how the commissioning process will be coordinated with the project team. The review includes verification that the systems and components are being designed in accordance with the Basis of Design and the individual code requirements associated with each system.

Commissioning Plan: A **commissioning plan** must be submitted along with the permit documents. The plan must include the project goals, systems and functions to be tested, test criteria, team information and the commissioning process activities.

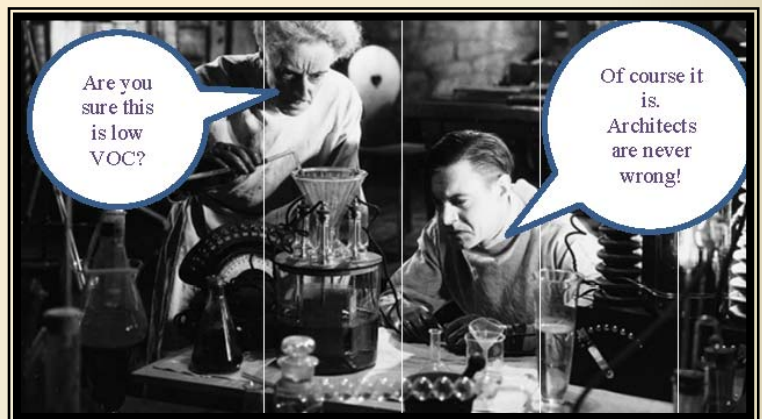
Functional Performance Testing: Functional Performance Tests (FPT) shall demonstrate the correct installation and operation of each component, system and system-to-system interface. Essentially, these are individual sheets that describe the systems to be tested, which tests will be performed and the pass/fail criteria for each. Once systems are completed the contractor will be required to demonstrate to the commissioning agent that each system passes the FPT. Each test will be signed and dated by the contractor and witnessed by the commissioning agent.

Documentation and Training: The code requires a systems manual be turned over to the building owner upon completion of the project. In addition, an owner's representative must be trained on the operation of the various systems, and components, within the building as well as the maintenance requirements.

Project Closeout and Beneficial Occupancy: Most local jurisdictions will want a sign-off by the project's commissioning agent that all systems are installed in accordance with the design and all system tests have been completed satisfactorily. This will be a requirement of the occupancy permit.

15000 Inc. has certified commission agents on staff to provide full commissioning services on your project. Call Jay or Gary at 707-577-0363 if you would like to learn more.

We are happy to discuss the process!



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