



# **Commissioning Report**

## **Curio Hotel, San Gabriel**

### **101-111 Valley Blvd. San Gabriel, CA 91776**

California Green Building Commissioning Plan  
Based on the 2013 version of the California Green Building Code

Prepared for the Building Safety Department, City of San Gabriel

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TABLE OF CONTENTS

ABSTRACT: CALIFORNIA MANDATORY COMMISSIONING.....4#

    CALIFORNIA ENERGY STANDARD REQUIREMENT.....5#

    CALIFORNIA GREEN BUILDING CODE REQUIREMENT.....8#

SECTION 1: BACKGROUND AND OWNER’S REQUIREMENT.....9#

    1.1 BCKGROUND .....10#

    GEOGRAPHY .....10#

    1.1.1 HISTORY .....10#

    1.1.2 SUSTAINABLE PROJECT SITE .....11#

    1.2 OWNER’S REQUIREMENT .....13#

SECTION 2: THE COMMISSIONING PROCESS.....15#

    2.1 INTRODUCTION.....16#

    2.2 COMMISSIONING DEFINED .....16#

    2.3 COMMISSIONING PROCESS .....16#

SECTION 3: BASIS OF DESIGN .....17#

    3.1 ARCHITECT SPECIFIED MANDATORY ITEMS PER CALIFORNIA GREEN BUILDING CODE .....18#

    3.2 MEP SPECIFIED ENERGY ITEMS PER CALIFORNIA ENERGY COMMISSION(CEC).....21#

    3.3 MEP ENERGY COMPLIANCE FORMS .....21#

    3.4 DESIGN PAHSE DESIGN REVIEW .....24#

*A design review is not necessary for code compliances, the system required items can be discussed among the designers. The architect who is leader of the design team shall evaluate all phase of the building design based on function of the building.*.....24#

*Electrical Design Review* .....24#

*Mechanical Design Review* .....24#

*Plumbing System Design Review* .....25#

*Structure design review:* .....41#

*Architect drawing review* .....41#

    SITE INSPECTION RECORD .....41#

    CITY COMMENT DATED SEPTEMBER 16, 2019 .....41#

    CITY COMMENT DATED JANUARY 22, 2020.....42#

    CITY COMMENT DATED OCTOBER 20, 2020 .....42#

SECTION 4: COMMISSIONING MEASURES.....43#

    4.1 BUILDING COMMISSIONING SPECIFICATIONS .....44#

    4.2 BUILDING SYSTEMS COMMISSIONING ACTIVITIES.....44#

SECTION 5: COMMISSIONING PLAN .....47#

    5.1 DEFINITION OF BUILDING SYSTEMS COMMISSIONING.....50#

    5.2 QUALITY ASSURANCE.....50#

5.3 BUILDING COMMISSIONING PLAN .....	51#
5.4 . COMMISSIONING TEAM MEMBERS .....	52#
5.5 STRUCTURE OF COMMISSIONING TEAM .....	53#
5.6 COMMISSIONING TEAM, RESPONSIBILITIES AND COMMUNICATION .....	56#
<i>Owner / Owner's Commissioning Coordinator</i> .....	56#
<i>Architect</i> .....	57#
<i>Mechanical Engineer</i> .....	57#
<i>Electrical Engineer</i> .....	57#
<i>General Contractor</i> .....	58#
<i>Mechanical Contractor</i> .....	58#
<i>Electrical Contractor</i> .....	59#
<i>Commissioning Agent (CxA)</i> .....	59#
5.7 COMMISSIONING MEMBER COMMUNICATION LIST .....	60#
SECTION 6: FUNCTIONAL TESTING .....	65#
6.1 CONSTRUCTION PHASE COMMISSIONING ACTIVITIES .....	66#
6.2 MEP SYSTEMS ACCEPTANCE TEST FORMS .....	68#
SECTION 7: SITE INSPECTION REPORT (DURING CONSTRUCTION) .....	73#
7.1 SITE INSPECTION .....	73#
SECTION 8: DOCUMENTATION AND SYSTEM MANUAL .....	75#
REFERENCES .....	79#
APPENDICES .....	83#
APPENDIX 1: CITY COMMENT RECORD AND INSPECTION RECORD .....	85#
APPENDIX 2 – CxA COMMISSIONING RECORD.....	83#
APPENDIX 2 – CxA COMMISSIONING RECORD.....	84#
APPENDIX 4 – SITE INSPECTION RECORD .....	95#
APPENDIX 5 – CITY COMMENT DATED SEPTEMBER 16, 2019 .....	101#
APPENDIX 6 – CITY COMMENT DATED JANUARY 22, 2020.....	107#
APPENDIX 7 – CITY COMMENT DATED OCTOBER 20, 2020.....	108#

# ABSTRACT:

## CALIFORNIA MANDATORY COMMISSIONING

The California Green Building Code and the California Energy Code require that new constructions must meet the California Green Building Procedure and building energy efficiency standards through the commissioning process. This commissioning report documents the design and construction phases of energy-efficient design for the new building.

(<https://ww2.energy.ca.gov/title24/2013standards/>)

CalRecycle's web site.

**5.410.2 Commissioning.** [N] For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. All occupancies other than I-occupancies and L-occupancies shall comply with the *California Energy Code* as prescribed in *California Energy Code* Section 120.8. For I-occupancies that are not regulated by OSHPD or for I-occupancies and L-occupancies that are not regulated by the *California Energy Code* Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.

Commissioning requirements shall include:

1. Owner's or owner representative's project requirements.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE

# **CALIFORNIA Energy Standard Requirement**

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## **SECTION 120.8 - BUILDING COMMISSIONING**

For all new nonresidential buildings, the Subsections of 120.8 (a) through (i) for building commissioning shall be included in the design and construction processes of the building project to verify that the building energy systems and components meet the owner's or owner representative's project requirements. All building systems and components covered by Sections 110.0, 120.0, 130.0, and 140.0 shall be included in the scope of the commissioning requirements in this Section, excluding covered processes. For buildings less than 10,000 square feet, only the design review requirements in Sections 120.8(d) and 120.8(e) shall be completed.

(a) **Summary of Commissioning Requirements.** The following items shall be completed:

1. Owner's or owner representative's project requirements;
2. Basis of design;
3. Design phase design review;
4. Commissioning measures shown in the construction documents;
5. Commissioning plan;
6. Functional performance testing;
7. Documentation and training; and
8. Commissioning report.

(b) **Owner's or Owner Representative's Project Requirements (OPR).** The energy-related expectations and requirements of the building shall be documented before the design phase of the project begins. This documentation shall include the following:

1. Energy efficiency goals;
3. Ventilation requirements;
4. Project program, including facility functions and hours of operation, and need for after hours operation; and
5. Equipment and systems expectations.

**EXCEPTION to Section 120.8(b):** Buildings less than 10,000 square feet.

(c) **Basis of Design (BOD).** A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project, and updated as necessary during the design and construction phases. The Basis of Design document shall cover the following systems:

1. Heating, ventilation, air conditioning (HVAC) systems and controls;
2. Indoor lighting system and controls; and
3. Water heating systems and controls; and
4. Covered processes.

**EXCEPTION to Section 120.8(c):** Buildings less than 10,000 square feet.

(d) **Design Phase Design Review.**

1. **Design Reviewer Requirements.** For buildings less than 10,000 square feet, design phase design review may be completed by the design engineer. Buildings between 10,000 and 50,000 square feet require completion of the Design Review Checklist by either an engineer in-house to the design firm but not associated with the building project, or a third party design engineer. For buildings larger than 50,000 square feet or for buildings with complex mechanical systems, an independent, review of these documents by a third party design engineer is required.
2. **Design Review.** During the schematic design phase of the building project, the owner or owner's representative, design team and design reviewer must meet to discuss the project scope, schedule and how the design reviewer will coordinate with the project team. The building owner or owner's representative

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## **SECTION 120.8 - BUILDING COMMISSIONING**

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shall include the Design Review Checklist compliance form in the Certificate of Compliance documentation (see Section 10-103).

3. **Construction Documents Design Review.** The Construction Documents Design Review compliance form lists the items that shall be checked by the design reviewer during the construction document review. The completed form shall be returned to the owner and design team for review and sign-off. The building owner or owner's representative shall include this Construction Documents Design Review compliance form in the Certificate of Compliance documentation (see Section 10-103).
- (e) **Commissioning measures shown in the construction documents.** Include commissioning measures or requirements in the construction documents (plans and specifications). Commissioning measures or requirements should be clear, detailed and complete to clarify the commissioning process. These requirements should include the list of systems and assemblies commissioned, testing scope, roles and responsibilities of contractors, requirements for meetings, management of issues, the commissioning schedule, operations and maintenance manual development and of training, and checklist and test form development, execution and documentation. Include, for information only, roles of noncontractor parties.
- (f) **Commissioning Plan.** Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned and shall be started during the design phase of the building project. The Commissioning Plan shall include the following:
  1. General project information; and
  2. Commissioning goals; and
  3. Systems to be commissioned; and
  4. Plans to test systems and components, which shall include:
    - A. An explanation of the original design intent; and
    - B. Equipment and systems to be tested, including the extent of tests; and
    - C. Functions to be tested; and
    - D. Conditions under which the test shall be performed; and
    - E. Measurable criteria for acceptable performance; and
    - F. Commissioning team information; and
    - G. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning requirements listed in Sections 120.8(g) through 120.8(i) shall be included.

**EXCEPTION to Section 120.8(f):** Buildings less than 10,000 square feet.

- (g) **Functional performance testing.** Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the acceptance test requirements in Sections 120.5, 120.6, 130.4 and 140.9. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

**EXCEPTION to Section 120.8(g):** Buildings less than 10,000 square feet.

- (h) **Documentation and training.** A Systems Manual and Systems Operations Training shall be completed.
  1. **Systems manual.** Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative and facilities operator. The Systems Manual shall include the following:
    - A. Site information, including facility description, history and current requirements; and
    - B. Site contact information; and
    - C. Instructions for basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, and a site events log; and
    - D. Description of major systems; and

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**SECTION 120.8 - BUILDING COMMISSIONING**

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- E. Site equipment inventory and maintenance notes; and
  - F. A copy of all special inspection verifications required by the enforcing agency or the Standards.
2. **Systems operations training.** The training of the appropriate maintenance staff for each equipment type or system shall be documented in the commissioning report. Training materials shall include the following:
- A. System and equipment overview (i.e., what the equipment is, what it does and with what other systems or equipment it interfaces)
  - B. Review and demonstration of operation, servicing and preventive maintenance procedures
  - C. Review of the information in the Systems Manual
  - D. Review of the record drawings on the systems and equipment

**EXCEPTION to Section 120.8(h):** Buildings less than 10,000 square feet.

- (i) **Commissioning report.** A complete report of commissioning process activities undertaken through the design, construction and reporting recommendations for post-construction phases of the building project shall be completed and provided to the owner or representative.

**EXCEPTION to Section 120.8(i):** Buildings less than 10,000 square feet.

## **CALIFORNIA Green Building Code Requirement**

**|| 5.410.2 Commissioning.** [N] For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. Commissioning requirements shall include:

1. Owner's or owner representative's project requirements.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.
6. Documentation and training.
7. Commissioning report.

### **Exceptions:**

1. Dry storage warehouses of any size.

## **2013 CALIFORNIA GREEN BUILDING STANDARDS CODE**