

3-Part Series: How to Integrate Building Code Into Projects

Summary of Course Content & Learning Objectives

PART I - Code Information Gathering Basics

1. Identify the kinds of code-related information that will affect programming decisions.
2. Understand how statutory requirements and fiduciary duty impact HSW.
3. Learn how to prepare a project-specific list of codes and standards.
4. Become knowledgeable of the various ways that state and federal laws impact design.
5. Determine how to best use task lists and checklists for gathering code information.

PART II

LEARNING OBJECTIVES

1. Learn how to properly identify occupancies and calculate occupant loads.
2. Understand the various construction types and how they are identified.
3. Determine quantities and types of means of egress.
4. Distinguish between fire resistance and fire protection requirements.
5. Become familiar with calculations for plumbing fixtures, CFM quantities, and lighting power densities.

PART III

LEARNING OBJECTIVES

1. Learn how permit-ready documents differ from construction documents.
2. Understand the key components for making documents 'permit-ready'.
3. Become familiar with documenting performance-based design.
4. Identify the components for documenting sustainability design.
5. Review the construction administration processes for obtaining a Certificate of Occupancy.



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Part I: Code Information Gathering Basics

1. Codes and Programming: Gathering Relevant Information (10 – 12 minutes)
 - a. Hierarchy of Needs and Needs Analysis
 - b. Typical Programming Information Categories
 - c. Code Information that Affects Programming Decisions.
 - d. Existing Buildings vs. New Construction.
2. Codes: Protecting the Public Health, Safety, and Welfare (10 – 12 minutes)
 - a. HSW Defined as Statutory Requirements
 - b. Fiduciary Duty – Code Minimum Requirements
 - c. Code Bodies Judge HSW by Outcomes
 - d. 'Better Than Code' Advantages and Pitfalls
3. Code Research Basics (10 – 12 minutes)
 - a. Code Jurisdiction Research
 - b. Municipal Code Research
 - c. Comprehensive List of Codes and Standards
 - d. Verify Amendments
4. Researching Federal Laws and Regulations (8 – 10 minutes)
 - a. Accessibility Laws
 - b. Energy Codes and Standards
 - c. Environmental Laws
 - d. Sustainability Laws
5. Compiling Information (10 – 12 minutes)
 - a. How to Use of Hyperlinks
 - b. How to Coordinate Space Planning with Codes
 - c. How to Develop a TASK LIST for Gathering Code Information
 - d. A Summary Checklist and Outline for the Programming Phase

Part I Summary:

Programming is an essential tool for satisfying the goals and needs of a project. Often left out of this initial exercise, however, is the gathering of the basic requirements of the local jurisdiction, and any state and federal laws that may be required to meet the Health, Safety and Welfare components of the design.

This one-hour seminar will address the various steps and procedures to start a project off on the right foot by seeing how code information affects programming decisions; looking at how codes meet the fiduciary duty of licensed professionals by establishing minimum standards (including the advantages and pitfalls of being 'better than code'); developing a task list for doing jurisdictional research to determine the applicable codes and standards (including state and federal laws); how to use online sources; coordinating space planning with codes; and preparing an outline and summary checklist.



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Part II: Conducting a Preliminary Code Analysis for Your Project

1. Occupancy Requirements (10 – 12 minutes)
 - a. Determine Use Types(s)
 - b. Determine Occupancy Classification(s)
 - c. Calculate Occupant Load(s)
 - d. Review Specific Occupancy Requirements
2. Minimum Types of Construction (8 – 10 minutes)
 - a. Determine Construction Type
 - b. Determine Ratings of Building Elements
 - c. Calculate Building Height and Maximum Floor Area (as required)
 - d. Review Construction Type Limitations
3. Means of Egress Requirements (10- 12 minutes)
 - a. Determine Quantity and Types of Means of Egress
 - b. Calculate Minimum Widths and Arrangement of Exits
 - c. Calculate Travel Distances, Common Paths, and Dead Ends
 - d. Compare Egress and Accessibility Requirements
4. Fire Resistance and Fire-Protection Requirements (10 – 12 minutes)
 - a. Determine Fire and Smoke Barriers/Partitions and Horizontal Assemblies
 - b. Determine Location of Opening Protectives and Review Types of Fire Tests and Ratings Required
 - c. Determine Fire and Smoke Detection Systems and Required Alarm Systems
 - d. Determine Types of Extinguishing Systems and Possible Sprinkler Trade-Offs
5. Mechanical, Electrical and Plumbing Requirements (10 – 12 minutes)
 - a. Determine Required Toilet/Bathing Facilities and Calculate Number of Each Fixture Required
 - b. Determine Type of Air Distribution System(s)
 - c. Determine Types/Locations of Outlets, Switches, Fixtures
 - d. Determine Emergency Power and Lighting Requirements

Part II Summary:

Preparing an initial code analysis can be a daunting task, depending on the size and complexity of the project. However, integrating these elements early into the design is an essential step in meeting the minimum requirements for the Health, Safety and Welfare of the eventual occupants of the building.

The components discussed in this one-hour seminar represent the basic information needed to successfully prepare the project for review for code compliance by the various jurisdictional authorities of a given community. These represent only a small fraction of the many-faceted elements that make up the municipal, state and federal laws encompassing any given project. Research continues throughout the design and construction process. Properly and consistently prepared code documentation is imperative should any liability issues arise after a project is completed.

Part III: Creating a 'Permit-Ready' Set of Documents

1. How Permit-Ready Documents Differ from Construction Documents (8 - 10 minutes)
 - a. Communicating to Code Officials (written and graphic)
 - b. Excluding Contract-Only Information and Language
 - c. Including Code-Relevant Tables, Calculations and Summaries
 - d. Excluding Work Where No Permit is Required
2. Key Components of Permit-Ready Documents (12 – 14 minutes)
 - a. Cover Sheet Basics – Do's and Don'ts
 - b. Writing a Scope of Work Statement and a Code Summary
 - c. Moving Code Information from Specifications to Drawings
 - d. Exclude Non-applicable Information (No 'One-Size-Fits-All' Sheets)
3. Performance Design (Alternative Methods) Documentation Considerations (10 - 12 minutes)
 - a. Performance Criteria, Technical References and Resources
 - b. Design Assumptions, Limitations, Hazards, and Safety Factors
 - c. Calculations and Computer Modeling
 - d. Scope of Inspection and Testing Required to Demonstrate Compliance
4. Sustainability Design Documentation Considerations (8 - 10 minutes)
 - a. Achievement Goals (voluntary or by ordinance)
 - b. Type(s) of Green Building Features to be Included
 - c. Validation Method(s) Used
 - d. Commissioning Procedures and Maintenance Documentation
5. Final Steps: Documentation Integration for Construction (8 – 10 minutes)
 - a. 'Approved' Drawings Available on Site
 - b. RFI and Change Order Documentation
 - c. Obtaining a Certificate of Occupancy
 - d. The Importance of Creating an 'As-Built' Set of Documents

Part III Summary:

Although construction documents are traditionally intended to convey the design to a builder in a way that it can be built and meet the aesthetic and functional requirements, they also represent what must be included to meet codes. These communication methods include the usual drawings and specifications, but they must also include additional and accurate information required by a code jurisdiction that will then be relied upon during the construction process to communicate the legal requirements that must be met to achieve compliance.

Proper documentation, coupled with the integration of these requirements into the design and construction, will help ensure that whatever interpretations and agreements made between the design professionals and the jurisdictional authorities have been commemorated and may be referred to throughout the life of the project and the building.