



**Project Delivery Education Program
Construction Documents Technology (CDT)
Online Training for Groups
Summer 2019**

Session 1 – Fundamentals and Considerations

Chapter 1 - Considerations for the Reader

The PDPG is the **body of knowledge for the Project Delivery Process**.

Ch. 1 explains how understanding Project Delivery as **foundational knowledge is helpful to all stakeholders**: an **owner** who requires a facility; **A/Es** who create and decide what to build and produce construction documentation; **contractors** who build the project and provide construction management services; **manufacturers** and suppliers who provide products and materials; and **facility managers** who operate and maintain structures and facilities. There is value in all of these participants having common understanding of the language and the process. The chapter includes a **Project Scenario** describing the steps involved from conception of the project through occupancy.

Chapter 2 - Facility Life Cycle

The facility life cycle shows the **sequence of stages** that a project goes through, from decision to build to taking occupancy for the facility's intended purpose. It goes in a circle from project conception to design to construction documents to procurement to construction to facility management and around again, as the facility is either remodeled or replaced. Each stage is explained based on various organizations' approach.

Chapter 3 - Project Delivery Plan

A short chapter noting that a project delivery **plan is vital** to success of the project and must reflect the specific needs of the owner and the project.

Chapter 4 - Project Delivery Methods

The **quality** of a project is based on **3 factors**: cost (or budget); extent (or scope); and time (or schedule). A change in one necessitates a change in the other two. Determination of the project delivery method is key to how these factors are approached.

Design-Bid-Build is the most common historically and especially on public projects where often lowest cost is the deciding factor. A lot of the discussion is based on this form of delivery because if you understand D-B-B you can then understand the others that are presented.

Generally in order of common usage –

CMAR – **Construction Manager at Risk**, where the CM is involved in the early stages of design through procurement, and then becomes the general contractor, usually with a not-to-exceed contract.

D-B – **Design-Build**, where the Owner contracts with one entity for design and construction services.

O-B – **Owner-Build**, where the Owner acts as general contractor with multiple prime contracts.

IPD – **Integrated Project Delivery**, still coming up, where the various entities participate in the process together, sharing risk and reward.

Chapter 5 - Stakeholders and Participants

Owner, Designer, Contractor and Supplier Teams – various entities on each team and types of agreements between them.

Chapter 6 - Codes, Regulations and Reference Standards

Minimum requirements. Authorities Having Jurisdiction (AHJs) who enforce the requirements.

Session 2 – Project Delivery

Chapter 7 - Risk Management

As it relates to A/Es but concepts apply to owners and contractors as well. Discusses risk management methods – **identification of risk, assessment, then strategies to deal with it**, such as avoidance, reduction, sharing, and transfer or retention. Must evaluate projects and firm's relevant skills, client and contractor.

Chapter discusses **agreements** (various but we study AIA); Owner, A/E, Contractor tripartite relationships.

Includes **managing expectations, quality control, professional liability insurance, and claims**.

Chapter 8 - Project Conception

Developing owner's requirements and other requirements into a **project program**. Looking at financial aspects, location, facility management requirements.

Includes site evaluation, regulatory requirements and facility performance criteria.

Session 3 –Design Process

Chapter 9 – Design

Schematics and design development. Establishing requirements for quality – early cost estimates, life cycle costs, sustainability considerations.

Chapter 10 - Product Evaluation and Selection

This process must establish performance requirements for products, assemblies, equipment and the facility. Identify products that comply. How to get information, select specific products, ultimately document selections by Owner and A/E.

Session 4 – Construction Documents: Part 1

Chapter 11 – Construction Documents (Drawings and Specifications) - CDs are the written and graphic documents prepared for communicating the project design to those that will construct the project and for administering the construction contract. The documents define the **rights, responsibilities and relationships** between the parties so are all part of the contract. The drawings show **quantity and location of elements**; the specifications define the **quality of products, materials, and workmanship** required.

Various types of each and how they are used to convey information are discussed.

Categories of drawings and their features and the various **methods of specifying** are covered.

Formats provide consistency in the location of information to reduce conflicts in the documents. We go over **OmniClass™** for classification of elements of the built environment from different points of view, **PPD Format™** for preliminary project descriptions, **UniFormat™** for organizing information by systems and assemblies in the early stages of design, **MasterFormat™** for project manuals, **SectionFormat™** to organize sections of specifications into three consistent parts, and **PageFormat™** for placing information similarly on the page.

Session 5 – Construction Documents: Part 2

Chapter 11 – Construction Documents (Specifications)

Relationship of Division 01 – General Requirements to the rest of the specifications and how they apply to all the other sections for **administrative and procedural requirements, temporary facilities and controls, performance requirements, and life cycle activities**. We learn about the **hierarchy** between the General Conditions, Division 01, and Part 1 – General of the specification sections.

Session 6 – Procurement

Chapter 12 - Procurement Documents and Contracting

For bidding and after agreement is signed. Bidding and contracting requirements including **Invitation to Bid, Instructions, Bid Forms, Agreement Forms, General Conditions, Bonds and insurance**.

Chapter 13 – Procurement

Pricing, addenda, bids or proposals; difference in public versus private projects.

Controlling variables such as unknowns and contingencies through use of **allowances, alternates, and unit prices**.

Evaluation Options: **Low Bid; Best Value: Total Cost; Best Value: Fees; Qualifications Based Selection**

Basis of Payment: **Stipulated Sum; Cost-Plus with or without a Guaranteed Maximum Price; Target Price; Unit Price**.

Chapter 14 – Preconstruction

Award of contract; preconstruction submittals; permits; mobilization.

Session 7 – Construction

Chapter 15 – Construction – Part 1

Construction contract administration activities for administering the contract, typically performed by the A/E; **contractor project management activities** related to managing the construction process, typically performed by the contractor; different from CMAR.

Chapter discusses roles and responsibilities, communications, schedule, meetings, submittals, site visits, contract modifications including change orders and construction change directives, substitutions, supervision of construction, site safety, and measurement and payment.

Session 8 – Construction, Closeout, and Facility Management

Chapter 15 – Construction (continued)

Chapter 16 – Closeout

Inspections, closeout submittals, substantial completion, operations and maintenance data, project record documents, the correction period, and warranties.

Chapter 17 – Facility Management

Includes asset management, maintenance, security, telecommunications, information technology, inventory, parking and other activities involved in facility management. Chapter completes the circle, as the facility is delivered to the owner, ready for its intended use.

Session 9 – AIA A201 – General Conditions – Part 1

Articles 1 through 9 – Rights, responsibilities and relationships of Owner, Contractor, Architect, and Subcontractors. Changes in the Work, Time, and Payments and Completion.

Session 10 – AIA A201 – General Conditions – Part 2

Articles 10 through 15 – Protection of Persons and Property, Insurance and Bonds, Uncovering and Correction of Work, Termination or Suspension of the Contract, Claims and Disputes and Miscellaneous Provisions.

* * *