

CONSTRUCTION CONTRACTING

INSTITUTE FOR FACILITIES MANAGEMENT

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AIA Continuing Education Provider

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COURSE DESCRIPTION

408 Construction Contract Administration APPAU201909M

Discuss the various project delivery approaches utilized by colleges and universities. Learn about the basic legal and contractual documents for a design and construction project. Examine the structure of a construction contract. Review bidding strategies and procedures for soliciting a construction bid and explore various techniques for structuring a bid proposal to the owner's advantage.

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LEARNING OBJECTIVES

1. Discuss bidding strategies for construction bids
2. Discuss project delivery approaches
3. Learn basic legal and contractual design documents for design and construction.
4. Discuss the construction contract structure



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OUTLINE

1. Contractual Relationships
2. Project Delivery Methods
3. Contract Documents
4. Bidding & Award

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CONTRACTUAL RELATIONSHIPS

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DEFINING PROJECT DELIVERY METHODS

- Associated General Contractors of America (AGC)
 - "The comprehensive process of assigning the contractual responsibilities for designing and constructing a project...a delivery method identifies the primary parties taking contractual responsibility for the performance of the work"
- Alternative project delivery methods seek to increase collaboration by altering the point at which the contractor formally enters the project team with input into the design, budget and schedule

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AGENTS AND VENDORS

 Agents: Provide professional Services Act in the owners interest Qualification based selection Serve owners loosely defined needs Follows a professional code of conduct	 Vendors: Provide a specific product or service Act in their own interest Value or cost basis selection Meet specified requirements Contract defines standard of conduct
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PROJECT DELIVERY METHODS

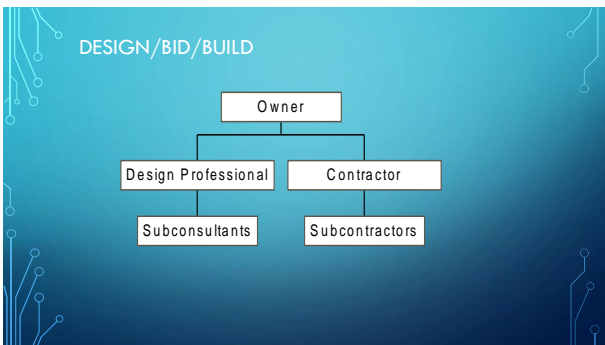
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DELIVERY APPROACHES

- Design-Bid-Build
- Design-Build
- Construction Management at Risk
- Construction Management with Bid of Fees and General Conditions (CM Agent)
- Multiple Prime Contracts
- Cost-Plus
- Job Order Contracting
- Privatized Design-Build-Finance
- Integrated Project Delivery

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DESIGN/BID/BUILD

Advantages

- Process most familiar to institutions
- Owner controls the design....completed under separate owner/A-E contract prior to construction
- Competitive pricing for entire construction contract

Greatest competition for both design and construction
 Best utilized when scope of work is easily and well defined

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DESIGN/BID/BUILD

Disadvantages

- No mean to expedite schedule...drawings and specs must be 100% complete to bid
- Construction contract awarded to low bidder without consideration of qualifications (this is changing however with pre-qualifications of bidders becoming more common)
- No contractor assistance pre-construction
- Not an open book process
- Adversarial, change order environment
- Construction price not fixed until after design and bids are finalized
- Time consuming if bids exceed project budget

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DESIGN/BUILD

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graph TD
    Owner[Owner] --- Design/Build Contractor[Design/Build Contractor]
  
```

Traditional D-B

- Owner holds single contract
- Selection process is based on qualifications and price
- Constructability review during design
- Design is not complete prior to selection

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DESIGN/BUILD

Advantages

- Single point of responsibility for both design and construction
- A/E and contractor work together through all project phases
- Guaranteed maximum price is fixed early in the design phase of the project
- Contract is awarded based on A/E and contractor team qualifications
- Project schedule can be fast tracked
- Less adversarial relationship
- Reduced change orders
- Contractor is motivated to ensure owner satisfaction when selections are based on qualifications and performance

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DESIGN/BUILD

Disadvantages

- Works best with simple project types where requirements can be fully documented in request for proposals (RFP)
- Pre-planning is needed to prepare sufficient material for (RFQ)/RFP process
- Owner has less control of design process...A/E typically working for the contractor
- Design changes can result in costly impacts to drawings or construction work in progress
- Disagreements related to intended quality of work can occur
- May not work any better than D-B-B if mutual trust relationships are not built
- Is not legal in some states

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DESIGN/BUILD (BRIDGING)

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graph TD
    Owner[Owner] --- TC[Technical Consultant]
    Owner --- DBC[Design/Build Contractor]
    TC --- DBC
  
```

Alternative to D-B

- Schematic design and RFP/RFQ documents prepared by A/E
- Separate bridging A/E selection required
- Helps ensure adequate RFP documents are prepared

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CONSTRUCTION MANAGER AT RISK

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graph TD
    Owner[Owner] --- DP[Design Professional]
    Owner --- CMF[CM Firm]
    DP --- CMF
    CMF --- SC1[Subcontractor]
    CMF --- SC2[Subcontractor]
  
```

CM@R Structure

- Owner holds separate contracts
- Separate qualifications based selection required
- Constructability review during design

* Owner retains full control over design and receives the benefits of early contractor participation

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CONSTRUCTION MANAGER AT RISK

Advantages

- A/E, owner, and (CM@R) work together through all phases
- GMP may be fixed early, during the design phase of the project
- Project can be expedited with fast-track construction, which can also reduce costs
- Construction contract is awarded on basis of CM@R qualifications and past performance
- Construction work is competitively priced through low bids of prequalified subcontractors
- Less adversarial relationship is encouraged between owner and A/E-contractor
- Change orders are generally reduced due to A/E and contractor coordination through the design phase
- Owner controls the design, which is completed under direct owner-A/E contract
- Provides more design-change flexibility for complex building types

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CONSTRUCTION MANAGER AT RISK

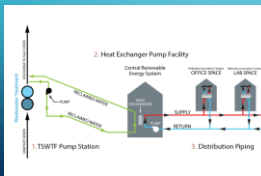
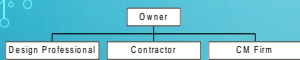


Disadvantages

- Fast-track construction presents risks related to incomplete construction documents
- Design changes during construction can result in costly changes to construction work already in progress
- CM@Rs must learn to provide quality preconstruction services
- Is not legal in some states

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CONSTRUCTION MANAGER FOR-FEE (CM AGENT)



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CONSTRUCTION MANAGER FOR-FEE

Advantages

- A/E, owner, and contractor (CM) can work together through all phases of the project
- GMP may be fixed early, during the design phase of the project
- Project can be expedited with fast-track construction, which can also reduce costs
- Change orders can be reduced with improved A/E and CM coordination through the design phase
- Owner can control the design, which is completed under direct owner-A/E contract
- Provides more design-change flexibility for complex building types
- Ensures lowest CM fee and/or general conditions amounts through bid process

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CONSTRUCTION MANAGER FOR-FEE

Disadvantages

- CM qualifications or past performance are considered in the CM selection process
- The lowest bid of fees and/or general conditions is not an indicator of CM capabilities
- Fee and/or general conditions savings can be much less than the cost of CM inefficiencies
- Fast-track construction presents risks related to incomplete construction documents
- CMs must learn to provide quality preconstruction services
- May not work better than DBB if mutual trust relationships are not built
- Is not legal in some states

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AGENCY CONSTRUCTION MANAGEMENT W/D-B-B

- Agency construction manager is hired as a consultant to help represent the owner
- Can be an advantage if you are looking at specialized construction and your in-house construction management staff has limited experience with this type of construction

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AGENCY CONSTRUCTION MANAGEMENT W/D-B-B

Advantages

- Same advantages as noted for DBB process
- Agency CM can provide industry experience and estimating, scheduling, and project management expertise for the owner's benefit

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AGENCY CONSTRUCTION MANAGEMENT W/D-B-B

Disadvantages

- Same disadvantages as noted for D-B-B process
- Agency CM has no direct accountability for the success of the construction process
- Owner must pay the fees of an agency CM in addition to the contractor's fees for the construction work
- Agency CM must be committed to representing the owner first and foremost, or a loss of control can result

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MULTIPLE PRIME CONTRACTS

- Multiple direct owner-contractor prime contracts
- Bid for various trades as needed to complete project
- Done as state procurement requirement
- Often with a fee base CM contract

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MULTIPLE PRIME CONTRACTS

Advantages

- Construction method required by the procurement law in certain states
- Can reduce markups of general contractors who otherwise would oversee the entire scope of work
- Can be preferred by some established subcontractors who have prime contracts with the owner
- Project can be expedited with fast-track construction, which can also reduce costs

Truly just a variation of Design-Bid-Build but often will require a CM Agent to assist

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MULTIPLE PRIME CONTRACTS

Disadvantages

- No single point of responsibility for the various trades
- Construction is awarded to multiple low bidders, without consideration of their qualifications
- The owner is responsible for conflicts and inefficiencies between the multiple prime contractors
- No contractor assistance with estimating, plan checking, and constructability reviews during design
- Not an open-book process—bid shopping can occur and actual overhead and profit amounts are unknown
- Adversarial, change-order-oriented environment can occur between owner, A/E, and contractor
- Construction price is not fixed until after the design and all bid processes are completed
- Time-consuming redesign and rebid is generally required if bids come in over budget

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NEGOTIATED CONTRACTS

- Vast majority of the time occurs at private institution settings
- Can be used for construction or design services
- A/E or contractor is informally selected
- Contract is developed through negotiation

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NEGOTIATED CONTRACTS

Advantages

- Informal contractor selection and award process can be expedited
- Informally negotiated contract can be informally terminated if needed
- Terms and conditions of private sector contracts are often more oriented toward the owner's interests

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NEGOTIATED CONTRACTS

Disadvantages

- Negotiated contracts are generally not legal for use by public owners
- Informal contractor selection processes may not identify the most qualified contractors
- This process can lead to perceptions of favoritism toward often-utilized contractors

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COST-PLUS AND UNIT PRICE CONTRACTS

- Does not establish total construction contract amount in advance
- Uses the actual documented construction costs or pre-established unit prices plus agreed-upon contractor fee markups
- Good contracting mechanism for emergency or re-occurring annual work

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COST-PLUS AND UNIT PRICE CONTRACTS

Advantages

- Does not rely as much on accurate estimating or bidding of the work
- Reduces potential for change-order-related conflicts
- Open-book process allows the owner to keep track of actual costs and appropriate compensation
- Good process if budget is not limited or phased completion levels are flexible

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COST-PLUS AND UNIT PRICE CONTRACTS

Disadvantages

- Is not conducive to effective overall project budget management
- Contract usually with a single sub-contractor
- Is not legal in some states

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• Similar to unit price however usually involves a GC for extend scope of work

• Contract is based on a specification and a unit price book

• Bids are based on a multiplier; contract is awarded to the lowest multiplier

• Project cost is determined by:
 $(\text{quantities}) \times (\text{book unit prices}) \times (\text{multiplier})$

• Used extensively in the federal government

JOB ORDER CONTRACTING

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JOB ORDER CONTRACTING

Advantages

- Expedites projects by eliminating project-specific bid phases and reducing design documentation requirements
- Allows for construction price negotiation based on an established construction cost unit-price book
- Less adversarial relationship is encouraged between owner and contractor
- Can be utilized with single or multiple job order contracting (JOC) contractors


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JOB ORDER CONTRACTING

Disadvantages

- Works best on small- to medium-sized projects with easily identified construction components
- Allowable JOC project size is limited by the procurement codes of most jurisdictions
- Although process is more informal, files and documentation must be carefully kept for audits
- Is not legal in some states

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PRIVATIZED DESIGN-BUILD FINANCE (P3)

- Turnkey design, construction, financing and possible operation of a facility by private developer
- Commonly being used for residential housing and parking structures
- Varying levels of legal, financial, and ownership participation by the university owner

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PRIVATIZED DESIGN-BUILD FINANCE (P3)

Advantages

- Same advantages as DB except
- Owner generally pays for facility through lease payments over time, rather than through bond sales or other financing methods.
- Some design and quality control can be incorporated into the terms of the ground lease, when applicable.
- The owner may receive ownership of the building at the end of the ground lease term.
- The project cost may not be included on the owner's financial statements in some cases.

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PRIVATIZED DESIGN-BUILD FINANCE (P3)

Disadvantages

- Same disadvantages as DB except
- Less control of design, quality, and maintainability with developer managing the design and construction process
- Developer may be able to build projects less expensively, but at lower quality levels
- Developer may not have access to tax-free financing and reasonably expects to make a profit on the project
- Projects are often included on owner balance sheets by bond/credit rating agencies anyway

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CONSIDERATIONS WHEN SELECTING PDM

Regardless of the PDM selected, it still requires your campus to plan, program, design, construct, operate and maintain...view this as a campus asset considering the Total Cost of Ownership rather than looking to minimize initial construction cost

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- Less control of design, quality, and maintainability with developer managing the design and construction process
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This concludes The American Institute of Architects Continuing Education Systems Course



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