gkkworks partners with clients to improve the built environment through creative and adaptive planning, design and construction solutions that respond to our clients’ culture, business and community.

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Integrated Services, Customized Solutions
Delivery Methods: Basics

- Project delivery consists of planning, design, construction and other services necessary for organizing, executing and completing a building facility.

- What are the fundamental decisions that an owner must make?
  - What type of project delivery method to use?
  - What will be the procurement method?
  - What will the contract be like?

- Generally 3 parties are involved in the process:
  - Owner
  - Designer
  - Builder
Delivery Methods: Types

- Types of Project Delivery
  - Design-Bid-Build
  - Construction Management Multi-Prime (CM MP)
  - Construction Management-at-Risk (CM@Risk)
  - Design-Build (DB)

- Other Concepts
  - Agency CM: Add on service that an Owner can use to add expertise to any type of delivery
  - Lean (Alliance Contracting): Overlay to any delivery method that attempts to reduce the redundant efforts (waste) associated with the current delivery process (Lean can also be applied to CM Multi-Prime, CM@Risk and Design-Build project deliveries)
Delivery Methods: Design-Bid-Build

- **Characteristics**
  - Two contracts (Architect & Contractor)
  - Best understood
  - Linear sequence of work (longest delivery)

- **Primary Reason to Choose**
  - Retain control of design
  - Procurement laws are well defined
  - Low first cost (Bidding)

- **Disadvantages**
  - Final cost changes: Owner responsible
  - Most litigious
  - Contractor has no input to project
Delivery Methods: CM-Multi-Prime

- **Characteristics**
  - Many contracts (Architect, Contractor, Subcontractors)
  - Linear design
  - CM is selected on qualifications

- **Primary reason to choose**
  - Retain control of design
  - Contractor involved early
  - Combine fast track and lowest bids

- **Disadvantages**
  - Owner responsible for changes, overlaps and gaps in scope
  - Lack of subcontractor involvement
  - Exposure to CM’s lack of proper oversight
Delivery Methods: CM@Risk

- **Characteristics**
  - Two contracts (Architect & Contractor)
  - CM is selected on qualifications and fees
  - Some construction risks are transferred to GC
  - Similar to CM Multi-Prime for selection and management of the work
  - Open book on costs (subcontractor and supplier payments) and procurement process
  - Flexibility to price the project
  - Subcontracts are re-assigned to the CM
  - Bonding can be for the entire scope of the work (GC and subcontractors)
  - Risks can push the CM not to act as the agent of the Owner
Delivery Methods: CM@Risk

- **Primary reason to choose**
  - Retain control of design
  - Contractor involved early
  - Flexibility to price the project

- **Disadvantages**
  - Owner responsible for changes
  - Owner’s qualification-based selection of CM
  - Architect may not take input from CM during design
Delivery Methods: Design-Build

- **Characteristics**
  - Single point of contact/responsibility
  - Often is the fastest delivery
  - Most cost effective
  - Need a well defined scope
  - Need for timely decisions
  - Must effectively administer design-build process
Design-Build: Benefits

Benefits to the Owner

- Owner retains control of design
- Construction input occurs during the design process
- Overlaps & gaps in scope are identified during pre-construction
- Cost benefit of procuring the construction directly from the trades
- There are no mark-ups on subcontracts or on changes
- Improved schedule due to early resolution of design and construction issues
- Packaging of work can allow for construction to start early
- Tighter control to adhere scope budget
- CM as Owner’s representative manages the construction in the Owner’s best interest
Design-Build: Disadvantages

- Owner responsible for changes, overlaps and gaps in scope
- Exposure to CM’s lack of proper oversight
- Subcontractors may be brought into project late in the process
- Need up-front program & performance criteria
- Owner needs to manage decisions on quality
- Owner is pushed for early decisions
Penn State CII Study

- Construction Industry Institute study of 351 projects in 37 states
- Compared the cost, schedule and quality performance of DBB, CM@R and DB deliveries

Findings:
- DB cost at least 6% less than DBB
- DB is at least 33% faster than DBB
- DB provides at least 10% better quality than DBB
Note: DB costs at least 4.5% less than CM@R and 6% less than DBB (CII Study)
Note: DB delivery speed is at least 23% faster than CM@R and 33% faster than DBB (CII Study)
Delivery Methods: Integrated Team

Typical Design-Build Team

- Owner
- Contractor
  - Architect
    - Engineer
    - Engineer
    - Engineer
  - Subcontractor
    - Subcontractor
    - Subcontractor

Integrated Team

- Owner
- Architect / Contractor
  - Engineer
  - Engineer
  - Engineer
  - Subcontractor
  - Subcontractor
  - Subcontractor
What are the advantages of an integrated team?

- Architect and contractor are one entity (single point of responsibility)
- Experts in design and construction contribute to ALL phases of the project
- Owner can tailor the best of CM-Multi-Prime, CM@Risk and Design-Build
- Allows for reduction of costs by eliminating redundant efforts