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Alternative DELIVERY Models

Learn about alternative delivery models and how they differ from the traditional bid build method

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Introduction

It's All About Three Things:

- Heirarchy
- Procurement
- Contracting

Procurement models for infrastructure projects have evolved significantly over the past 50 years, offering owners a variety of choices and increased flexibility. This flexibility helps owners select the right design and construction teams, ensuring appropriate role allocation. The chosen delivery method is crucial as it influences which firms bid on a project.

Project delivery typically involves four phases: planning, designing, constructing, and operations. Historically, these phases had limited overlap, but as projects have grown more complex, integrating some phases has proven beneficial. For example, the design-build model combines design and construction responsibilities.

The latest models, known as Collaborative, Alternative, or Progressive Delivery models, integrate the private sector earlier in design and planning, fostering collaboration among owners, designers, and constructors. These models can significantly impact project cost and schedule.

Given the variety of procurement models and the complexity of projects, selecting the right delivery method is critical. This choice depends on when designers, constructors, and third parties are engaged and their responsibilities. Large, risky projects may benefit from collaborative models, while simpler projects might use traditional models.

Ultimately, the best delivery method considers project goals, risks, cost, schedule, and quality. This course reviews existing models and offers recommendations for selecting the best fit, including:

1. **Design-Bid-Build (DBB)**
2. **Construction Manager General Contractor (CMGC)**
3. **Design-Build (DB)**
4. **Progressive Design-Build (PDB)**

The best delivery method considers project goals, risks, cost, schedule, and quality.

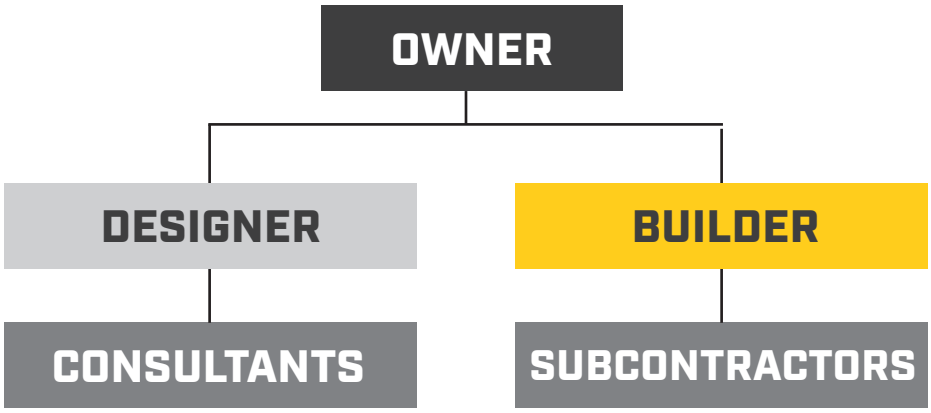
Traditional Model
Design Bid Build (DBB)

Design Bid Build (DBB), also known as the Traditional Model, remains the most commonly used delivery method by owners. Despite its longer duration due to sequential phases (planning, design, and contractor procurement), it allows owners to work closely with design engineers to select a contractor. DBB is effective for less complex projects where the owner has prior experience.

It's a challenge and a risk that some of that design cannot be built, **which can cause change orders and a delay to the schedule.**

DBB consists of three phases: design, bid, and build. The design phase starts with hiring an engineer to create the project design. Contractors then bid on the project, and the designer may help the owner choose the best fit. After awarding the bid, the general contractor begins construction, with the designer overseeing quality assurance.

A lack of early collaboration between designers and constructors can lead to quality and constructability issues on complex projects. Thus, DBB is a perfect solution for low-risk, routine projects where collaboration may not be necessary or constructability isn't a concern.



A Deep Dive:
Design Build (DB)

In Design-Build (DB), the owner hires a design engineer to develop a reference concept and performance requirements, advancing the design to about 30% before selecting a design-builder.

The design-builder then integrates design and construction, adhering to performance specifications and allowing for design innovations.

The Value

Partnering with a design-builder offers the constructability and schedule benefits that aren't realized in traditonal DBB. Key aspects that add value to DB include:

Early industry dialogue and collaboration

Open communication to build trust

Best-value risk allocation strategy

Cost Certainty

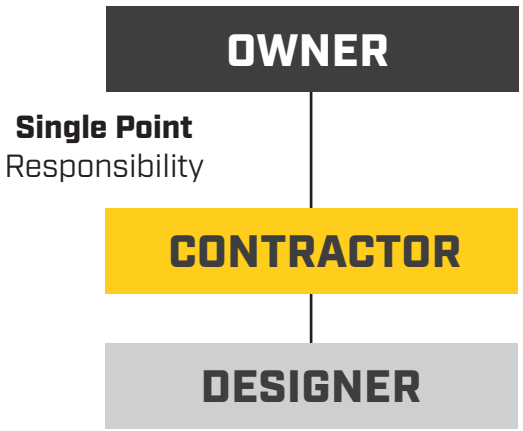
Cost certainty in DB occurs earlier than in DBB, as the design-builder provides cost estimates before completing the design. Using a best-value selection methodology, considering both price and qualifications, is crucial for complex DB projects. This approach promotes faster delivery, higher quality, and cost reductions, with fewer changes causing cost growth and schedule delays.

Advantages

Enhanced Collaboration: Promotes teamwork and innovation.
Cost and Time Efficiency: Reduces costs and timelines.
Single Point of Responsibility: Simplifies communication and accountability.

Disadvantages

High Trust Required: Relies on strong trust and communication.
Less Competitive Bidding: Can lead to higher costs.
Owner Involvement: Requires more owner participation.



Collaborative Delivery
CMGC

CMGC is a progressive delivery method integrating the client, engineer, and contractor to develop efficient budgets and schedules. The owner first engages a designer, then a contractor early in design for collaboration on constructability, estimating, risk management, and scheduling. At design completion, the project converts to a Guaranteed Maximum Price, Target Price, or Lump Sum contract.

The model fosters innovation, sustainability, and equity, with early subcontractor engagement. Contractor selection can be based more on qualifications rather than the lowest bid.

Advantages

Early Cost Certainty: Provides cost certainty early in the design phase.

Enhanced Collaboration: Promotes teamwork between owner, designer, and contractor.

Risk Mitigation: Allows for better risk management through early contractor involvement.

Disadvantages

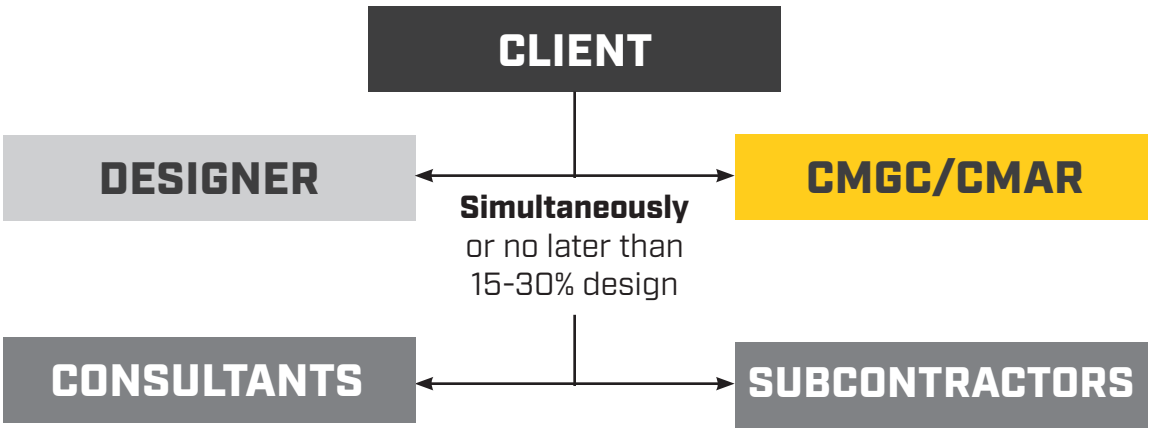
High Owner Involvement: Requires significant owner participation throughout the project.

Potential for Higher Costs: May lead to higher costs due to reduced competitive bidding.

Complex Contract Management: Involves complex contract management and coordination.

Key Difference

CMGC retains some owner risk. The construction manager is responsible for budget and schedule, including rush deliveries and change orders. Owners may limit the contractor's self-performed work, affecting attractiveness and benefits.



A New Approach:
Progessive Design Build (PDB)

PDB connects agencies with a single DB partner to manage and execute the project from start to finish. The procurement phase focuses on selecting a team based on qualifications, experience, and fit. This method fosters a collaborative relationship between the owner and design-builder, built on managed risk and mutual respect. The owner may choose not to engage an owner's design engineer or involve them minimally. Early selection of a DB partner (often at 5% of the project lifecycle) maximizes innovation and eliminates design duplication.

Procurement Phases

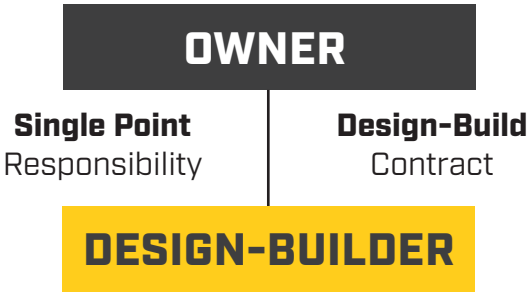
PDB procurement is phased. Initially, the owner seeks a DB partner to develop the optimal design approach. After selection, they enter a project development agreement to collaboratively develop the design, estimate, and contract arrangement. The design-builder leads every stage, from planning to construction. The final scope is determined midway through design, with a negotiated target price, guaranteed maximum price, or lump sum contract. The project development phase ends with the design-build agreement. This approach emphasizes collaboration and quick, effective communication to manage cost and schedule impacts.

Advantages

Early Cost Certainty: Provides cost certainty early in the design phase.
Enhanced Collaboration: Promotes teamwork between owner, designer, and contractor.
Flexibility: Allows for adjustments during the project.

Disadvantages

High Owner Involvement: Requires significant owner participation throughout the project.
Complex Contract Management: The single contract involves more complex systems and coordination, since it controls both the designer and the builder.



Comparing
The Models

When choosing a project delivery method, it's important to consider factors like control, coordination, risk, budget, and schedule.

Owner-Designer Relationship: The owner directly interacts with the designer in all methods. In PDB and DB, this interaction lessens once the design-builder is involved. Early teamwork in CMGC and PDB helps avoid conflicts.

Communication: PDB has open and constant communication. CMGC involves collaboration but keeps designer and contractor roles separate. DB's collaboration depends on the parties' culture.

Best Value and Budget: PDB and CMGC give early budget estimates that get better over time. Close teamwork encourages innovation, reduces risk, and shortens the schedule. DBB is good for smaller, routine projects.

Cost Estimating: PDB and CMGC provide ongoing cost estimates, leading to more accurate numbers as the design progresses. DB and DBB set costs during bidding, but these can change due to less early contractor involvement.

Schedule: PDB and CMGC speed up the process, reducing design and construction time. They allow early construction while design continues, fostering innovation and improving the schedule. Early contractor involvement consistently helps the schedule.

Change Orders: PDB reduces change orders due to early collaboration. CMGC also cuts down on change orders with early contractor input. These methods keep owners involved, helping with timely decisions and minimizing risk.

Procurement Traits	CMAR/CMGC	PDB	DB	DBB
Risk Management				
Innovation				
Constructability				
Mitigate Design Risk/ Maximize Optimization				
Third-Party Interface				
Owner/Engineer/ Contractor Collaboration				
Owner Control				
Transparent Pricing Process				
Price Certainty				
Schedule Optimization				

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