Delivery Methods for Your Project: What Makes the Most Sense in this Turbulent Construction Environment?

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INTRODUCTION

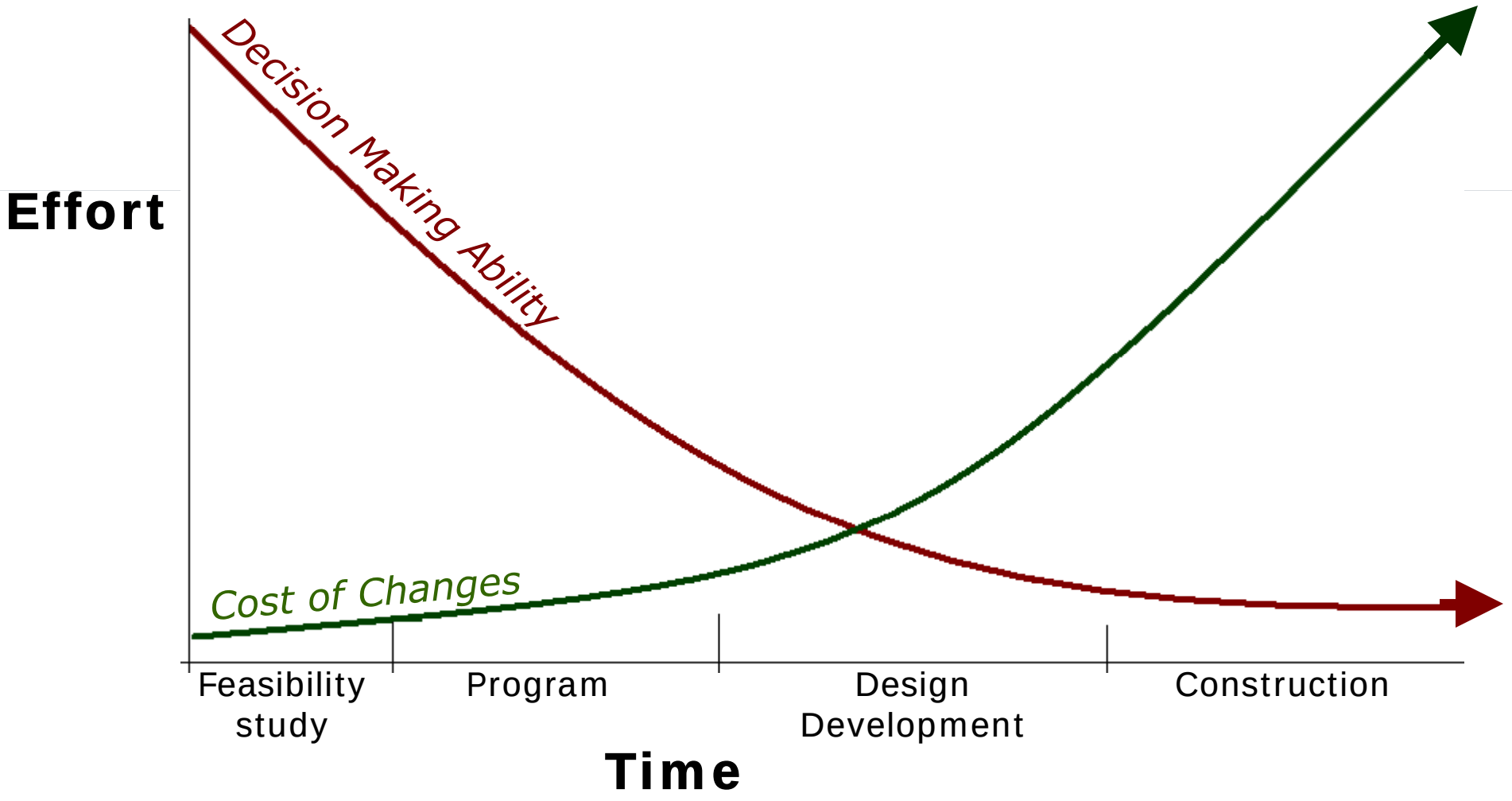
Brad Noyes – Vice President, Brailsford & Dunlavey

- Been with the firm since our founding in 1993
- Background in Architecture and Real Estate Development
- Frequent guest lecturer at many national conferences
- Written articles on planning and program management for a number of national publications
- Experience with over 200 education facilities projects
    - Over $1.2 billion of program management and consulting

PRESENTATION OUTLINE

1. Introductions
2. Current Marketplace
3. Delivery Methods
4. Contractor Payment Options
5. Selection Approaches
6. Sample Scenarios and Discussion
7. Wrap Up

CONTEXT


Effort
Decision Making Ability
Cost of Changes
Feasibility study
Program
Design Development
Construction
Time

PROJECT DELIVERY METHODOLOGIES

1. Design-Bid-Build
2. Construction Management
   a. CM as Advisor (Program Manager)
   b. CM as Agent
   c. CM as Builder (CM @ Risk)
3. Design-Build
   a. Design-Build by Developer
   b. Bridging Documents

Note:

No project delivery method is inherently superior to any other.

Regardless of the delivery methodology, a Client can have a highly satisfactory outcome mostly dependant on:

1. The integrity of the pre-implementation process
2. The relationship between the design documents and the design intent
3. The completeness and clarity of the design documents
4. Clear contractual relationships
5. The relationships of all involved
6. Experience

BASIC RESPONSIBILITIES

Owner Responsibilities:

- Project finance
- Provide program of requirements
- Provide accurate existing conditions data for site
- Provide testing & inspections
- Review & approve architects' CDs
- Provide timely decisions on points not delineated in contract documents
- Ultimate decision responsibility for schedule & cost

The Owner may elect to undertake project management duties

* or *

May designate either the architect or builder to undertake these duties

* or *

May hire a separate project management entity to act as his/her agent throughout the process

Architect Responsibilities:

- Provide Contract Documents
- Coordination of design consultants
- Assistance with preliminary cost estimates
- The approvals process
- Comment on builder's conformance to documents & design intent through construction
- Project finance Assistance thru bidding phase
- Construction administration

There may one architect or a design team comprised of the design architect, architect of record, etc.

BUT, there is one contractual relationship between the primary architect and the Owner.

Builder Responsibilities:

- Provide Lump Sum or GMP Cost Guarantee
- Obtain Permits
- Guide/Manage construction process
- Coordinate Subs
- Fulfill requirements of the Construction Documents
- Guarantee quality and schedule

The Lowest Bid does not mean the lowest Cost.

Aside from the completeness of the Contract Documents, the best way to manage cost risk is to hire a contractor with a solid reputation for delivering:

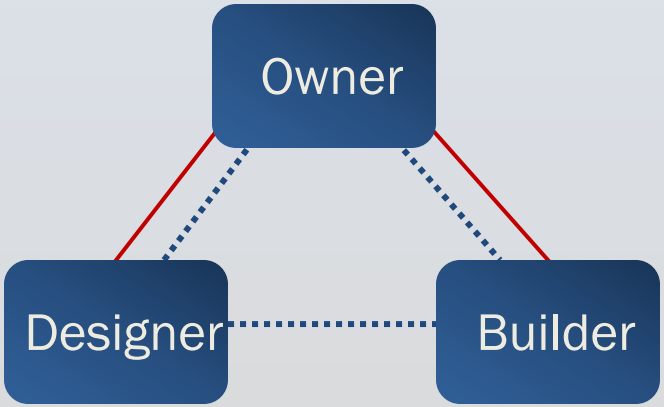
ON TIME

ON BUDGET

TRADITIONAL METHODS

Design-Bid-Build

- Most common in the industry
- Three phases
- Separate contracts between Owner/Architect (AIA B141) and Owner/Builder (AIA 201)



Project Communication

Contracts

DESIGN BID BUILD

ADVANTAGES

- Very Familiar Process
- Clear Role of All Parties
- Balance of Power
- More Control of Design
- Clear Understanding of Construction Documentation

DISADVANTAGES

-Time Consuming (Time is Money)
-Contractual Distance Between Architect & Contractor
- May Incur Change Orders & Delays

TRADITIONAL METHODS

Design-Bid-Build

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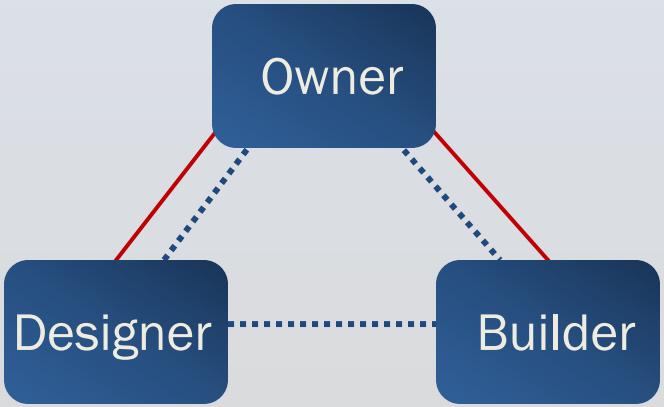
Partnering

- A Positive Dispute Prevention Method that Emphasizes Cooperation Among All the Parties and Shared Management of Risk



Project Communication

Contracts

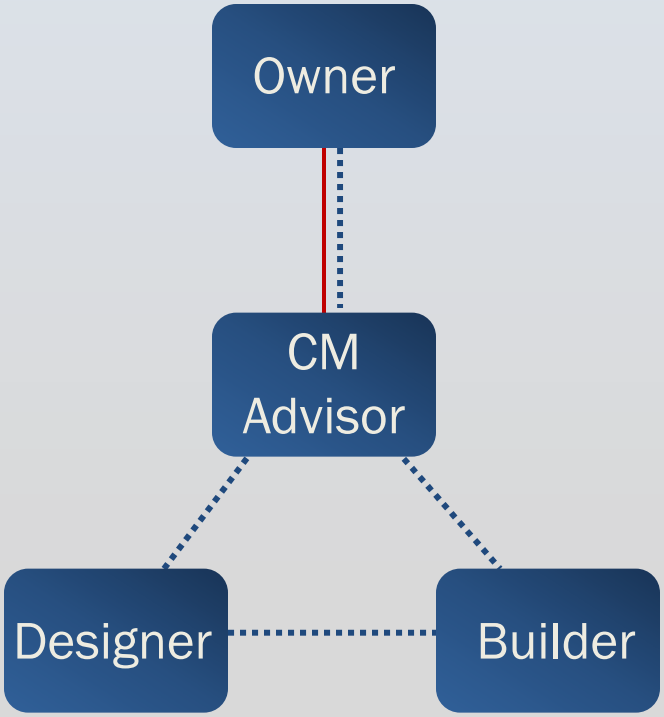
CM ADVISOR METHOD

Design-Bid-Build

- Most common in the industry
- Three phases
- Separate contracts between Owner/Architect (AIA B141) and Owner/Builder (AIA 201)

Construction Manager

- Three Types:
  - **CM as Advisor**
  - CM as Agent
  - CM as Builder
- Same three phase structure as before



Generally, this method is utilized when the Owner is in a different geographic location than the project and desires greater on-site representation and therefore empowers a CM to act as Agent.

DESIGN BID BUILD WITH CM AS ADVISOR

ADVANTAGES

- Owner Maintains Direct Contract Relationships
- Careful Monitoring of Cost & Schedule
- Project Oversight

DISADVANTAGES

- Added Cost of Consultant
- Confusion from Traditional Method
- More Complex Relationships

CM AGENT METHOD

Design-Bid-Build

- Most common in the industry
- Three phases
- Separate contracts between Owner/Architect (AIA B141) and Owner/Builder (AIA 201)

Construction Manager

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  - CM as Advisor
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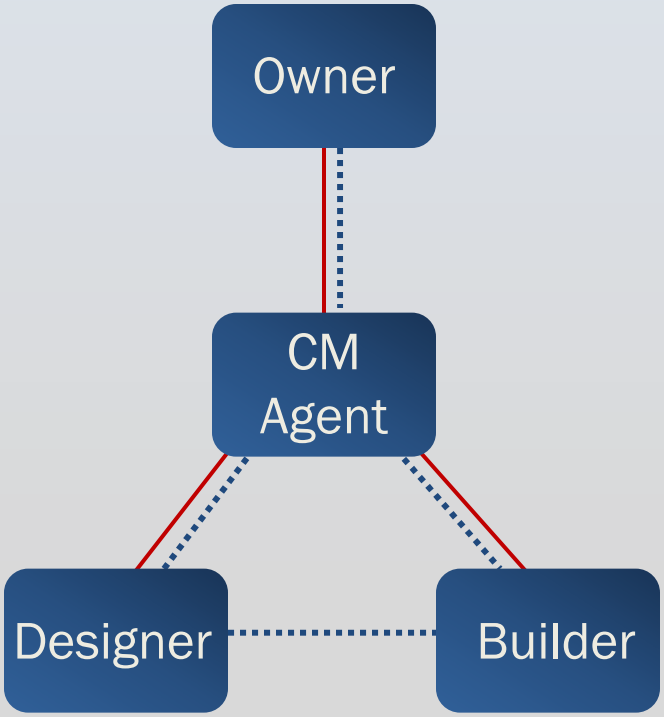

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DESIGN BID BUILD WITH CM AS AGENT

ADVANTAGES

- Careful Monitoring of Cost & Schedule
- CM Takes on Contractual Relationships
- Can Shorten the Schedule
- Oversight

DISADVANTAGES

- Owner Does Not have Direct Communication with Architect or Contractor
- Added Cost of Consultant
- Confusion from Traditional Method
- More Complex Relationships

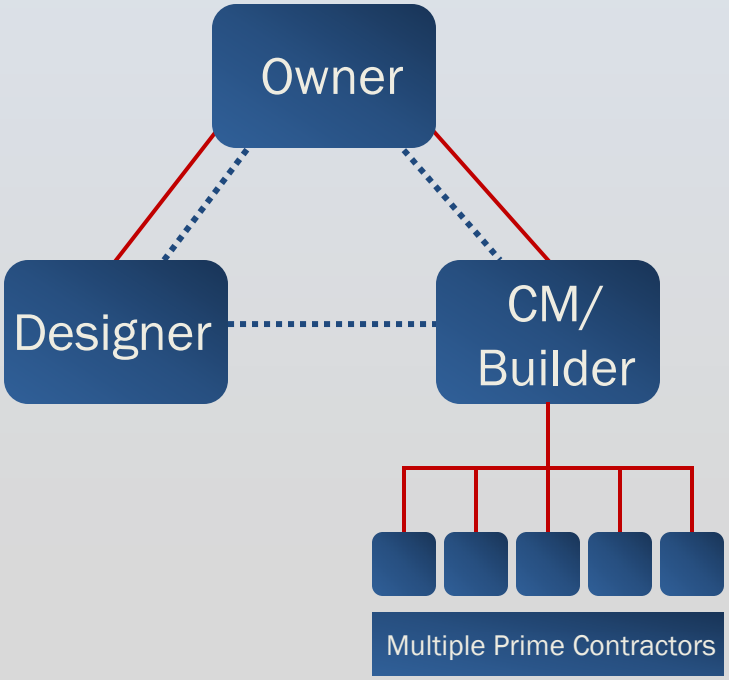
CM BUILDER METHOD

Design-Bid-Build

- Most common in the industry
- Three phases
- Separate contracts between Owner/Architect (AIA B141) and Owner/Builder (AIA 201)

Construction Manager

- Three Types:
  - CM as Advisor
  - CM as Agent
  - **CM as Builder (at Risk)**
- Same three phase structure as before



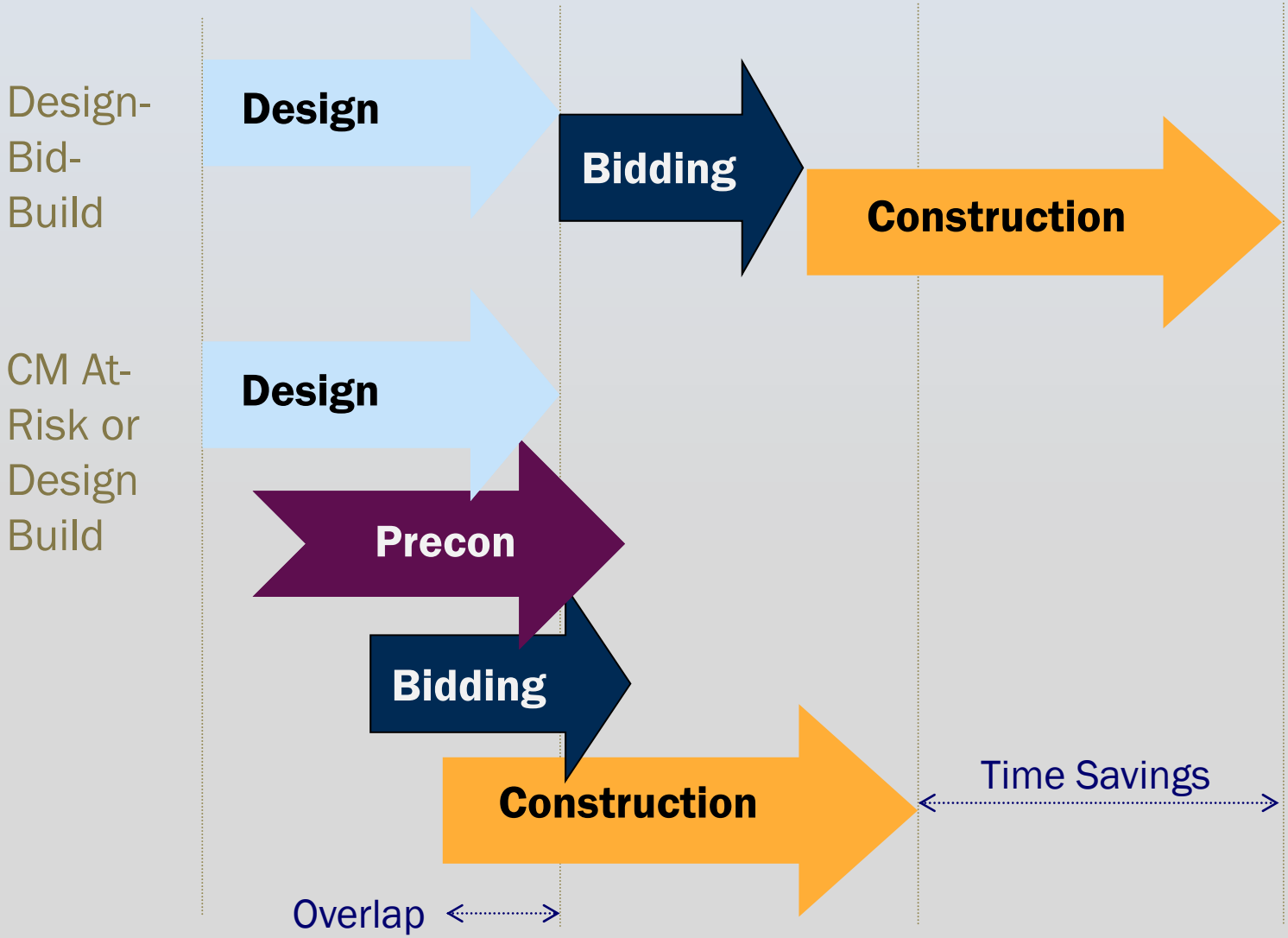
DESIGN BID BUILD WITH CM AS BUILDER

ADVANTAGES

- Careful Monitoring of Cost & Schedule During Design
- CM Takes on Contractual Relationships
- Can Shorten the Schedule
- Oversight
- Can Guarantee Cost

DISADVANTAGES

- Reduced Ability to Control Construction Quality
- Change Orders Due to Low Bidding of Contractors
-Confusion from Traditional Method


Design-
Bid-
Build
Design
Bidding
Construction
CM At-
Risk or
Design
Build
Design
Precon
Bidding
Construction
Time Savings
Overlap

THE DEBATE IN THE INDUSTRY

Proponents:

Costs are lower

CM assists with design & controls costs within the SCL

CM process is team oriented

CM process prevents costly & time consuming re-design

Quality of design is better

Opponents:

Costs are higher

CM causes “train wreck” by inflating costs at time of GMP

CM creates too much tension with design team

CM process results in constant VE & re-design

CM reduces scope & quality thru constant VE

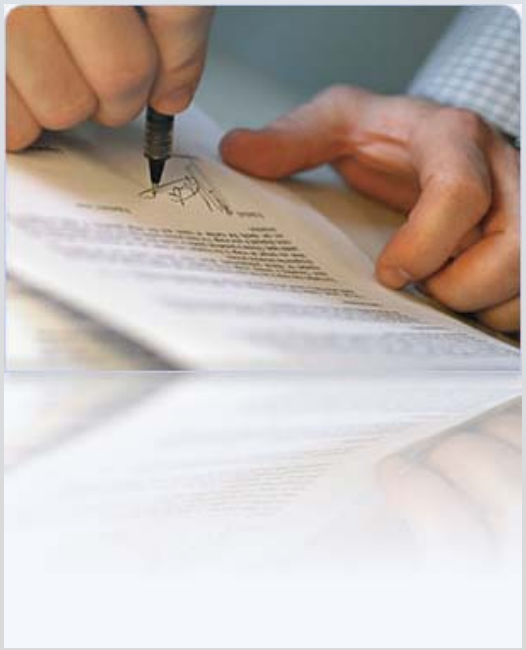
PRECONSTRUCTION SERVICES

- Management plan
- Estimating & cost control
- Value engineering
- Constructability reviews
- Phasing of design
- Scheduling
- QA/QC Plan
- Logistics & safety
- Establish a GMP

CONSTRUCTABILITY REVIEWS

- What does that really mean?
- A/E should benefit from CM know-how
- The goal is that the final design is:
  - Complete
  - Coordinated
  - Constructable
  - Good quality
  - Economical
  - Biddable (no unwanted change orders)
- Constructability = value engineering
- What is the format of this review?

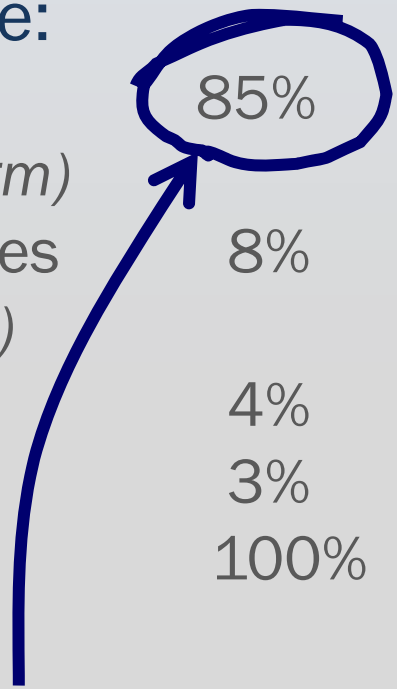
TIMING OF THE GMP



- Early GMP (100% SD or DD):
  - Requires more Owner & A/E sophistication
  - Risk of scope defined in “words” vs. drawings
  - Estimates are more inaccurate
  - Higher likelihood of disputes
  - High pricing may force cuts in scope
- Best practice:
  - 50%CD (scope can be defined & quantified)
  - After bids received > 50% of costs

ESTABLISHING THE PRICE

- GMP is not an arbitrary number
- Price to be fully detailed (open book)
- Typical breakdown of the price:
  - "Costs of the Work" 85%
    (Subs, Suppliers & Self-Perform)
  - CM Overhead Costs & Expenses 8%
    (Staff, Field Offices, Utilities…)
  - CM Fee (Overhead & Profit) 4%
  - Construction Contingency 3%
  - Total: 100%



Mostly based upon competitive sub bids

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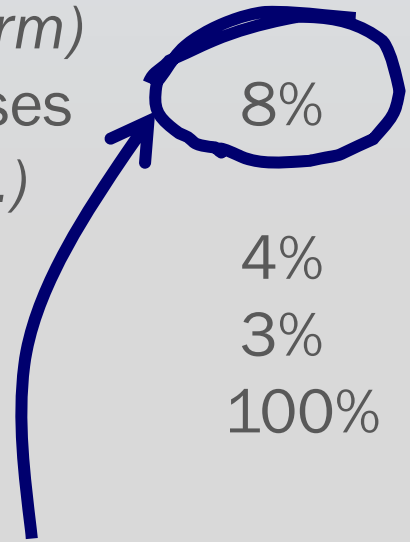

Generally consistent with CM's original proposal

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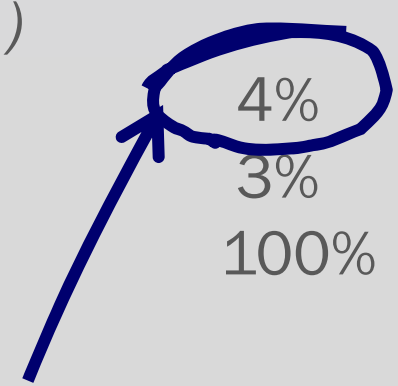

Defined during contract negotiations

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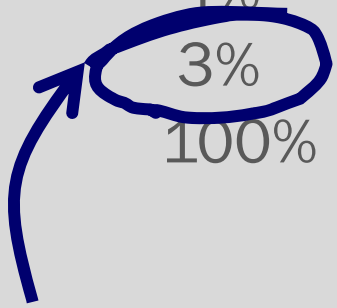


To be negotiated based upon risk assignment

CONTRACTOR COMPENSATION

1. **Cost Plus**: The contractor is compensated for actual cost of the work plus a fee based upon either an agreed fixed sum or % of work. Often called “time and materials” this method is appropriate for small complex projects in which estimates are difficult to determine.

Open book job vs. closed book job

CONTRACTOR COMPENSATION

2. **Guaranteed Maximum Price**: (GMP) The contractor is compensated for actual costs, plus a fee with an agreed maximum price. Cost beyond the maximum are borne by the contractor. If costs are below the price, the contractor shares the savings with the owner depending on the contract. GMP could be adjusted by change orders.

CONTRACTOR COMPENSATION

3. **Unit Price**: The contractor is paid a predetermined price for each unit or quantity of work or material used in the project's construction. The unit price can be derived through bidding or negotiation. Quantities are verified by an independent inspection.

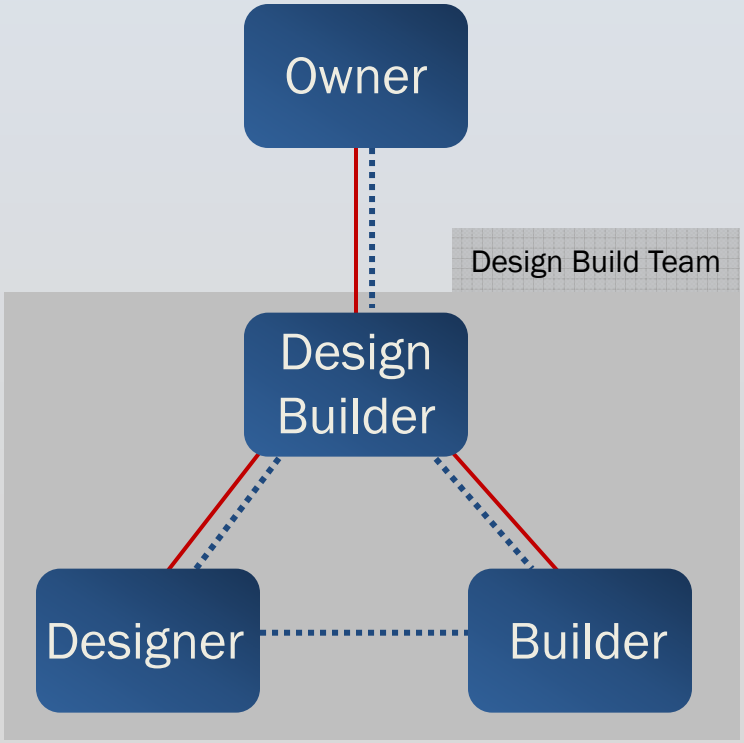
CONTRACTOR COMPENSATION

4. **Lump Sum**: The contractor is paid a fixed price for the completed construction, regardless of the cost to the contractor. The lump sum is established through bidding. The fixed price is adjusted by change orders.

DESIGN BUILD

Design Build

- Owner can contract with single DB Entity
- Most prevalent in private sector
- 2 Phase process: Design / Build



DESIGN BUILD

ADVANTAGES

- Faster Schedule
- Single Point of Contact / Responsibility
- Reduces Change Orders
- Reduces Construction Delays

DISADVANTAGES

- Owner's Inexperience with the Process
- Owner's Perceived Lack of Control of Design & Quality
- Less Direct Connection with the Architect

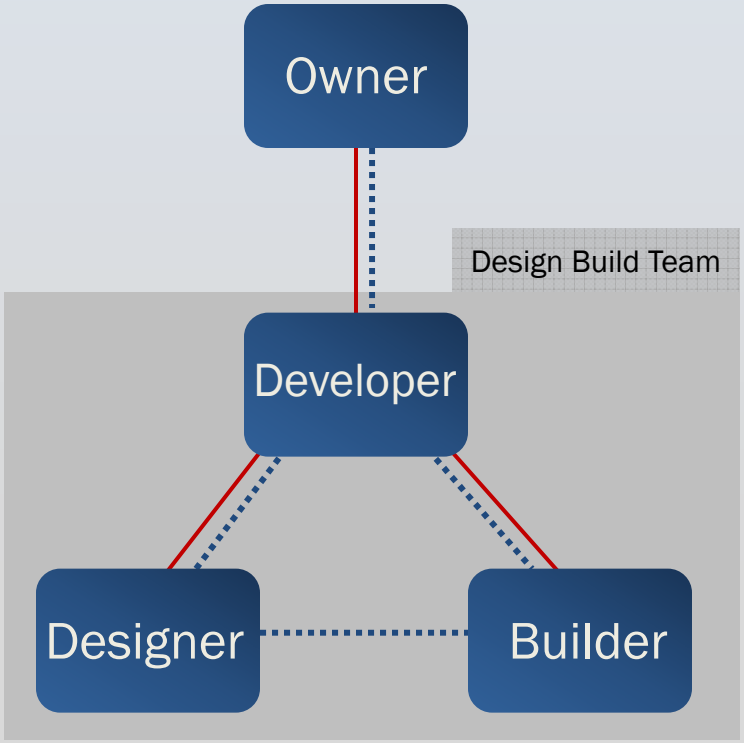
DESIGN BUILD

Design Build

- Owner can contract with single DB Entity
- Most prevalent in private sector
- 2 Phase process: Design / Build

Design Build by Developer

- Often called “Turnkey”, sale/leaseback
- Responsible for Acquisition, Design, Build, Financing, etc



Project Communication

Contracts

DESIGN BUILD WITH DEVELOPER

ADVANTAGES

- Single Point of Contact
- Reduces Financial & Legal Risk
- Early Guarantee of Construction Costs
- Shortened Schedule

DISADVANTAGES

- Owner's Inexperience with the Process
- Lack of Direct Owner Participation
- Lack of Control
- Complexity
- Difficulty in Preparing Adequate Pre-selection of materials and performance standards

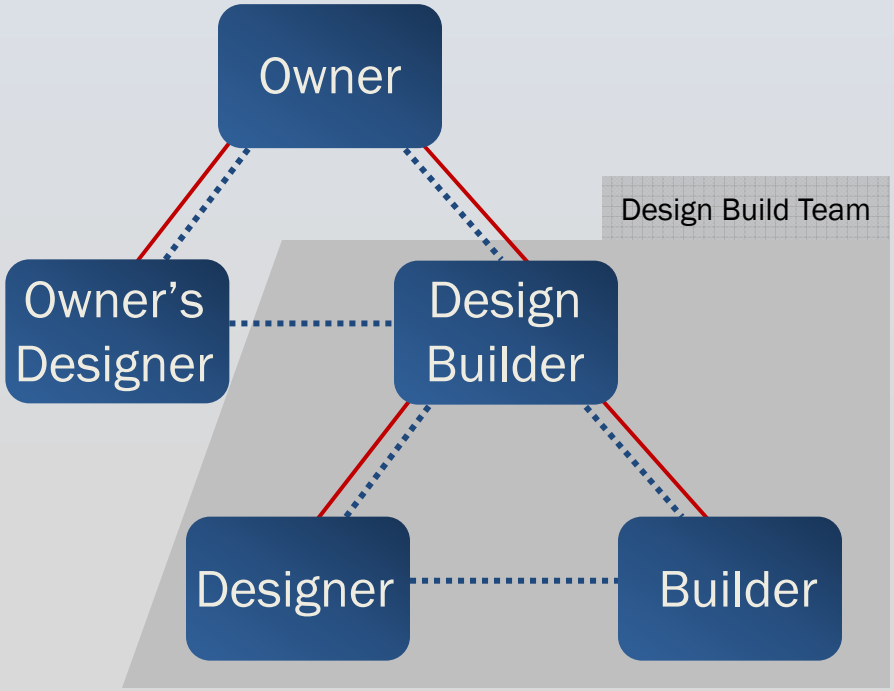
DESIGN BUILD

Design Build

- Owner can contract with single DB Entity
- Most prevalent in private sector
- 2 Phase process: Design / Build

Design Build with Bridging

- Combining Strengths of DBB and DB



Project Communication

Contracts

DESIGN BUILD WITH BRIDGING

ADVANTAGES

- Focused Attention to the Design
- Competitive Bidding
- Single Point of Responsibility
- Pre-selection of materials and performance standards

DISADVANTAGES

- Owner's Inexperience with the Process
- More Management by the Owner
- Complexity
- Conflicts Between Original Architect and Design Builder
- Unsure of Any Cost Savings

SELECTION PROCESS OPTIONS

1. Low Bid Approach
   - Meet Qualification Requirements
   - Lowest Bid Wins

2. Qualifications Approach
   - Limited Documentation
   - Price Not a Factor / Most Qualified Team Wins

3. Price Ceiling Approach
   - Only price ceiling published
   - Mix of Price and Quality to Determine Winner

Fixed Price / GMP Approach
- Price is Known and Fixed
- Best value within the price
- Up to DB team to find the best value

EXAMPLE 1

A public XYZ University, which has strict design standards, wants to build a new laboratory building on campus.

What type of Delivery Method should they use?

EXAMPLE 2

A for profit ABC University is starting to build mini-campuses across the country. They want each campus to have the same architectural feel and identity.

What type of Delivery Method should they use?

EXAMPLE 3

A private OPQ University is consolidating campuses and is selling a campus that has housing and recreational facilities. The campus must vacate the campus by August 2012, so it needs all new facilities to be open on the new campus before vacating.

What type of Delivery Method should they use?

DBT SELECTION PROCESS

1. Low Bid Approach
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Most state schools familiar with this option

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Favorite Approach of builders/architects

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→ Two Different Versions of "Best Value" Approaches

APPROACH, OPTION 3: PRICE CEILING

SAMPLE: Team Selection Formula (if price is a variable)

$$\frac{\$GMP}{\text{Quality Points}} \times 1000 \text{ (lowest score wins)}$$

Team			
A	$\frac{\$40M}{140\ Pts}$	X 1000 =	286
B	$\frac{\$38.9M}{138\ Pts}$	X 1000 =	282 ← Winning Score
C	$\frac{\$37.3M}{128\ Pts}$	X 1000 =	292

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Fixed Price / GMP Approach
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→ If a facility can support certain level of debt service, the value (quality) should be maximized within the amount.

CONCLUSION

1. Different Circumstances = Different Structures
2. Understand Key Factors
3. Debate Remains in the Industry
4. Selections Process is Important
5. Management Matters

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