COGENCE Alliance

Owners+Architects+Engineers+Contractors

Selecting the Right Project Delivery System:

Evaluation Criteria and The Project Delivery Workshop

Presented by:

Jeff Appelbaum

Thompson Hine, LLP

Project Management Consultants, LLC

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Inspire. Educate. Unite.

Sometimes, projects are poorly conceived….

The Mellonville Tower

- So the architect partied..
- But the project failed…
- And the lawyers stepped in to clean-up the mess

So what went wrong ?????

I think I picked the **wrong project delivery system** !!!

The Project Delivery System!

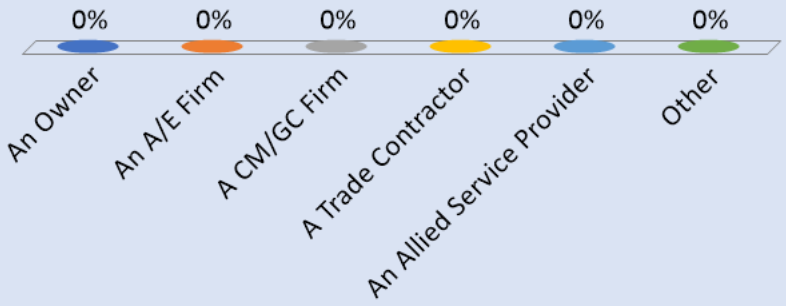
The Tool that Brings Order to the Chaos of Construction

Demographics

Who is here today?

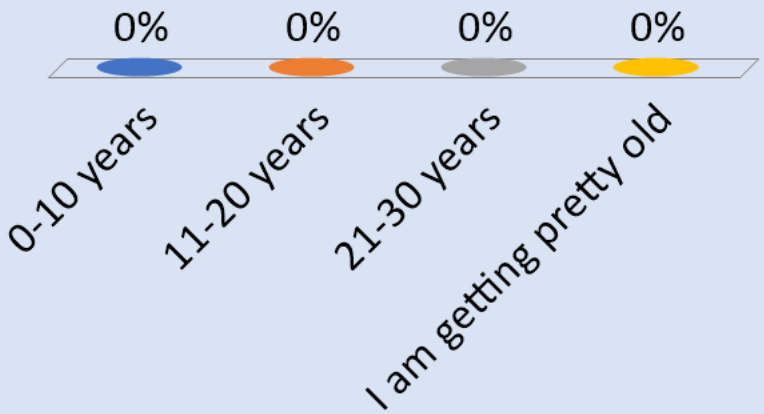
My organization is:

A. An Owner
B. An A/E Firm
C. A CM/GC Firm
D. A Trade Contractor
E. An Allied Service Provider
F. Other



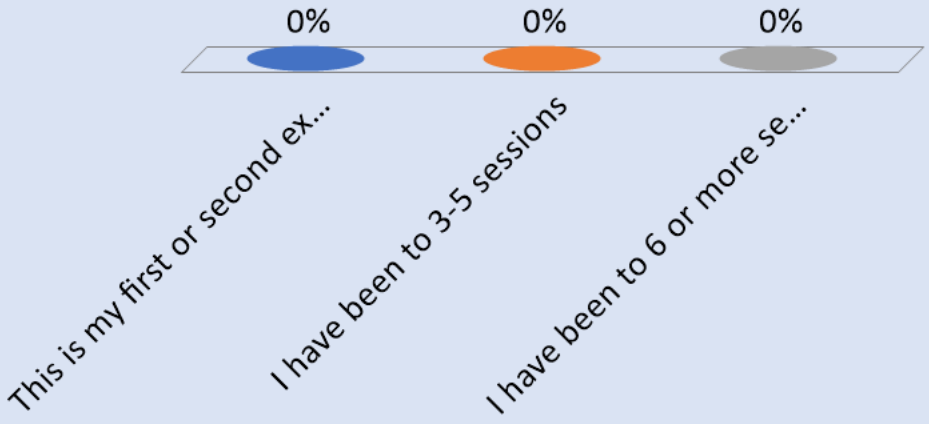
I have been in the design/construction/development business:

A. 0-10 years
B. 11-20 years
C. 21-30 years
D. I am getting pretty old



My Experience with Cogence:

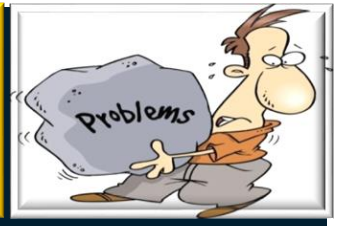
A. This is my first or second experience
B. I have been to 3-5 sessions
C. I have been to 6 or more sessions



I am involved in project delivery decisions or evaluation for my organization:

A. To a great extent
B. Frequently
C. Occasionally
D. To a limited extent
E. Very rarely
F. Not at all

The Problem:



- Project Delivery Selection
  - Critical initial decision
  - Often made without objective analysis and not tailored to specific project objectives
- Improper selection can lead to project failure
  - Schedule impact and delay
  - Cost overruns
  - Unnecessary design compromises
  - Failure to meet other project objectives
- So who is responsible to prevent this problem, and what is the method for selection?

–Excuses:

- "The way we always did it"
- "What the Architect wanted"
- "The form the lawyer used"

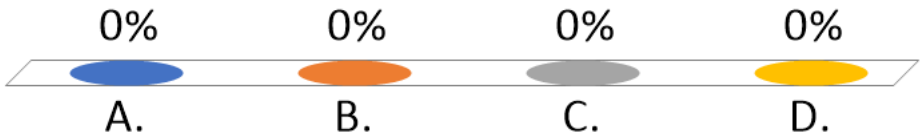
What is the A/E responsibility? Under a standard AIA B201 Agreement, which is true?

A. The Architect has no obligation to advise the Owner regarding alternate project delivery methods.

B. The Architect has an obligation to advise the owner regarding alternate project delivery methods at the outset of the engagement.

C. The Architect has an obligation to advise the Owner regarding alternate project delivery methods during the Schematic Design phase.

D. Advising the Owner of alternate project delivery methods is an Additional Service.



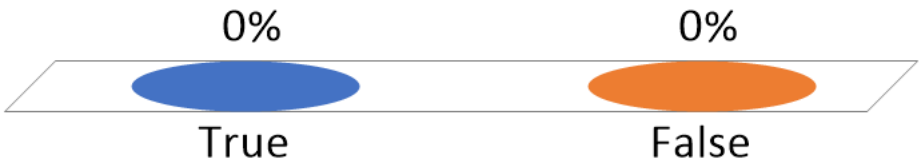
AIA B201 (2017) Standard Owner Architect Agreement

- §2.2 Schematic Design Phase Services
  - §2.2.2 The Architect shall prepare a preliminary evaluation of the Owner's program, schedule, budget for the Cost of the Work, Project site, the proposed procurement and delivery method… to ascertain the requirements of the Project. The Architect shall notify the Owner of… other….consulting services that may be reasonably needed for the Project."

The architect's contractual obligation to prepare a "preliminary evaluation" with respect to "proposed procurement and delivery method" is satisfied if a single method is recommended without discussion of alternative approaches.

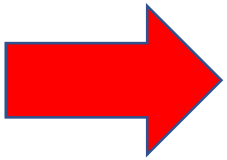
A. True
B. False

§2.2.2 The Architect shall prepare a preliminary evaluation of the Owner's program, schedule, budget for the Cost of the Work, Project site, the proposed procurement and delivery method… to ascertain the requirements of the Project.



AIA B201 (2017) Standard Owner Architect Agreement

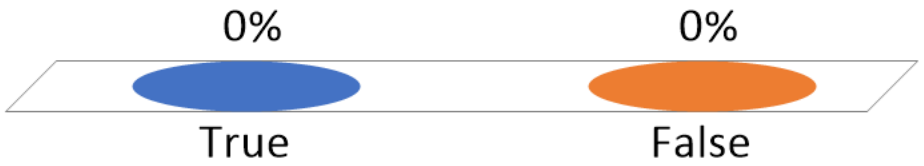
- §2.2 Schematic Design Phase Services
  - §2.2.2 The Architect shall prepare a preliminary evaluation of the Owner's program, schedule, budget for the Cost of the Work, Project site, the proposed procurement and delivery method… to ascertain the requirements of the Project. The Architect shall notify the Owner of… other….consulting services that may be reasonably needed for the Project."
  - §2.2.3 The architect shall present its preliminary evaluation to the Owner and shall discuss with the Owner alternative approaches to design and construction of the Project. The Architect shall reach an understanding with the Owner regarding the requirements of the Project.



Does this make sense from a timing perspective?

An A/E may be found to be liable for recommending an improper project delivery system or failing to discuss alternative approaches

A. True
B. False



The Solution: Initiate Project with a Project Delivery Workshop

- Step 1: Educate owner regarding project delivery options
- Step 2: Review and prioritize critical project parameters
- Step 3: Identify absolute constraints that limit possible delivery options
- Step 4: Compare options based upon stakeholder priorities and select preferred option (factor analysis)
- Step 5: Implement special tools to enhance project delivery success

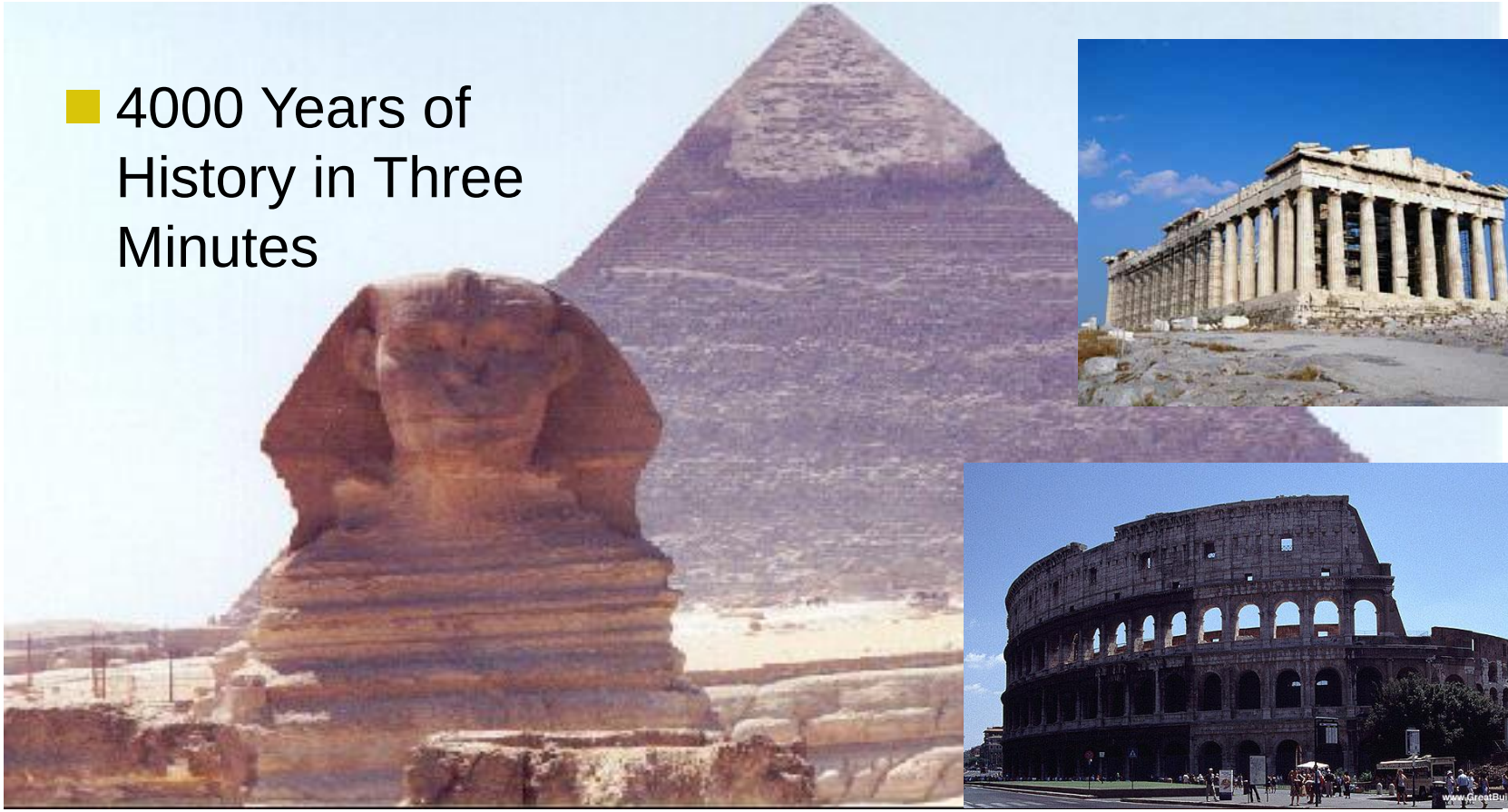
Step 1: Educate Owner

Explain Project Delivery Options, including "Typical" Advantages and Disadvantages of Each

- Design-Bid-Build
  - Single Prime
  - Multiple Prime
- Construction Management
  - As Adviser
  - As Adviser with GMP as Financial Accomodation
  - As Constructor (CM at Risk)
- Design Build and EPC
  - Traditional
  - Progressive
  - Bridging
- IPD Approaches

Historical Perspective

- 4000 Years of History in Three Minutes



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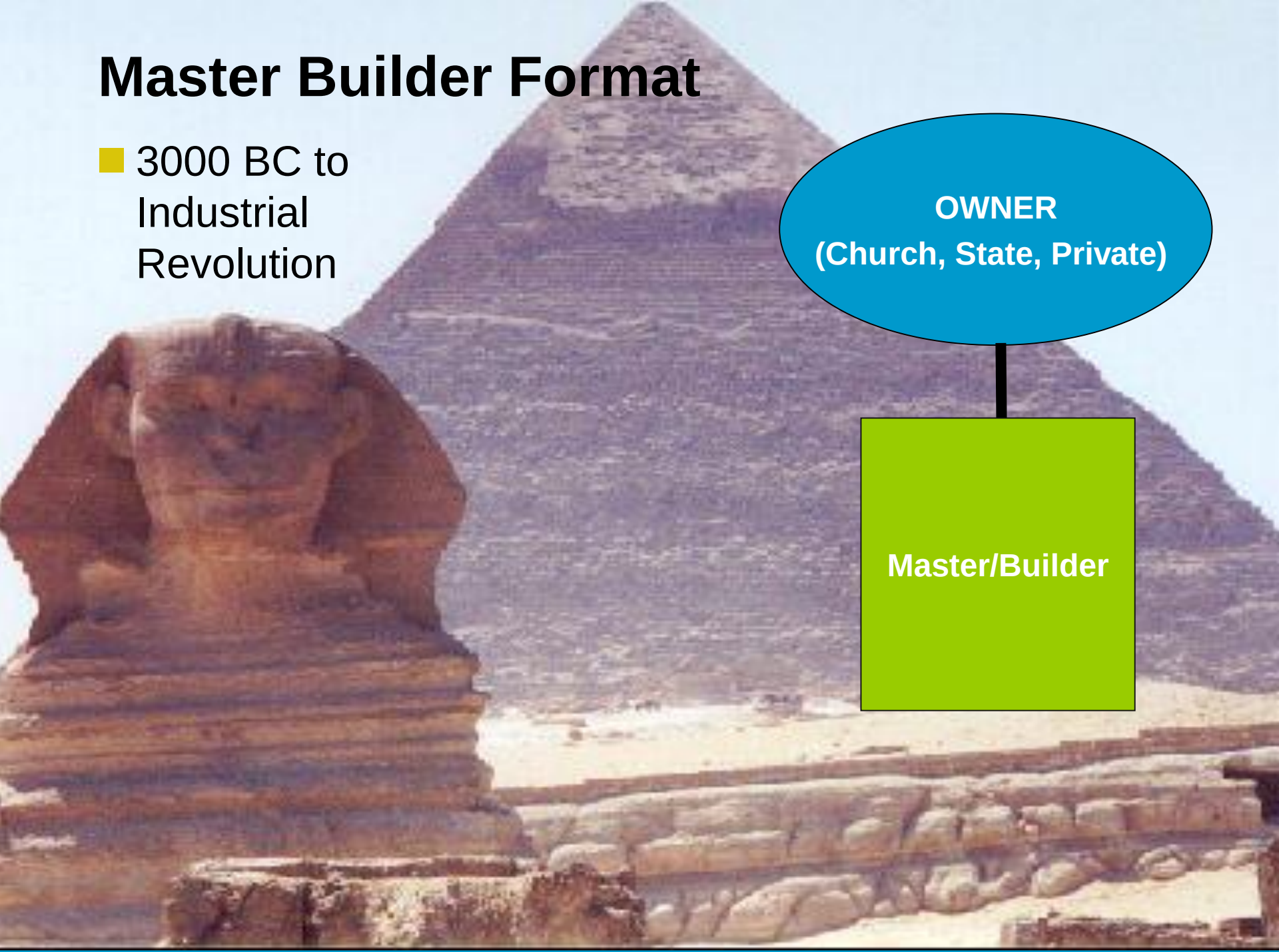
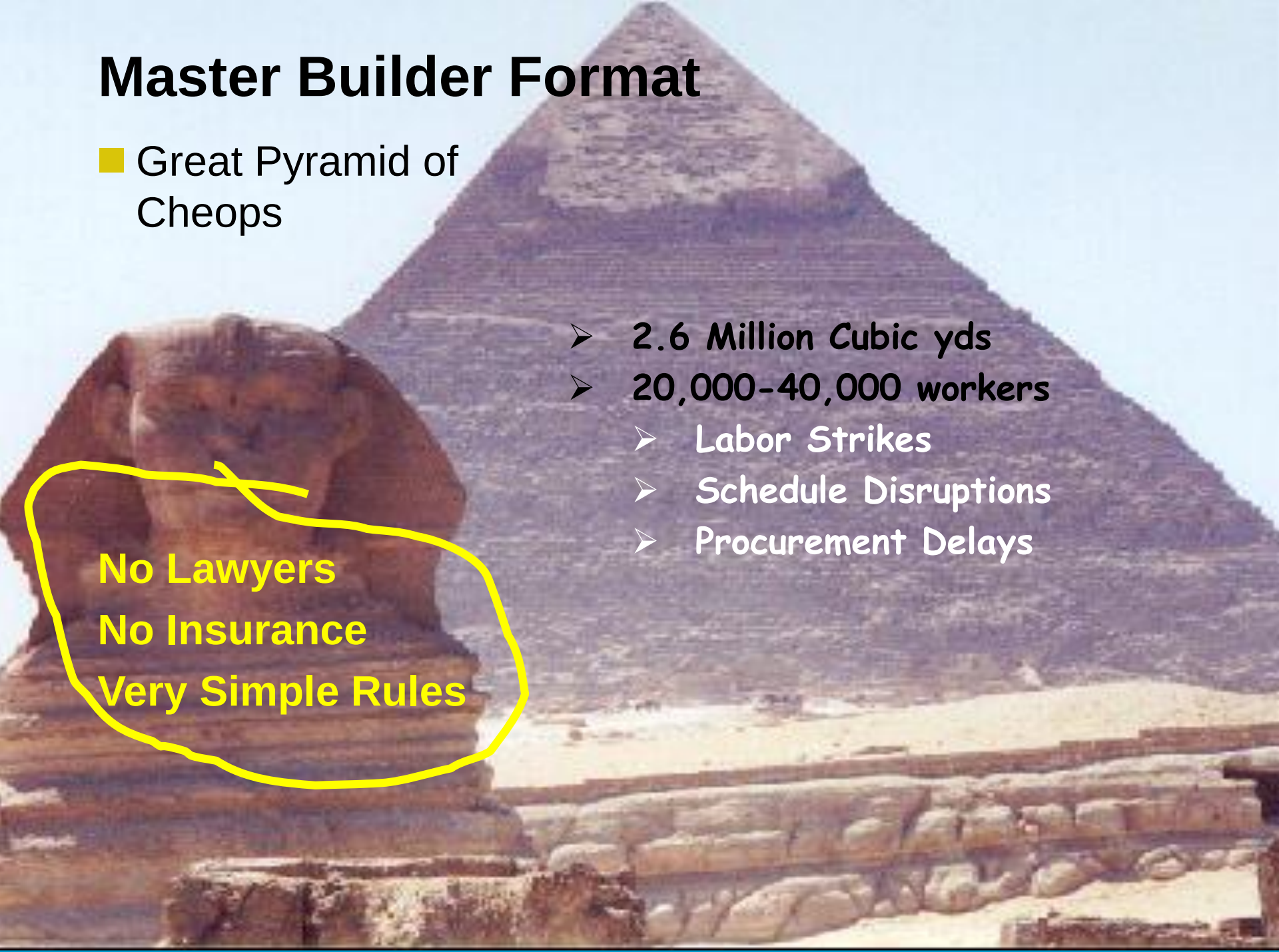
Master Builder Format

- 3000 BC to Industrial Revolution



Master Builder Format

- Great Pyramid of Cheops

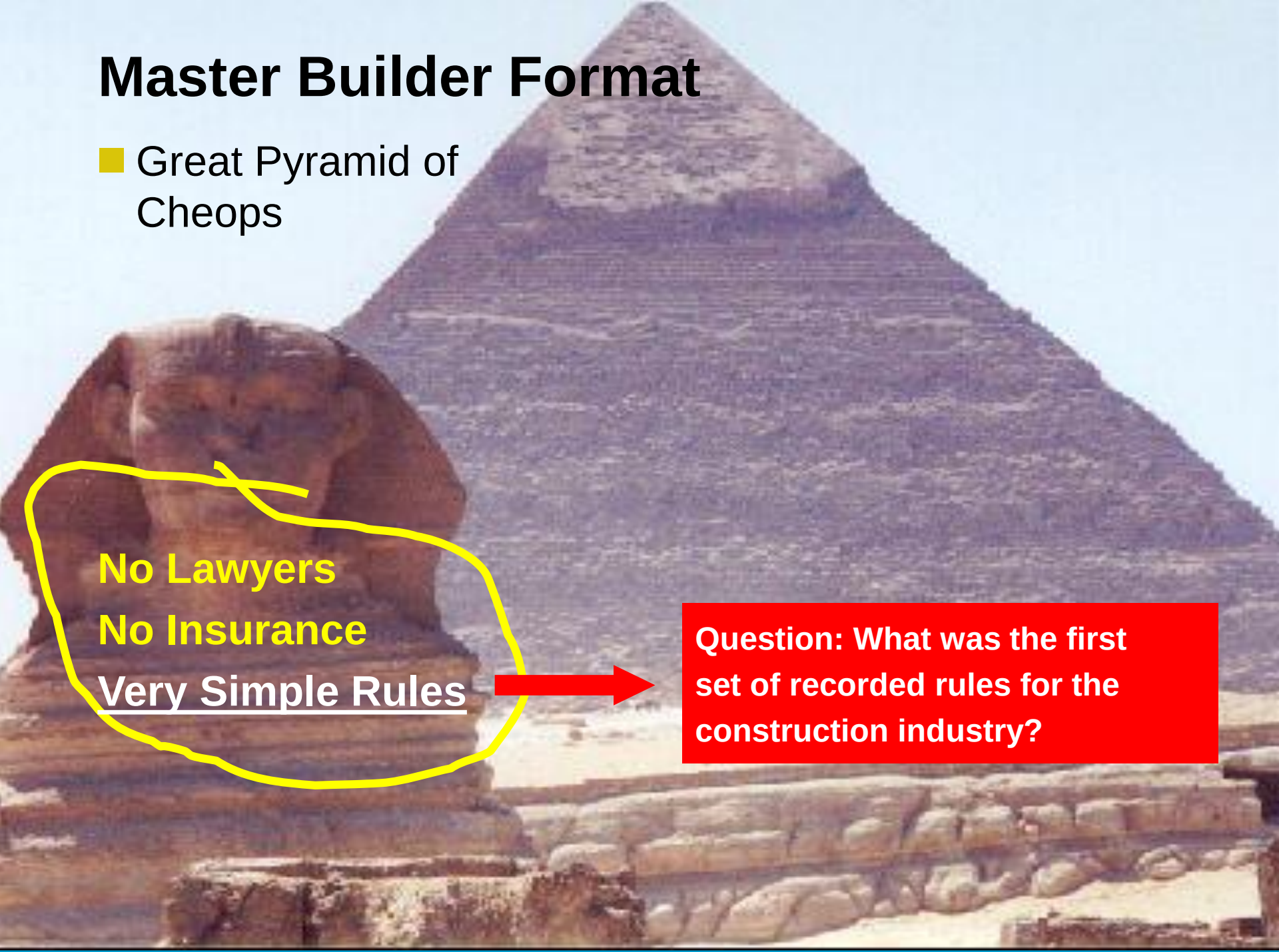


- 2.6 Million Cubic yds
- 20,000-40,000 workers
  - Labor Strikes
  - Schedule Disruptions
  - Procurement Delays

No Lawyers
No Insurance
Very Simple Rules

Master Builder Format

- Great Pyramid of Cheops



No Lawyers

No Insurance

Very Simple Rules

Question: What was the first set of recorded rules for the construction industry?

THE HAMMURABI CODE
3000 BC

228: If a builder build a house for a man and complete it, that man shall pay him two shekels of silver per sar (approx. 12 sq. ft.) of house as his wage.

→ **Payment (Cost plus)**

229: If a builder has built a house for a man and his work is not strong, and if the house he has built falls in an kills the householder, that builder shall be slain.

→ **Liability (including death penalties)**

230: If the son of the householder be killed, the son of that builder shall be slain.

→ **Good to be the daughter!**

231: If the slave of the householder be killed, he shall give slave for slave to the householder.

232: If goods have been destroyed, he shall replace all that has been destroyed; and because the house was not made strong, and it has fallen in, he shall restore the fallen house of his own material.

233: If a` has built a house for a man, and his work is not done properly and a wall shifts, then that builder shall make that wall good with his own silver.

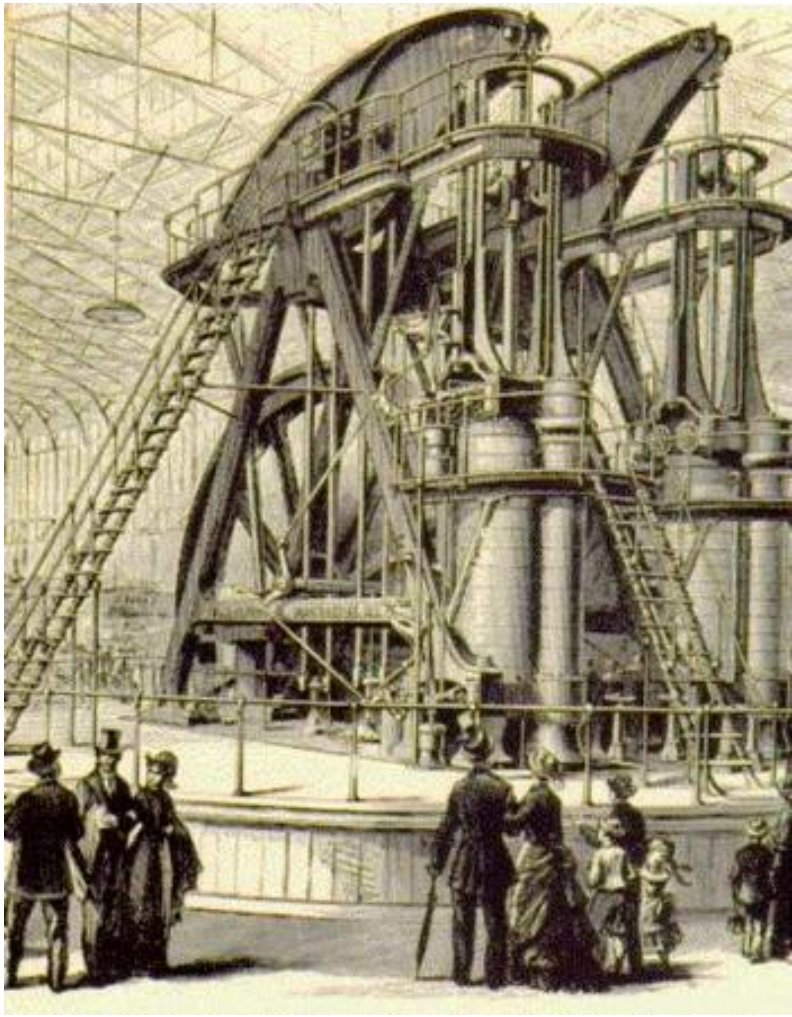
Note: All rules pertain to "Builder"–

When did that Change?

- Leon Battista Alberti (1443)
  - First Printed book on architecture, "*De re aedificatoria. On the art of building in ten books*"
  - Role of independent architect begins to emerge

Industrial Revolution

- 1750-1850
- Age of Specialization
- Decisions are Driven by Production and Cost
- Master Builder Separates into “Component Parts”



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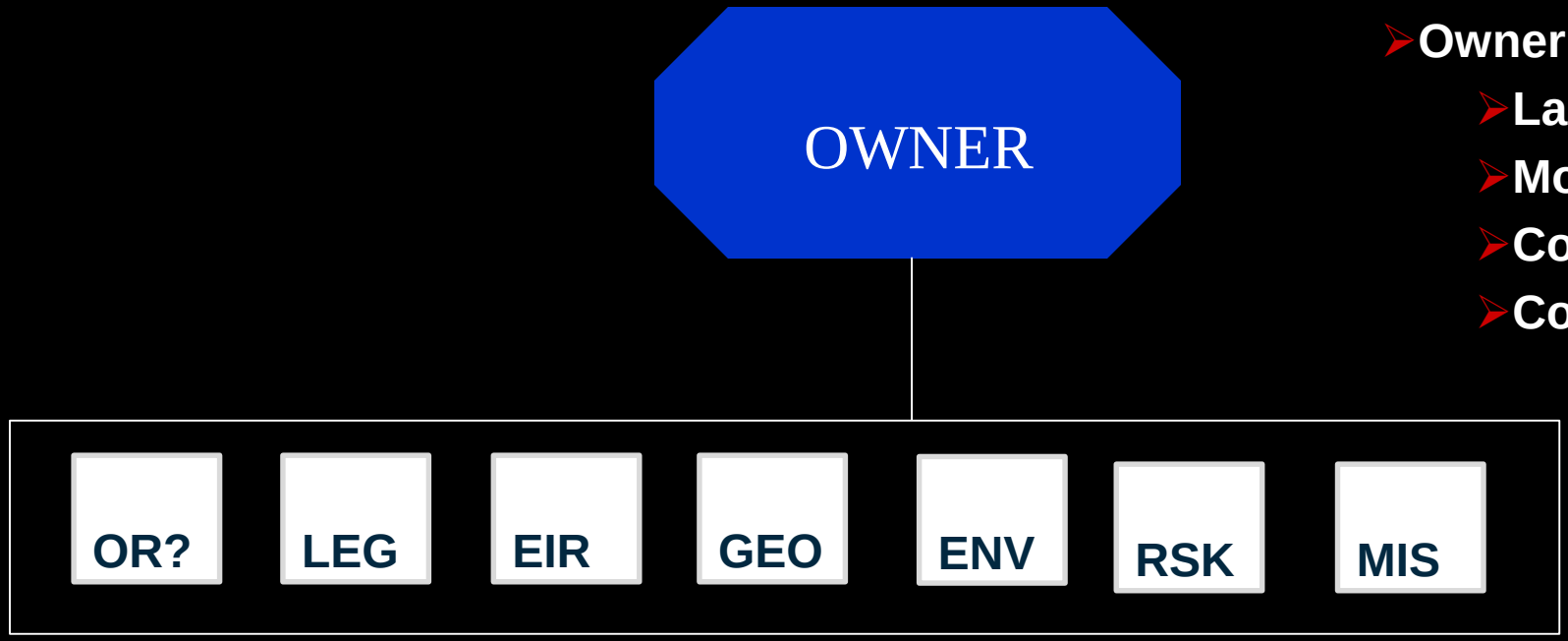
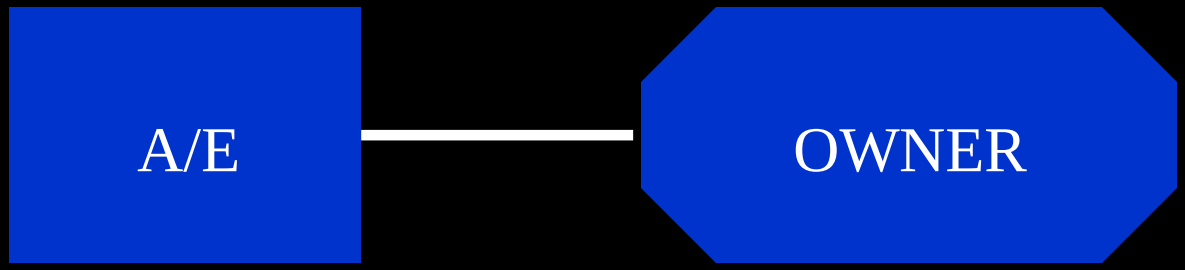
General Contractor Approach



- Owner Brings:
  - Land
  - Money
  - Concept
  - Consultants

General Contractor Approach

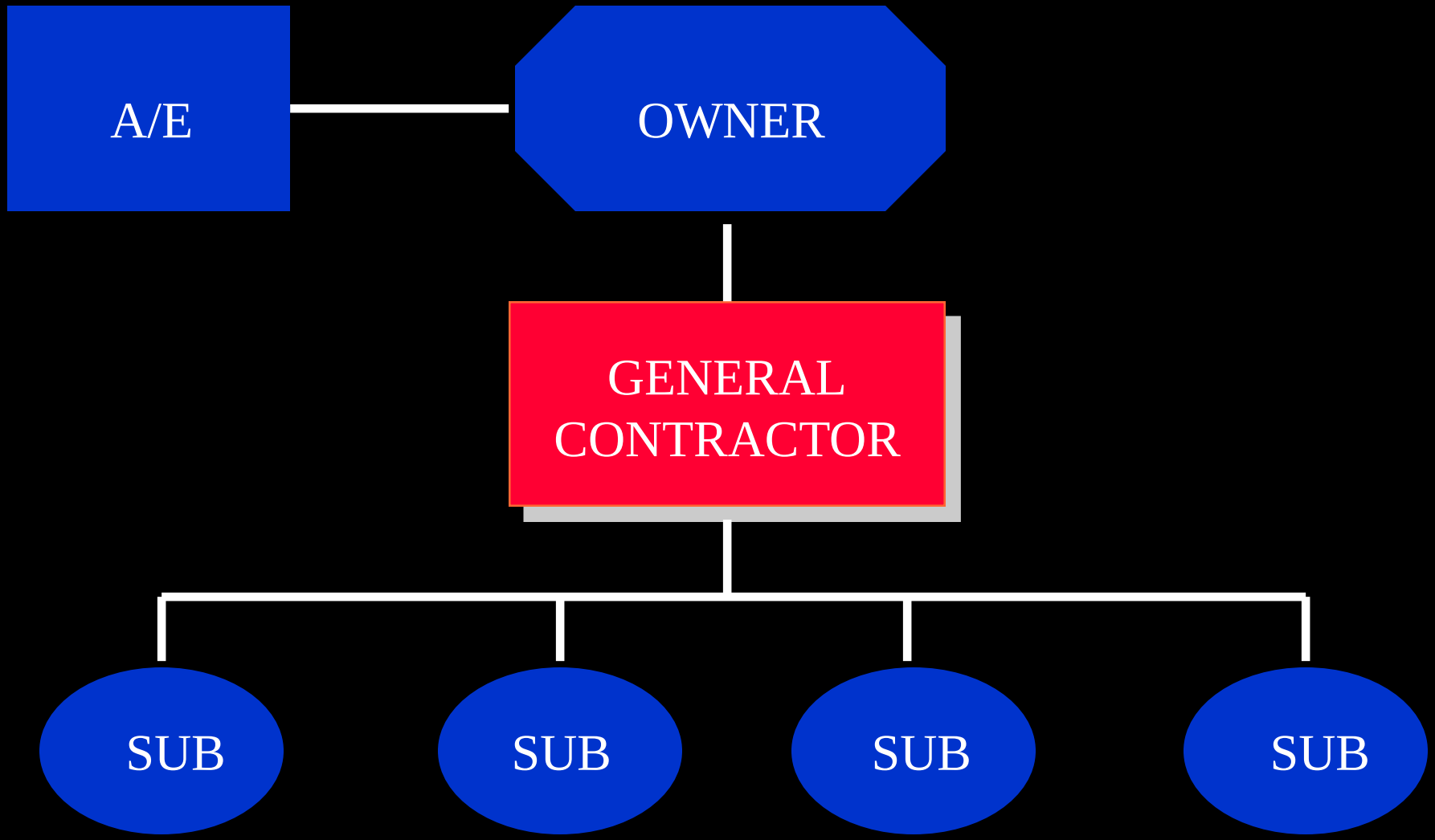


- **Owner Brings:**
  - **Land**
  - **Money**
  - **Concept**
  - **Consultants**

- **A/E Scope**
  - Design Phases
    - Programming (5%)
    - Schematic Design [SD] (10%)
    - Design Development [DD](20%)
    - Construction Documents [CD] (40%)
  - Bidding (5%)
  - Construction Administration (20%)

Level of Design

General Contractor Approach



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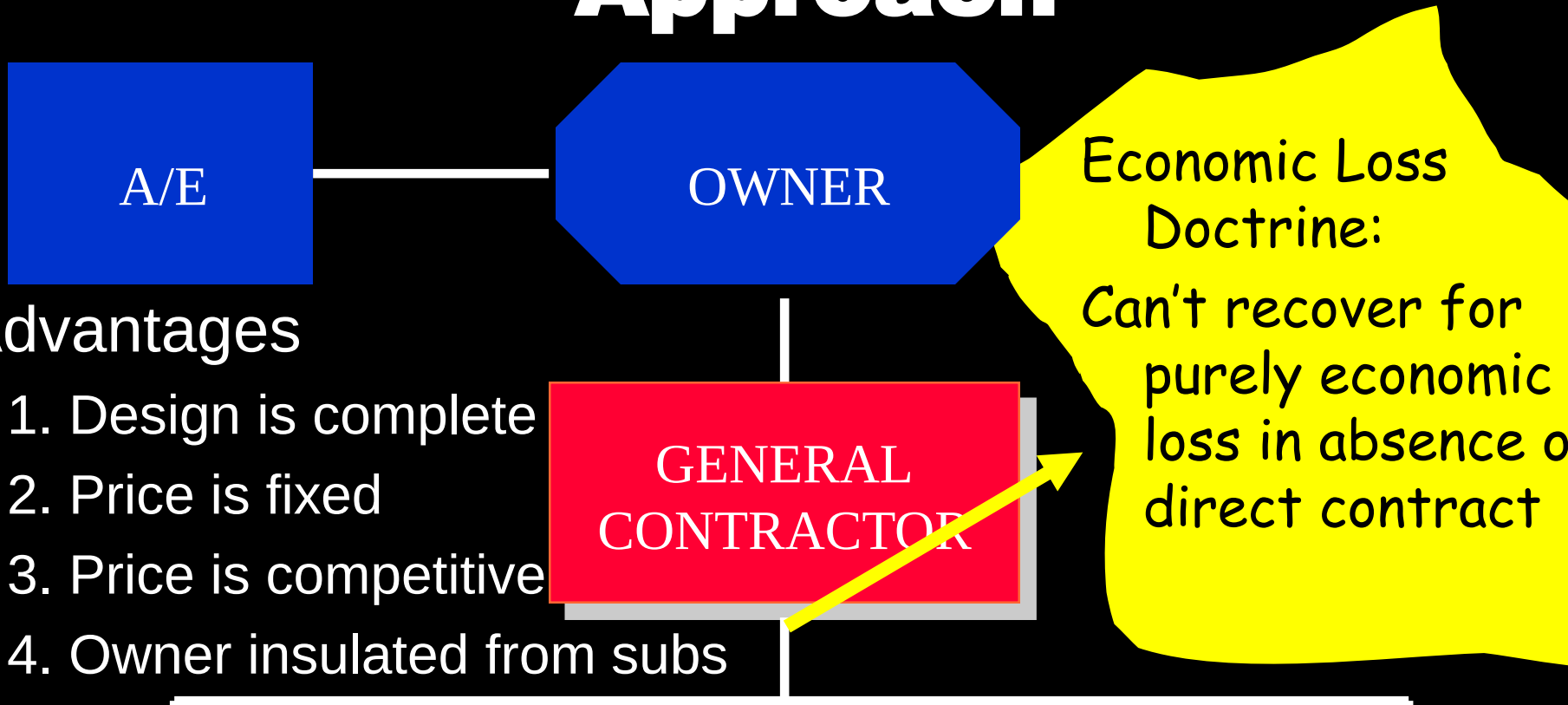


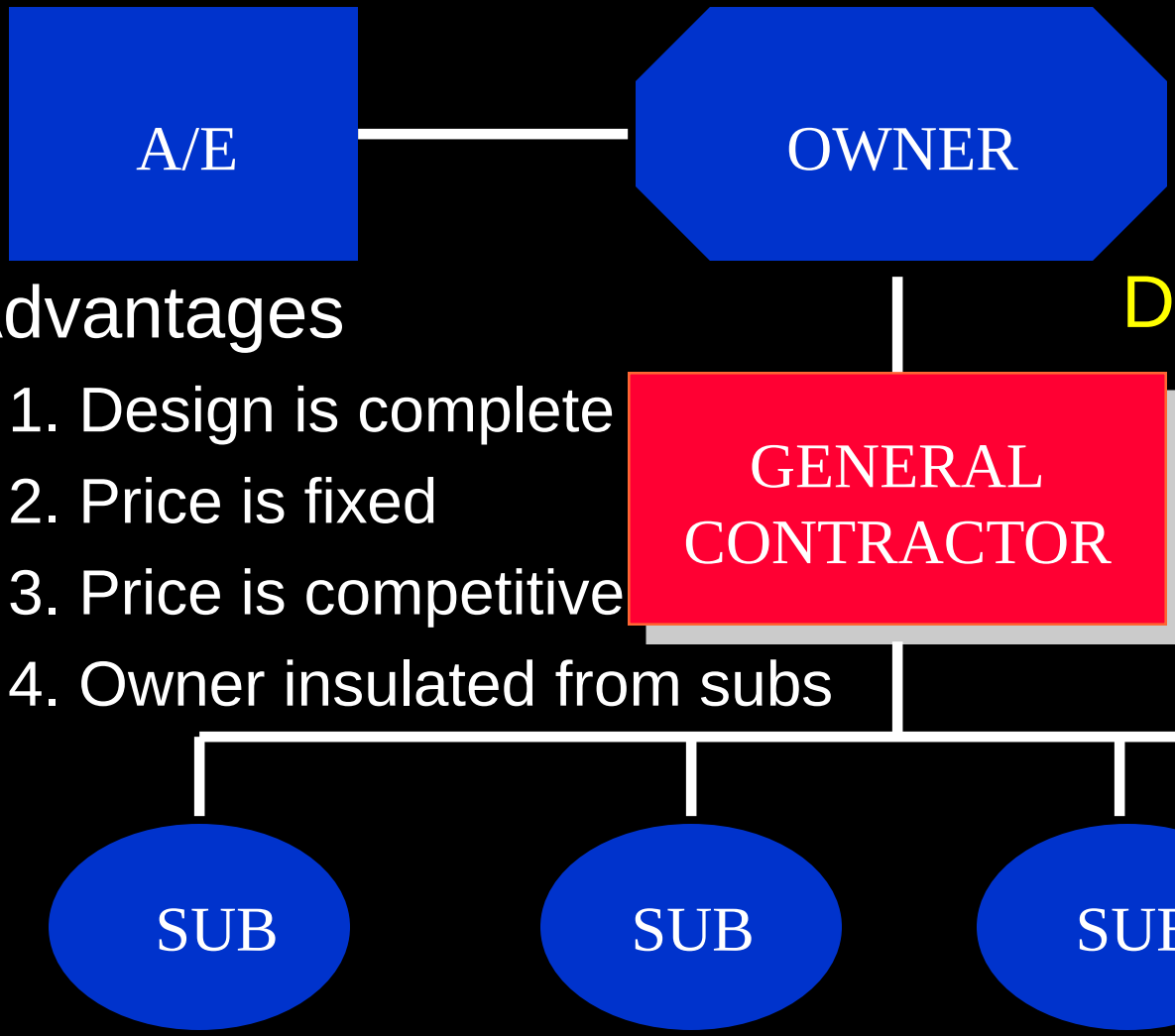
Advantages

1. Design is complete
2. Price is fixed
3. Price is competitive
4. Owner insulated from subs

Economic Loss Doctrine:

Can't recover for purely economic loss in absence of direct contract

General Contractor Approach



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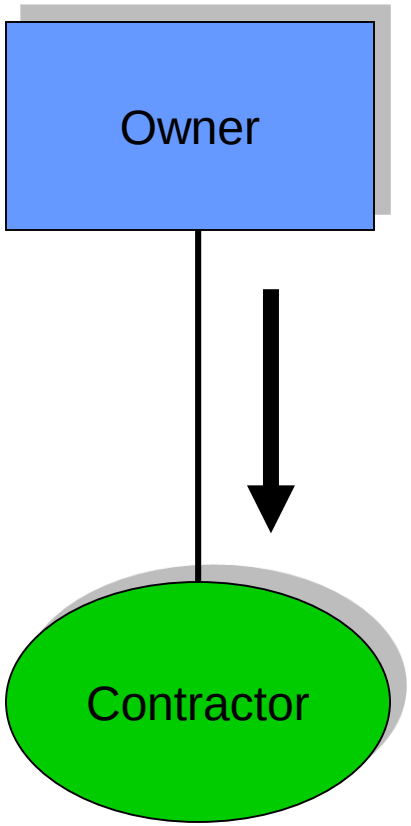
Disadvantages

1. Adversarial
2. The Spearin Gap

The Spearin Rule



The Spearin Rule:

“The Owner warrants (to Contractor) the adequacy of plans and specifications”

United States v. Spearin, 248 U.S. 132 (1918);

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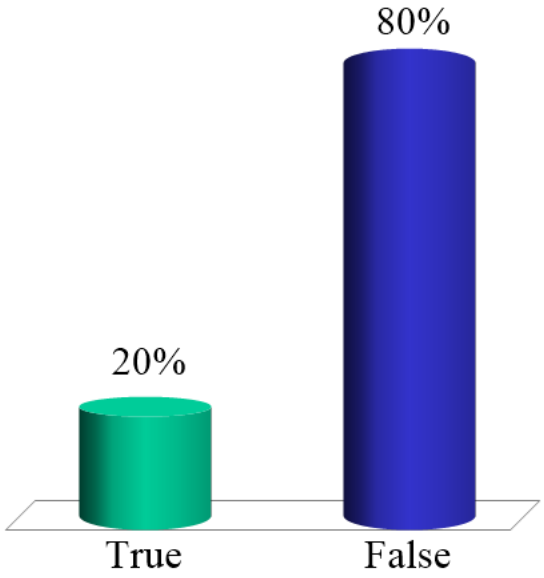
If a design agreement is properly crafted, it does provide that the A/E gives the same warranty regarding the adequacy of plans and specifications to the Owner that the Owner provides to the Contractor.

A. True

B. False



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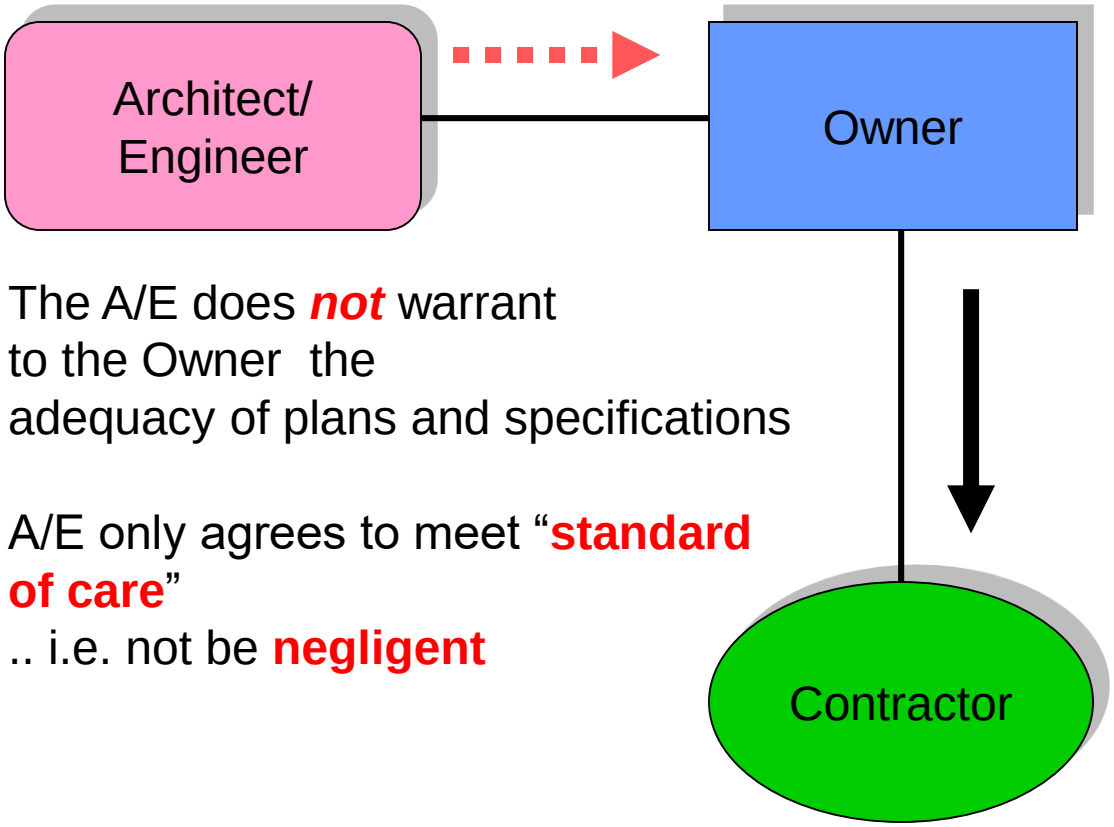
The Spearin Gap



The A/E does ***not*** warrant to the Owner the adequacy of plans and specifications

A/E only agrees to meet "**standard of care**"
.. i.e. not be **negligent**

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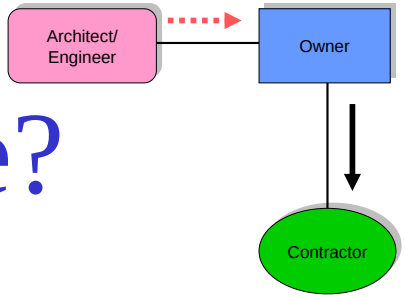


What is the Standard of Care?

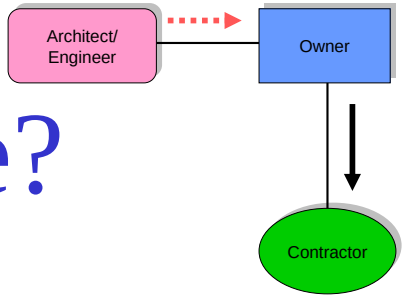
Reasonable care and competence ordinarily displayed by architect of good standing practicing in the same locality

1) “average or ordinary performance”

of

2)“local architect or engineer”

How do you prove a breach?



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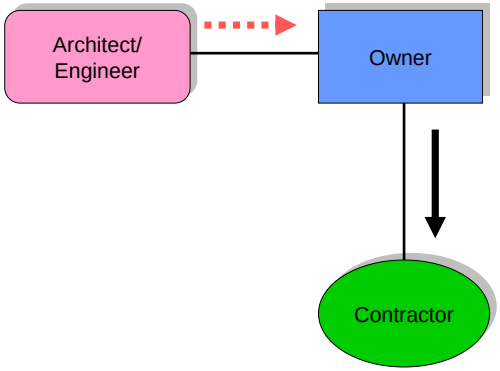
1) "average or ordinary performance"
of
2)"local architect or engineer"

- Owner Position "I am not buying average or ordinary – You told me you were the best!"
- Can the Standard of Care be Elevated?

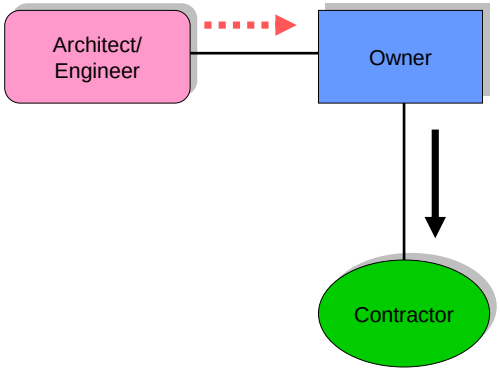
Elevating Standard of Care



- Standard AIA Definition?
  - There is none!
- Owner Clause
  - Architect will at all times during the term of the agreement exercise his or her **best** judgment and skill in carrying out its duties in accordance with the **highest standards** of the profession.
  - Architect agrees the Construction Documents will be **free from defects** and if any defects are reported to Architect they will be corrected at no cost to Owner.

Is this insurable? Can this be defended in court?

Elevating Standard of Care



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  - Architect agrees the Construction Documents will be **free from defects** and if any defects are reported to Architect they will be corrected at no cost to Owner.
- Acceptable Compromise
  - Architect's services under this Agreement shall be performed in accordance with the standard of care for licensed professionals providing architectural services for the design of projects of similar scale and complexity in comparable urban areas.

Other Solutions?

We will return to this topic!

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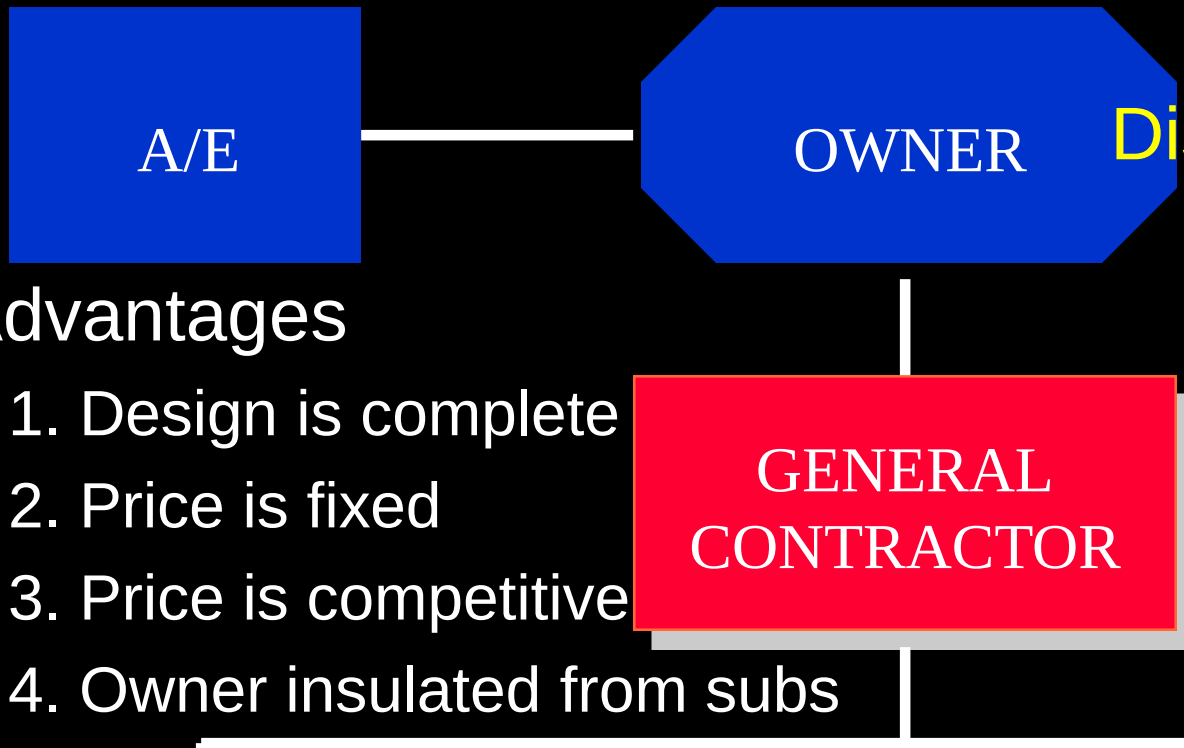
General Contractor Approach

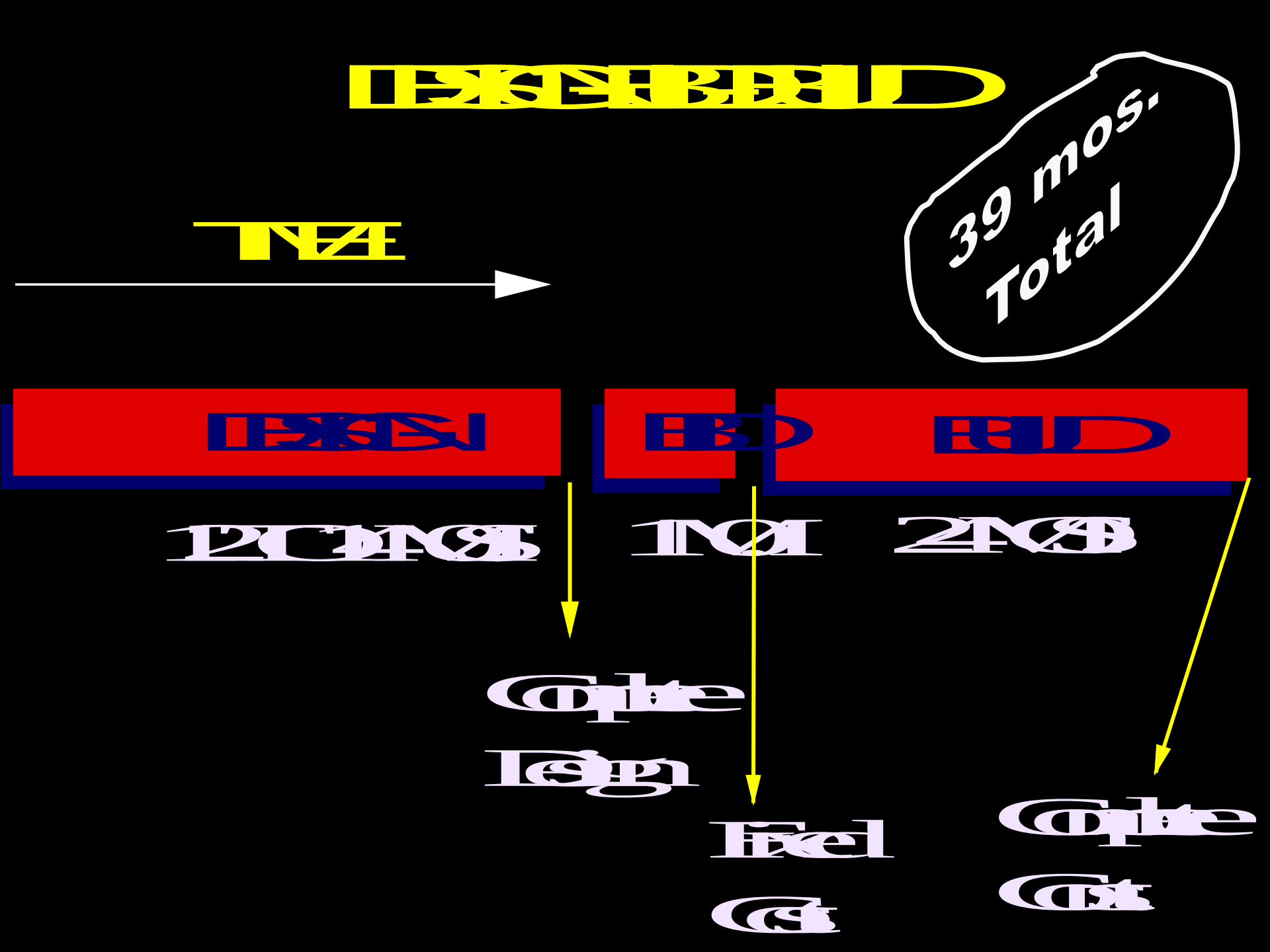


Advantages

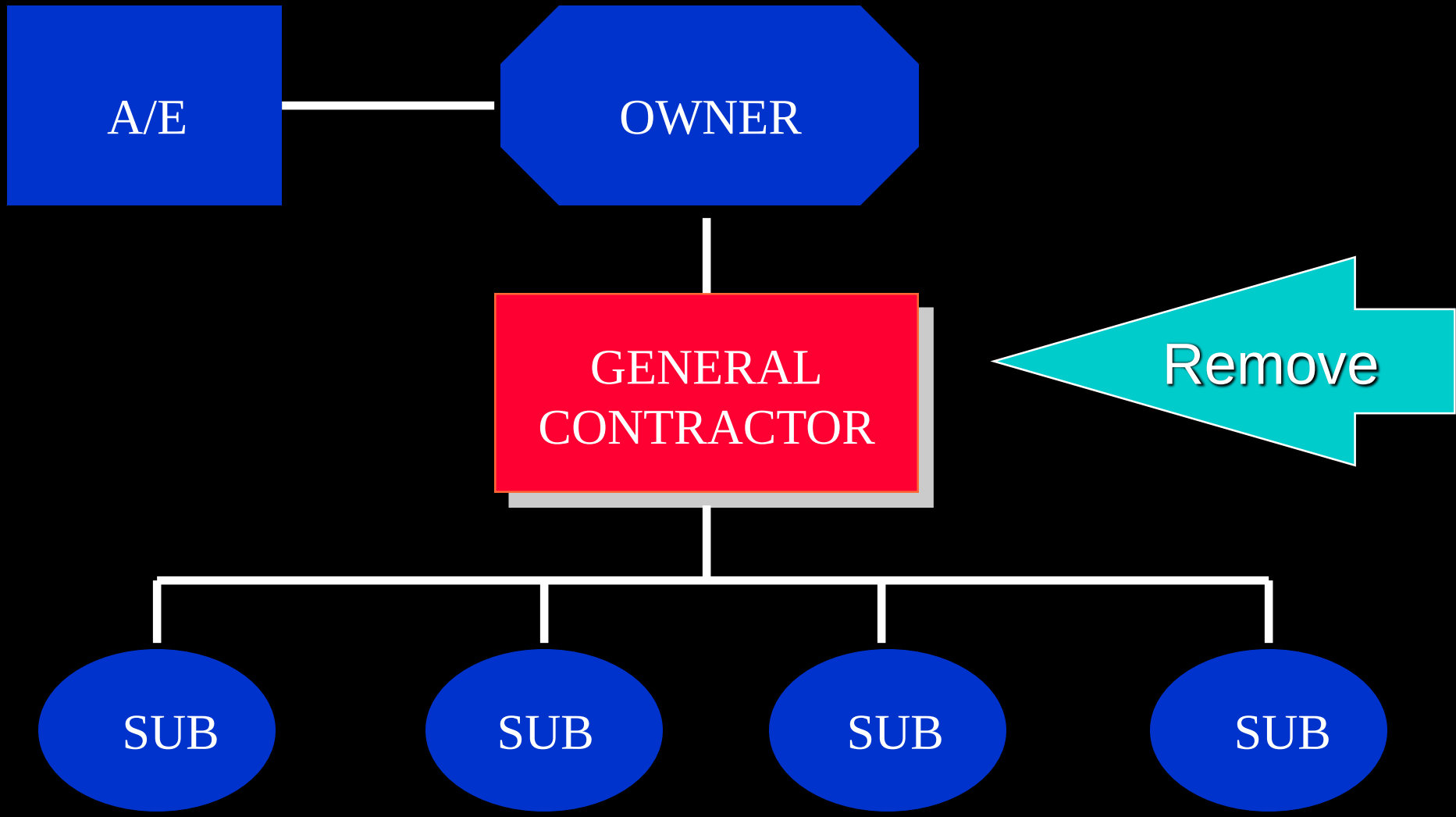
1. Design is complete
2. Price is fixed
3. Price is competitive
4. Owner insulated from subs

Disadvantages

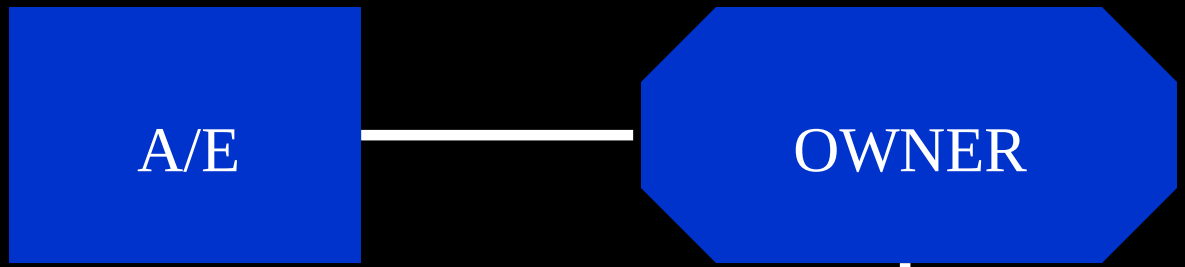
1. Adversarial
2. The Spearin Gap
3. GC Markup
4. No Precon
5. Long Duration


39 mos.
Total

General Contractor Approach

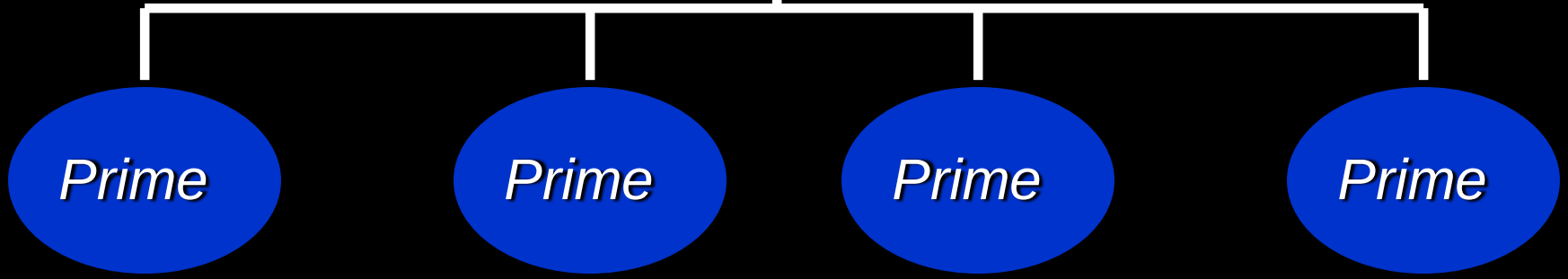


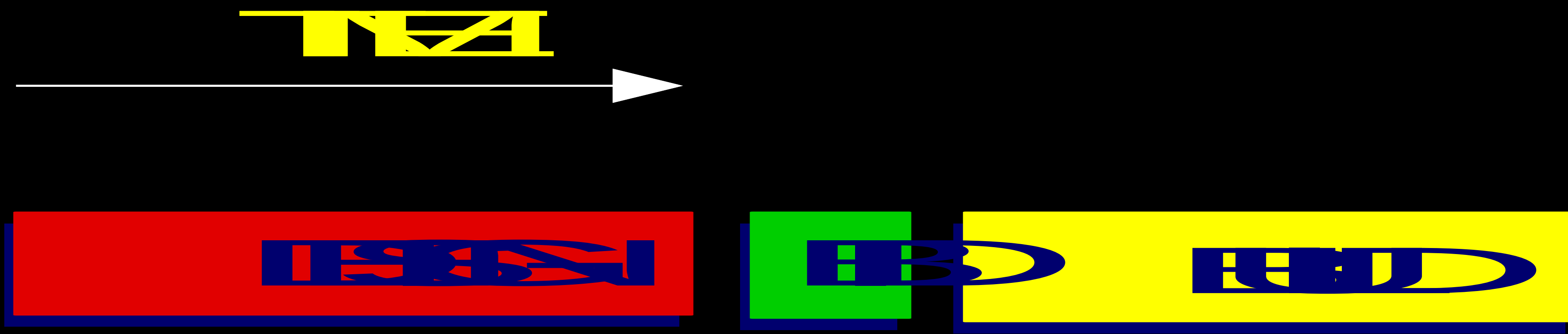
Multiple Prime Approach



Advantages:

1. No General Contractor Fee
2. Controls “Bid Shopping”
3. Phased “Fast Track” option





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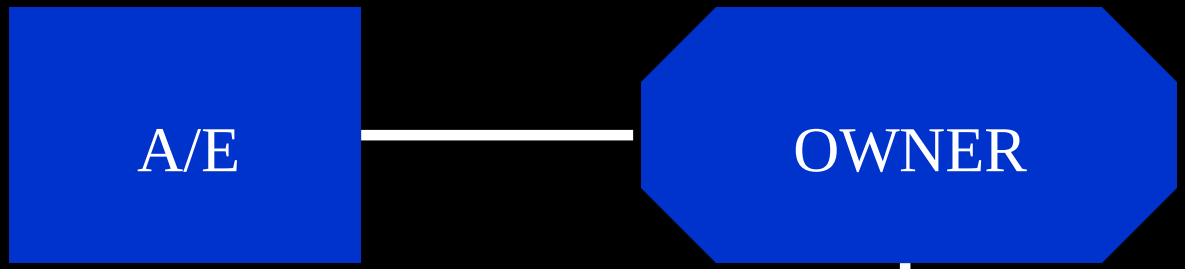
Multiple Prime Approach

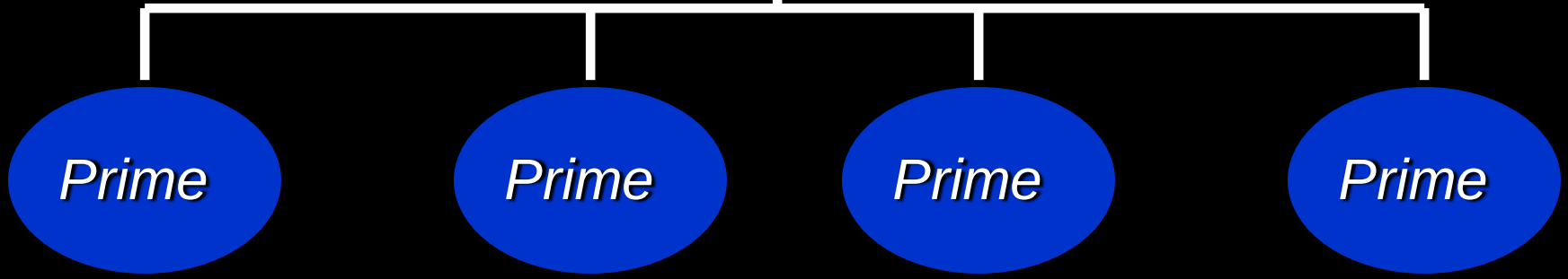


Advantages:

1. No General Contractor Fee
2. Controls “Bid Shopping”
3. Phased “Fast Track” option

Disadvantages:

1. No fixed price
2. No insulation of Owner
3. Multiple disputes
4. No external management
5. Poor coordination



So What is Construction Management?

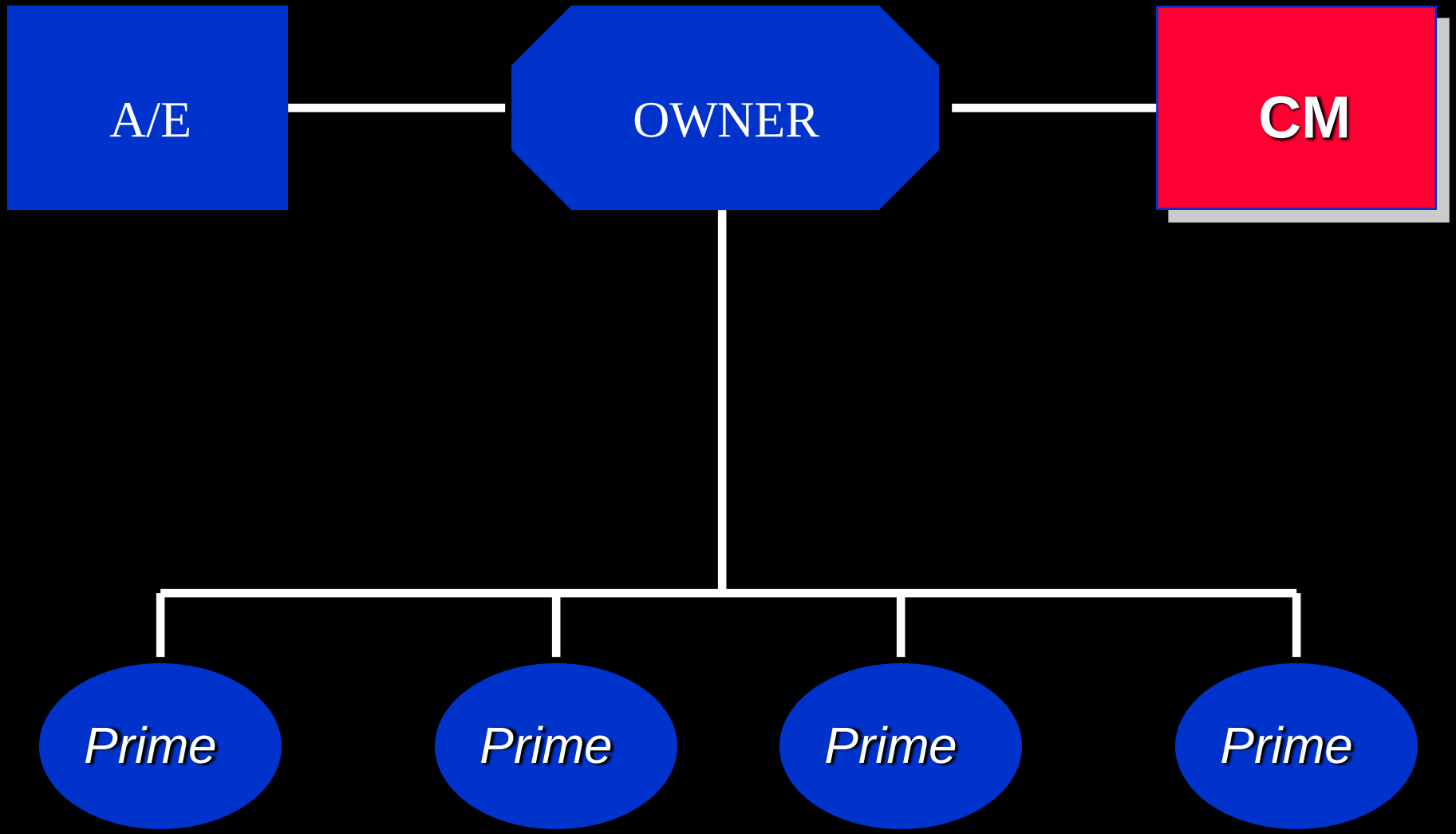
Some More History

- Washington Roebling is Engineer in Charge of Brooklyn Bridge
- Suffers crippling illness; confined to bed in Brooklyn
- Oversees work with field glasses
- Develops reliable management and tracking techniques for time, quality and budget
- Field Management/Direct Communications all handled by:

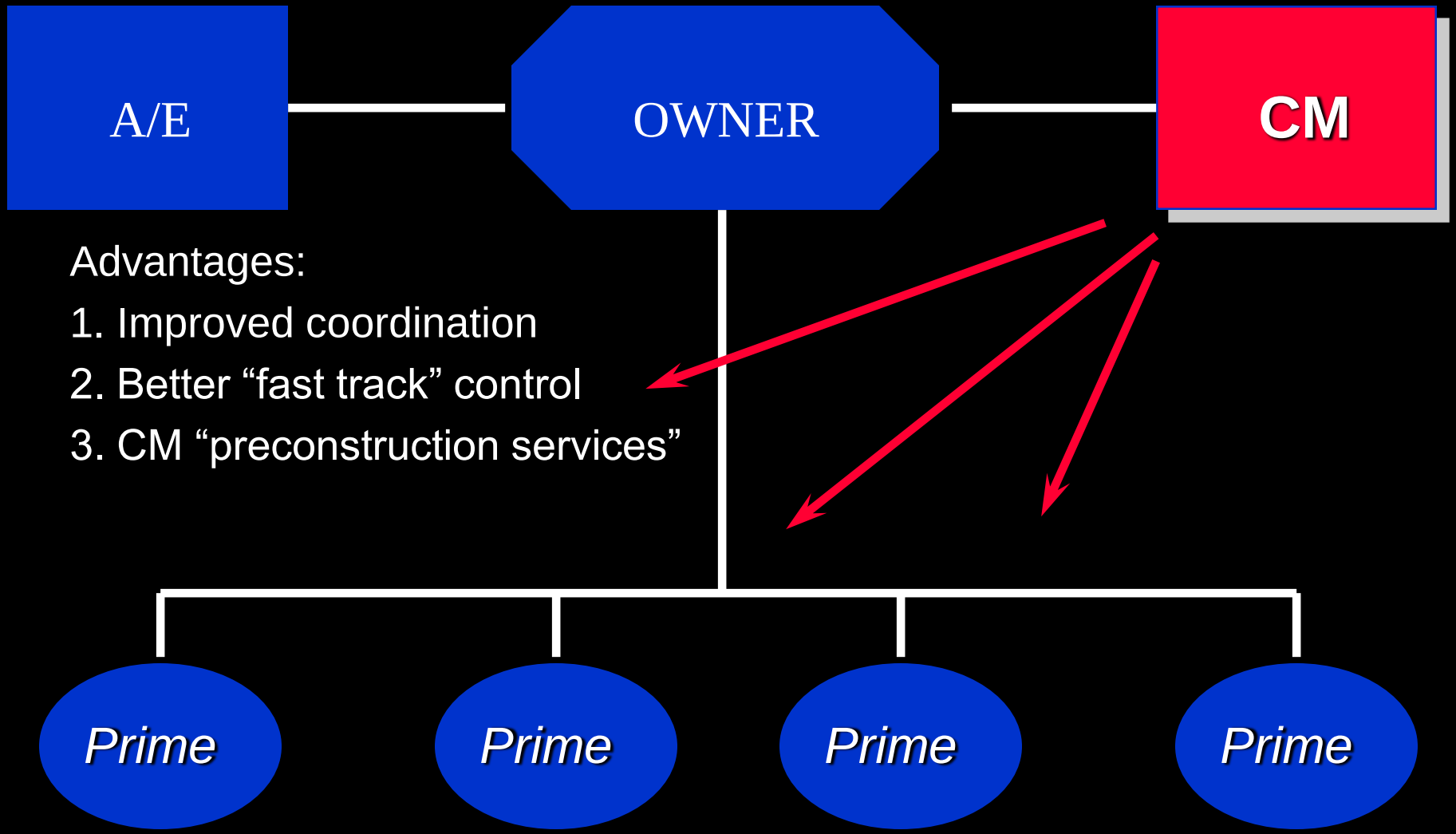
Washington Roebling

Elizabeth Warren Roebling

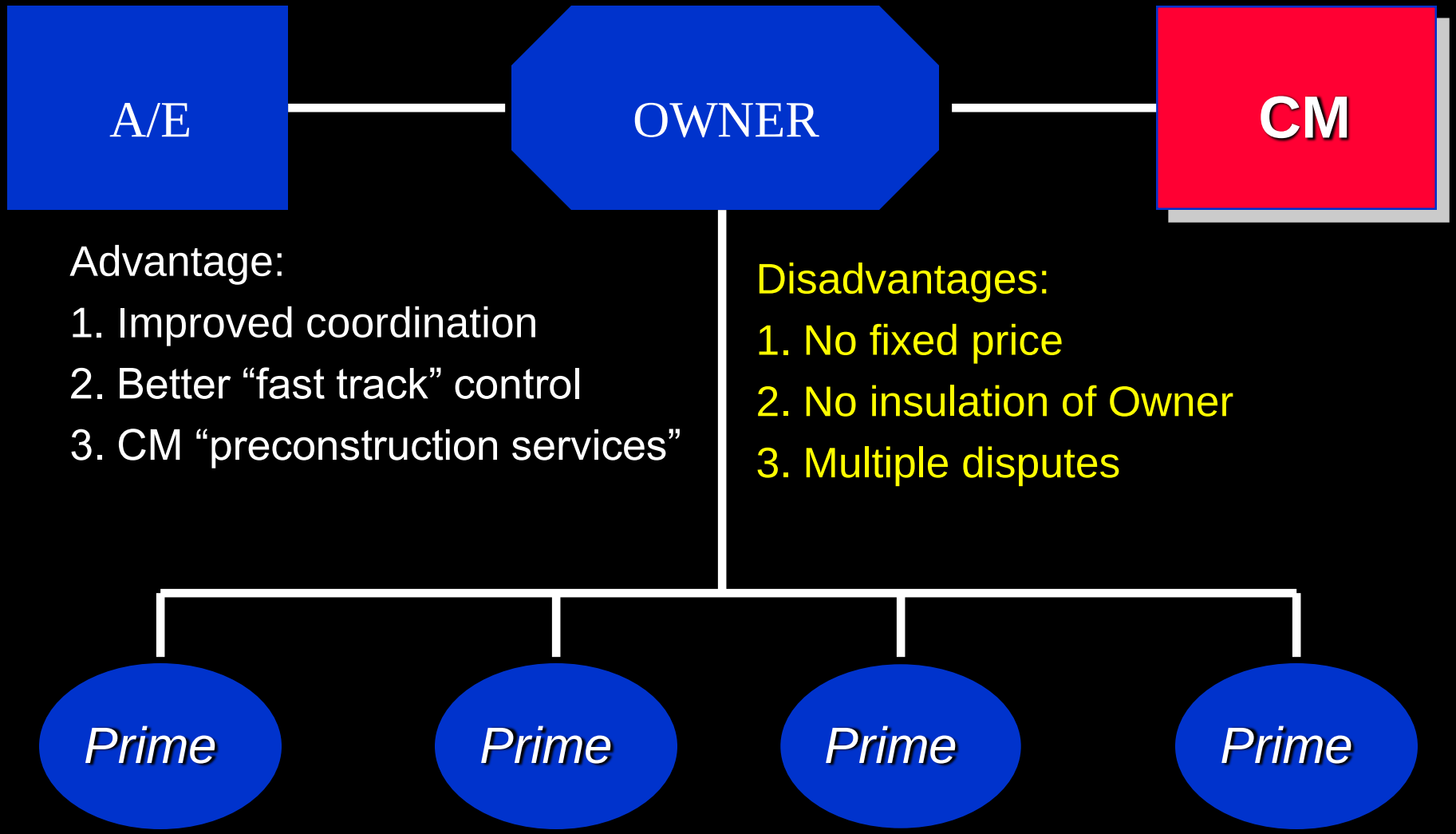
Construction Manager As Adviser



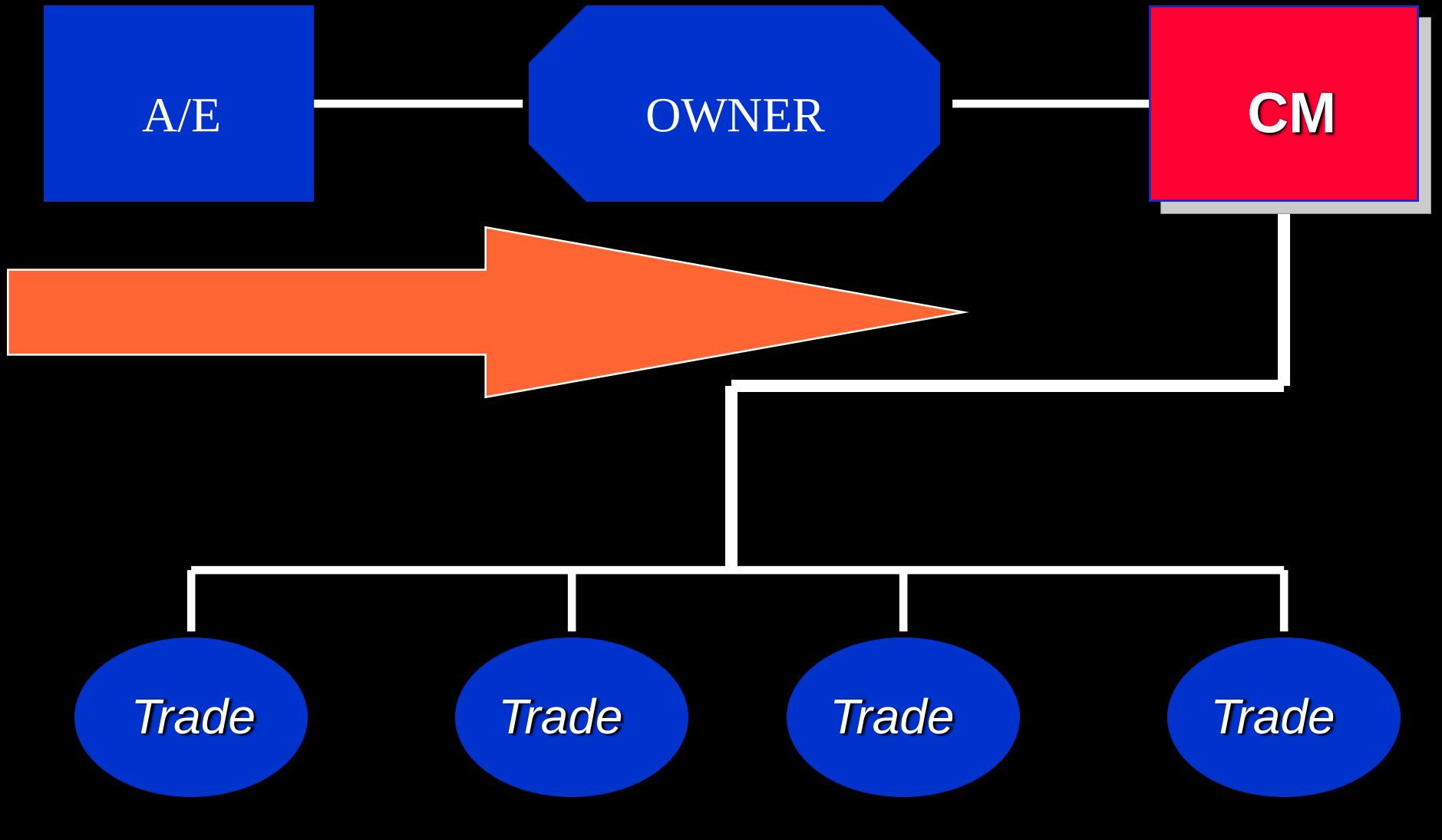
Construction Manager As Adviser



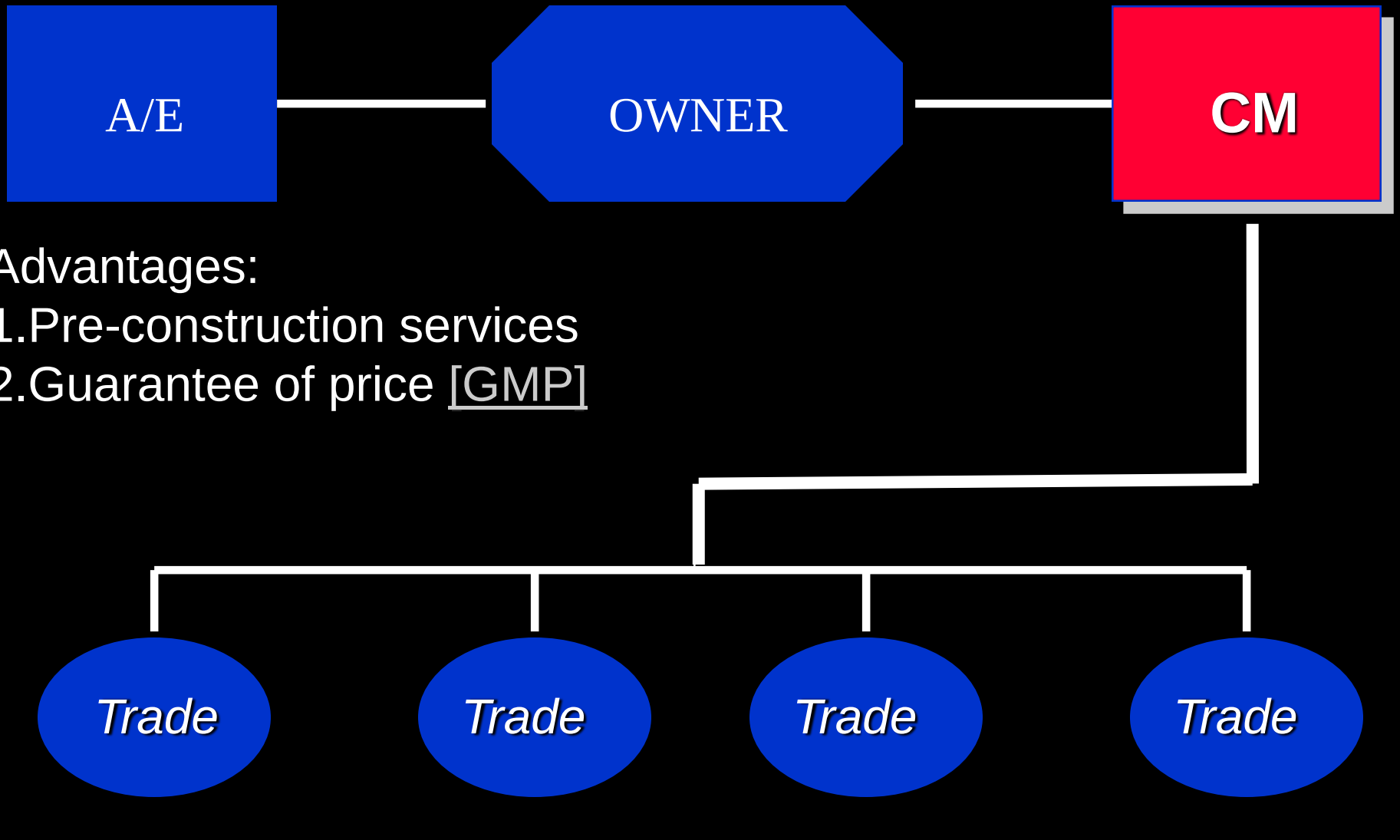
Construction Manager As Adviser



Construction Manager
as Constructor



Construction Manager as Constructor



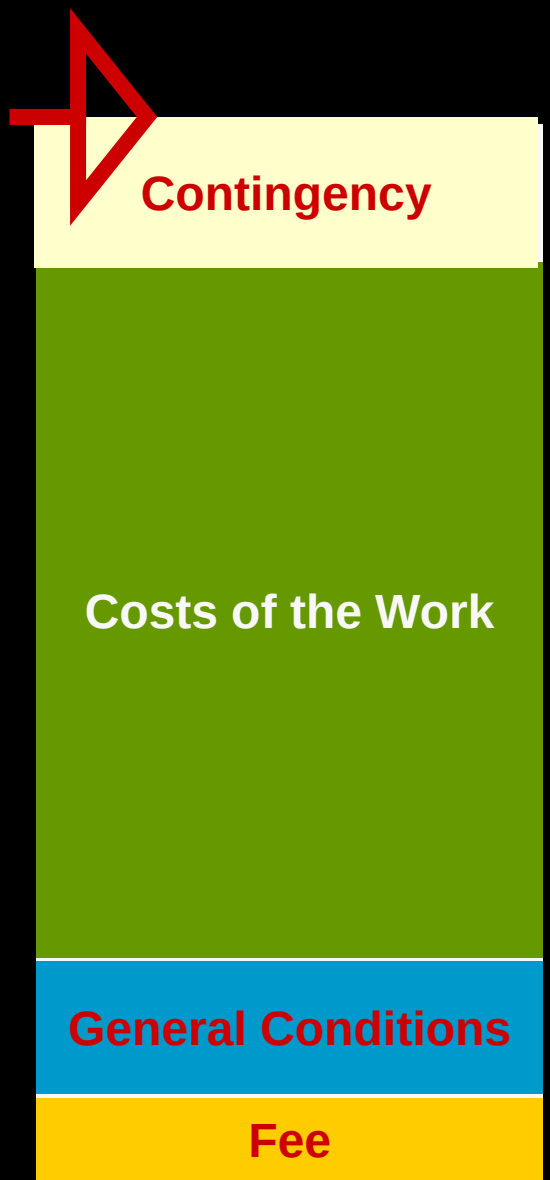
Advantages:
1.Pre-construction services
2.Guarantee of price [GMP]

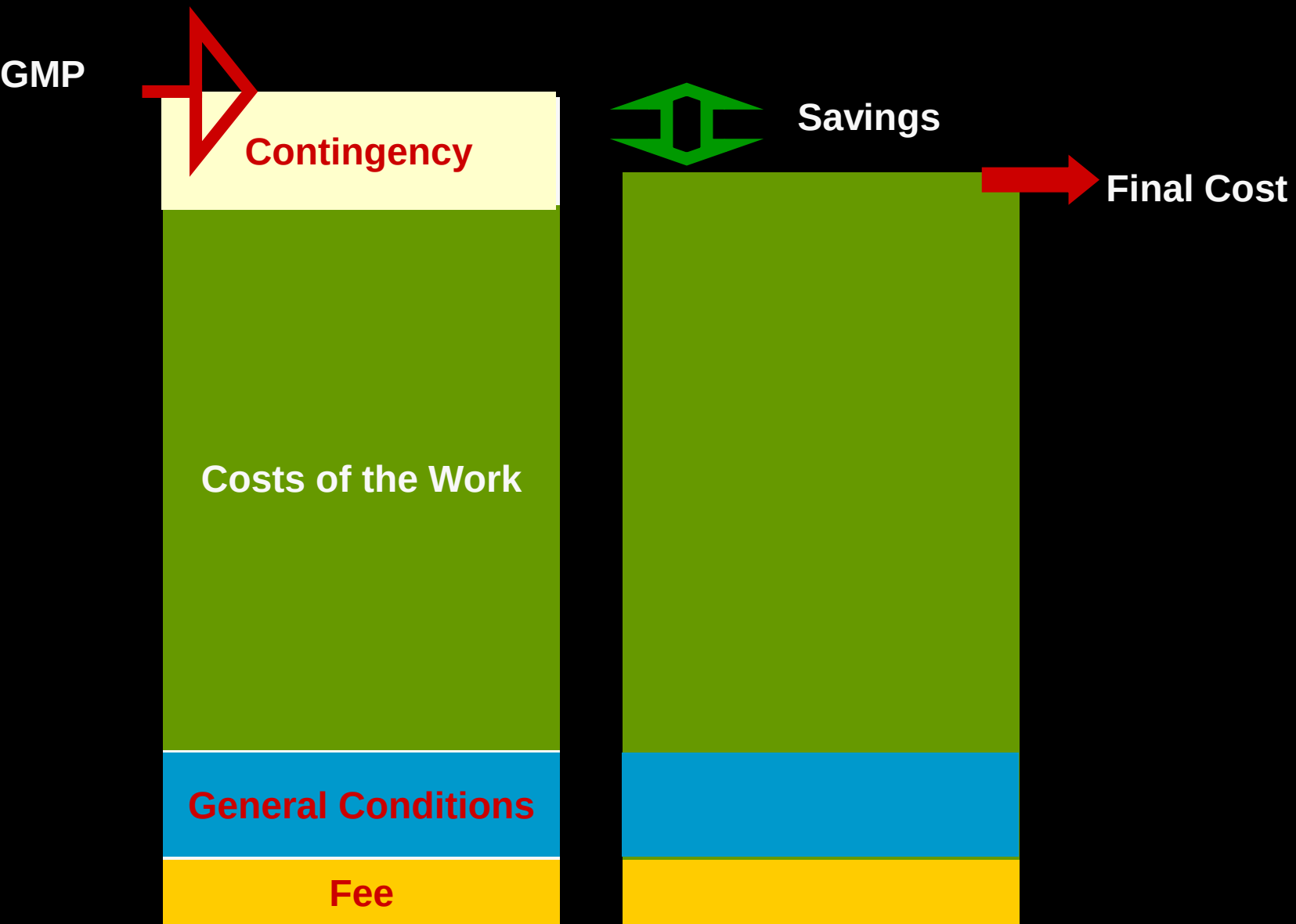
Lump Sum Pricing

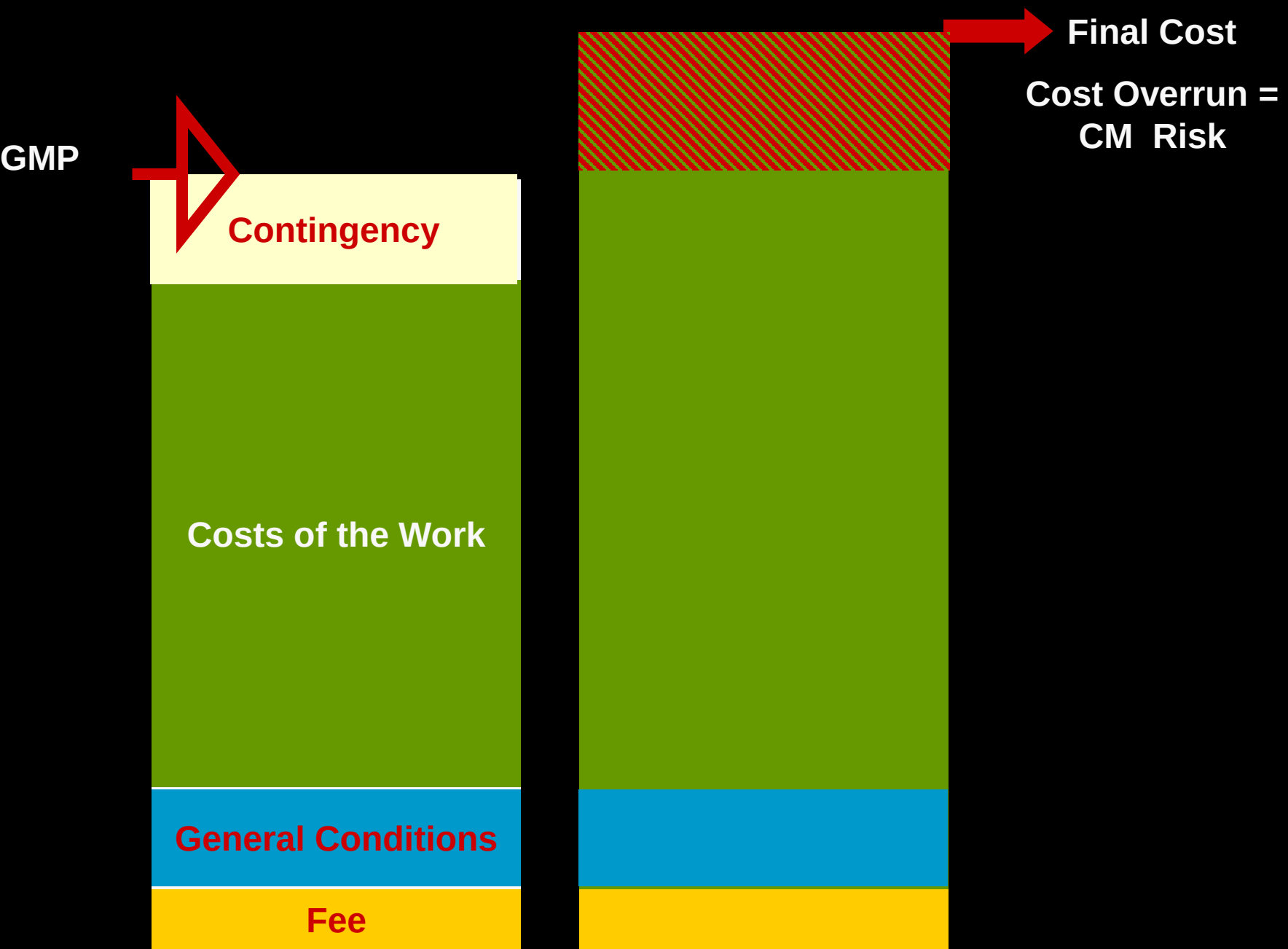
Lump Sum Pricing

- **No transparency**
- **Paid on percentage completion**
- **No Owner involvement or collaboration in pricing**
- **No opportunity for cost savings or managed contingency**

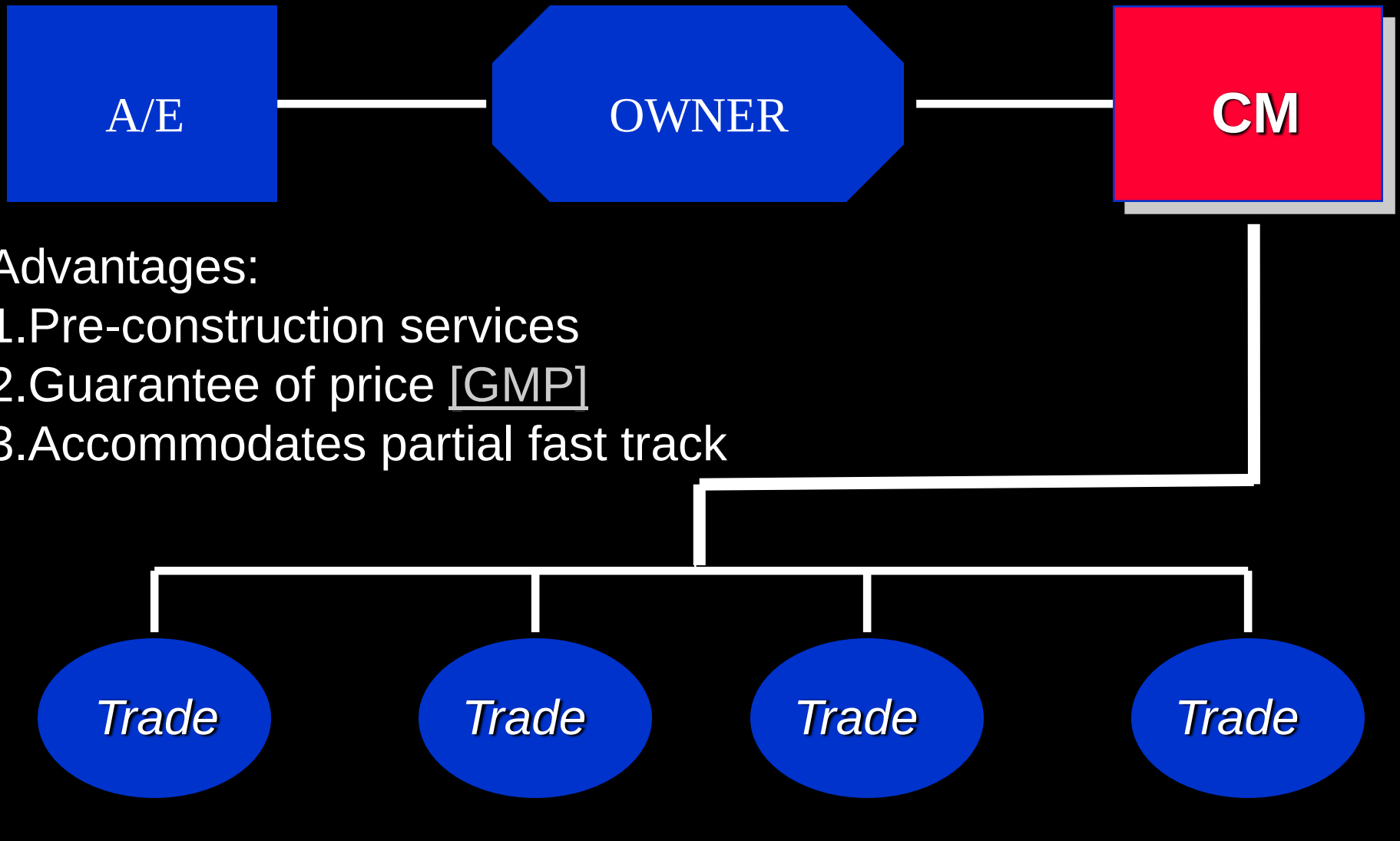
GMP



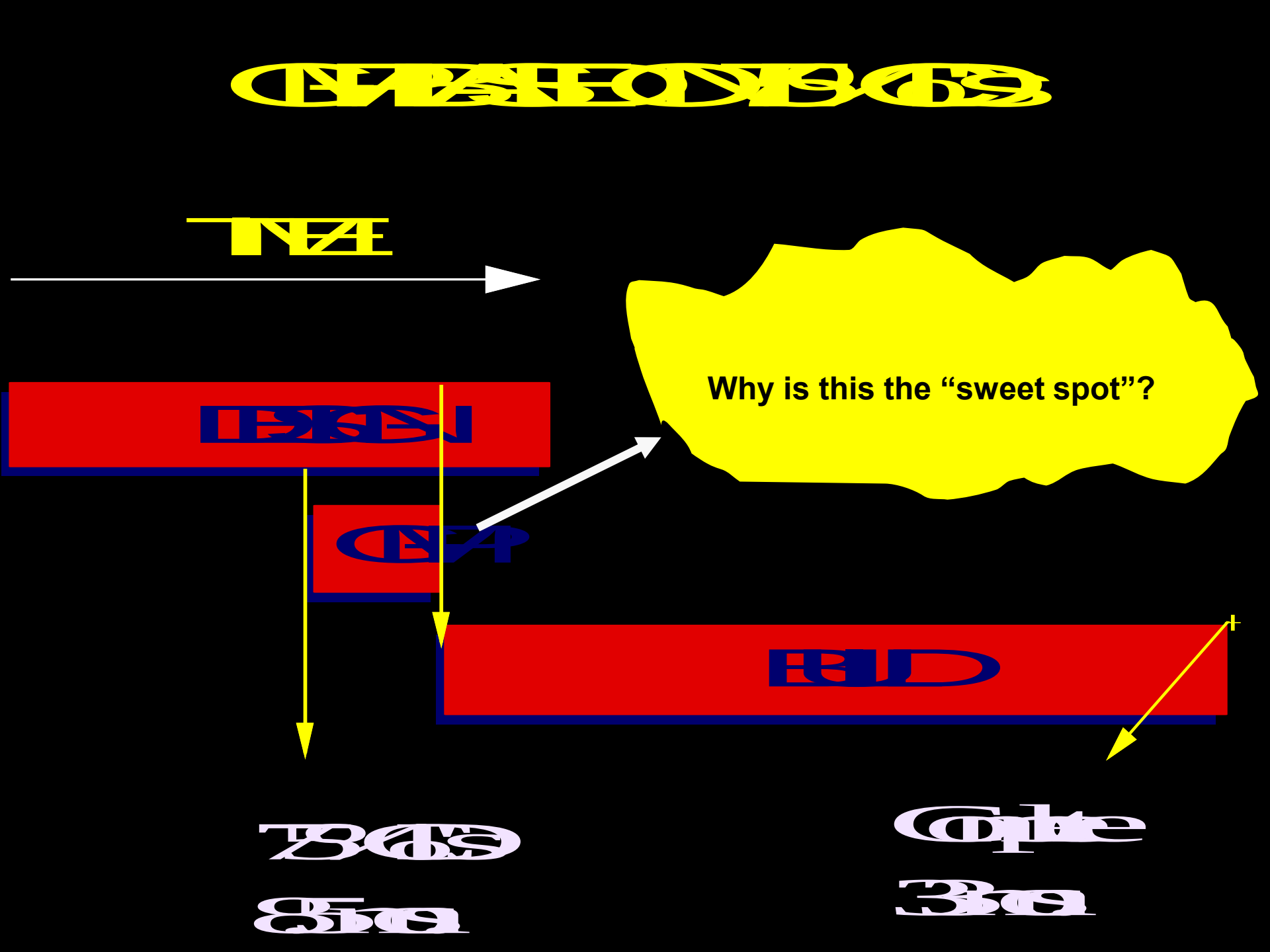

GMP
Contingency
Costs of the Work
General Conditions
Fee
Savings
Final Cost

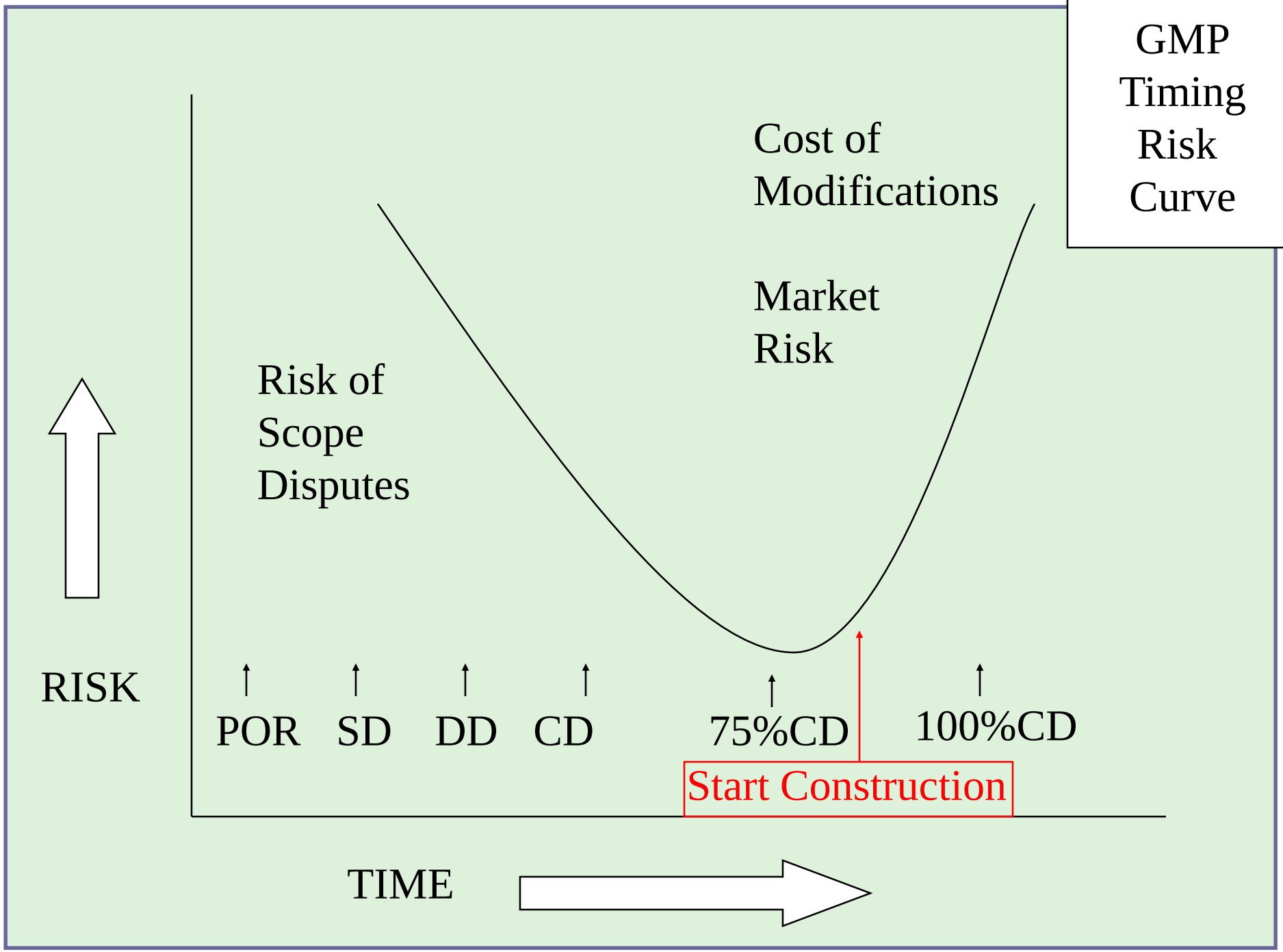

GMP
Contingency
Costs of the Work
General Conditions
Fee
Final Cost
Cost Overrun =
CM Risk

Construction Manager as Constructor

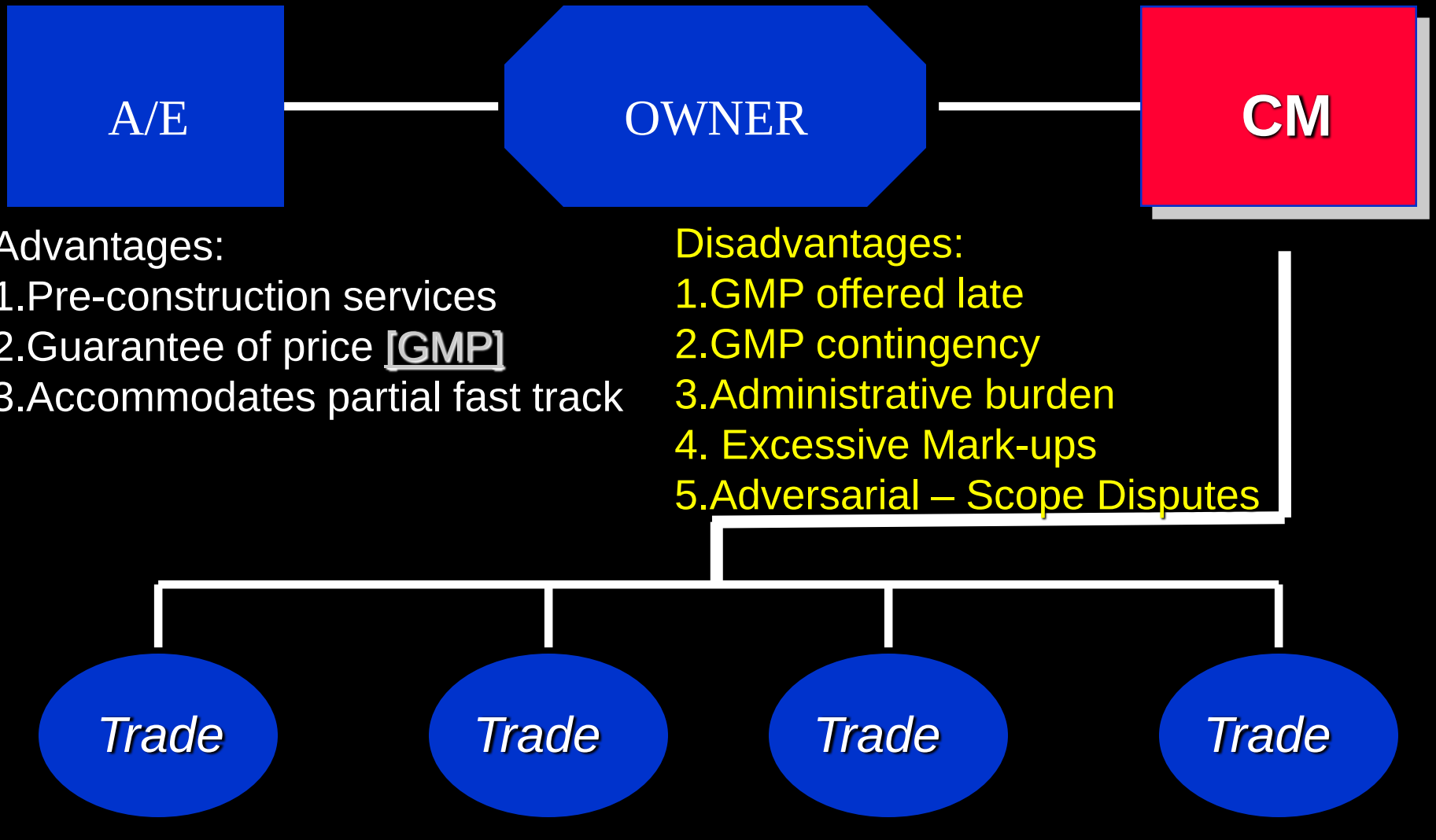


Advantages:
1.Pre-construction services
2.Guarantee of price [GMP]
3.Accommodates partial fast track


Why is this the “sweet spot”?


GMP
Timing
Risk
Curve
Cost of
Modifications
Market
Risk
Risk of
Scope
Disputes
RISK
POR
SD
DD
CD
75%CD
100%CD
Start Construction
TIME

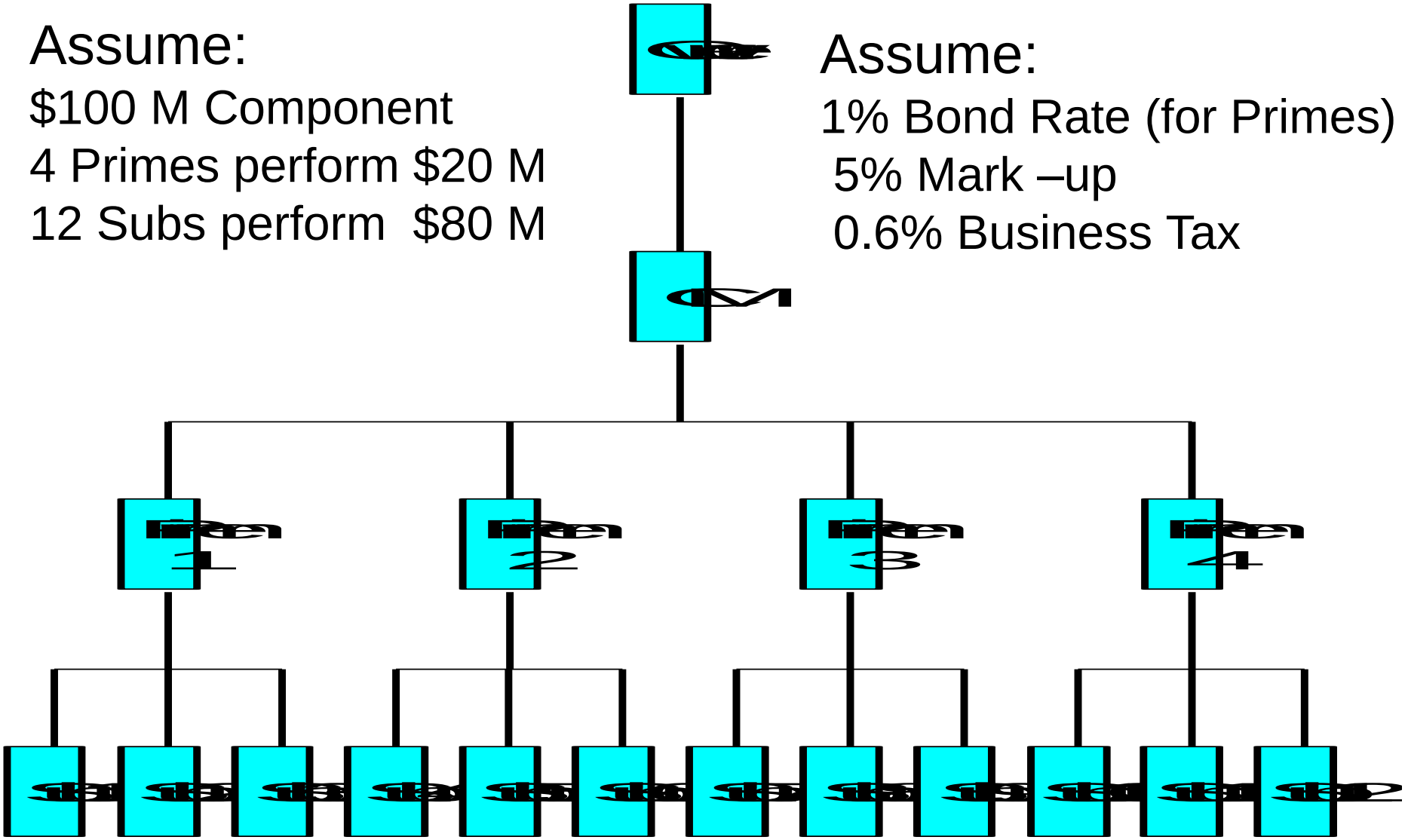
Construction Manager as Constructor



Pyramid Structure

Assume:
$100 M Component
4 Primes perform $20 M
12 Subs perform $80 M

Assume:
1% Bond Rate (for Primes)
5% Mark –up
0.6% Business Tax

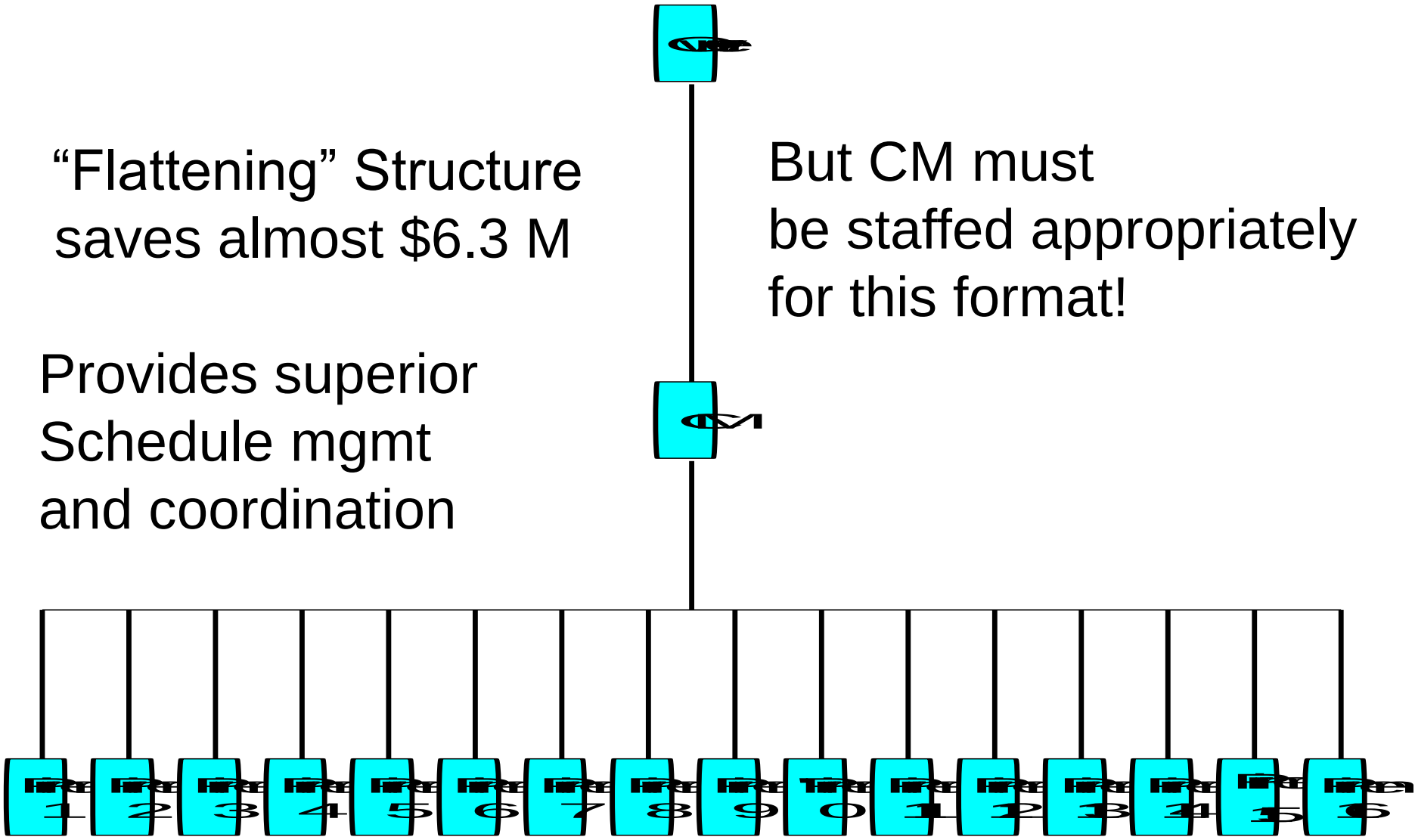


Flat Structure

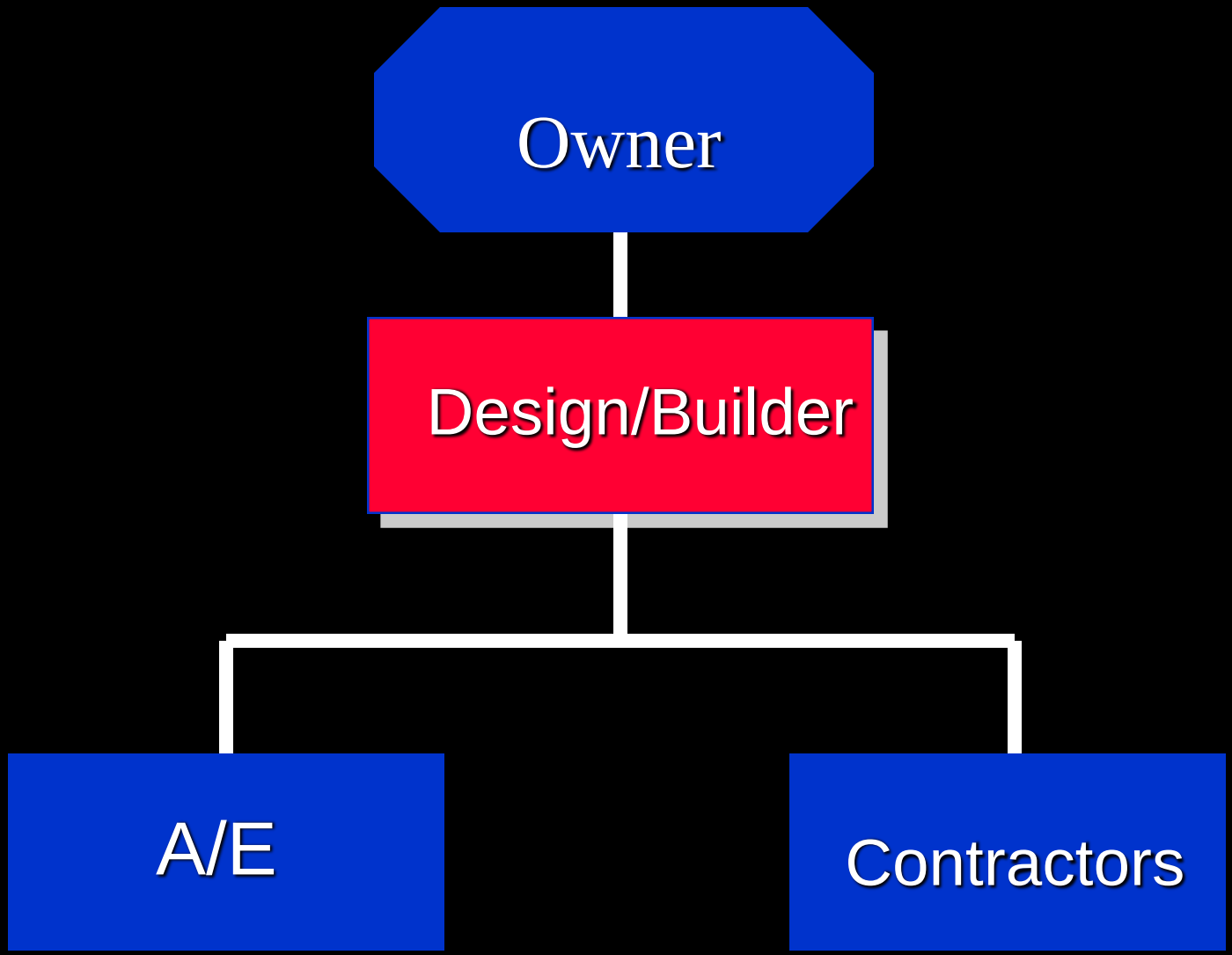
“Flattening” Structure saves almost $6.3 M

Provides superior Schedule mgmt and coordination

But CM must be staffed appropriately for this format!

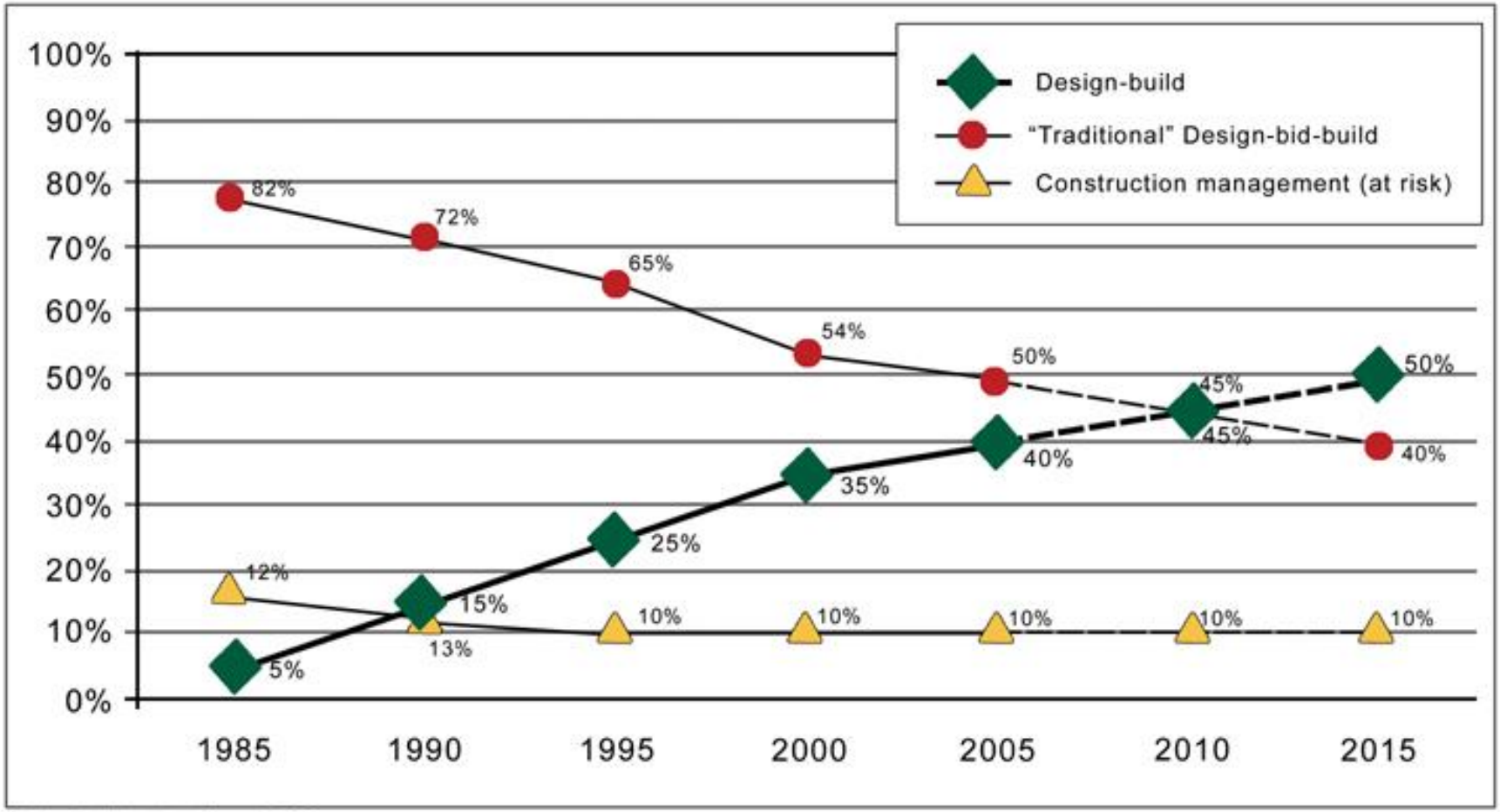


Design / Build Approach



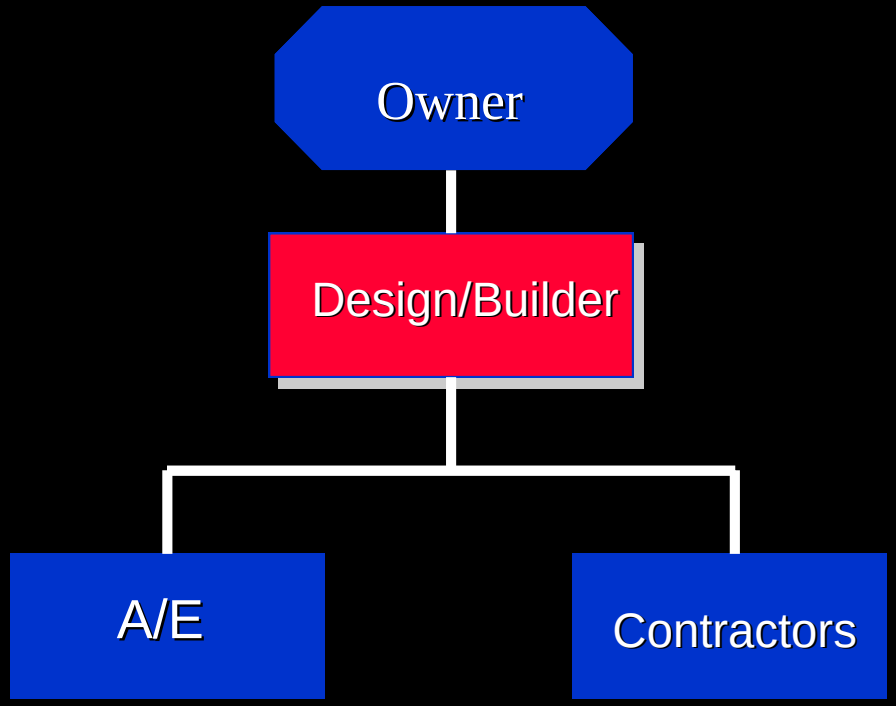
Dramatic Growth of Design Build in US

Non-Residential Design and Construction in the United States



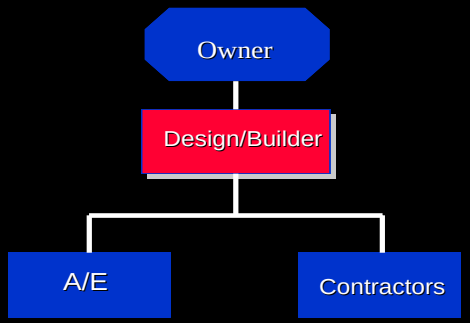
Design-Build Institute of America 2005

Design Build



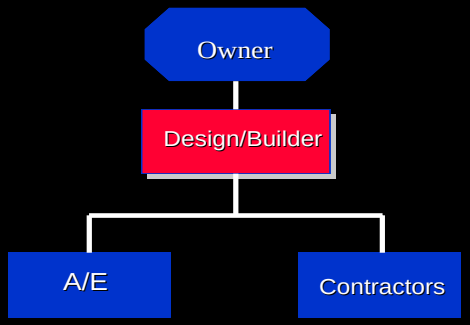
- Design/Build Entity
  - Integrated Design/Build Company
  - Joint Venture or LLC
  - Designer Led
  - Contractor Led

Advantages of Design/Build



- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction

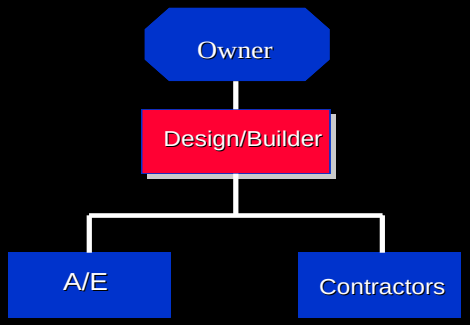
Advantages of Design/Build



- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

- Seamless project concept
- Owner avoids design liability (Spearin Solved!)
- Owner avoids A/E vs. contractor disputes

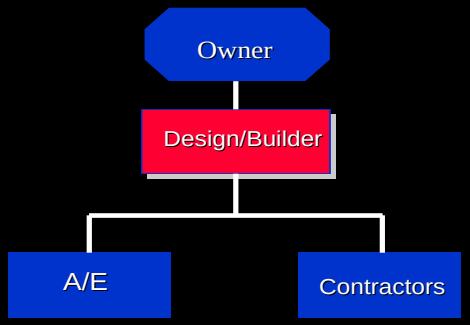
Advantages of Design/Build



- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

- Design-build team speaks with single voice
- Owner not “caught in crossfire” between A/E and contractor

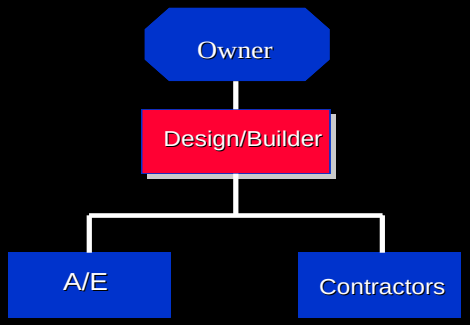
Advantages of Design/Build



- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

- Reduction of administrative burden
- Elimination of paperwork
- Closer working relationship between contractor and A/E

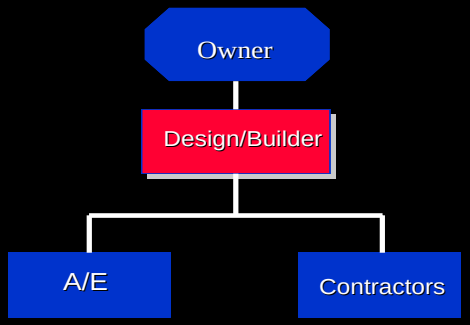
Advantages of Design/Build



- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

- Earliest possible price guarantee
- Prompt and coordinated production of bid packages

Advantages of Design/Build



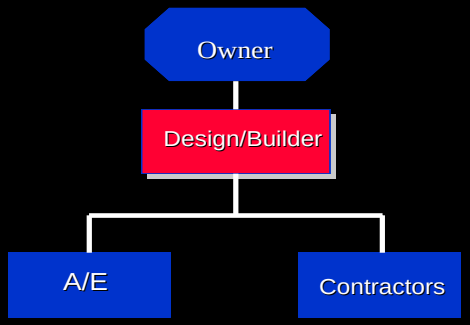
- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

➢ A/E and contractor "on same team"

➢ Design related claims minimized

➢ Efficient claims administration

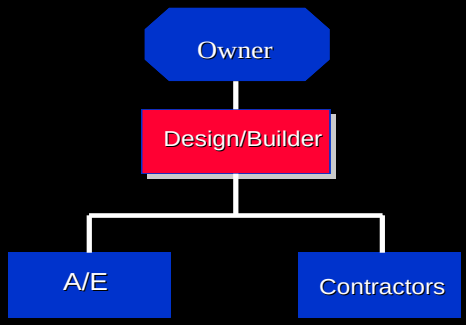
Advantages of Design/Build



- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

Turnkey -- The design-build entity provides financing (and perhaps land acquisition and development), turning the project over to the owner when construction is completed.

Advantages of Design/Build

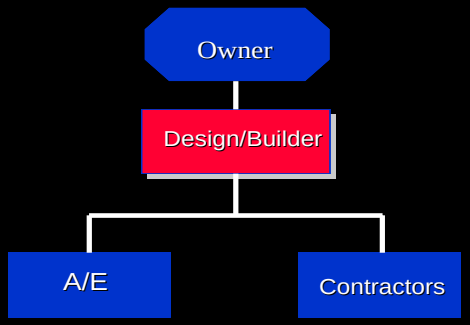


- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

Build-Operate-Transfer -

- The design-build entity owns and operates the project according to the client's requirements, receiving fees during the ownership period and transferring the project to the client at a specified future date.

Advantages of Design/Build

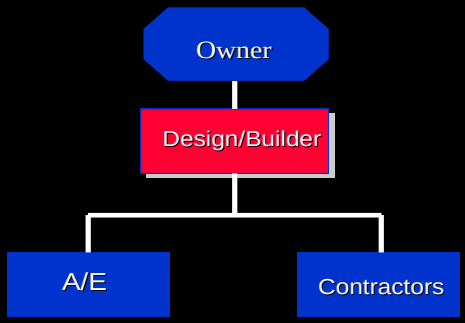


- Sole source responsibility
- Single point of communication
- Efficient use of resources
- Facilitates fast track
- Claim reduction
- Opportunities for creative finance

Sale-Leaseback

The design-build entity retains ownership of the project, leasing it back to the client who commissioned it based on terms negotiated at the outset

Disadvantages of Design Build



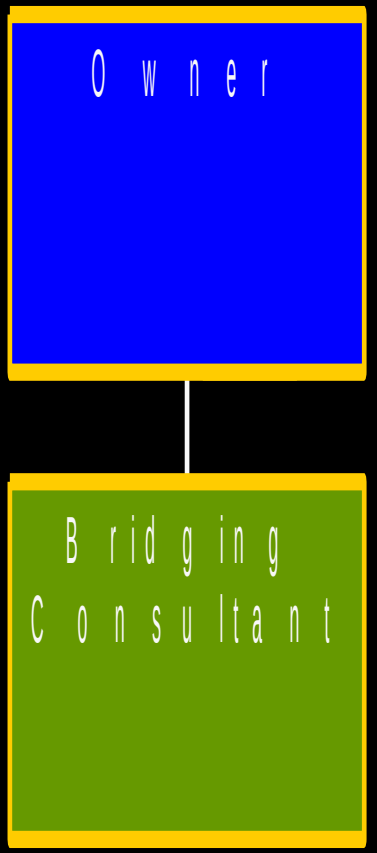
- Owner's Loss of Control Over Design
  - Design Professional No Longer Agent of Owner
  - Owner's Loss of Direct Communication with Design Professional
- Selection Criteria for Design Professional (Price vs.Qualifications)
- Inherent Conflicts of Interest
  - Design Decisions Improperly Influenced
  - Construction Oversight Improperly Influenced
- Disputes over Scope and Content
- Creation of Hidden Costs

Solution : Bridging Approach to Design Build

- Observations:
  - Principle disadvantages of design build occur during conceptual stage
  - Principle advantages of design build occur during preparation of CDs and construction
  - Bridging preserves advantages while minimizing disadvantages

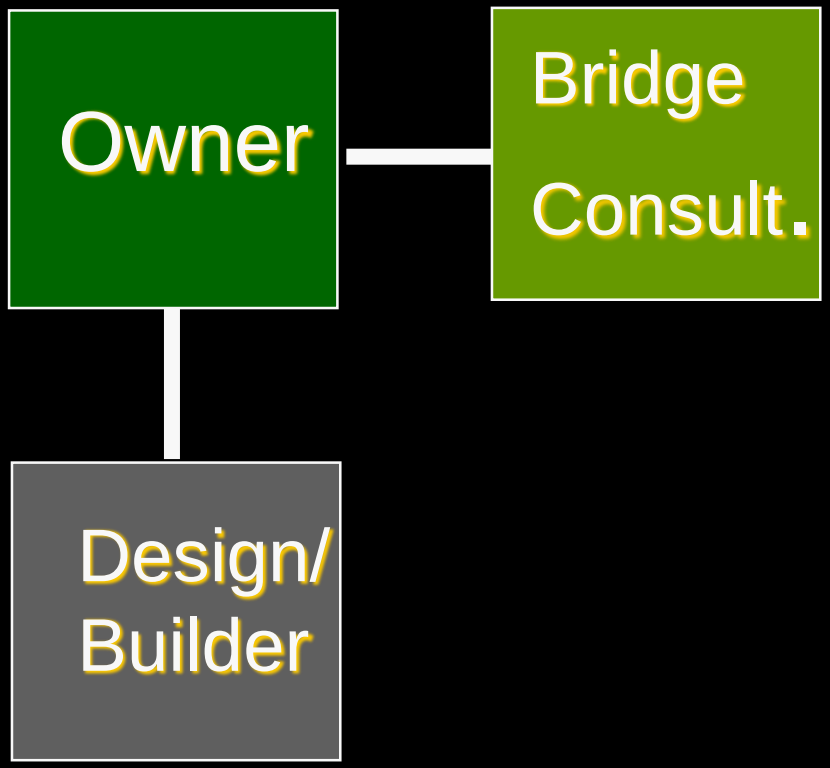
Bridging: A Design/Build Alternative

- Phase 1
  - Programming and planning
  - Conceptual estimating
  - Preparation of 10 to 35% complete conceptual design package



Bridging: A Design/Build Alternative

- Phase 2
  - Design Build Contractor Negotiates GMP based on Bridging Documents
  - [Note: Under Progressive Model, DB is involved from the outset working in parallel]
- Phase 3
  - Design/Builder completes working drawings and constructs
  - Bridging Consultant monitors conformance with conceptual plans



Advantages of Bridging

- Owner controls design
- Design/Builder bids, designs and builds to established criteria
- Quality control maintained
- Bridging Consultant protects Owner's interests
- Traditional advantages of Design/Build maintained during construction phase

Variations on the Bridging Theme

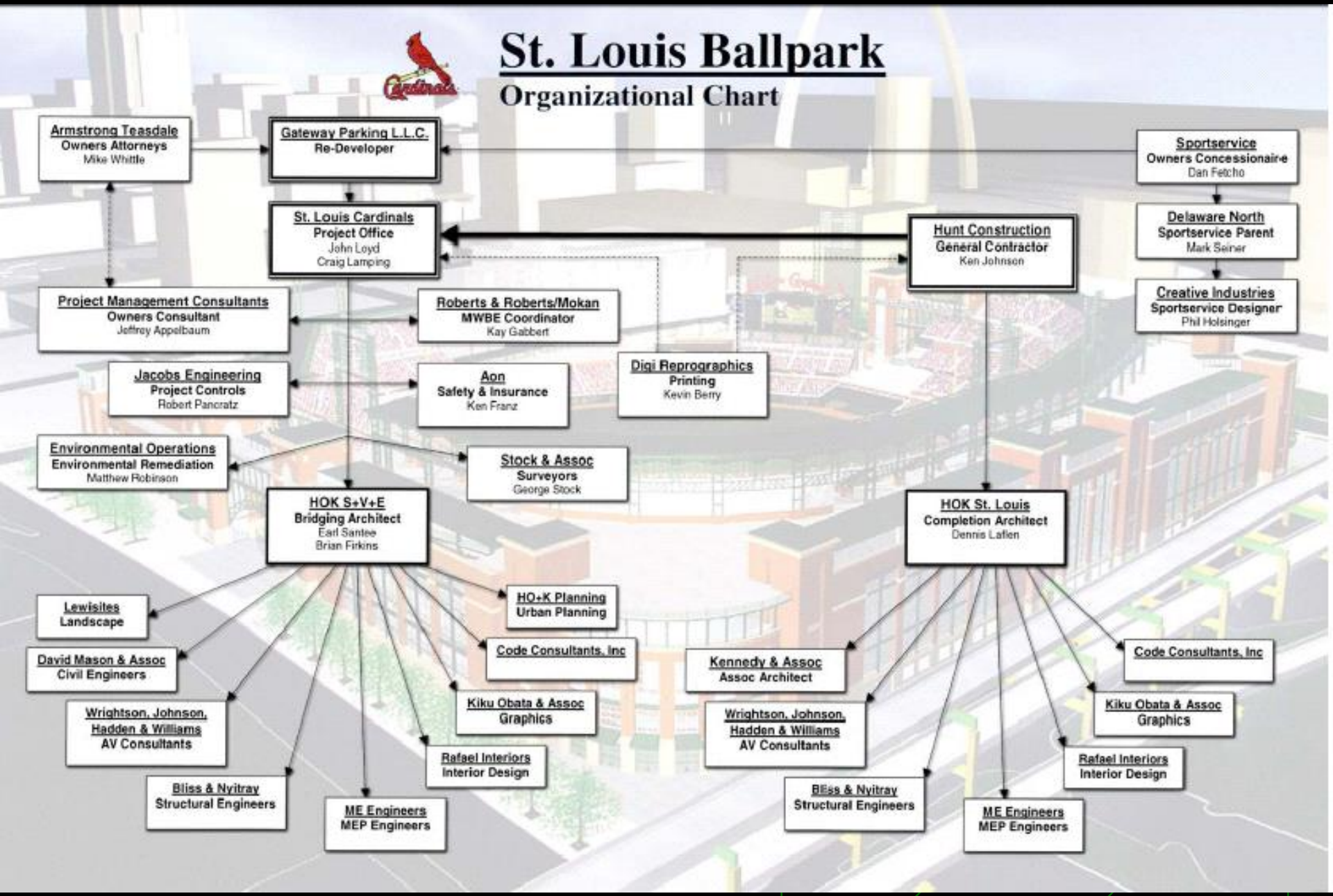
- Progressive Design Build
- Integrated Bridging Design Build (49ers Continuation Design Build Model)

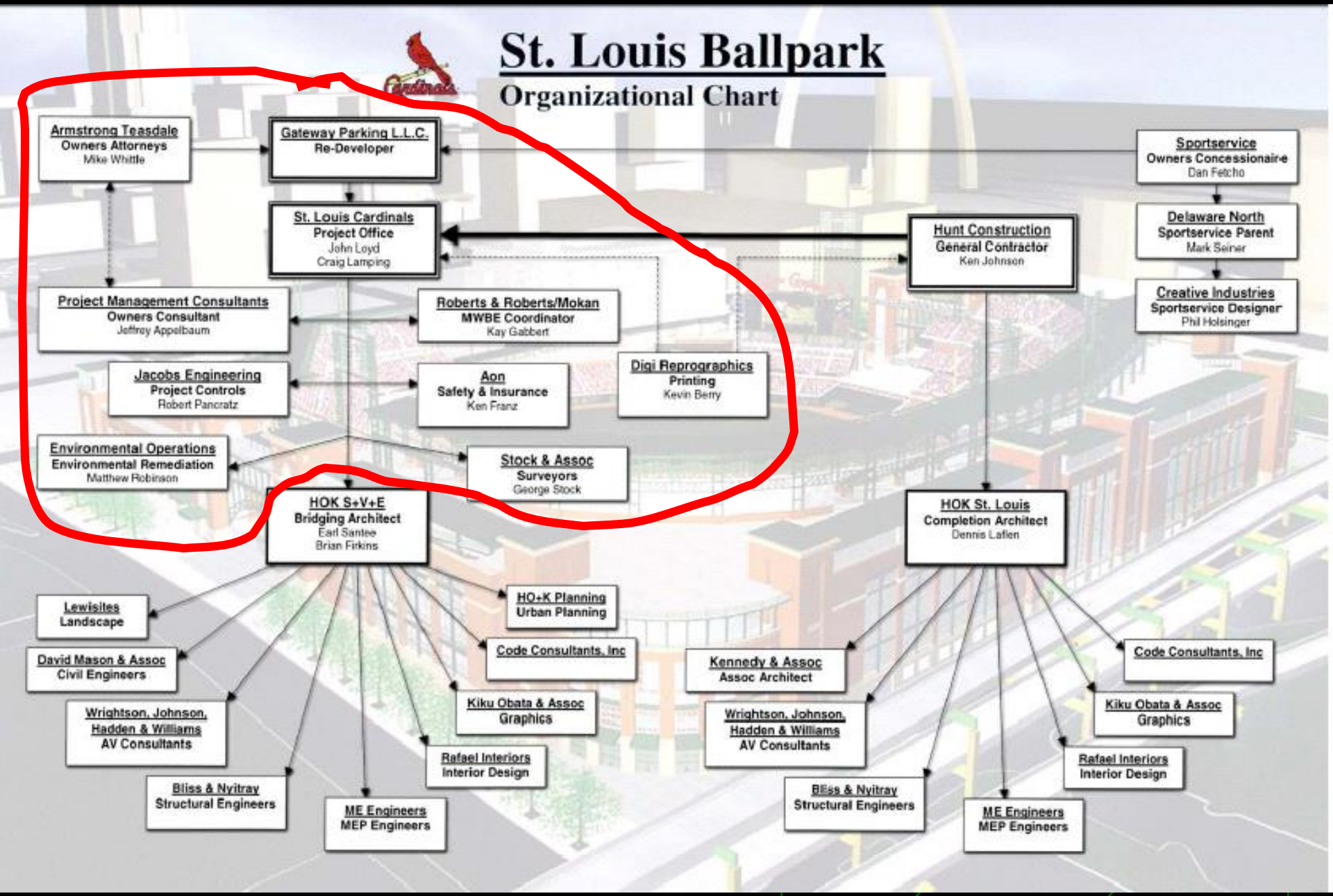
Design/Build Bridging – The Process

HOK S+V+E – Bridging Consultant	**Schematic Design**	**GMP Documents(DD's)**	CD Review, Quality Control, Construction Observation
	* **IGMP**	* **GMP**	
HOK St. Louis– Architect of Record		**Construction Documents**	Construction Monitoring
Hunt Construction-Design/Builder		**Construction**	

St. Louis Ballpark

Organizational Chart

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Armstrong Teasdale
Owners Attorneys
Mike Whittle
Gateway Parking L.L.C.
Re-Developer
Sportservice
Owners Concessionaire
Dan Fetcho
St. Louis Cardinals
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John Loyd
Craig Lamping
Hunt Construction
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Delaware North
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MWBE Coordinator
Kay Gabbert
Digi Reprographics
Printing
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Project Controls
Robert Pancratz
Aon
Safety & Insurance
Ken Franz
Environmental Operations
Environmental Remediation
Matthew Robinson
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George Stock
HOK S+V+E
Bridging Architect
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MEP Engineers
BEss & Nyitray
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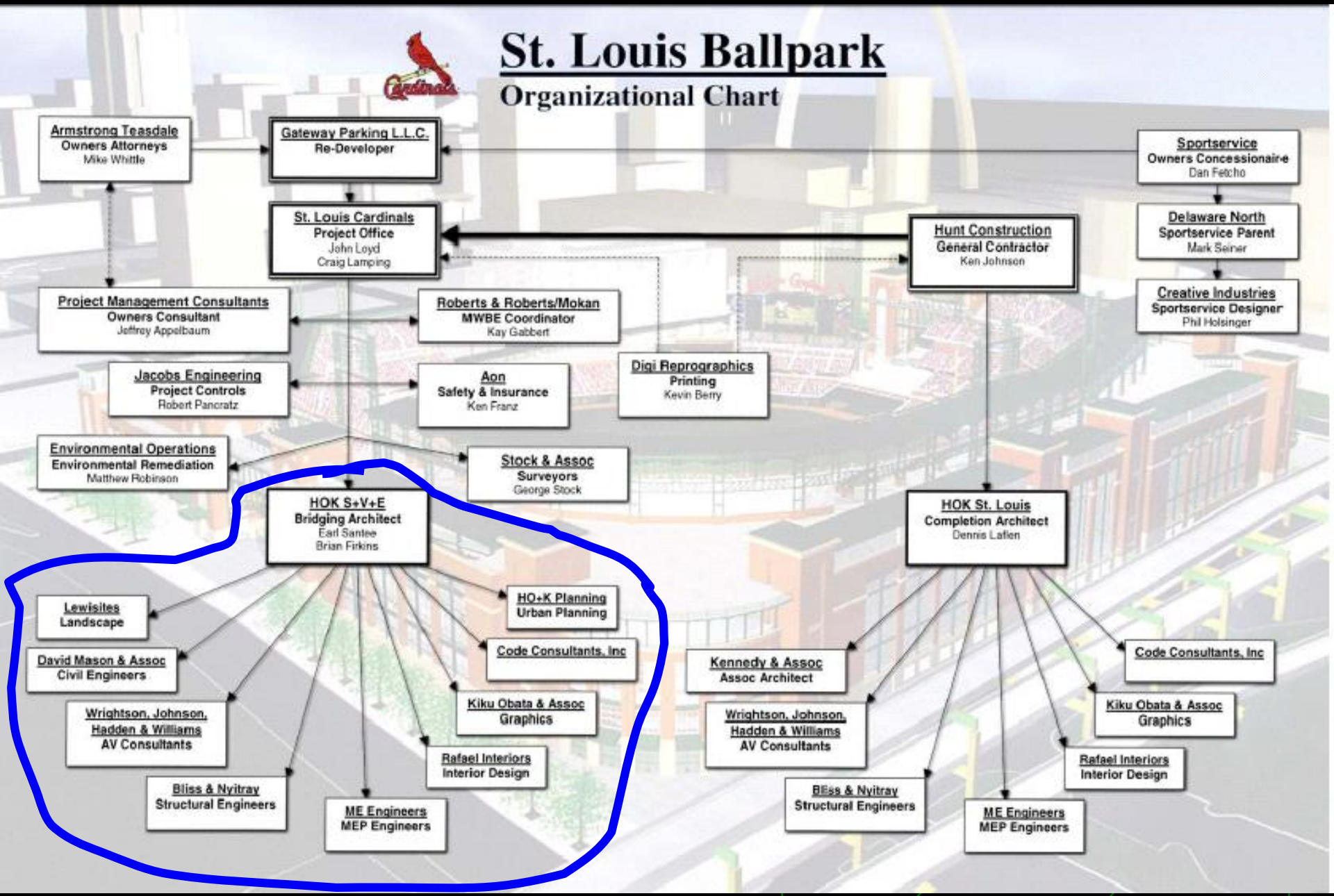
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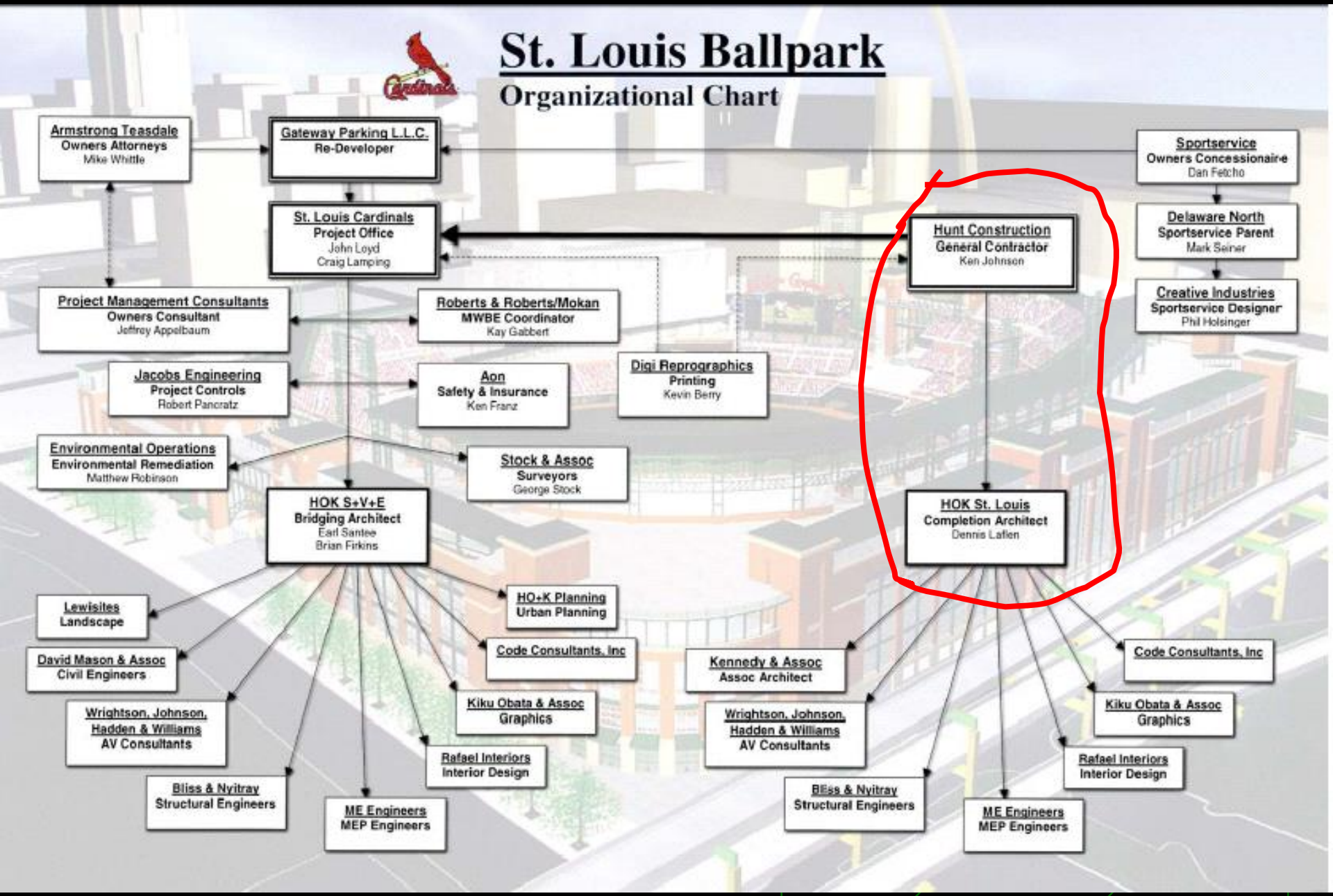
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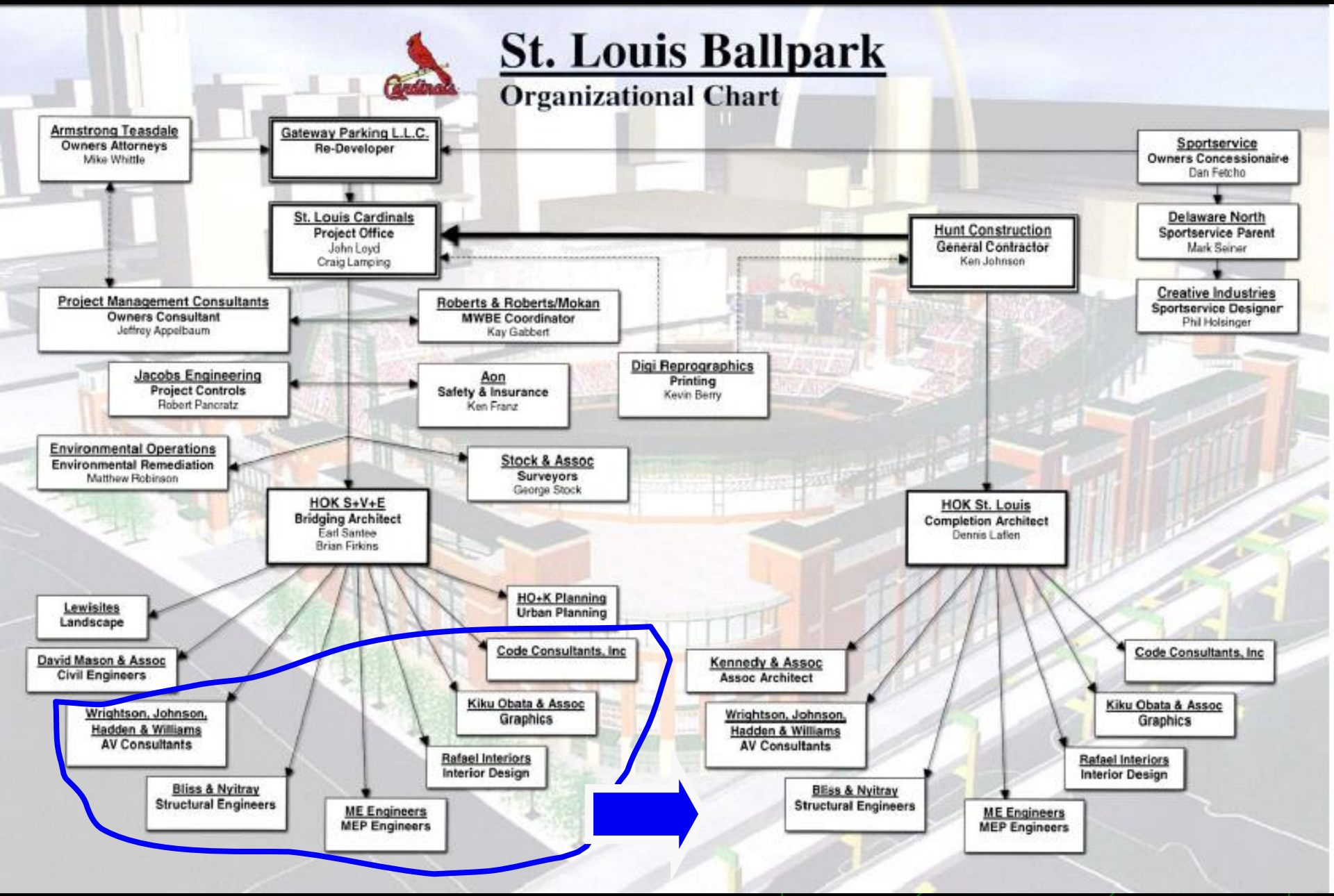
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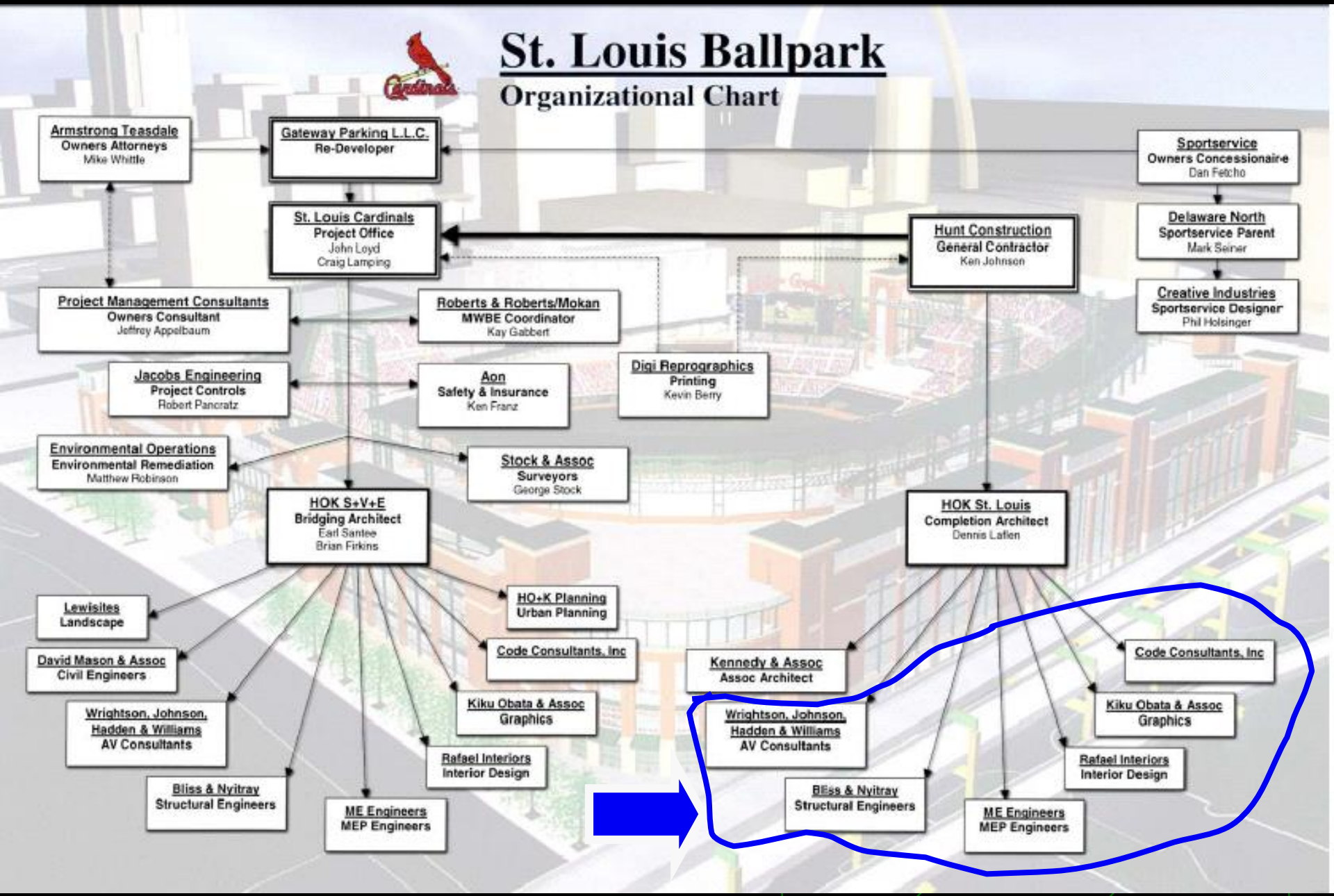
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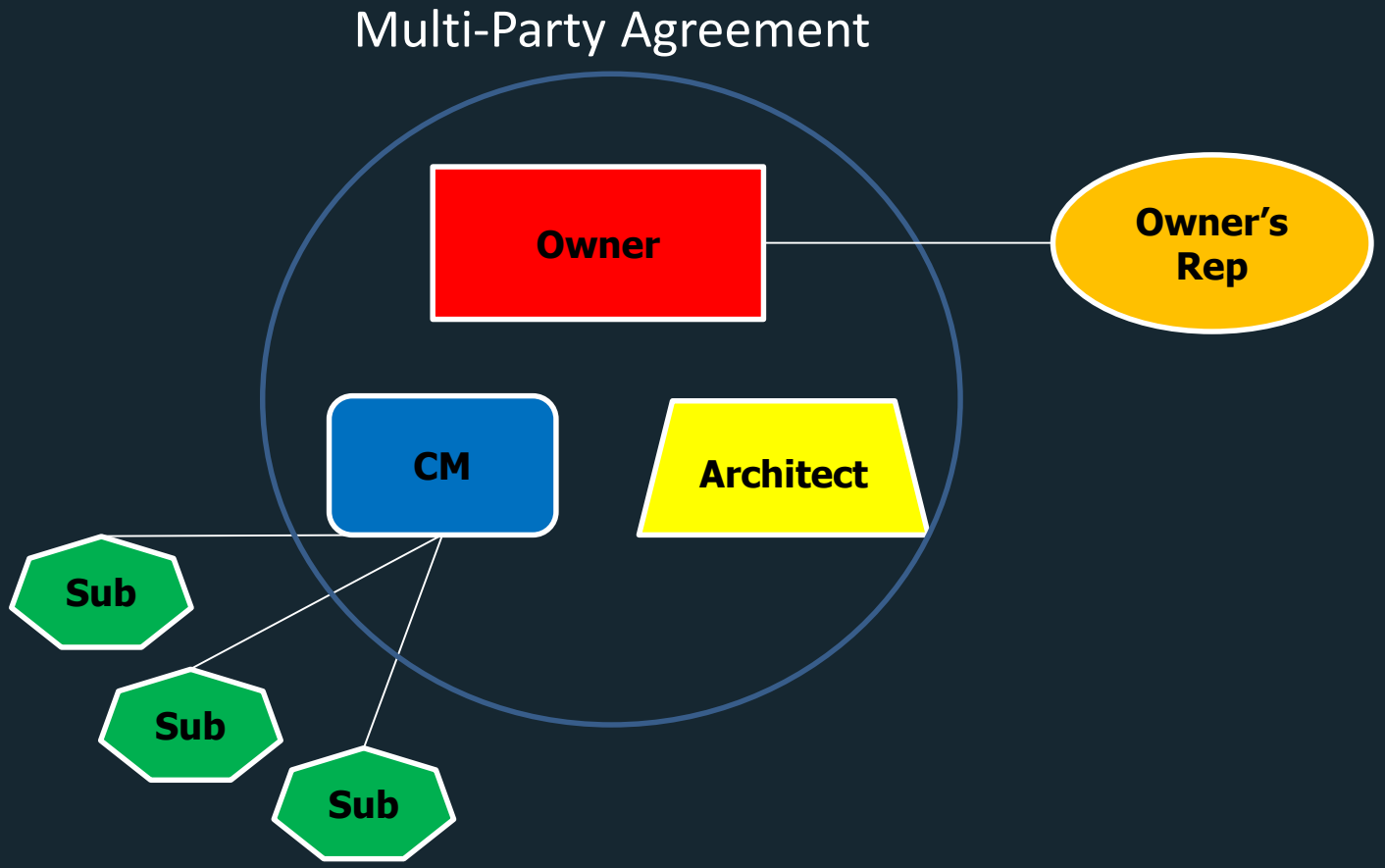
Integrated Project Delivery (IPD)

Integrated Project Delivery

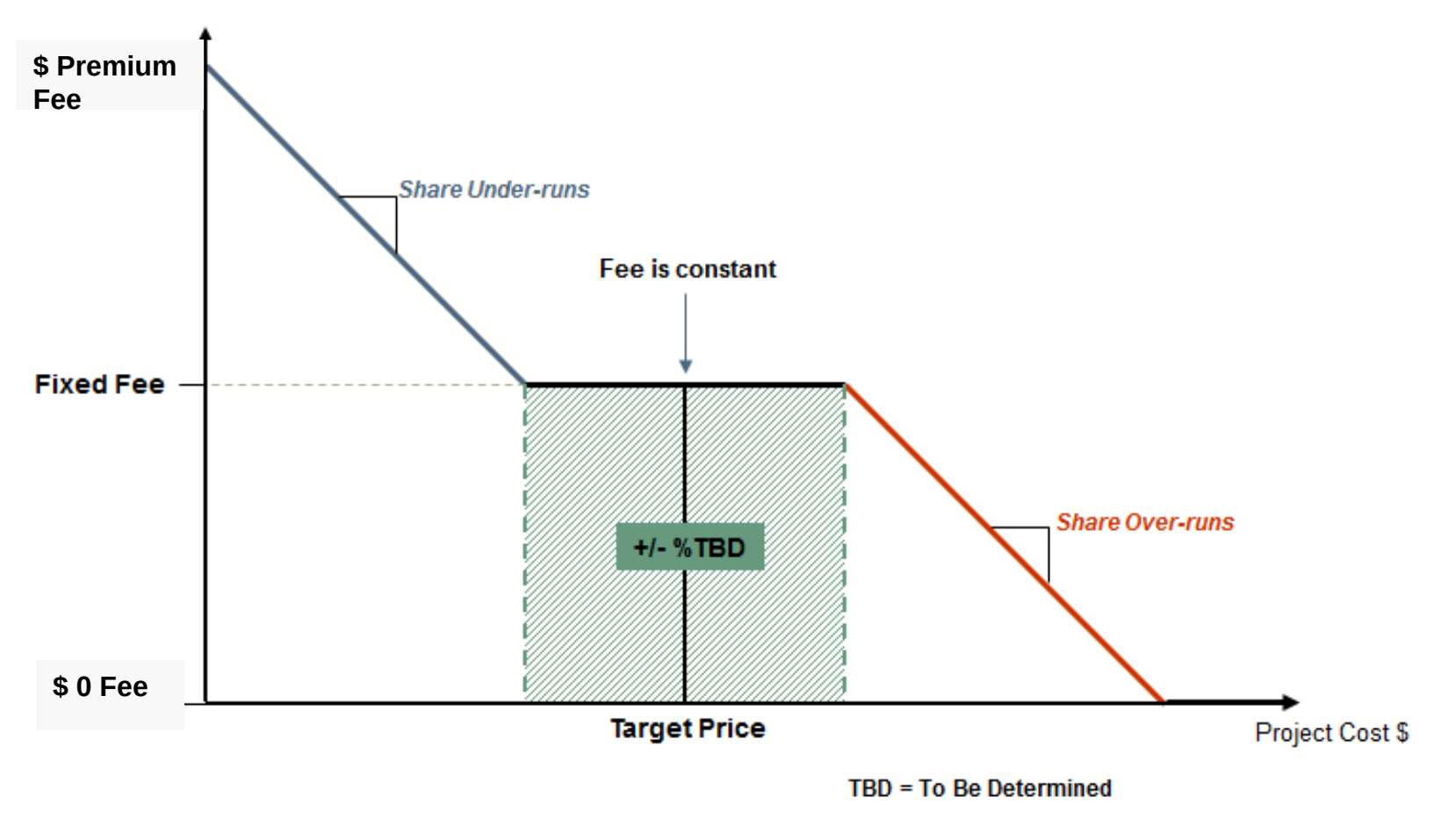


Joining Agreements

project management consultants

THOMPSON HINE

Target Price Method

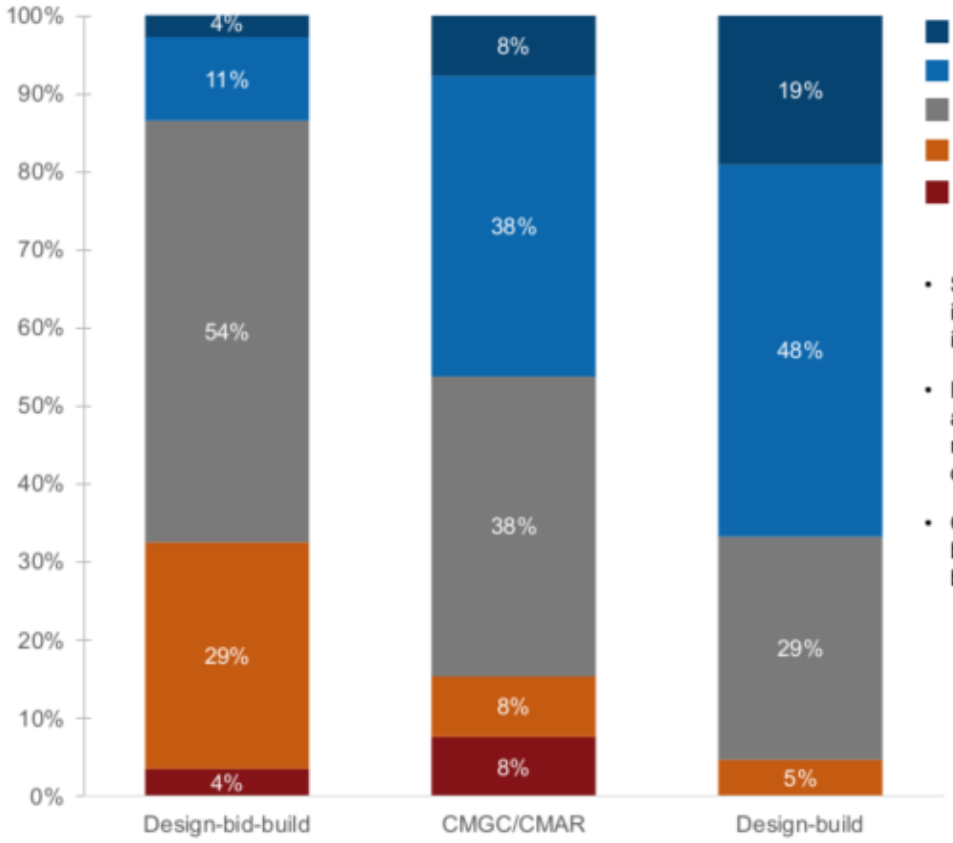


Contractor and Consultants Place Fees at Risk….but there is no Guaranteed Maximum Price

So which of these methods are you using……and why?

The majority of owners indicated design-build utilization will increase in the next 5 years.

From an industry perspective, how will the use of the following delivery methods change in the next 5 years?
Owner respondents; (1=significant decrease, 5=significant increase)
Source(s): FMI Survey



- Sixty-seven percent of owner respondents indicated an increase in the use of design-build in the next 5 years.
- Forty-six percent of owner respondents indicated an increase in the use of CMGC/CMAR in the next 5 years. However, 16% of owners see a decrease.
- Over 50% of owners believe the use of design-bid-build will remain the same. However, 32% believe there will be a decrease in use.

FMI

Educate the Owner

Comparison of Project Delivery Systems

Metric	DB vs. D-B-B	CM@R vs. D-B-B	DB vs. CM@R
Unit Cost ($/SF)	6.1% lower	1.6% lower	4.5% lower
Speed of Construction	12% faster	5.8% faster	7% faster
Delivery Speed	33.5% faster	13.3% faster	23.5% faster
Cost Growth	5.2% less	9.2% more	12.6% less
Schedule Growth	11.4% less	9.2% less	2.2% less

"Comparison of U.S. Project Delivery Systems," Mark Konchar & Victor Sanvido, Journal of Construction Engineering and Management, Vol. 124, No. 6 (1998), pp 435-44)

Caution: Industry literature and studies, while helpful, are not project specific…

- There is no "best" delivery system for all applications

The Project Delivery Workshop

- Step 1: Educate owner regarding project delivery options
- Step 2: Review and prioritize critical project parameters
- Step 3: Identify absolute constraints that limit possible delivery options
- Step 4: Compare options based upon stakeholder priorities
- Step 5: Implement special tools to enhance project delivery success

Step 2: Prioritize Critical Project Parameters

- Assemble Stakeholders
- Confirm Project Goals and Requirements, including:
  - Programmatic Elements
  - Timing Requirements
  - Budget and Financing Requirements
  - Owner/Management Approach
- Prioritize Project Parameters
  - If necessary, use facilitated “forced ranking exercise”

ETON PARTNERING SESSION
May 9, 2010

PRIORITIES ASSESSMENT EXERCISE

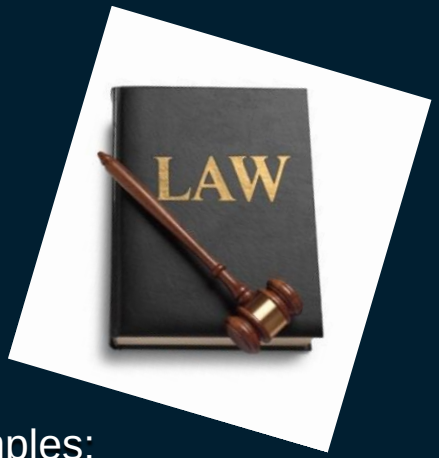
Priority	Forced Ranking
Eton Strategic Plan	_____
Eton Master Plan - Upper Campus	_____
Eton Master Plan - Lower Campus	_____
Eton Design Standards	_____
Middle School Location	_____
Circulation – Upper Campus	_____
Natatorium - Exterior Design Aesthetic	_____
Natatorium - Interior Design Aesthetic	_____
Natatorium Location (attached, detached, semi -attached)	_____
Natatorium Program	_____
Natatorium Schedule	_____
Natatorium Budget	_____
Athletic Complex - Master Plan	_____
Athletic Complex - Exterior Aesthetic	_____
Athletic Complex - Interior Layout	_____
Athletic Complex - Interior Upgrades	_____
Gray House Renovation	_____
Upper Campus Library	_____
Consistency of Old and New Architectural Styles	_____
_____ _____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Evaluator___

Step 3: Identify Absolute Constraints that Limit Possible Delivery Options

Legal Constraints

- Dictated by Ownership Entity and Funding Source
  - Private
  - Public
  - P3 (Public Private Partnership)
- For Public (and P3) Projects, Law of Jurisdiction may Constrain Project Delivery Choice or Structure



- Examples:
  - Competitive Bidding; QBS Laws
  - Separations Act
  - Certification of Funds
  - Specific Delivery Restrictions
    - Example: Florida permits Design Build, but only with separate Bridging Architect
  - Other Requirements, such as
    - Bonding
    - Social Policy Considerations -- (MBE,FBE,SBE, local participation, union, prevailing wage, etc.)

Step 3: Identify Absolute Constraints that Limit Possible Delivery Options

- Absolute Funding and Budget Constraints
  - Requirement for fixed or guaranteed price
    - Owner requirement
    - Financing requirement
  - Other “strings attached”

- Absolute Timing Constraints
  - Date by which:
    - Financing must be obtained
    - Fixed price or GMP must be established
    - Construction must commence
    - Completion must be achieved
    - Building operation must start

Step 4: Compare Options Based upon Project Criteria and Stakeholder Priorities

a) Project Type

b) Comparative Cost Analysis

c) Comparative Schedule Analysis

d) Owner/Management Profile

4.a Project Type; Basis of Design

- Project Type
  - Size
  - Complexity
  - Industry approach

Parking Deck

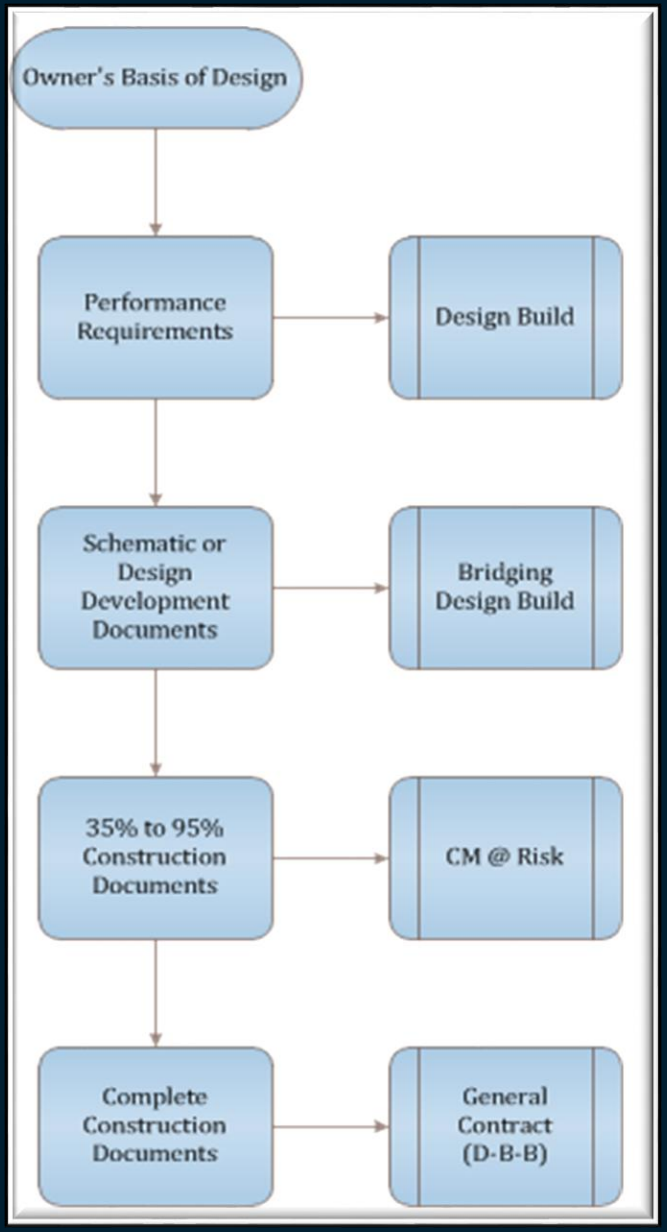
Wastewater Treatment Plant

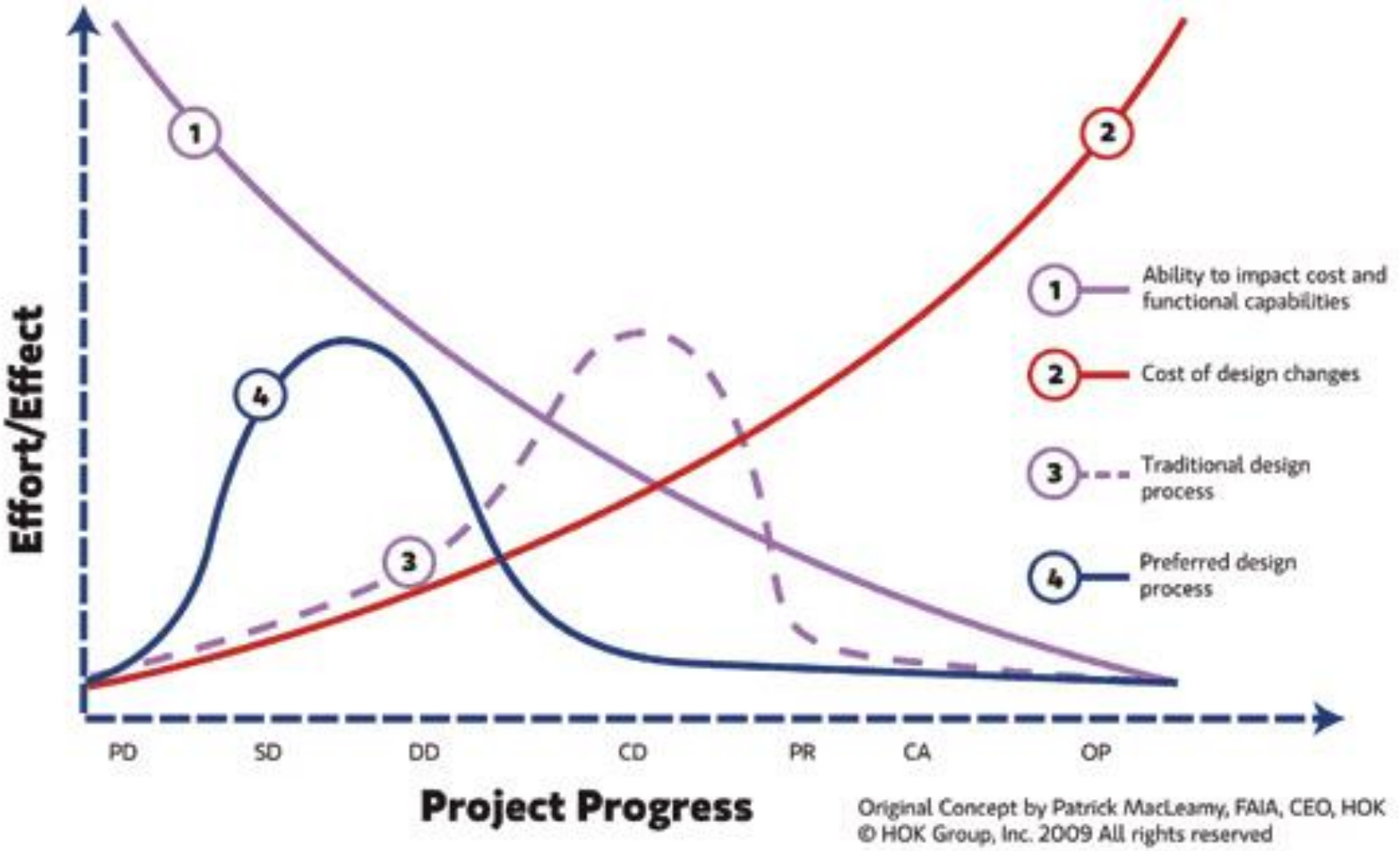
Hospital

Stadium

4.a Project Type; Basis of Design

- Project Type
  - Size
  - Complexity
  - Industry approach
- Basis and Extent of Design
  - At optimal point of risk transfer
  - When Owner will “put down the pencil”
  - Consider need for flexibility throughout construction process





Original Concept by Patrick MacLeamy, FAIA, CEO, HOK

Can you “put the pencil down” after DDs?

- Can critical design decisions be made?
  - Are all parties at the table (e.g., food service)
- Can design be adequately expressed for sign off?
  - BIM, Sketch-up, Immersive tools, mock-ups, etc?
- Can flexibility maintained within budget?
  - Effective Add-Alternate Development and Contingency Reduction methodology
  - Limited white box/block box planning for sponsorship?
- Can design build team be immediately engaged?
- Can design assist be implemented with target pricing confirmed prior to GMP?
- Can Ownership reasonably resist the urge to rethink accepted design?

4.b Funding and Cost Analysis

- Fixed or Guaranteed Price Required?
  - If so, when?

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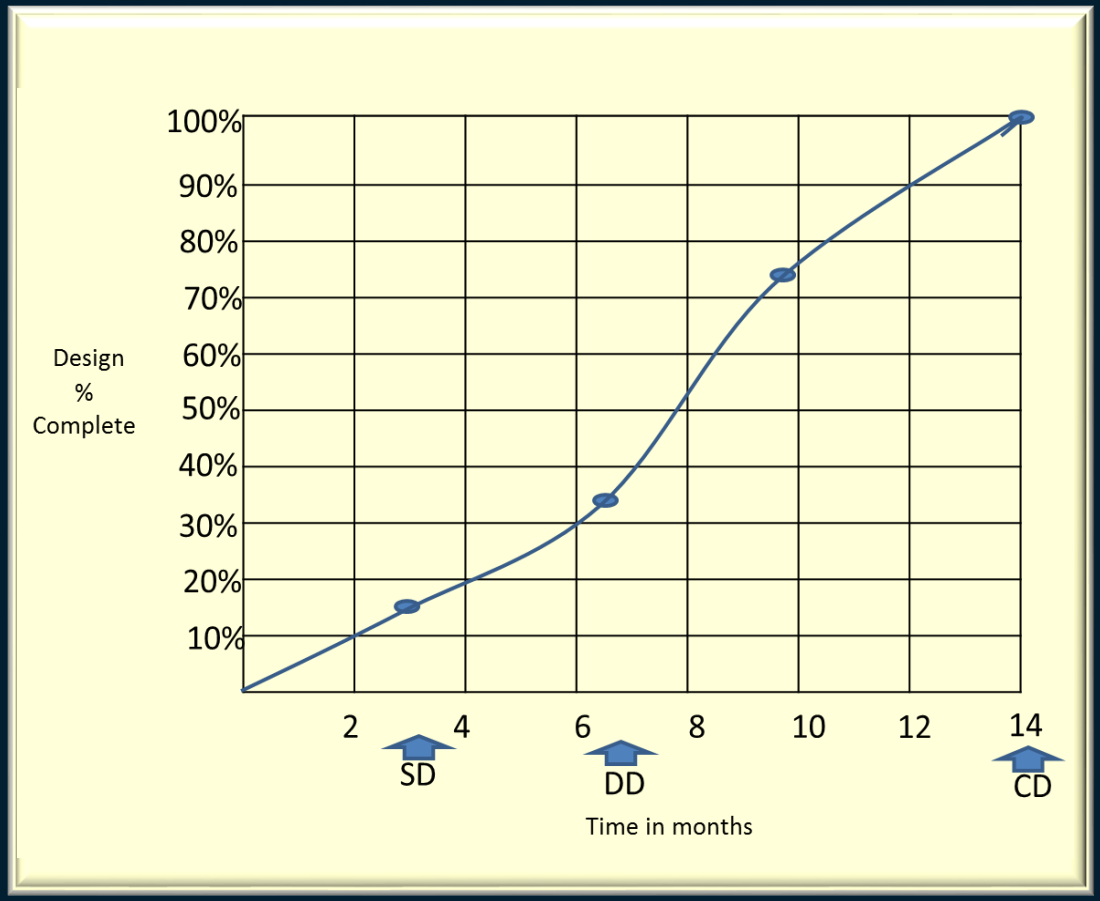

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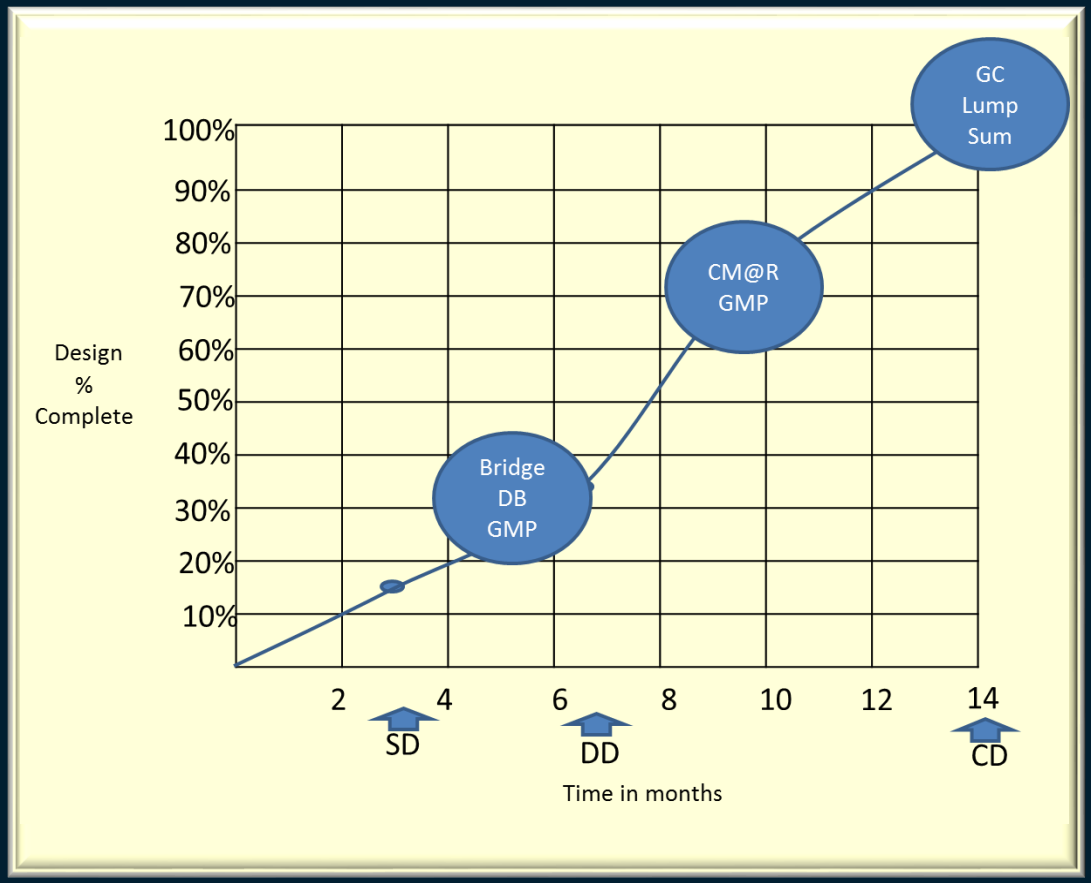

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- Fixed or Guaranteed Price Required?
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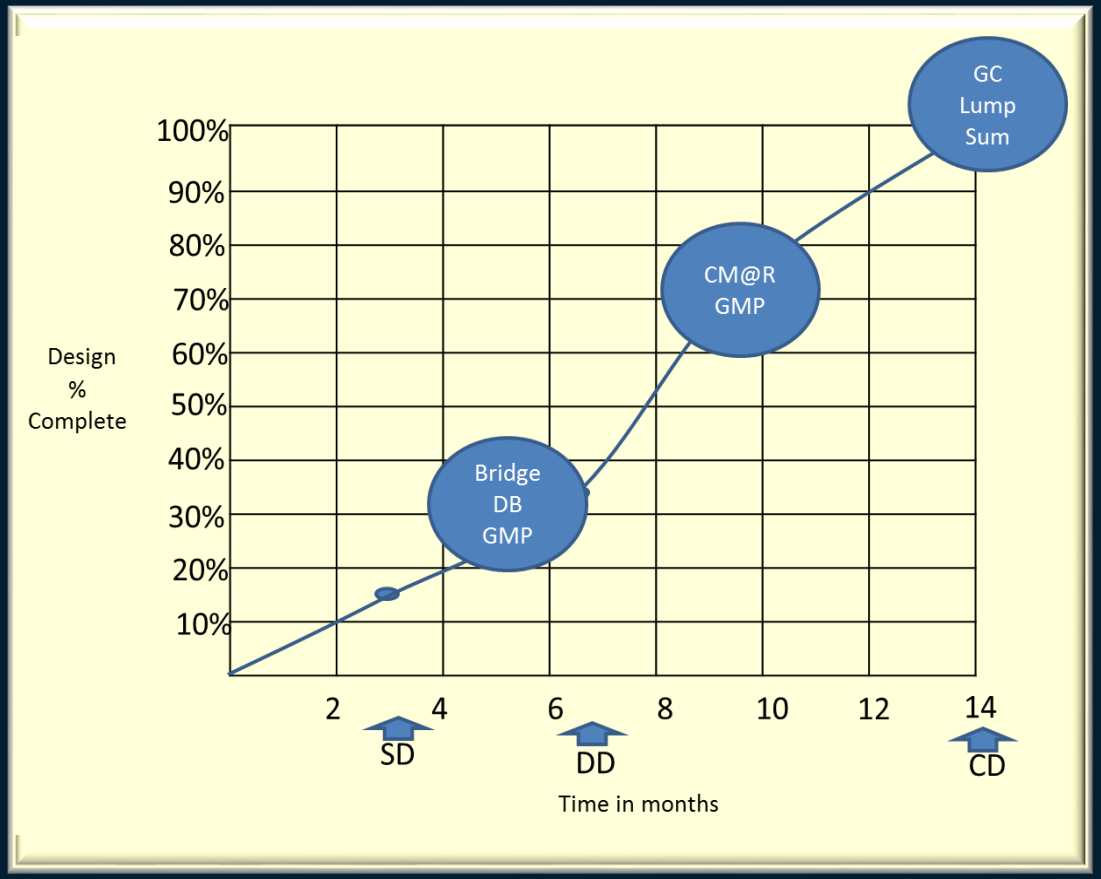
- Cost Comparison
  - Fee
    - Risk
    - Design Component
  - General Conditions
  - Cost of Work
  - Contingency



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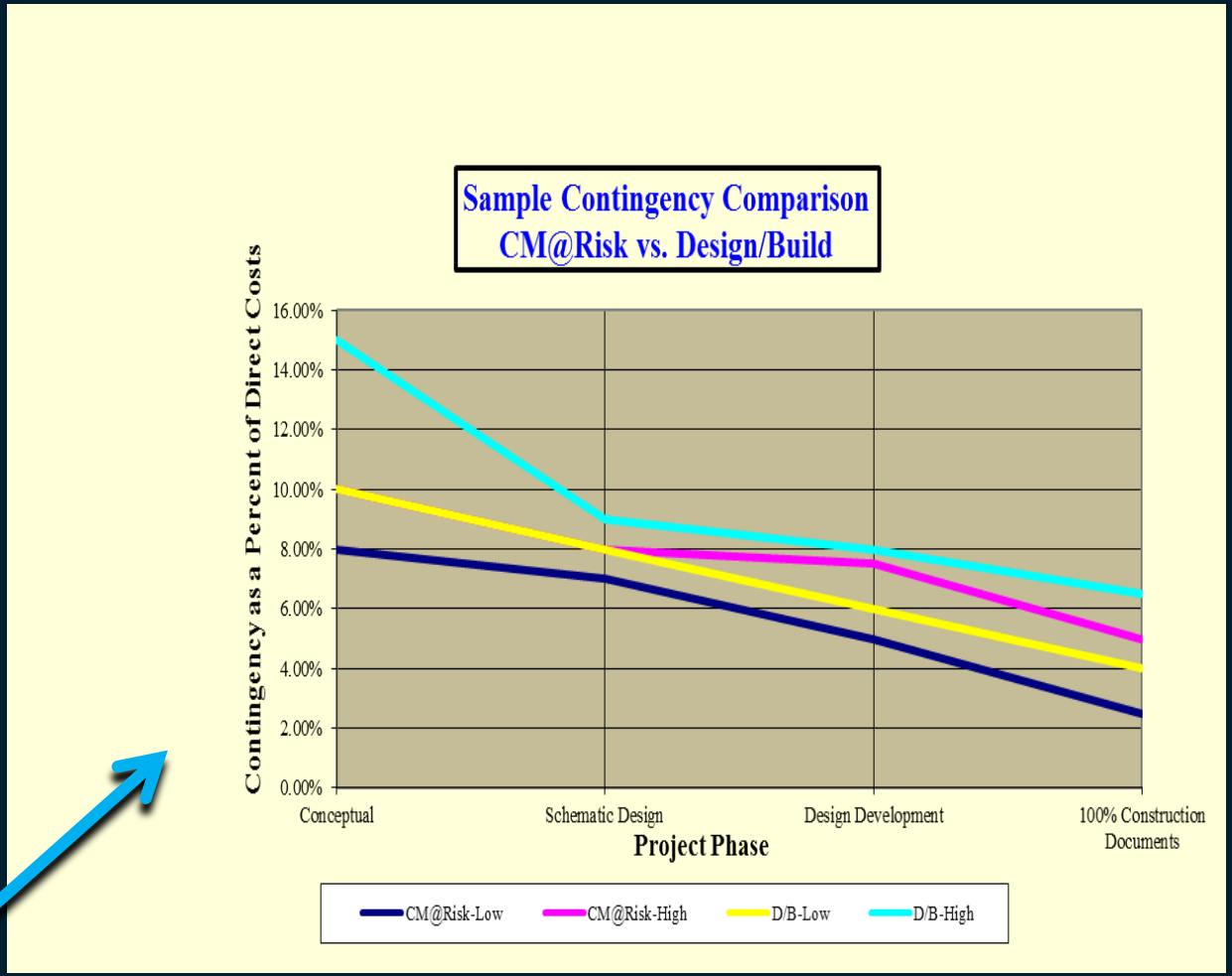
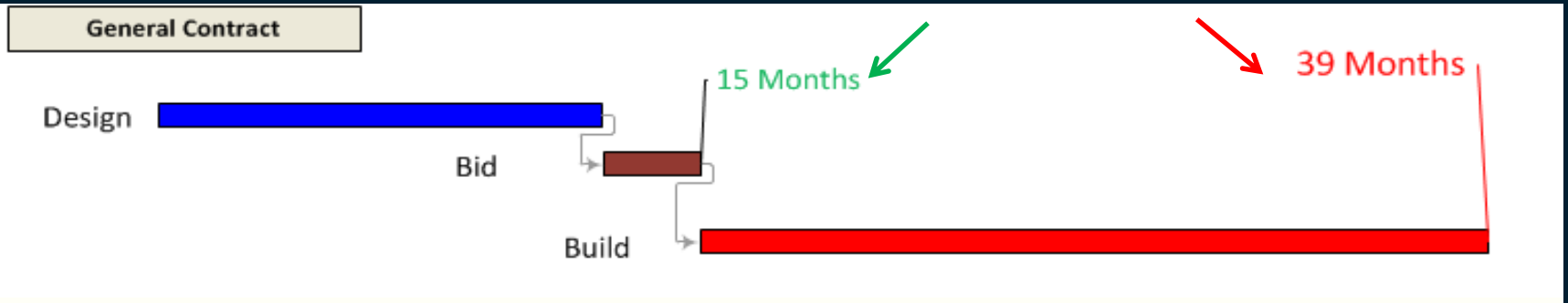


4.c Comparative Schedule Analysis

Example: Corporate Headquarters Project

Time to **Fixed Price** and **Overall Completion**



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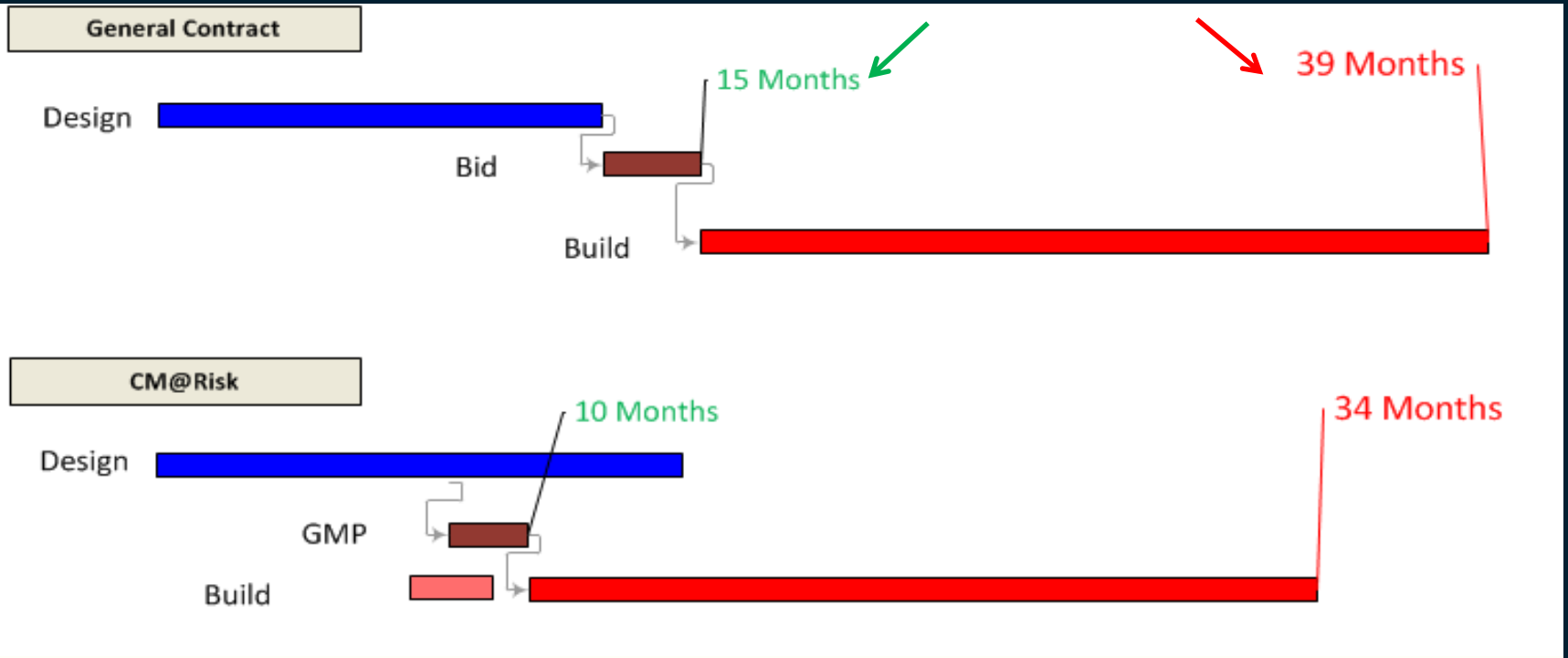

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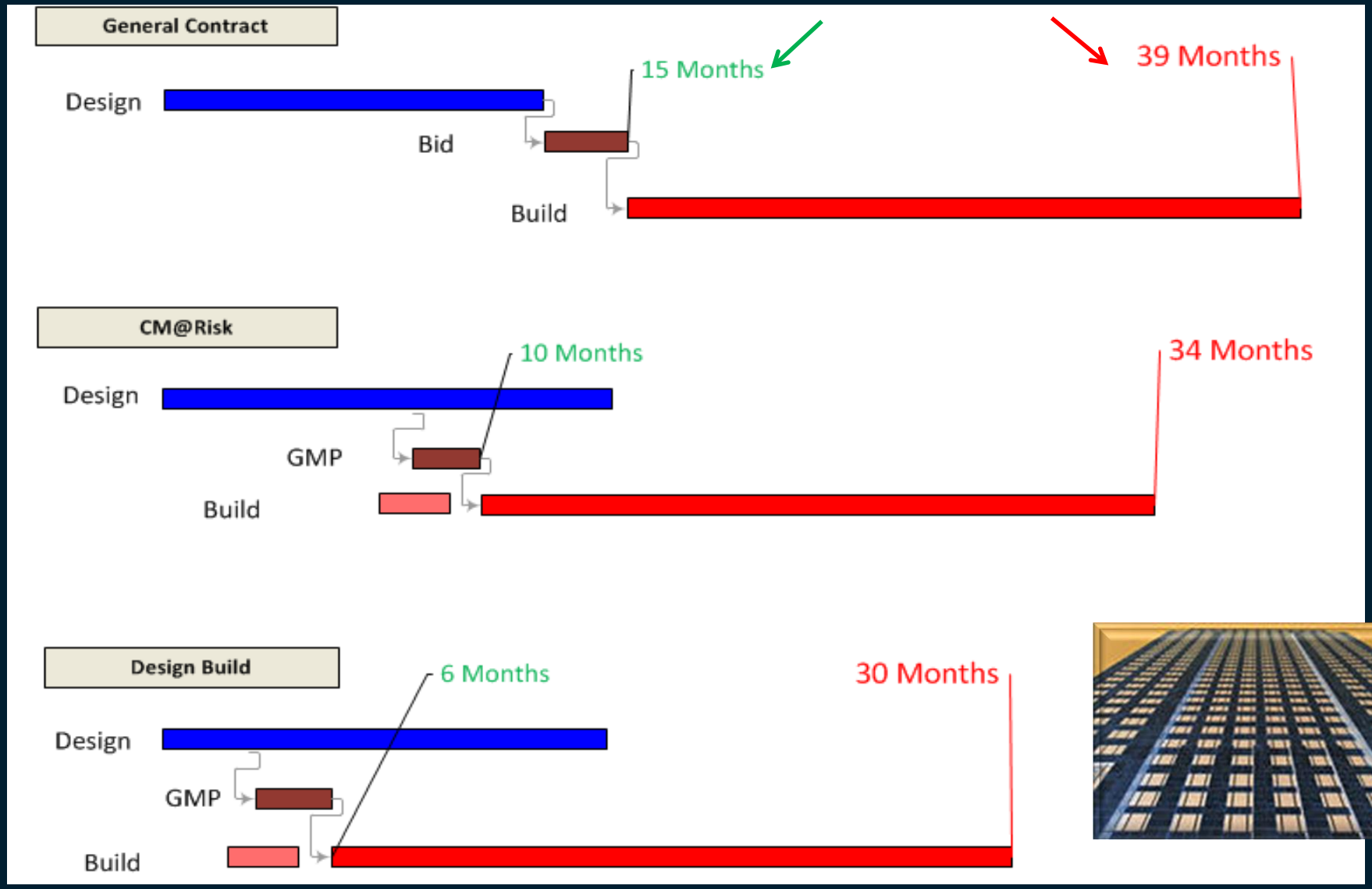

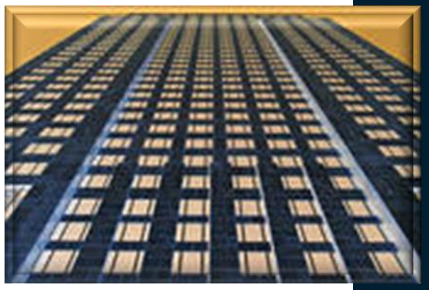

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- In House Expertise
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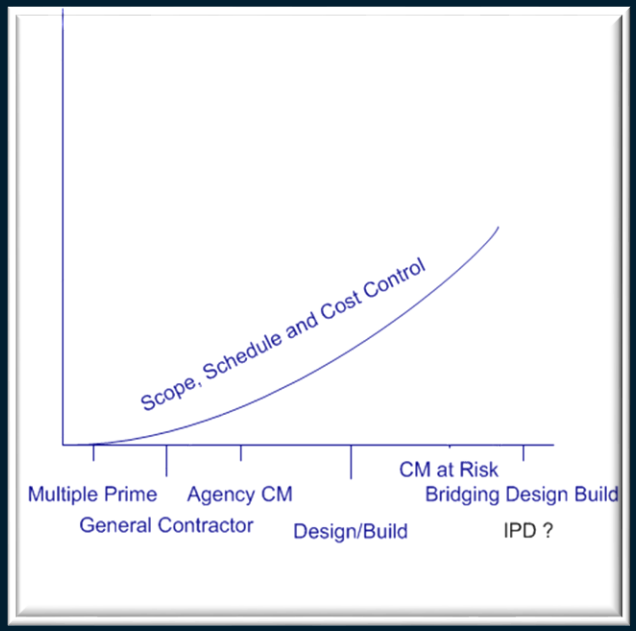

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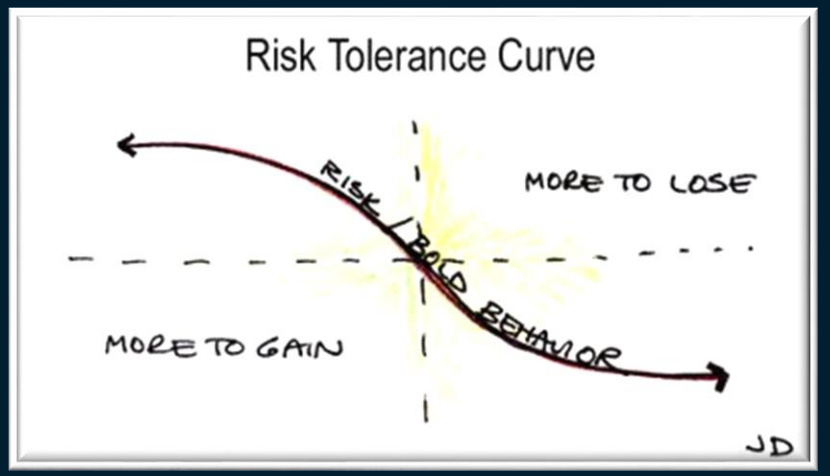

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  - Desire for involvement in contingency management
- Relationship Network
  - Open competition vs. reliance upon preferred vendors
  - Bid vs. negotiated arrangements

Step 5: Implement Special Tools to Enhance Project Delivery Success

- Facilitated GMP Process
- Contingency Management Plan
- Risk Matrix and Enhanced Insurance Plan
- On-Site Issue Resolution
- Incentives; Collaboration Agreements; Partnering

Example of Professional Sports Stadium Project Delivery Workshop

Representative Professional Sports Facilities

	Facility/Team	Delivery Method	Completion Date
MLB	Marlins Ballpark (Miami Marlins)	CM@Risk	2012
MLB	Target Field (Minnesota Twins)	CM@Risk	2010
MLB	Kaufman Stadium Renovations (Kansas City Royals)	CM@Risk	2010
MLB	New Busch Stadium (St. Louis Cardinals)	Bridging Design Build	2006
MLB	PNC Park (Pittsburgh Pirates)	Bridging Design Build	2001
MLB	Progressive Field (Cleveland Indians)	CM as Adviser	1994
NBA	Amway Arena (Orlando Magic)	CM@Risk	2010
NBA	Oracle Arena (Golden State Warriors)	Design Build	1996
NBA	Quicken Loans Arena (Cleveland Cavaliers)	CM as Adviser	1994
NHL	Consol Energy Arena (Pittsburgh Penguins)	CM@Risk	2010
NHL	Nationwide Arena (Columbus Blue Jackets)	CM@Risk	2000
NHL	Xcel Energy Center (Minnesota Wild)	CM/GC (Lump sum)	2000
NFL	Soldier Field (Chicago Bears)	CM@Risk	2003
NFL	49ers Stadium (San Francisco 49ers)	Bridging Design Build	Proposed
Minor	Fifth Third Field (Toledo Mudhens)	CM Adviser with GMP as Financial Accommodation	2002
ECHL	Huntington Center (Toledo Walleye)	CM Adviser with GMP as Financial Accommodation	2009

Marlins: Why CM at Risk?

- Early Decisions Made in Series of Workshop Settings in 2005
- Excerpts from 2005 Project Delivery Workshop

Ballpark Summary

- **Total Cost** $515 Million
- **Date of Groundbreaking**: July 1, 2009
- **Date of Project Completion**: March 31, 2012
- **Months for Construction**: 33 Months
- **Name of Construction Manager**: Hunt/Moss, A Joint Venture
- **Name of Architect**: Populous (formerly HOK Sport)
- **Square Footage of Ballpark**: Approximately 928,000 Square Feet

Florida Stadium

Project Delivery and Insurance Investigation

Jeffrey R. Appelbaum, Esq.
Project Management Consultants, LLC.

Project Delivery Workshop

- Presentation of Various Delivery Methods
  - GC
  - Multiple Prime
  - Agency CM
  - CM @ Risk
  - Design Build
  - Bridging Design Build
- Factor Analysis
  - Florida Legal Constraints
  - Schedule Comparison
    - Time to Cost Guarantee
    - Time to Commencement of Work
    - Time to Project Completion
  - Cost Comparison
    - Design Fees
    - Contingency
    - Hard Cost
  - Risk Management Comparison
    - Quality of GMP
    - Change Premium
    - Claims Potential
- Initial Conclusion
  - Slight Preference of Bridging Design Build, but for these problems ……

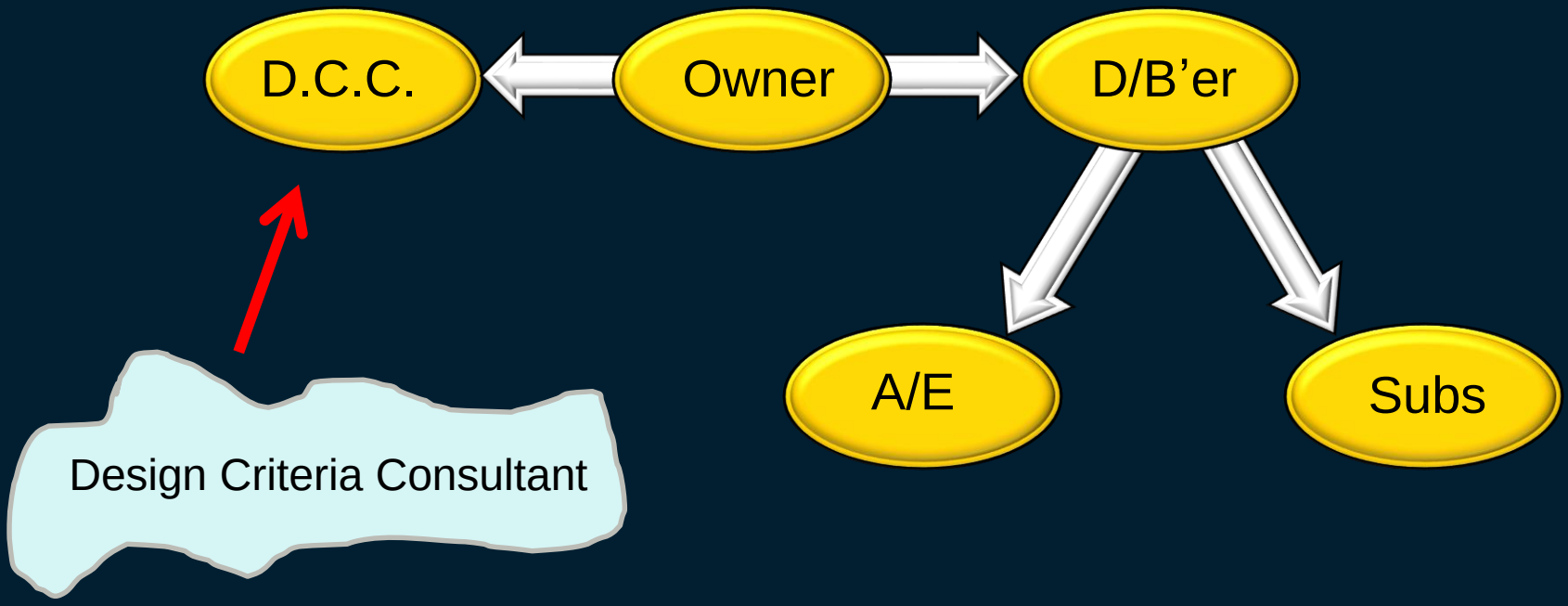
Project Delivery Factor Analysis

	DBB	CM@A	CM@R	DB	DB Bridge
Time to Fixed $$	C	F	B	A	A-
Time to Completion	C	B+	B	A	A-
Mgt. of Cost Risk	C	B-	B+	A	A-
Mgt. of Schedule Risk	C+	C-	A-	B+	B
Assurance of Owner Program	A-	B	B+	C-	B+
Quality of Finished Work	C	B-	A-	B	A-
Initial Cost	B	A-	B+	A	B
Final Cost	C	C	B+	A	A-
Mgt. of Design Risk	C	C	B	A	A-
Dispute Control	C	C-	B	B+	A-

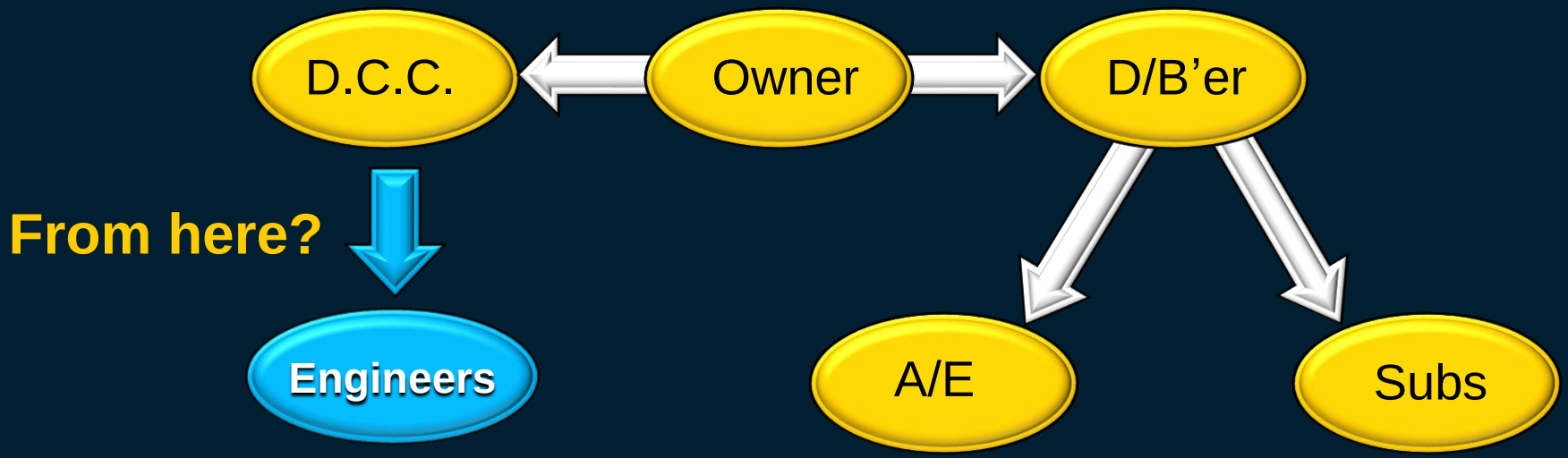
Project Delivery Workshop

- Bridging Issues
  - Comfort level and experience of (Original) Owner's Rep
  - Commitments already made to A/E
  - Owner Discipline – Can Owner limit appetite for changes after GMP based on "Enhanced DD Documents"?
  - Issue of Engineering Shift
    - Continuity of certain engineering disciplines critical on Stadium/Arena projects in general and retractable roof facilities in particular

The Florida Design Build Bridging Model



Can we move the Engineers.....



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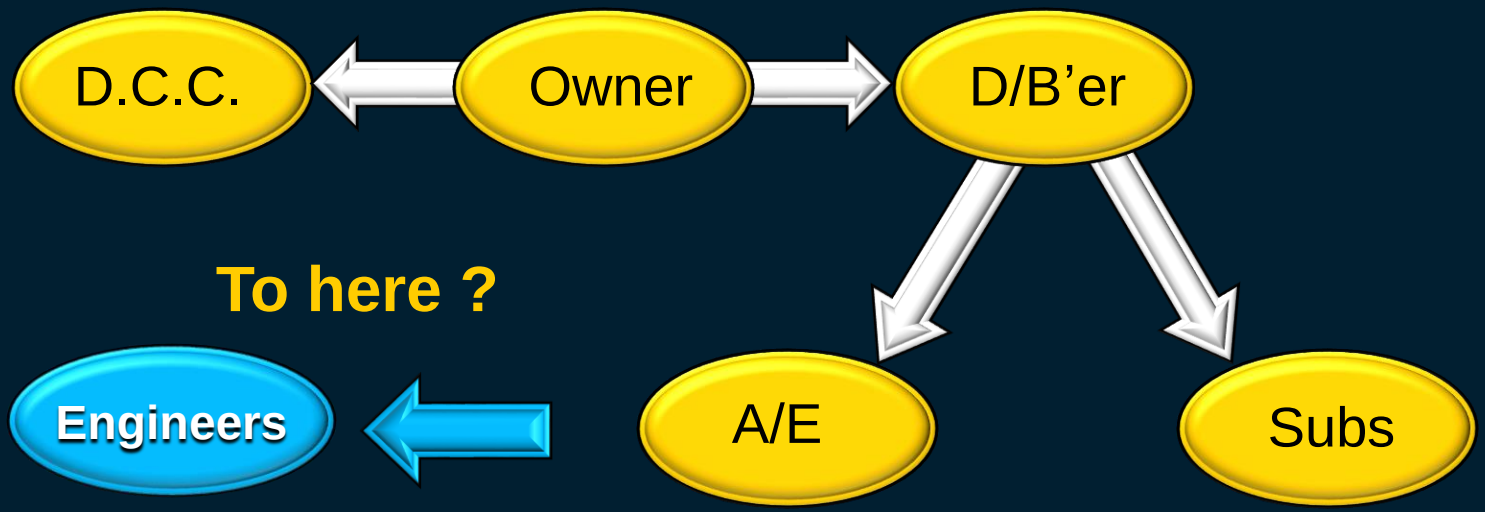

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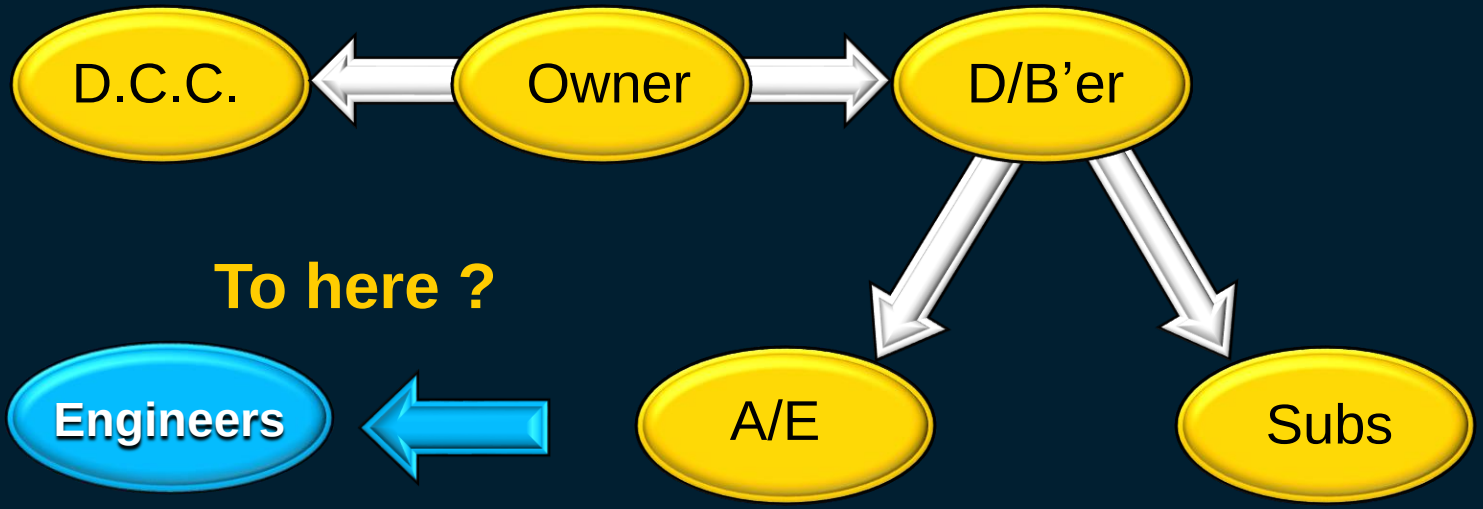
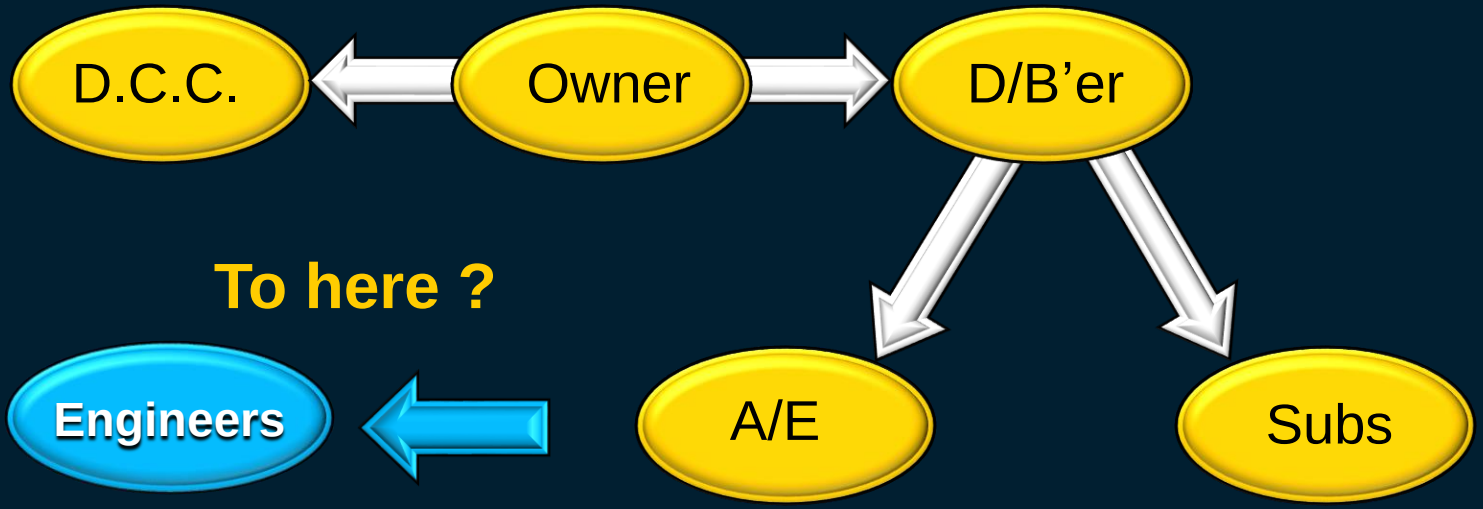


Note: Engineers were shifted from Bridging (Criteria) Architect to Architect of Record on Busch Stadium and PNC Park

Can we move the Engineers.....



"A design criteria professional who has been selected to prepare the design criteria package ***is not eligible*** to render services under a design-build contract executed pursuant to the design criteria package." Fla. Stat. §287.055

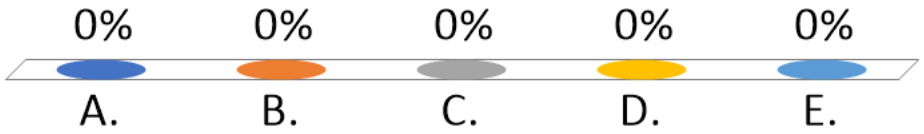
Marlins Conclusion: CM at Risk

- For this Project, the benefits of bridging are compromised if engineering services cannot be transferred
  - Options are either two sets of engineers or no engineers working for design criteria consultant… neither option is desirable
  - Fla. Stat. §287.055 creates risk that transfer of engineers may be precluded (issue not specifically addressed in Florida law)
- Well managed CM at Risk is best alternative to bridging design/build
- Enhancements to be implemented include:
  - Facilitated IGMP/GMP Process
  - Declining contingency /add alternate management plan
  - Comprehensive insurance and risk management program
  - Incentive Bonus Plan
  - On-site issue resolution


Questions...

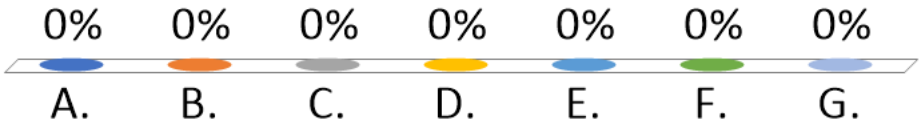
By volume, what percentage of your entity's work involves single prime general contracting?

A. Less than 10 %
B. 11 to 25%
C. 26 to 50%
D. 51 to 75%
E. 76-100%



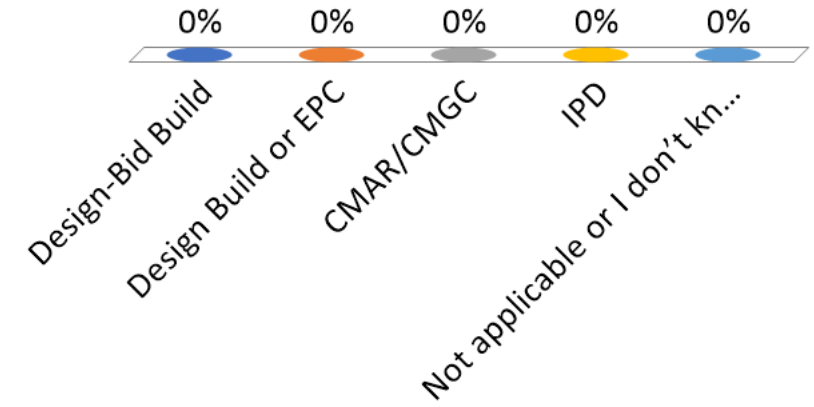
Over the years, our company's involvement with GC Design/Bid/Build projects as a percentage of our overall work has

A. Substantially Increased
B. Increased
C. Slightly Increased
D. Remained Constant
E. Slightly Decreased
F. Decreased
G. Substantially Decreased



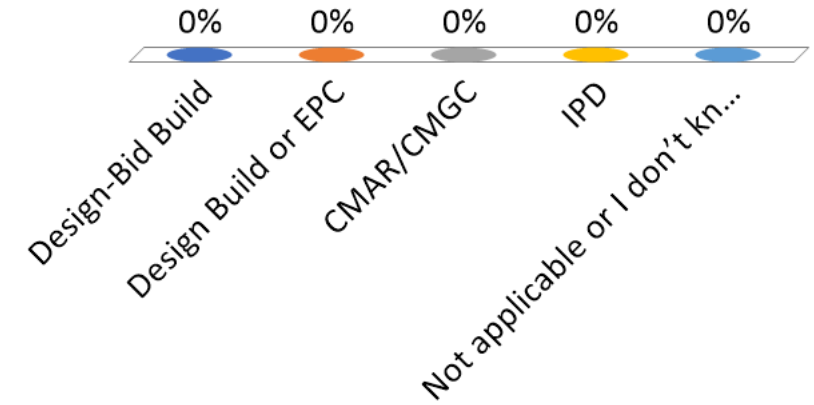
Which of the following project delivery methods has your organization used (or been a subtrade or consultant for) during the past 5 years?

A. Design-Bid Build
B. Design Build or EPC
C. CMAR/CMGC
D. IPD
E. Not applicable or I don't know.



Which of the following project delivery methods does you organization anticipate using (or being a subtrade or consultant for) during the next 5 years?

A. Design-Bid Build
B. Design Build or EPC
C. CMAR/CMGC
D. IPD
E. Not applicable or I don't know.



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Who is here today?

ⓘ Start presenting to display the poll results on this slide.