



DEFINING PROJECT DELIVERY OPTIONS IN TODAY'S DEVELOPMENT ENVIRONMENT

Airport Construction Strategy Summit
Kansas City, MO | May 20-21, 2019



KANSAS CITY
AVIATION DEPARTMENT

Panel Participants

→ Roger Johnson, Jacobs

→ Michael Kenig, Holder Construction Company

DEFINING PROJECT DELIVERY OPTIONS IN TODAY'S DEVELOPMENT ENVIRONMENT

OVERVIEW:

- (A previous) Owner's take on using alternative delivery methods?
- Project Delivery – Defining Terms
- Expanding Project Delivery Options
- Discussion/Wrap Up

DEFINING PROJECT DELIVERY OPTIONS IN TODAY'S DEVELOPMENT ENVIRONMENT

Roger Johnson:

→ (A previous) Owner's take on using alternative delivery methods?

Why Vocabulary Matters?



- ✓ Capturing Lessons!
- ✓ Identifying Best Practices!
- ✓ Continuous Improvement!!

Click here to subscribe to:

McGraw Hill CONSTRUCTION **ENR**


be the first to know
subscribe to our FREE e-newsletter today!

>> Marketplace
Sponsored Links

The Jobclock
The Contractor's
Timeclock. Portable,
Rugged and
Weatherproof.

opinions

VIEWPOINT - (2/28/2005 Issue)

The Industry Needs Common Language

If the construction industry is going to keep pace with advances in information technology, then it needs to change the way it communicates. Some potential changes are so simple and obvious that they may be overlooked.

One is the need for the industry to share a common vocabulary, which is essential to start capturing best practices at an industry-wide level.

Information technology will help improve productivity, and interoperability eventually will force our fragmented industry's technology solutions to work together. When IT systems start communicating with each other, efficiencies will result. But the lack of our ability to really communicate now keeps the industry from reaping those benefits.

The lack of a common vocabulary continues to keep real industry-wide process advancements from taking place. While the industry works on common language for our technology tools, it also needs to start working on a common language for its processes so it will be in a position to capture dramatic process improvements when interoperability becomes a reality.



KENIG

Hazard?
Hexavalent Chromium
and Cement

▪ Story ▪
▪ Full Safety & Health
Coverage ▪

Industry Links

click here for
construction jobs

CONTECH

For
Pavement Lifting

U.S.COST

CH2MHILL

Construction

Let's go ahead and test this... This is my...

First Time Attending
this Summit

Been awhile since I
have attended

Attended Most

Who Cares?! (about Project Delivery)

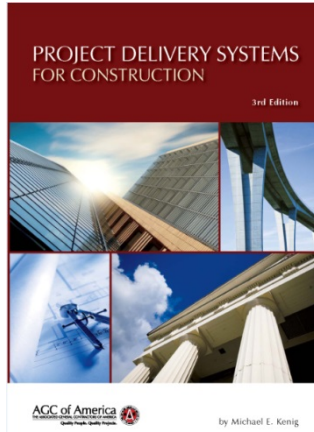
A Strategy for Getting the Most for the \$'s...

$$\text{Value} \uparrow = \frac{\text{Quality} \uparrow}{\text{Cost} \downarrow + \text{Schedule} \downarrow}$$

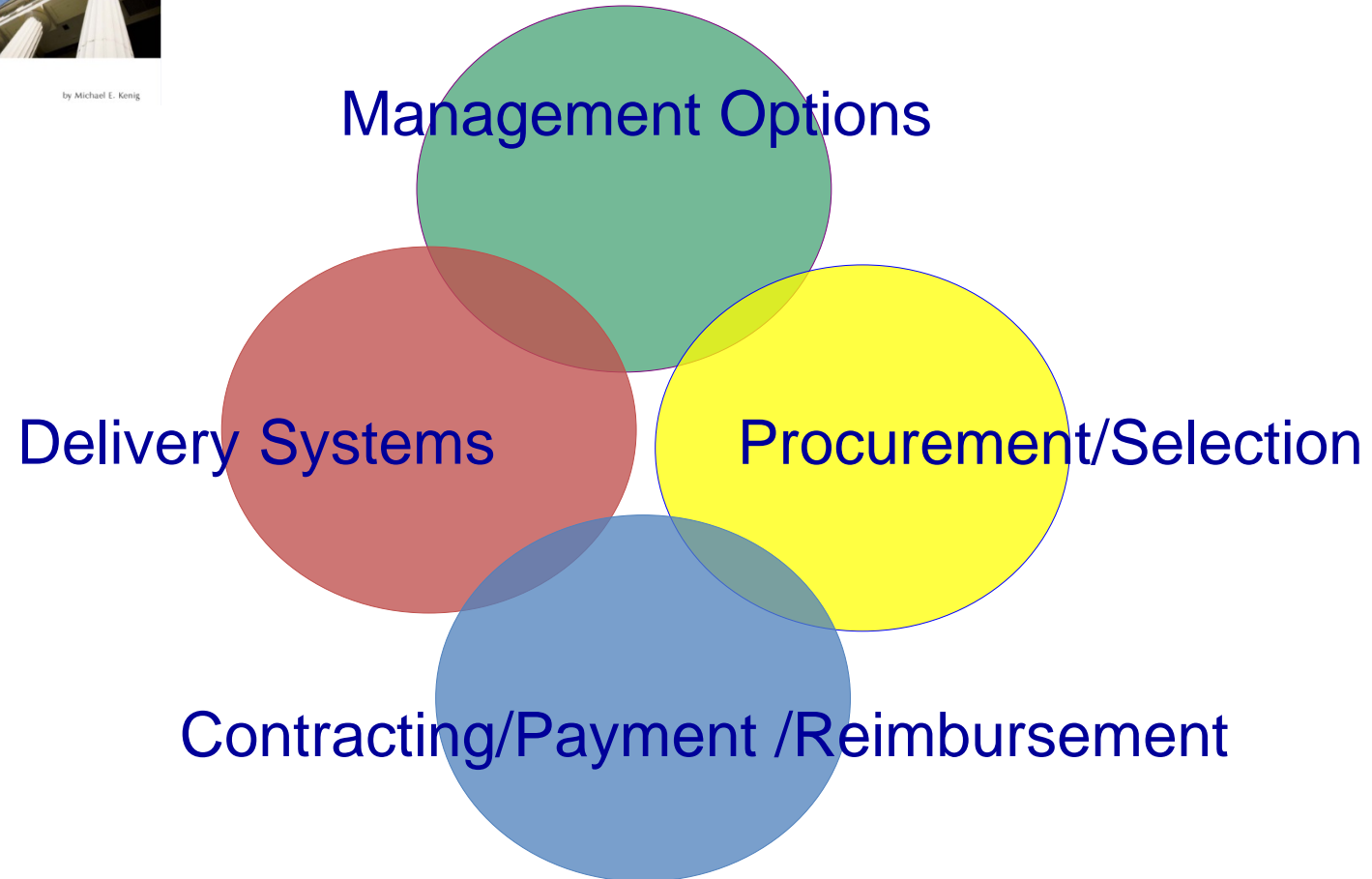


1. We measure cost and schedule... how do we measure quality?
2. Collaboration/Project Delivery as a strategy to manage risk

Project Delivery: A way to maximize value!

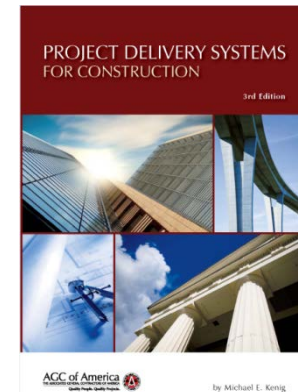


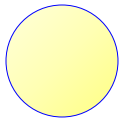
Delivery of Projects



Defining Terms

- Management Options
- Contracting/Payment/Reimbursement
- Delivery Methods
- Procurement/Selection





Procurement: What is the “Price”?

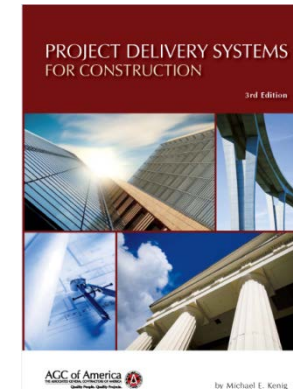
Cost of Construction

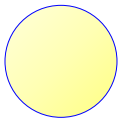
- + Contractor’s Fee and General Conditions
- + Construction Contingencies /Allowances

Total Construction Cost

- + Professional Services Fees
- + Other Project Costs
- + Permitting & Other Soft Costs
- +Owner Contingency

Total Project Budget





Procurement /Selection Types

1. *Low Bid*

- *Total Construction Cost, is the only final selection criteria
(Total Construction weighted 100%)*

2. *Best Value: Total Cost*

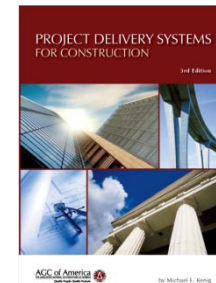
- *Construction Cost is a weighted final selection criteria
(Total Construction Cost weighted between 0% & Total C100%)*

3. *Best Value: Fees*


- *Fees and/or General Conditions are weighted;
but Total Construction Cost is not a weighted selection criteria
(Fees weighted between 0% & 100%)*

4. *Qualifications Based Selection*

- *Price is not a selection criteria
(Price weighted 0%)*



Typical Delivery Method / Selection Options



DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)	<input type="checkbox"/>	<input type="checkbox"/>	n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a	<input type="checkbox"/>	<input type="checkbox"/>
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a	<input type="checkbox"/>	<input type="checkbox"/>
Traditional Design-Build Engineer-Procure-Construct (EPC)	<input type="checkbox"/>	<input type="checkbox"/>	n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical	<input type="checkbox"/>	<input type="checkbox"/>

Example: (fill in yours copy and paste)

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)			n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a		
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a		
Traditional Design-Build Engineer-Procure-Construct (EPC)			n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical		

Typical Delivery Method / Selection Options

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)	<input type="checkbox"/>	<input type="checkbox"/>	n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a	<input type="checkbox"/>	<input type="checkbox"/>
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a	<input type="checkbox"/>	<input type="checkbox"/>
Traditional Design-Build Engineer-Procure-Construct (EPC)	<input type="checkbox"/>	<input type="checkbox"/>	n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical	<input type="checkbox"/>	<input type="checkbox"/>

Which Delivery/Selection Types do you use most?

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)	A	B	n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a	C	C
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a	D	D
Traditional Design-Build Engineer-Procure-Construct (EPC)	E	E	n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical	F	F

Airports Only: Which delivery method do you use the most?

Design-Bid-Build (Low Bid) **A**

Design-Bid-Build (Best Value - Price = Total Cost) **B**

CM at-Risk (Best Value: Price - Total Cost OR QBS (Qualification Based Selection no price) **C**

Progressive Design-Build (Best Value price = Fees OR QBS) **D**

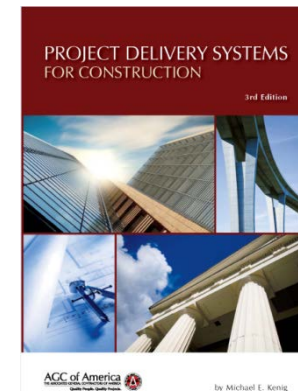
Traditional Design-Build (Low Bid OR Best Value, price = Total Cost) **E**

Integrated Project Delivery (Multi-party agreement) **F**

Contracting/Payment/ Reimbursement

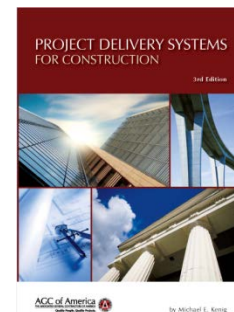
How the Owner wants to pay for the services provided.

Common Options: GMP, Cost plus, lump sum, or *target price*



Contracting/Payment/Reimbursement

- ✓ **Guaranteed Maximum Price**
- ✓ **Cost Plus**
- ✓ **Firm Fixed price (lump sum)**
- ✓ **Target Price (IPD)**





Typical Basis of Reimbursement

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)	Lump Sum	Lump Sum	n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a	GMP	GMP
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a	GMP	GMP
Traditional Design-Build Engineer-Procure-Construct (EPC)	Lump Sum	Lump Sum	n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical	Target Price	Target Price

Which Design-Build??

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)			n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a		
<u>Progressive Design-Build</u> Engineer-Procure-Construct (EPC)	n/a	n/a	Open Book	
<u>Traditional Design-Build</u> Engineer-Procure-Construct (EPC)	Closed Book		n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical		

Airports Only: Which delivery method do you use the most?

Design-Bid-Build (Low Bid) **A**

Design-Bid-Build (Best Value - Price = Total Cost) **B**


CM at-Risk (Best Value: Price - Total Cost OR QBS (Qualification Based Selection no price) **C**

Progressive Design-Build (Best Value price = Fees OR QBS) **D**

Traditional Design-Build (Low Bid OR Best Value, price = Total Cost) **E**

Integrated Project Delivery (Multi-party agreement) **F**

Example: Seattle Delivery Method Options

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build		n/a	n/a	n/a
CM at-Risk	n/a	n/a	✓	n/a
Design-Build	n/a	✓	✓	n/a
IPD	n/a	n/a	n/a	n/a

SFO Contract Delivery Methods

Contract Elements	Contract Delivery Method			
	Design-Bid-Build	CM at Risk	Design-Build (Lump Sum)	Design-Build (Progressive)
Contract Relationship				
Pricing Model for Direct Construction Cost	Lump Sum/Low Bid	Negotiated GMP	Lump Sum/Low Bid	Negotiated GMP
Qualifications Part of Selection of Builder	No	Yes	Yes	Yes
Design Philosophy	Owner Managed Design	Design Assist	Builder Managed Design	Collaborative Design

Example: **San Francisco** Delivery Method Options

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build	✓	X	n/a	n/a
CM/GC	n/a	n/a	✓	X
“Design-Build”	X	✓ Traditional Design-Build	✓ Progressive Design-Build	X
IPD	n/a	n/a	X	X



DEFINING PROJECT DELIVERY OPTIONS IN TODAY'S DEVELOPMENT ENVIRONMENT

Roger Johnson:

→ Expanding project delivery options

— LAX

Delivery Approaches: LAX

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)	✓	X	n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a	✓	X
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a	✓	✓
Traditional Design-Build Engineer-Procure-Construct (EPC)	✓	✓	n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical	X	X

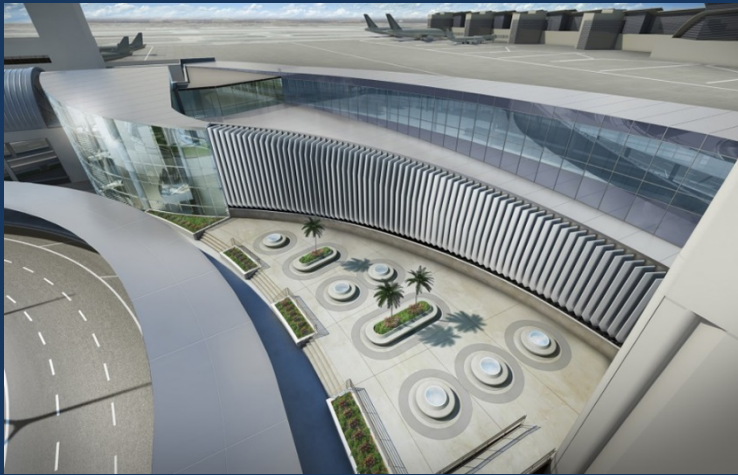
Project Delivery at LAX



Bradley West CM@R Open Book



MSC Progressive Design/Build Open Book



CUP Traditional Design/Build Closed Book

T4 Connector Traditional Design/Build Open Book



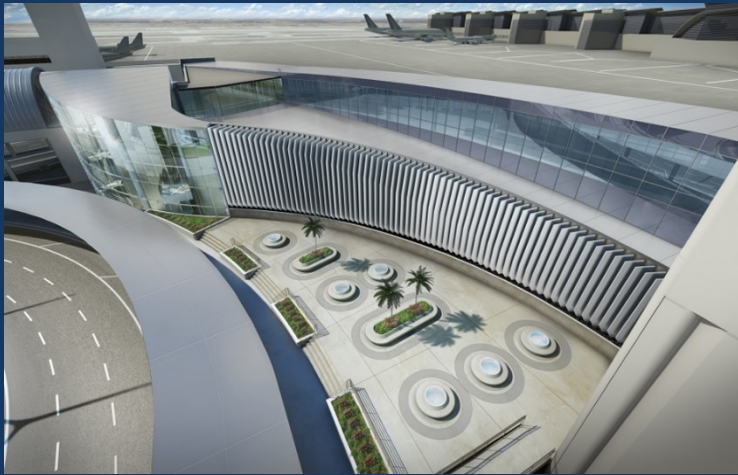
Project Delivery at LAX



Bradley West CM@R GMP



MSC Progressive Design/Build GMP



CUP Traditional Design/Build Lump Sum

T4 Connector Traditional Design/Build GMP



Airports Only: Regardless of which one you use, which one do you believe allows you to best maximize value?

Design-Bid-Build (Low Bid)

Design-Bid-Build (Best Value - Price = Total Cost)

CM at-Risk (Best Value: Price - Total Cost
OR QBS - Qualifications Based Selection)

Progressive Design-Build (Best Value
price = Fees OR QBS)

Traditional Design-Build (Low Bid OR
Best Value, price = Total Cost)

Integrated Project Delivery (Multi-party
agreement)

Discussion...

DELIVERY METHOD Common Nicknames	Low Bid	Best Value: Total Cost	Best Value: Fees	Qualifications Based Selection (QBS)
Design-Bid-Build Competitive Sealed Bid; Low Bid; Inv. to Bid (IFB)	<i>Closed Book</i>		n/a	n/a
CM at-Risk CM/GC; GC/CM; CMc; ECI	n/a	n/a	<i>Open Book</i>	
Progressive Design-Build Engineer-Procure-Construct (EPC)	n/a	n/a		
Traditional Design-Build Engineer-Procure-Construct (EPC)	<i>Closed Book</i>		n/a	n/a
IPD Multi-party; Alliancing	Not Typical	Not Typical	<i>Open Book</i>	



THE OFFICIAL WEBSITE OF THE CONSTRUCTION OWNERS ASSOCIATION OF AMERICA

Design Management Course: July 18

The screenshot shows the COAA website with a navigation bar at the top containing links for ADVOCACY, EDUCATION, INTELLIGENCE, COMMITTEES & PROGRAMS, ABOUT, and a MEMBER LOGOUT button with a My Profile link. Below the navigation bar are three event cards:

- Business of Airports Conference**
June 10 - 12, 2019
Scottsdale, AZ
REGISTER NOW
- 2019 Business of Airlines Workshop for Airport Decision Makers**
July 15-17
Seattle, WA
LEARN MORE
- Airport Design Process Management Workshop**
July 18
Washington, D.C.
REGISTER NOW

Training for Owners, by Owners!



Airport Construction Strategy Summit
May 20-21, 2019

Airport Owners: If I had to use an Open Book delivery approach, I would prefer to use...

CM at-Risk **A**

Progressive
Design-Build **B**

Integrated Project
Delivery (IPD) **C**

Remember Why Vocabulary Matters!



- ✓ Capturing Lessons!
- ✓ Identifying Best Practices!
- ✓ Continuous Improvement!!

Click here to subscribe to:

McGraw Hill CONSTRUCTION **ENR**


be the first to know
subscribe to our FREE e-newsletter today!

>> Marketplace Sponsored Links

The Jobclock
The Contractor's Timeclock. Portable, Rugged and Weatherproof.

opinions

VIEWPOINT - (2/28/2005 Issue)

The Industry Needs Common Language

If the construction industry is going to keep pace with advances in information technology, then it needs to change the way it communicates. Some potential changes are so simple and obvious that they may be overlooked.

One is the need for the industry to share a common vocabulary, which is essential to start capturing best practices at an industry-wide level.

Information technology will help improve productivity, and interoperability eventually will force our fragmented industry's technology solutions to work together. When IT systems start communicating with each other, efficiencies will result. But the lack of our ability to really communicate now keeps the industry from reaping those benefits.

The lack of a common vocabulary continues to keep real industry-wide process advancements from taking place. While the industry works on common language for our technology tools, it also needs to start working on a common language for its processes so it will be in a position to capture dramatic process improvements when interoperability becomes a reality.



Hazard?
Hexavalent Chromium
and Cement

- Story ▪
- Full Safety & Health Coverage ▪

Industry Links

click here for construction jobs

CONTECH

For Pavement Lifting

U.S.COST

CH2MHILL

Construction

Everyone: How much did you enjoy this session?

OMG...
it was
the
BEST!!

Thank You!

→ Panelists:

— Roger Johnson, Jacobs

- Roger.Johnson3@Jacobs.com cell:949-338-5044



— Michael Kenig, Holder Construction Company

- mkenig@holder.com cell: 770-355-3876

