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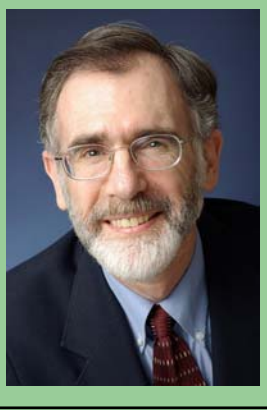
Delivering Construction Projects: Exploring Alternatives to the Low-Bid Model



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SINCE 2005

Agenda

1. **Introduction**
2. **Traditional Project Delivery Method**
   - Design-Bid-Build (Low-Bid Model)
3. **Alternative Project Delivery Methods**
   - Design-Build
   - Construction Manager at Risk
   - Job Order Contracting
   - Integrated Project Delivery
   - Public-Private Partnerships
4. **Contractor Selection Processes**
   - Best Value Selection
   - Non-Competitive Selection Below Bid Limits
   - Construction Rosters
   - On-Call Construction Contracts
   - Emergency Contracts

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Introduction

- Know what laws and regulations apply
- Think strategically about each project

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Traditional Project Delivery Method
- Definition of Design-Bid-Build

- The traditional project delivery method, which customarily involves three sequential project phases: design, procurement, and construction, and two distinct contracts for the design and construction (build) phases.

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Traditional Project Delivery Method

- Design-Bid-Build (low-bid model)
  - Separate designer and contractor
  - Basis of award
    - Responsible bidder with low responsive bid
  - Responsibility vs. Responsiveness
- Multiple Prime Contracting
  - Owner acts as general contractor

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Traditional Project Delivery Method
- Problems with Low Bid Model

- Adversarial Relationship
- Increased Change Orders
- Workmanship Quality Suffers
- Schedule Delays
- Subcontractors
  - Not Paid
  - Not Coordinated
  - Quality Not Managed

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Alternative Project Delivery Methods

- Design-Build
- Construction Manager at Risk
- Job Order Contracting
- Integrated Project Delivery
- Public-Private Partnerships

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Design-Bid
- Definition

- Design-build is a method of project delivery in which one entity – the design-build team – works under a single contract with the project owner to provide design and construction services. One entity, one contract, one unified flow of work from initial concept through completion – thereby re-integrating the roles of designer and constructor.

Design-Build Institute of America (DBIA)

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Design-Bid
- Definition

- A project delivery method that combines architectural and engineering design services with construction performance under one contract.

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Design-Bid
- Definition

- **Traditional Design-Build**
  - Design and construction cost is part of selection process
  - Limits Owner's ability to shape the design
- **Progressive Design-Build**
  - Only price for overhead, profit, and general staffing costs part of selection process
  - Construction cost negotiated when design sufficiently complete
  - Allows more Owner input into design

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Design-Bid
- Preparing for Design-Build

- **Resources**
  - Hire a consultant or conduct an internal study
- **Programming**
  - Establish programmatic objectives and expectations for the project
- **Sufficiency**
  - The more complete and thorough the preliminary development of the programmatic objectives of the project, the easier management of the Design-Build contract will be

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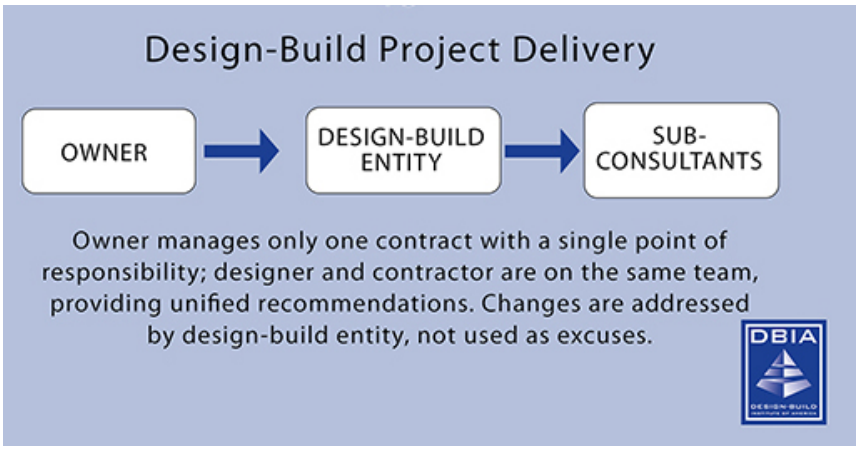
Design-Bid
- Contract Flow



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Design-Bid
- Contracting Models

- Contractor hires designer
- Joint venture between contractor and designer
- Firm has both construction and design divisions
- Designer hires contractor (less likely)

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Design-Bid
- Selection Process

- Request for Qualifications (RFQ)
- Interviews
- Request for Proposals (RFP)
  - Complete cost or
  - Cost related factors

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Design-Bid
- Pros and Cons

Advantages	Disadvantages
Speed	Requires clear objectives
Cost savings	Cost estimating harder without details
Quality	Negotiations
Familiarity	Owner sophistication required
Fewer conflicts	Balancing owner's role of hands-off vs. control
Accountability	Project may not meet functionality
Cooperation	More change orders if not funded sufficiently
Reduces blame	

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Design-Bid
- Variations of Design-Build

- Design-Build-Operate (DBO)
- Design-Build-Operate-Maintain (DBOM)
- Design Build Finance Operate (DBFO)
- Design-Build Finance-Operate Maintain (DBFOM)
- Design Build Finance (DBF)

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Construction Manager at Risk
- Definition

- Contractor selected early in the design process to provide pre-construction services and to act as the contractor during the construction phase. Construction cost is negotiated when design is sufficiently developed.

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Construction Manager at Risk
- Definition

- A project delivery method in which the owner enters into separate contracts with the designer and builder, often at or about the same time. During design, the CMAR advises the owner and designer on constructability, schedule, sequencing, selection of components and materials, and other matters. When the design is completed, the CMAR becomes the "builder," or general contractor, responsible or "at risk" for completing construction within the Guaranteed Maximum Price (GMP).

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Construction Manager at Risk
- Alternate Names

- CM at Risk
- CMAR
- CMR
- General Contractor/Construction Manager (GC/CM)
- Construction Manager/General Contractor (CM/GC)

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Construction Manager at Risk
- Compared to Design-Bid-Build

Construction Manager at Risk	Design-Bid-Build
Selection of contractor before design completed	Bidding and award to contractor using 100% design documents
Construction cost is negotiated	Construction cost is bid
Contractor selected based on proposal, interview, and limited pricing	Awarded to responsible bidder with low responsive bid
Contractor provides pre-construction services	No pre-construction services provided by contractor
Contractor may be required to competitively bid subcontract work	Contractor selects subs using their own process
Partnership and cooperation between Owner, Designer, and Contractor	Low bid process may promote adversarial relationships

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Construction Manager at Risk
- Philosophy

- **Partnership**
  - Cooperative venture
  - Individuals and firm both important
  - Chemistry important
- **Mindset**
  - Negotiation skills needed
  - Partnership…but protect the public
  - Public agency must still manage project

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Construction Manager at Risk
- Selection Process

- Request for Proposals (RFP)
  - Early (by end of schematic design)
  - Evaluation criteria
  - Qualifications and approach submitted
  - Evaluation and shortlist
- Interview
  - Evaluation and shortlist
- Request for Final Proposals (RFFP)
  - Prices submitted
- Highest ranked firm selected
  - Pre-Construction contract negotiated
  - Construction cost negotiation when design sufficient

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Construction Manager at Risk
- Pre-Construction Services

- Constructability Analysis
- Value Engineering
- Cost Estimating
  - Reconciliation Contractor & Designer Estimates
- Scheduling and sequencing of the work

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Construction Manager at Risk
- Pre-Construction Services

- Subcontract Plan
- BIM (Building Information Modeling)
- Life-cycle cost design considerations
- Alternative construction options for cost savings
- Early procurement and subcontracting

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Construction Manager at Risk
- Pre-Construction Services

- Construction Plan
  - Document management and tracking system
  - Cost management and tracking
  - Site safety plan
  - Site security
  - Traffic and parking issues
  - Hoisting equipment
  - Managing noise and vibration
  - Site staging (offices, laydown areas, temporary facilities and utilities)
  - Submittal schedule
  - Quality control

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Construction Manager at Risk
- Pros and Cons

Advantages	Disadvantages
Contractor familiar with project	Contractor may abuse the process
Pre-Construction services - Better design	Inexperienced Owner can be detrimental to project
Qualified contractor, not based on low bid	Owner must have skills to negotiate price
Cost savings?	Pre-Construction is additional cost
Fewer claims & change orders?	Fewer claims & change orders?
Partnership between Owner, Designer, and Contractor	Cost categories are complex to manager
Faster schedule	

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Construction Manager at Risk
- Cost Categories

- **Total Contract Cost**
  - **MACC or GMP**
    - Subcontract Costs
    - Risk Contingency
    - Negotiated Support Services
  - **Fee**
  - **Specified General Conditions**

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Construction Manager at Risk
- Subcontracting

- **Traditional:**
  - Subcontract bidding after cost negotiations (at-risk)
- **Reality Check:** Subcontract bidding of some work prior to cost negotiations
- **Early start of Construction:** Early subcontract bidding, award, and construction
- **Negotiated Cost:** Early selection of key subcontractors

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Construction Manager at Risk
- Self-Performed Work by Contractor

- How much work may the Contractor perform?
  - No limits?
  - Percentage limits?
- How are decisions made?
  - Contractor bids against subcontractors, or
  - Contractor gets to decide what work to self-perform

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Construction Manager at Risk
- Ensuring Quality Subcontractors

- Contractor select subcontractors
- Pre-Qualification
- Subcontractor Responsibility Criteria
- Bonding requirements for subs

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Job Order Contracting
- Definition

- Job Order Contracting is a project delivery method for a fixed period or maximum dollar value, whichever occurs first, in which a contractor is selected based on a competitive selection process to quickly and easily perform various separate negotiated, definitive work orders for a variety of renovation, repair, and minor construction projects, using a unit price book plus the contractor's markup for managing the process.

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Job Order Contracting
- Unit Price Book

- Unit price book is a book containing specific prices, based on generally accepted industry standards and information, where available, for various items of work to be performed by the job order contractor. The prices may include all the costs of materials, labor equipment, overhead, including bonding costs, and profit for performing the items of work. The unit prices for labor must be at the rates in effect at the time the individual work order is issued.

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Job Order Contracting
- Unit Price Book

- Developing a Unit Price Book
  - Public Agency develops based on
    - Historical data and usage
    - Current market conditions
  - Hire consultant to develop based on
    - Current market conditions

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Job Order Contracting
- Markup or Coefficient

- Contractor's competitively bid price adjustment to the unit prices published in the unit price book
  - Covers all overhead and profit for Contractor
  - Markups may be different for normal working hours versus overtime work
  - Markup may vary by location of the work
  - Markup multiplied by the unit prices is the basis for negotiations of a lump sum, fixed price for each work order

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Job Order Contracting
- Pros and Cons

Advantages	Disadvantages
Reduces lead time to perform smaller projects	A negotiated project may be more expensive than bidding each project. No real savings on actual construction costs
Reduces Owner's administrative cost to perform smaller projects and reduces or eliminates designer fees	Owner must be familiar with how to use unit price book and respond to contractor's proposed work order prices
Uses pre-established, competitively bid unit prices and markup for all work	Owner must have skills to negotiate reasonable work order prices with contractor
Fewer change orders and claims because work is negotiated	Contractor may not have ability to effectively obtain or manage subcontractors
Collaborative team relationship and partnership between contractor and owner	

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Job Order Contracting
- Selection Process

- Advertise Request for Proposals (RFP)
  - Evaluate proposals
- Interview shortlisted firms
  - Evaluate interviewed firms
- Request Markup from shortlisted firms
- Select highest ranked contractor

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Job Order Contracting
- Work Order Process

- **Bidding Documents:** Required to the extent they are required for permits and contractor to price
- **Pre-Pricing Job Walk-Through Meeting:** Owner, Contractor, subcontractors, and designer walk the project site.
- **Obtaining Prices:** Contractor requests bids from subcontractors or negotiates with subcontractors
- **Contractor Submits Prices:** Based on unit price book multiplied by markup
- **Price Review by Owner:** Owner analyzes Contractor's prices line by line (items and quantitities). Negotiation.

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Job Order Contracting
- Issues to Consider

- Maximum Work Order amount
- Maximum annual cumulative amount
- Contract duration
- Number of JOC contracts per agency
- Subcontracting
  - Process for selecting subs
  - Percentage of work done by subs

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Integrated Project Delivery (IPD)
- Definition

- IPD as a project delivery methodology that fully integrates project teams in order to take advantage of the knowledge of all team members to maximize the project outcome. Integrated Project Delivery is the highest form of collaboration because all three parties (Owner, Architect, Contractor) enter into a single contract.

Adapted from Associated General Contractors

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Integrated Project Delivery (IPD)
- Issues

- Collaboration
- Involvement by all parties from start to finish
- All team members share in the risks and rewards of the project based on whether project goals are achieved
- Many public agencies precluded from entering into a 3 party agreement
- IPD works best in private sector where prospect of repeat business encourages high performance by Architect and Contractor

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Public-Private Partnership (P3)
- Definition

- Public-Private Partnerships are a mechanism for public agencies to obtain public infrastructure construction or improvements using the financial and other resources and expertise of the private sector. PPPs combine the skills and resources of both the public and private sectors through sharing of risks and responsibilities.

Adapted from The World Bank definition

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Public Private Partnership (P3)
- Types of PPPs

- Build Operate Transfer (BOT)
- Build Own Operate (BOO)
- Build Own Operate Transfer (BOOT)
- Build Lease Transfer (BLT)
- Build Transfer Operate (BTO)
- Lease Renovate Operate Transfer (LROT)
- Design Construct Manage Finance (DCMF)
- Build Own Operate Remove (BOOR)

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Public Private Partnership (P3) - Issues

- Not all public agencies are authorized to use
- Ownership, control, and operational issues
- Private sector ownership of infrastructure for agreed upon number of years to recoup their investment
- Number of firms to shortlist
  - Too few – not enough competition
  - Too many – firms may drop out with lower chance of winning
- Need strong and comprehensive contract
- Similarities to some forms of Design Build

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Public Private Partnership (P3) - Issues

- Accommodating political framework
- Right legal framework
- Public acceptance
- Quality practitioners
- Availability of financing
- Protect public's interests
- P3s are very complex

James Robinson, PSOJ Research Economist

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Public Private Partnership (P3) - Issues

- **Design:** Contractor involved in design phase and encourage features to promote savings over project lifetime
- **Financial:**
  - Private sector has incentive to come in on budget since overruns impact their profits
  - Public agencies transfer risk of higher construction costs or lower revenue to private sector
    - Quality could suffer
- **Maintenance:** Long-term maintenance of project removes temptation of government to defer upkeep

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Contractor Selection Processes

- Best Value Selection
- Non-Competitive Selection Below Bid Limits
- Construction Rosters
- On-Call Construction Contracts
- Emergency Contracts

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Best Value Selection

- Based on 100% design documents
- Selection via Request for Proposals (RFP), not bid
- Evaluate price, qualifications, and value added to project by contractors
  - Establish evaluation criteria and weighting
  - How much should price be worth

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Best Value Selection

- May avoid problems associated with low bid
- Award to highest ranked firm
  - Might not be the low price

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Best Value Selection
- Variations on Best Value

- Pre-Qualification of contractors
- Bidder Responsibility criteria
- Arizona State University's Performance Based Studies Research Group
  - Significant anti-owner bias from this program that is funded by contractors
  - See attached blog post

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Non-Competitive Selection
- Below Bid Limit

- State or local authority waives bidding for small projects
- Selection without competitive process
- Avoid ethical quagmires
- Communicate scope of work and project requirements to contractor
- Negotiate fair and reasonable price

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Construction Rosters

- Typically for lower dollar value projects
- Restricts competition to firms on the Roster
  - No public newspaper advertisement needed
- Competitive bidding still required
- Award to low responsible bidder with responsive bid

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On-Call Construction Contracts

- For common construction trade services needed during the year
- Bid and award based on unit prices
- Issue work orders when needs arise
- No guaranteed amount of work for contractor
- Helpful for smaller agencies without maintenance staff

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Emergency Contracts

- Threat to public health, safety, property, or performance of agency's essential functions
- Declare an emergency and waive competitive bidding
  - Not sufficient time to conduct bid process
- Delegate to appropriate staff ability to declare an emergency
- Consider on-call emergency contracts
  - Contract, bonding, insurance established in advance

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Resources

- Design-Build Institute of America
  - www.dbia.org
- Construction Manager at Risk
  - Washington State law
    - http://apps.leg.wa.gov/rcw/default.aspx?cite=39.10
  - CM/GC Guidelines for Public Owners from the AGC and National Association of State Facilities Administrators
    - https://www.agc.org/cm-risk

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Resources

- Public-Private Partnerships
  - The National Council for Public-Private Partnerships
    - https://www.ncppp.org/
  - Government Finance Officers Association – issues to consider
    - http://www.gfoa.org/public-private-partnerships-p3

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Resources

- Project Delivery Methods from Mike Purdy's Public Contracting Blog
  - http://publiccontracting.blogspot.com/2012/04/project-delivery-methods-for-public.html

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About Mike Purdy

- **Public Contracting Manager:**
  - Retired in February 2010 after more than 30 years
  - City of Seattle, Contracting Manager
  - Seattle Housing Authority, Contracting and Procurement Manager
  - University of Washington, Contracts Manager
- **Procurement and Contracting Consultant:**
  - Consultant and frequent speaker/trainer since 2005
  - Helps public agencies, contractors, and consultants in understanding complexities of public contracting issues
  - Author of the popular Mike Purdy's Public Contracting Blog (http://PublicContracting.blogspot.com)
- **Education:**
  - Bachelor's degree in business and public administration and MBA from University of Puget Sound (Tacoma, WA)
  - Master of divinity degree from Fuller Theological Seminary (Pasadena, CA)

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Best Value Procurement

February 16, 2008

I attended a four-day conference on Best Value procurement near Phoenix from February 11th through 14th. While the concept of selecting a contractor based on best value rather than purely low bid has significant public benefits to the taxpayers on public works construction projects, if designed and managed appropriately, I came away from the conference very skeptical about the particular slant on best value that was promoted by the presenters, notwithstanding the strong support that Best Value has generated with many in the construction field.

The conference was part pep rally, part testimonials by owner converts, and part explanation of a fairly rigid contracting process that has a strong bias against owners and strongly tilts towards and favors contractors. In fact, it is contractors and vendors who have funded millions of dollars in research and support of Arizona State University's Performance Based Studies Research Group (PBSRG), the sponsors of the conference. The conference was also long on self-promotion of PBSRB by Dr. Dean Kashiwagi, its director.

Frequently repeated and unsupported statements were zealously preached to the some 60 organizations (owners, contractors, suppliers) with representatives at the conference. The "client [owner] is the source of all risk" was a major theme as Dr. Kashiwagi urged owners to "give up control [of the contractor] because you actually have no control." PBSRG's black and white philosophy argues that the contractor is the expert and knows best how to do the project. Under Best Value procurement, as articulated by Dr. Kashiwagi, neither management or decision making by the owner is necessary or desirable. "Decision making is not a good thing," Dr. Kashiwagi asserted. Instead, once having picked the right contractor, the contractor should take control of the project, including writing the actual contract. In fact, according to Dr. Kashiwagi, the "contract must protect the contractor, not the owner." Furthermore, the owner shouldn't manage risk but delegate technical risk to the contractor.

The conference was heavy on promoting a simplistic, unrealistic, and underlying philosophy that views people mechanistically, asserting that people are always predictable and that for any event there is just one possible outcome because people are always predictable. “All event outcomes can be predicted with ‘all information,’” a questionable assumption even if we lived in a perfect world where all information was available. Thus, if these assertions are true, so goes the argument, contractors will always do the right thing if they’re just given the responsibility to manage risks instead of having the owner attempting to control a project and mitigate risks. All of this, of course, appears to be predicated on the false assumption that all contractors are competent, take pride in their work, and have the owner’s best interest at heart. Nothing in the philosophy supports an owner’s role in managing a project. Instead, the contractor, as the expert, should make the decisions and be accountable, while all efforts should be made to minimize the owner’s “management, inspection, and decision making.”

Furthermore, I found Dr. Kashiwagi’s presentation style to be condescending and derogatory of owners, procurement officers, and those who, in his words are “blind” (possess technical knowledge and experience that they try to use in managing), but are not “visionaries.” He continually repeated that his best value system was “simple” and based totally on logic, even though he made multiple unsupported and non-logical claims for his positions. I often wondered if the system is really so simple why it took a four-day conference that included marketing pitches to hire PBSRG as consultants to run the procurement and project for owners. Dr. Kashiwagi repeatedly urged the attendees to make no changes to the system or it wouldn’t work.

According to PBSRG, the success of Best Value is boiled down to whether the contractor is on-time, on-budget, and “making everyone happy.” Conspicuously missing from the equation is the concept of quality. But under PBSRG’s model, the contractor will take care of the quality and the owner won’t have to even inspect the project as much because if the contractor is a high performer, they’ll manage all of this, permitting the owner to minimize decision making and managing the project.

Beyond its heavy and negative bias against owners in favor of protecting contractors, the core of the Best Value procurement system, does offer some potential tools for owners that may be able to be used even in a low bid environment. However, PBSRG’s Best Value procurement is designed to work outside of a low bid environment where non-price factors are used as part of the selection process.

While the generic concept of Best Value makes good sense, as promoted by PBSRG, it does not seem to me to be within an owner’s best interests, notwithstanding the glowing testimonies from various owners who have used it under PBSRG’s guidance.