Session II: Performance-Based Design-Build Process

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Discussion Team

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Session Topics

- Performance based design-build process
- Incentives
- Shared Values
- Owner’s perspective
- Design-Builder’s perspective
• Has anyone ever utilized one design-build team to perform design from conceptual through final design, and all construction, under the umbrella of a single contract?
Buildings are Strategically Important to Energy Goals
• Consume 40% of Primary Energy and 72% of Electricity
• Represented 9% of GDP (2006)
Myth, Challenge, and Benefits

• Myth
  – Superior Building Energy Performance Requires Advanced Technologies and is Too Costly Relative to Standard Construction

• Challenge
  – Create a Replicable Acquisition Strategy to Achieve Superior Building Energy Performance at a Comparable Cost

• Engaging the Challenge
  – Leveraging DOE’s Building Energy Performance Expertise into Commercial Success
  – Creating Value Beyond Budget through Acquisition Strategy

• What Are the Benefits?
  – Contributing to Security, Economic Competitiveness, and Environmental Quality
Elements for Acquisition Success

- Performance-Based Acquisition Strategy
- Extensive and Informed Owner Planning
  - What are the Project Goals?
  - Is the Project Technically Feasible?
  - What are the Project Objectives and Substantiation Criteria?
- Leadership Team Commitment and Involvement
- Recognizing What You Don’t Know and Seeking Help
- Integrated Project and Acquisition Planning
- Commitment to Risk Management for All
- Owner Must Relinquish Some Control
Summary of Acquisition Strategy

• Two Step Best Value Selection
  – Step 1: Request for Qualifications
    • Request for Qualifications
    • Short List to Three
  – Step 2: Request for Proposals
    • Issue Draft RFP
    • Finalize and Issue RFP
      – One-on-One Meetings
        » Purpose: Answer Questions and Build Trust
        – Sharing of All Non-Proprietary Information
    • Design Competition
      – Twenty Six Performance Objectives
RFP Performance Objectives

• **Mission Critical**
  – Attain Safe Work Performance
  – LEED Platinum
  – Energy Star First Plus

• **Highly Desirable**
  – Up to 800 Staff
  – 25 kBTU/sf/year
  – Architectural Integrity
  – Honor “Future Staff” Needs
  – Measurable ASHRAE 90.1-50%
  – Support Culture
  – Expandable Building
  – Ergonomics
  – Flexible Workplace
  – Support Future Technologies
  – Documentation to Produce a “How To” Manual
  – “PR Campaign Implemented in Real-time
  – Allows Secure Collaboration with Outsiders
  – Building Information Modeling
  – Substantial Completion by May 2010

• **If Possible**
  – Net Zero Energy Approach
  – Most Energy Efficient Building in the World
  – LEED Platinum Plus
  – ASHRAE 90.1 plus 50%
  – Visual Displays of Current Energy Efficiency
  – Support Public Tours
  – Achieve National and Global Recognition and Awards
  – Support Personnel Turnover
• Types of Design-Build Acquisition Strategies
  – Bridging Documents
    • Owner has significant input into the preliminary design
    • Some overlap of A/E costs
  – Performance Specifications
    • What something must do - not what it must be
    • Subcontractor must substantiate their design meets the objectives
    • Owner must not give the subcontractor technical direction

• Use of Criteria Consultants
  – Aid owner with the creation of performance specifications
  – Provide owners representative services
  – Fixed-Price type subcontract preferred
Design-Build Institute of America (DBIA) Best Practices

• Use of Seven DBIA Best Practices
  – Best Value Procurement
  – Two-Step Solicitation
  – Short-List To No More Than Three Qualified Teams
  – Conduct Interim Interviews During Competition
  – Payment to Unsuccessful Offerors for Design Rights
  – Milestone-Based Award Fee Program
  – Use of Performance-Based Specifications
Partnering is a very important aspect of Design-Build

- Builds Trust Between Design-build Team/Owner/Owner’s Rep
- Should Be Collaborative and Not Adversarial
- Integrated Project Team (IPT) is Crucial to Develop Solutions During the Design-build Project
  - Members of IPT must include all members of the design-build team and all stakeholders in the project
- Ensures the IPT Continues to Work as a Team
- Partnering Sessions Should Be a Safe Environment for All Parties to Be Completely Transparent
Identification, Mitigation, and Allocation of Risk

• Initial Risk Matrix Developed by Owner
• First Owner/Contractor Partnering Session Convened on Risk Identification and Management
  – Identified Risk to All Parties
  – Allocation to Party Most Able to Manage
  – Resulted in Trust Building
  – Not a Traditional Adversarial Relationship
  • “Setting You Up to Succeed and We’ll Ride Across the Finish Line on Your Coat tails”
Final RSF Acquisition Strategy

- Performance-Based, Phased Contract, Firm-Fixed Price Design-Build with Award Fee
  - Performance-Based (Unleash Creativity)
  - Two-Phased Acquisition (Improve Knowledge and Reduce Risk)
  - Firm-Fixed Price (Set Bounds and Manage Risk)
  - Award Fee Milestones (Engage Contractor Management)

- Acquisition Strategy Created Value By
  - Leveraging Owner Knowledge
  - Enabling Contractor Creativity
  - Reducing Project Risk
Performance-Based: Owner’s View

• Fundamental Change in Acquisition Focus
  – Traditional: *Here’s a Design, What’s the Cost?*
  – Alternative: *Here’s the Requirements and Budget, What’s the Design?*

• Specific and Measurable Performance Objectives and Substantiation Criteria
  – Define the Design-Build Team’s Value Challenge

• Contractor Free to Design to Performance Objectives
  – No Traditional “Return on Investment” Tests
  – No Bridging Documents to Impede Creativity
  – How Many of the Performance Objectives Can You Achieve?
Performance-Based: Contractor’s View

- Quickly Define the Boundaries and the Goal
  - Performance Boundaries
  - Cost Goal
- Creative Tension Under Market Conditions
  - Drives Team to Optimize Value
- Starting with a Clean Palette
  - Motivated Team to Take Ownership
Phased Contract: Owner’s View

- Two Phased Contract
  - Phase 1: Preliminary Design (~50% Final)
    - Off-Ramp Option to Continue for Contractor and Owner to Alleviate Risk to Capital and Reputation
    - Structured to Encourage Exercise of Option
  - Phase 2: Final Design and Construction
    - Completion of Detailed Design Packages for Foundation, Structure, and Interior in Parallel
    - Foundation Work Could Begin Immediately

- Ultimately Reduced Risk to All Parties but…
  - High Stakes Owner Gamble Given Fixed Appropriation and Aggressive Schedule
Phased Contract: Contractor’s View

• Original RFP: Too Much Risk
  – Single Phase: Required FFP Commitment Too Early in the RFP Process
  – Uninsurable Event for Design and Construction
    • Performance and Substantiation Requirements
    • Function of Time

• Two Phase Allowed for Shared Risk
  – Aligned Parties to Move Forward

• Started the Collaboration Process

• High Stakes Contractor Gamble Given Penalty if the Contractor Chose to Terminate
Firm-Fixed Price: Owner’s View

• Contract was “Derivative” Reflecting Best Ideas of Owner and Contractor
  – Absolute Understanding and Clarity of Purpose
  – Risks Identified, Mitigated, and Allocated
  – Builds Trust Between Parties to Attempt a Very Challenging Project

• Addressed Corporate Risk Aversion
  – Established Risk Boundaries
  – Reduced Risk Allocated to Party Best Able to Manage

• All for One, One for All!
Firm-Fixed Price: Contractor’s View

• Begin with the End in Mind
  – Fixed Amount of Money: No More & No Less

• Target Value Design
  – Grouped Dollars into Prioritized Areas, e.g., Energy and Envelope

• Risk Management
  – Control of Cost Allocation through Design and Construction
Award Fee Program: Owner’s View

- Incentives to Induce Continuous Attention by Contractor Management
- Best Money We Invested!

The Research Support Facility Award Fee Program

Milestones for evaluation of the Subcontractor’s performance and Award Fee:

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Available Fee (%)</th>
<th>Fee Based on $2.0 Million Pool</th>
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<tbody>
<tr>
<td>Completion of Preliminary Design</td>
<td>20</td>
<td>$400,000</td>
</tr>
<tr>
<td>Completion of Design Development</td>
<td>15</td>
<td>$300,000</td>
</tr>
<tr>
<td>Completion of Construction Document</td>
<td>15</td>
<td>$300,000</td>
</tr>
<tr>
<td>Completion of Construction</td>
<td>25</td>
<td>$500,000</td>
</tr>
<tr>
<td>Completion of Closeout</td>
<td>20</td>
<td>$400,000</td>
</tr>
<tr>
<td>12 month post-occupancy</td>
<td>Balance</td>
<td>$100,000</td>
</tr>
</tbody>
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Any period with “Unsatisfactory” performance noted in any evaluation category could render the Subcontractor ineligible to receive any Award Fee for the entire Evaluation Stage.

Rating System
- Superior (90 to 100)
- Excellent (80 to 89)
- Satisfactory (70 to 79)
- Unsatisfactory (0 to 69)

Rollover Fee
Unearned fee could be recouped in subsequent periods providing that the subcontractor earned at least 90 for that period.
Award Fee Program: Contractor’s View

• Highly Motivating
  – Money Talks and People Listen!
  – Shared Incentive for Design and Construction
  – Aligned the Team to Drive for Superior Performance

• Measurable Result
  – Owner Criteria
  – Feedback Sessions
  – Feedback Shared to Motivate Team
Acquisition Strategy Result?

• Created Value Beyond the Budget at Lower Cost and Risk to All Parties
  – No Claims or Controversy
  – No Contractor Change Orders
  – Virtually No Contingency Use for Unknowns or Omissions
  – Sixteen Months from Shovel to Move-In
• Defined a New National Building Energy Standard
• Replicable Acquisition Strategy for Use by Others to Create Their Own Successes!
Construction Costs for Commercial Buildings

LEGEND:
- NOT RATED
- LEED CERTIFIED
- LEED GOLD
- LEED SILVER
- LEED PLATINUM

PROJECTS AND LEED CERTIFICATION

SOURCES:
- www.fayobserver.com
- www.dbia.com
- www.nasa.gov
- www.eomega.org
- www.oregonsustainabilitycenter.org
- www.americas.rlb.com
- http://greensource.construction.com
- www.1800larimer.com
- www.usgbc.org
- www.smithgroup.com
- www.cronkite.asu.edu
Research Support Facility: A New National Standard for Commercial Building Energy Performance

Request for Proposals and Additional Information on High-Efficiency Building Design Available at:

http://www.eere.energy.gov/topics/buildings.html
www.nrel.gov/sustainable_nrel/rsf.html