Design-Build Project Spotlight

Industry Research

University of Hartford
Hartford, CT
Examined influence of 19 factors on:

- Several types of delivery systems
- Cost control
- Schedule control
- Construction speed
- Delivery speed
## Comparison of Project Delivery Methods (CII/Penn State Study)

<table>
<thead>
<tr>
<th>Metric</th>
<th>DB vs. DBB</th>
<th>CM@R vs. DBB</th>
<th>DB vs. CM@R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Cost</td>
<td>6.1% lower</td>
<td>1.6% lower</td>
<td>4.5% lower</td>
</tr>
<tr>
<td>Construction Speed</td>
<td>12% faster</td>
<td>5.8% faster</td>
<td>7% faster</td>
</tr>
<tr>
<td>Delivery Speed</td>
<td>33.5% faster</td>
<td>13.3% faster</td>
<td>23.5% faster</td>
</tr>
<tr>
<td>Cost Growth</td>
<td>5.2% less</td>
<td>7.8% more</td>
<td>12.6% less</td>
</tr>
<tr>
<td>Schedule Growth</td>
<td>11.4% less</td>
<td>9.2% less</td>
<td>2.2% less</td>
</tr>
</tbody>
</table>

Comparison (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Research Study</th>
<th>CII Penn State (US) DB vs. DBB</th>
<th>Reading DB Forum (UK) DB vs. DBB</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Construction Speed</td>
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<td>12% Faster</td>
<td>12% Faster</td>
</tr>
<tr>
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<td></td>
<td>33% Faster</td>
<td>30% Faster</td>
</tr>
</tbody>
</table>
Comparison for Quality

- D-B delivers **equal or higher quality**

- D-B out performed traditional D-B-B in every category on a 10 point scale
  - Startup
  - Call Backs
  - O&M
  - Exterior & Structure
  - Interior
  - Environmental
  - Equipment
Contributing Factors for Success

- Contractor’s & specialty contractor’s experience with project delivery system & facility type
- Excellent team communication
- Early engagement of construction team
- Ability to restrain/pre-qualify the Contractor pool
Contributing Factors for Success (continued)

- Prior experience of team as a unit
- Owner’s ability to make prompt decisions
- Use of negotiated contract format
- No onerous contract clauses
Success Factors for D-B Delivery System

- Engaging construction team before more than 20% of design work done (by Owner)
- Experience of subs with facility type
- Experience of subs with D-B delivery system
- Contractor experience with facility type
- Excellent project team communication
CII Study Summary

• Best performing projects:
  • Excellent Owner decision making
  • Excellent scope definition
  • Excellent team communication
  • Qualified contractor pool
  • High ability to restrain Contractor pool
CII Study Summary (continued)

• Worst performing projects:
  • Engaged Contractor late in design
  • Limited or no prior team experience
  • Several onerous contract clauses
  • Poor ability to make decisions
  • Unable to pre-qualify Contractor pool