



PRO Strategic Plans Initiative 1: Improve the Constructability of Concrete Structures

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A Barrier to Productivity: Improve the Constructability of Concrete Structures

Agenda:

1. What is constructability?
2. Constructability -> Productivity Gain
3. Paths to improve Constructability
4. Constructability Blueprint: *Value of Design Collaboration*
5. Constructability Blueprint: *Constructable Design Principles*
6. PRO Resources

Constructability? Why?

- *PRO defines constructability as the effective integration of construction knowledge into the planning and design of a project to optimize its construction cost and schedule and maximize its value to the owner.*
- According to the Construction Industry Institute Task Force, early introduction of constructability practices can account for a 10:1 return on investment for owners.

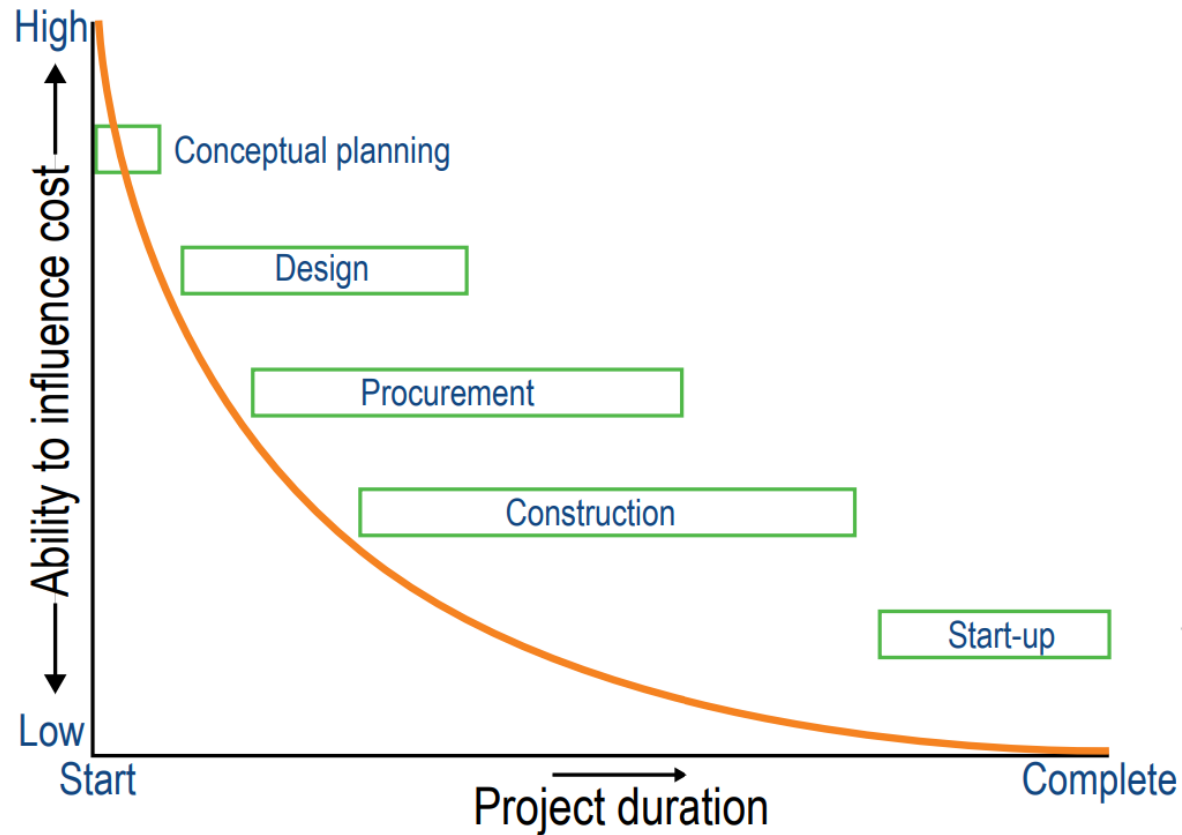


Constructability → Productivity Gain

- Capitalize on construction personnel, skills, materials, and equipment
- Productivity Gain provides value to Project Owner
 - *Lower Construction Cost*
 - *Earlier Construction Completion*
 - *Fewer RFI's*
 - *Fewer Change Orders*
 - *Reduced Stakeholder Conflict*

Constructability → Productivity Gain

Capture Constructability Potential Early



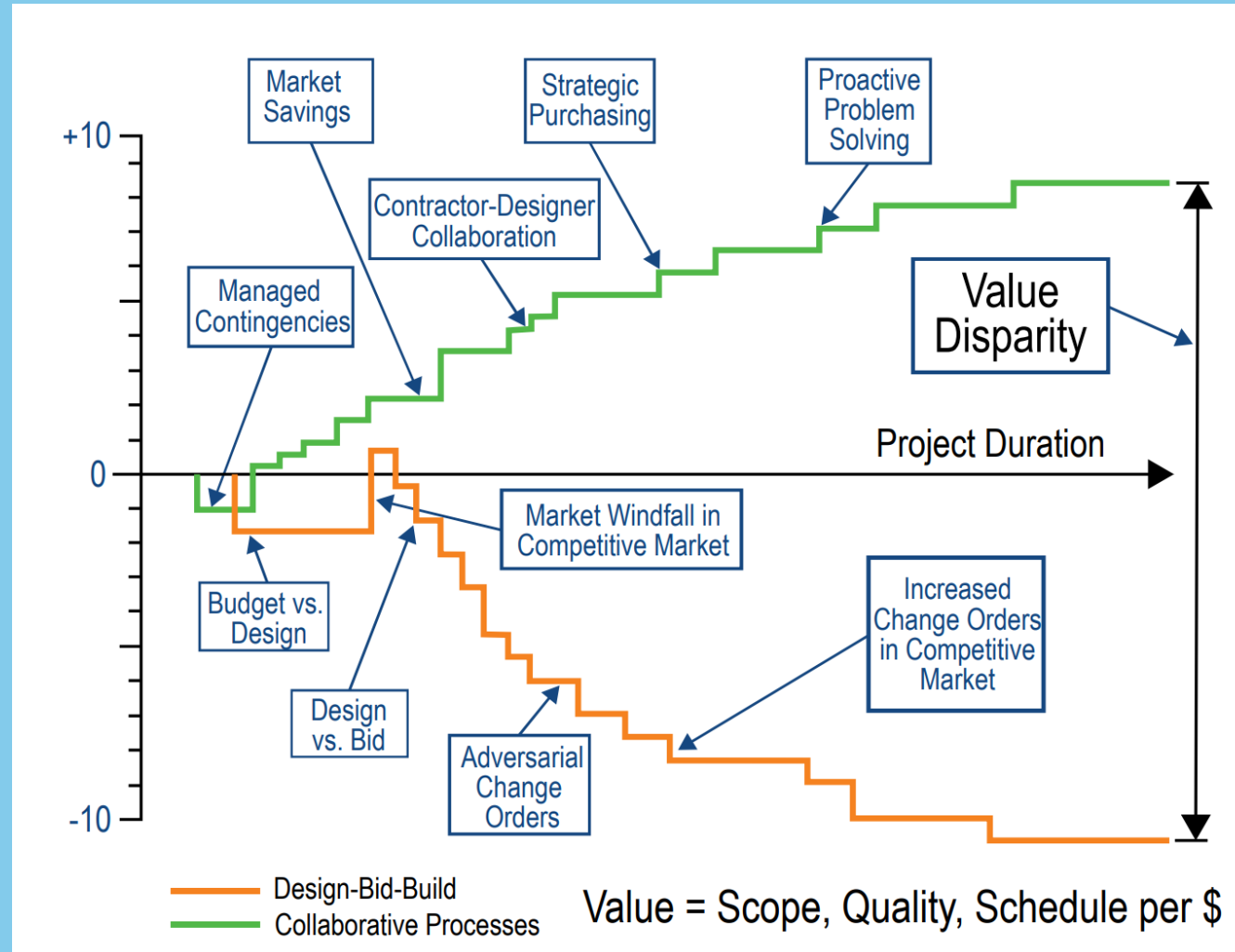
The ability to influence the final cost of a project decreases rapidly with each phase of the project ("Constructability: A Primer, Construction Industry Institute," Austin, TX, 1986, 24 pp.)

Paths to Improve Constructability

- Seek stakeholders with proven constructability skills
- Optimize construction labor & time vs material in design
- Contractor-designer collaboration
- Leverage contractor knowledge early
- Reward innovative concepts
- Maximize stakeholder communication and trust

Paths to Improve Constructability

Perceived Value of D-B-B vs. Collaborative Process



Designer's Path to Improve Constructability

No Design Collaboration, now what?

Owner driven Design-Bid-Build, now what?

- Leverage industry relationships
- Produce complete and coordinated construction documents
- Tap industry association constructability resources

Constructability Blueprint: Value of Design Collaboration

Released Spring 2024



Constructability BLUEPRINT



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SECTION 1: VALUE OF DESIGN COLLABORATION

- 1.1 What is Constructability?
- 1.2 Improving Productivity via Constructability
- 1.3 Status of Construction Productivity
- 1.4 Constructability Economics
- 1.5 Collaborative Relationships
- 1.6 Design Collaboration is the Key
- 1.7 Timing of Collaboration to Maximize Results
- 1.8 Outcomes of Constructability Focus
- 1.9 Concrete's Design Advantages Versus Constructability
- 1.10 The Path to Concrete Productivity—A Summary
- 1.11 Additional Resources for Those Seeking to Improve Concrete Productivity



Constructability Blueprint: Constructable Design Principles

Available Now!



Constructability BLUEPRINT



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SECTION 2: Constructable Design Principles

- 2.1 Pathways toward Constructable Design
- 2.2 Code-Compliant Design versus Code-Constructable Design
- 2.3 Permanent Material versus Construction Labor and Time
- 2.4 Where to Start as a Designer
- 2.5 Horizontal Framing
- 2.6 Formwork Logic
- 2.7 Reinforcement Logic

Dozens of Source Documents embedded,
just click!



Constructability Blueprint: Constructable Design Principles

Available January 2025



Constructability BLUEPRINT



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SECTION 2: Constructable Design Principles

2.8 Mixtures, Pumping, Placing, and Finishing

2.9 Logistics, Hoisting, and Safety

2.10 Vertical Elements

2.11 Lateral-Force-Resisting Systems

2.12 Foundations

2.13 On-site Testing and Inspection

2.14 Specifications for Constructable Concrete

2.15 Coordination and Completion of Drawings

2.16 Summary of Constructable Design Principles



PRO Resources

- Website: ConcreteProductivity.org
- Constructability Blueprint Free Download: [Constructability Blueprint](#)
- Future PRO Documents: [Subscribe](#)

Single source of Constructability Resources

Rick Farr

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