



Industry Productivity and Constructability Initiatives

Phil Diekemper

Executive Director, PRO: An ACI Center of Excellence for Advancing Productivity



An ACI Center of Excellence for
Advancing Productivity

Constructability

Constructability is the effective integration of construction knowledge into the design of a building or other structure.

The goal is to:

- Create designs that are materially efficient, and
- Allow the productivity potential of modern construction systems to be fully realized



Source:
Ceco Concrete Construction
PRO Member



Improving Construction Productivity

McKinsey Global Institute provides 7 recommendations for improving construction productivity:

1. Improve the Constructability of Design
2. Embrace Innovation
3. Reshape Regulation
4. Rewire Contracts
5. Improve Procurement and Supply Chains
6. Improve Onsite Execution
7. Reskill Workers



Improving Construction Productivity

What Architects want GCs to know (Shelley D. Hutchins, LEED-AP, Published July 11, 2023.)

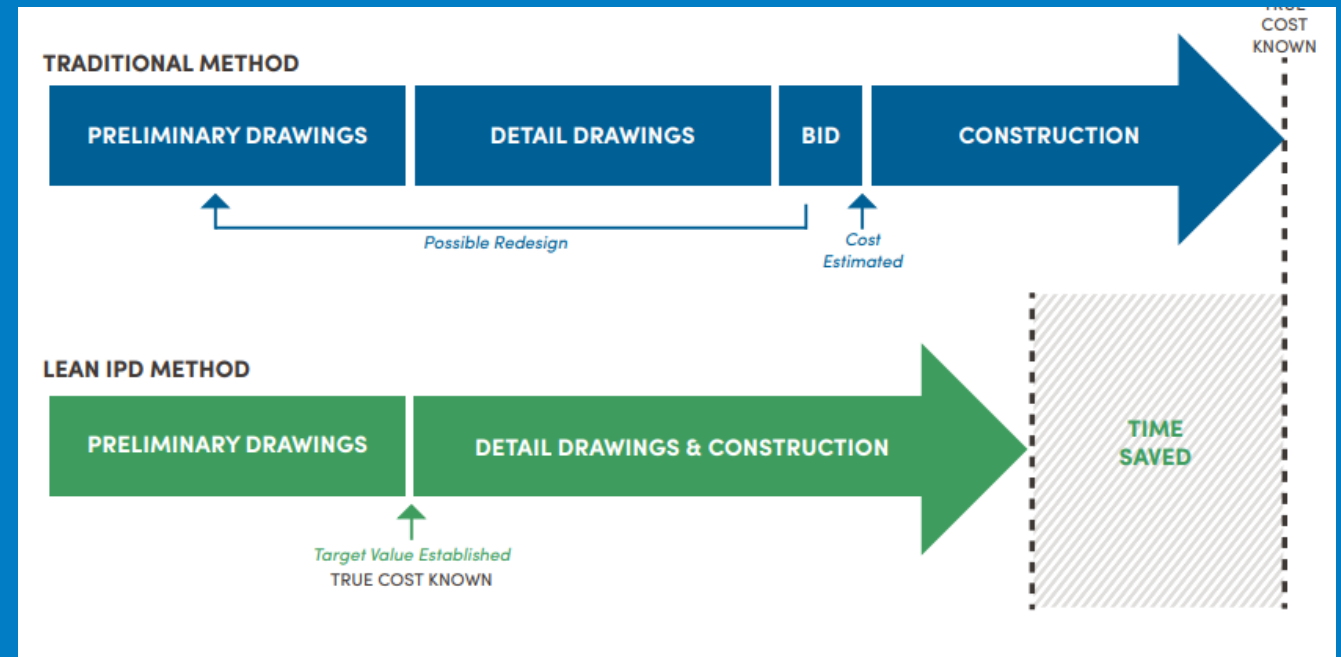
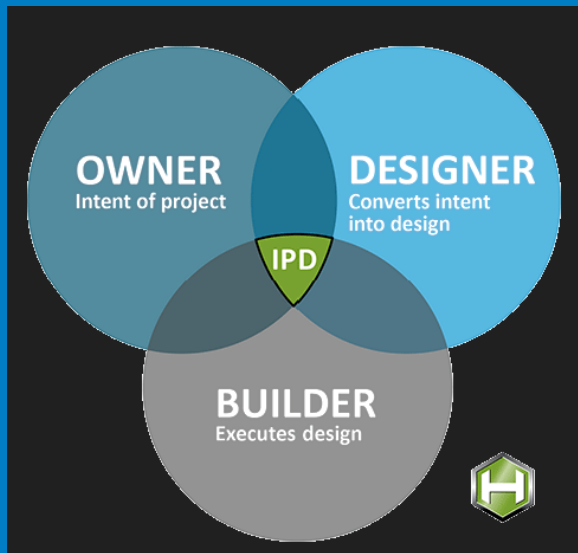
According to a study by the American Institute of Architects and the Associated General Contractors of America, both groups value early and frequent collaboration as key to building strong relationships. The majority – 80% of architects and 73% of contractors – targeted design development as the ideal project phase for starting the teamwork.



Source: Conco
PRO Member



Lean Construction Institute & Integrated Project Delivery (IPD)



Construction Industry Institute (CII)



Constructability means better projects – lower costs, better productivity, earlier project completions, and earlier start-ups.

- Owners, designers, and builders who belong to CII believe this statement.

Constructability works – frequently with dramatic results. Paybacks range up to 15:1.

Who can afford to pass up constructability benefits?

ConsensusDocs 40 National Trade Associations



New Standard Design-Assist Contract Document is First Industry Standard Document to Address Growing Practice

The ConsensusDocs 541 gets Constructors and Trade Contractors involved earlier in the project and collaborating successfully with Design Professionals.



Source:
Ceco Concrete Construction
PRO Member

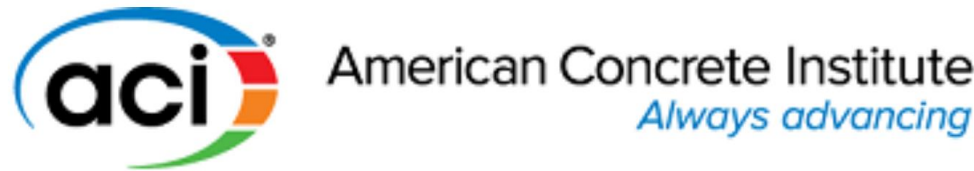


ASCC Constructability Committee



- Position Statements to ACI Documents
 - PS #14 → Anchor Bolt Tolerance in ACI 301-10, 302.1-04
- CI Article: "Reinforcement Congestion in Cast-in-Place Concrete"
- CI Q&A article: "Operator Qualification for Determining F-Numbers"
- More CI articles in development
- ACI Committee Involvement
- Input to PRO Constructability Blueprint

American Concrete Institute (ACI)



- ACI Committee 134: Concrete Constructability
- Committee Mission: Develop and report on the best practices for constructability of concrete structures
 - Meeting October 31st, 3 – 6 PM
- Convention Session, Wednesday Nov. 1st, 8:30 – 10:30 AM
 - “Prescriptive or Performance? What is the State of the Industry and What are the Examples of a Positive Movement Towards Collaboration”

ACI University Certificate Program: Concrete Constructability

The Concrete Constructability Certificate Program covers planning, layout, project delivery, project site drivers, structural system concept design, and more.

With over 300 participants, this certificate program is valuable to structural engineers to improve constructability and productivity in the industry.



ACI University Certificate Program: Concrete Constructability

A program certificate is awarded after completion of the following required courses (14.5 PDH):

- Introduction to Constructability and Why it Matters (1 PDH)
- Structural Systems Concept Design (2-part series) (2.5 PDH)
- Design and Detailing of Steel Reinforced Concrete Structural Members (2-part series) (3 PDH)
- Coordination and Completeness of Structural Construction Documents (1.5 PDH)
- Developing Specifications for Constructable Concrete (1 PDH)
- On-site Testing and Inspection (1 PDH)
- Formwork for Constructable Concrete Structures (1 PDH)
- Variables Affecting Construction Project Execution (1 PDH)
- Design and Construction with Precast Concrete (1.5 PDH)
- Post-Tensioned Concrete Design and Construction (1 PDH)



ACI - TAC Productivity and Constructability Subcommittee

Committee Mission:

- Review ACI documents and ballots from standards-writing committees for constructability and productivity



Source:
Ceco Concrete Construction
PRO Member



ACI Foundation



Concrete Innovation Council

- Committee Mission: To identify technologies and innovations which provide needed solutions for the concrete industry and help implement their use when appropriate
- Technology Forum: May 14 – 16, 2024 in Santa Fe, NM



Source: Conco
PRO Member





PRO - Mission:

To collaborate with designers, materials suppliers, and contractors to identify and resolve issues that negatively impact productivity in concrete construction. The Center and its members aim to advance design, new technologies, and processes that improve productivity beyond historic levels.



: Initiatives

- Improve the Constructability of Concrete Design
- Align the Risk and Reward of Concrete Design, Construction, and Ownership
- Incentivize Innovation in Concrete Design and Construction
- Improve Collaboration and Teamwork among all project participants
- Improve the Completeness and Coordination of Construction Documents
- Expand Industry Use of New Technologies



Join the Effort! Become a Member.

