

CHAPTER 1



LEAN CONSTRUCTION OVERVIEW

Introduction

Lean/Integrated Project Delivery (Lean/IPD) is a response to customer and supply chain dissatisfaction with the results in the building industry. Construction labor efficiency/productivity has decreased while all other non-farming labor efficiency has doubled or more since the 1960s. Currently, 70% of projects are over budget and delivered late. The industry still sees about 800 deaths and thousands of injuries per year. The industry is broken.

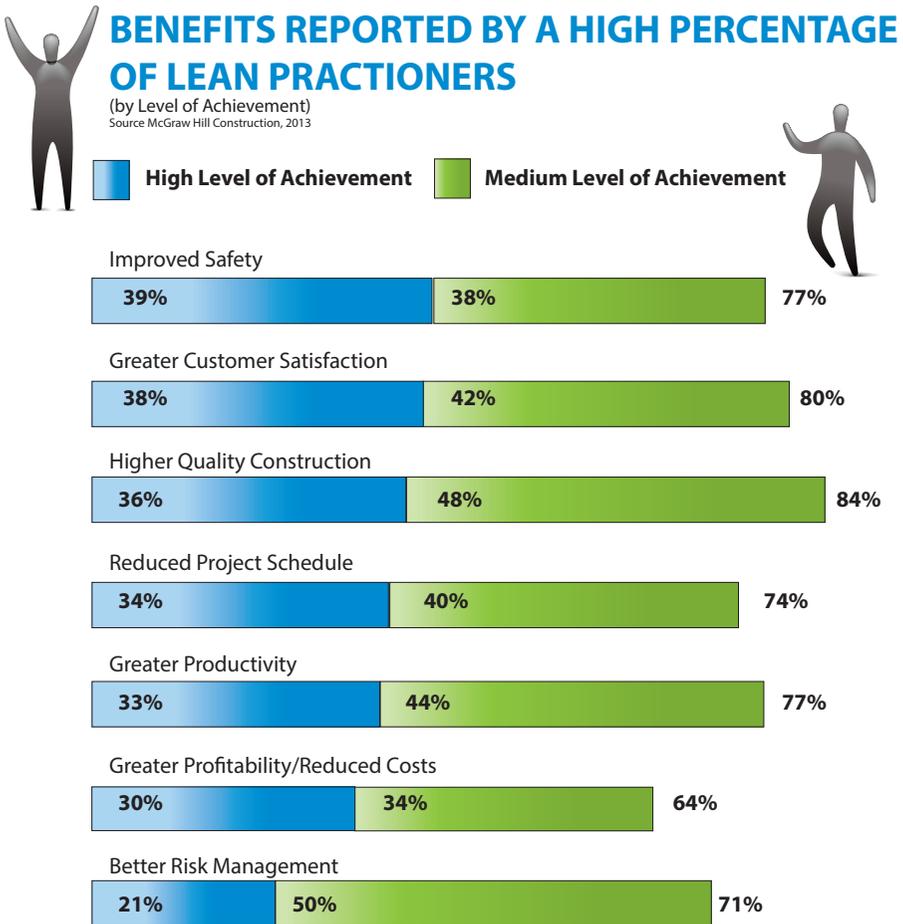
Construction labor efficiency/productivity has decreased while all other non-farming labor efficiency has doubled or more since the 1960s. Currently, 70% of projects are over budget and delivered late.

This is not a construction-only issue; it spans the entire delivery system. The silos created around architects, engineers, general contractors, trade contractors and specialty providers have introduced significant waste into the delivery system. An alarming lack of trust has created systems of checks, double-checks and over specification to cover legal ramifications—either real or perceived.

1.0 Why

Lean/IPD has shown that this phenomenon can be reversed as shown below.

Source: McGraw Hill Construction, 2013



Lean/IPD has the potential to reverse alarming trends in the construction industry that threaten safety, competitiveness and profitability.

Lean construction is a relationship-based system that is founded in commitments and accountability. It significantly improves trust. Teams are integrated through collaborative tools and search for ways to eliminate waste—specifically at the hand-off of work. Teams seek to continuously improve through reflection. Lean/IPD processes are designed to remove variation and create continuous workflow to drive significant improvement in predictability, all while strongly encouraging respect for all people involved.

2.0 How

High-Performing Team selection through a value-based Partner Selection assessment allows multiple subject matter experts to provide their knowledge in new ways through onboarding practices, Cluster Team development, and early incorporation of means and methods. These practices ultimately lead to higher-quality, lower-cost projects. Partners come together in a Big Room environment and learn to function as one team by creating long-term business partnerships. Teams improve by Learning to See Waste through the use of Retrospectives like the common Plus/Delta. Enhanced Facilitation, Agenda management, Production Systems implementation, and the Last Planner® System are tools that drive productivity into meetings, planning sessions and construction efforts.

Owner/operators are offered a significantly improved Value decision making opportunity and project predictability through Target Value Design. Teams learn to make better decisions with the use of Choosing by Advantages and present better solutions to complex problems through the A3 thinking process.

This framework can be structured through a common contract based around Conditions of Satisfaction that aligns goals and allows all parties to win together—not at the expense of each other—by creating a unique Business Deal.

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Quick Reference

[About the Lean Construction Institute](#) . 265

[Glossary](#) 243

[Alpha Index for Topics](#) 262

For additional readings and information, please see the below information.

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Additional Readings

[Analysis of lean construction practices at Abu Dhabi construction industry](#)

[Kaizen and Job Satisfaction – A Case Study in Industrialized Homebuilding](#)

[Keynote Case-SHEMC Lessons Case Study](#)

[Keynote Case-Temecula Valley Hospital](#)

[LEAN CONSTRUCTION THE CONTRIBUTION OF ETHNOGRAPHY](#)

[Lean production, value chain and sustainability in precast concrete factory - a case study in Singapore](#)

[Moving on - Beyond Lean Thinking](#)

[Process Flow Improvement Proposal Using Lean Manufacturing Philosophy and Simulation Techniques on A Modular Home Manufacturer](#)

[Psychological foundations for incentives](#)

[Reverse Phase Scheduling Slides - George Zettel](#)

[Site Implementation and Assessment of Lean Construction Techniques](#)

[The Application of Lean Principles to In-Service Support a Comparison Between Construction and The Aerospace and Defence Sectors](#)

[The Impact of Path Dependencies on Lean Implementation within a Construction Company - A Case Study](#)

[Using a design-build contract for Lean Integrated Project Delivery](#)

[Value Delivery through Product Offers a Lean Leap in Multi-Storey Timber Housing Construction](#)

[What makes the delivery of a project integrated A case study of Children's Hospital, Bellevue, WA](#)