

*By Tom Richert, RisingTerrain LLC*

## Introduction

With a bit of digging into lean construction you are bound to run into people who talk about their lean journey. The metaphor is applied because the philosophy informing lean is rooted in the idea that continuous improvement is both always possible and imperative.

A challenge with the metaphor is that lean in this context is often mistaken for the destination when it is more appropriately thought of as the vehicle that facilitates a journey. Journeys after all, have destinations that are defined. In lean the lean construction galaxy we refer to those arrival at those destinations as having met the Conditions of Satisfaction. Our lean “vehicles” are how we get to where we want to go. Rather than a car, consider that you are hitching a ride on boats that are part of a sailing fleet and agreeing to be a member of the crew.



This brief guide introduces key ideas about lean construction to people new or unfamiliar with these practices, aka lean

vehicles, and are considering hitching rides on them to get to their destination – a well designed and constructed capital project. It is also directed at people who thought they had hitched a ride to their destination, only to find the captain had been given poor directions.



## The Benefits Are Real, Yet Require Work

I have been part of projects that have saved significant time and money using lean practices. I am not alone, as others have had the same experiences. By significant, project duration reductions exceeding 25% and construction cost reductions exceeding 15%. While these projects are outliers, the work performed by those project teams is replicable.

## Lean Construction Includes Design

The principles and practices informing lean construction can be applied throughout the entire capital project development process, beginning with initial programming and lasting through the final activation of the project. Practices vary with each stage of development, yet the principles remain the same. When I mention lean construction in

this article I am referring to the entire project development duration.

### Lean Construction Began Outside of Toyota

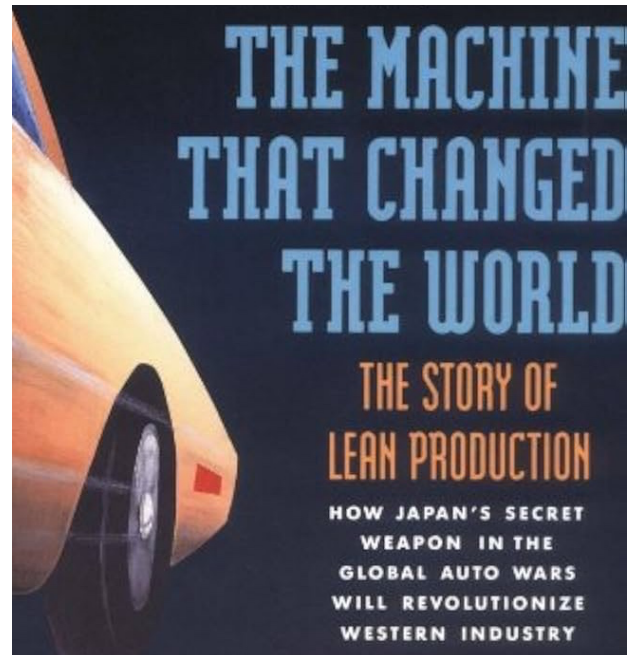
Greg Howell and Glenn Ballard began working on what ultimately became the Last Planner System® when they were on a team of people assigned to rescue a project in Texas in 1980. This is eight years before the term “lean production” was coined in an academic paper and ten years before the term became more widely popularized in manufacturing circles in the book *The Machine That Changed the World*. The term was first applied to construction in 1993 when several people determined that the construction productivity practices being developed needed a label.



### Lean is a Brand

The word “lean” was coined in the 1980s to describe what researchers with the International Motor Vehicle Program observed was happening in Toyota Motor manufacturing facilities. The word is inspired by the observation that Toyota

produced more vehicles with fewer resources at a lower human and financial cost. Toyota calls the same set of practices the Toyota Production System. It appears Toyota employees do not use the word “lean” until after they retire from Toyota and become consultants.



### Similar Concepts Can Be Found in Other Management Writing

While lean specific reading is beneficial, supplement your reading with research by people drawing from outside the lean galaxy. These people include Jim Collins, W. Edwards Deming, Peter Drucker, Atul Gawande, Gene Kim, and Steve Spear. Lean specific authors to read include Jim Benson, Art Byrne, Niklas Modig, and John Shook. A fascinating and relevant book to read about an approach to architecture and construction that aligns with lean construction can be found in *The Battle for the Life and Beauty of the Earth* by

Christopher Alexander. My apologies to all the wonderful authors I have not listed. Keep reading from your favorites.

### **Pull Planning is Not Lean Construction**

Pull planning is a technique used to facilitate planning conversations at a range of timescales. Most commonly the pull planning technique is used to collaboratively plan project phases. The plans produced in these sessions are not “pull plans.” Those plans should be labeled to describe the timescale covered by that plan, such as “phase plan.” Therefore, there is no such thing as a “pull planning meeting,” a term often used to describe events as varied as weekly coordination meetings, daily huddles, and phase planning sessions.

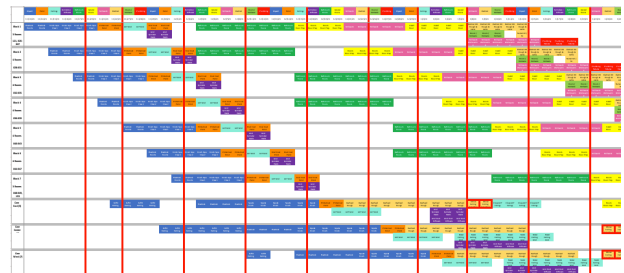


### **Sticky Notes on a Wall Does Not Mean Pull Planning Was Involved**

There are practices wherein people place sticky notes on a wall targeting certain calendar dates or build a plan from left to right. Pulling means working from an end milestone, building a plan through a series of requests that organizes work to be performed when needed rather than when available.

### **Takt Planning is a Technique, not a Replacement for the Last Planner System**

Takt planning can be an effective linearization technique for collaboratively designing even workflow through a series of spaces. A part of strategic work planning is considering where Takt may be appropriate. The need for performance reliability when executing the Takt portion of a project plan requires the coordination practices of the Last Planner System to make the plan work.



### **Focus on Practices, Not Tools**

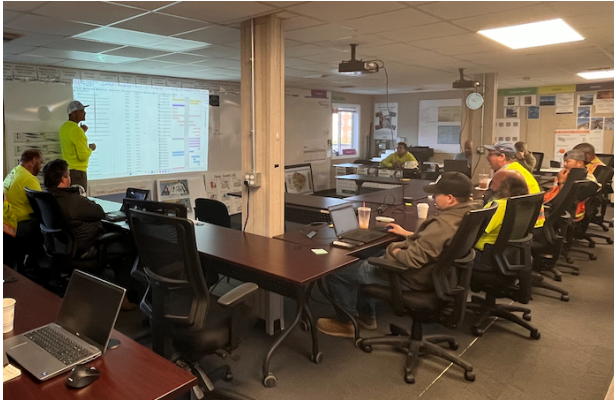
You may read about “lean tools.” This label is accurate, and not helpful unless you are in the business of selling tools based on the promise of better performance. A high-performance golf club may be a great tool, yet without practice on the driving range using proper form a golfer will get little benefit from that tool. It is important to learn lean practices, with a focus on proper form.

### **Lean Practices Are Skills, Not Tricks**

Because lean practices are conceptually easy to understand many people learn the basic elements of a practice yet never develop significant skill with that practice. This is a common human impulse, illustrated by the Dunning-Kruger effect. All



lean practice skills can continuously be improved. I'm improving my skills after more than two decades of working with the practices.



### **You Don't Need Two Decades to Develop Skills that Produce Better Results**

When project teams first learn lean skills, they can make gains in their capabilities in less than six months that produce visible results. With dedication they can develop

lean construction expertise within eighteen months to three years. There will always be more to learn, yet in terms of project execution skills they can be among the top 1% in the world.

### **When it Comes to Projects, It's About the Destination First, Then the Journey**

When it comes to your life, it is about the journey, whether we choose to live out a purpose or go with the flow. Project life is different in that project teams are uniting to create places and infrastructure that support other people's journeys. The mission should never be to "be lean." The mission is the successful completion of the project for the benefit of others. Lean practices are simply effective vehicles to get you there. While focusing on a journey that includes improving those practices always work with the objectives of the mission in mind.

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#### About RisingTerrain

*RisingTerrain LLC is a capital project performance consultancy equipping project teams with the executive skills required to lead and rapidly deliver quality projects at reduced costs. RisingTerrain serves clients throughout the U.S., supporting healthcare, technology, manufacturing, pharmaceutical, institutional, multifamily, and government projects. The firm continually builds its capabilities, through the introduction of leadership and project performance practices to client project leaders.*

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