



Managing To Create Problem-Solvers

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 **Lean Transformation**
Summit 2017
Carlsbad, CA | March 7-8, 2017

The Mountain is the Way: Transforming Construction

James P. Barrett

V.P., Chief Innovation Officer – Turner Construction Company



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A Year in the Life of Turner



Turner Construction Company



NYC IRT Subway Stairs, 1904



Turner City 1902-1910

At A Glance

Founded in 1902 ("Turner for Concrete")

8,500 Employees

Annual Volume \$10 Billion+

70% of Work from Repeat Clients

Experience in 55 Countries and Active in 20 Countries

Office Network in Every Major Metropolitan Area in U.S.

Average of 1,400 Active Projects Each Year

Largest General Builder in U.S.

Top 5 in Nearly All Building Types



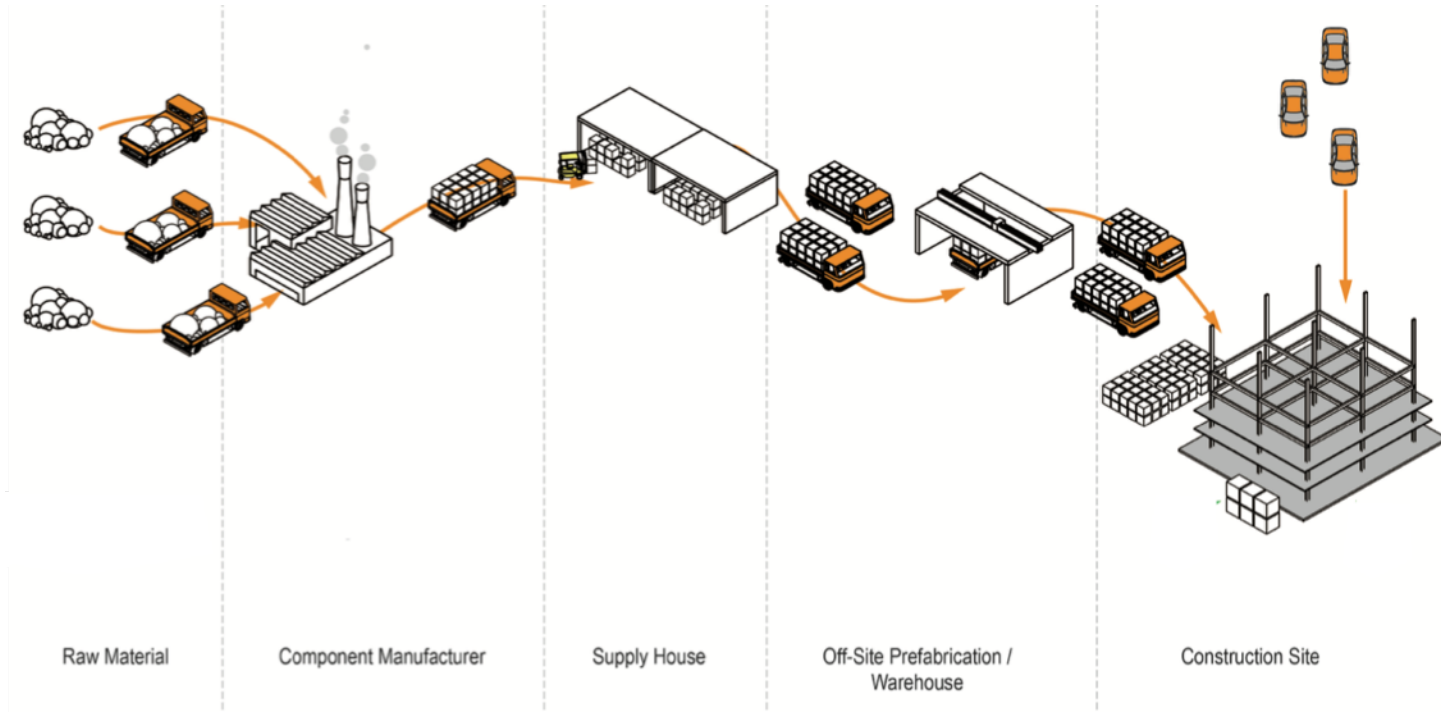
Burj Khalifa, 2013



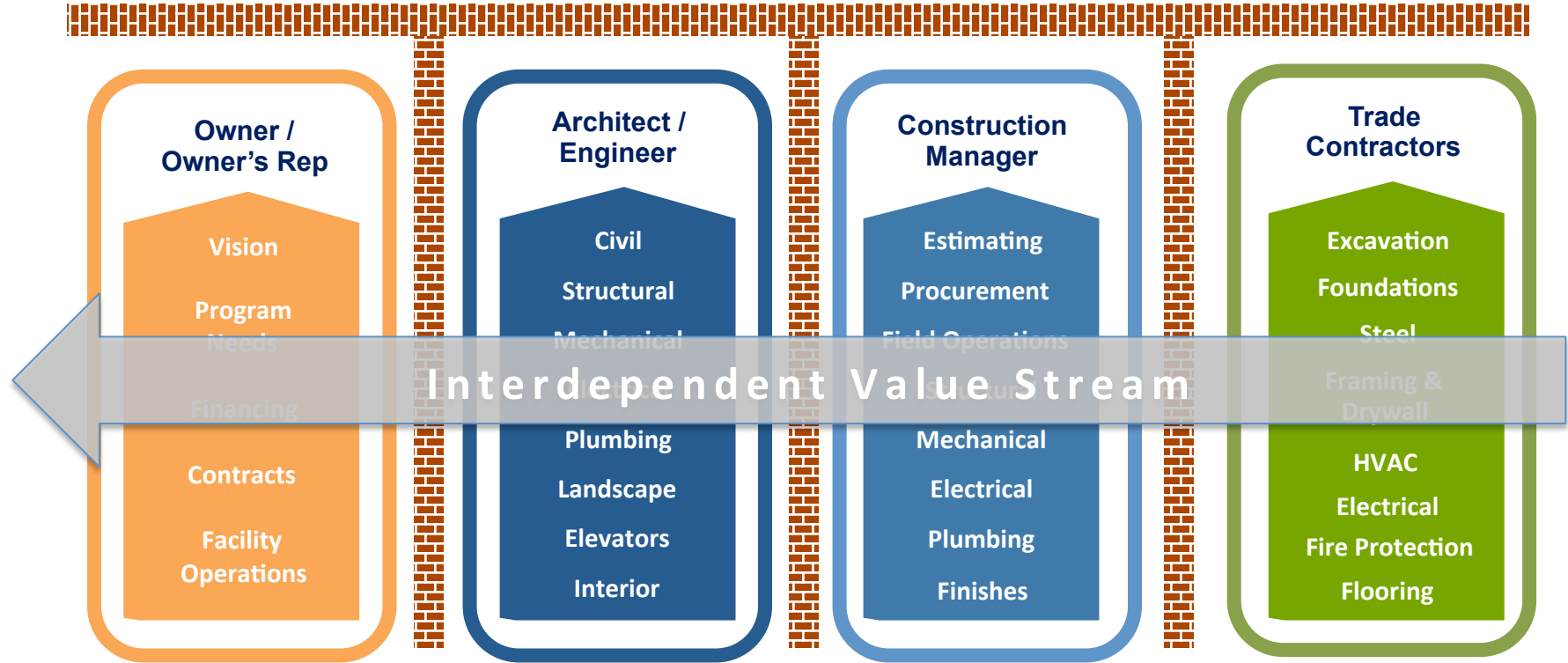
Turner City 2016



Global Network of 1,000+ Temporary Factories

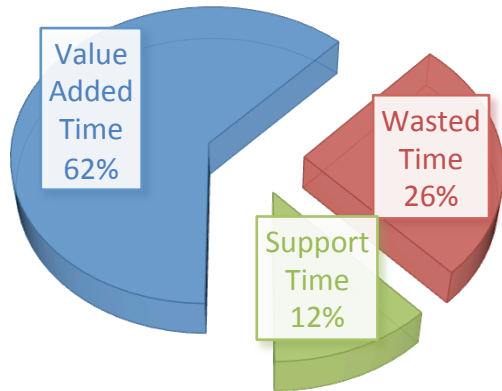


Fragmented “House of Construction”

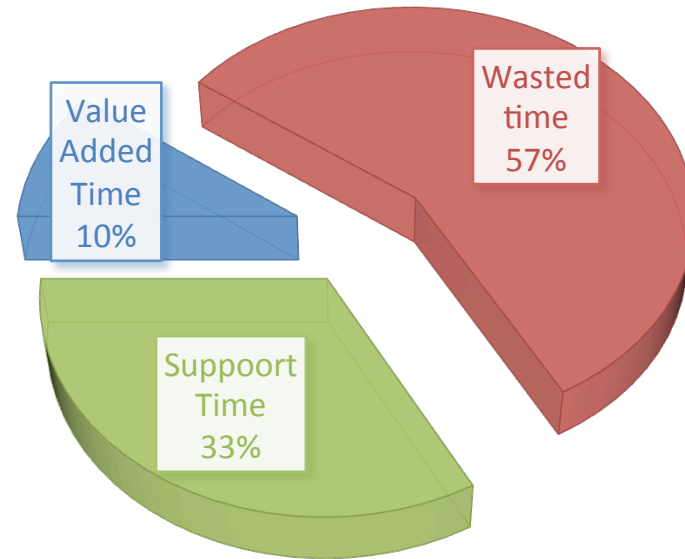


CII Benchmark Study of Work Activities

MANUFACTURING



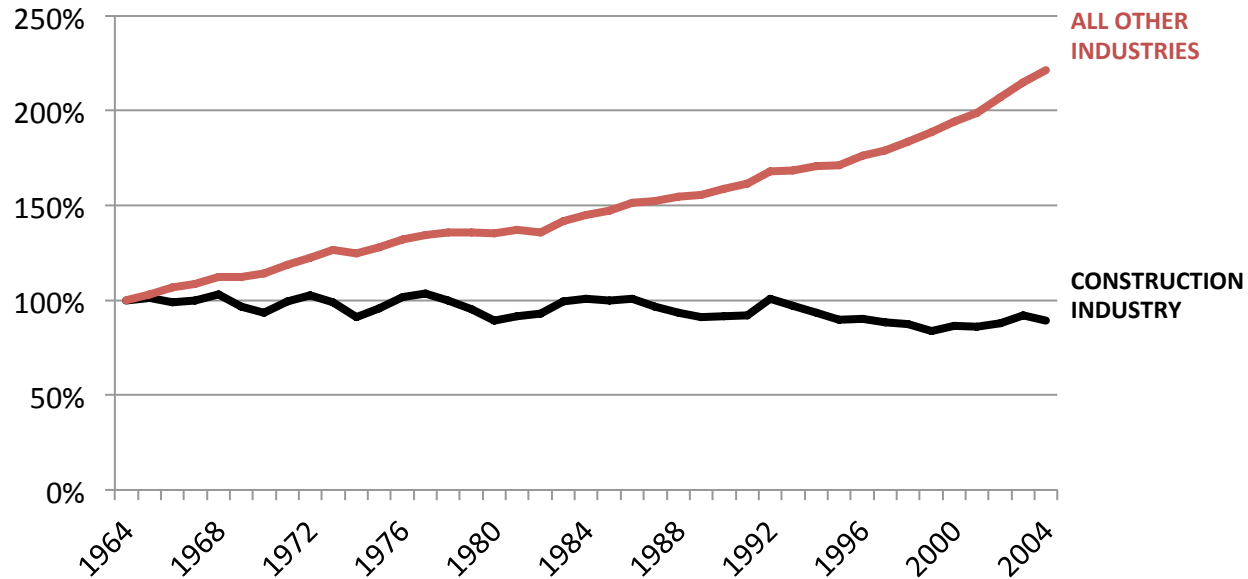
CONSTRUCTION



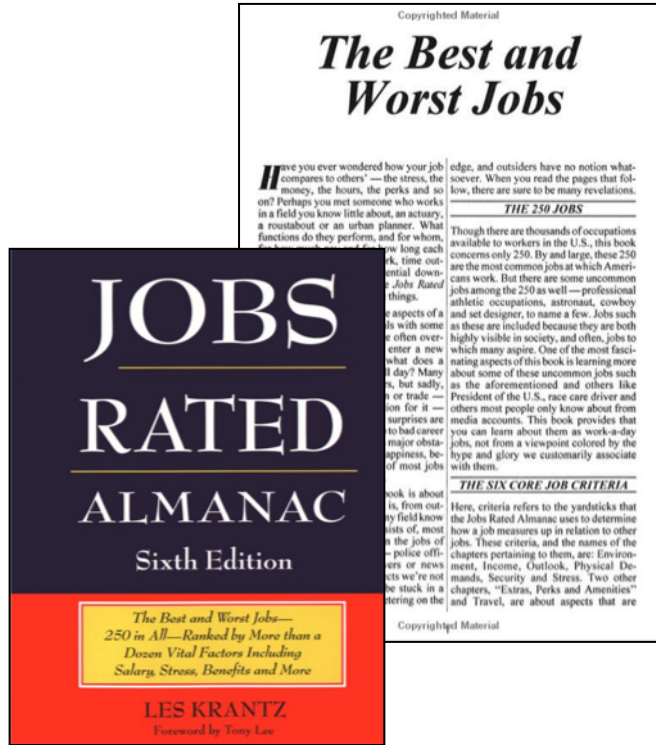
Construction Industry Institute



Construction Productivity - 40 Year Decline



Perceptions of Industry



The Best and Worst Jobs

Have you ever wondered how your job compares to others? —the stress, the money, the hours, the perks and so on? Perhaps you met someone who works in a field you know little about, an actuary, a roustabout or an urban planner. What functions do they perform, and for whom?

edge, and outsiders have no notion whatsoever. When you read the pages that follow, there are sure to be many revelations.

THE 250 JOBS

Though there are thousands of occupations available to workers in the U.S., this book concerns only 250. By and large, these 250 are the most common jobs at which Americans work. But there are some uncommon jobs among the 250 as well — professional athletic occupations, astronaut, cowboy and set designer, to name a few. Jobs such as these are included because they are both highly visible in society, and often, jobs to which many aspire. One of the most fascinating aspects of this book is learning more about some of these uncommon jobs such as the aforementioned and others like them.

THE SIX CORE JOB CRITERIA

Here, criteria refers to the yardsticks that the Jobs Rated Almanac uses to determine how a job measures up in relation to other jobs. These criteria, and the names of the chapters pertaining to them, are: Environment, Income, Outlook, Physical Demands, Security and Stress. Two other chapters, "Extras, Perks and Amenities" and "Travel," are about aspects that are

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Bottom Ten "Worst Jobs"

...

- 241. Seaman
- 242. Roofer
- 243. Taxi driver
- 244. Sheet metal driver
- 245. Dancer (exotic)
- 246. Cowboy
- 247. Construction Worker**
- 248. Fisherman
- 249. Lumberjack
- 250. Roustabout/Oil Field Laborer



Not “Just a Brick on Top of a Brick” Anymore



Rockefeller Univ. Campus Expansion (NYC)



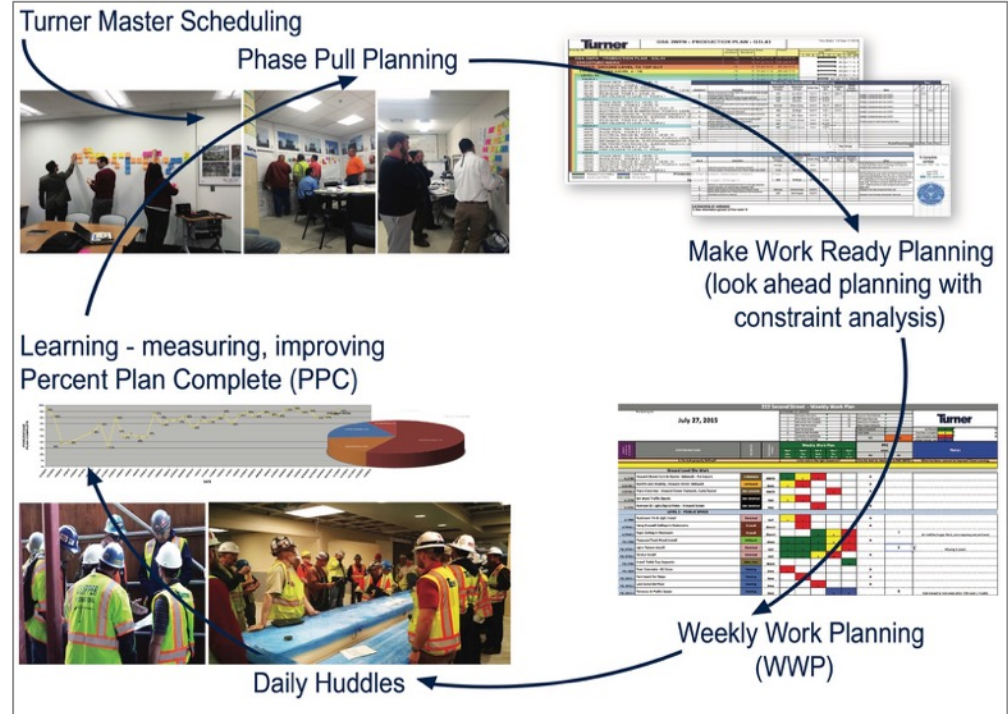
Lean in Construction Industry



**Lean
Construction
Institute**

Transforming the Built Environment

Last Planner® System



Turner's Lean Strategy

Vision Statement

“Lean is a transformational business strategy focused on maximizing customer value while eliminating waste through continuous improvement and respect for people”

Turner

2017

VISION

Our vision is to be the highest value provider of global construction services and technical expertise.

WHO WE ARE

Core Purpose

Make a difference in the lives of our people, customers and community.

Core Values

Teamwork
Integrity
Commitment

Culture

Safe: Live Injury Free Every Day
Inclusive and Diverse
Innovative
Lean
Sustainable
Continuous Learners
Active Community Partner

Our people distinguish themselves with their dedication to the defining principles of who we are.

HOW WE WILL SUCCEED

Guiding Principles

Enhance value to our clients
Create opportunities for our people
Improve profitability in line with the value we create

Priorities

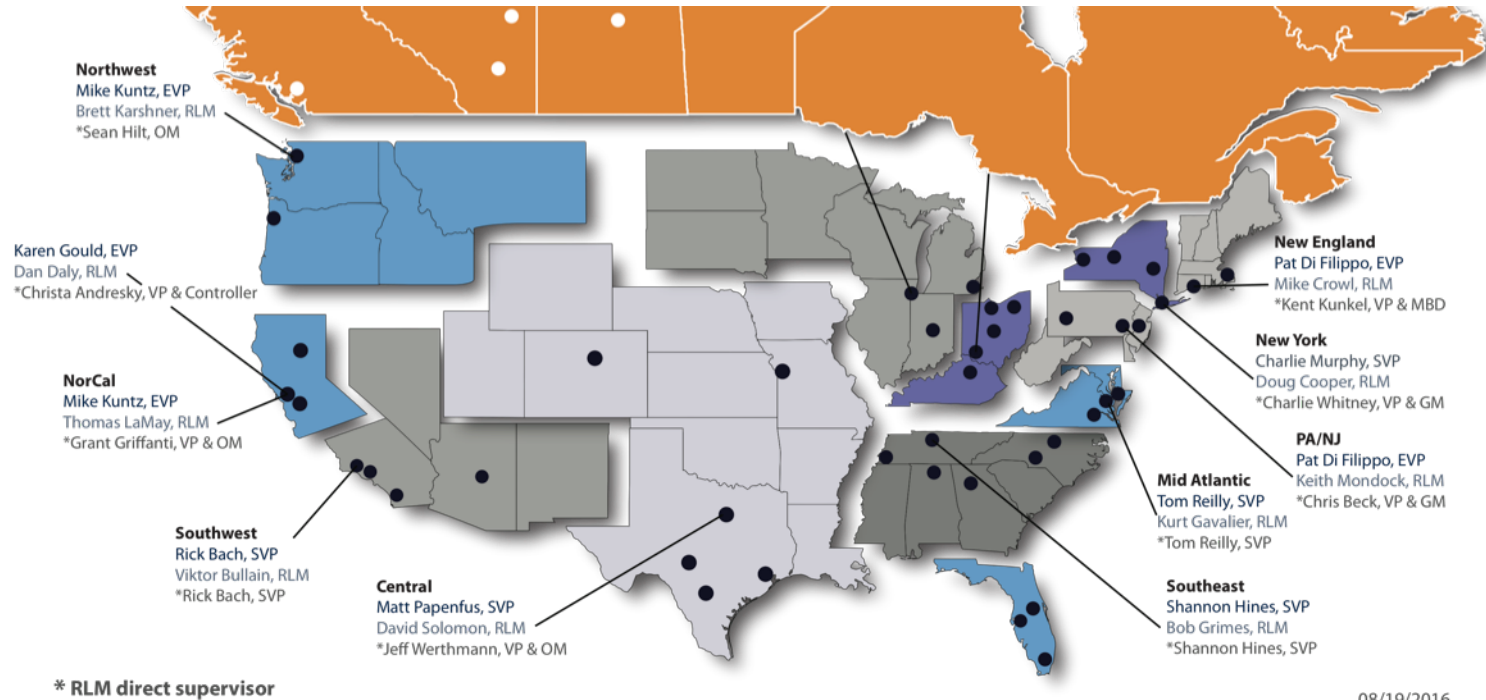
Create and sustain the right environment
Adopt lean principles and mindset
Successfully launch and deliver our projects
Increase global presence through Turner International and Canada

Priorities

Create and sustain the right environment
Adopt lean principles and mindset



11 Full-time Regional Lean Managers



08/19/2016



Enterprise Lean Standards and Adoption Tools



Lean Learning

Section	Item	Points	Planned	Current	Target	Comments
Production Systems	credit 1: Control Line focused work and waste in shops to flow from work project staff to learn about other strategies and principles. Learning Time, New Process, Work Management, Six Sigma Methodology, Problem Solving, etc. (credit project)	20				
	credit 2: At least one staff member attends 70% of all Learning Forum Group, L3O, L4P, or equivalent group meeting and learn training with team	20				
	credit 3: Every staff member attends L3O or L4P or equivalent meeting and learn project staff and learn training with team	20				
	credit 4: All project team members (on and off work) attend project, trade partner conference, other industry lean activities, or learn from others	20				
	credit 5: Engage about lean initiatives on the project and in the site office	20				
Total Possible Points: 100						
Continuous Improvement	credit 1: Utilize Lean Problem Solving and PDCA for a minimum of 3 problems on the project	20				
	credit 2: Utilize Lean Problem Solving and PDCA for a minimum of 3 problems on the project	20				
	credit 3: Utilize Lean Problem Solving and PDCA for a minimum of 3 problems on the project	20				
	credit 4: Utilize Lean Problem Solving and PDCA for a minimum of 3 problems on the project	20				
	credit 5: Apply a new method that you learned in the Lean Learning module to improve the project environment. Document and share your results on the Lean Learning Tool	20				
Total Possible Points: 100						
5S Jobsites	credit 1: Implemented 5S in the house	20				
	credit 2: Implemented 5S in the project office space	20				
	credit 3: Implemented 5S in the shop	20				
	credit 4: Implement a 5S project team member in the shop and learn from the implementation process (lead team, site, and project staff) and share results with the project	20				
	credit 5: Achieve a minimum of 80% reduction in project staff time (excluding on-site) from the current number of staff to the target number of staff (excluding on-site)	20				
Total Possible Points: 100						
BIM & Technology	credit 1: Utilize BIM for project management	20				
	credit 2: Advanced BIM: Use of Building Information Modeling to create 3D/4D models for scheduling (4D), such as plans, drawings, specific control, construction, or facility planning on the project	20				
	credit 3: Develop a project team member in the shop and learn from the implementation process (lead team, site, and project staff) and share results with the project	20				
	credit 4: Utilize a new technology to improve the project (e.g., project staff or project)	20				
	credit 5: Utilize a new technology to improve the project (e.g., project staff or project)	20				
Total Possible Points: 100						
Sustainability	credit 1: Describe a sustainability initiative on the site and describe the sustainability of the initiative, and implement a plan for the implementation of the initiative, such as training, controls, and other sustainable practices	20				
	credit 2: Utilize a sustainability initiative on the site and describe the sustainability of the initiative, and implement a plan for the implementation of the initiative, such as training, controls, and other sustainable practices	20				
	credit 3: Utilize a sustainability initiative on the site and describe the sustainability of the initiative, and implement a plan for the implementation of the initiative, such as training, controls, and other sustainable practices	20				
	credit 4: Utilize a sustainability initiative on the site and describe the sustainability of the initiative, and implement a plan for the implementation of the initiative, such as training, controls, and other sustainable practices	20				
	credit 5: Utilize a sustainability initiative on the site and describe the sustainability of the initiative, and implement a plan for the implementation of the initiative, such as training, controls, and other sustainable practices	20				
Total Possible Points: 100						
Lean Innovation	credit 1: Develop a Lean approach that improves the current standard (e.g., work built to document the benefits of the approach)	20				
	credit 2: Develop a Lean approach that improves the current standard (e.g., work built to document the benefits of the approach)	20				
	credit 3: Develop a Lean approach that improves the current standard (e.g., work built to document the benefits of the approach)	20				
	credit 4: Develop a Lean approach that improves the current standard (e.g., work built to document the benefits of the approach)	20				
	credit 5: Develop a Lean approach that improves the current standard (e.g., work built to document the benefits of the approach)	20				
Total Possible Points: 100						
Total Possible Points: 110						

Advanced Member Certification: 20-35, Silver 36-50, Gold 51-64, Platinum 65+

“Advancing Lean” 5 Day Training Program

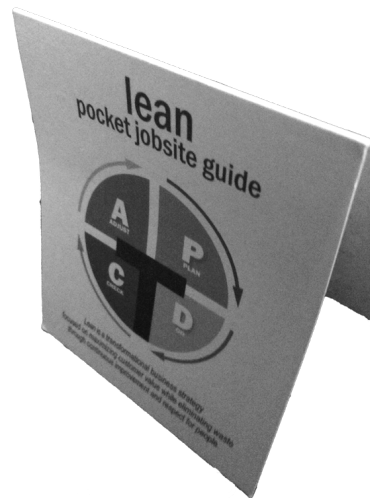
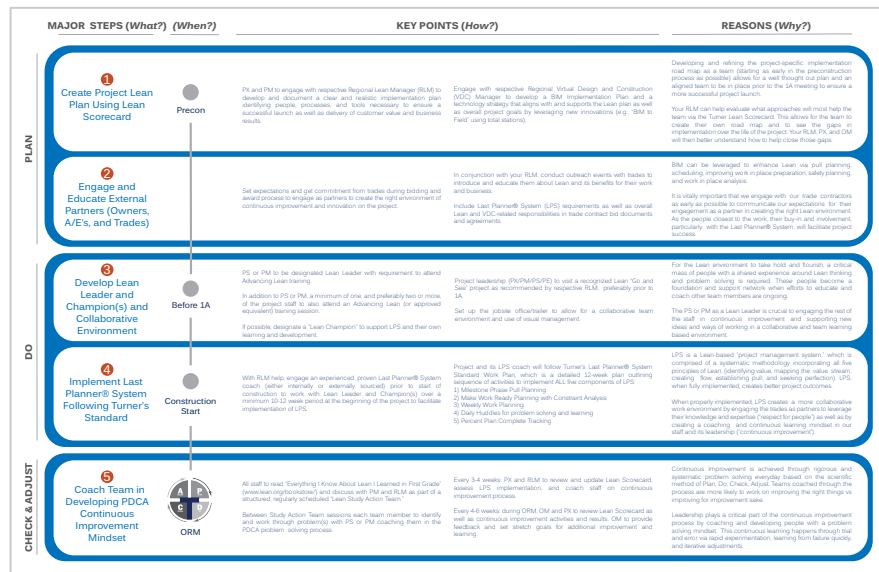
Monday	Tuesday	Wednesday	Thursday	Friday
TRAVEL IN	Breakfast 700AM-800AM	Breakfast 700AM-800AM	Breakfast 700AM-800AM	Breakfast 630AM-730AM
	Study Action Team (SAT) Reports	Study Action Team (SAT) Reports	Study Action Team (SAT) Reports	Study Action Team (SAT) Reports
	Last Planner Overview	Weekly Work Planning	Lean Problem Solving	Report Outs to Leadership & Discussion
	15 min break	15 min break	15 min break	
	Sample Project Review & Team Formations	Daily Huddles PPC / Variance	(continued)	
	Pull Plan Prep			Wrap-Up Final 1130AM-12PM
LUNCH 12PM-1PM	LUNCH 12PM-1PM	LUNCH 12PM-1PM	LUNCH 12PM-1PM	LUNCH 12PM-1PM
Welcome & Intros	Pull Planning	Skype Turner Lean Practitioner (1)	Improvement Kata	TRAVEL OUT
Defining Value		Skype Turner Lean Practitioner (2)		
Defining Waste		Value Stream Mapping with 15 break		
Creating Culture of Continuous Improvement			(continued)	
15 min break	15 min break			
Building Lean Problem Solvers	Make Ready Planning Constraint Analysis			
Study Action Teams (SAT) Prep				
Plus / Delta's - DAY 1	Plus / Delta's - DAY 2	Plus / Delta's - DAY 3	Plus / Delta's - DAY 4	



Scripting Culture Change

Project Guide for Adopting Lean Principles and Mindset

Lean Leaders Pocket Guide



Tabletop Improvement Experiment

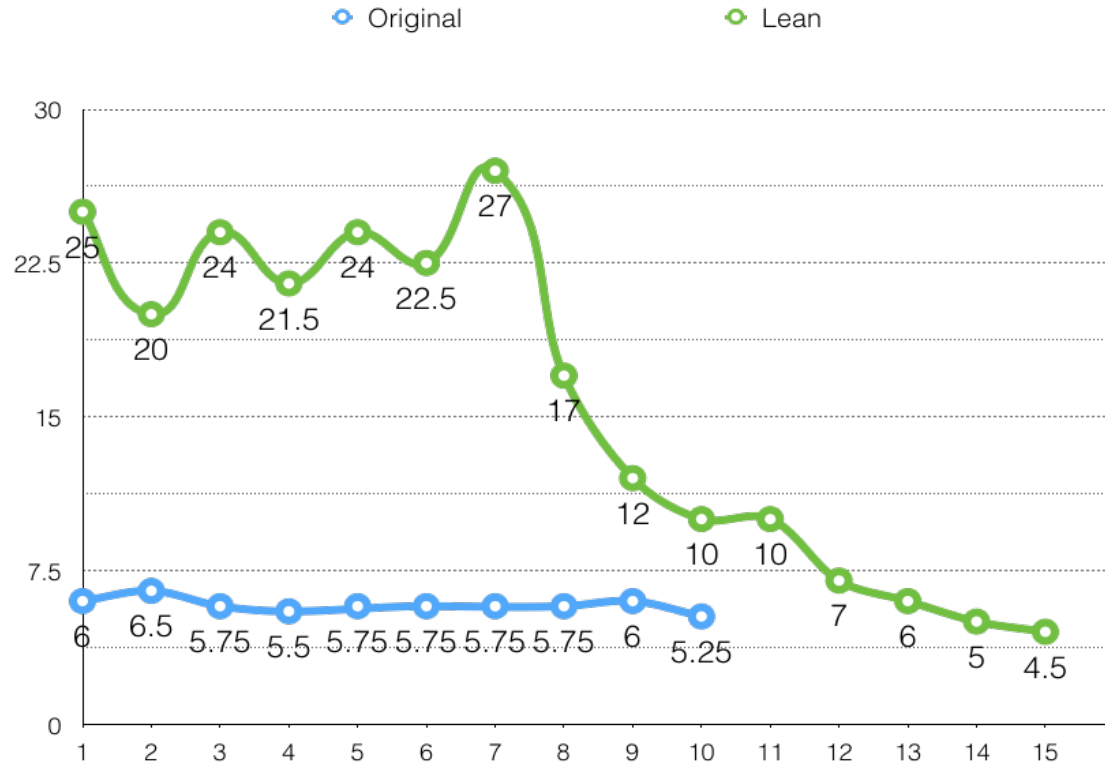
Turner Construction Company



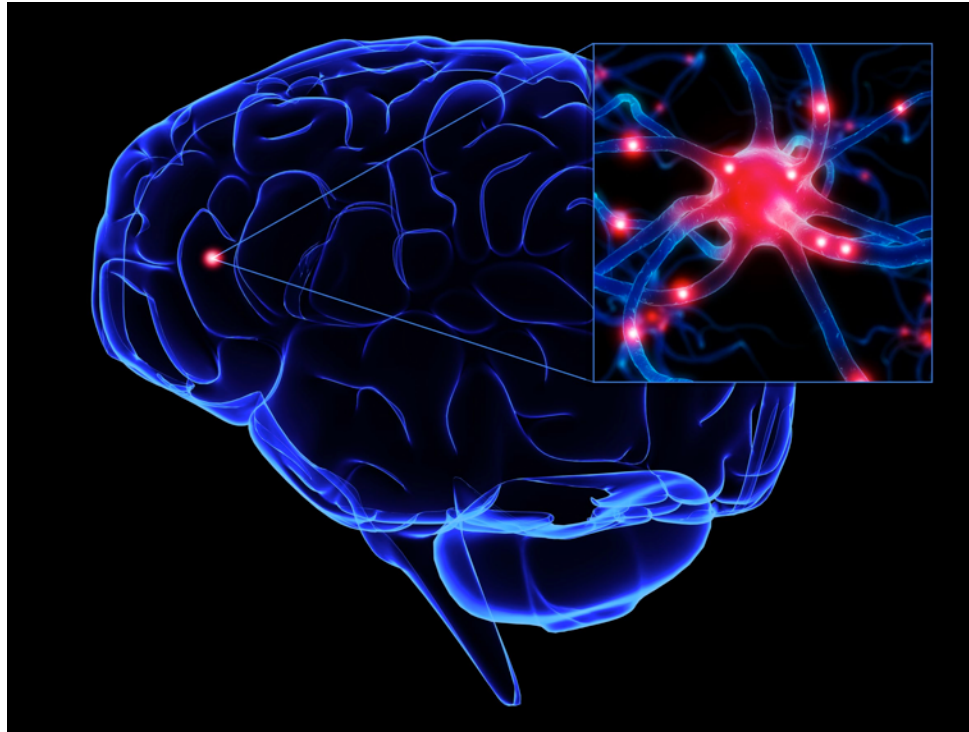
TuRnEr CoNsTrUcTiOn CoMpAnY



It Takes Effort and Practice to Improve



Designed to Resist Change



Respect For Humanness





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