THANK YOU FOR JOINING TODAY’S WEBCAST
What is your current level of understanding of Lean for construction?

• No exposure
• Some
• Well versed
What is your role in the industry?

• General Contractor
• Designer
• Subcontractor
• Other
What value do you see Lean providing to you personally?

- Work more efficiently
- Improve project delivery
- Eliminate wasted motion
- Other (specify)
KEY SUCCESS FACTORS

- Preconstruction
- Safety
- Schedule
- Change Management
- Quality
- Close-out
HISTORY...

- 1980 - Toyota Production System
- 1990’s – Lean Construction was Established
- 1998 – Present – LPC (Lean Project Consulting), and Last Planner were established.
Produce and Stock Only What’s Needed by the Customer
Lean: Waste/Value in Construction vs. Manuf.

(Design &) Construction
- Waste: 57%
- Support Activities: 33%
- Value Added: 10%

Manufacturing
- Support Activities: 26%
- Waste: 12%
- Value Added: 62%

Source: US Bureau of Labor and Statistics
What Lean Is...

Through continuous improvement and respect for people, delivering ever-increasing value to customers while eliminating waste.
Consider how a Lean Operations Strategy can improve an architectural and engineering practice...Deliver Lean Design:

"...a creative process to prevent error and invent value."

_This is Lean_ suggests that resolving sources of variation in the design process – inherently recursive and iterative – can deliver both required function (meeting the client's need) and aspirational form (meeting the architect's need) within the constraints of time and money.

-An Architect's Interpretation, by Sam Spata, in _This is Lean_, (Nicholas Modig & Par Ahlstrom, 2015)
...or if you prefer...

Lean is nothing more than common sense, rigorously applied.
7 Values – Create Value for the Customer

- Correct price
- Timely response
- Valued products
- Flexible solutions
- Reliable supply
- Ethical supply
- Trusted quality

(“7 wastes.... what about 7 values?”, from The Joy of Standards, ©James Sandfield, 2016)
What is a ‘Lean’ product?

Custom-designed,

Low batch size/inventory,

Material efficiency,

Designed at the point of innovation,

Manufactured at the point of desire
What is ‘Lean’ production?

Providing the **right** information,

And the **right** materials,

To the **right** person,

In the **right** place,

At the **right** time
What is ‘Lean’ demand?

Providing a customized product,
Made of the desired materials,
Delivered where the client wants it,
When they want it
At a price they are willing to pay
Variation in Production Systems

- Client decision-making
- Code compliance
- AHJ review
- Systems/Component information
- Manpower planning
- Value engineering
- Scope/Process differences
- Studio/Personnel differences
Lean Supply Chain and Assembly

- Develop decision/responsibility matrix – who decides what and when
- Plan decisions & dependencies
- Plan manpower according to workflow
- Provide appropriate expertise
BIG CHALLENGES!

- Developing trust
- Inexperience in making commitments for planning
- Poor promising

Learn in Action
Continuous Improvement
Lead by Example
Connect the silos

- Minimize handovers
- Get involved early, stay involved late
Strategic Planning

**SHOULD**

- **MASTER SCHEDULING**
  - Set milestones
  - Identify long leads

Production Planning

**SHOULD**

- **PHASE SCHEDULING**
  - Pull workflow and hand-offs

**CAN**

- **LOOKAHEAD PLANNING**
  - Builders plan crew flow
  - Identify and remove constraints
  - Make reliable promises to deliver next week’s work

**WILL**

- **WEEKLY WORK PLANNING**
  - Measure PPC for previous day
  - Confirm today
  - Remove obstacles for tomorrow

**DID**

- **DAILY CHECK-IN**

Last Planners ...

- Pull workflow and hand-offs
- Builders plan crew flow
- Identify and remove constraints
- Make reliable promises to deliver next week’s work
- Measure PPC for previous day
- Confirm today
- Remove obstacles for tomorrow
Projects consist of phases

Phases consist of processes

Processes consist of operations

Operations consist of steps

Steps consist of motions

Motions create the product
Last Planner System

MAP

Master Schedule

Phase Scheduling (Six Weeks Prior to Start)

Standard Processes

Lookahead Planning Out 6 Weeks Done Weekly

Commitment Planning & Learning (Check In)

Execute Work
CONTINUING THE DISCUSSION

DOWNLOAD the eBook:

*Getting Started with Lean Construction*

GET THE GUIDE