24TH ANNUAL

24TH LCI CONGRESS
OCTOBER 18-21

LEAN GUMBO: THE RIGHT INGREDIENTS FOR PROJECT SUCCESS

Last Planner System® Design Practical Application

October 18, 2022

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Learning Objectives

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Participants will gain a deeper understanding of the foundational principles of each of the 5 connected conversations of LPS® in Design.

Participants will engage in all the connected conversations of LPS® from Milestone Planning to weekly or daily interaction through practical application.

Participants will experience the process of work register management of commitments and to identify/remove constraints.

Participants will gain practical insight to improve work hand off reliability utilizing LPS tools and metrics.

Learning Overview

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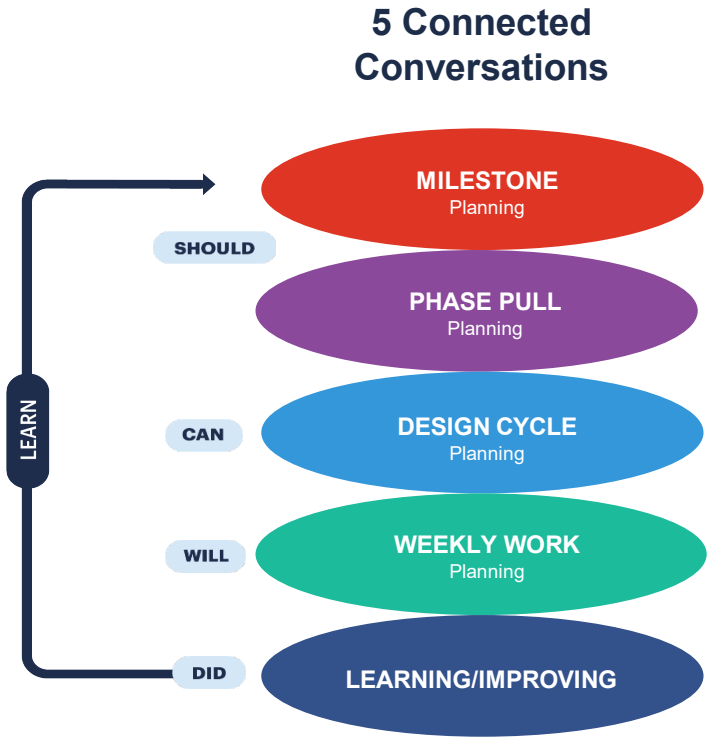
1. Why Last Planner System
2. LPS Overview
3. Milestone Planning
4. Phase Pull Planning
5. Design Cycle Planning
6. Weekly Work Planning
7. Learning/Improving



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Rules of Engagement

- This is a safe zone
- Everyone has equal status
- Speak up and share your ideas
- Actively listen to others
- One conversation at a time
- Use E.L.M.O.
- Silence phones
- Be focused and engaged
- Stay on time
- Have fun!

Last Planner System in Design

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1:00 PM – Introductions

1:05 PM – Last Planner System® Design

2:45 PM – Break 15 Minutes

4:50 PM – Wrap Up & Plus/Delta

5:00 PM – Adjourn

Lean Journey to Mastery

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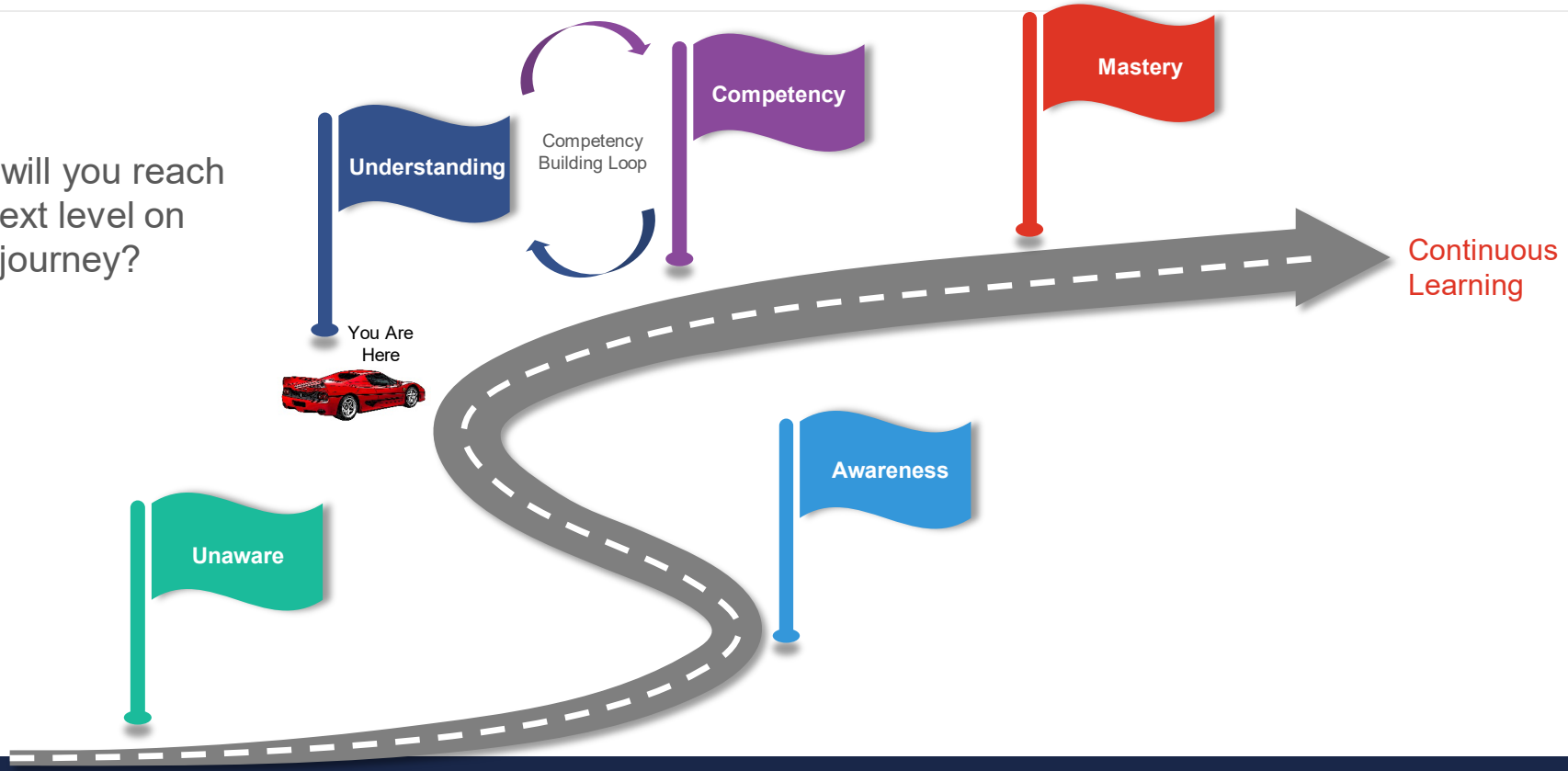
How will you reach the next level on your journey?



Last Planner System Trademark

The Last Planner System® is a registered trademark of the *Lean Construction Institute*:

- Last Planner System®
- LPS®
- Last Planner® (In reference to the person not the system)

Team Formation

Assign Team Roles:

Architect

Civil & Landscape

Structure

MEP

Interiors

Owner/End-User

LPS In Design Key Principles

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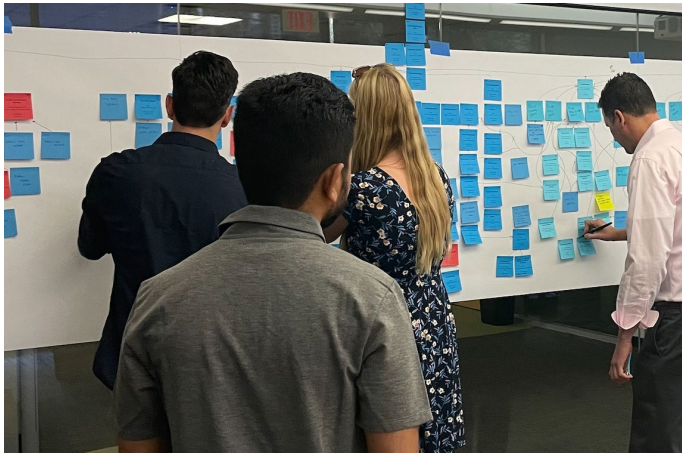
Experienced Lean practitioners state that LPS aids in:

- Align the team in information flow, controlling how information gets shared.
- Really understand needs to start an activity (what releases work?)
- Identifying key decision points – what info is needed & when. Who is needed and when to support decisions.
- Using pull to value stream map milestones, hot topics and key deliverables.
- Aligning the team with the owner's information sharing and resources needs with stakeholders.



Courtesy of Devenney Group

5 Connected Conversations Of LPS

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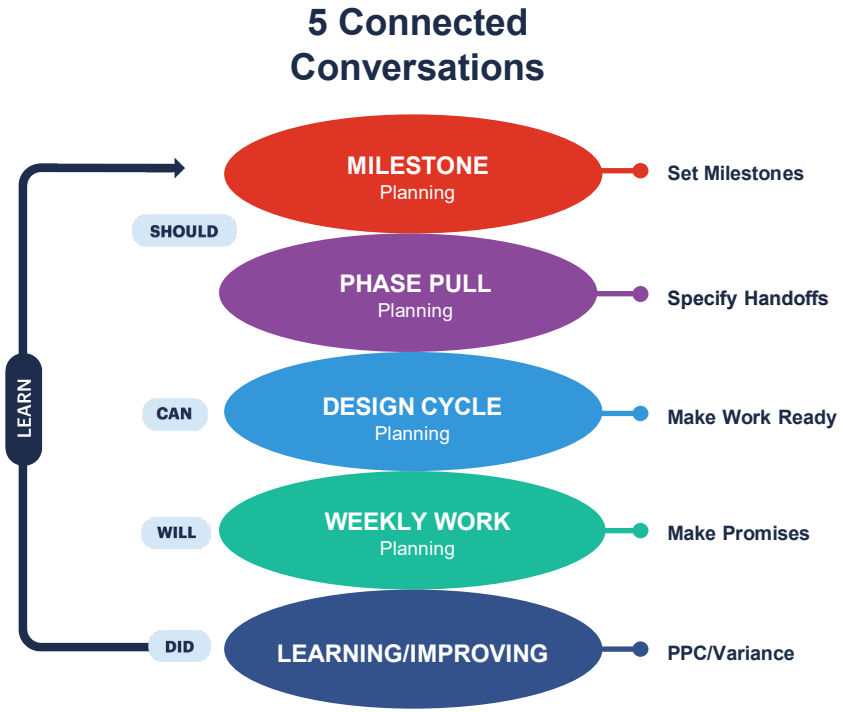
LPS is a commitment-based system integrating 5 connected planning conversations:

1. Milestone Planning (Should)
2. Phase Pull Planning (Should)
3. Design Cycle Planning (Can)
4. Weekly Work Planning (Will)
5. Learning & Improving (Did/Learn)



The Project – Heartland Middle School

The following slides outline “The Project”
Business Case & relevant information

Simulation Project

Business Plan:

Business Plan
Heartland Middle School

Owner Business Case

Owner:

Heartland City

Mission Statement:

Shaping tomorrow today.
Elevating our community by elevating our kids.

Owner Business Case

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- $39MM Allowable Cost
  - Land, entitlements & utilities to site already established
- School must be open for academic year
  - (building ready by July for ~Mid-August class start)
- Design team has input to project delivery approach and will help owner group with relevant decisions/selections

Allowable Cost Breakdown

Land is owned, entitlements and utilities to site complete

$39,000,000 Total Project Funding

Including:

- Design
- Construction
- Community Engagement
- FF&E, Soft Costs (Permitting, etc)

Owner's Program

	Department		IU's		Area
A	Administration		1		4,380
B	Student Services		0		2,500
C	Learning Commons		1		8,150
D	Basic Instructional Area		43		44,990
E	Career Explorations		7		11,860
F	Music & Theater		4		17,505
G	Physical Education		3		18,960
H	Food Service		0		10,610
J	Utilities & Services Areas		0		9,560
	Total Instructional Units (IU's)		59		
	Total Net Square Footage				128,520
	Assumed Grossing Factor				1.33
	Estimated Gross Square Footage				170,932

Note:

Other project required auto parking for 71 IU at 250 spaces and bus parking at 32 spaces.

Project Site

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- 6.8 Acre Parcel
- City has supplied main utilities to the site

Owner Provided Value/CoS

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Quantitative

- Energy efficient design
  - Low monthly utility cost
  - High % of daylighting
  - Innovative water management system
- Meet the ***Allowable Cost***
- 25% workforce inclusion (Underemployed / Community Residents – min. 10% each)
- Community engagement
  - Regularly engage with school board and community member events
- Regularly (weekly) updated progress signage at visible location
- Social Media Updates (min. 3 per week)
- Robust, proactive protection of the safety of our workers and community:
  - Weekly team safety walk-throughs
  - Short-falls remediated immediately (no more than 24 hours)
  - System for immediate reporting of safety problems identified by workers and community members
- All team members earn a fair profit
- Community stakeholder involvement in design process (e.g. advocate/advisory board involvement in design)

Team-Developed CoS: Activity

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Team Developed Conditions of Satisfaction

- Review Owner Values/Mission Statement
- Develop CoS in alignment & incorporate team objective

- Ask us anything

10 Minutes Group Exercise

Milestone Planning

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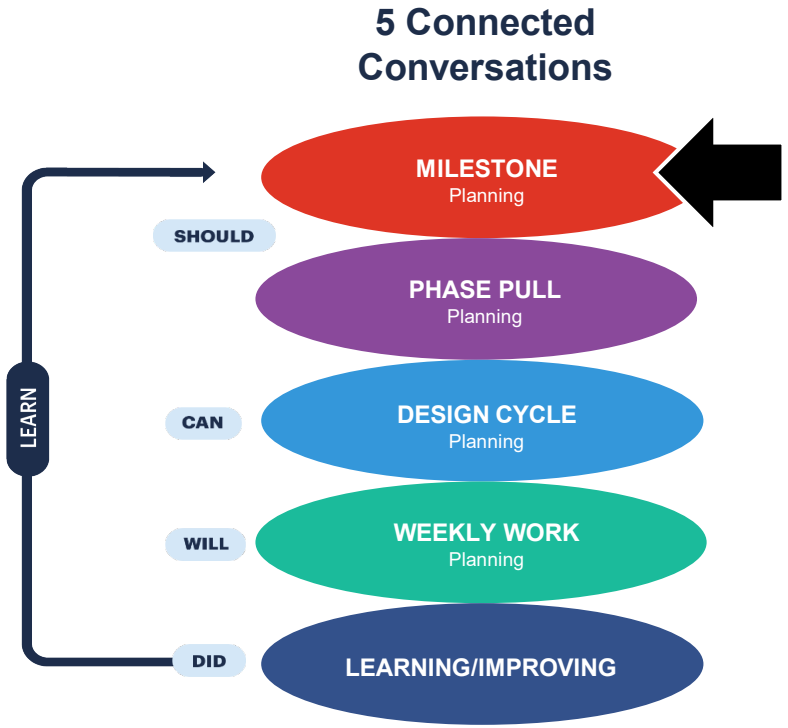
The first conversation of LPS is *Milestone Planning.*

The goal of Milestone Planning is for the team to align on and *set the milestones* for the project.

This starts the we *"should"* be able to do conversation.



Re-Defining Design Milestones

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Traditional Milestones:

- Percent Complete Sets
  - 30/60/90
- Schematic, Design Development, Construction Documents

Redefined Milestones:

- Handoffs of information
- Decisions, activities and deliverables to meet a specific release of part of the project.

Creating The Milestone Plan

Courtesy of : The ReAlignment Group

Think differently Milestone Planning

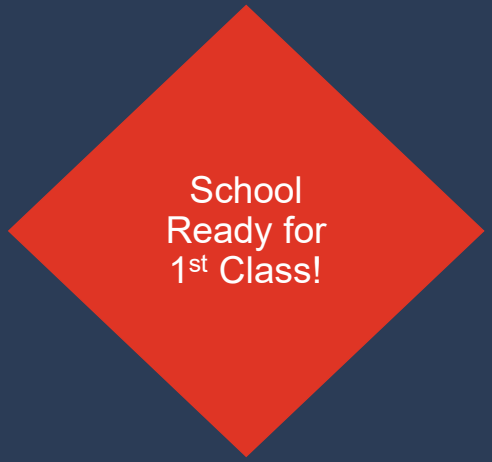
Design Cycle Planning – Team Thinking Change

- Construction Pulling Design – Integration
- As procurement overlaps design, what things need to get ‘frozen’ earlier and how do we define
- No pencils down review periods
- How it looks on IPD vs non-IPD flow of design
- Design for releasing work, releasing other team members – vs traditionally described sets.

Milestone Exercise

Develop Project Milestone Plan

- Color Code by phase/type of activity
- Pull back from final milestone
- Stay high level
- Refrain from:
  - 30/60/90
  - SD/DD/Final CD
  - Incorporate cost feedback
- Have fun!



45 Minutes Group Exercise

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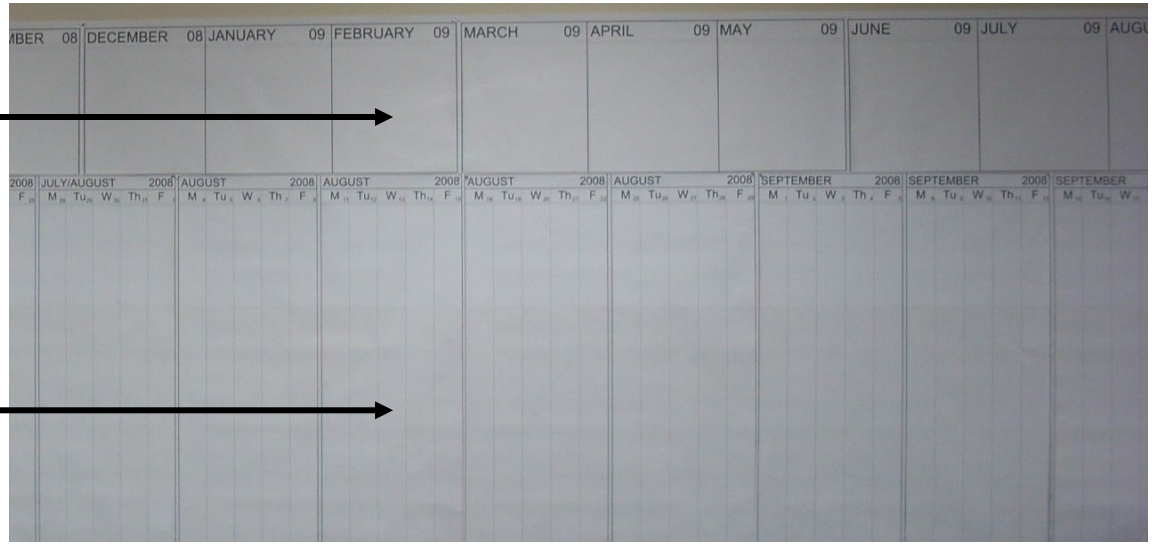
Setting Up To Plan

This set up includes a time scale (months) to transfer the Milestone Plan to once dates are determined.

This set up includes a time scale (weeks & days) for the next level Phase Pull Planning.



Phase Pull Planning

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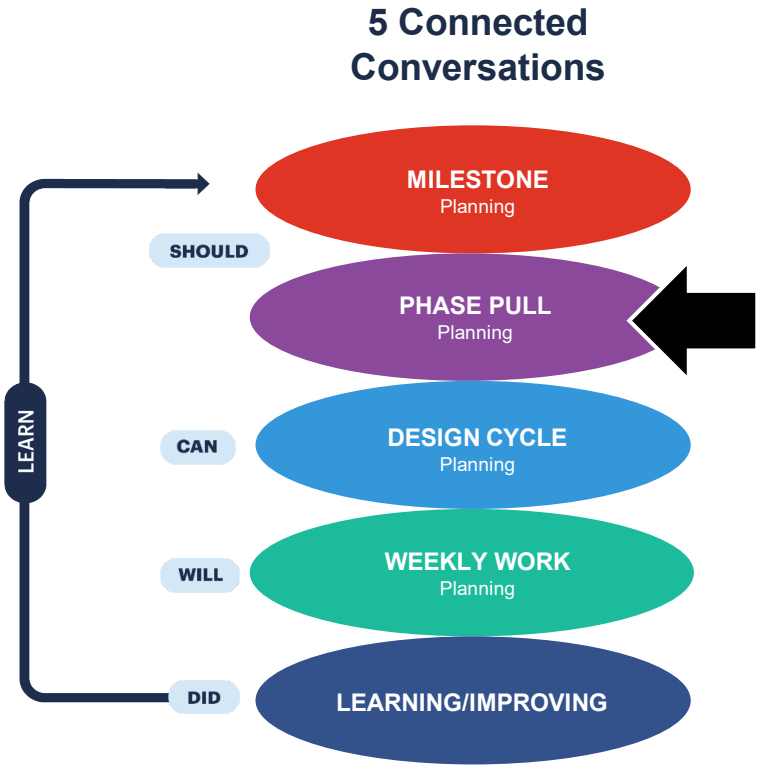
The second conversation of LPS is *Phase Pull Planning.*

The goal of Phase Pull Planning is for the team to determine the key *handoffs* of work or information needed to deliver a milestone.

This continues the we *"should"* be able to do conversation.



Uses of Pull in Design Planning

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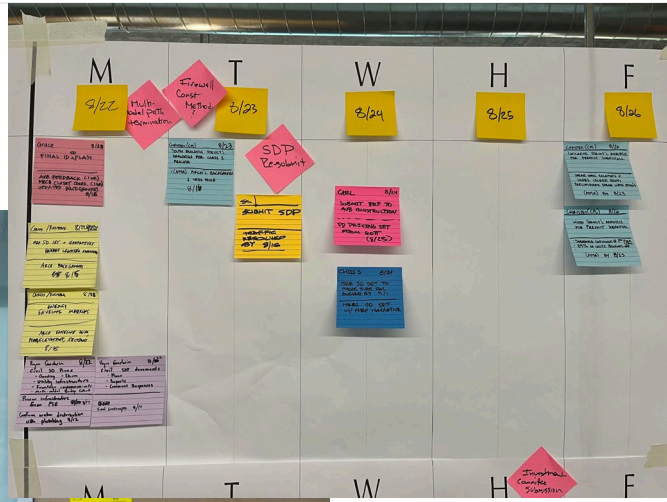
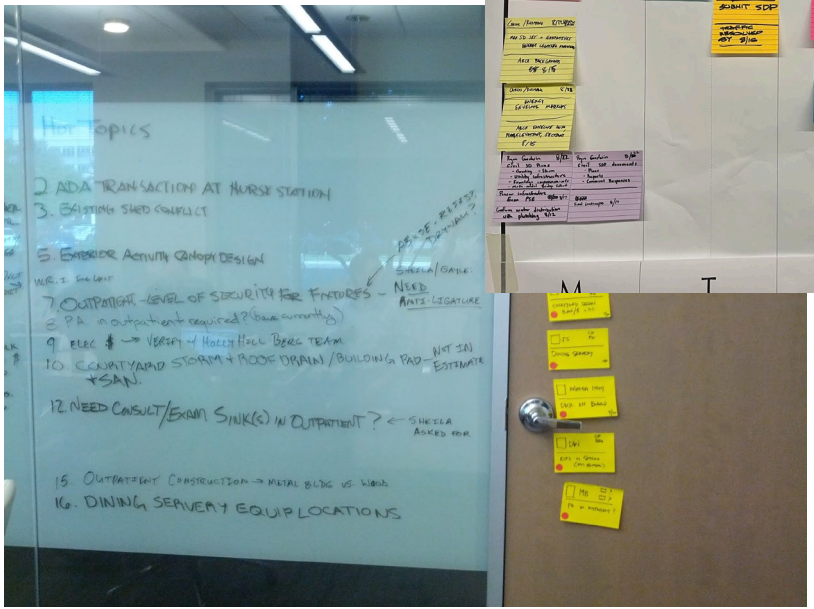
- Deliverables
- Hot Topics/Issues
- Key Client Decisions
- Production Plans





Think differently Phase Pull Planning

Design Cycle Planning – How does this change the design thought process?

- Organized process for defining design decisions
- Cycle based planning – different order than what we're used to
- Different packages progress at different speeds
- List of decisions for each deliverable

Think differently Phase Pull Planning

Design Cycle Planning – How does this change the design thought process?

- focus on what each package is needed for and what decisions are needed for each (are we giving customers more than they need?)
- Knowing what can wait
- Budget according to schedule
- Be comfortable with chaos

Key for Pull / Work Cycle Tags

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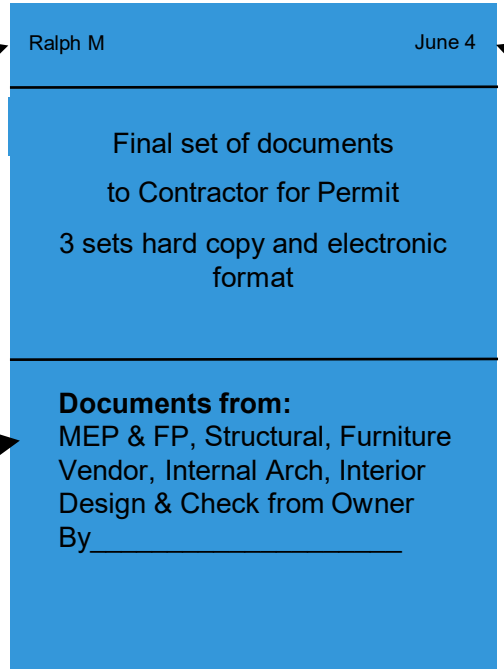
The ***Performer's*** name (not company) is placed on the tag.

Note additional information that adds clarity to the plan includes ***who*** a request is made of and the ***date*** the request is needed.



Upon negotiation of the Conditions of Satisfaction including a ***delivery date***, the date is noted.

Design Cycle Planning

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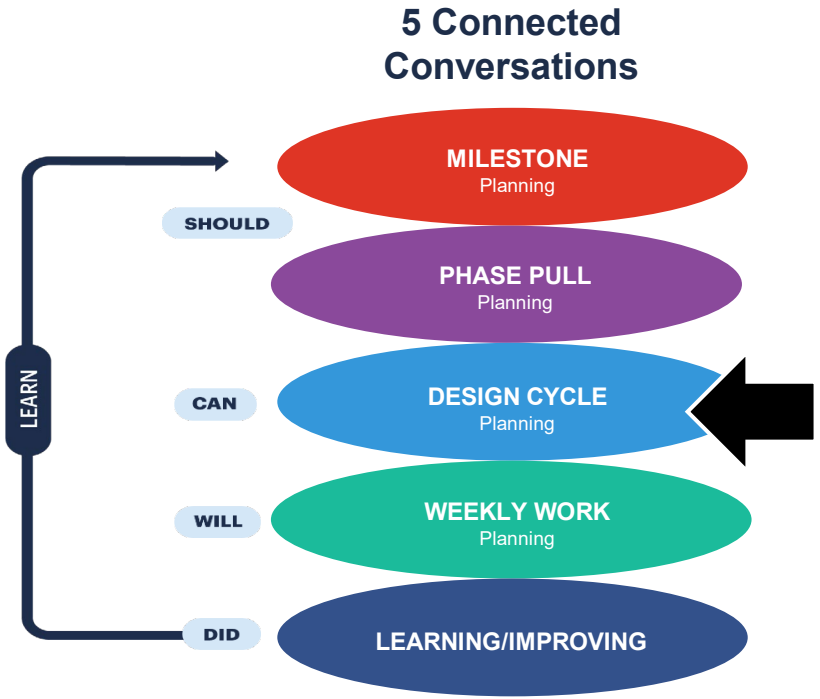
The third conversation of LPS is *Design Cycle Planning.*

The goal of this level is to continuously *advance the level of detail* of the Phase Pull Plan in 2-3 week cycles of time.

The conversation is we *"can"* do this.



Advancing The Plan

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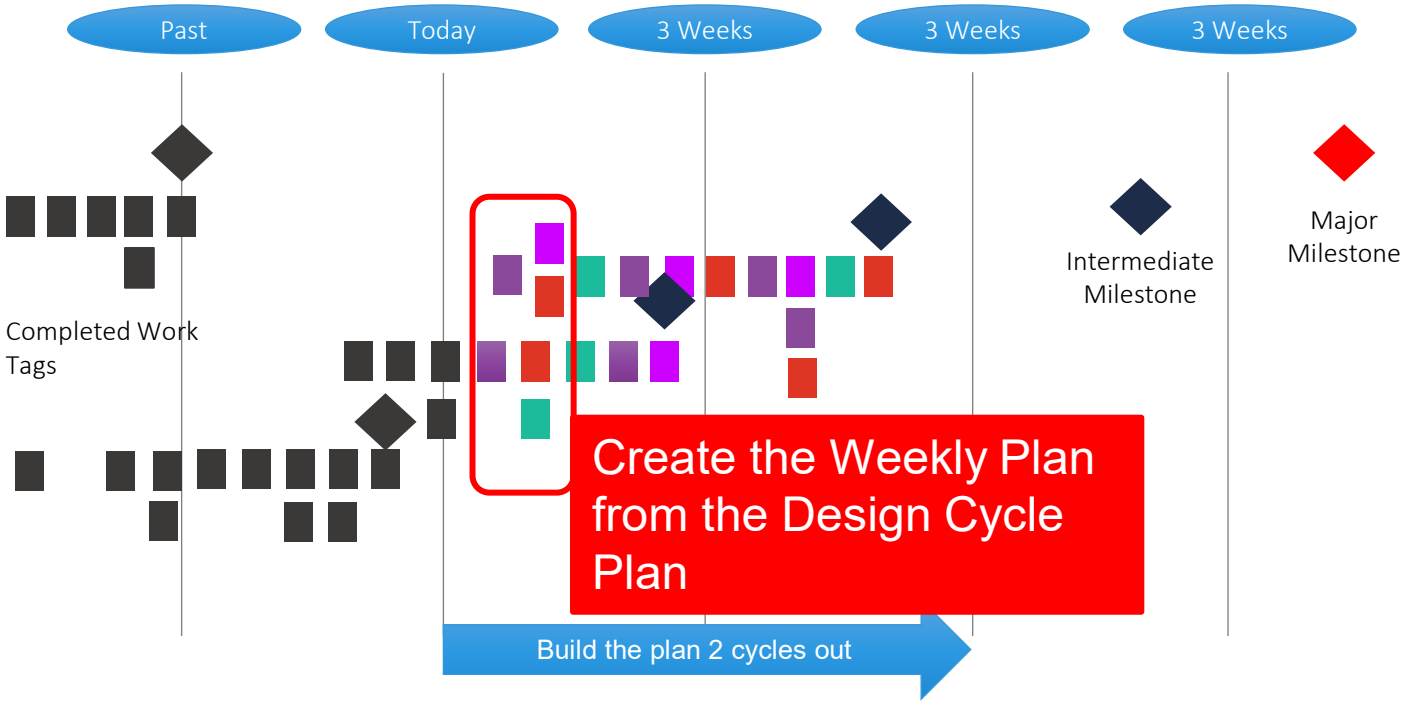

Work Cycle Planning

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Develop Design Work Cycle Plan

Name	Deliver Date
MY PROMISE •What I will Deliver •Be specific •Small batch	
MY REQUEST (S) •What I need from others •Be specific •Person /date	

- Put a date scale at top (Weeks)
- Pick a milestone that involves many participants or Hot Topic/Issue
- Color Code by discipline
- Define the milestone outcome
- Pull back from the milestone

30 min Groups at Wall

Weekly Plan Check-Ins

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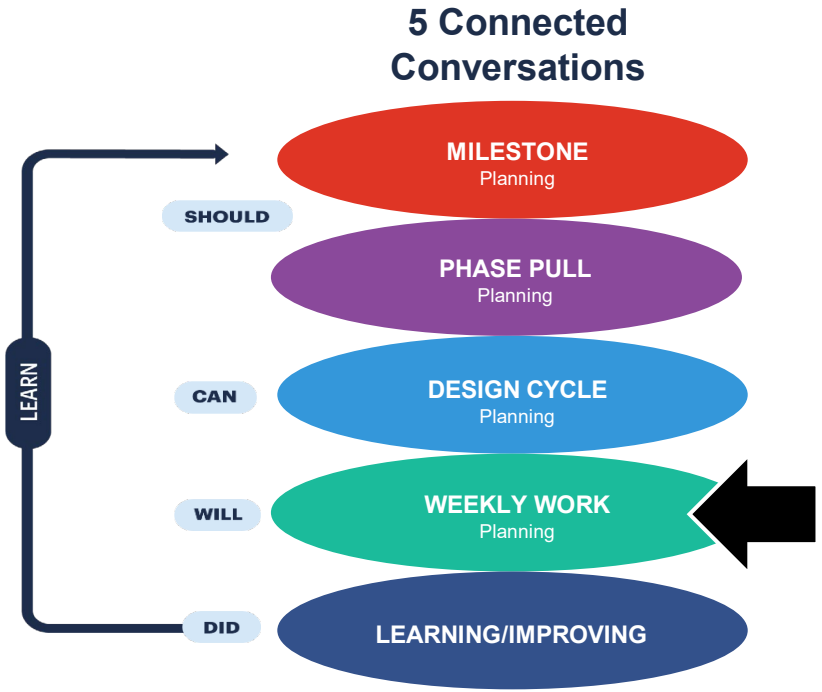
The fourth conversation of LPS is *Weekly Work Planning.*

The goal of this level is for the Last Planners to *check in on/adjust commitments* for the current week.



The Work Register

The **Work Register** is a combination of :

- The **Commitment Log** to stay on track with the commitments made.
- The **Constraint Log** to track the roadblocks that arise for any commitment.

PROJECT: **CONSTRAINT:**

Milestone	Location	Commitment	Performer	Plan Date	Estimated Effort– Days	Task Status	Constraint	Responsible Individual	Resolution Needed	Resolution Promised Date	Date Resolved/ New Plan

COMMITMENT LOG

CONSTRAINT LOG

Conducting Check-in Sessions

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Check-in Sessions are short, high energy touch points conducted standing.

Each person answers:

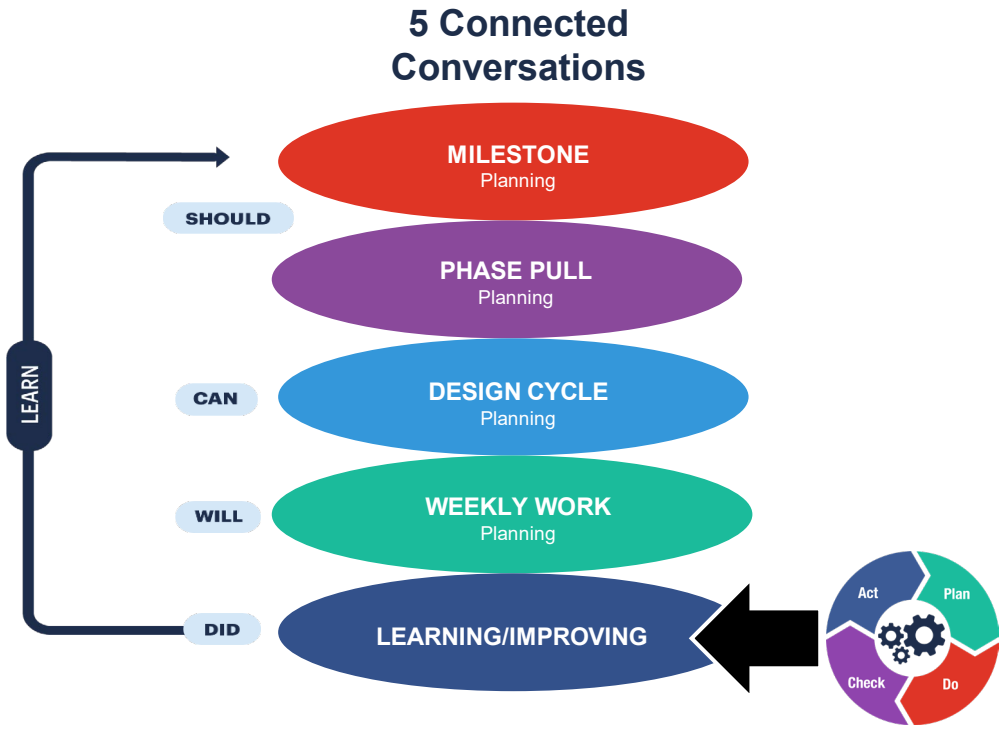
1. What promises I fulfilled. (Declaring Done)
2. What promises I will fulfill. (Managing Commitment)
3. What are my constraints or concerns. (Constraint management)
4. What is the status of my commitments overall. (Am I on track).

Learning/Improving

The fifth conversation is *Learning/Improving*.

The goal is for the team to *learn* from the cycle and take *actions for improving* going forward fulfilling PDCA.

The conversation is what we *"Did"* and *"Learned"*.



Learning From Check-in Sessions

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The *Commitment* and *Constraint Logs* are updated live during the Check-in Session.

The *Percent Plan Complete* (PPC) is calculated for the period or week.

PPC is the basic measure of how well the *planning system is working*

PROJECT: **CONSTRAINT:**

Milestone	Location	Commitment	Performer	Plan Date	Estimated Effort–Days	Task Status	Constraint	Responsible Individual	Resolution Needed	Resolution Promised Date	Date Resolved/ New Plan

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Reasons for Variance

Design Phase:

1. Overcommitted
2. Miscommunication
3. Previous work not complete
4. Change in work plan
5. Outside constraint
6. Resources not available
7. Other

Weekly Work Register Check-In

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“Stand & Deliver”

- Round robin report out
- Track variances

10 min Groups at Wall

Discussion Question

How to Implement?

What new actions or ideas that you learned today can you take back to your project?

10 min table conversation

Lean Journey to Mastery

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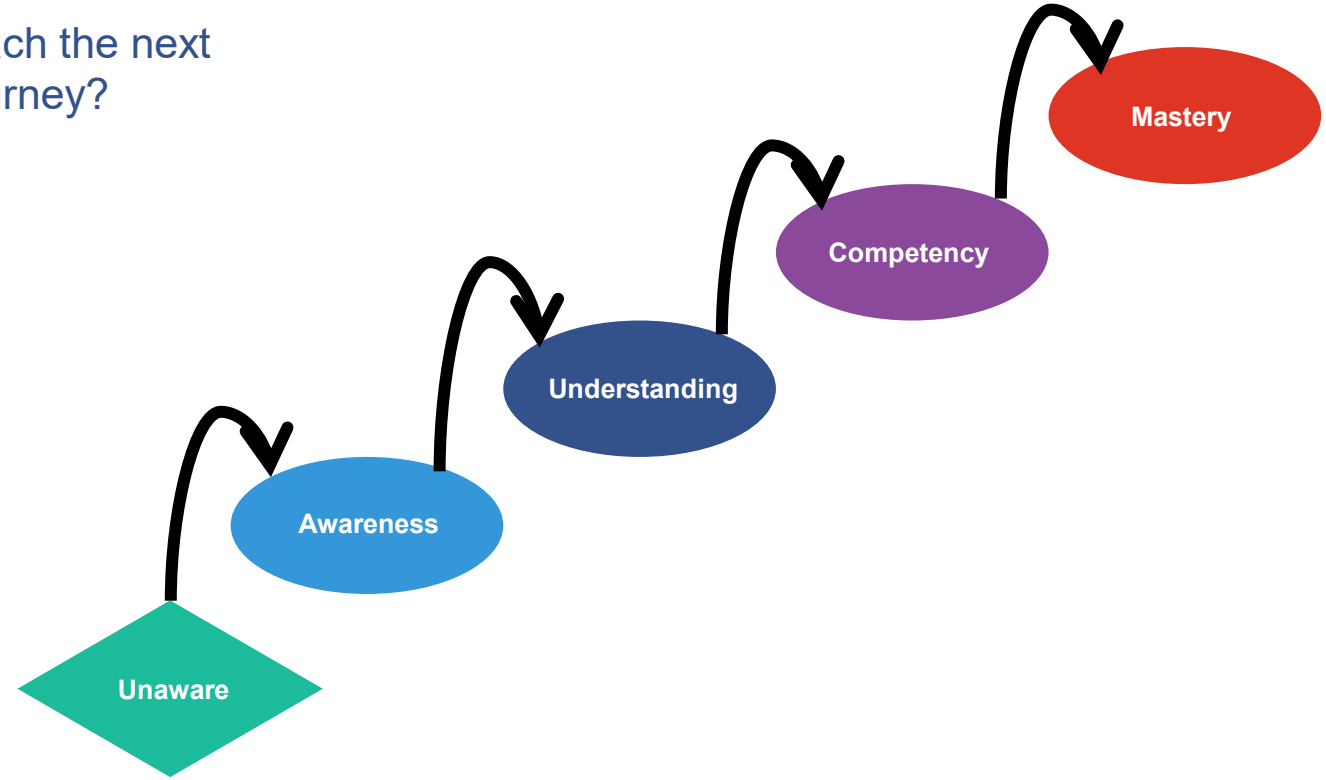
How will you reach the next level on your journey?



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More on Learning

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Books:

Events:

- Local Community of Practice
- Congress (October)
- Design Forum (May)

Start learning now:
www.LeanConstruction.org

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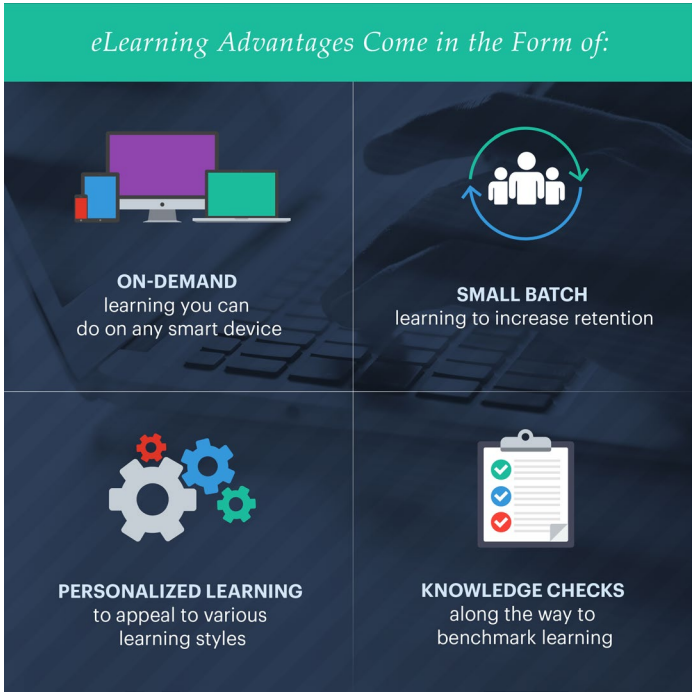
eLearning

- **Learn on your own time** without taking time off project work
- **Increase knowledge retention by up to 60%** with interactive, small-batch learning
- **Access field resources** to use with teams
- **Earn 1.5 CEUs** (self report to AGC CM-Lean and/or AIA)
- **Incentivize with LCI badging credentials** for email signatures and a certificate of completion
- **Save money** by eliminating instructor and travel expenses
- **Enterprise-level model:** unlimited access to all our eLearning courses directly from your own internal Learning Center or Learning Management System.



eLearning Courses

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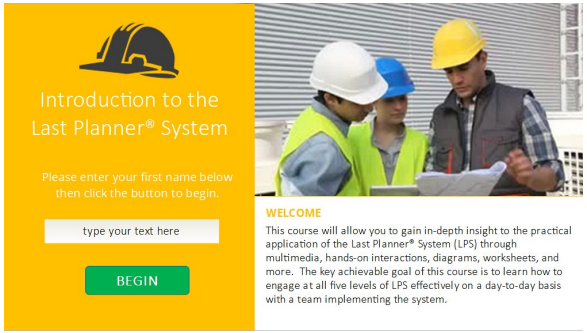
Available now:

- Introduction to the Last Planner System®
- Introduction to Lean Project Delivery
- Lean in the Design Phase
- Effective Big Room
- Target Value Delivery



Questions?

Learning Objectives Review

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Conduct Plus/Delta

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Plus: What produced *value* during the session?

Delta: What could we *change to improve* the process or outcome?