Target Value Design

Lessons for Project Delivery
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Lean Construction

- Been around since 1990
- Started with the Last Planner® System innovation by Dr. Glenn Ballard
- Advanced with Pull Planning created by Greg Howell, Executive Director, Lean Construction Institute, www.leanconstruction.org
- Over 500 peer-reviewed papers presented at 17 annual International Group for Lean Construction conferences, www.iglc.net

Lean Construction

- Started in refinery and power plant construction
- Prominent today in hospital design and construction
- Lean Construction Institute has 8,000 members and 8 local chapters with 8 more chapters forming
- Catalyst for Integrated Project Delivery (IPD)

Last Planner Highlights

- Highly collaborative ongoing planning system
- Melds planning with execution and project controls
- Articulates and activates the network of commitments
- Counteracts the compounding of dependence with variation producing reliable workflow
- Should – Can – Will – Did

Some Lean Project Principles

- Make commitments at the last responsible moment.
- Only start work when it is in the condition that it can be finished.
- Project performers develop the plan.
- Plans are perishable; replan often.

Major Influencers

- Goldratt's matchstick exercise from *The Goal*
- Fernando Flores' language-action perspective
- Failure of reductionistic and determinstic planning
- High degree of specialization in design and construction
- Outrageously high injury rates

Origins of Lean for Design

- Last Planner wasn't working for design
- *The New New Product Development Game* by Takeuchi and Nonaka
- Target costing in product development
- *Product Development for the Lean Enterprise* by Michael Kennedy
- Building information modeling

9 Foundational TVD Practices

1. Engage deeply with the client to establish the target value
2. Lead the design effort for learning and innovation
3. Design to a detailed estimate
4. Collaboratively plan and re-plan the project
5. Concurrently design the product and the process in design sets

9 Foundational TVD Practices

1. Design and detail in the sequence of the customer who will use it
2. Work in small and diverse groups
3. Work in a Big Room
4. Conduct Retrospectives throughout the process

Responsibility-based Project Delivery

- Agile adaptation of Last Planner for design work
- Differences:
  - Create a backlog of work items
  - Workplans 1 – 3 weeks long
  - Use a cumulative flow diagram for tracking

TVD Practical Application

- Construction expertise guides design
- Traditional design is delayed to explore multiple design sets
- A3 (11” x 17”) summaries of design studies
- Small-batch design activity

5 Big Ideas Reshaping Design and Construction

- Collaborate, Really Collaborate
- Conduct the project as a network of commitments
- Increase relatedness of project participants
- Optimize the whole
- Tightly couple learning with action

TVD Outcomes

- Lean design takes less time
- Lean design has fewer loop-backs
- Lean design is rewarding for designers
- Design is everyone's role
- Impossible goals are now possible

What We've Learned

- Embrace the contradictions of lean
  - Go slow so you can go fast
  - Stop to fix the process to increase throughput
  - The perfect plan is discovered not created
- Focus on the tool users not the tools
  - "Let learning lead" (Matt May)
  - PDSA *everything*
  - Problems first

Challenges

- Replacing hubris with humility
- Attending to the process not the results
- Abandoning our theories of motivation
- Making the time for problem-learning
- Reframing the manager role in the face of the autonomous workforce

Recommended Reading

- *Chasing the Rabbit*, by Steven Spear
- *Extreme Toyota*, by Osono, et al
- *Ready, Set, Dominate*, by Kennedy, et al
- *The Elegant Solution*, by Matthew May
- *Managing to Learn*, by John Shook
- *Moneyball*, by Michael Lewis

Questions