Applying Lean Construction Principles to Project Information Flow

Zofia K. Rybkowski, PhD
Assistant Professor
Department of Construction Science
Texas A&M University

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Do you know where the inefficiencies are?
Owner in town

Can you see how to make this more efficient?
How do you think you can make this process more efficient?
The Lean Ideal: PARALLEL FLOW!
The Empire State Building: the LEAN IDEAL!

If you are a project manager, ask your team to help you identify:

What is keeping us from achieving the lean ideal of PERFECT FLOW?

- Where are the **bottlenecks**?
- Let’s identify the **constraints** & brainstorm how to overcome them!

How to achieve FLOW

*Image source credit: http://heinzeudemo.opalcontent.com/en/About/Trivia*
What are the key process **wastes**?

- Defects
- Over-Production
- Waiting
- Transporting
- Movement
- Inappropriate Processing
- Inventory

Eliminate waste

*Image source credit: http://www.turbosquid.com/3d-models/metal-trash-c4d/511839*
What do you need to assemble a sofa?

- Materials
- Labor
- Tools & Equipment
- Space
- Predecessor work
- External Conditions
- Information

Systematically identify and remove constraints

Image source credit: http://www.ourhomefromscratch.com/tag/ikea/
Metrics of success

The three legged stool of construction

Photo source credit: http://c12solutions.com/blog1/sustainability-green-business-models-fdu/
With TRADITIONAL delivery systems

If cost performance is improved

Safety performance worsens

and/or

Time performance worsens

and/or

Quality worsens

and/or

Morale worsens

Image source: http://etc.usf.edu/clipart/26600/26614/pulleysysten_26614.htm
versus

With LEAN PROJECT delivery systems

If cost performance is improved

Safety performance improves
and/or
Time performance improves
and/or
Quality improves
and/or
Morale improves
Reduce Waste and Add Value using Continuous Improvement in a Culture of Respect

Use *Root Cause Analysis* to figure out how to improve
One definition of Lean Construction

Flow & Value

Lean construction

The Last Planner System for Production Control

PLANNING WALL
Lean Training

Introduction: Lean History, Concepts & Methods

Basic Training
- Value Stream Mapping
- 5S
- Reliable Promising
- Learning from Experiments & Breakdowns
- Choosing by Advantages
- A3 Reports

Lean Project Delivery
- Last Planner Process
- Target Value Design
- Design Management
- Supply Chain Management
- Design of Construction Operations

Lean Management for Supervisors
- Leader Standard Work
- Daily Accountability Process
- Visual Controls
- Developing People
- Leading Change
- Problem Solving and Process Improvement
- Lean Management System

Plan-Do-Check-Act
Remember: the Empire State Building represents the LEAN IDEAL!

Image source credit: VICOSOFTWARE
Let’s return to our trench example...
How might parallel flow be achieved for infrastructure?

For more information, contact:

Zofia Rybkowski, PhD
Assistant Professor
Department of Construction Science
Texas A&M University
zrybkowski@tamu.edu
979-446-2228
Where do you think are the greatest **bottlenecks** & **constraints** on highway projects?