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LEAN CONSTRUCTION EDUCATION PROGRAM – VIRTUAL EDITION

AGC Lean Construction Education Program

Everyone related to the construction process has incentive to get the project done faster and at a lower cost - from the project owners who want to see tangible results for their investment to the contractors and designers who want to do their job well and move on to the next project. Lean Construction is based on the holistic pursuit of continuous improvements aimed at minimizing costs and maximizing value on a construction project.

To help contractors develop the knowledge needed to build lean, the Associated General Contractors of America developed the Lean Construction Education Program. All construction professionals will learn the building blocks necessary to transform their projects and companies into lean operating systems. Completion of all 7 modules also allows the opportunity to challenge the AGC Certificate of Management – Lean Construction exam and earn the CM-Lean designation. All course work and the exam are now being offered in a virtual delivery format!

LEAN CONSTRUCTION METHODOLOGY

The implementation of Lean tools and methods in a project-based environment – Lean Construction – has the potential to significantly improve budget, schedule and quality outcomes in a construction project.

Projects with contracting arrangements ranging from design-hard bid-build to design build have a level of risk to the project stakeholders in terms of cost and schedule. The potential for strained relationships developing between the owner, contractor and sub-trades exists which often results in conflicts leading to increased variation and a lack of reliability and predictability in workflow. When this occurs, we see an increased the level of waste on the project and adversely affected schedules and budgets.

To mitigate these issues, a disciplined and consistent effort to control workflow variation, reduce waste, increase productivity and drive continuous improvement is required. The content of the LCEP addresses these issues and provides participants with a sound fundamental knowledge of lean construction tools and methods.

LEAN CONSTRUCTION EDUCATION PROGRAM MODULES

Unit 1: Variation in Production Systems is an introductory course in the Lean Construction Education Program.

This course teaches the concept of variation and you will be able to:

- Define the different types of variation
- Explain the concept of throughput
- Distinguish the concepts of throughput and work in progress
- Describe the role of variation in production operations
- List sources of variation in construction settings
- Explain & contrast variation mitigation techniques

Unit 2: Pull in Production is a course that explains the concept of pull as a means to reliable production workflow.

Following this course, you will be able to:

- Compare batch-and-queue and continuous-flow production systems
- Distinguish push systems from pull systems
- Explain & describe the impact of pull strategies on construction production systems

Unit 3: Lean Workstructuring is the first of two units that introduces the Last Planner® System (LPS). This system was developed by the Lean Construction Institute (LCI) to plan projects in a way that produces predictable workflow and rapid learning. This course describes the process of Lean Workstructuring.

Following this course, you will be able to:

- Apply the methods and tools utilized in pull planning
- Describe the concept of Lean Workstructuring
- Outline the desired outcomes of Lean Workstructuring
- Describe the characteristics and application of the Last Planner® System

Unit 4: The Last Planner® System is the second of two units introducing the Last Planner® System (LPS). This system was developed by the Lean Construction Institute (LCI) to plan projects in a way that produces predictable workflow and rapid learning. This course shows how to conduct make-ready and weekly work planning sessions.

Following this course, you will be able to:

- Apply the Last Planner System on a project;
- Hold make-ready and weekly work planning sessions; and

- Calculate, track and analyze percent plan complete for a project

Unit 5: Lean Supply Chain and Assembly is a course that explains the concept of lean supply chain and assembly.

Following this course, you will be able to:

- Differentiate between traditional procurement practices and lean supply chain applications;
- Identify waste and value-adding activities within the supply chain and assembly;
- Evaluate the impact of using lean supply chain on waste elimination, continuous flow and site operations pull;
- Identify strategies needed at the project and company levels to support the lean supply chain;
- List examples of process improvements to the lean supply chain;
- Expand lean beyond the individual project; and
- Create a value stream map to diagnose and improve the supply chain.

Unit 6: Lean Design and Pre-construction is a course that explains the concepts of value-based management, lean in the design process and relational contracting.

Following this course, you will be able to:

- Distinguish between the varying definitions for design.
- Define value and commonly used methods to maximize it.
- Discuss waste and commonly used methods to minimize it.
- Differentiate between traditional project methods and lean design.
- Explain the various lean tools used in design and how to deploy them.

Unit 7: Problem-solving Principles and Tools is a course that describes the Lean Problem Solving Process and illustrates how to use tools to solve problems in a lean manner.

Following this course, you will be able to:

- Define the difference between traditional and lean problem solving.
- Describe how to create a team environment to solve problems.
- Explain how to create trust to avoid problems.
- Describe Observation Walks.
- Identify root causes of problems.

Following the completion of all seven modules, participants will have the opportunity to pursue the AGC designation CM-Lean (Certificate of Management – Lean Construction). This is achieved by writing the CMLean exam – which is now being offered virtually.