

# Lean Tools & Techniques

## Tools Used in Lean

Following are tools and techniques that HSC Builders uses for effective lean execution.

<b>Conditions of Satisfaction</b>	The team identifies the goals that will be the foundation for project success. This matrix is set at the beginning of a project, but can be changed or modified as the project progresses.
<b>Promise Log</b>	Similar to an Action List, but as the term indicates, there is a deeper guarantee by all parties to meet their commitments.
<b>Check-in Session</b>	Regularly scheduled meeting during the design process among the owner, design professionals, and construction manager. The intent of the check-in is to ensure that the design process remains a collaborative effort among the project stakeholders.
<b>PPC Tracking</b>	Planned Percent Complete (PPC) is a metric to monitor the status of commitments noted in the Promise Log. The percentage of promises fulfilled are tracked along with an average of all promises in aggregate. High performing teams operate at a level that exceeds 80%.
<b>Plus Delta</b>	Reviewing and documenting what is going well and what can be improved at the end of each meeting.
<b>Constraint Log</b>	A list of items that prevents a member from doing their job efficiently each day. Together the team members fix those constraints.
<b>Rules of Engagement</b>	A list of rules in which all team members agree to uphold.
<b>Target Value Design</b>	Rather than designing first and estimating later, TVD uses a project's speculative cost as the starting point. Targets are established for all relevant components (building envelope, structural system, interior finishes, and MEP systems). As the design evolves, the targets are adjusted up or down collaboratively by cross-disciplinary teams. Other owner-established design targets include sustainability, staffing, square footage, operations, and life cycle costs.
<b>Last Planner System®</b>	A production planning system designed to produce predictable work flow and rapid learning in programming, design, construction, and commissioning of projects. <b>Weekly Work Plans:</b> Every team member discloses their activities i.e. what they are doing, where they are working, what their plan is, how many people they have, and how many resources they need. <b>Pull Planning:</b> A method to determine the last responsible moment of accomplishing a task ... scheduling the project with a just-in-time basis. Typically sticky notes are adhered to walls marking essential elements of work while working backwards from the end-date.
<b>A3 Problem Solving</b>	The process utilizes a single sheet of A3 paper (11x17) to capture the content when trying to solve a problem, overcome a fork in the road, gain agreement, or analyze cause and effect.
<b>Retrospective</b>	The team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.
<b>Big Room Meeting</b>	Bringing together large groups from multiple disciplines in order to advance work. Big Rooms are a highly interactive format that provides global alignment of all players.
<b>Component Group Meeting</b>	Developing a smaller breakout session with the goal to make decisions on topics as identified in the Big Room Meeting. Group members share interrelated disciplines which allow for more rapid solutions and learning.
<b>PDCA Process</b>	Plan - Do - Check - Adjust (PDCA): One of the principles of lean is continuous improvement. This technique helps members to be vigilant and in a mode of continuous improvement.
<b>5 Whys</b>	A series of 5 Why questions to ask in order to drill down and find the best solution.
<b>Choosing by Advantages</b>	A system revealing that most decisions are essentially subjective, but then guides the participants toward more objectivity through discovered and documented facts.
<b>Standardize Work</b>	For work that is to be replicated, creating a standard in order to streamline the process.
<b>Takt Time</b>	Standardizing work, developing a timeframe to complete the work, and then always trying to find efficiencies in order to decrease that timeframe.
<b>Key Performance Indicators</b>	A quantitative metric of success that measures the Conditions of Satisfaction.

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