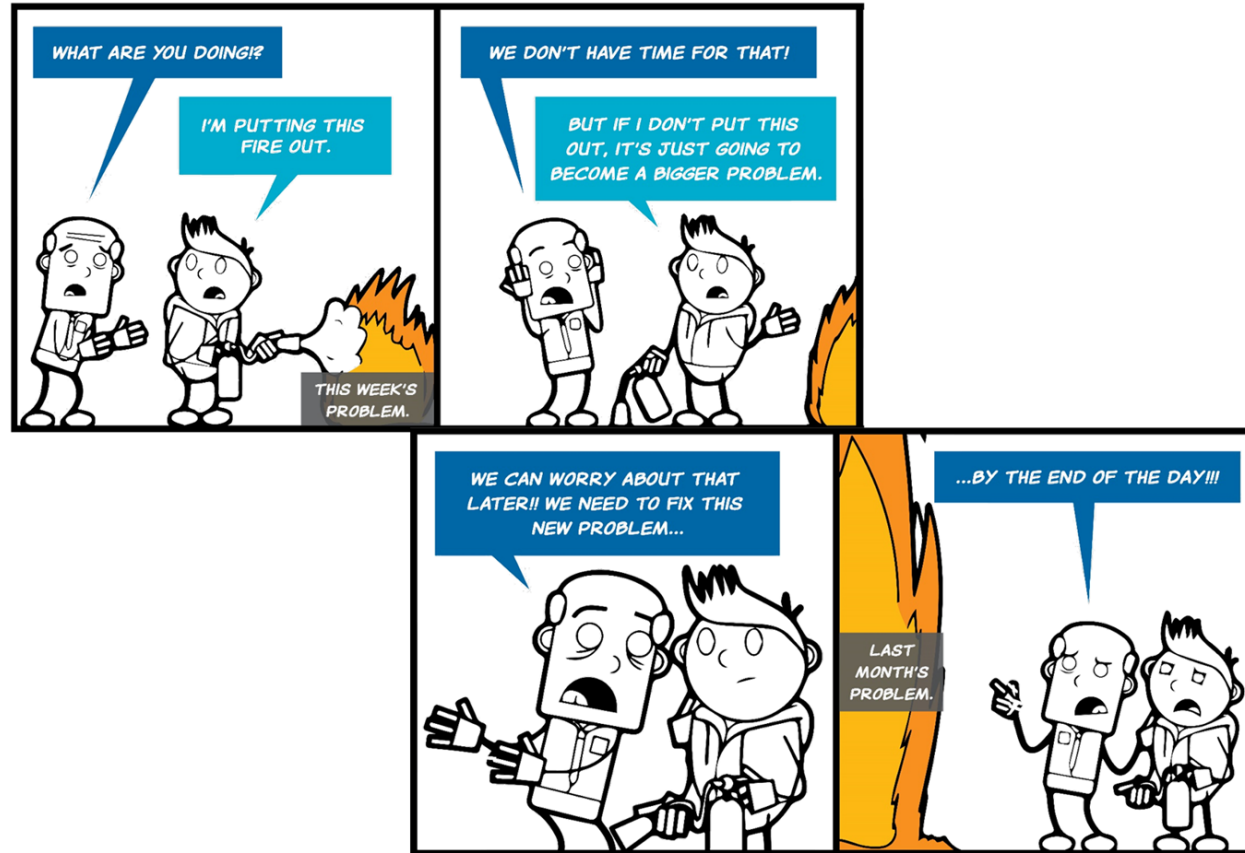


Lean Construction Implementation

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Arch Artifex



Does this sound familiar?



Why Lean Construction?

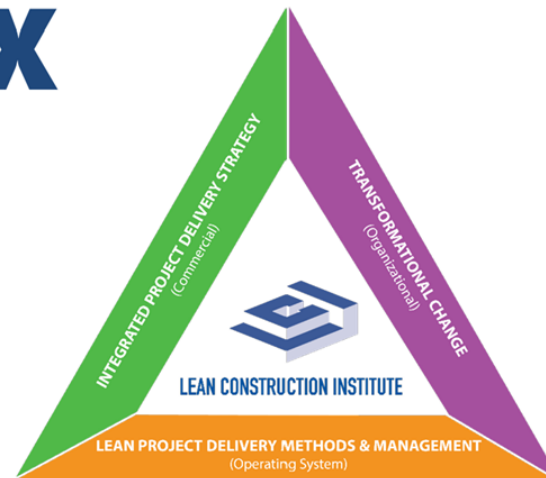
- Over 70% of projects fail to deliver what was promised to customers.
- 91.5% of projects go over budget, over schedule, or both.
- Globally, less than 1% of projects are completed on time and on schedule, and actually deliver the benefits promised.

Why Project Excel? The Business Case for Lean Construction

PROJECTS with **HIGH LEAN INTENSITY**
are **MORE LIKELY** to complete
AHEAD OF SCHEDULE & UNDER BUDGET

3X

2X

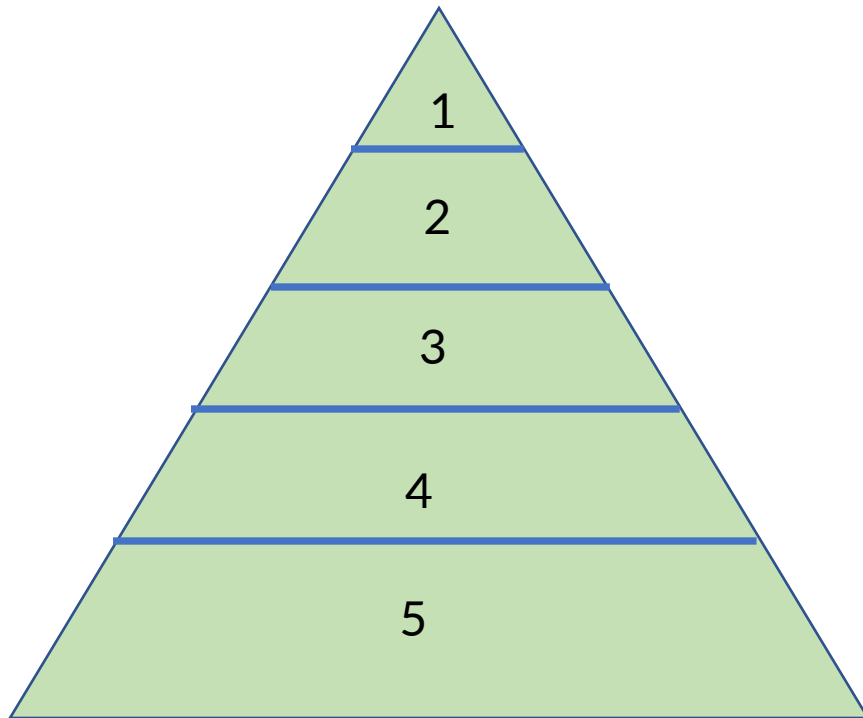


Lean Construction Tenets?

- Respect for People is the cornerstone of Lean Thinking. People transform ideas and materials into final useful value.
- The production management – based approach of Lean project delivery encourages all efforts to make transparent and then optimize all processes and flows within design and construction work.
- Lean thinking encourages practitioners to look for and remove waste. Waste is effort or resource utilization that does not create value. All waste cannot be removed but an effort to minimize all waste is encouraged.
- Lean thinking suggests that standardizing process and levelling flow are the best ways to optimize a value stream.
- Lean thinking demands a mindset of continuous improvement.



Hierarchy of Programmes



Level 1 – Key Milestones

Level 2 – Summary Programme

Level 3 – Integrated Delivery Programme
(or Contract Programme)

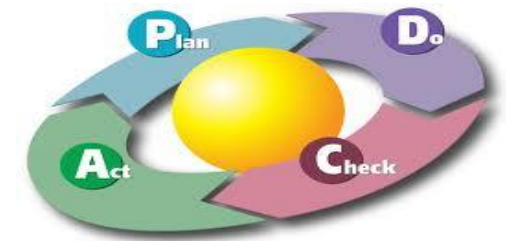
Level 4 – Construction Delivery Programmes (or
Target Programme – by SPEs / PE's)

Level 5 – Three Week Look Aheads (by
SE's, Supervisors etc)

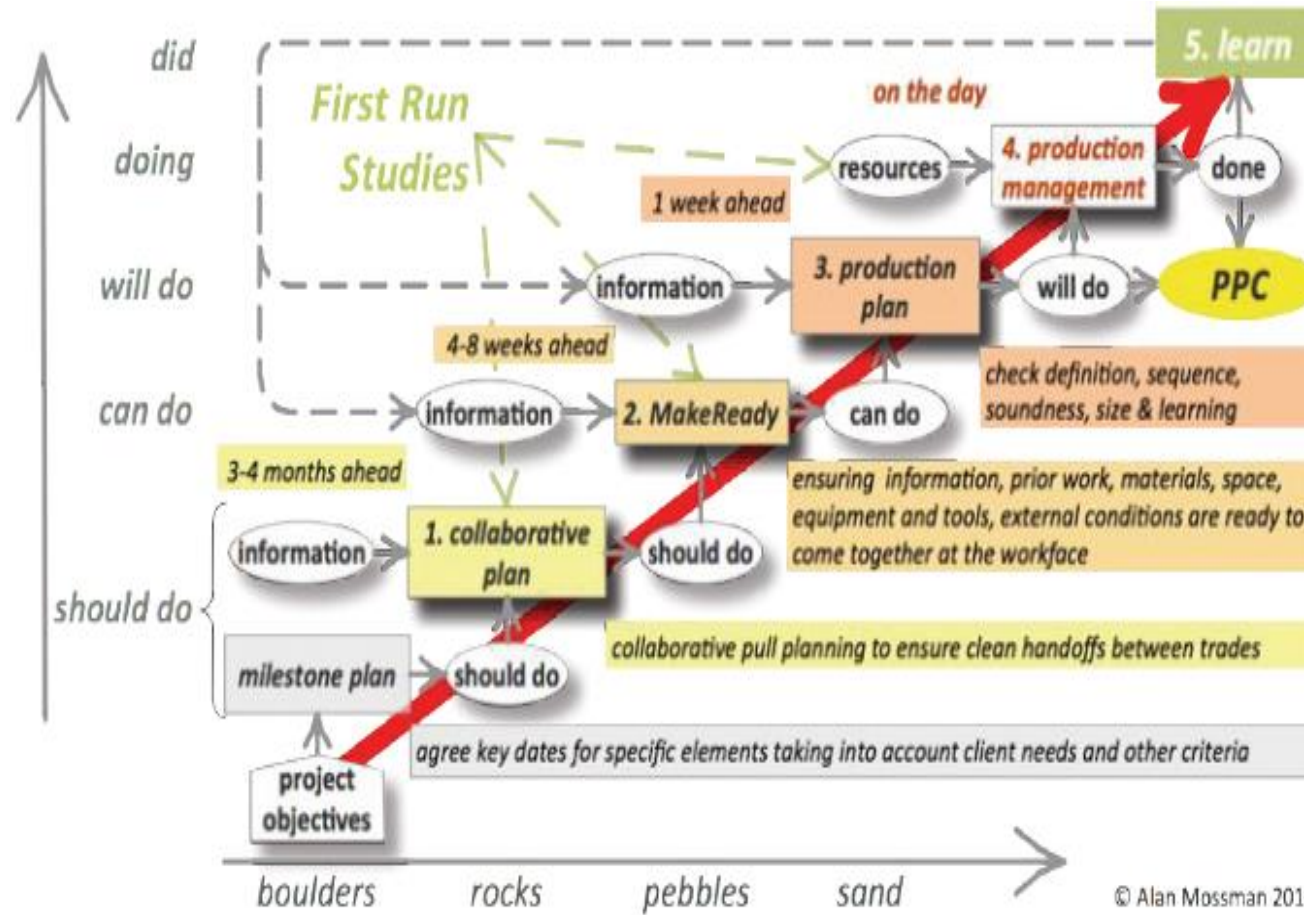
Last Planner Technique (Plan, Do, Check and Act)

WHY IS LEAN CONSTRUCTION NEEDED ON CONSTRUCTION PROJECTS EVEN MORE TODAY THAN IN THE PAST;

- Complex & aggressive programmes with multiple critical paths
- More Constraint on Budgets due to inflation and other factors
- Skills shortage across our industry
- Interfaces between different parties are increasing and getting more complex
- Productivity on construction projects need to improve - Over the last 30 years, productivity growth in construction sector has lagged other major industries by 30%
- Last Planner = proven “track record” / reliable / easy to use / consistent



Last Planner Technique



Challenges in LPS Implementation

WHAT ARE THE CHALLENGES IN LPS IMPLEMENTATION;

- Change Management - Team buy in & understanding of the Last Planner process
- Agreement on Level 5 programme template for the whole project (multi-disciplinary)
- Last Planner roll out across a large design & construction teams
- Maintaining quality & consistency of weekly programmes across all project teams
- Mentoring & coaching of Last Planner principles
- C&P Team's time required to imbed Last Planner & work through learning curve
- Creating a “blame free” and a challenging culture for carrying out Root Cause Analysis,

LPS Implementation

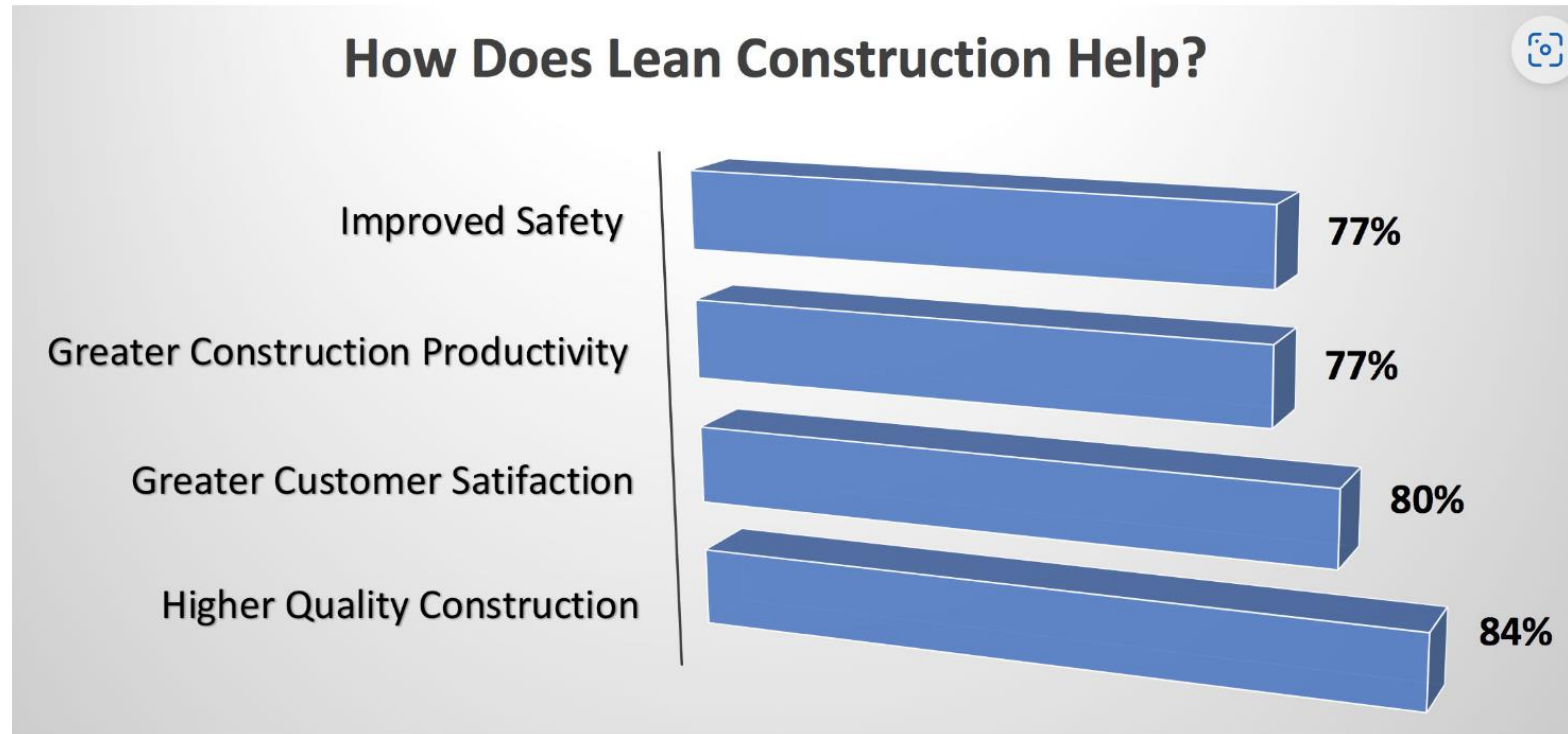
KEY TO SUCCESS = STRUCTURE WITH DEFINED ROLES & RESPONSIBILITIES FOR EACH PROGRAMME

- Standardising the process – “one rule for all”...
- Leadership / senior management commitment is essential – needs to be visible
- Individual buy-in / ownership of last planner
- Engineers & Foreman (“Last Planners”) taking ownership of programme
- Promotes “promise” communication between disciplines = “commitment”
- **Allow for the learning curve – typically 8 to 12 week depending on size of the project / complexity**

Different Sectors where Lean Construction has been introduced / implemented by our team and reaped a lot of benefits for our clients and stakeholders

- Marine Ports – Various in NSW.
- Various Metro and TAP Station Upgrades in NSW working across multiple Tier 1, Tier2 / Tier 3 contractors
- Various Road Upgrade Projects in NSW
- Water Sector – Various WWTP upgrades across multiple sites within NSW
- Multi Billion \$ Projects

Survey results filled by clients about benefits of Lean Construction (conducted by LCI) in 2018 stated:



Tactical Takeaways for Projects for Enhanced success

- **1. Set Targets:** Define owner's business case & goals
- **2. Build the team:** Engage with (using best value) key stakeholders prior to / during concept design to validate targets & unify the team
- **3. Learn as a team:** Provide training & coaching for the team to increase adoption of Lean methods
- **4. Support the team:** Contracts should support (not thwart) a good team culture and adoption of Lean methods.



THANK YOU