

This Year, Make “Lean” Your Firm’s Buzzword

By Sarah Scarborough, P.E., S.E.

Structural engineering firms should embrace Lean thinking, tools, and techniques to reduce excess waste in processes and produce a higher quality product for clients. The Lean Construction Institute (LCI) recognizes the 6 Tenets of Lean Construction: Respect for People, Process & Flow, Eliminate Waste, Generation of Value, Continuous Improvement, and Optimize the Whole.

Implementing a Lean philosophy at your firm might be easier than you think. Simple steps can incorporate these Tenets into your firm’s daily internal practices.



Six tenets of lean construction. (www.leanconstruction.org/about-us/lci-tenets)

Take Stock of Internal Processes

Everything we do is a function of a process, whether it is formalized or not. The key is to understand your current **Processes & Flows** (Tenet #2), or lack thereof, and determine what works well, what can be improved, and what needs to be developed. Ask yourself the following:

- How do you track work in progress on a project?
- How does information get disseminated to the firm?
- How do changes get made to your standard drafting library?

For any process to be successful, there must be buy-in from all users of the process. There does not need to be 100% agreement on every step in the process, but there must be agreement that everyone will use and respect the process. Remember – no process is ever finalized; there is always room for change and improvement. The concept of process and flow is integral to **Respect for People** (Tenet #1). Your people must be empowered to be critical of the processes and voice ideas and opinions for changes.

Join the Huddle

Project huddles that include all internal team members are a visible way to demonstrate that your firm values and prioritizes

staff needs. Project huddles may look a little different today with the aid of Zoom or Microsoft Teams, but virtual huddles can still be highly effective. The frequency of project huddles varies based on project size, schedule, team preferences, etc. For longer project schedules, a weekly or bi-monthly huddle may be appropriate. Still, as deadlines approach, a daily huddle is likely needed to make sure all team members have the information they need to meet the deadline.

Discussion topics in a 5 to 10 minute huddle include:

- What did you do since the last huddle?
- What are you doing before the next huddle?
- What is holding you up?

Project huddles help ensure all team members have the resources to get their job done and identify any roadblocks that may be in the way of delivering their contributions to the project on time. The project huddle promotes respect for other team members by making the entire project team aware of each individual’s constraints, how the tasks of one person may impact another team member, and the overall schedule of the project. Team leaders must convey that this is a forum for identifying project-related concerns or problems. Team members must feel that their

needs and contributions are valued and heard and feel empowered to take ownership of their tasks.

Teamwork, communication, and process problem solving are critical to providing a successful project.

Stop Wasting Time

Waste (Tenet #3) is any effort or resource utilization that does not **Generate Value** (Tenet #4). Additional meetings such as huddles are not necessarily a waste. As long as these meetings are intentional and focused, they can generate value. It requires effort to identify and remove waste from your project workflow. Not all waste can be eliminated, but standardizing processes and creat-

ing a culture of **Continuous Improvement** (Tenet #5) can identify opportunities to remove waste.

Work smarter, not harder. We must be efficient and effective in how we work. Be aware of opportunities to eliminate unnecessary steps in a process and the time spent waiting on information and work to eliminate defects and reduce rework.

Break out Sticky Notes

Every project is different, but there is always a process to follow when efficiently managing and executing a project. As a supplement to your project huddles, step up your to-do list with a Kanban board to provide a collaborative and visual way to track project tasks and progress.

A basic Kanban Board can be achieved with sticky notes, a blank wall, three columns; the to-do column, the work-in-progress column, and the done column. Define every task on the project with its own sticky note and assign it to a team member. Prioritize tasks by moving sticky notes around the board and set internal milestones to keep the team on track. The Kanban board helps eliminate waste of *Transportation* or the unnecessary flow of information. With the visual aid of the Kanban board, only those

tasks ready to be tackled are moved to the work in progress column.

This practice also aids in reducing the waste of *Waiting* for information delivery or completing a preceding task. The Kanban board shows which tasks must be completed prior to other tasks and can help identify tasks that are stuck waiting for information, prompting the Team Leader to get answers to move the project forward.

Reflect on Project Performance

Make time for reflection after completion of a project. A project close-out discussion with the entire team is a great way to generate ideas for better processes, increase the value of future projects, and identify areas that need improvement. Ask everyone their thoughts on what went well and what can be improved going forward.

There must be honest and open communication to get the most out of this discussion. Openly discussing roadblocks and conflicts as a team allows the group to take action toward improvement for the next project.

Database of Lessons Learned

Everyone probably has a library of technical references and CAD/Revit standards, but how can you take that resource bank a step further?

Close-out discussions help set the scene for continuous improvement through reflection on the project and individual performance, generating opportunities for additional knowledge sharing and training. Takeaways from these discussions should be appropriately documented, and any action items should be addressed and communicated to the rest of the company.

Establishing an internal database of lessons learned that all company members can contribute to and that becomes a searchable tool for all staff can help foster the culture of continuous improvement. The practice of documenting common issues or lessons learned can save time on the next project and can guide the next person performing the task.

Similarly, an internal database of sample calculations and design guides creates efficiencies from project to project. No calculation is too complex or too simple to provide a valuable starting point for someone else. Opportunities to contribute to internal databases should be encouraged and welcomed at any time.

Utilize Efficiency Tools and Staff

Save time and generate value by engaging tech-savvy staff to explore the world of add-ins and tools available that interact with 3-D analysis and drafting software – from pyRevit to Bluebeam Studio. Unfortunately, the newest waste is *Skills and Underutilized Talent*. Do not make the mistake of ignoring peoples' skills, creativity, or knowledge on a project or their potential contribution to your firm. Instead, build your staff's capabilities and provide them with growth opportunities for the sake of current and future projects.

Know the Why

Lean thinking encourages **Optimizing the Whole** (Tenet #6). This concept requires constant reflection and analysis to determine if implementation has made an impact.

To analyze if you are generating value, you must first Know the Why. Why are you changing or implementing a new process? Are you looking to make a task easier? Are you looking to accomplish something faster? Identify the metric to measure so you can refer to that after process implementation and determine if you are meeting those metrics. Utilizing one of the most powerful tools you have – your own data – can aid in this process.

The Author's Go-To Efficiency Tools

1. Collaboration App – Microsoft Teams
2. Internal Database – SharePoint
3. Kanban Board – Microsoft Planner
4. Revit Add-In – pyRevit, Ideate
5. Data Analytics – PowerBI
6. Visual Programming for Revit – Dynamo
7. Site Visit Management – PlanGrid
8. PDF Markups – Bluebeam Revu
9. PDF Collaboration – Bluebeam Studio
10. Digital Note Taking – OneNote

A Lean philosophy will help your firm make the most of its people and project expertise, keeping old clients coming back and creating opportunities for happy new clients. ■



What internal practices can you Lean on today that will help influence your firm's future successes?

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Celebrating 28 years

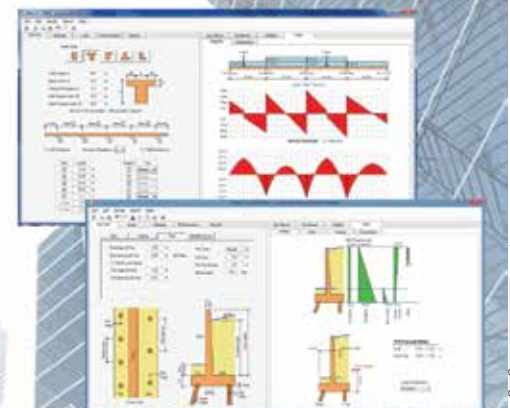
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