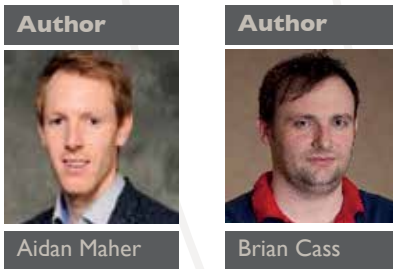


Company Overview | CLANCY | clancy.ie

Our origins date back to 1947, and with history comes experience. We use this 70+ years and over 1400 projects completed to date to deliver a service that truly reflects our clients' particular needs. We have 5 core values which we believe are critical to our success and every decision we make is based on our core values, which are: Safety, Professionalism, Quality, Commitment, and Teamwork/ Collaboration. We carry out a variety of project types, including: Residential, Industrial & Commercial, Healthcare, Conservation & Restoration, Fit-Out, Education, and Fast Track/Off Site Construction.

We currently have an extensive portfolio of projects with our most recent projects for the HSE an example of where we used our experience and our own design and build model to construct two 24 bed isolation wards in a 14 week period to assist with the country's fight against Covid. Investment and implementation in areas such as staff training, technology, and Lean Construction have propelled Clancy forward and given the company the platform to be one of the leading contractors in the country.



Overview & Background to the Lean Initiative

Lean thinking, tools, and techniques have been introduced to the Clancy team over the last number of years. This transformation happened gradually at first, with waste reduction the key focus initially, and it has now expanded to where it is generating its own momentum.

This case study looks at the refinement of Lean practices within Clancy and the current journey being undertaken as a strategic project to standardise the Clancy Last Planner® System (LPS) across the company. LPS is a system for planning and production control designed to deliver highly reliable work flow and rapid learning. It is a system that encourages collaboration on projects, versus the traditional method of working in silos, and it results in improved project delivery to meet client requirements.

4. Weekly Work Planning.
5. Daily Huddle.
6. Continuous Improvement.

This study outlines Clancy's strategic change management approach to the systematic deployment of LPS across the company. Recognising that standard work is foundational in Lean deployment, this LPS standardisation was undertaken as a strategic initiative by senior leaders who invested time and funding for: (a) training by an external Lean service provider on the six key LPS processes; (b) workshops to create agreed standards of execution that best suit the company's needs; and (c) execution of trials at project level to enable the senior team to coach the process in the future and before full deployment.

Aim

The overarching aim was to ensure our client requirements were met in collaboration with our stakeholders by reducing the variability within project delivery. At a more detailed level, the following aims were in scope:

- Client: Assist our teams with meeting project KPIs and company goals.
- Project Delivery: Create a more predictable construction programme and successful hand-over with a reduction in defects and snags.
- Standard: Implement the Clancy LPS universally across all project teams.
- Metrics: Improve analysis of the weekly work plan to gain valuable trends and data.
- Efficiency: Improve efficiencies for implementing the system and efficiencies for our site teams such as time management, removal of firefighting techniques, and reductions in waste.
- Education: Educate and improve the leadership buy-in and implementation via training and workshops.
- Collaboration: Enable a collaborative working team on each project.

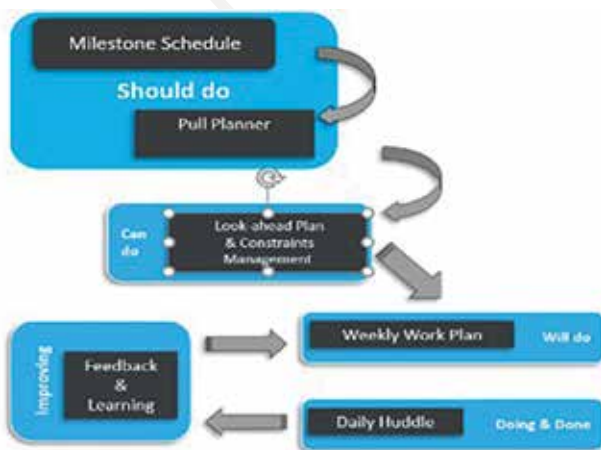


Figure 1. Key LPS Processes

There are six key processes in the LPS:

1. Master (Milestone) Scheduling.
2. Phase (Pull) Planning.
3. Look-Ahead Planning and Constraint Management.

Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

LPS was first introduced to Clancy personnel in 2016 whilst working on a large-scale project. Being very much engaged with the process being implemented on this project, our people could see the real benefits resulting from using the system for project delivery. Those early adopters have continued to utilise LPS principles on various projects since then, yielding many benefits such as improved schedule adherence, improved communication, and collaboration across project teams. Mainly due to this success, these practices have been spread informally to pockets of the organisation since that initial experience.

Clancy senior management identified a strategic opportunity to standardise LPS deployment across the company to further reap the benefits of a uniformly-applied system on all projects. This will result in improved competitiveness through more reliable programs, improved team collaboration, and enhanced communication, thus enabling further growth in the business. Furthermore, as communication and collaboration are core values for the company, any improvements in these behaviours are viewed as vital to the success of all projects.

Strategic Team and Objectives

The company appointed two Directors as program sponsors and a Contracts Manager as leader of the initiative with responsibility to guide the development to a successful conclusion. This team recognised early on that key to the LPS development strategy was sourcing an industry-recognised consultancy to provide clear and expert direction, not just on the tools but also on the approach for effective change management. Crystal Lean Solutions (CLS) were identified as the best fit to work with the Clancy team, and the deliverables set out in partnership with CLS were to:

- i. Develop an LPS standard to meet the company's construction requirements through collaboration with all the Contracts Managers.
- ii. Complete LPS training with Contracts Managers.
- iii. Develop a roll-out plan for deployment across the company, including engagement with Project Managers and Site Managers.

Potential risks were identified in both engagement with the change, and having time to work on the change. These were viewed as medium risk as there was a high level of communication and engagement with the senior team built into the plan, including:

- Explaining the why and following up to ensure the messaging landed well. Utilising the Kotter Model for communication and feedback, including quick wins (complete external audits to see if baseline is maintained).

- Focus on the Kotter Model and monthly follow up meetings with CLS and the Steering Group (monthly communication to all staff).

Baseline of Current Process

So as to create a baseline for LPS maturity within our organisation, one of our leading LPS project processes was assessed by CLS against the LCI LPS Maturity Model, which resulted in a score of 2.9 out of 5. Both Pull Planning and Weekly Planning were identified as good, and there were opportunities for the project team to improve around look-ahead planning, constraints management, and using metrics to improve project performance. This could be achieved through additional training and tweaks to the existing system.

The assessment highlighted that, albeit the project team was performing very well and implementing the system to the best of their ability, as a company there was an opportunity to improve our techniques and also educate our teams further to instil LPS best practices both on this project and across the company.

Key Milestones

Following on from that initial baseline assessment, actions and milestones were agreed in order to achieve the target deliverables, including:

- Complete program charter and change management plan.
- Lean Construction training (namely "LCi Lean Pass") with Management completing this introductory course, including Value to Customer, 8 Wastes, and 5S housekeeping.
- Communication and Engagement. A workshop was run involving the program team and the contracts managers in the proposed approach and soliciting feedback on same.
- Complete LPS introductory training with the core team. This was a high-level overview putting the system in context and explaining the overall intent of the system. This set up a series of training workshops for the individual processes.
- Complete pull plan training with the core team and run a workshop to agree a pull plan standard.
- Complete look-ahead and constraints management training with the core team and run a workshop to agree a look-ahead and constraints standard.
- Complete WWP and daily huddle training and run a workshop to agree a WWP and daily huddle standard.
- Complete two standardisation workshops with contracts managers.
- Trial on site.
- Final workshop with senior management to agree the LPS standard.
- Agree roll-out plan of the standard.
- Implement a process to sustain LPS into the future.

Lean Initiative Improvements & Impact

The undertaking of this Lean initiative has been of great value to date for the company as we now have an agreed LPS benchmark that suits our company's core values. The process has yielded many advancements to the processes we had begun to roll out. Moreover, the process has generated consensus amongst the leadership team

about how the system should be deployed and has increased the overall knowledge of Lean practices within the business. The workshops to date with senior management, project sponsors, and CLS have generated an overall agreed LPS system which will ensure the following areas are met.

LPS Standard for Clancy

- The LPS standard will be universal across all project teams going forward.
- There is a training manual to support new employees using the standard in the future.
- A company champion is in place to ensure engagement with, and education about, LPS is upheld going forward.

Sustaining the LPS Standard

- LPS maturity will be audited externally to monitor and continually benchmark the approach used. This will enable sharing of best practices going forward.

Project Performance Metrics to Drive Continuous Improvement

- Improved analysis of the executed fortnightly programme which can now gather PPC, reasons for variance, and constraints to aid project teams manage their sites.
- An agreed company constraints log which will aid senior management review live projects and the constraints that site teams are finding. This is invaluable to the successful running of the business.
- Data collection and analysis of information managed on our projects has furthermore been developed with an investment in Procore. Gaining real time analytics from inspections, checklists, and snags is again an enhancement to our LPS journey. This can be used to review across all projects and help senior management identify trends.



Figure 2. Analysis from our Clancy Weekly Work Plans

Daily and Weekly Visual Management of Project Delivery

- Improvements to our site LPS constraints board will aid our site teams work through common constraints and allow them to look-ahead in a more systematic way that is universal to all sites.
- Improvements to our daily white board will ensure we get the maximum value from this daily activity and ensure site teams are completing the tasks as set out in the weekly work plan.

Figure 3. Clancy Last Planner Constraints Board

Leadership Coaching Capability

- Education of senior management in order to guide site team implementation of the LPS standard within the company. This will be backed up by the LPS champion within Clancy, along with CLS as required.
- Roadmap for training of middle management now that the benchmark Clancy LPS has been set, and using CLS to ensure that dedicated training is completed.

Improved Efficiencies

- Improved time efficiencies in carrying out the fortnightly programme for our last planners with an estimated time reduction of over 1.5 hours each week per site manager.
- The removal of additional meetings from site team agendas to free up more time within each working week.

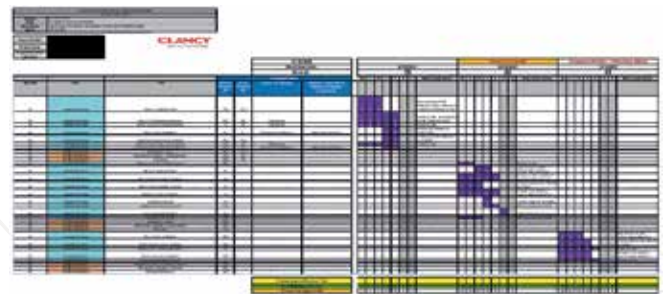


Figure 4. Clancy Fortnightly Programme (including look back)

Overall Senior Team Feedback

During the workshop process over recent months, the LPS standards were trialled across all sites to agree the benchmark. From feedback, this process showed each site team that collaboration between site teams and the last planners was a very successful way to manage projects and instil a strong team working environment. Below are some of the comments received back from the senior team to describe the work completed to date and looking forward to the implementation and continuous improvement stages that lay ahead:

- "The workshops and training to date have greatly enhanced the level and consistency of our service offering across all spectrums and is at the core of our pursuit of a better way."
- "The LPS is transforming Clancy's approach on how we engage, collaborate, and deliver projects."
- "It will enable us to form an inspired, harmonious team early in the initiation stage across all disciplines, and set the expectations, demands, and responsibilities transparently from the outset."
- "These workshop sessions have helped to mould the process into a common operating environment that can be used throughout the organisation, on any of our worksites, by any of our construction management teams. I'm really looking forward to the next steps."

This feedback was furthermore confirmed by means of external audits carried out during the implementation trial period by CLS who noted considerable uptake with the benchmark LPS and were confident that the system implementation would be a success overall.