

Case Study Title: Lean and Collaborative Planning at Coffey

Company Overview | COFFEY GROUP | coffeygroup.com

Founded in 1974, Coffey is a family owned, engineering led Civil Engineering, Environmental and Building contracting group of companies. Our headquarters are situated in Athenry, County Galway and we operate in every major construction sector and undertake work throughout the UK and Ireland. We are passionate about quality and efficiency, and this passion drives our belief in

delivering projects with a directly employed workforce of 250 people.

Coffey prides itself on delivering quality projects safely, on time and within budget. The hallmarks of our contracts are innovative solutions, engineering ingenuity, professional construction management and adherence to the highest safety and quality standards.



Overview & Background to the Lean Initiative

The Coffey lean journey began during the turmoil of Covid lockdown in 2020. Company strategy sessions in recent years had regularly raised the issue of 'planning' as a significant area of opportunity from a production, quality and health and safety perspective.

each attendee had to prepare a project within the company where some of the core lean principles of eliminating waste, value-add and finding flow in the company processes could be applied.

To educate ourselves on a structured approach to lean principles, our Managing Director attended Lean Green Belt training. The Health, Safety, Quality and Environment (HSQE) team subsequently attended the Green Belt programme so that they could assist in developing, facilitating and supporting the lean roll-out. The programme was run over a 12-week period at the end of which

Together with our Managing Director, we identified a number of Lean Construction Ireland and Lean Construction Institute (US) webinars to attend and obtain as much information as possible about lean in construction. During this research, we came across the Last Planner® System (LPS) as a tool to help us in the effective planning, programming and managing projects.

Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

As part of our Company Strategy Sessions in 2021, we elected to include our 'customer' as one of our core values. Our customer is the reason we are in business and one of the reasons we have found that lean thinking, tools, and techniques have been so effective is that it focuses on the value stream from the eyes of the customer.

Our lean transformation has progressed steadily from early 2021. Value-add and eliminating waste were initially the key focus. This has now expanded to include LPS collaborative planning on each of our sites, where the pillars of lean from a Coffey point of view, are being embedded.

This case study looks at the implementation of lean thinking, tools and techniques within Coffey and the current journey being undertaken as part of the company strategy to implement and standardise the Coffey Collaborative Planning Tool across all Coffey sites.

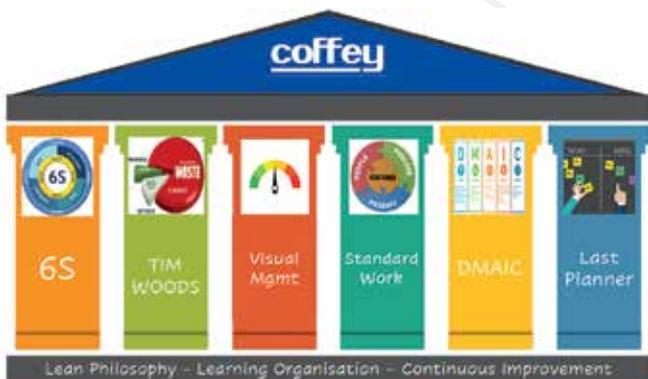


Figure 1: Coffey Pillars of Lean

Coffey Continuous Improvement Policy

In July 2021 we developed our Continuous Improvement Policy. This had been created in line with Coffey's long-term initiative and desire to continually improve our work practices and procedures to improve value delivery and eliminate waste. Continuous improvement is more of a philosophy than a process or system. It requires everyone, as a participant, to adopt as part of their normal work, a mindset of continuously looking for ways to improve processes and systems to make them more efficient and effective.



Figure 2: Coffey Continuous Improvement Policy

Continuous improvement activities drive organisational excellence to improve value delivery to all Coffey stakeholders, including employees, customers, shareholders and society, thereby increasing the probability of long-term success of the organisation. By adopting a culture of continuous improvement, we:

- Maintain a culture of clear, open communication.
- Focus on value delivery and understanding and satisfying the customer.
- Regularly review continuous improvement opportunities identified and the approaches and methods used to implement change.
- Regularly measure the performance of key processes.
- Manage process changes using data driven facts rather than opinion.
- Promote teamwork in each of our departments and sites to achieve positive outcomes.
- Develop a culture wherein continuous improvement involves everyone and the process of change becomes routine.
- Recognise and promote continuous improvement efforts.

Collaborative Planning

The Last Planner® System (LPS) was developed by the Lean Construction Institute and follows the Plan, Do, Check, Act (PDCA) cycle we are familiar with from our ISO Management Systems. PLS is also known as a collaborative planning tool and the primary function is to increase productivity and accountability of the project team by teasing out the program and carrying out detailed group planning with the entire project team present, including the client or their representative. LPS is also a project management tool or approach to efficiently run a construction project. The principle of the system is to ensure each on site foreman/ supervisor, be they internal or external subcontractor, can manage their workload while having accountability. This is achieved by involving them in the weekly planning sessions and holding them accountable for completing the work as planned.

Having researched LPS in detail, we decided to proceed with the implementation of our own Collaborative Planning Procedure on a

pilot project in Saggart Reservoir in September 2021.

Strategic Objectives:

Coffey's Managing Director took the lead in the implementation of the Collaborative Planning initiative and tasked the HSQE team with responsibility to guide the development of our Collaborative Planning System. The first step in the collaborative planning development strategy was appointing a lean expert. Through our training consultancy LBS, we sourced Dr. Steven Ward from Lean Construct Ltd in the UK. Steve was a vital resource in terms of LPS implementation, facilitating the sessions and gathering and disseminating the learning review data.

Our key deliverables in terms of our Collaborative Planning procedure were identified as;

- Design and implement a Coffey Collaborative Planning Procedure to meet our requirements and get buy in from our Operations Directors and Contract Managers.
- Develop and carry out an Internal "Introduction to Lean and LPS" and roll out at each of the Collaborative Planning kick off sessions

We assigned a core team to facilitate the LPS sessions and hold weekly meetings to discuss our Collaborative Planning progress on each of the projects and setting a timetable for attending the weekly sessions on site. We have found "A Facilitators Guide to the Last Planner System" from Nottingham Trent University a very useful guidance document to facilitate the weekly sessions. The core team maintains constant communication in terms of lean practices and LPS through toolbox talks on topics such as Visual Management, 6S, Standard Work & 8 Wastes. We reinforce these messages through signage and weekly lean conversations on site, which are recorded through our internal OBSERVE PowerApps.

We continue to hold quarterly sessions with our external consultant, focusing on the 'why we are doing what we are doing' in terms of Collaborative Planning and following up, to ensure the message is being received well by site teams.

The Coffey Collaborative Planning Procedure has six core elements;

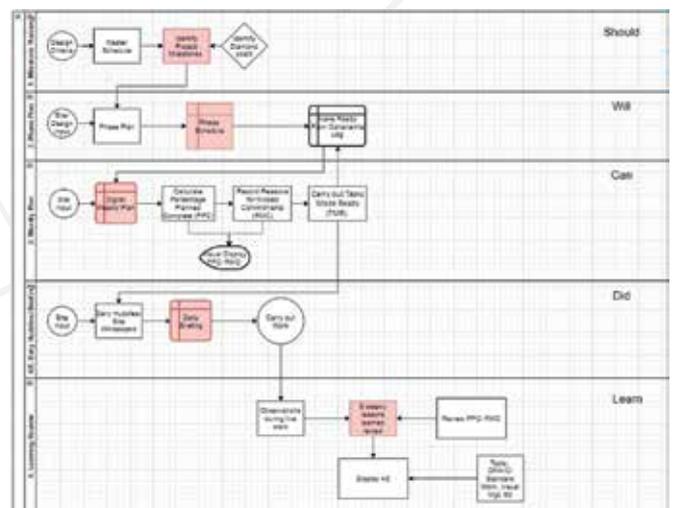


Figure 3: Collaborative Planning Procedure

I. Milestone Planning:

Milestone Planning identifies the main project milestones / key

task delivery dates from the initial contract programme. Project milestones are transferred from the traditional Gantt program to the milestone plan, creating a simple visual for key milestones. We also hold 'Pull Planning' sessions with all project team members, taking a reverse approach to sequencing at the Collaborative Planning Sessions. Pull planning enhances initial project communication and improves efficiency and reduces waste.



Figure 4: Milestone Plan

2. Phase Plan

The Phase Plan identifies key dates (start, finish, order dates, delivery dates etc.) of high-level tasks required to meet the milestone within the 12-week Phase Plan.

3. Weekly Plan

To standardise the roll-out of the programme, site collaborative meetings to discuss the works are scheduled every Thursday at 10:30am, on every Coffey site. This is the forum to discuss the Weekly Plan as follows:

- Discuss what was completed the previous week and measure Percentage Plan Complete (PPC).
- Discuss why the tasks that were not completed, noting the root cause (RMC – Reason for Missed Commitment).

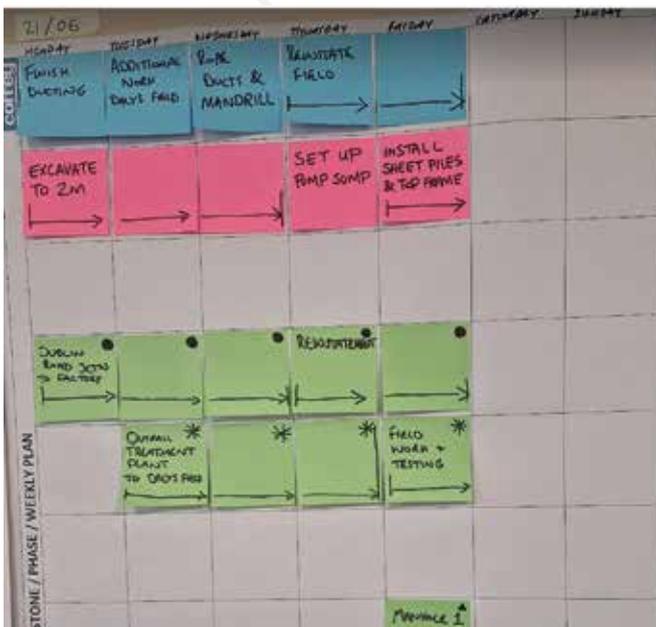


Figure 5: Weekly Plan

- Discuss progress this week and any changes / improvements that can be made.
- Plan out the next 2 weeks in detail, including resources if necessary.
- Foremen / Subcontractor Foremen place the post-it notes on the wall chart.
- Carry out daily exercise with delivery dates noting actions necessary to make the tasks ready.
- No task is to be greater than 3 days in duration.
- Task completion should be easily measurable.

4. Daily Huddles

Coffey has, for some time, operated an SPA (Safe Plan of Action) by way of a point-of-work daily Risk Assessment. We have now expanded this to a Daily Huddle so that safety and planning are not mutually exclusive. At the Daily Huddle, the following takes place:

- Discuss the current day, progress, what went well or what didn't go well.
- Final detailed planning for the next day's work, production targets, quality standards, resources, plant, materials, H&S risks. Engineer prepares the paperwork, with input from relevant team members, for the morning's briefing.



Figure 6: Daily Huddles

5. Daily Briefing

Foreman delivers a briefing to the workforce. This includes a review of the previous day and an explanation of the tasks for the day, targets, quality and H&S risks. Engagement then takes place with the workforce on thoughts, ideas, improvements or concerns.

6. Learning Review

Every six weeks, a review takes place and information from the Reasons for Missed Commitments are collated. Focus areas are then identified for improvement. A3, DMAIC or 3C lean projects or lean activities are then initiated to seek out improvements and solutions.



Figure 7: Learning Review

- REs get to understand the contractor rationale behind the 6 week look-ahead programme, key inputs and risks. This also helps when there is a change in the programme of works or methodology, due to unknown factors."

Coffey Site Foreman

- "Last Planner is a good system. The Daily Huddle is time well spent and the visual action list is very helpful. Everyone is involved and sees it. It's a good opportunity to thrash out issues arising, whether it's with orders, safety etc. They are identified sooner than they would have been before."

Coffey Project Manager

- "Last Planner gives the whole project team a better understanding of the programme. It identifies issues that

historically could easily be missed. It is a simple, visual, self-explanatory system that lends to excellent buy-in from all parties, particularly foremen who are instrumental in the sequencing of work. It fosters inclusion and validates everyone's input in the project."

This positive feedback is incorporated into our Lean and LPS Introduction Training for all staff attending a Project Kick-Off meeting and is furthermore reinforced at the Quarterly sessions with our lean consultant. We are in the early days of implementation, but we have seen a proactive approach to implementing Collaborative Planning by our Project Managers and Site teams. The Coffey leadership team are convinced that the Collaborative Planning implementation will be of great benefit to the company, our employees, and our customers.