

Case Study Title: Walls Construction Ltd. Lean Transformation Project

Company Overview | WALLS CONSTRUCTION | walls.ie

Walls Construction Limited (WCL) provides building contracting, design and build, construction management and management contracting services and has a proven track record in a diverse range of sectors including residential, commercial office, data centres, education, healthcare, industrial, leisure, life sciences, pharma, and fitouts. Established in 1950, the company has a well-guarded

reputation for quality and for providing value-based, client focused solutions. The company's employees are highly experienced in their respective areas of responsibility, while its supply chain consists of specialist firms committed to its ideal of teamwork and, together with its design team partners, exceeding client expectations.

Author



Jamie Goddard

Overview & Background to the Lean Initiative

WCL has identified lean construction as an essential tool to support the Irish construction industry and its business in reducing the delivery time and cost of multi-unit residential developments. Lean initiatives include Modern Methods of Construction (MMC) and Off-Site Construction (OSC) technologies which lead to increased productivity, enhanced quality assurance and a reduction in waste. At WCL, we recognise that lean construction is not just about eliminating waste from our processes, but utilising and

applying our resources in ways that enable us to do more with the same employees and equipment. Implementing lean construction throughout all our business processes helps ensure that our clients receive the highest quality construction projects, expeditiously, for the best value. The lean initiative will follow a five-year roadmap to ensure that not only will tools and methodologies be implemented throughout the business, but cultural change will be undertaken for the long-term benefit of the company.

Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

The lean transformation project WCL aims to implement companywide organisational change, by embedding lean as a culture rather than just giving the team tools to use. A lean vision, strategy and plan has been created by our Lean Manager to outline the key activities required to complete this project. The current lean plan is focused on year one's activity and towards the end of 2023, it will be reviewed and 'lessons learned' will inform the building of the year two plan and further development.

To guarantee our goals are achieved, the first phase of the project will focus on identifying and visualising the key metrics required to monitor and track our performance, and directly aligning these to our company values. The creation of a truly integrated management system focusing on customer value, in which lean construction principles are embedded throughout, is key to the success of the system.

These principles are:

- Create processes that allow problems to be exposed and counter-measured in real time.
- Ensure employees see the value flow to the customer and can take the necessary remedial actions to ensure that it doesn't break down.
- Achieve results by developing our people to create sustainable continuous improvement.

To support the implementation of the above principles, WCL commits to the use and development of lean construction tools to enable the continuous improvement of our standard systems of work. This commitment means the bulk of our project implementation in the first phase will focus on building on the training already completed and coaching of lean principles and tools across the company, in particular the following five key pillars:

1. Visual Management: Creation of standardised site, KPI, and planning management boards.
2. Standardisation: Utilising defined KPI's to create an integrated management system.
3. Lean Culture: Build on the basics already trained to further promote lean thinking with the company and make lean the normal.
4. Continuous Improvement: Every failure or gap is an opportunity to develop and improve.
5. Sharing & Awards: Share and promote achievements across the business internally and externally.

The Lean Vision (Figure 1) is a directional strategy utilising five key pillars supported by employee versatility to implement lean sustainability. The lean principles and company values build into the vision to highlight the key metrics the pillars are working towards.

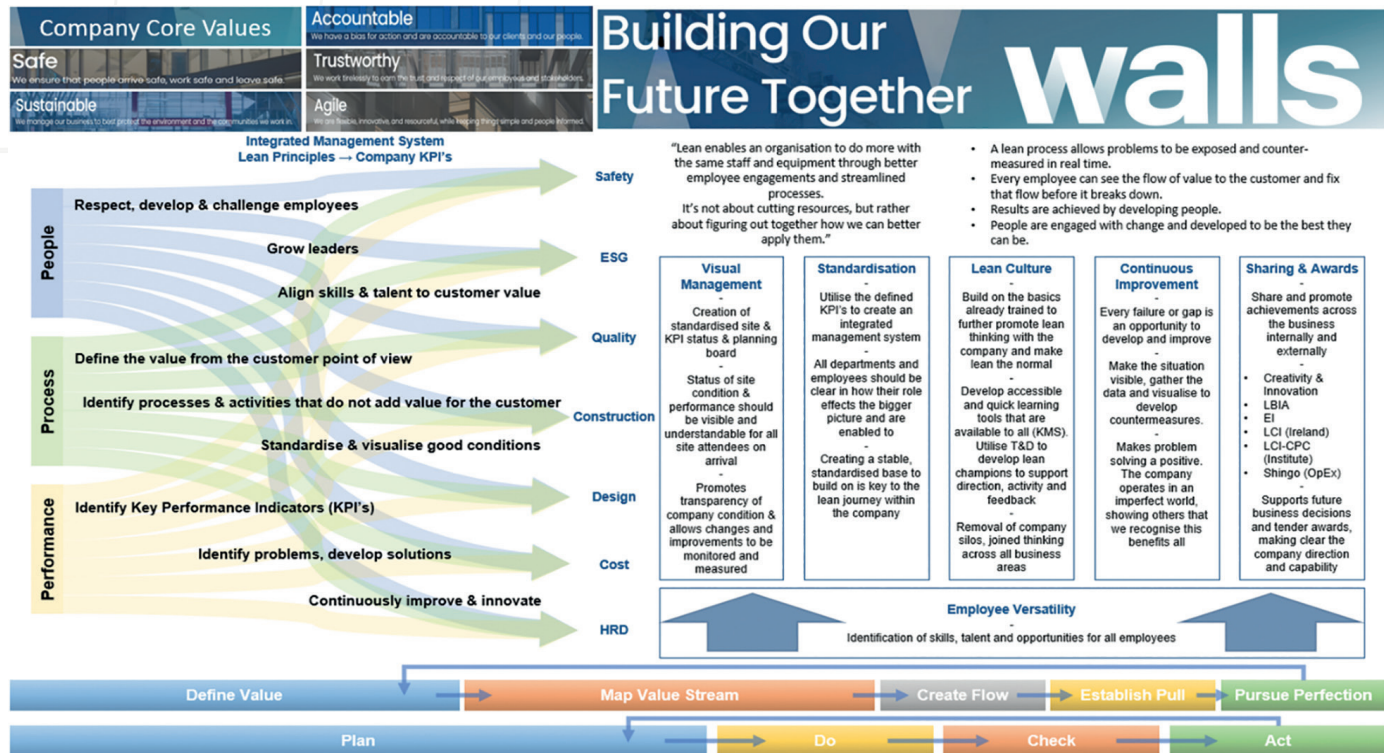


Figure 1: Walls Construction Limited Lean Vision

The 5 Year strategy is a live document to be reviewed annually that provides the high-level activities required to be completed to support the realisation of the vision. Each pillar will require training across the company, focusing mainly on lean tools but also leadership and management skills.

The Year 1 plan (Figure 2) builds on the 5 Year strategy and creates the key activities we aim to complete as part of this project. Our Lean Manager is responsible for the implementation and tracking of this document. The Year 1 plan focuses on the understanding of the

current situation and the development of a new method of working with lean being embedded. Specific lean tools such as Practical Problem Solving, and collaborative planning will have dedicated training actions and mini projects to be completed to help show the benefits and improve the company performance and productivity through the development of our team members.

Many companies, whether in construction or other industries, tend to just implement some of the tools available. However, through the guidance of our Lean Manager and his years of Toyota Manufacturing experience, we understand that the key to successful lean construction implementation is going beyond the simple

Walls Construction Lean Year 1 Plan

- Implementation of Lean Construction management key principles company wide to build a sustainable, cost efficient company direction.
- Create a transparent business model to ensure all employees understand and can see the flow of value to enable it to be fixed in real time.

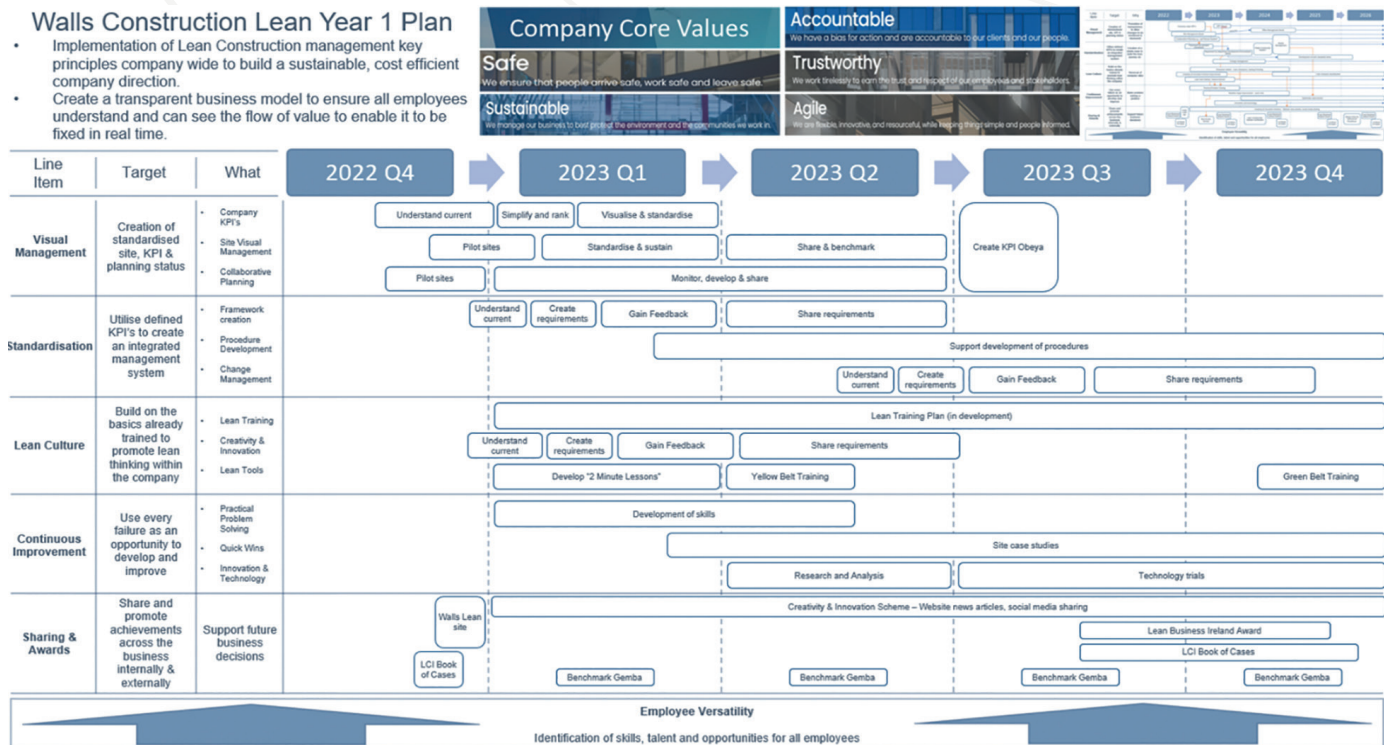


Figure 2: Walls Construction Limited Year 1 Plan

application of these tools and completing a transformation of the company culture to create a new system of work.

The current focus of the construction industry is seen as resource efficient where all people within organisations are kept busy. By working towards a change in focus to flow efficiency, where the customer sees the true flow of value to them, we can start to effectively work on solving problems that negatively impact our delivery times, productivity, and cost. Starting with our Year 1 plan, the aim is to build the foundations for this cultural change.

Collaborative planning, where sub-contractors are involved in the creation of programmes and plans along with the daily / weekly / monthly tracking of progress, is used by many construction contractors as a method to support the use of Critical Path Planning (task focused). To support the cultural change, a move to Takt planning (area flow focused) will also be required, and this is an innovative method within the construction industry adapted from the mass production manufacturing industry.

We recognise this is not a simple goal to achieve, but by utilising a strong training programme that focuses on the key tools, we can

progress ourselves and others through the sharing of good practice and benchmarking. Key to ensuring the progression will be the reflection and learning from the progression of the current year 1 plan, further into the future.

The company's training and development policy supports the development of our employees to achieve their fullest potential, to assist them with the enhancement of their personal and professional competence and to contribute towards their professional development. This training is delivered in various forms, including classroom learning, eLearning, mentoring, knowledge sharing, research, internal and external seminars, part-time third level educational courses and any other methods considered appropriate. Management's responsibility includes assisting with the identification of staff training needs, and reviewing these needs on a regular basis, ensuring that the learning is being applied in the workplace. In many cases, management is involved in the actual design and delivery of the training itself. Employees also take responsibility for their training by discussing their training needs with their supervisor / manager during the normal course of their duties and at their annual performance appraisal meeting.

Lean Initiative Improvements & Impact

Area Quality	Future / Target State	Impact for WCL
Defects & Rework	Creation of a companywide KPI matrix and development of a baseline target for site quality that will be used to direct future improvement activities. Right first-time construction.	Consistent reduction in quality issues & concerns. Increase customer satisfaction (future business). Reduction in quality check and rectification time.
Delivery Time / Project Recoveries	During the first stage of the project the target involves standardising the visualisation of program performance and requirements to ensure all members of the team are aware of the status and understand the flow of value.	Reduction in delivery time of residential units Increased team productivity
Productivity	Ideal Future – utilise flow focused methods of planning (e.g, Takt) to support a continuous improvement culture.	Right first-time planning.
Company Visibility	Increased visibility and transparency of the company vision and direction is key to the implementation of Lean processes and a continuous improvement culture. By developing the company wide KPI matrix, all departments will be aligned to common goals and targets, driving the company forward.	Improved visibility of the company condition.
Practical Problem Solving	Develop the team and system of work to ensure that true root cause analysis is completed against all issues that occur. By analysing the common and repetitive concerns across a number of sites we will be able to build an improved, standardised, and stable construction system. The team should recognise that each problem can be seen as a positive opportunity for improvement.	Increased proactive problem-solving activities to prevent issues occurring. Completion of 3 major problem-solving activities to a Green Belt standard within 2023.
Change Management System	Implementation and improvement of the change management system to ensure that all business / construction effecting changes are managed appropriately with the correct levels of sign off to aid transparency and visibility across the company. caused by no good changes.	Changes handled in a standardised manner with appropriate approval. Improved collaboration and communication between sites, management, and sub-contractors. Reduced resistance to change across the company. Increased productivity due to reduced disruptions

Table 1: Lean Transformation Project Targets

As the project is still within its infancy in WCL, our focus is on nurturing a supportive and collaborative culture both internally and with our sub-contractors and clients. We are already observing promising indications of progress, notably increased interest,

heightened team buy-in, and enhanced understanding of lean construction principles. This initial groundwork is paving the way for further improvements. See Table 1 which outlines the targets we hope to achieve through our journey.

Summary and Lessons Learned

The biggest challenge for our project is that it can be described as a paradigm shift within WCL, in which a new system of working will be created to enable the lean culture to be embedded companywide. The strong buy-in demonstrated by the WCL Senior Management team must be reinforced by the support of the various experienced teams of sub-contractors that change from project to project. Key to the implementation of a successful lean initiative will be the ability to bring these sub-contractors along with us on our journey. To

support this project, our Lean Manager will be creating a team of Lean Champions across all project sites and throughout the various administration support functions. These Lean Champions will be required to undertake advanced training, especially in practical problem solving where the yellow and green belt programs will allow them to complete projects on site with tangible results working towards our targeted improvements.

