

Turner Access Limited is a member of Turner and Co, one of Scotland's largest family owned businesses which has been in operation since 1912. Turner Access Limited was established in 1984 as a hire and contracts operation. The company has evolved into a leading manufacturer and supplier of access equipment for safe working at height. The product range includes aluminium access towers, systems scaffolding and collective protection equipment.



Lean Team

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Lean Project

The Lean project was to analyse activity throughout the manufacturing process. The product flows from goods-in through various sawing, welding and assembly areas supported by stores and inspection. One product type will travel a distance of 650 metres throughout the process. There are over 30 product lines.

The team's objective was to identify issues within this area and implement improvements.

Lean tools utilised

The key Lean tools utilised were as follows:

- Process mapping – the team created a process map for one product collecting actual data and details of waste.
- Spaghetti charts – movement of product was charted.
- Pareto analysis – a number of graphs were created showing the impact of defects on production flows.
- 5S – the team carried out 5S activity utilising audits to document improvement.
- Control charts – the team used control charts to gather information from operators on defect analysis

Problem and Objective Statements

Whilst using the Lean tools, the team were able to create a problem statement as follows:

"There is a high element of re-work within the production process potentially equating to an annual cost of £16,000 on one product line in non added value activity"

From this the team created an objective statement for the project as follows:

"The objective over the next year is to reduce the cost of non added value of activity by 50% through low cost / no cost initiatives. Achieving this on one product line initially will set the scene to roll out to other product lines having a substantial impact on reducing costs."

Implementation activity

The deck assembly area became the main focus for improvement which led to a detailed 5S programme. Following the initial audit (which scored very low) the team planned a series of actions under the following 5S headers:

1. **Sort** – excess materials were removed from the area along with redundant storage equipment.
2. **Straighten** – clear signage was installed as the team created a new layout improving the flow of product. Floor areas were clearly marked out identifying where items should be placed. Barriers were erected for process flow and Health & Safety improvements. Shadow boards were introduced to the area.

3. Shine – floors, walls and fixtures were cleaned and repainted. Day-to-day cleaning responsibilities were planned into the production process.

4. Standardise – operators were involved in developing a new layout and in creating work instructions for the area.

5. Sustain – the audits were made visible and a schedule was created for on-going audits. 5S training was delivered to all factory personnel.

The project team took before and after photographs to demonstrate the visual impact of improvement.

Project benefits

The 5S implementation has enabled the on-going collection of data to be developed for the team to improve the overall quality of the product. This will see a significant reduction in the number of products rejected and reworked throughout the various processing areas. The results of this will be as follows:

- Faster processing time
- Increased throughput
- Lower volume of scrap material
- More efficient processing
- Significant cost savings with a target of £50,000 for 2011

Key lessons learned

The business has seen how Lean Thinking will need to be an ongoing culture change across the company. This will mean engaging with all staff members to embed the Thinking element of Lean. Sustainability will require management buy-in and more open communication across the business. The company understands that it needs to constantly develop staff in this area.

Overall, there is a belief that phased implementation will be required on small manageable projects going forward. Data collection and consistency of activity will be key drivers to success.

Future considerations

The company now has a structured plan for ongoing Lean activity which is summarised below:

1. Environmental impact:

- A focus on waste reduction
- Management of compressed air usage
- Review of factory lighting

2. Cross functional training:

- On-going Lean training within design, sales and manufacturing teams
- Improved planning and forecasting

3. Product quality:

- Introduction of a robust quality system
- Develop equipment maintenance schedules
- Review equipment capabilities
- Review operator training/certification

4. Factory layout:

- Reduce fuel usage on fork lift trucks
- Continued development of product flow
- Roll out of 5S

Environmental benefits of "Lean"

With the improved flow and consequent lower movement of materials, to date, the project has seen a reduction of 213 litres of diesel equating to £193.00 and 0.56 tonnes of CO2 per annum.

The company has had its carbon footprint calculated and has begun to communicate this data for a planned overall reduction of 10% by 2014.

"The LMT programme demonstrated that even low cost/ no cost lean projects can make significant impact to our productivity, quality and people. It's all about the mind set and challenging 'how it's always been!' We are about to start our second project and have twice as many volunteers which we see as a very encouraging sign"