

COMPANY OVERVIEW



COMPANY WEBSITE
www.kirbygroup.com

Founded in 1964, Kirby is a mechanical and electrical engineering contractor. The company operates in Ireland, the UK and Northern Europe, and directly employs over 850 highly-skilled employees. Kirby provides full mechanical and electrical contracting services as well as specialist high voltage (HV) and medium voltage (MV) design and construction services to clients across a number of different sectors including Data Centres, Life Sciences, Industrial Manufacturing, Substations and Renewables, Power Generation, Petrochemical and Commercial. After 55 years in business,

Kirby has earned a reputation, supported by client references, for excellence in high-value mechanical and electrical engineering contracting services. This reputation is built on early engagement, finding innovative cost-effective solutions for complex build challenges and an uncompromising approach to safety, quality and delivery. Kirby has strong capabilities in prefabrication, modularisation and digital construction, along with a Lean approach to project delivery, which ensures excellence and value for its clients.

OVERVIEW & BACKGROUND TO THE LEAN INITIATIVE

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A mindset change regarding quality can be seen since the publishing of ISO 9001:2015 standard in September 2016 and even prior to that with the Q-Mark standard applied from 2012. A duty was placed upon companies to now deliver quality from the top down to all levels of the industry. This can be particularly seen within section 5 of ISO 9001:2015 – Leadership along with Section 1.0 of Q-Mark Leadership & Commitment. It emphasised the need for senior management to demonstrate leadership and commitment with respect to the quality system by taking accountability for the effectiveness of the quality management system. It also stresses the importance of senior

management demonstrating leadership and commitment with respect to customer focus and adding value to the customer needs.

With this ISO update, along with the Q-Mark standard, Kirby felt that there was an opportunity to show true leadership from the senior management as part of the company’s Lean initiative. As part of Lean thinking and utilising Plan-Do-Check-Act (PDCA), the use of Gemba walks would be seen as a positive continuous improvement to Kirby work practices. This was an opportunity for the Senior Operations Team to go to the Gemba and highlight positives, reduce wastes (Muda) and promote value to the customer, where going to the Gemba meant going to the actual place where the work was being undertaken and the place where value is created (namely the construction site).

The Gemba walk, much like Management By Walking Around (MBWA), is an activity that takes management to the front lines to look for waste (Muda) and opportunities. Gemba, a term first used by Toyota, which means going

to the real place where the action is. In the 1980s, ‘In Search of Excellence’ author Tom Peters popularised the concept when he talked about management by wandering around (MBWA). Like MBWA, Gemba walks take management to the front lines to see daily happenings. Gemba, however, is more focussed. The Gemba process was to be delivered in three phases:

- Kaizen to determine requirement and content of Gemba Form.
- October 2016 – December 2016 trial of process at 2 projects to finalise process
- Beginning January 2017 – roll-out of process and inclusion into company metrics and KPIs.

This Gemba process is now part of the Lean Construction way of thinking at Kirby and has been since January 2017 with over 45 visits taking place per year. As is it is also part of our continuous improvement process, we are now on revision 7 of the Gemba form to illustrate that once we have a behavioural change within the organisation we can emphasise the importance of something else, as continual improvements are realised.

LEAN INITIATIVE UNDERTAKEN – LEAN THINKING, TOOLS, TECHNIQUES

New quality standards and continuous improvement within the construction industry determined that senior management of companies needed to be present on projects. Progress needs to be driven from the top and senior

management must be seen as promoters of innovation. Lean was the innovation moving forward for Kirby, and Gemba walks would be the tool to promote this and drive it forward.

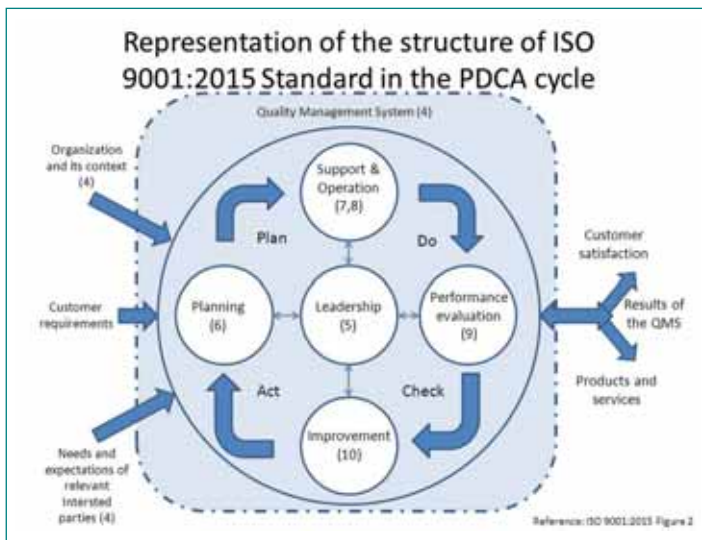


Figure 1. Structure of the ISO 9001:2015 Standard in the PDCA cycle

ISO 9001:2015 highlights the importance of the PDCA cycle in that it can be applied to all processes and to the quality management system as a whole. Kirby utilised this cycle as a way to bring its vision and values to every project it delivers. Kirby's values are Safety, Quality, Delivery, and Value. The aspect of value is where Kirby can create and share value through collaboration, innovation, and operational excellence.

Through this methodology, a Kaizen event was held with the senior management team to determine how best to deliver this value to the clients while also encapsulating the other values and vision it has moving forward. In 2016 when this was happening, Lean thinking was still being developed within Kirby, and there was a need to educate the workforce. The best way forward to deliver on the new standards, deliver value to the client, reduce wastes (Muda) in the processes, and educate Lean Construction within the company was through Gemba walks by the senior management team. A standard QEHS Senior Tour form was created to measure against aspects of TIMWOODS while also including EHS (Environment, Health & Safety) and Quality needs. Now a senior manager can go to a project, walk a site, and identify and eliminate wastes on the project. The wastes highlighted can fall under all aspects of TIMWOODS: Transportation, Inventory, Motion, Waiting, Over-Production, Over-Processing, Defects, and Skills. The site visit can result in improvements to all these aspects as they are noted. Site staff can then be educated in Lean thinking and adding value to the next customer in the cycle.

Three important elements of this Gemba walk included:

- *Go and See* – to get the senior managers to visit the sites and see the work activities.
- *Ask Why* – to explore what is adding value to the clients and what wastes can be removed.
- *Respect* – it is not a blame culture, collaborating with teams and problem solving together will enhance productivity and uptake in Lean thinking.

From a base level of 0 in 2015, to move to trial during the last quarter of 2016, and to roll-out in 2017 resulted in a large change of thought within the company strategy. A total of 48 Gemba walks were completed in 2017, and then repeated in 2018, and in quarter 1&2 of 2019 there were 42 completed – the largest number for the first two quarters.



Figure 2. QEHS Senior Manager Tours (Gemba Walks) completed – 2017 to 2019

Some of the elements that the senior management brought to these Gemba walks included:

- Promoting the use of the process approach and risk based thinking.
- Ensuring that the necessary resources needed for the tasks are available.
- Communicating the importance of effective quality management.
- Promoting continuous improvement and providing leadership support.
- Educating Lean thinking to site staff.
- Highlighting the Kirby Values of Safety, Quality, Delivery and Value (i.e. Kirby Project KPIs).

Additional Lean practices were brought to site through this new initiative. The use of 5S was key, and it makes the workplace safer and more pleasant, improves work efficiency, reduces defects and leads to better customer satisfaction and higher productivity:

- **1S – Sort:** Remove what is not needed and keep what is needed. The workplace becomes easier, quicker, and more efficient.
- **2S – Set in Order:** Arrange essential items in order for easy access. This includes identifying and labelling them and keeping surfaces and walkways clear.
- **3S – Shine:** Keep things clean and tidy. Regularly remove dirt: Damage/Defects are easier to see; safety issues are less likely to occur, and plant and tools work more efficiently.
- **4S – Standardise:** Establish standards and guidelines to maintain the first three S.
- **5S – Sustain:** Make 5S a habit. The benefits of 5S will only truly be seen if it is maintained in the long-term.

Another key Lean tool that became part of the routing of Gemba walks is Visual Management which enhances the smooth flow of information by using visual and audio signals instead of texts or other written instructions. It makes operational standards visible so that people can follow them more easily. This technique exposes waste (Muda) so that it can be prevented and eliminated. It can be used to identify or communicate easily:

- What's right, wrong, done, left to be done, delayed.
- Resources Tools & Equipment, Materials, etc.
- Norms, Methods, etc.

These became part of the Kirby Management KPIs that are now being recorded and promoted on every project within every Gemba walk. Good practices were promoted and shared, and wastes could now be eliminated.



Figure 3. Kirby Senior Management QEHS Senior Tour (Gemba Walk) Register 2017



Figure 4. Sample of a completed QEHS Senior Tour (Gemba Walk) Form

LEAN INITIATIVE IMPROVEMENTS & IMPACT

The improvements seen through the Gemba walk process are clearly shown through Kirby's continued growth within the construction industry. As part of our Q-Mark assessment in 2018, we scored 192 out of a possible 200 points for Leadership; and we continue to score highly within ISO 9001:2015 audits for Leadership. We are able to show through these project walks that Kirby Senior Management aspires to have Kirby be the most trusted provider of high-value engineering and construction services. There has been an increase in focus for adding value to clients. In a Gemba walk in Co. Kerry with an Associate Director, our client and end client were also invited to take part in the Gemba walk. They found the experience invaluable and are now promoting the practice within their own organisations. This is not an isolated case and we have found such collaboration to be a fundamental prerequisite of this practice.

From the site point of view, and collaborating with the site staff, we have found a multitude of positives, including:

- A clean/safe workplace.
- Positive, inclusive culture.
- High Employee engagement – high morale.
- Reductions in over-processing.
- Takt time improvements.
- Right first-time mentality.
- Positive Lean Thinking.

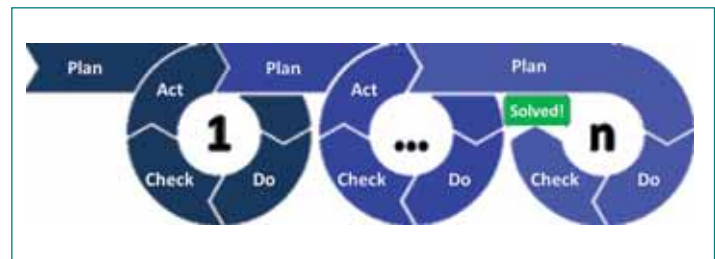


Figure 5. PDCA Cycle of Continuous Improvement

As part of our continuous improvement mind-set, though applying the Plan-Do-Check-Act approach, we are now analysing the data gathered and findings raised during these Gemba walks completed over the past two-and-a-half years, to further realise benefits from this where value is being created on our projects. We are gaining new data and a fresh perspective, in Lean thinking, as we strive towards operational excellence on our projects. Value flows horizontally across our organisation to our customers. It is these Gemba walks which help our senior managers see and reconcile the horizontal with the vertical communication and feedback loops provided so as to realise further benefits and opportunities. This helps further embed Lean Construction as a part of our values in improving our deliver and value add, for our clients and stakeholders.