

# TOYOTA LEAN CLUSTERS PROGRAMME



## Headlines

Teledyne Qioptiq 1 – 100% scrap reduction achieved, saving over £43K in one month

Eriez Magnetics Europe Ltd – Output increased by 33% to 28+ units/week

Archwood Ltd – £39k waste-reduction savings delivered

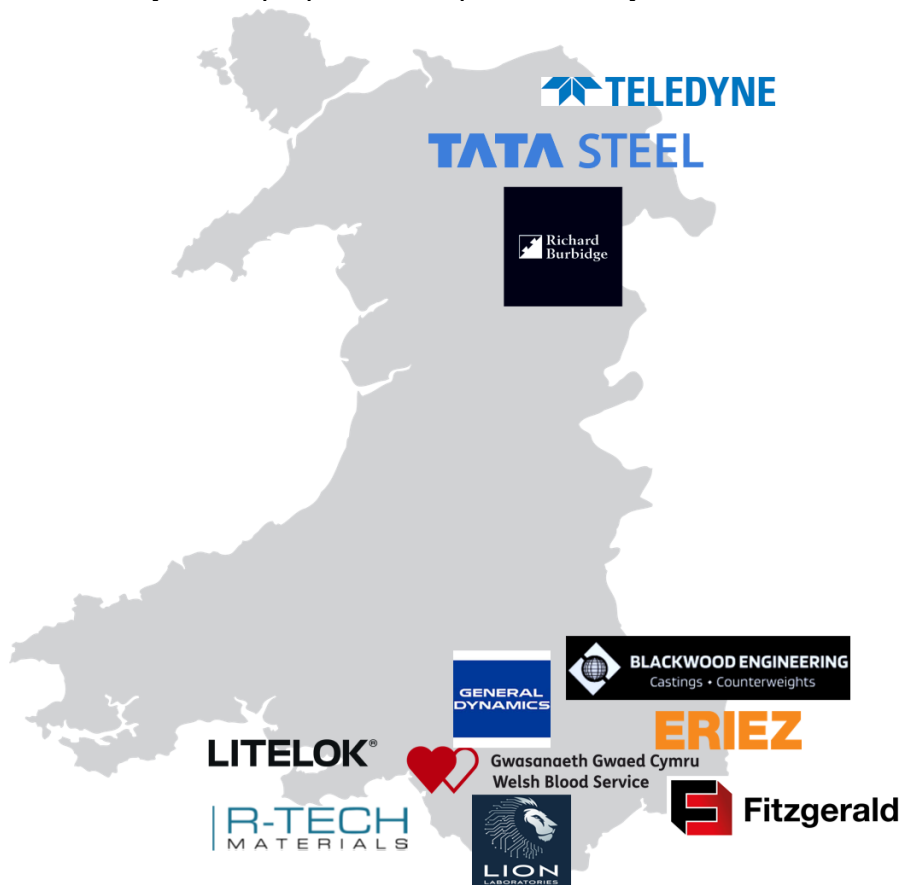
Blackwood Engineering – 70% handling time reduction; zero rework

Fitzgerald Plant Services – £284k annual saving from rework reduction

General Dynamics – 60-minute pulse time reduction

Welsh Blood Service – 99% turnaround within 5 days achieved

Teledyne Qioptiq #2 – Scrap reduced by 85%.



These are just some of the outputs and achievements from Cohort 8 of the Lean Start programme. Twelve companies identified issues and objectives in their workplace over the course of 8 days between May 2025-October 2025.

Lean Start is a practical programme available for Welsh companies where the main objective is developing people the Toyota Way while improving operational performance.

If you're a Wales based business and interested in learning more about the Toyota Lean Clusters Programme, visit our web page or contact the team at [TLMP@gov.wales](mailto:TLMP@gov.wales)

## Cohort 8: May 2025-October 2025

### Teledyne Qioptiq (1)

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Teledyne Qioptiq delivers advanced manufacturing facilities in St Asaph and Bodelwyddan, Wales. The company focuses on high-precision optical systems for aerospace, defence, and space, and is recognised for its quality accreditations and contributions to global technology programmes.</p>	<p>1.Reduce losses of £194,000 per year identified on material waste, where the largest loss contributor was identified on DMG 5-axis, CNC machine amounting to 45.36% of the losses = £88,000. - Reduce material breaks (part number CMG100) at Lehr/Inspection.</p> <p>2. Standardise improvements across all glass products and produce a series of countermeasures.</p>	<p>1. Breaking down the DMG data indicated that the 'Polishing department' was causing the highest defect quantity and total cost of chips were over £34,000. Further analysis identified the top 10 contributors to chip-related costs with part: DD-4442-3101-00 producing highest losses. Using the '5 whys' and a fishbone analysis to break down the data identified the point of occurrence where chips were frequently occurring on part DD-4442-3101-00 amounted to £5,544.34 in losses. Further analysis revealed that ovens were overloaded and cutters were worn, with no standard checklist for operators to check tools.</p> <p>2. Countermeasures that have been introduced include: A departmental programmer employed within the department. A training matrix has been created. Standardisation has allowed for dedicated ovens for a specific product type. Purchasing an extra oven has avoided over filling and reduced chips. Replaced suction cups with silicone for better adhesion, and introduced rechargeable battery stations for suction pens. Standardised checklists for each job, such as tool condition checks. Improved visually supported work instructions. Tool-condition checklist.</p>	<p>1. Utilising Lean Start procedures allowed Qioptiq to eliminated scrap on part number DD-4442-3101-00 and this achieved a 100% yield on DMG machines. For the first time EVER, a campaign of prisms was processed through DMG without any defects reducing costs from £5,500 to £0. Decisions are driven by data and facts throughout operations, and improved by built-in quality.</p> <p>2. In addition, Teledyne Qioptiq are seeing benefits across optical (Yokoten). Teledyne Qioptiq are trending down with their scrap. October 2025 was around £43k, and subsequent months have seen a month on month reduction. Scrap for January 2026 was around £16k. This reduction has come from multiple improvements. Structured problem solving from this course has really played its part.</p>

## Eriez Magnetics Europe Ltd

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Eriez was established in 1942 in Pennsylvania. The company focuses on the development of magnetic separation, flotation, metal detection and material handling equipment. The company employs over 1,000 people globally.</p>	<ol style="list-style-type: none"> <li>Eriez were under achieving their weekly target and needed to Increase weekly output of Overband Magnets from 21 to 28 units. The gap between actual and target is 7 per week, a 25% reduction in output.</li> <li>Improve current stock management and storage processes. Poor stock management has been resulting in late orders, supplier issues delivering parts late, and/or the incorrect number of parts ordered.</li> <li>Implement standard work instructions in the warehouse.</li> </ol>	<p>Eriez identified bottlenecks in their processes and introduced countermeasures to close the weekly production gap.</p> <ol style="list-style-type: none"> <li>Analysis of the main issue using a Pareto graph and root cause analysis identified the bottlenecks. This showed the main reason for underachieving the weekly target was due to parts shortages. In particular, laser cut pinch covers at the Overband Magnet Production Area were identified as the top shortage. Warehouse &amp; Stock Management Improvements were implemented. Clearly labelled storage locations for RH and LH pinch covers. (Visible numeric identifiers such as rack IDs and part numbers like E0001219 and E0001220).</li> <li>Countermeasures were implemented to standardise processes:                     <ul style="list-style-type: none"> <li>An inhouse lasercutter was sourced.</li> <li>A dedicated team in the purchasing department took control of supply issues closing the gap of weekly output.</li> <li>A live planning system, improved part identification and discipline.</li> <li>Dedicated warehouse locations were implemented - new locations and labels for pinch covers increased order control.</li> <li>Improved part storage, labelling and identification process.</li> <li>Standardised processes and implemented ownership.</li> <li>Best practices adopted by other affiliates.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Eriez have achieved their goal of no shortages on pinch plate cover parts for the build of Overband magnets</li> <li>Eriez have also increased weekly output consistently from 21 units to 28 units per week. Infact the company excelled to 30 plus units per week.</li> </ol> <p>Yokoten sharing resulted in other Eriez affiliates adopting the improved processes.</p> <p>Standardisation has been extended site-wide, and the team reported improved accuracy of decision-making and reduced assumptions.</p>

Archwood Ltd			
COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Established over 150 years ago, Richard Burbridge, part of the Archwood Group, is a manufacturer of high-quality timber products, including mouldings, stairparts, and outdoor balustrading.</p> <p>The Archwood Group is known for its brands which consist of, Richard Burbidge, Atkinson &amp; Kirby (hardwood flooring), and Masons Timber (bespoke hardwood mouldings and boards). Archwood combines traditional craftsmanship with modern technology.</p>	<ol style="list-style-type: none"> <li>1. Reduce Hardwood waste by 25% through the CML from random width lumber. Targeted £60k saving.</li> <li>2. Improve knowledge in Operations around Hardwood processing through the CML.</li> </ol>	<ol style="list-style-type: none"> <li>1. Standardisation of process (SOP) procedures were introduced for the CML &amp; Planning.</li> <li>2. New combinations of sizes were introduced on Works Orders to improve optimization.</li> <li>3. Alternative Hardwood lumbers were procured at higher costs to help reduce waste and overall material costs.</li> <li>4. New blades were procured &amp; installed. 4mm blades to 2.6mm to yield better optimization where tolerances of sizes are tight.</li> </ol>	<ol style="list-style-type: none"> <li>1. 65% savings achieved towards the £60k target. This amounted to £39,000 saved.</li> <li>2. BOMs updated with new scrap % on Hardwood's linked to the CML.</li> <li>3. Increased awareness of waste in manufacturing with knowledge that can be applied to other manufacturing areas.</li> </ol>

Tata Steel – Shotton			
COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Tata Steel's Shotton Works in Deeside has just celebrated its 125th anniversary and manufactures approximately 500,000 tonnes of metallic-coated and pre-finished steel each year for building envelope, domestic and consumer applications. Tata Steel at Shotton consists of two main businesses, Colors and Building Systems employing around 800 people.</p>	<ol style="list-style-type: none"> <li>1. Air Knife issues causing rub mark defects resulting in degrades on 255 Grade at Line speeds greater than 160 at the Air Knife Assembly. The largest contributing defect (by tonnage) is rub marks. Target is to reduce 140t waste to 0 between Jan-Oct 2025.</li> </ol>	<ol style="list-style-type: none"> <li>1. The group spent four months compiling baseline data, and a cause and effect analysis. Within 3 months of their Lean Start course, they were implementing countermeasures for the issue and gathering results which will conclude in March 2026.</li> </ol>	<ol style="list-style-type: none"> <li>1. By March 2026, when all countermeasures are completed, Tata Steel Shotton believe they can achieve a target of zero, saving £116k per year. In addition, approximately £400k could be saved due to knock-on benefits from solving this problem.</li> </ol>

## R-Tech Materials

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>R-Tech Materials was established in 2002. Based in Port Talbot, the company has grown to 45 employees across five departments: Steel, Composites, Water, Analytical, and Consultancy. R-Tech provides materials testing, consultancy, research and development, and case studies, serving a wide range of clients.</p>	<ol style="list-style-type: none"> <li>1. Due to company expansion, space optimisation is required, and a more efficient stock control process adopted.</li> <li>2. Increase Safety.</li> <li>3. Aim to increase profit from approx. £647/m<sup>2</sup> to a target of £700/m<sup>2</sup>—a projected improvement of over 8%.</li> <li>4. Implement and demonstrate lean practice internally.</li> </ol>	<ol style="list-style-type: none"> <li>1. Starting with a storage area that all staff used, 5S was implemented. Unused or redundant items were sorted and, where possible, sold for additional profit. Stock control became an agenda item at the operations board meeting.</li> <li>3. Stock control and red tag processes were digitalised using Monday.com, with QR codes enabling easy access and standardisation.</li> <li>4. Getting buy-in from stakeholders was crucial for success. All staff are engaged and are trained in new processes, and plans to extend the 5S improvements to the workshop floor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Staff reported that the workplace became significantly more efficient through lean philosophies, with safer, easier access to materials and less time wasted searching for items. This improved transparency and accountability for inventory management</li> <li>2. Aim to increase profit from approx. £647/m<sup>2</sup> to a target of £700/m<sup>2</sup>—a projected improvement of over 8%.</li> <li>3. The project demonstrated that small solutions make a big difference. The process generated space for new equipment.</li> </ol>

## General Dynamics

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>General Dynamics' assembly integration and testing facility in Merthyr Tydfil were delivering the Ajax and Foxhound armoured vehicles for the British Army. The site is 57 acres, with 236,000 sq ft of flexible manufacturing space with numerous assembly lines, and quality control. General Dynamics are one of the UK's largest defence companies and a lead supplier to the Ministry of Defence.</p>	<ol style="list-style-type: none"> <li>1. Reduce Line B average pulse time from 151mins to 100mins by October 2025.</li> <li>2. Address root cause of inefficiency - tackle pump truck availability, line layout, and lack of standard procedures.</li> </ol>	<p>Each assembly line has 10 processes. A "line pulse" is effectively moving a vehicle and all the parts for the vehicle from station to station.</p> <p>Analysis was undertaken regarding the number of staff employed during processes, the number of pallets and movement time per pulse, and additional equipment availability used at various stages. This identified contributors for the delay, and processes 5-7 were the worst culprits. After asking the 5Y's a number of countermeasures were put in place, including staggering the pulse to ensure the most efficient use of members.</p>	<ol style="list-style-type: none"> <li>1. Achieved average pulse time reduction of up to 60mins per pulse. The team achieved a projected reduction of 21 days in end-to-end cycle time across the Ajax programme lifecycle.</li> <li>2. Through lean project work, it was identified the inefficient pulse times on line B were during processes 5-7. Countermeasures led to improved process flow, reduced delays and enhance communication.</li> <li>3. General Dynamics have rolled this out to the other lines to standardise the process across the shop floor.</li> <li>4. The company is now going through a new shop floor layout currently so when the changes have been made, they will reintroduce the pulse sheets from team coordinators to fill in and monitor.</li> <li>5. Through Plan-Do-Check-Act (PDCA) cycles and data driven experimentation, the team identified the most effective approach, enabling the successful implementation of a standardised working method across the assembly lines.</li> </ol>

## Welsh Blood Service

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>The Welsh Blood Service is a division of Velindre University NHS Trust responsible for the collection of blood in Wales, and of the distribution of blood products to hospitals within the country.</p> <p>The Red Cell Immunohaematology Laboratory (RCI) at Talbot Green is the referral centre for all complex RCI investigations in Wales. Donations are processed and tested at the laboratories based in Talbot Green, Llantrisant, before distribution to customer hospitals throughout Wales.</p>	<p>Under The Welsh Blood Service Service Level Agreements with customer hospitals, RCI turnaround times for non-urgent referrals are set at 90% within 5 working days. This target was not being met, and the project aimed to address this gap.</p> <p>1. Reduce the number of incomplete hospital antibody investigations at Day 4, to align with hospital quality standards and national pathology benchmarks by 18 September 2025.</p>	<p>The group monitored the number and type of blood samples received and identified the point of occurrence at day 4. After implementing Fishbone analysis and the 5 Y's root causes included inappropriate skill mix per shift and limitations with staff training, plus a lack of standardised workflow documentation.</p> <p>The right blend of skills among staff could be rectified and maximised efficiency and service quality, and workflow and authorisation procedure assessment enhanced compliance and reduced errors.</p>	<p>The Lean Start programme has been a major driver of transformation within the laboratory services, directly enabling the significant and sustained improvements now seen in Red Cell Immunohaematology (RCI) turnaround times. By redesigning processes, removing waste, and empowering staff to lead change, the programme has created a more efficient, consistent and resilient workflow.</p> <p>As a result, RCI performance has risen well beyond expectations, with the latest results achieving 99% of blood testing completed within five days against a KPI target of 90%. This demonstrates the clear and measurable impact of Lean Start on service reliability and underpins continued confidence from hospitals and patients.</p>

Blackwood Engineering			
COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p><b>Blackwood Engineering</b> have been delivering quality products and services to their clients for over 75 years. They work alongside leading brands as counterweight and castings suppliers to the construction and heavy machinery industry.</p> <p>Components are sourced globally to exacting quality and process standards, ensuring customer requirements are met consistently. Painting and finishing are performed locally to customer specifications</p>	<p>The aim throughout the project is to improve our production of part 579-1422.</p> <p>Standard time: 17,339 mins Ideal time: 13,250mins</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Reduction in multiple handling of parts, and lead time</li> <li>2. Eliminate rework due to surface defects (e.g., blistering).</li> <li>3. Improve Health &amp; Safety in Material Handling area on paint shop floor.</li> </ol>	<p>A large stock of part 579 – 1422 was held in storage which wasn't temperature controlled for 11,100 minutes This could lead to problems with surface defects requiring a restart of the process again. Working with the material handlers, Blackwood Engineering created to-scale layouts of the paint shop material handling area to improve layout, eliminate double handling and improve continuous flow of the product, The company implemented 10 areas for the 579 – 1422 for when they are in the curing process. This allowed the company to directly transfer the part straight into the process instead of “double handling” into a storage area.</p> <p>Blackwood Engineering knew truck length was 4.2m, turning circle 0.7m, clearance 0.6m and the aisle size was 5.5m.</p>	<ol style="list-style-type: none"> <li>1. With the improved layout, handling time reduced by 70% by removing two FLT movements and redesign of shop floor.</li> <li>2. 100% reduction in rework - due to redesign and bringing stock inside preventing surface defects. This allowed more staff available to get prepped stock through, and processed quicker. From 17,339 minutes to 12,495 and no re-work.</li> <li>3. The paint shop material handling area re-design resulted in minimal vehicle to pedestrian interaction, prioritising safety in the area, with a 750mm walkway between stillages for safe access created, and crane reach and safe lifting zones identified.</li> </ol>

Teledyne Qioptiq (2)			
COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Teledyne Qioptiq is a leading supplier in the aerospace and defence electronics sector, with a legacy dating back to the 1960s.</p>	<p>1. Reduce scrap costs amounting to £48,000 (13.83%) due to material breaks. £30,000 of these breaks specifically relate to CMG glass type.</p>	<p>1. A Root Cause analysis took place and a series of countermeasures have been introduced at various stages of production to reduce waste.</p> <p>The following standardised checks have now been implemented:</p> <ul style="list-style-type: none"> <li>- Replace suction cups – material change to silicone to ensure better adhesion to the glass and reduced drops in the glass.</li> <li>- Rechargeable Battery stations for the Suction Pens are now changed daily at 6am. This reduces the drainage of batteries and glass dropping causing breaks.</li> <li>- Reduce air pressure of blow off guns to 1.75 throughout the factory reducing breakage.</li> <li>- Anti static checks have been implemented.</li> <li>- Reduce the high number of touch points reducing breakage. As an alternative, review the option of robot loading at Lehr inspection stage.</li> </ul>	<p>1. Scrap costs have been reduced by 85% in breaks at the Lehr/inspection within 6 months following identification of the point of occurrence of breakage.</p> <p>Secondary benefits: an additional £30,000 estimated cost savings across other glass products due to positive secondary effects of countermeasures.</p>

## Fitzgerald Plant Services

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Since 2007 Fitzgerald Plant Services is a provider of specialist services within the rail and construction industries, providing repair, maintenance, upgrade and manufacturing services UK wide. The firm based in Cwmbran; South Wales now employs more than 100 people including over 50 service engineers nationwide. The company holds major maintenance contracts with local governments and Network Rail worth over £30m and provides assistance to over 300 customers.</p>	<p>Incorrectly completed engineer job sheets, incurs up to 2hrs per sheet to correct, before the customer can be invoiced.</p> <ol style="list-style-type: none"> <li>1. A SMART target set in May 2025 to decrease the number of incorrectly detailed job sheets completed off site from 50% to 10% by 30th September.</li> <li>2. Amend new job sheet, produce a How To guide and increase training.</li> </ol>	<ol style="list-style-type: none"> <li>1. Using Practical Problem Solving (PPS) activity, it was identified 87% of sample documents did not meet the required standards, and those job sheets completed off-site from equipment servicing tasks, lacked specific detail.</li> </ol> <p>This calculated to 440 hours a week implementing corrections. In monetary terms, £6,000 a week in lost working time or £320,320 a year.</p> <ol style="list-style-type: none"> <li>2. After a Cause &amp; Effect analysis, some factors were out of our control, but with minimal training, the lack of standardised document completion process were direct causes and could be improved. A new starter training plan was implemented along with the revised job sheet.</li> </ol>	<p>Two months after implementing the new job sheet, the number of hours per week correcting reduced to 50 (from 440 hours) saving the annual equivalent of £283,920.</p>

## Lion Laboratories

COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Lion Laboratories is a global leader in the supply of electronic breathalysing devices, which are manufactured by hand on-site at its Welsh headquarters. The company's products are used by police forces worldwide including the UK, Denmark, Malaysia, Thailand, Oman, Switzerland, Namibia and Australia.</p>	<p>1. Reduce the number of Customer complaints, from 2.39-1% PA. (Gap: 1.39%). In particular, eliminate the short shipment of mouthpieces (40%) from the packing area in doing so, reduce customer complaints            Improve product quality, and enhance operational efficiency relating to products produced and despatched.</p>	<p>Prioritised Problem: Short Shipment of Mouthpieces            A Root Cause Analysis, 5S improvements, Cause &amp; Effect and 5-Why Findings revealed key issues. This included, operatives were not trained to work instructions, mouthpieces were stored in the wrong location, storage areas were disorganised and there were no outbound checks. there were also weak WIP management controls, distractions during packing, no workstation standardisation and there was incorrect stock from suppliers and damaged parts.</p> <p>Countermeasures were developed and introduced:</p> <ul style="list-style-type: none"> <li>- Process standards were revised and work instructions were created for all employees.</li> <li>- Post packing quality checks areas were implemented.</li> <li>- Checks on incoming stock and recording any short shipments and damages were recorded.</li> <li>- A formal layout of stores was produced and signage was implemented.</li> <li>- A workstation layout was standardised ensuring tidy and clearer work areas.</li> </ul>	<p>The project emphasised the importance of continuous Improvement and learning following data, avoiding assumptions, sharing results, and completing all countermeasures.</p> <p>Improved resource control.            Uniformity of work processes.</p>

Litelok			
COMPANY	OBJECTIVES	ACTIONS	KEY RESULTS
<p>Litelok was founded in 2013, and produce bike and motorcycle locks from their solar-powered factory in the heart of South Wales.</p>	<p>1. Using 3S (Sort, Set, Shine), to re-assess their X1 and X3 assembly rooms</p> <p>2. Identify and eliminate waste in the Warehouse process.</p>	<p>1. After watching the process as a team in the assembly room, Litelok introduced 3S. Litelok eliminated waste, with only required amount in the station. Components were labelled and made more visual. Introduced stock lanes, min and max levels and put the boxes on wheels. Racking is now specific for X1 and X3 product and has been moved to an area easier for dispatching.</p> <p>2. Litelok then repeated this process in the Warehouse, engaging the staff for input. By ensuring only necessary components are on the work bench, removing all sub assemblies and creating single piece flow production, with the following days production set out under the bench.</p>	<p>Introducing the 3S into our work place started to identify some additional waste Litelok had not seen before. Litelok had no visualisation of what they were producing and no way to measure progress.</p> <p>The company has implemented a basic andon system. Staff now have instant access to all information: Volumes, hourly production, task targets, elimination of paper andon pull for immediate problems. This can now be shared throughout the building.</p> <p>Litelok are not finished with the 3S and would like to improve what they are doing further. The company is now looking at another S which will be STANDARDISE.</p>