

## Case Study Title: Lean the BAM way

### Company Overview | BAM | bam.com

Operating successfully for over 150 years, the bedrock of Royal BAM Group's success has always been an understanding of our clients' needs and a willingness to deliver innovative solutions that ensure cost savings and surpass environmental expectations. Operating across all construction sectors and throughout the complete project lifecycle, our principal activities are building contracting and civil engineering in the public, private, and PPP sectors. Other activities include facilities management, property development, and

rail infrastructure.

We are a member operating company (OpCo) of Royal BAM Group of the Netherlands, a stock market listed PLC answerable for performance, which has a turnover of €8 Billion and employs approx. 23,000 people worldwide. At BAM, we are building the present while creating a sustainable future for all.

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## Overview & Background to the Lean Initiative

Within BAM, lean is a proven strategic approach, to improving our organisational culture, which unlocks value across our business. It is also the foundation of our transition to Industrialised Construction.

BAM have been successfully deploying Lean across its organisation, for over 10 years.

In 2022 BAM (Nuttall), achieved an industry leading Lean Maturity Assessment (LMA) result of 3.4/4 with the National Highways Excellence LMA, this rates BAM as the leader in Lean amongst Tier 1 contractors in the UK.

During 2022, BAM brought together its four operating companies across the UK & Ireland to create a single harmonised business. As part of BAM's strategy, Lean is a key enabler for one of BAM's core objectives- Operational Excellence.

The Lean & Operational Excellence project was developed from

the model, and a team created to deploy the model from its civils business across the operational companies.

Improving our overall Lean & Operational Excellence maturity increases strategic capability, organisational capacity and competence.

- Increased 'Value,' improved production, efficient resource management.
- Reduced rework, error, risk, Carbon impacts, process waste, delay, variation, and cost.
- Upskilled workforce and supply chain in standard improvement, problem solving and planning methods.
- Increase market confidence – Lean is a differentiator.
- Further support more Modern Methods of Construction (MMC).
- Lean supports the identification of objectives for future improvement and transformation projects.
- Improves organisational culture with Lean collaborative working and problem-solving methodologies.

## Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

We based our deployment on a three- phase approach; 1: Benchmark, 2: Train, 3: Improve.



Figure 1: Three phase approach

The first step in the process of rolling out the programme involved benchmarking the business. This consisted of planned strategic assessments to establish where lean deployment is already happening and the level of maturity in all areas of the business.

As a result of this Lean Improvement Action Plans (IAP) further drive continuous improvement and Lean deployment, by identifying training needs and opportunities and recognising shortfalls and scalable opportunities within business units, sectors, and our regions.

The Scope of the project included Identifying opportunities to establish lean improvement project teams which are supported and enabled to become self-scaling.

This project also involved a pilot study for a Lean Construction Programme tailored to both the existing business and our Industrialised Construction strategies, for example:

- Identify and eliminate waste within our projects (7 wastes).
- Introducing production planning tools to drive an assembly mindset on our projects.
- Implementing Just In Time Delivery onto all DFMA projects to reduce resource and re-handling.
- Adopt continuous improvement tools using accurate real time performance metrics (Plan Do Check Act / 5S).

The deployment model features Pilot Improvement projects in each Business Unit.

## Lean Initiative Improvements & Impact

There are many benefits being realised by the business as a result of deploying the Lean project.

The benefits include the following:

- Reduced waste and increased value returned - doing more with less.
- Enhanced stakeholder (client/design and supply chain) engagement and outcomes.
- Enhanced safety, quality, commercials, programme certainty and carbon reduction.
- Enhanced digital delivery - BIM, digital site data capture.
- Reduced errors and omissions, variation / change orders, legal fees and insurance premiums.

Critical success factors are the following:

- CSF: Management and Business Unit (BU) engagement and adequate resourcing and funding.
- CSF: >65% staff competency in Lean thinking across UK and Ireland BU's within 3 years. •
- CSF: >75% projects utilising Lean tools within 3 years.

In deeper detail deploying the Lean Improvement Programme supports:

1. Improved earnings before interest, taxes, depreciation, and amortisation (EBITDA)
  - Profitability- Reduced costs, reduced waste, improved efficiency.
  - Performance- Predictable delivery, improved productivity, reduced downtime, reduced risk.
2. Improved Risk Performance.
  - Commercial- Predictable delivery, reduced costs.
  - Digital BMS/PMS- Improved performance, efficiency, and management organisation through Data Analytics.
  - Safety- Reduced incident rate, improved compliance, and communication.
  - Environmental- Reduced incidents & carbon, improved

UK and Irish Business Units are broken down into the following:

- Tier 1 - staff involved in day-to-day production / administration work.
- Tier 2 - Staff involved in management and support for improvement projects.
- Tier 3 - improvement experts and staff who facilitate improvement projects.
- Tier 4 - Supply chain staff involved in day-to-day production and administration work.
- Tier 5 - Client and supply chain staff involved in management and support to improvement projects. There are many benefits being realised by the business as a result of deploying the Lean project

compliance, and communication.

- Quality- Reduced rework cost, improved compliance, and communication.

3. Improved Client and Worker experience:

- Predictable 'on-time' delivery. •
- Improved satisfaction – External / internal customer retainment, improved reputation (creating a platform for future growth).
- Improved communication and innovation. •
- The Improvement Programme supports the strategic plan to Maximise Value, minimise Cost and prevent Risk.



Figure 2: BAM construction site

## Summary and Lessons Learned

In summary the BAM UK and Ireland Division Lean Improvement strategy involved three distinct phases, resulting in significant improvements and valuable lessons learned.

### Phase I: Benchmarking the organisation's Lean maturity

This involved conducting a comprehensive assessment of existing

processes, identifying areas of waste and inefficiency, and establishing a baseline for future improvement efforts. Through this phase, the organisation gained a clear understanding of its current state, enabling targeted interventions in subsequent phases.

### Phase 2: Training

Recognizing the importance of empowering employees with the necessary Lean methodologies and tools, BAM provides comprehensive training sessions to identified staff members. This training supports a culture of continuous improvement, equipping individuals with the skills to identify and eliminate waste, streamline processes, and enhance overall efficiency. By investing in the development of our workforce, BAM is ensuring a strong foundation for increased strategic capability and capacity.

### Phase 3: Improvement and review

This phase focused on realising both the hard and soft benefits of Lean. Equipped with new competencies and skills, employees actively engage in process improvement initiatives. These efforts

have resulted in tangible outcomes such as reduced process times, increased productivity, and cost savings. Additionally, we see softer benefits, including improved employee morale, enhanced communication, and increased collaboration across teams. By prioritising both the quantitative and qualitative aspects of Lean implementation, BAM is supporting its vision of 'Building a Sustainable Future' and a culture of continuous improvement.

Lessons learned from this successful deployment highlighted the importance of thorough benchmarking to understand the starting point, the significance of comprehensive training to build capabilities, and the need to focus on both tangible and intangible benefits. Additionally, it emphasised the importance of strong leadership support and active employee involvement in driving Lean initiatives. Overall, this Lean Improvement strategy has exemplified how a structured approach, combined with employee empowerment and a focus on continuous learning, can lead to significant and sustainable organisational improvements.