



# Our National Productivity Challenge

## Eliminating Waste and Adding Value

In 2018, the UK construction industry generated £117bn of economic output, representing 6% of our total GDP.

Currently, UK construction productivity lags behind most other major sectors (as measured by the Office of National Statistics) with half of construction projects finishing late, and one third over budget.

Improving productivity in such a large and significant sector clearly has massive potential economic benefits.

We've been working hard to play our part by more than doubling our efficiency savings since 2019 and have a plan to do more.

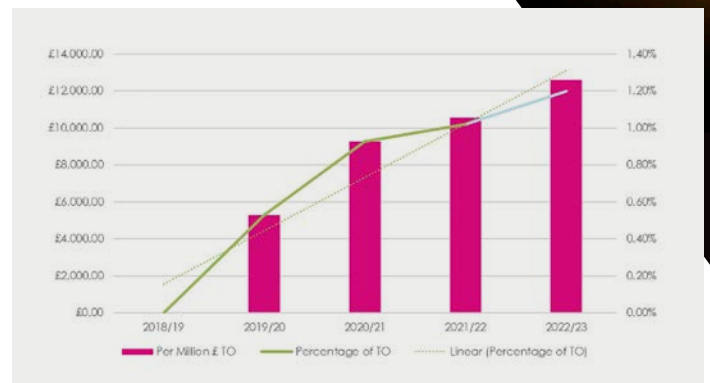
Octavius Infrastructure's plan is to achieve consistency, stability and predictable outcomes across all projects. Our research shows that by using data correlations we can predict the outcomes of Safety, Quality, Cost and Productivity. We can set our project attributes to ensure positive performance. Implementing Lean Six Sigma principles is part of the solution to this challenge. Along with this we support our people to develop their skills and make a cultural shift.

Lean enables continuous and sustained improvement in efficiency, safety and quality. We all have a role to play in successful implementation.

Putting Lean practices into action we've delivered more than £5m of efficiencies in a little over 3 years and track those savings per million turnover across our projects.



Savings Per Million £  
Turnover 2021/22 to date  
2022/23 forecast



Ultimately this means we can deliver more with the same resources while creating greater resilience in our transport networks and bringing better value for taxpayers. It also means we can more efficiently connect the customers and communities we serve.

Embedding Lean management principles became a core feature of Octavius Infrastructure's business strategy early in 2019. Since then, Lean has evolved from an aspiration to a natural part of how we work every day.

## Lean Six Sigma

Within Octavius Infrastructure Lean Six Sigma is driven by Performance Manager, Kimberley Wild. She is passionate about driving change and tackling the long-standing productivity challenge facing the industry.

Using her Lean Black Belt expertise Kimberley trains and supports our people, customers and suppliers to deliver improvement projects.

The key, according to Kimberley is to truly understand value from the customers' perspective.

The critical shift in thinking is to find the time and space to be creative and solve the problems of the future, not firefight in the here and now.

Kimberley's enthusiasm extends to industry where she is Chair of several Lean forums.

**"We cannot simply ask the industry to work harder and faster, we must focus on the evolution of how we deliver projects for our customers".**



**Kimberley Wild** Performance Manager

## Lean Management Principles

**There are five principles at the heart of Lean management:**

- Identify & specify value from the customer's perspective
- Identify and map the value stream of end-to-end process
- Let the customer pull value by designing processes that respond to customer demand
- Eliminate waste and activities that don't bring value to the end product
- Continuous improvement and pursuing perfection

These principles are consistent with our business culture and always have been. Lean brings structure, tools and processes that help ensure these goals are delivered consistently throughout the business and on every project.

Embedding Lean is a demanding process and won't happen without careful planning, committing the right resources and skills development across the organisation. There are no quick or easy fixes and benchmarking our performance is vital. Since early 2019 Octavius Infrastructure has adopted the Highways England Lean Maturity Assessment (HELMA) process.

In the first year our assessment moved from 0.9 to 1.9. Our most recent assessment was 2.4. We've moved from close to the bottom of the pack to a solid mid-table position in a relatively short space of time. There's no doubt that progress was enabled by the fact that there was already a good cultural alignment with the objectives of Lean management.



## Driving Change

Bringing the process in house was essential. This allowed the training and implementation to be tailored to the specific needs of Octavius Infrastructure and National Highways, in a way that wouldn't have been possible if we'd relied on bought-in training.

Change throughout the organisation has been driven by Kimberley Wild who undertook 46 training modules within a year to become our first Lean Six Sigma blackbelt. She is overseeing the roll-out of tools, processes and training with our internal teams, partners and supply chain.

The fundamentals for implementation were in place by the end of 2020. Efforts to embed Lean principles in everyday operations then intensified. Lean champions were trained and individual strategies were aligned to ensure that Lean delivered tangible benefits for Octavius Infrastructure and our customers across the key dimensions of productivity, quality and health and safety.

By the end of March 2022 Lean awareness training will have been delivered to 113 members of our supply chain along with 277 Octavius Infrastructure staff.

### The Lean methods and tools implemented include:

- **Collaborative Planning**
- **Visual Management** – Normal/Abnormal, Ahead/Behind, Location, Sequence
- **Value Stream Mapping** – Streamlined process with waste identified and removed and non-value added tasks reduced to the bare essentials (e.g. business controls).
- **DMAIC + T** – Define, Measure, Access, Improve, Control + Transfer learning . This is the improvement structure that underpins Lean
- **Root cause analysis**
- **Kanban** – used to 'Pull' not 'Push – value to our customers
- **5S** – Sort, Straighten, Sweep, Standardise, Sustain
- **The 8 wastes** – TIM WOODS
- **Standardisation** – same every time
- **SPRINT** – Short duration
- **Takt Time** – in the beat of the customer

## Embedding, Lean In Action

Knowledge sharing within all organisations is challenging – particularly in an industry with remote teams working across multiple work sites, making Lean more difficult to implement consistently.

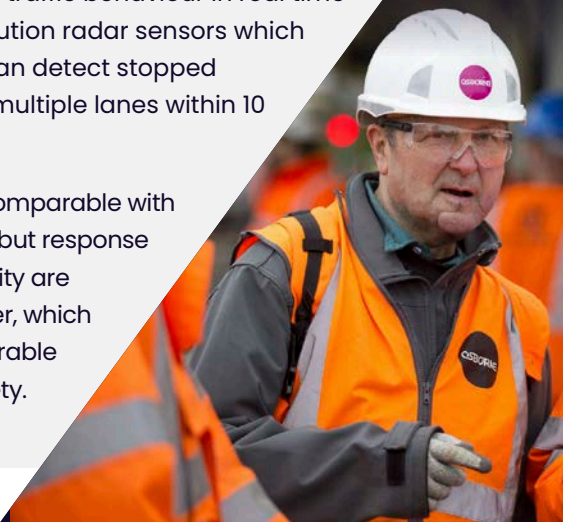
To successfully embed Lean principles in our operations it was essential to create a project delivery environment that made Lean tools the obvious, and easy, choice. It also means thinking differently and encompasses all aspects of project delivery

**Lean in Action:** Vehicle recovery during roadworks usually involves having recovery vehicles on standby close to the road works. On the A46 enhancement scheme the team recognised that National Highways was contracting a recovery service with a national supplier in it's management of the strategic road network.

An integrated and collaborative approach, where the national supplier was paid a monthly retainer and an agreed fee for each recovered vehicle provided a saving of £533,000 out of a projected cost of approximately £590,000.

To illustrate the point that Lean benefits aren't all about saving money, traffic management on the Binley project replaced the usual manned CCTV with radar sensor technology. The NavTech system analyses traffic behaviour in real time using high-resolution radar sensors which scan 360° and can detect stopped vehicles across multiple lanes within 10 seconds.

The costs were comparable with monitored CCTV but response times and reliability are significantly better, which makes a considerable difference to safety.





## Where Are We Now?

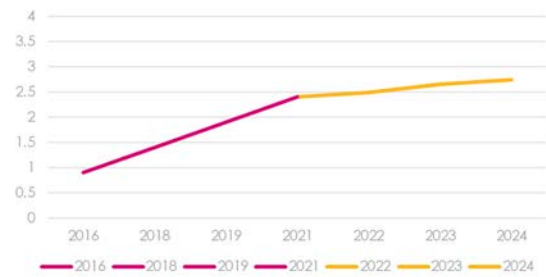
Our most recent HELMA Highways Excellence Lean Maturity Assessment (HELMA) by National Highways recognised a significant shift in our capabilities, and since 2016 our HELMA score has increased by 1.5 (shown in graph). There was a huge 37.5% increase in the deployment of Lean across the business, supported by a 25% increase in the leadership and engagement scoring. They commented on the extent to which tools and expertise had become embedded and highlighted our capability to use the voice of the customer to eliminate waste and deliver value.

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**Lean in action:** We standardised and improved the process of handling reactive faults for Network Rail Works Delivery to eliminate 475 working days of effort per year.

HELMA Score Over Time



Assessors were particularly impressed with how we have created space for problem solving on a daily basis and the roll-out of training across the organisation and with partners.

Lean green belts have been trained and are deployed throughout our teams to further embed Lean principles and ensure that we are consistently pulling value from our performance data. This data helps to guide teams and eliminate all activities that add no value to our customers.

As we continue to move forward it will be in collaboration with framework and supply chain partners so that we're all working consistently to drive out waste and deliver greater value to our customers.



To learn more about OIL's approach to project delivery visit our **Transport Infrastructure Resource Centre** or contact Mike Todd [hello@octaviusinfrastructure.co.uk](mailto:hello@octaviusinfrastructure.co.uk)

