

# How Lean brings the Construction Playbook aims within reach



The aims of the **Construction Playbook** are hard to argue with. Achieving them will transform productivity levels in our industry and ensure that projects are consistently delivered in ways that produce better outcomes for infrastructure owners, operators and users.

The question as always is: how do we get from where we are to where we need to be? Based on our experience there's little doubt that fully embedding Lean principles into the industry will be a large part of the answer.

Within Octavius our Lean journey is fully aligned with achieving the Construction Playbook aims. Implementing Lean across the whole of our business provides a framework through which we're making measurable progress towards delivering better productivity, outcomes and customer value on every project. This is in line with our four key pillars which form the heart of our organisation: Assured and Safe Delivery; Exceptional Value; Learn, Grow & Thrive and Sustainable Legacy.



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# Playbook aims

In addition to the overarching aim of productivity improvement, the Construction Playbook has specific objectives that align to Lean implementation. These are summarised below.

## Outcome-based

Both the Construction Playbook and Lean are focused on improving outcomes. One key Playbook objective is that each project should have clear and appropriate outcome-based specifications, designed with the input of industry experts.

Lean methods help to embed this discipline across the breadth of the business and down through every project we deliver. Lean also provides valuable context and direction for continuous improvement and innovation – so that change is always channelled towards a more desirable outcome.

Many implications flow from outcome-based plans and specifications. These touch on how contractors engage with supply chains to identify common success criteria. Outcome-based specifications also affect how teams are organised and aligned to keep nudging the bar upwards across a range of measures: quality, efficiency, productivity, asset resilience and more.

## Standardisation

Manufacturing businesses achieved massive productivity gains over the last century through standardised products and processes and through implementing Lean principles into the business. These innovations paved the way for today's highly automated factories. Similar gains have largely eluded the construction sector generally and infrastructure in particular.

This is because standardisation across infrastructure projects is more challenging. Each asset and the surrounding topography and environment are unique in many ways. Nevertheless, there are opportunities to be exploited, particularly for station upgrades and **Access for All (AfA)** projects where modular approaches and standardised design elements are proven to deliver efficiency and quality improvements.

Part of the solution is to look for standardisation opportunities in the first place by adopting a process and system-based approach rather than being project-centric.

## Increased speed

Delivering projects faster means less disruption to transport networks and reduced inconvenience for road and rail users. The Construction Playbook recognises that you can accelerate projects and avoid unforeseen delays by putting more detailed work into the planning phase.

One critical question is how this enhanced planning activity is organised and focused. Our experience shows that applying Lean principles to project planning and Early Contractor Involvement (ECI) provides a much-needed focus and delivers quantifiable gains.



Collaborative master planning also provides effective early clash detection to ensure that truncated delivery schedules will be achieved in practice.





## Implementation roadmap

Lean implementation is a huge task. The scale of the task mirrors what's needed to transform the sector to achieve the Construction Playbook vision. There are no shortcuts or easy fixes.

The early stages of our journey focused on building awareness and understanding, mapping Lean to our business strategy, training, and building the structures to provide consistent implementation and reporting.

For 2022 our focus was on implementing collaborative planning and production control across National Highways major projects and establishing baselines for key delivery processes. These learnings have also begun to be introduced across all other projects to great success.

For 2023 our focus is on establishing a Lean champion for every framework with a Lean register showing demonstrable savings.

As we move forward our focus will increasingly be on our supply chain and their processes, and working towards ISO 18404 2015 certification.

By 2025 all value streams will have improvement plans in place to deliver measurable performance improvement. Business strategy will be fully aligned with delivering enhanced customer value. This is getting much closer to making the Construction Playbook aims a reality.



# Lean and the Continuous Improvement Framework

Delivering the Construction Playbook aims will happen in a series of small steps rather than a single giant leap. This makes continuous improvement an integral part of transforming the sector.

The key challenge is to move from a scenario of improved outcomes being delivered on a project-by-project basis – where learning isn't always retained – to a systematic approach that leads to sustained improvement across a broad range of outcomes.

The most difficult aspects of continuous improvement can be implementing a structure that provides a consistent approach and the ability to easily track progress across the organisation.

Lean fills that gap. It has been instrumental in building an effective continuous improvement framework within Octavius.

Our most recent maturity assessment using the HELMA framework was 3 out of 4, putting us in joint fourth place out of all the companies in the supply chain for National Highways that have completed a HELMA assessment. This has only been possible because Lean is much more than an initiative or a project. It's a top-to-bottom change in the way we work. It brings structure and accountability to continuous improvement.

The most important aspects of our Lean and continuous improvement framework are described below.

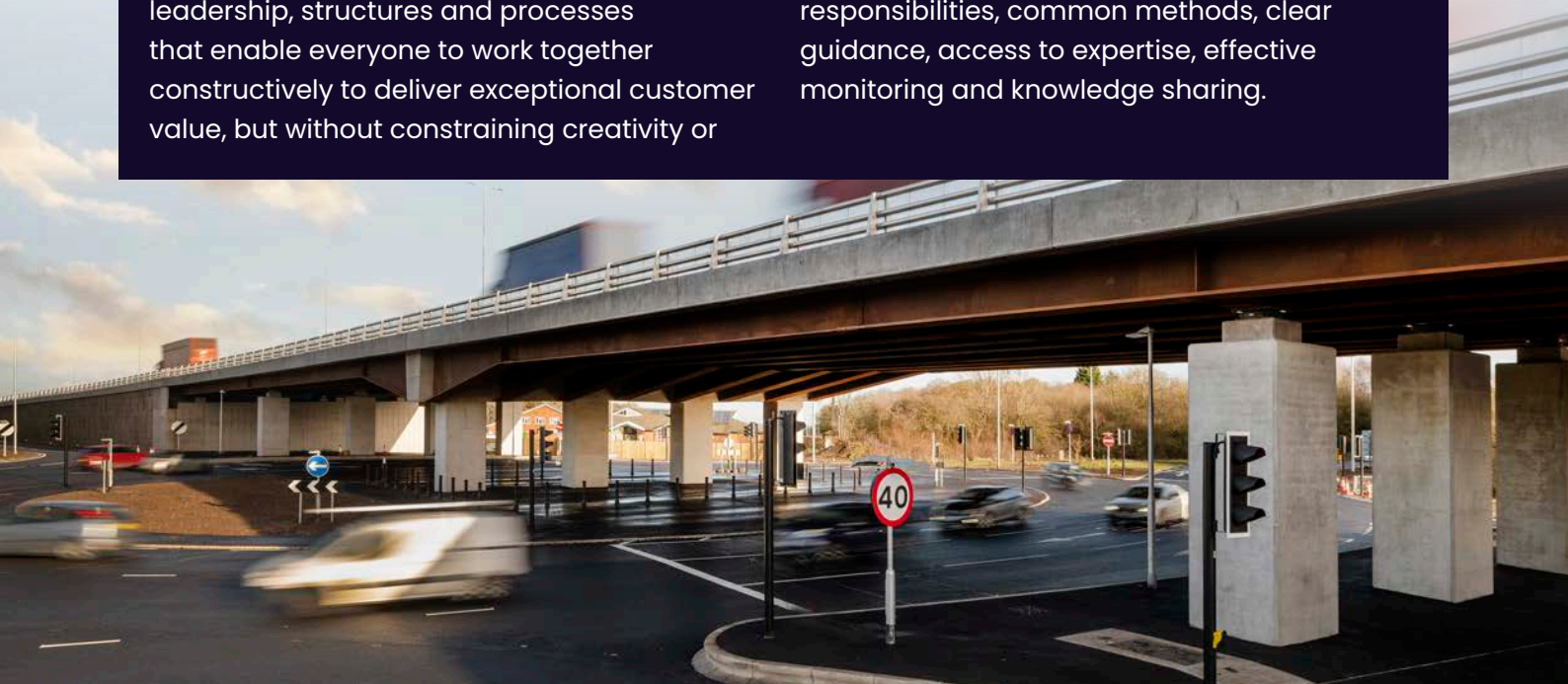
## Governance

Lean aims to balance consistency and accountability with empowerment of individuals and teams. These aims could potentially be in conflict, which makes an effective governance model an absolute prerequisite for success.

Effective Lean governance provides the leadership, structures and processes that enable everyone to work together constructively to deliver exceptional customer value, but without constraining creativity or

inhibiting individual ownership. In practice, people feel freer to make decisions when they understand the limits of their autonomy and have a clear structure of values and priorities. This is sometimes referred to as 'the freedom of a tight brief.'

The critical elements are clearly defined responsibilities, common methods, clear guidance, access to expertise, effective monitoring and knowledge sharing.



## Strategy

Lean cannot be implemented in isolation and won't happen unless it's a key strategic commitment. It simply touches too many functions of the business to be treated any other way.

The connection between Lean and delivering our business strategy is clear and unambiguous. Lean is integral to delivering the four pillars of our strategy. These are:

- Assured and safe delivery
- Exceptional value
- Learn, grow and thrive
- Sustainable legacy

Lean provides a practical framework for delivering these objectives in much the same way as it helps to move towards the aims of the Construction Playbook.

'Delivering exceptional value' is at the core of Lean implementation: 'We deliver exceptional value through integrating our processes, governance and systems through the whole value chain, delivering innovative solutions, investing in R&D and applying Lean methodology to everything that we do.'

Both breadth and depth are important. Lean maturity means covering all business functions including support functions like Finance and HR as these all ultimately support project delivery and delivering customer priorities.

## Leadership

Lean is everyone's job. It needs a person to steer it through the organisation and champions to help with implementation and consistency. But it's a collective effort.

Lean leadership within Octavius is provided by Kimberley Coxon (née Wild) who is supported by a thriving Lean community that helps keep everyone engaged. Every member of the senior leadership team has undertaken Lean awareness training and uses Lean principles to evaluate progress.

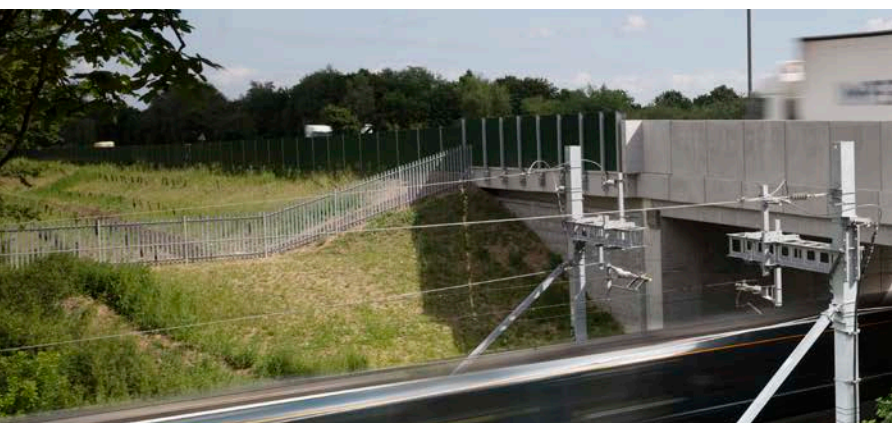
There are 17 Lean Champions who have undertaken four day training, follow-up and project-based assessment.

## Targets

Having fully engaged leaders at every level delivers consistent evaluation. This ensures that everyone defines success in the same way and project teams aren't pulled in different directions because of conflicting priorities.

The priority in Octavius is to measure what customers need and value – so we can demonstrate consistent progress, not only with Lean but also with achieving the aims of the Construction Playbook.

Measurements happen across business areas, customer project teams and supply chain partners, so standardisation is essential. Prime examples are waste and carbon reduction where we can only report meaningful data if everyone measures achievements in the same way. The introduction of project tools to achieve and measure waste reduction at site level is a key part of our implementation.



## Evidence-based efficiency

Improved productivity and efficiency are important Construction Playbook aims.

Deciding how these parameters should be measured needs careful consideration so that other desired outcomes such as quality and resilience aren't compromised.



Our experience shows that a collaborative planning approach works better than imposing targets on project teams and supply chain partners. An example of this would be a productivity measure such as daily planned % complete data. Consistency is more important than the absolute number as this indicates that effective controls are in place. Wide fluctuations in performance should be a warning flag.



## Knowledge sharing

Although construction is often thought of in terms of discrete projects, in reality it is a complex adaptive system. All participants adapt their behaviour depending on what they see happening around them. Sharing knowledge helps all partners see the bigger picture and anticipate events.

Any effective continuous improvement framework must prioritise knowledge sharing. This needs to involve more than case studies. It should be fully interactive to provoke discussion and thought. Active forums and 'lunch and learn' sessions help to broaden understanding and ensure that Lean stays on the agenda.

As well as extensive Lean training for our own people we are happy to welcome our customers and supply chain partners to our training programmes.

Yammer is used extensively to ask questions from the Lean community and to share achievements and insights.

Our supply chain is the priority for the next stages of our Lean maturity. This will involve getting much closer to understand how they work so they can be brought fully into the Lean ecosystem without completely disrupting their business. As part of our outreach Octavius has produced a Lean assessment and improvement plan for a ground engineering contractor that was at an earlier stage in their journey.

Knowledge also comes from external sources and other industries. One example is X-MR charts, which are used extensively in the healthcare sector. As we become more process-focused this approach would potentially help with measuring variability to ensure that appropriate controls are in place.





## Innovation means doing different things

Continuous improvement isn't the same as innovation. It's important to understand the difference and appreciate how each relates to Lean and achieving the aims of the Construction Playbook.

Continuous improvement means doing things better. These are the incremental improvements that produce gradual progress. Ingraining this philosophy into everyday business is essential but it isn't sufficient.

The Construction Playbook vision calls for us to do different things - to plan and execute projects in very different ways. This is innovation. For innovation to be meaningful it has to be directed towards meeting customer expectations.

At the heart of Lean implementation and delivering Construction Playbook aims is the need to understand customer expectations for innovation - what does it mean to them in terms of outcomes and enhanced value?

## Lean in action: Meaningful early contractor engagement

It's easy to talk in theoretical terms about the Lean principles and how they help bring the Construction Playbook closer to reality. What does it look like in practice?

Infrastructure projects are delivered by the supply chain. So a Lean ecosystem that stops at the boundaries of our own organisation makes no sense. Collaborative master planning alongside supply chain partners is possibly the most significant change happening right now.

Now that Lean is well established within Octavius, getting closer to our supply chain partners is the critical next step. We're already finding that working in a structured way, relentlessly focused on improved outcomes, makes ECI more meaningful.

## Collaborative master planning

Our collaborative master planning for the Waterloo Station canopy replacement programme was among the most rigorous we've ever conducted. Using one of the 25 bays as a prototype we spent several days with supply chain specialists walking through the project step-by-step to produce highly detailed process maps. The intention was to develop a robust process that we could replicate and scale.

The project has many constraints, including narrow time windows for installing or moving scaffolding and moving materials and waste, as well as strict weight restrictions which all impacts productivity. The planning process identified a major clash related to safely removing the old lead-based paint system. Without effective mitigation this complication would have added 15 days per bay to the programme.

The paint system supplier and the scaffolding contractor were able to design an alternative approach that allows work to take place safely in sections without shutting down entire bays.

Process is part of the story. It's equally important to build a culture of trust and openness that recognises the investment needed by the supply chain to deliver better outcomes.

## Systematic change delivers sustainable improvement

The Construction Playbook envisages a major transformation in how the industry works and the value it delivers to all stakeholders. This won't come from isolated process improvements. It's a case for systematic change at every level and across all functions that support successful project delivery.

It's exactly this structure and discipline that Lean implementation provides. If the Playbook is the objective, Lean provides the roadmap and structure to get us there.



# octavius

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