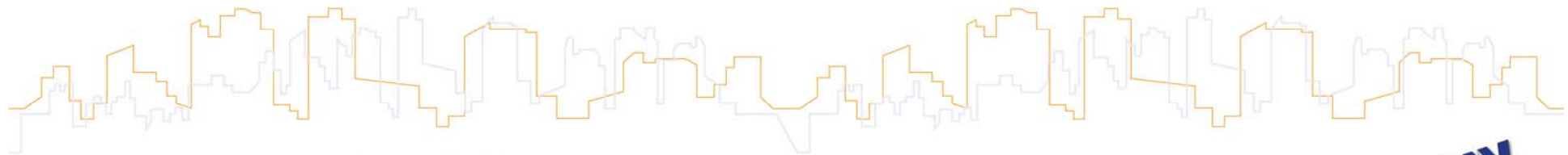


Leaner Construction Through Research Collaboration

Mathew Gilligan, Costain



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Construction 2025

Lower costs

33%

reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

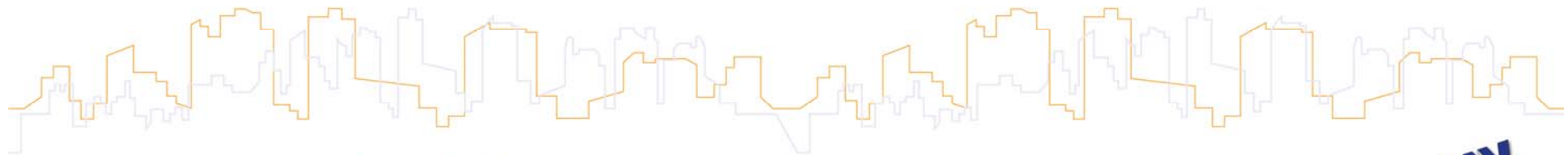
50%

reduction in greenhouse gas emissions in the built environment

Improvement in exports

50%

reduction in the trade gap between total exports and total imports for construction products and materials



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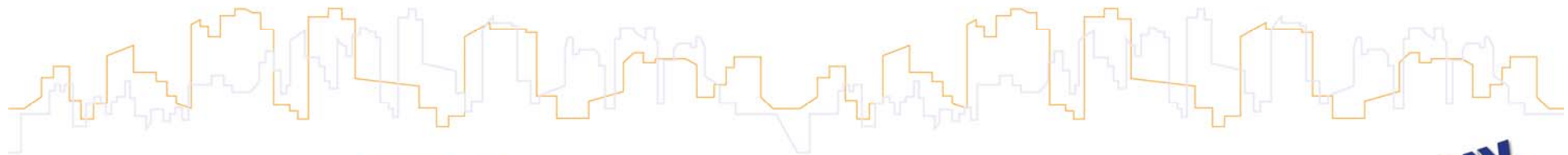
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Collaboration



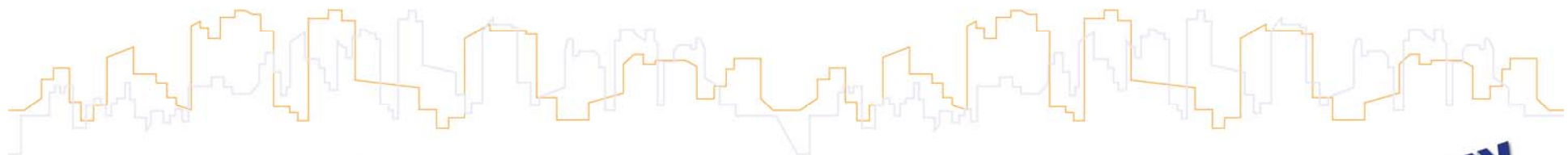
The Aim

To further develop 'Lean Construction' – the application of Lean thinking to the design and construction process designed to create improved project delivery to meet client needs and improved efficiencies to contractors



Quote - Lauri Koskela

“We are pleased and excited by the commitment on the part of the industrial partners to engage with research on Lean Construction. Considerable benefits for all collaborating parties are anticipated. It is noteworthy that we are launching a new, collaborative style of working between the parties, similar to what is already applied on advanced construction projects. In so doing we walk our lean talk.”



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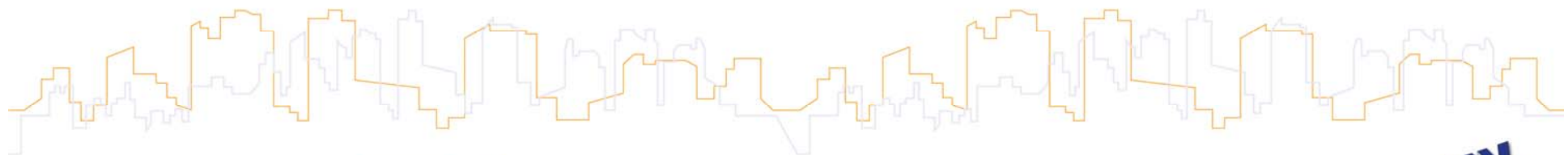
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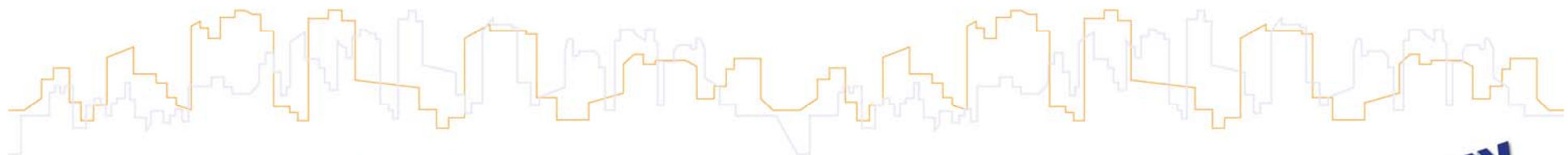
Quote – Derek Drysdale

‘The Highways Agency are committed to deploying lean across our business including our £3bn Supply chain. Although the philosophy and methodology of Lean Construction is well understood it is vitally important that we continuously improve our thinking. The Agency are also committed to supporting the Government’s Construction 2025 strategy and Lean thinking supports all aspects of the Strategy.’

The Research Partnership which includes industry, the Lean Construction Institute - UK and academia is a key milestone in further developing Lean in all its forms and we will of course disseminate the findings as widely as possible across the whole of the construction sector.’



7 Projects Taken Forward



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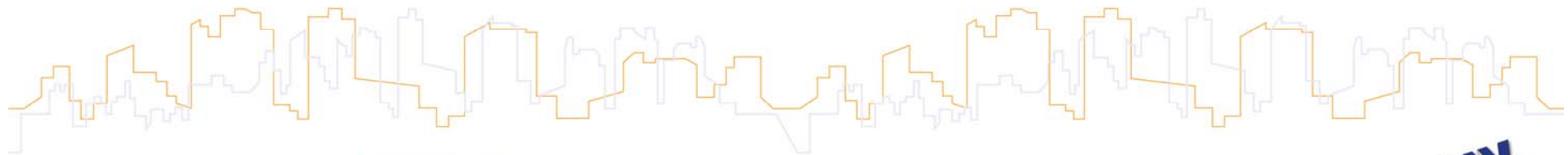
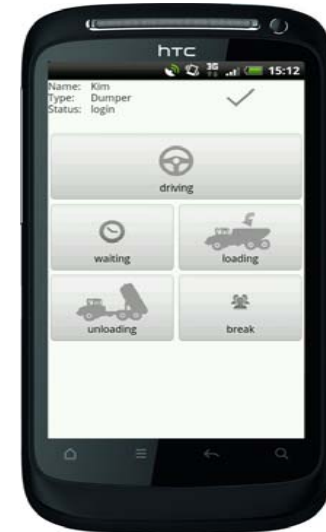
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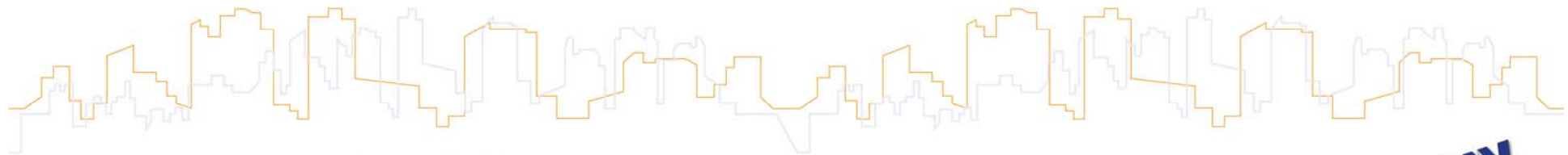
Earthworks Control Automation

- *Proof of Concept*
- *Real-Time Monitoring of Construction Site*
- *Analysis of Situation*
- *Trialled on the M6 to Heysham Project*
- *Resulted in Submission for Major Project in 2015*



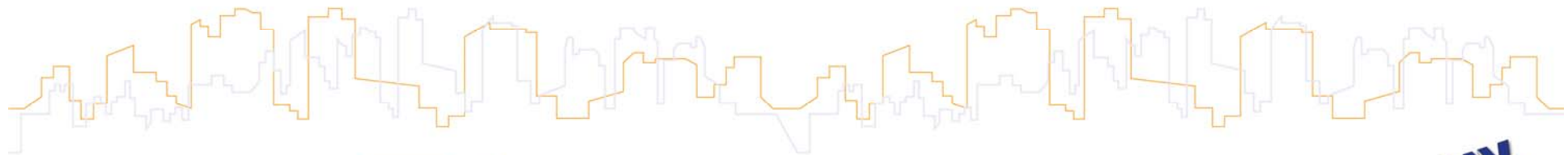
Visual Controls at the Workplace

- *To Inventorise existing visual controls at the workface*
- *Develop, implement and evaluate new types of visual controls*
- *Create an initial framework for the implementation*
- *Determine further development steps*



International Horizon Scanning

The project aims at determination of new promising approaches and methods to lean construction as emerging internationally.



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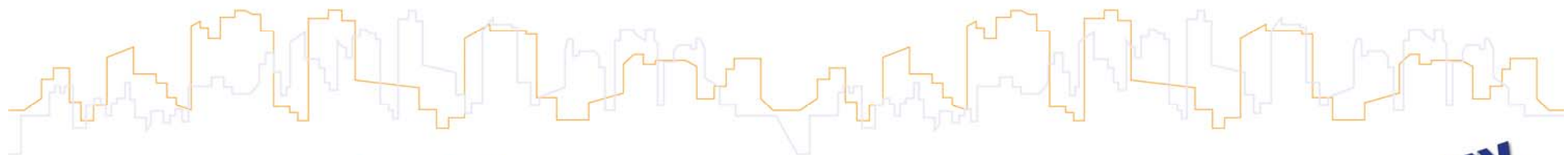
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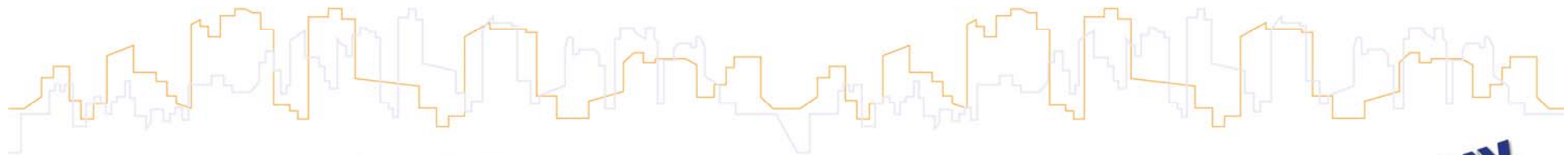
Last Planner / Collaborative Planning Practises

- A codified current state map of the road transport sector and its operation.
- A literature review reporting the current knowledge about LPS, Collaborative Planning and collaborative working
- A report providing a snapshot of the current industrial perception, including barriers and drivers
- Major Research Project



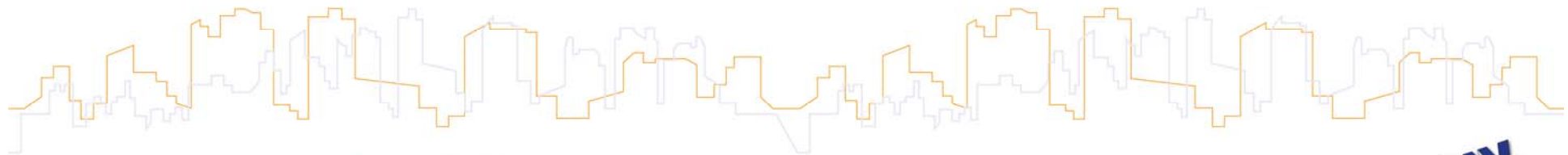
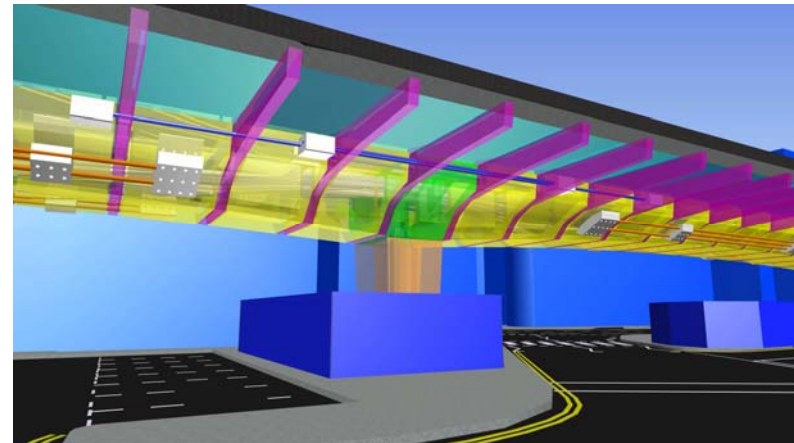
Engineering to Order

- Characterising the different types of ETO
- Testing theory with HA, Costain and others
- Understanding the different current contract forms in use and their implication for the Supply Chain
- Determine which type of ETO requires which type of contract form & development of auditing tool



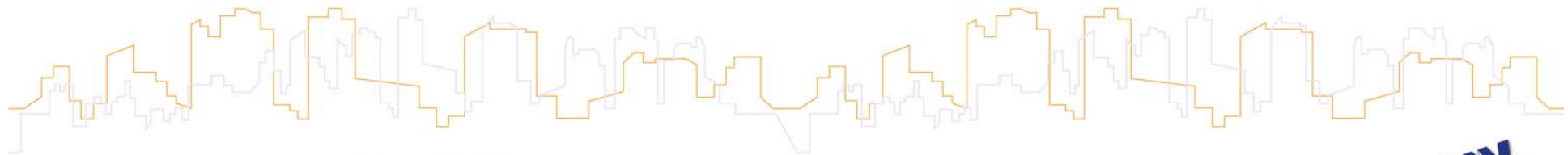
BIM & Lean

- Determining how BIM can be utilized in lean production management
- Creating a roadmap for stage-wise implementation of BIM based lean production management
- Outlining associated research and development needs

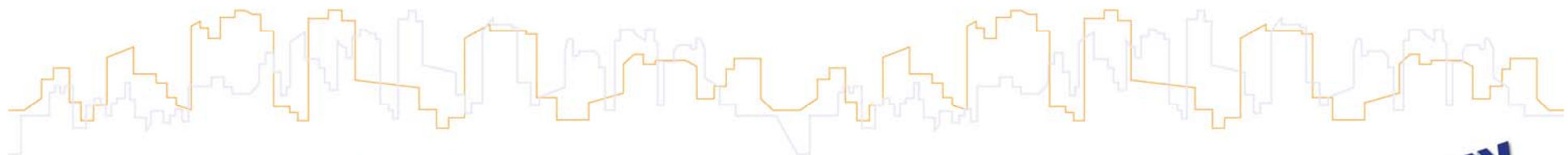


Deployment of Lean To SME's and Wider SC

- Produce a literature review of existing good practice in business support activities for SMEs
- Determine the applicability of these activities for lean implementation
- Develop a portfolio of effective lean implementation activities suitable for SMEs



What Shall We Do Next?



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