

INDUSTRIALISED CONSTRUCTION:

Developing effective policy
and strategy

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SESSION CONTEXT

*What should Government do to
enable and accelerate the
industrialisation of construction?*

WHAT MAKES GOOD POLICY?

What are they trying to do?

- ☐ Clear, unambiguous language
- ☐ Targeted intervention(s)

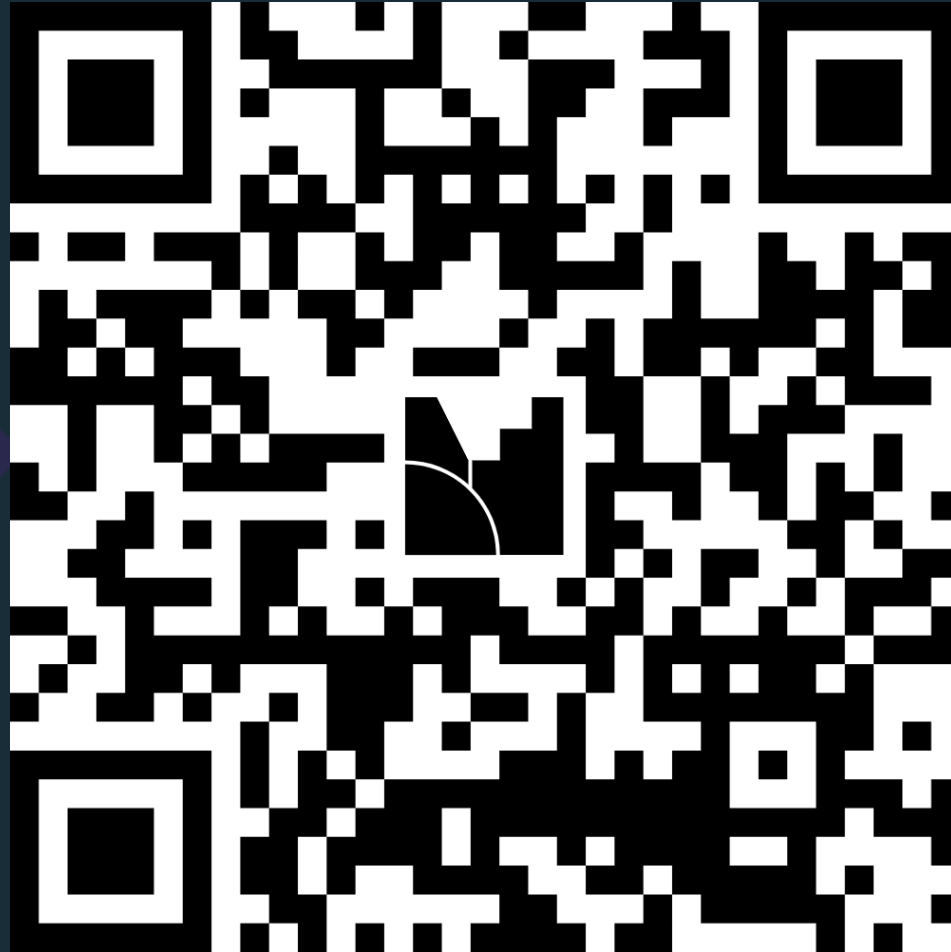
Why are they doing it?

- ☐ Outcome-focused (industrialisation as a 'means to an end')
- ☐ Data-driven (baselining, causality)
- ☐ Acknowledging wider system impacts and constraints

How are they going to do it?

- ☐ What are the critical upstream enablers (what needs to be true)
- ☐ Who needs to do what
- ☐ How we will incentivise or enforce the change
- ☐ How we will measure success (inputs > outputs > outcomes > impacts)

JOIN IN
(PLEASE)





WHAT

ARE WE CLEAR AND SPECIFIC, ABOUT THE 'WHAT'?



Argument: MMC Means different things to different people. Its heavily associated with housing, but generally synonymous with offsite...this makes it very difficult to develop a strategy and o measure success.

MMC

“...a wide term, covering a range of offsite and onsite techniques. Platform approaches and MMC provides alternatives to traditional methods.”

(Construction Playbook)

“...a range of building methods that are designed to be more efficient and effective than traditional construction techniques.”

(House of Lords MMC Enquiry)

ARE WE CLEAR AND SPECIFIC, ABOUT THE 'WHAT'?



Argument: *The Offsite agenda is much more focused and has allowed more specific targets to be set...*

...HOWEVER, doing things in factories does not automatically make us industrialised.

OFFSITE

“the pre-fabrication and/or pre-assembly of construction elements or systems in manufacturing facilities away from the construction site.”

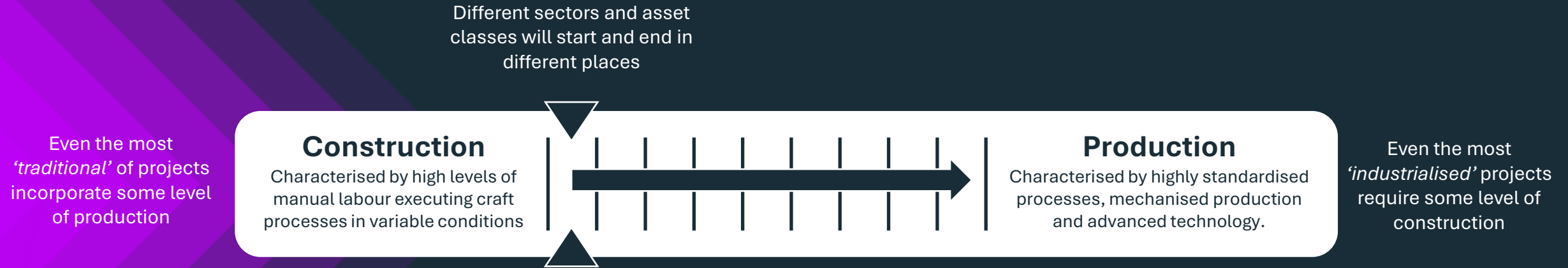
(Construction Leadership Council)

“the completion of elements or components of a construction project at a different location to where they will be permanently installed.”

(Designing Buildings Wiki)

DISTILLING THE WHAT

Policy initiatives come and go - but the underlying premise does not



While 'Industrialised Construction' is often used in absolute terms, it is more useful to think about the extent to which a project, programme or sector is incorporating industrialised approaches.

Industrialised Construction refers to the application of standard, repeatable manufacturing and assembly processes to the delivery of building and infrastructure projects.

This approach aims to improve productivity, predictability and quality by minimising the *proportion* of construction projects delivered through variable craft-based activities and manual labour.

By focusing on process standardisation and repeatability, Industrialised Construction reduces variability, enables continuous improvement, and unlocks the benefits of advanced manufacturing technologies, robotics, and digital workflows.

Note: This definition is a co-created, working definition of Industrialised Construction for the purpose of driving collaboration and best practice in the field. It is intended to be tested and refined over time and, as such, feedback is welcomed. Please contact ron.lang@atkinsrealis.com.

Related Terms

Offsite

Offsite Manufacturing or Offsite Construction is used to reference the pre-fabrication and/or pre-assembly of construction elements or sub-assemblies away from the construction site. Industrialised Construction approaches often incorporate some level of Offsite Manufacturing, but not all offsite approaches are industrialised.

Modular

As part of DfMA, designers need to determine the most logical and economical way to break assets down into systems, sub-assemblies and components. This is modular design.

Note: While the term 'modular' is commonly associated with 3D 'volumetric' building approaches, this is just one way of achieving a modular design.

DfMA

To enable Industrialised Construction approaches, buildings and infrastructure assets need to be consciously designed around repeatable components and subassemblies that can be efficiently manufactured, transported, and assembled. This methodology is called Design for Manufacture and Assembly (DfMA).

Platforms

The nature of construction projects limits the level of standardisation that is appropriate. Platforms are a way of driving commonality in parts, processes and relationships while retaining the flexibility to meet project-specific requirements.

Note: For more information, see the Construction Innovation Hub's [Product Platform Rulebook](#)

ARE WE CLEAR AND FOCUSED ON THE **WHY** (OUTCOMES)?



***Argument:** Government lacks a holistic, data-driven benefits case for MMC / Offsite, often leaving it to be presented as a silver bullet. The ambiguity of the current agenda makes this harder. Historically, the focus has been **productivity**.*

MMC

“[MMC] have the potential to deliver significant improvements in **productivity**, efficiency, safety and quality for both the construction industry and public sector.”

(Construction Playbook)

“An analysis of the factors contributing to **productivity** growth suggests that investing in new construction technologies and techniques that combine labour and capital could be the most effective means of addressing this issue.”

(Construction Sector Deal)

DRIVERS FOR CHANGE (UK Data 2022-23)

Our productivity and efficiency is hampered by high levels of **process variability...**

...which is also a significant driver for many other poor outcomes, from safety to waste.

Reducing variability and embracing standard repeatable processes where possible is the key to improving outcomes in many areas.

If we start to target outcomes, we'll become more industrialised by default (in the right way).

45

Fatal injuries in the construction industry in 2022/23, 31% of all workplace deaths.

4,185

Reported injuries in the construction industry 2021/22, 62% of which led to more than 7 days off work

-25%

Building construction productivity since 1997 versus +28.8% growth for the wider economy (-7.3% for all construction)

10.2m

Tonnes of CO₂ emitted annually from construction activity

25%

Proportion of UK greenhouse gas emissions arising from the built environment

4,163

Number of construction business insolvencies in 2022

£21bn

Annual cost of avoidable errors in construction

136m

Tonnes of construction and demolition waste per annum

13,000

Estimated number of victims of modern slavery in the UK construction industry

217,000

Estimated number of new workers required by 2025 to meet construction demand

31%

Proportion of construction projects delivered within 10% of original budget

<3%

Proportion of the site-based workforce who are female



HOW

DO WE HAVE A CLEAR PLAN FOR **HOW** WE'LL DO IT?

RECAP *(our marking criteria)*

- ☐ What are the critical upstream enablers (what needs to be true)
- ☐ Who needs to do what
- ☐ How we will incentivise or enforce the change
- ☐ How we will measure success (inputs > outputs > outcomes > impacts)

DO WE HAVE A CLEAR PLAN FOR **HOW** WE'LL DO IT?



- *Is this still in play?*
- *What is a 'presumption'?*
- *What is comply or explain?*
- *How is it being enforced?*
- *How is it being measured?*

MMC

“[Government] will use its substantial pipeline of construction projects to drive innovation and increase the adoption of modern methods of construction. Five government departments have committed to adopt a **presumption in favour** of offsite construction by 2019 across suitable capital programmes, where this represents best value for money”.

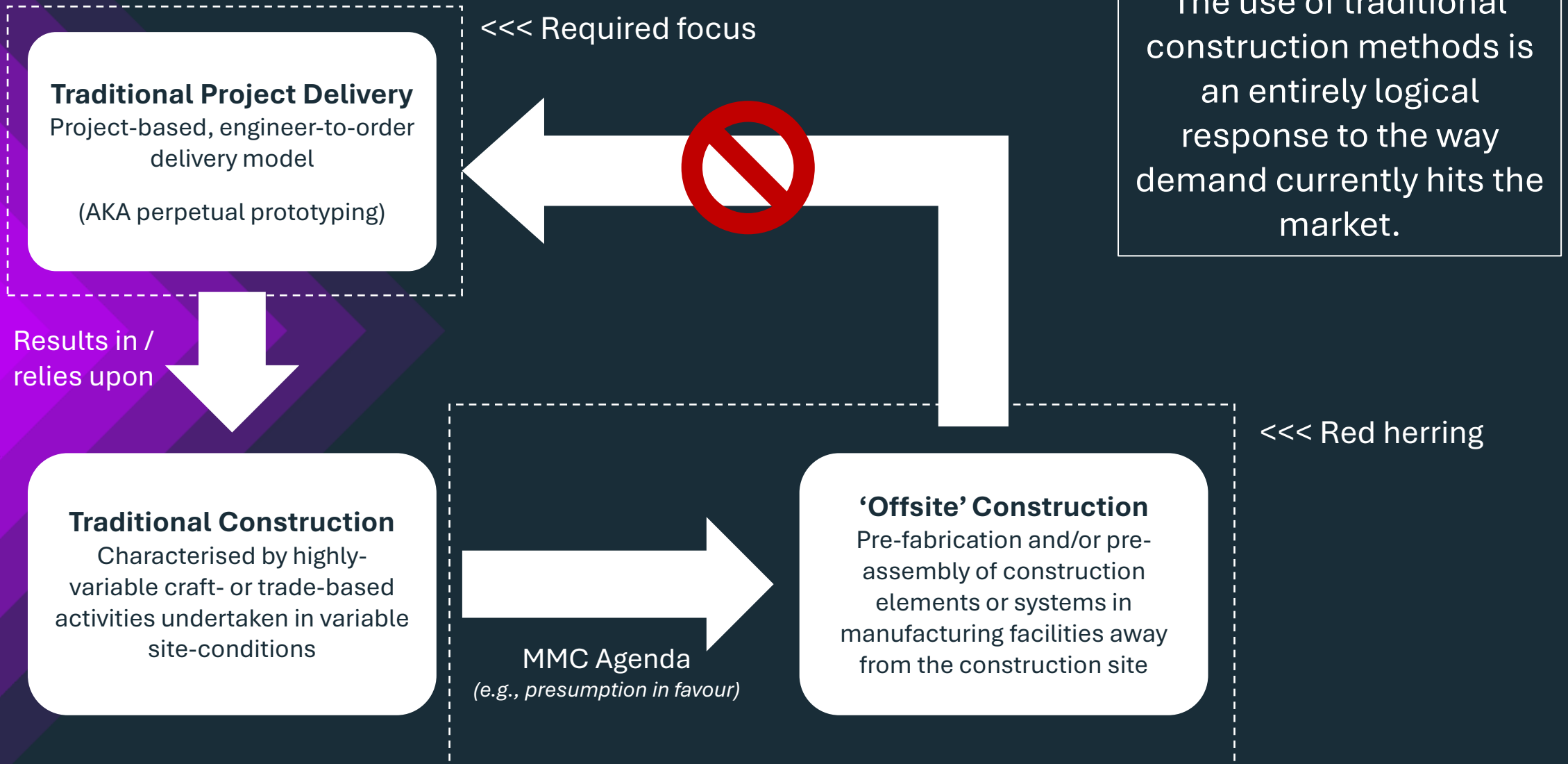
(Transforming Infrastructure Performance – referencing **2017** Autumn Budget Announcement)

“There is a new **expectation** for departments and ALBs to set targets for the level of use of MMC in the delivery of projects and programmes”.

(Construction Playbook)

But more fundamentally...

ELVIS WAS RIGHT



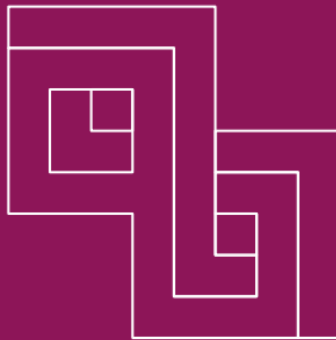
POSITIVE PROGRESS?



THE CONSTRUCTION PLAYBOOK

Government Guidance

on sourcing and contracting public works
projects and programmes



Version 1.1
September 2022

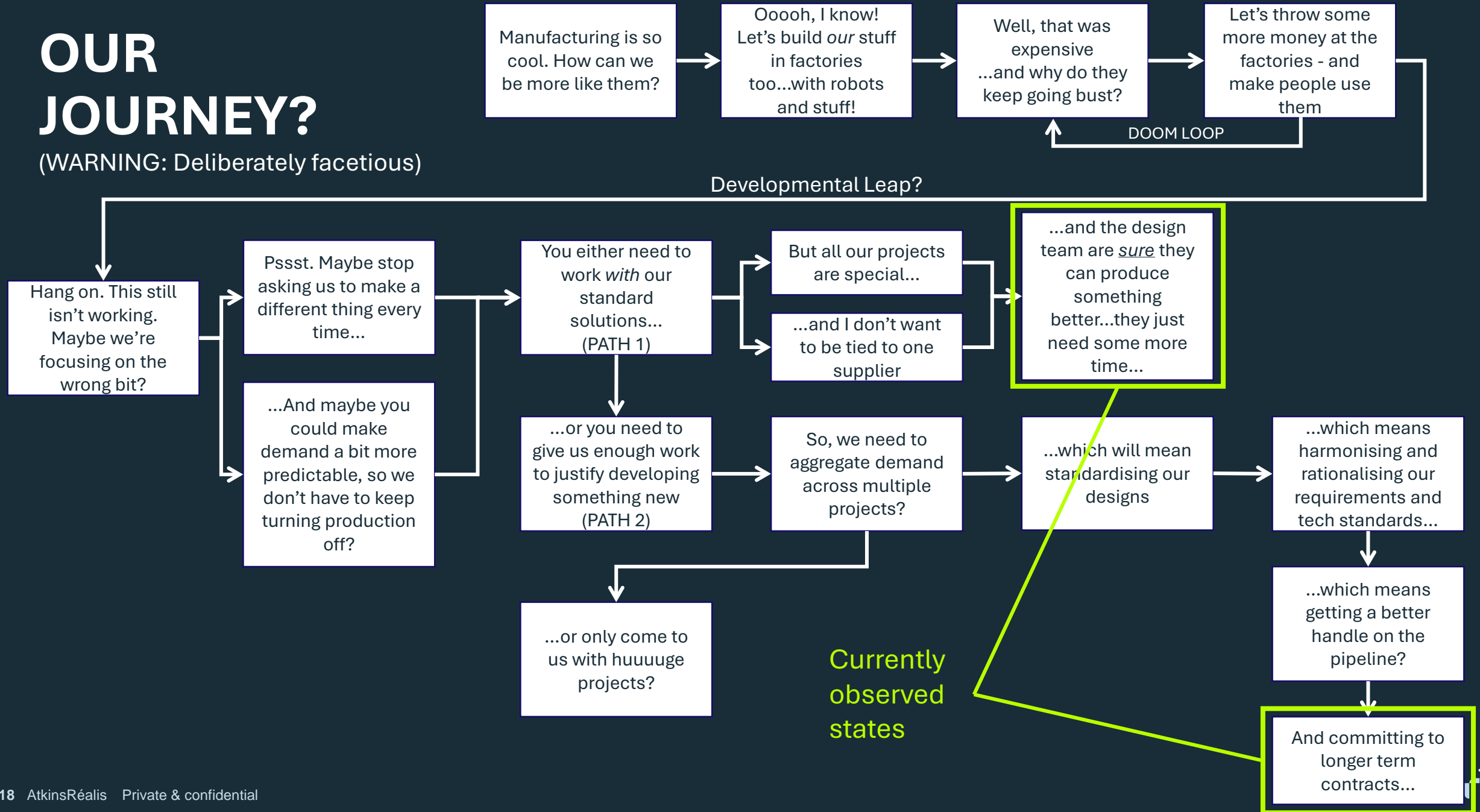
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OUR JOURNEY?

(WARNING: Deliberately facetious)



SO, WHAT DO WE KNOW?

The 'MMC' agenda is broad and means different things to different people / sectors.

This lack of specificity makes it hard to drive meaningful progress: As picked up by the House of Lords in the context of housing, successive Governments have not been clear what they are trying to achieve, why, or how they intend to measure success.



WHY

...but we can agree that our continued reliance on manual labour and craft skills are linked to many of the industry's performance issues...

The Offsite* agenda is more specific but often overly focused on specific systems and solutions

Even if we accept that MMC is generally synonymous with the adoption of 'pre-manufactured' solutions, Government has long failed to recognise the broader changes that need to be made to the construction delivery model to make this work.



WHAT

...and that the adoption of a more production-focused approach to construction offers a more attractive alternative...

HOW

...but we must recognise that such a shift requires wider changes to the way we conceive, design and deliver construction and infrastructure projects.

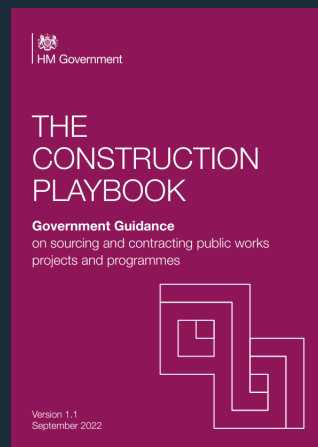
BLUEPRINT FOR SUCCESS?

Building an effective strategy for the industrialisation of the UK construction industry.

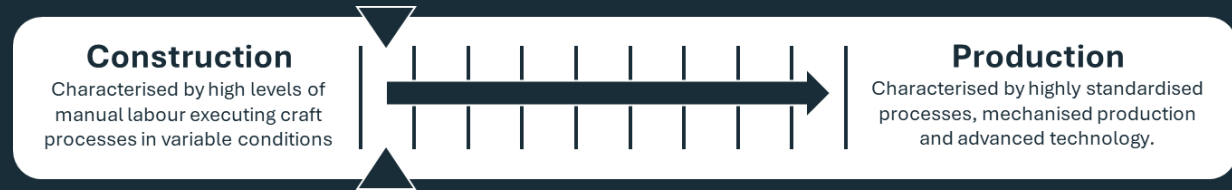


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Comply or explain



What are we trying to do?



Why do we need to do it?

Highly variable processes erode **productivity and predictability**...and directly contribute to many other poor outcomes.

How are we going to do it? (Government procurement driven)

- Set outcome-based targets (make IC the logical answer)
- Shift policy focus from the 'methods' to the 'delivery model'
- Harmonise, Digitise, Rationalise (Projects >>> Products)
- Aggregate demand and embrace longer-term relationships
- ...ensuring we have the skills and capabilities to respond!

thank you

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