

DfMA and Offsite Delivery for the Water Industry

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The Water Industry

- Price Review 14 (PR14) worth **£44 billion** over 5 years
- The majority of this is spent delivering assets in a traditional way
- Construction 2025 calls for 33% reduction in out-turn costs
- If we can deliver for less, we can deliver more, giving better service to our customers
- Offsite delivery and DfMA are critical for this improvement

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

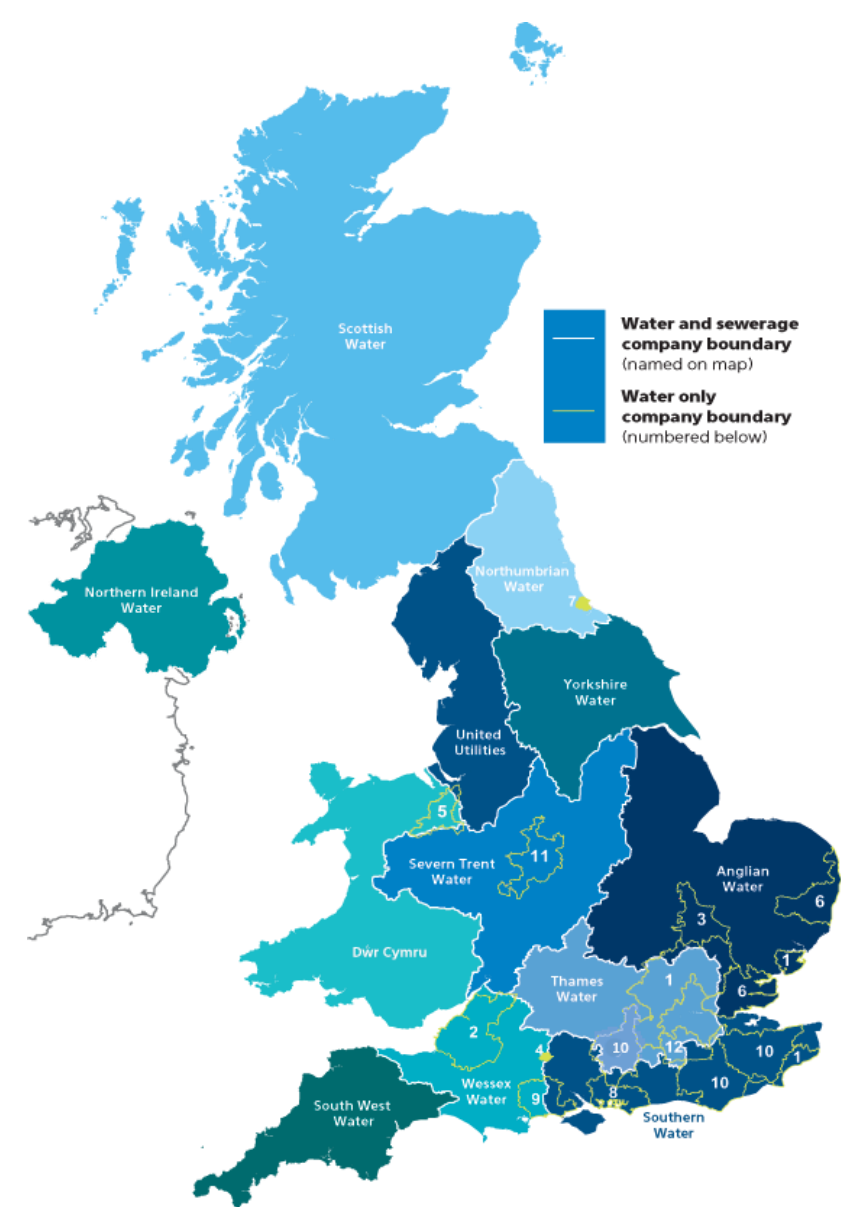
50%

reduction in greenhouse gas emissions in the built environment

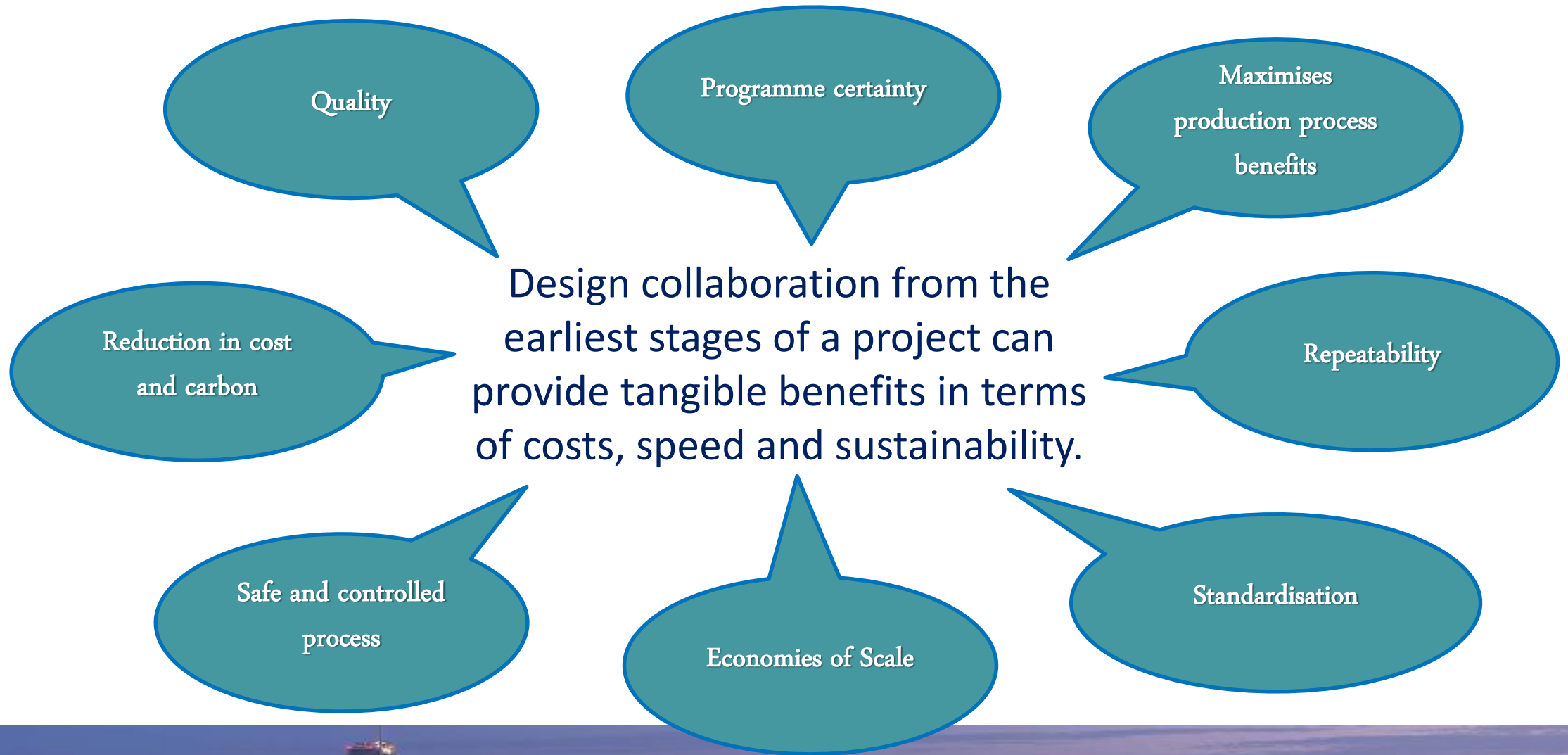
Improvement in exports

50%

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




Why we want DfMA and Offsite Delivery




What is to the water industry DfMA?

Design for Manufacture & Assembly



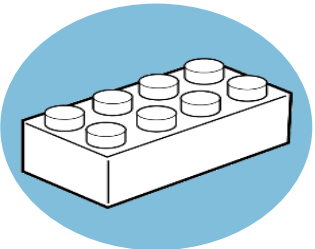
Design for Manufacture

Design for Manufacture is a process by which products are designed with ease of **Manufacturing** in mind.



Design for Assembly

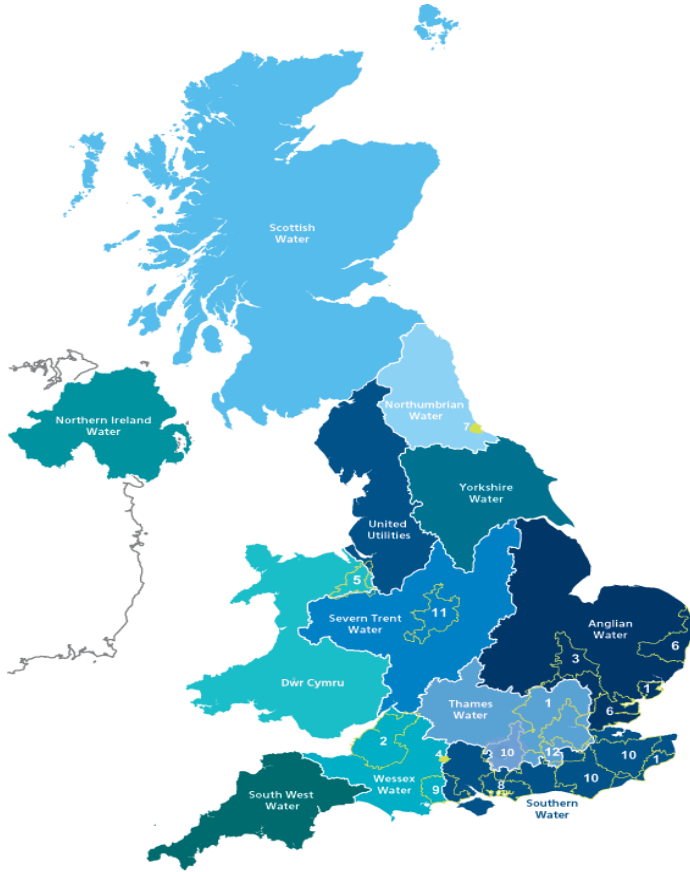
Design for Assembly is a process by which products are designed with ease of **assembly** in mind.



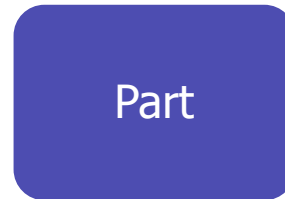
More **Offsite** construction & **Standard** products



Create and use standard products



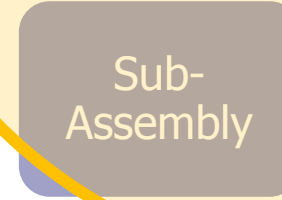
Something that is either formed, cut or cast



Something that comprises multiple part to perform task



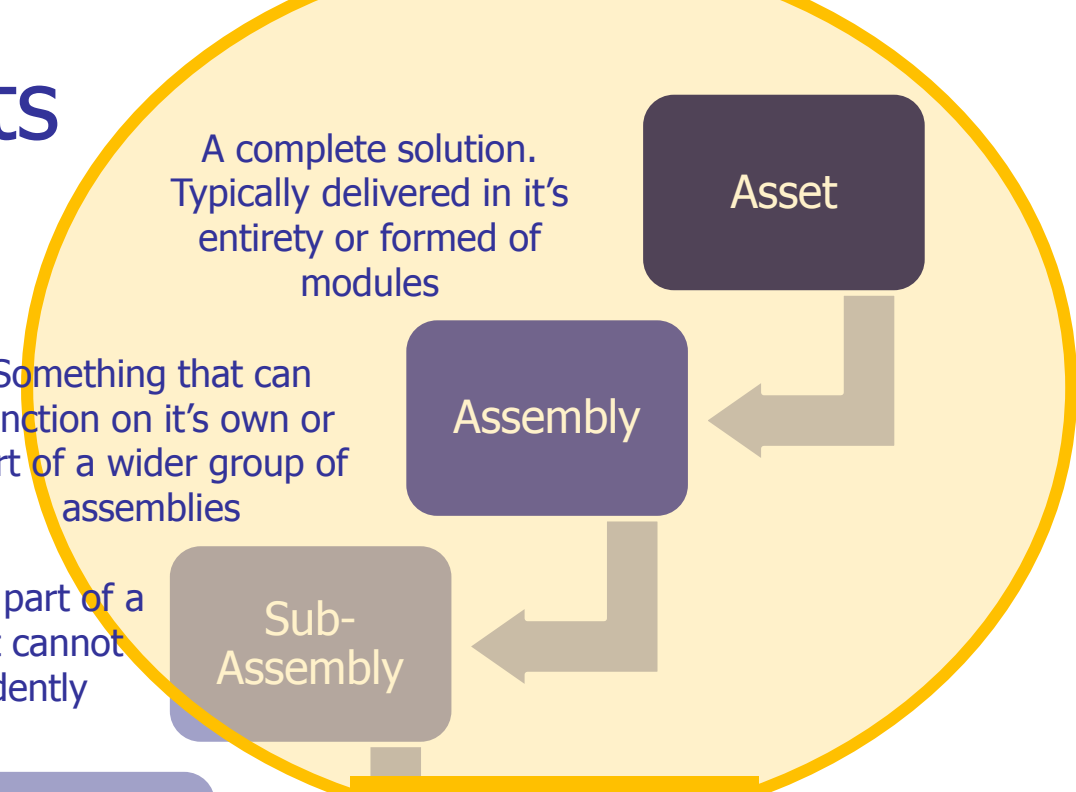
A module that forms part of a larger assembly but cannot function independently



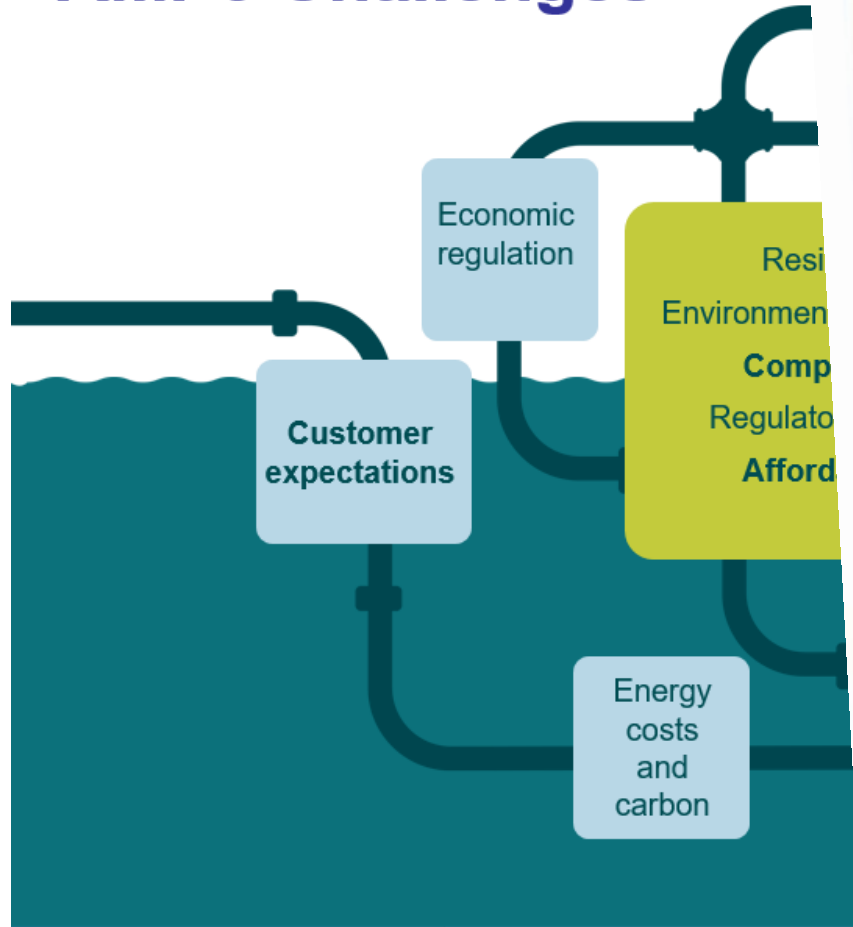
Something that can function on it's own or part of a wider group of assemblies



A complete solution. Typically delivered in it's entirety or formed of modules



AMP6 Challenges



The challenges

- We have forgotten it works – and haven't built upon success
- Current engineering culture – silo mentality?
- Traditionally risk averse when implementing investment projects
- Other avenues of value engineering have been preferred...such as Design & Build
- Lack of widespread proven efficiency
- Lack of widespread engagement across the value chain
- Courage to commit at an early stage
- Challenge of supply chain capability and capacity to deliver
- Little genuine "DfMA" occurring
- Procurement not facilitating DfMA in the short term
- Lack of practical forward programme to build from
- Slightly different standards and challenges across water companies dilute value but also make time consuming to convert.

Why we want DfMA and Offsite Delivery

- Limited cost efficiencies currently available
- Limited margin in the market to reduce further
- Saturated and stable market – disruptor required for step change?



UNDERSTAND – DISRUPT - IMPROVE

- Demands for reliability, resilience and minimal disruption
- Reduce failing asset
- Deliver more with what we have
- Without disrupting customers

"We will not achieve these ambitions by making small, incremental changes.... We are talking about an approach to design, manufacturing, assembly and performance in-use that does not recognise poor quality or poor productivity. An approach that assumes zero accidents, and an approach where the use of BIM, Lean construction and the intelligent use of quality offsite solutions becomes the norm"

Peter Hansford, Government Chief Construction Advisor,
Foreword to the Build-offSite Yearbook 2014-15

What the clients want...

- ❑ Work ***collaboratively***; across Water Companies and with the supply chain to target key investments for next AMP. Can't go alone - we must collaborate!
- ❑ Standard Products
 - ❑ ***Standard Products*** are a real catalyst for change, efficient procurement and delivery
 - ❑ BIM enabled ***standardised products***
- ❑ Standardise ***Standards*** but embrace ***innovations***
- ❑ Implement a ***TOTEX hierarchy*** – we only go traditional as a last resort
- ❑ Gap in the market for "***Final Assemblers***" and "agile DfMA" to support all areas of our industry

Questions

