

INDUSTRIALISED  
CONSTRUCTION  
CONFERENCE



Innovate  
UK

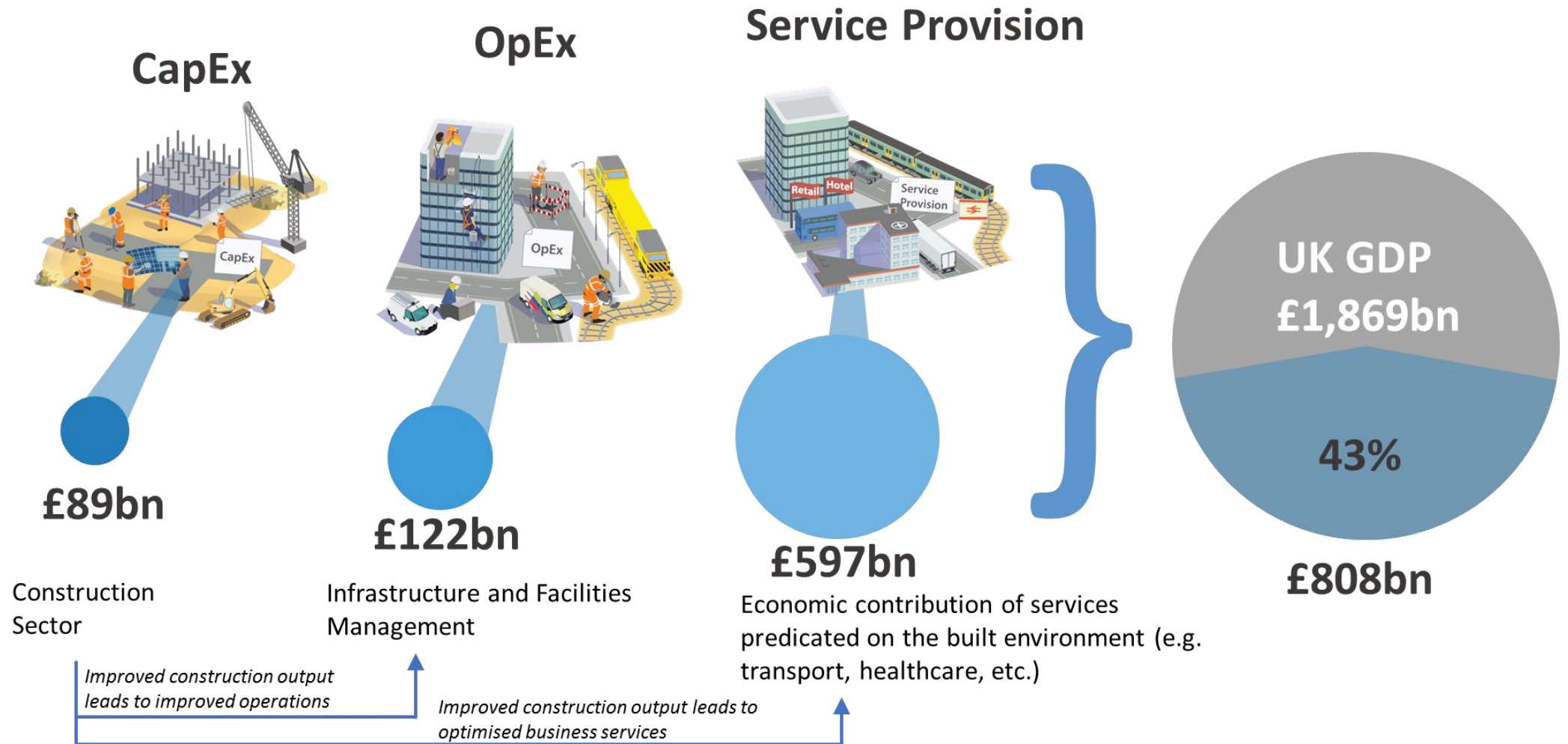
# reflecting on the Transforming Construction Challenge

[ukri.org/TCC](https://ukri.org/TCC)

#TransformingConstruction

Dr Mike Pitts  
2<sup>nd</sup> July 2025

# Transforming Construction: Why?



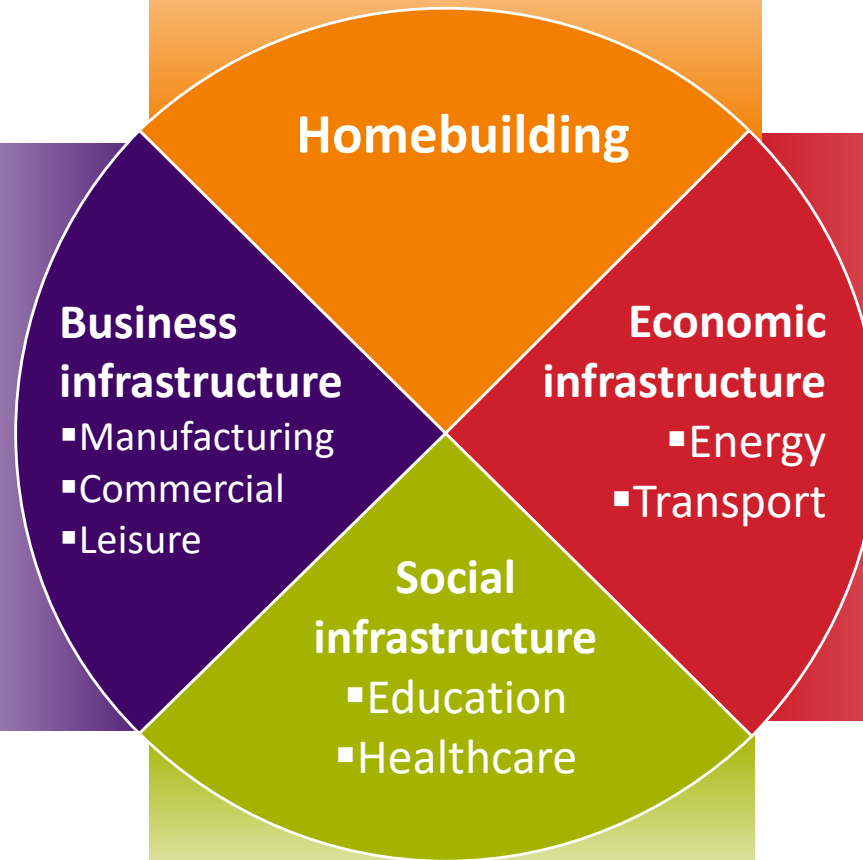
# CLC strategy



Construction  
Leadership  
Council



Construction 2025



## Outputs

Lower costs

33%

Faster delivery

50%

Reduction in trade gap

50%

Lower carbon emissions

50%

**More houses**

\*

**More Rail capacity**

\*

**Improved car journeys**

\*

**Cheaper energy**

\*

**Better public services**



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# Together, we are transforming construction

TCC outputs are deployed across public and private sector projects worth **over £14bn** and on track to deliver:

Lower costs

**33%**

reduction in the initial costs of construction and the whole life cost of built asset

Lower emissions

**50%**

reduction in greenhouse gas emissions in the built environment

Faster delivery

**50%**

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

Exports

**50%**

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

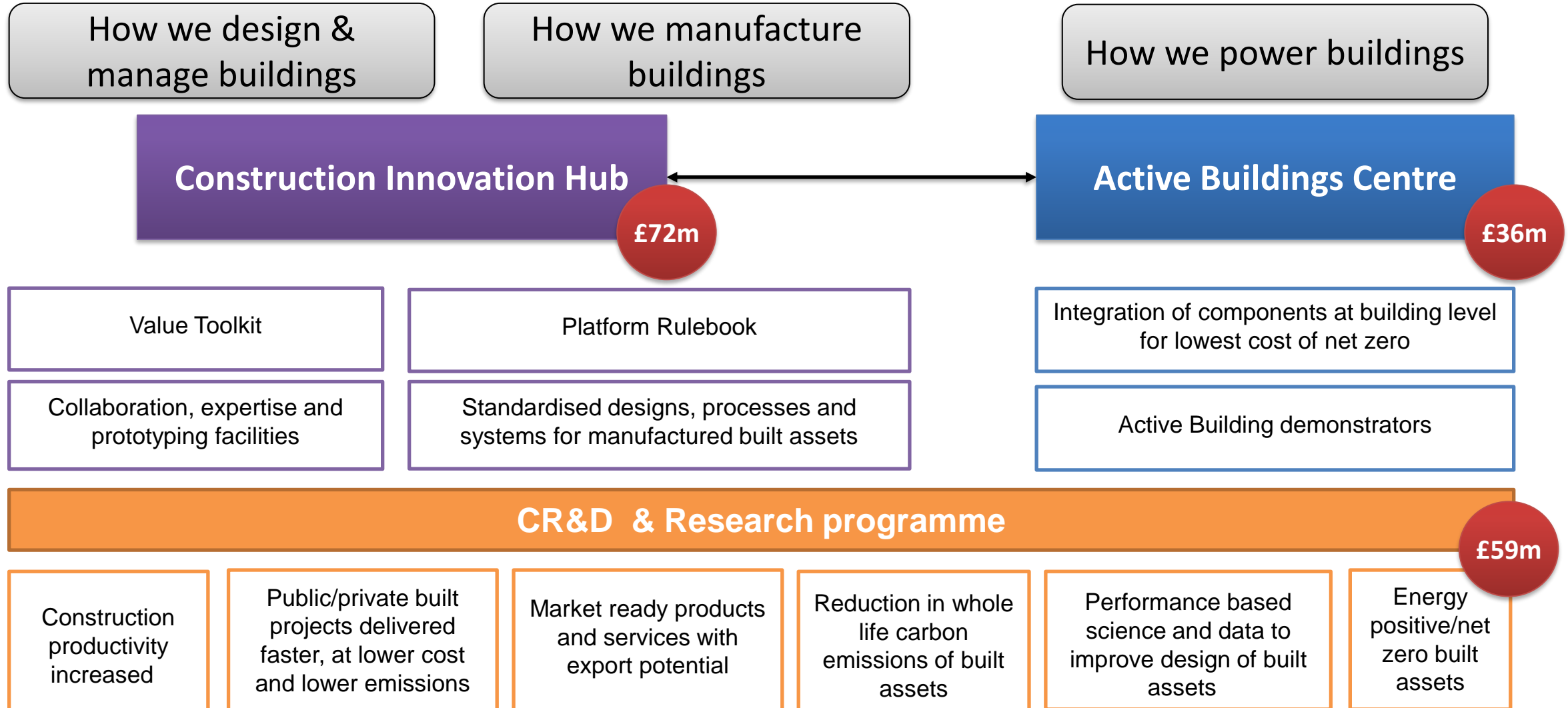
Productivity

**15%**

Eliminate the gap between construction and the rest of the economy

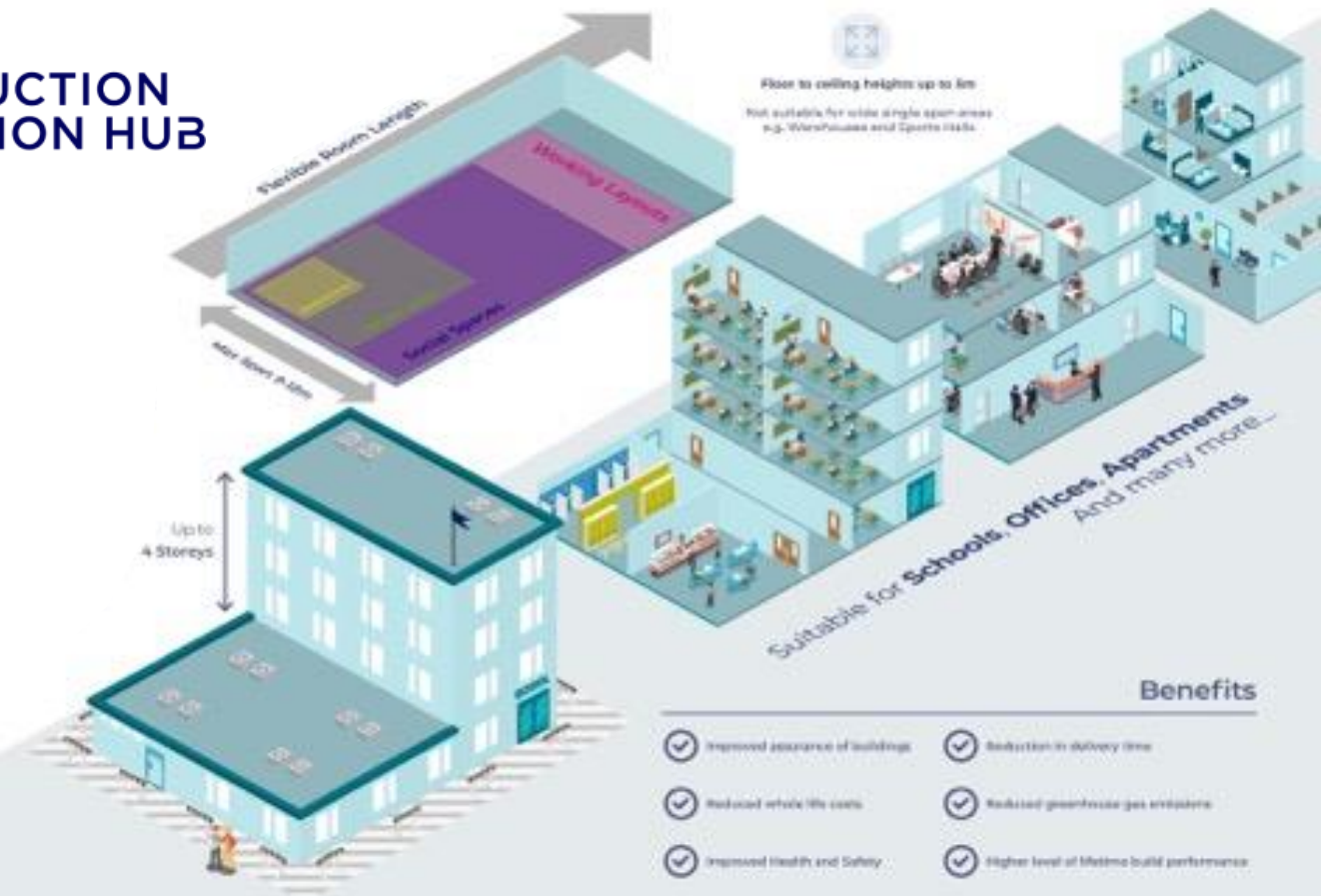
Forecast to be deployed on projects worth **£25bn** by 2027. Potential pipeline of **£45bn**.

# Transforming Construction Challenge

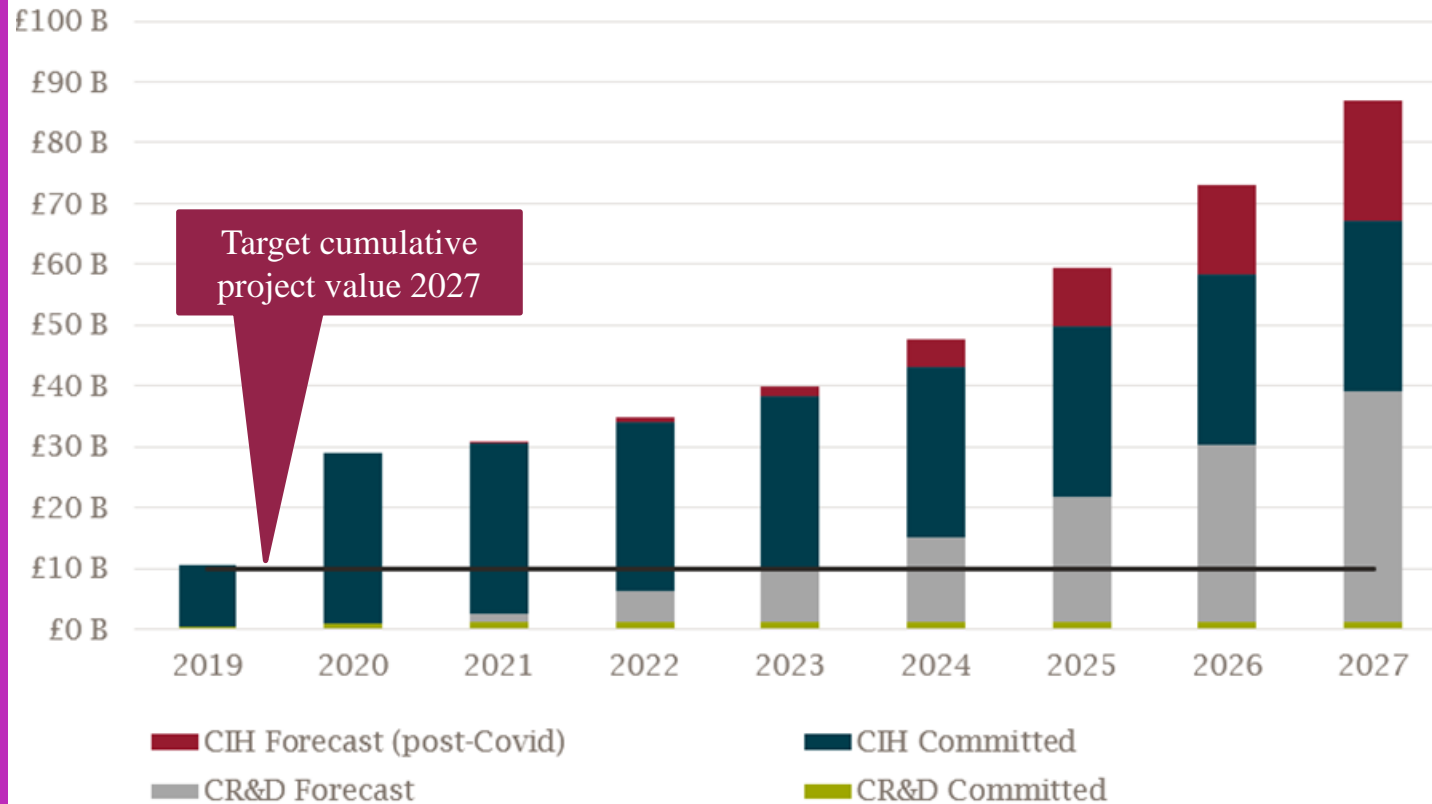


# Creating the rules of the new system

Platform Rulebook & Value Toolkit – embedded in the Construction Playbook  
& changed how government procure buildings



# Performance of construction sector



*Step change in productivity – reported actual and forecast value of projects*

## The Forge

PDfMA methodology and standardisation drives efficiency and productivity.

**Productivity improvement ~13.5%, targeting ~35%**

- reduces labour requirements
- continuous improvement in all aspects of the process that can be re-applied on other projects avoiding constant rework

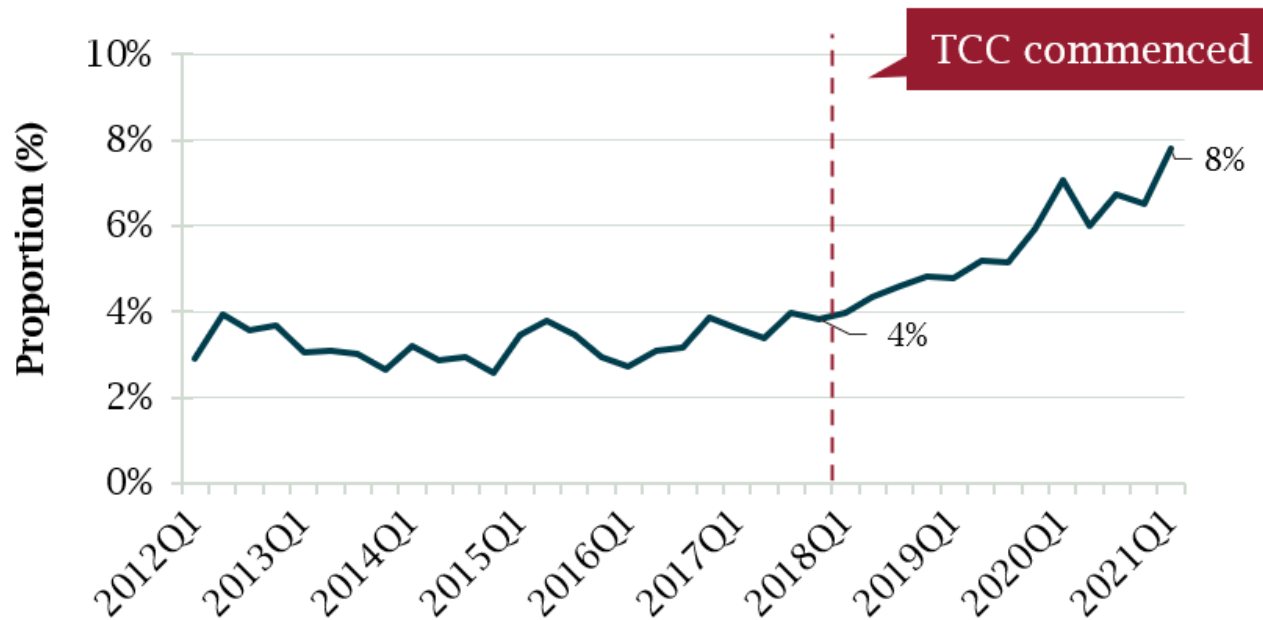




# Performance of construction sector

“there has been increases in investment due to the TCC for firms that the TCC has directly engaged with, but less so for the wider industry”

*Construction share of total non-manufacturing investment*



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ONS data

## nPlan

Founded in 2017 to use machine learning to better forecast and plan large construction projects using historical data.

Involved in two TCC projects, nPlan demonstrated significant savings on the Great Western Rail project.

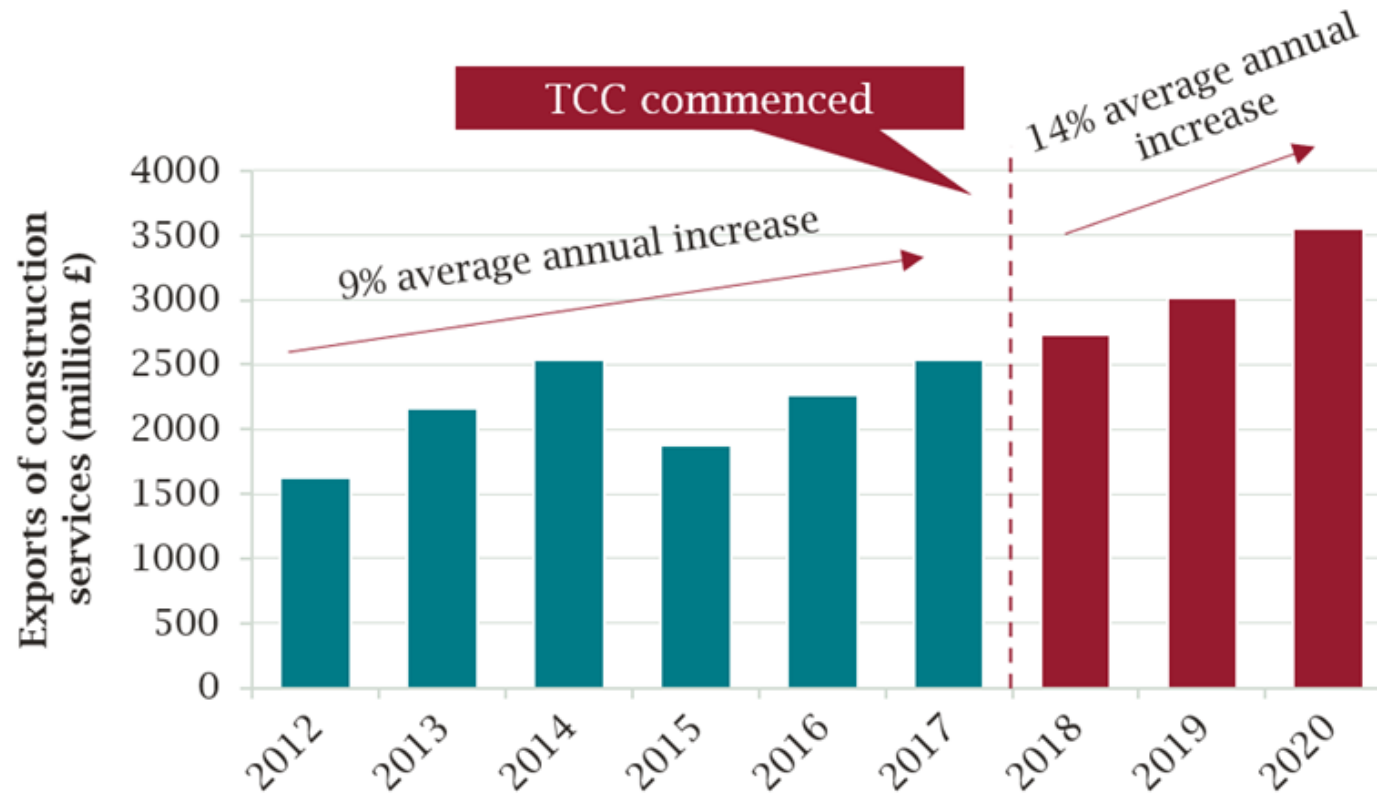
In 2021 they secured a **\$18.5m investment** from Google Ventures.





# Performance of construction sector

*Exports of Construction Service (UK)*

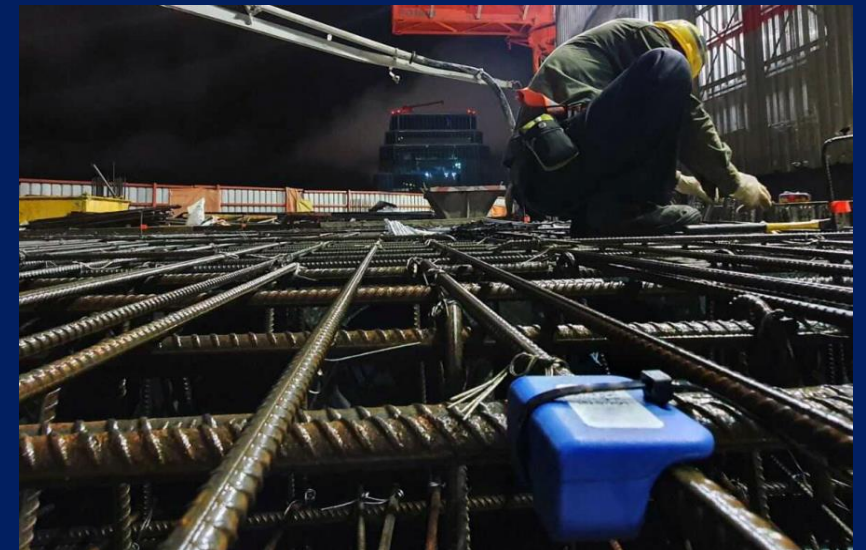


ONS Pink Book data

## CORE

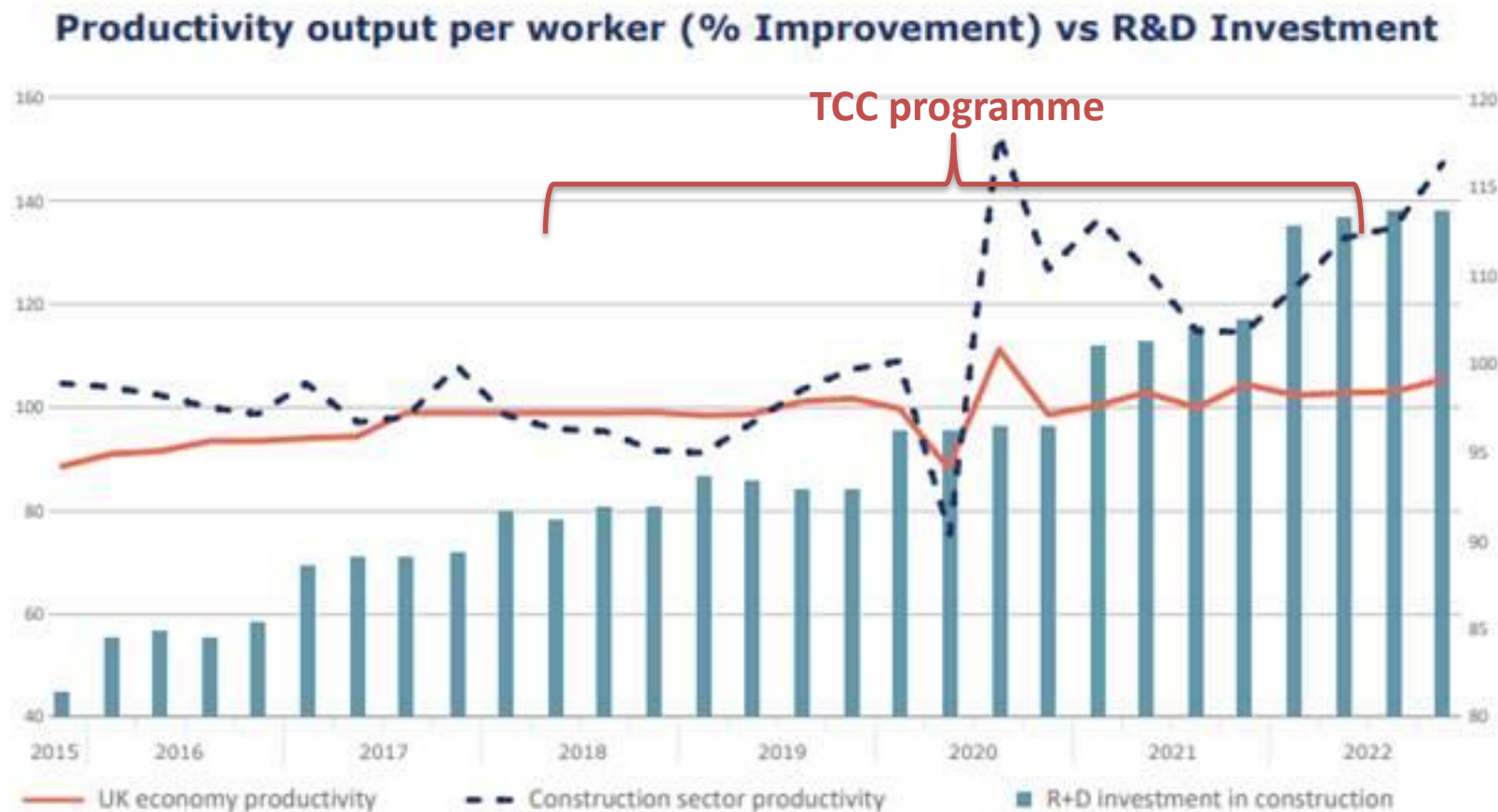
Asia is now >25% of Converge's ConcreteDNA Pro system market and the company is actively selling to a distributor and construction firm in Hong Kong and Singapore.

Deals have recently been signed in Australia and New Zealand 2021 exports ~£500,000

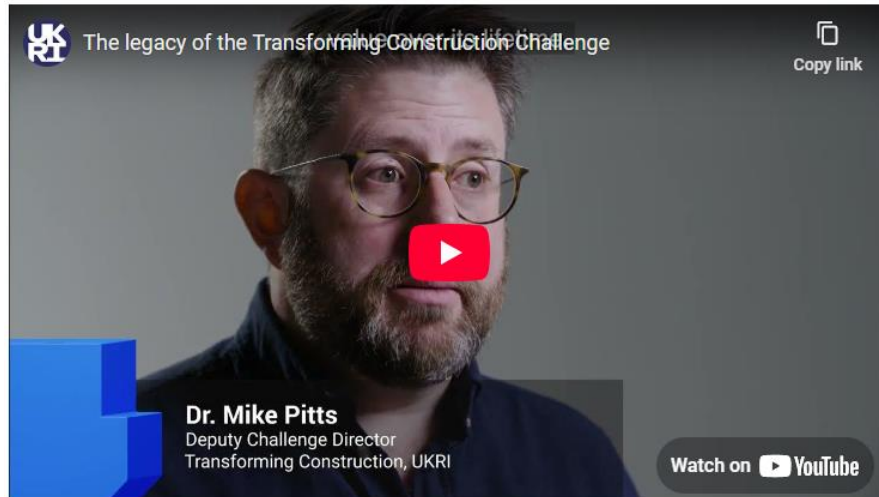


# Outcomes

Over the 5 years to **2023** the construction sector has collectively invested **£2bn in research and development**, a tenfold increase on the previous 10 years. This has had a material effect on **productivity – 10-15% up** – which had not been the case across the rest of the economy.



# ukri.org/TCC



**i** Search for a story by key word or filter, and then explore the different elements that make it a stronger story of change.

New search



View options:

Story building blocks ▾

Benefits ▾



**Filters:**

Innovation Types



Organisation Type



Locations



**84 results**

1 2 3 ... 10

**AIMCH**

Building more homes, with the same skilled workforce, at similar cost.

Last updated: 22nd February 2022



**SEISMIC I**

Collaboration to standardise and optimise the design for school building steel frames.

Last updated: 21st February 2022



**Landsec Office 1.0, The Forge**

The world's first 'kit of parts' office block paves the way for more productive and sustainable automated builds.

Last updated: 20th February 2022





# Example projects

## AIMCH

Major house builders demonstrating industrialised methods:

- More efficient scheduling & better use of workforce – 30% more can be built – comparable cost
- 52% faster build than standard
- Roofing up to 50% more productive



## HIPER Pile

Keltbray innovation for hollow structured bored piles that are smart monitored to enable reuse:

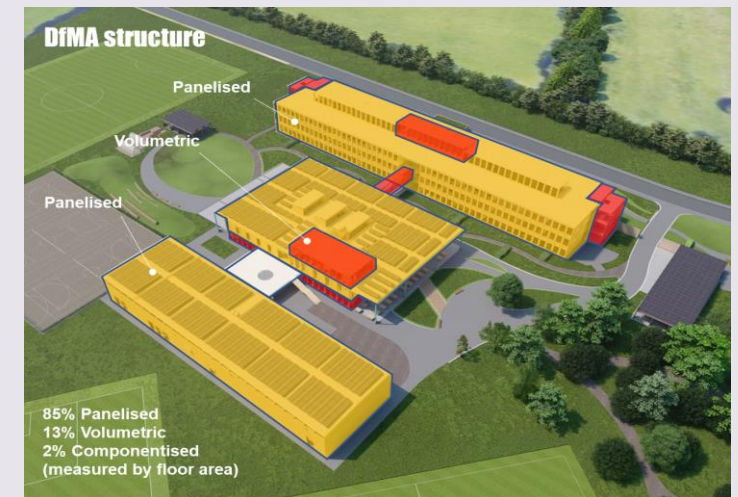
- 62% shorter programme time
- **47% reduction in carbon emissions** vs straight shafted.
- **Productivity up 20%.**



## GenZero schools

Department for Education, CIH & ABC

- New design guide setting out specification for new school building procurement
- Design rules for net zero (embodied and in use) and to enable construction using a platform approach.

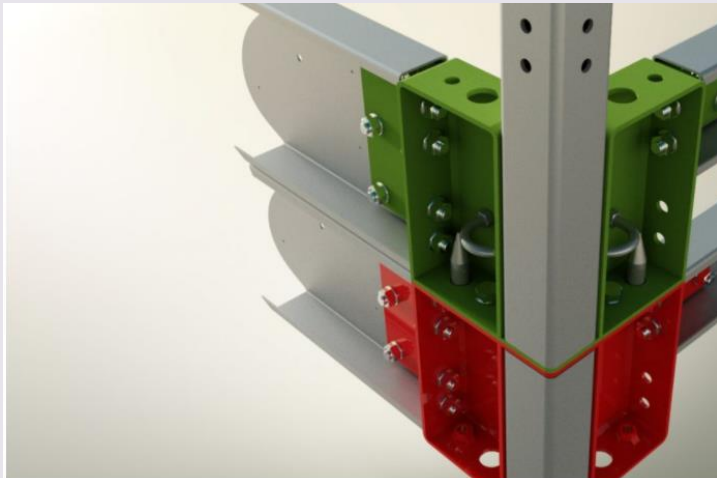


# Example projects

## Seismic

Kit of parts approach to school building steel frames:

- Reduces steel and associated emissions by 25%
- 52% reduction in build time and a design tool taking minutes rather than weeks



## PBBS

Digitally configurable kit-of-parts system to build schools and hospitals, standardising the hidden components to reduce cost and time:

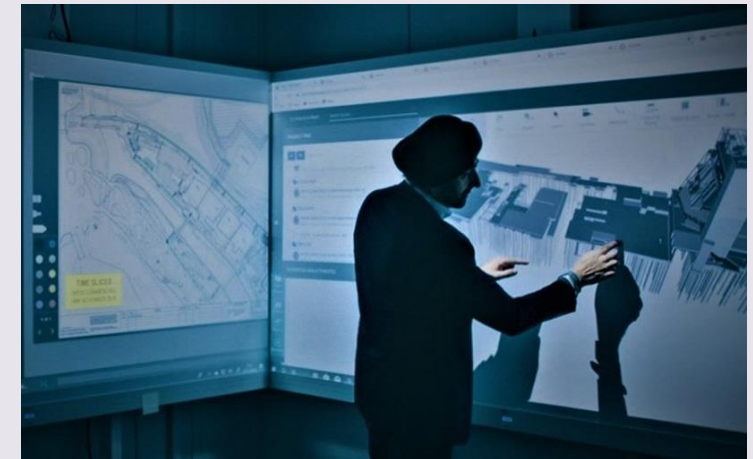
- 70% carbon savings
- 60% productivity improvement
- 16 weeks onsite saving



## AEC Production Control Room

NASA inspired control room for major construction projects:

- Replaces 500,000 sheets of paper with digitised reporting
- Gives teams 50% more info, improves safety and certainty of delivery
- 10-15% greater productivity



**Transform-ER (Transform.Engage.Retrofit.) - revolutionising the industry to retrofit one million homes a year.**



13 industry-leading partners using their expertise to tackle the sector's biggest barriers to achieving scale



Adopting the 'Demand – Develop – Deploy' model to unlock high-performance, cost-effective home improvement solutions



18-month duration with £4.1m budget, funded by Innovate UK.





As built measurements will be the future...



Image: Coltraco



Image: Kestrix



# Productivity – still an issue

Output per worker stands at £35.69 per worker hour, some 13.5% behind the economy average.

Clos[ing] the productivity gap between construction and the wider economy, [...] could generate £45bn of additional added value each year for the UK.

This is equivalent to 2% of UK GDP and enough to build more than 220,000 houses a year or pay for two thirds of the UK's ten-year infrastructure pipeline, including covering the cost of both HS2 and the new nuclear programme.

