

INDUSTRIALISED CONSTRUCTION CONFERENCE
02-03 July 2025 - MTC, Coventry

Platform Design @ The Forge

**Neil Pennell – Head of Design Innovation
& Property Solutions, Landsec**



Landsec



About Landsec

- We are one of the leading real estate companies in the UK, with a £10.9 billion* portfolio comprising c24m sq ft, including:
 - Central London Offices
 - Major Retail Destinations
 - Mixed-Use Urban Neighbourhoods
- Our purpose:
 - Sustainable places
 - Connecting communities
 - Realising potential

* Portfolio value at FY 2025



Focused on delivering sustainably

Sustainability embedded throughout our business

OUR VISION: We design, develop and manage places that enhance the health of our environment and improve quality of life for our people, customers and communities, now and for future generations

We will design, develop and manage places to tackle climate change, enhancing the health of the environment by achieving net zero and going beyond.

TARGETS

Reduce absolute scope 1,2 and 3 GHG operational emissions by **47% by 2030 and 90% by 2040** compared with a 2020 baseline.

Reduce average **embodied carbon by 50%** compared with a typical building by 2030.

Developed **£135m net zero transition investment plan.**



We will be a fair and responsible business in everything we do.

TARGET

All Landsec colleagues to have individual objectives to **support the delivery** of our vision.

We will create opportunities and inclusive places to change lives, supporting communities to thrive.

TARGET

Investing **£20m** into a Landsec Futures Fund empowering 30,000 people towards the world of work, **creating £200m of social value** in our local communities by 2030.

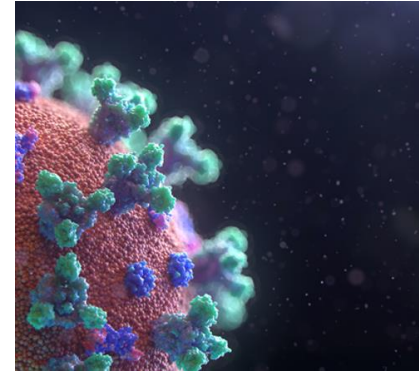
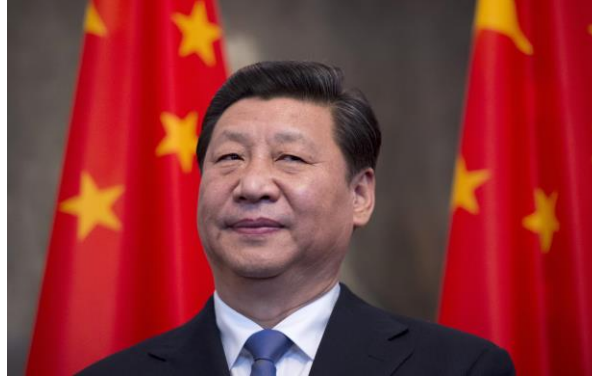
Changing the face of construction

The challenges facing the built environment sector

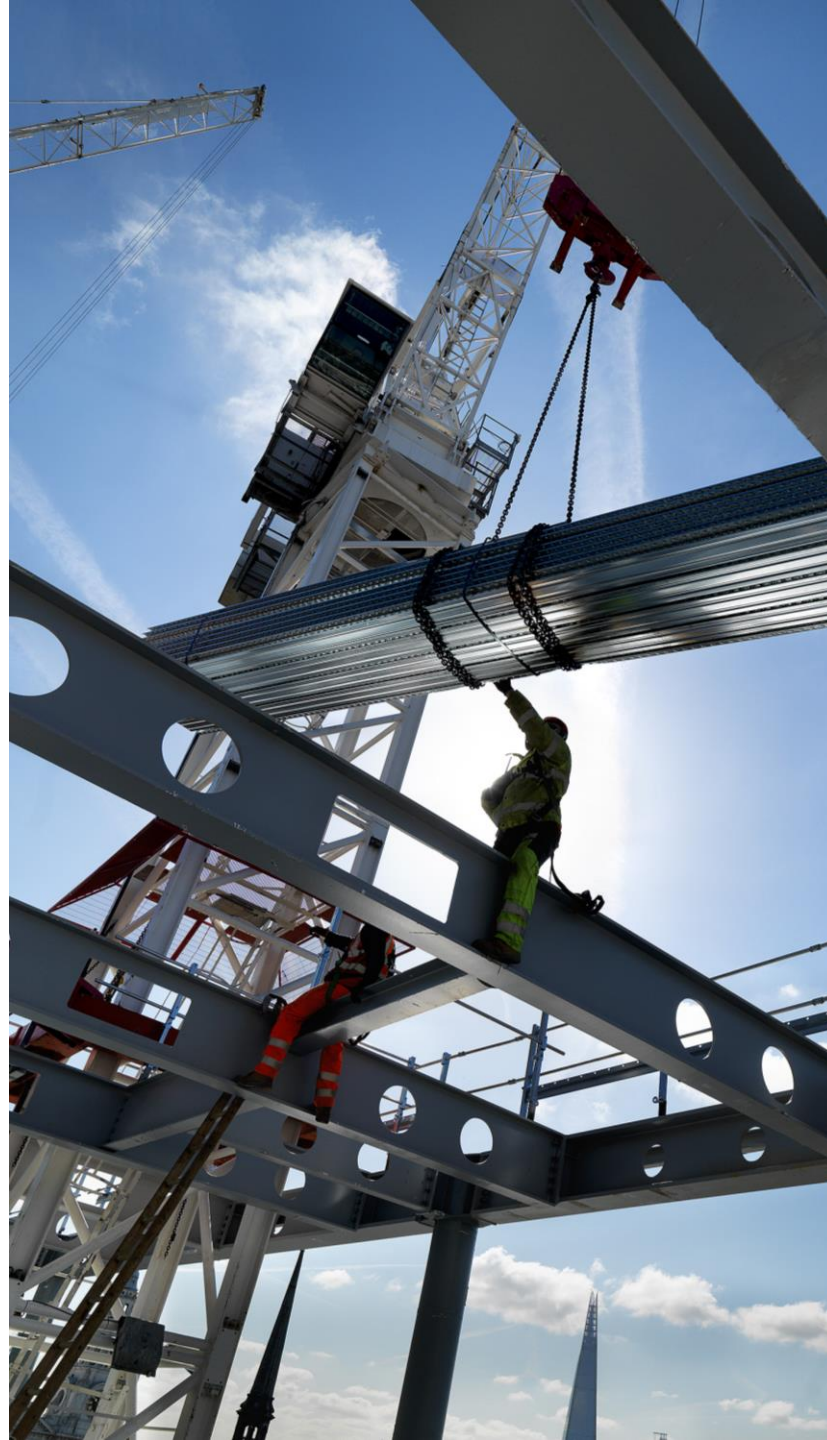


Landsec

We live in uncertain times



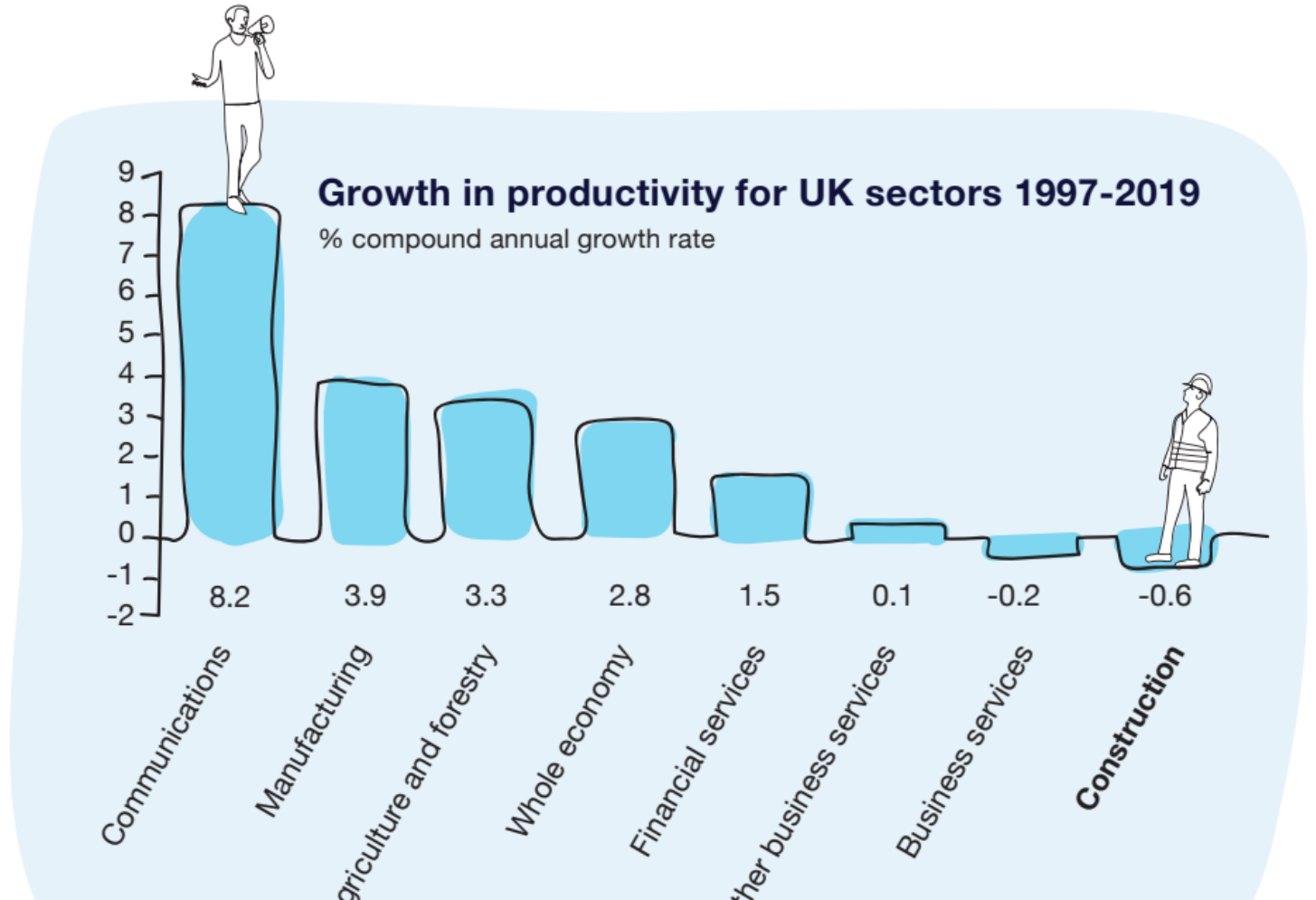
What it takes
to build buildings



CONSTRUCTION PRODUCTIVITY CHALLENGE

- UK construction productivity growth has fallen by an average of -0.6% each year between 1997 and 2019
- The goal is to overhaul a highly fragmented industry that lacks transparency and suffers from a lack of trust.

(research by Oxford Economics)



**“It is the long history of humankind
that those who learned to collaborate
and improvise most effectively have
prevailed”**

Charles Darwin

WELCOME TO

T H E
F O R G E

B A N K S I D E

BCO AWARD NATIONAL
AWARD WINNER 2024
for
INNOVATION



PROJECT AIMS

“Our purpose is to create sustainable places through connecting communities and realising the potential of people. We design develop and manage buildings to tackle climate change, enhance the natural environment and create inspiring places for people to thrive. The Forge is a true embodiment of this vision.” Mark Allan, CEO, Landsec

Landsec identified a shortfall of Grade A best-in-class office product in Southwark compared to some of its neighbouring sub-markets, this produced the opportunity.

The Forge is Landsec’s first development in Southwark for over a decade and is the first step in the company’s ambition to create over a million square foot green office cluster in the borough.

The Brief

- Create a best-in-class workspace to bring people together whilst celebrating the site’s industrial history and heritage.
- Deliver a building, or series of buildings, that are both in keeping with and improves the local townscape and public realm.
- Develop Landsec’s first Net Zero Carbon building (according to the UKGBC’s definition).
- Be a leader in testing new ideas, approaches, and products to improve construction efficiency.



DESIGN & PROCUREMENT

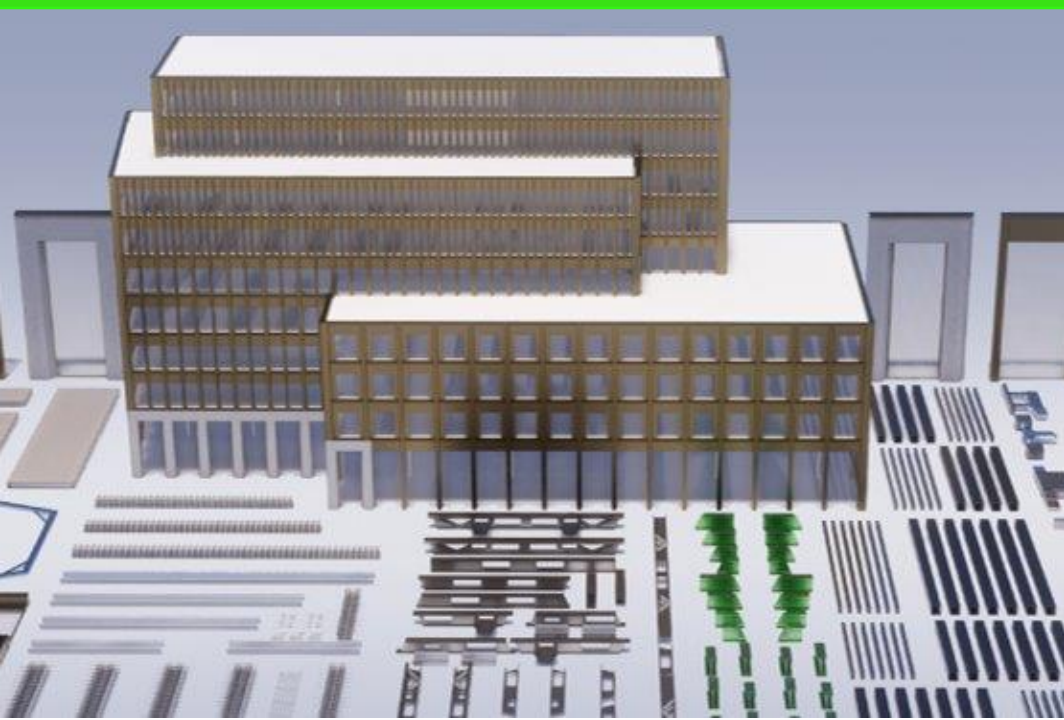
Design

- Planning permission achieved with Piercy & Co in 2017.
- Bryden Wood subsequently joined team as Multi-Disciplinary Designer to embed P-DfMA into the design of The Forge.
- Design in all areas complies, if not exceeds, the BCO Guide to Specification 2014, which was the basis for the project brief.
- Specialist suppliers including bespoke plant & equipment, unitised cladding manufacturer and MEP disciplines, employed under pre-construction service agreements to ensure technical knowledge implemented into design at early stage.

Procurement

- Procured via a Construction Management arrangement, with Mace and Sir Robert McAlpine entering into a joint venture to perform the role.
- Cladding and structural frame packages disintermediated with supply and install procured separately.
- Landsec required off-site collaboration between trade contractors to ease on-site installation.

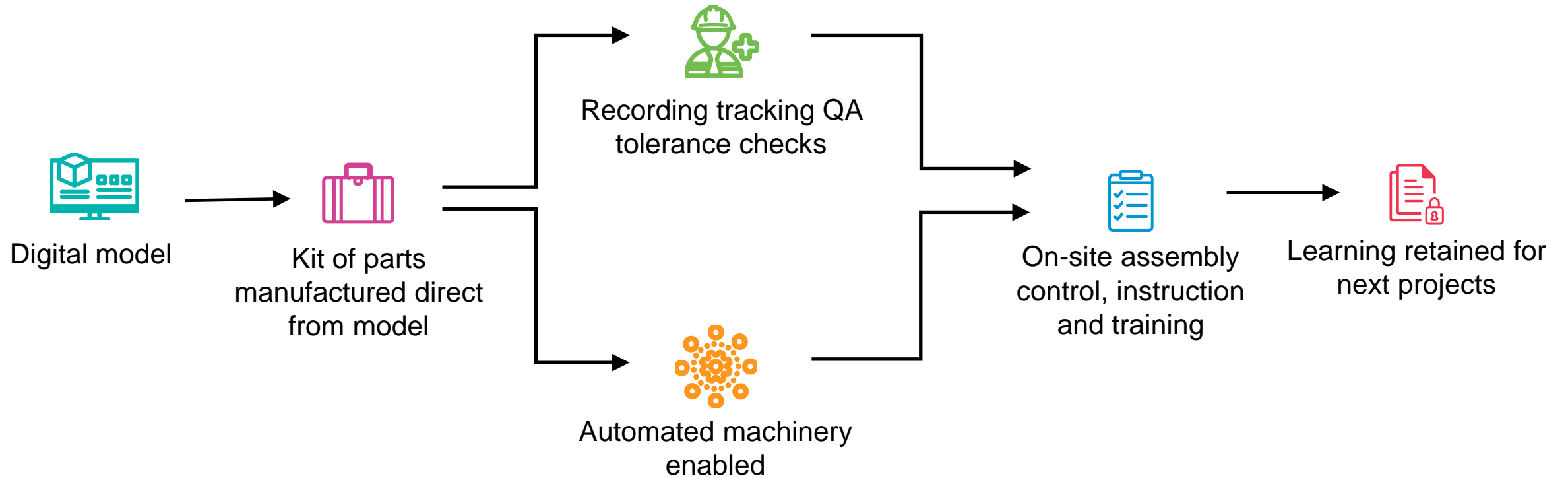




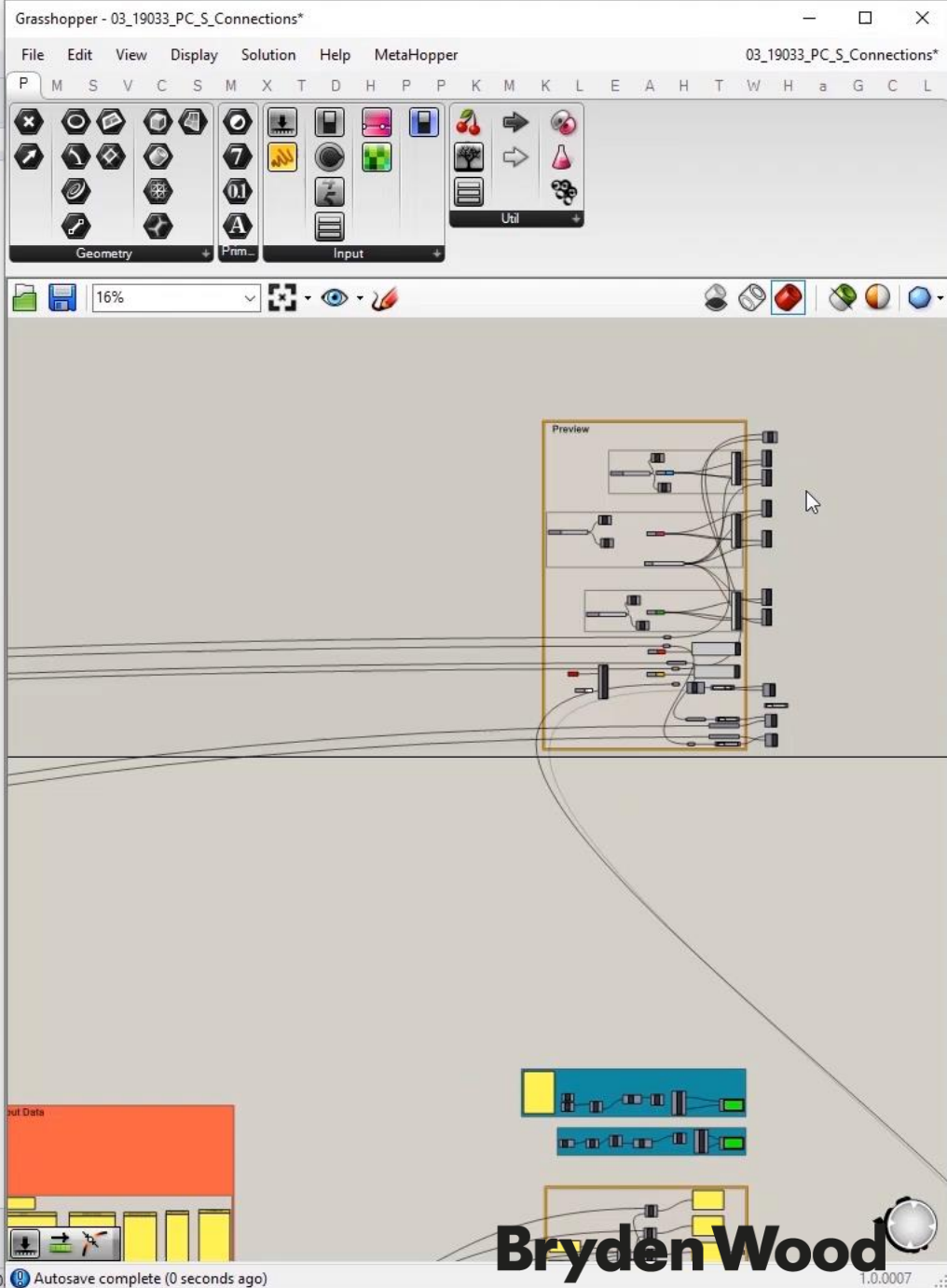
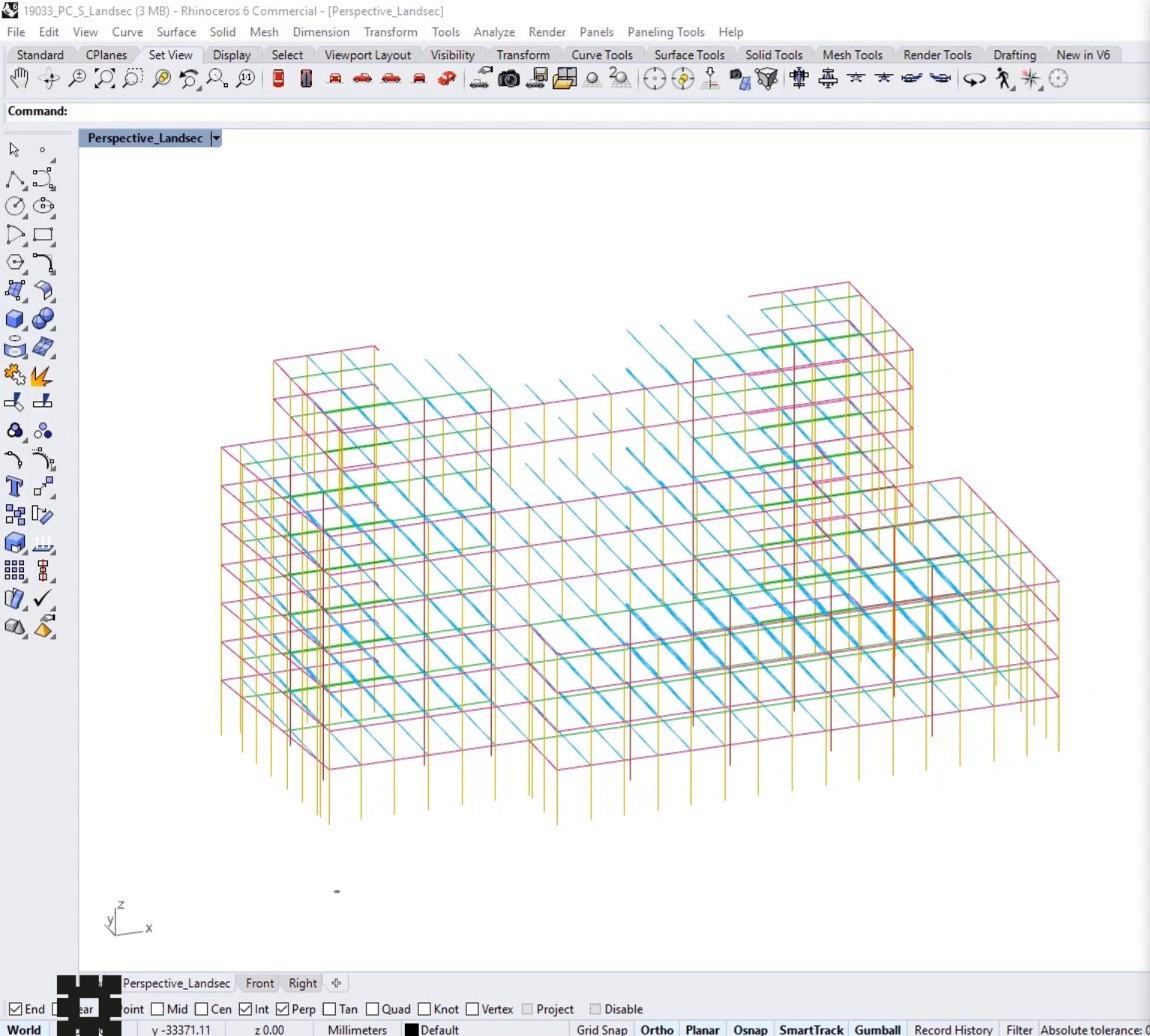
INNOVATION

- The Forge is the first large scale commercial development in the world to be designed and delivered using a Platform approach to Design for Manufacture (P-DfMA), which is now a central tenet of UK Government policy and strategy.
- Awarded £2.6m of grant funding by UK Research and Innovation as an R&D project, then a Demonstrator Project for Automated Construction.
- Productivity measurement research in collaboration with Centre for Digitally Built Britain and the University of Cambridge
- Early collaboration resulted in lots of pre-fabrication including CAT A MEP modules, sprinkler riser modules and volumetric structure with metal stairs pre-installed.
- Integration of smart technology, including IoT hubs, throughout.
- Used a series of digital design & delivery tools during the project life cycle.

INTEGRATED DIGITAL TECHNOLOGY

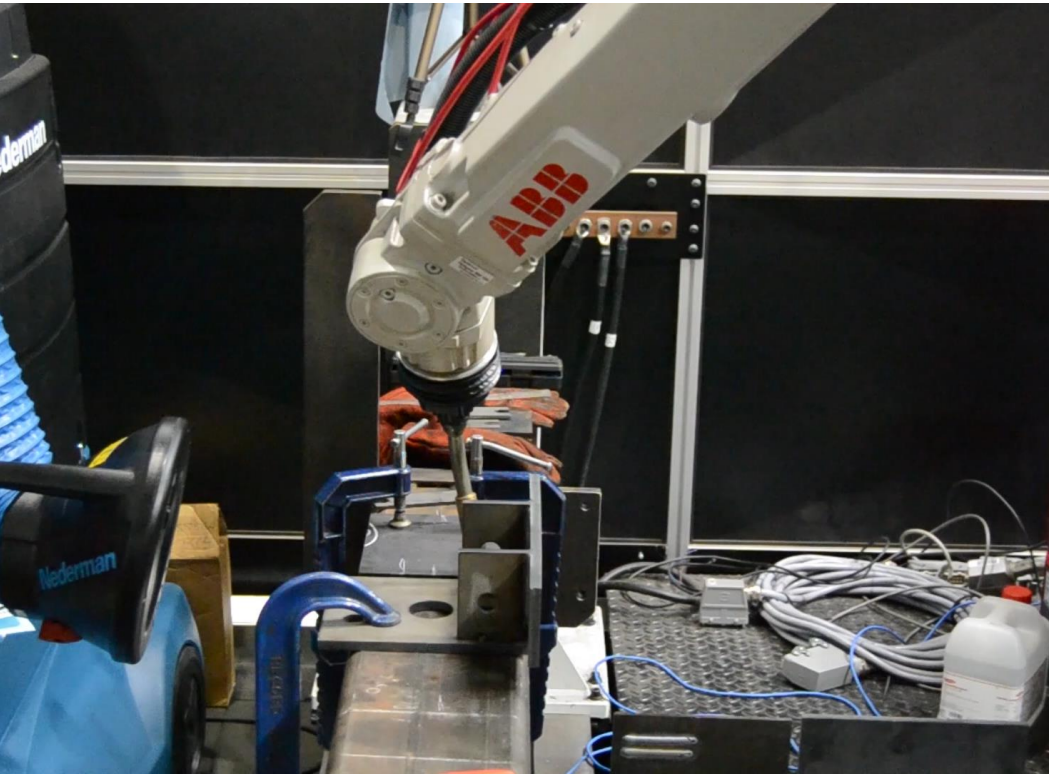


Following ISO 19650-5 and ISO 19650-6 principles

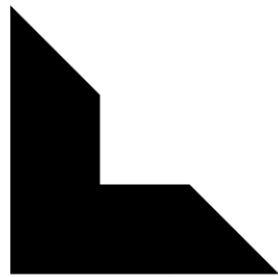




ADVANCED MANUFACTURING



Bryden Wood



Landsec

easi space

Environmentally And Socially Impacting Spaces



UK Research
and Innovation

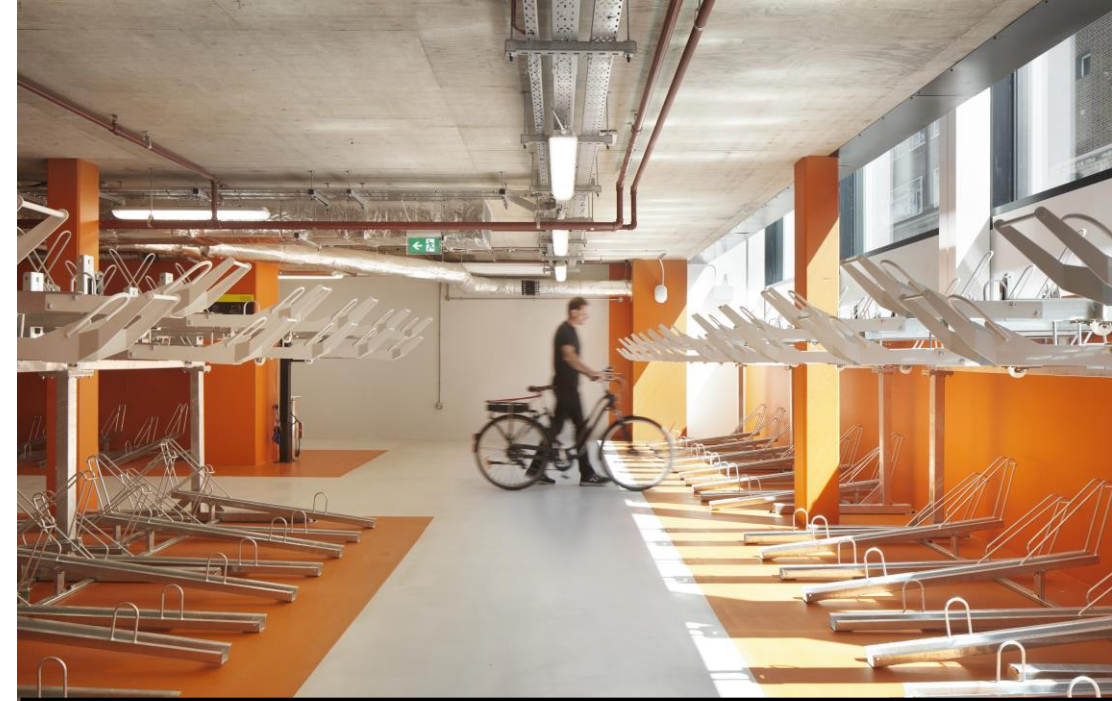
SUSTAINABLE DESIGN

The Forge was created with Landsec's sustainability strategy "build well, live well, act well" at the forefront. It has carefully curated outdoor and indoor spaces to meet the wellbeing needs of a modern workspace: fresh air, natural light, green spaces and end-of-trip facilities in a net zero carbon development and will also enhance the environment for surrounding communities. The development is pre-certified to WELL Core Gold. The purposeful biophilia throughout communal areas support cognitive function, physical health and psychological well-being.

The office floor plates best in class grade A office space, providing above market levels of fresh air ventilation. Floor-to-ceiling glazing and terraces promotes views out towards the local area. This creates a sense a strong sense of place for our customers as well as a sense of historic culture. The green roof on Bronze provides a biodiversity net gain compared to the sites previous use housing bug hotel, bat and bird boxes.

The reception in both buildings provide modern, spacious and comfortable areas of breakout space, with the provision of hot drinks and areas of artwork providing sensory engagement.

The cycle parking benefits from the Mezzanine level raised off Ground floor allowing natural light and a visible connection to the outside world. High end, shower and changing facilities are available to all with a complimentary towel service to set you up for your day.





ENVIRONMENTAL & WELLBEING

BUILD WELL

- Net zero carbon in construction and operation, as per UKGBC definition
- 39% reduction in embodied carbon emission (A1-A5) from the RIBA Stage 3 benchmark
- Powered by 100% renewable electricity including 107 PV panels
- 298m2 of biodiverse roof
- Responsible material selection and sourcing



LIVE WELL

- 230 cycle spaces, 230 lockers and 17 showers enabling an active lifestyle
- Enhanced staircase finishes to promote usage
- Excellent levels of fresh air and continuous air quality monitoring
- Terrace and courtyard spaces for easy access to the outdoors
- Amenity and activity booking through the building app

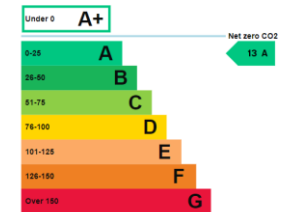
ACT WELL

- 115 suitable employment opportunities for unemployed Southwark residents
- 16 new jobs created through the build period for local residents
- £150,000 social mobility fund for employability and education programmes
- Partnering with grassroot organisations and committing £40,000 to support these and connecting our customers to the local community.

BREEAM®

Energy rating and score

This property's current energy rating is A.



bounce
back.

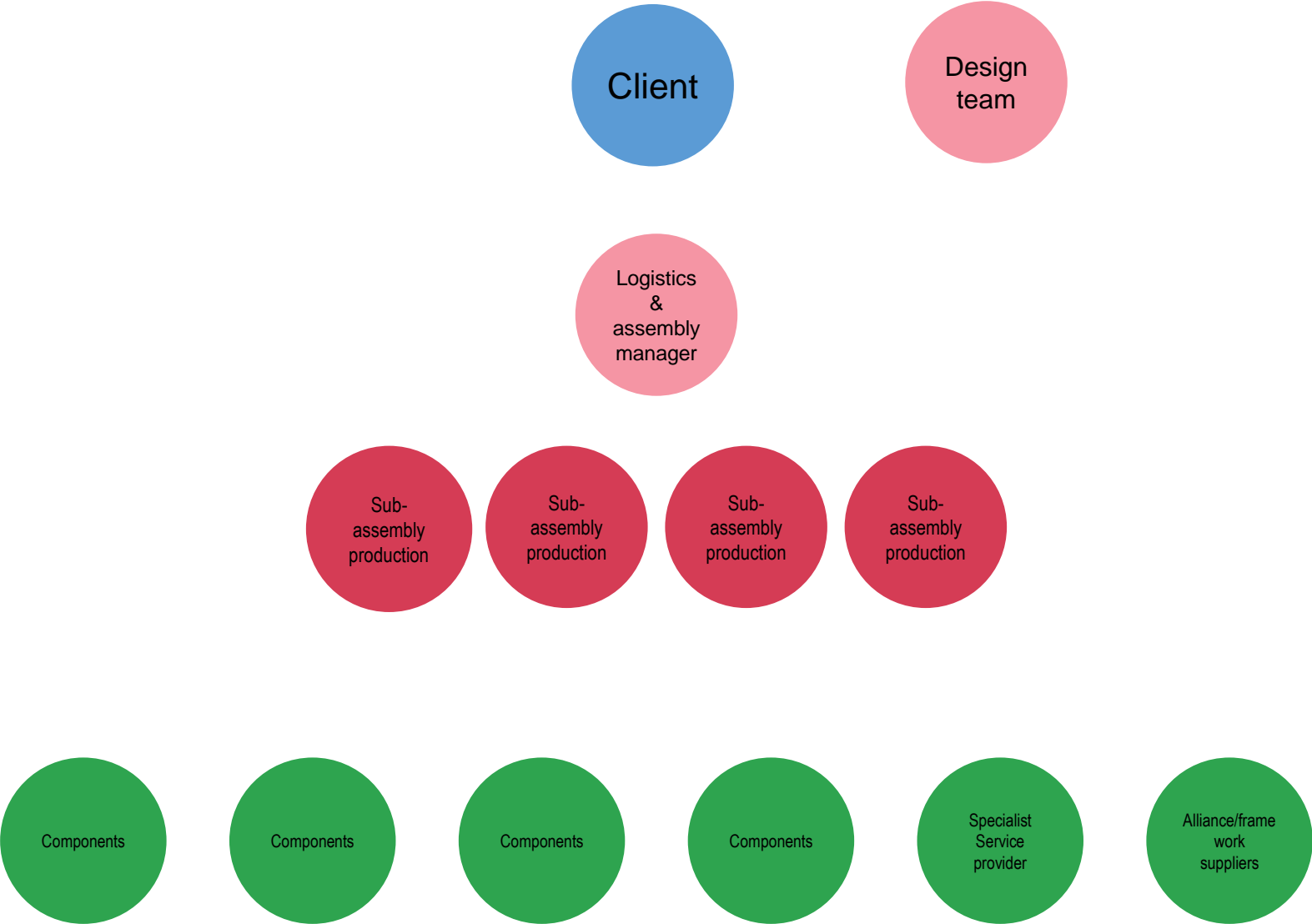


PROJECT DELIVERY

- Joint-venturing two Tier 1 main contractors in Construction Manager role.
- Tight central London site
- Challenging floor : wall ratio due to two buildings
- Introduced a new way of working with the P-DfMA structural system.
- Utilising bespoke temporary works equipment and plant the project was able to use 18% less steel and 13% less concrete compared to traditional structural frame.
- Coordination between disciplines resulted in generous floor-to-ceiling height
- Covid-19 / BREXIT / tender price inflation

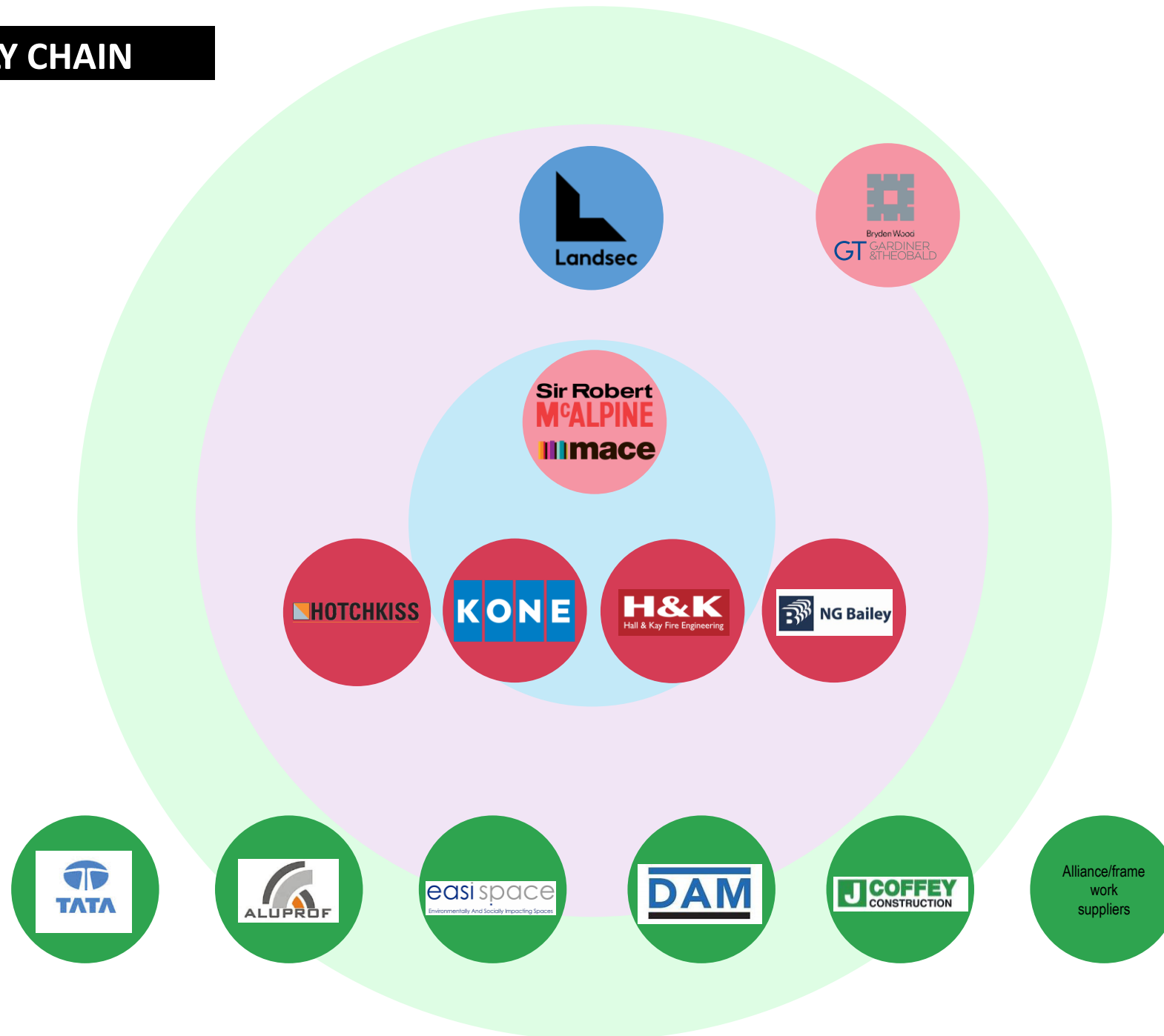


THE FORGE SUPPLY CHAIN



THE FORGE SUPPLY CHAIN

21



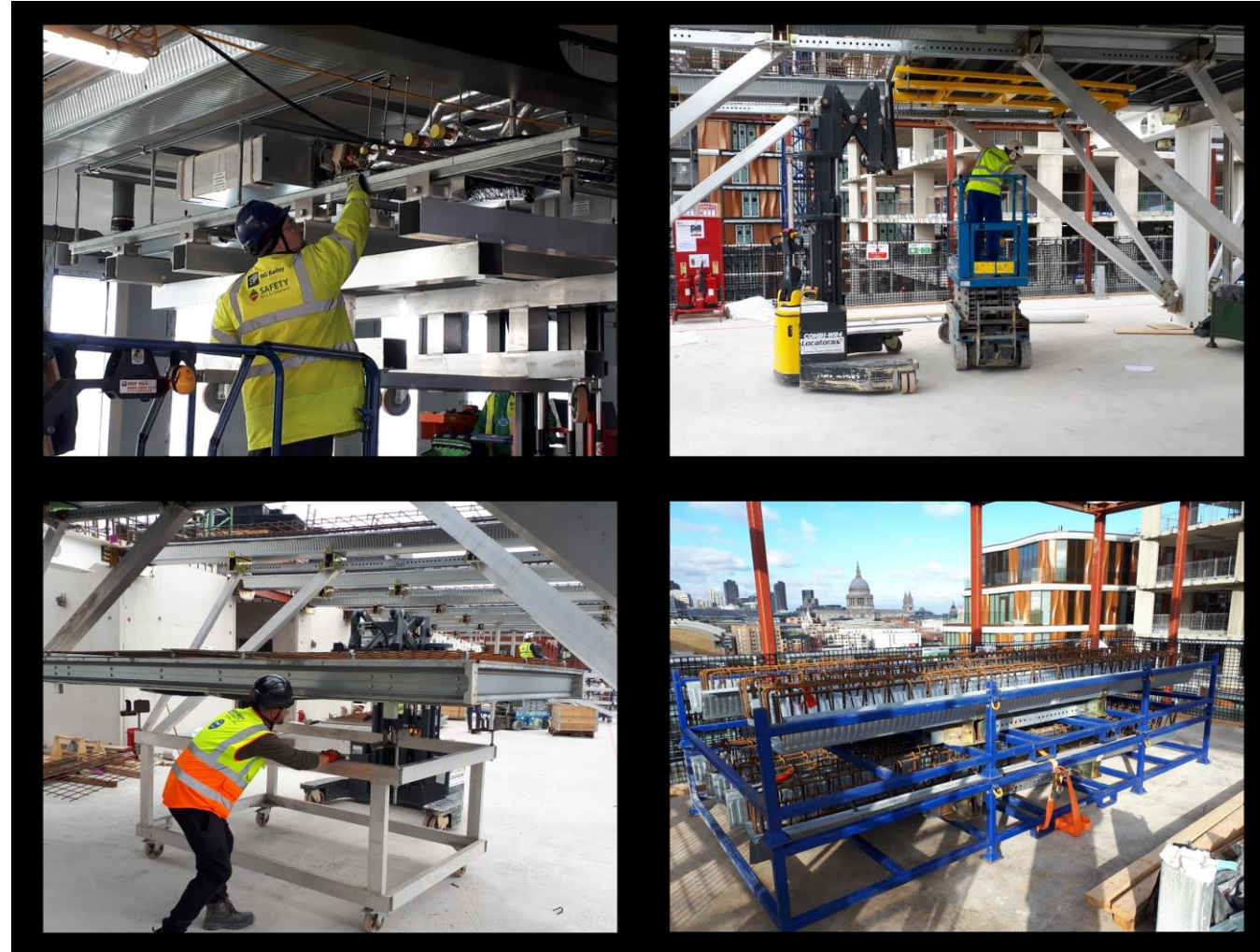
Key innovations

- Net zero carbon
- Value led design thinking
- P-DfMA 'kit of parts'
- Prototype development
- Supply chain disintermediation
- Collaborative contracting model
- Digital process transformation
- Productivity measurement



Process improvements

- Faster, better, safer, greener & more cost effective construction
- Increased off-site manufacturing
- On-site assembly methodologies
- Automated processes
- Breaking down silo's
- Reducing the use of materials and resources
- Improving productivity
- Data led decision making

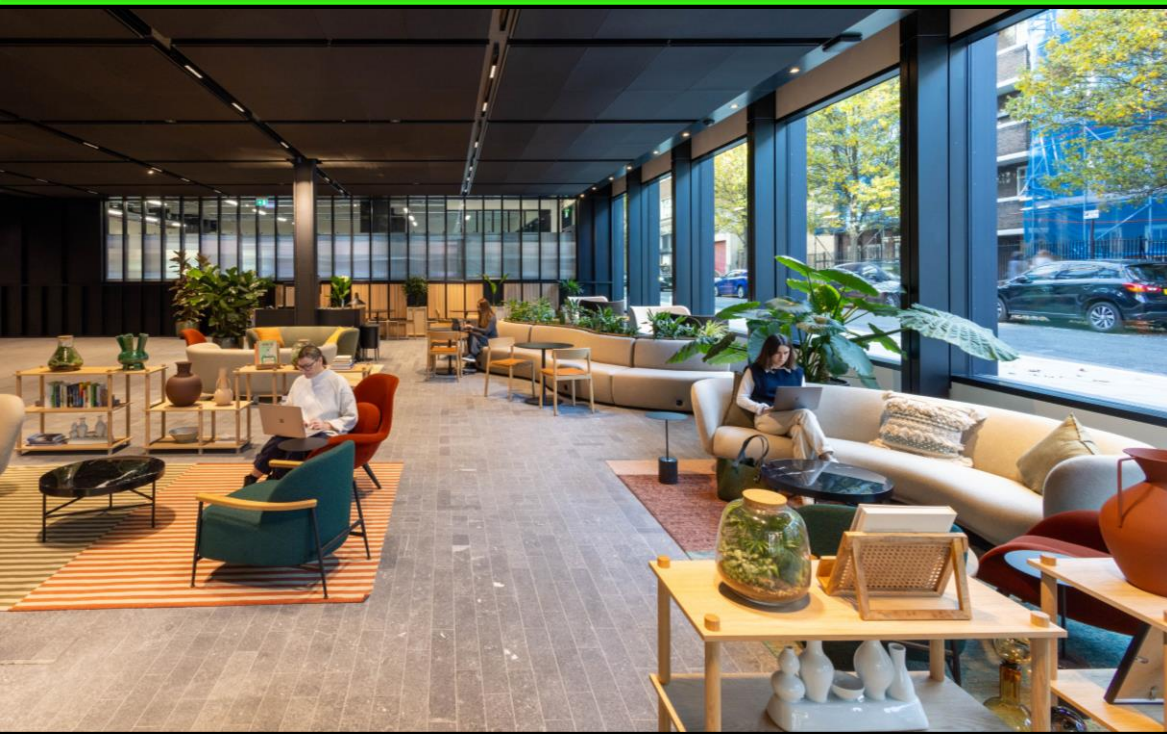


Next steps

We need to:

- Re-think the design process
- Re-engineer procurement
- Re-imagine construction logistics
- Re-invest in smart manufacturing
- Re-skill the workforce
- Re-set behaviours



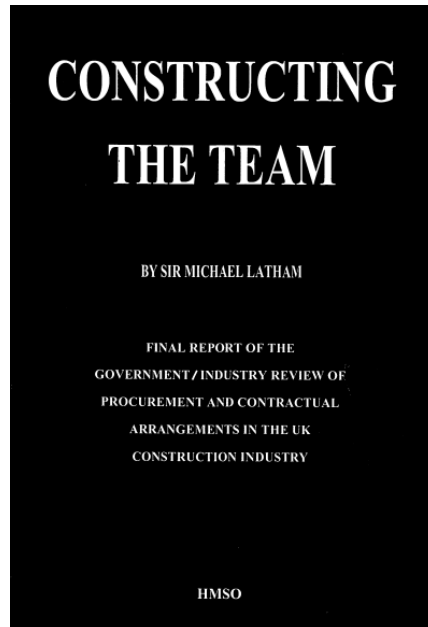


FIRSTS AT THE FORGE

- 1st UK commercial development designed and built to meet the UK Green Building Council's net zero carbon definition, covering construction and operation.
- 1st large scale commercial development in the world to be designed and delivered using a Platform approach to Design for Manufacture (P-DfMA)
- 1st joint venture between Mace and Sir Robert McAlpine on a project
- 1st net-zero carbon building for Landsec
- 1st Landsec project delivered via Construction Management for over a decade.
- 1st collaboration between the University of Cambridge and Landsec on the measurement of construction performance and productivity

30 years of trying to change

1994



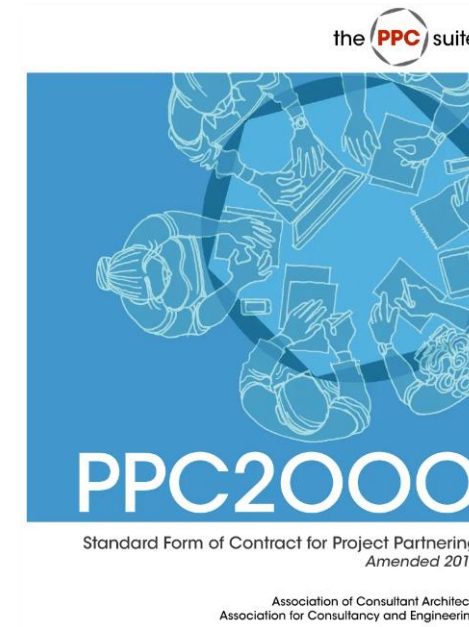
- Ineffective
- Fragmented
- Incapable of delivering
- Trust and money

1998



- Join with clients
- Do it differently

2000



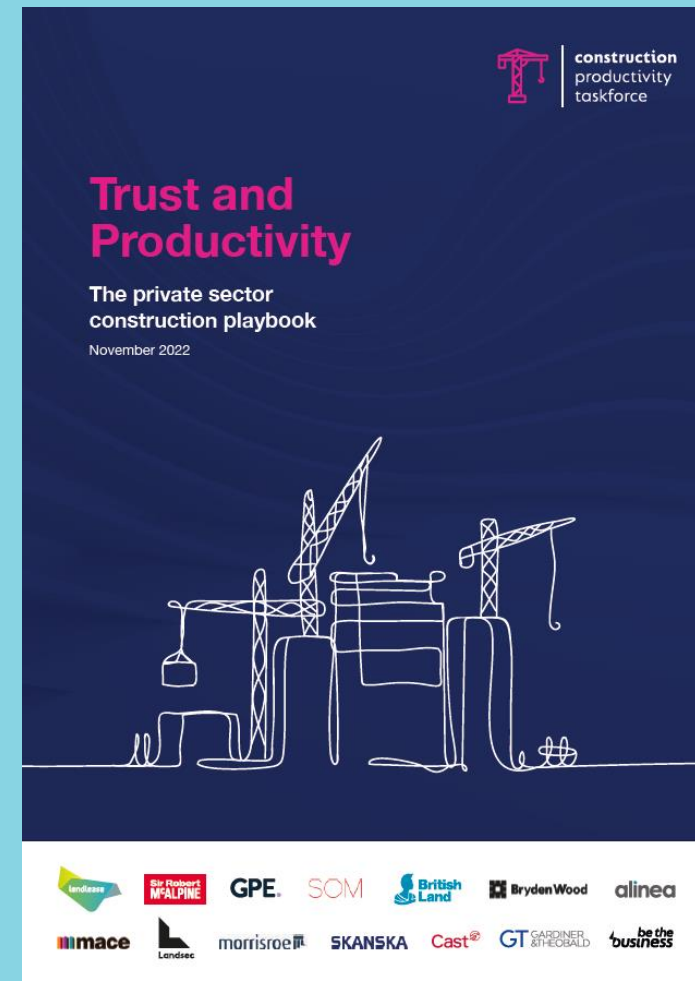
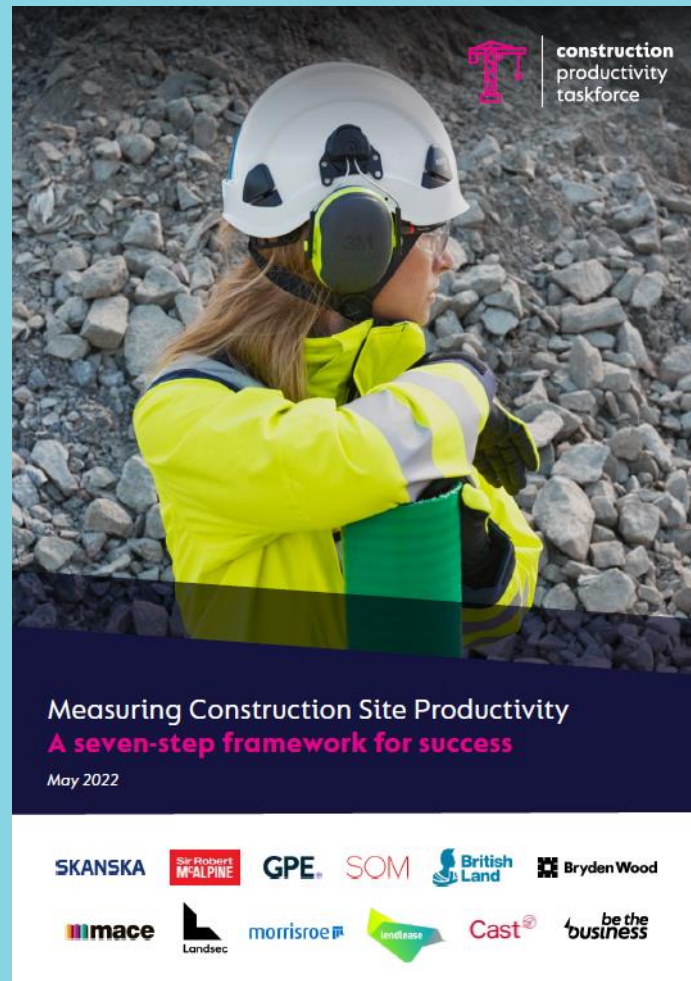
- Early engagement
- Clear pricing
- Integrated team

2016



- Dysfunctional training
- Low productivity
- Little innovation
- No R&D
- High costs

The Construction Productivity Taskforce – making the case for change



<https://www.bethebusiness.com/>

Changing the face of construction through innovation & collaboration



construction
productivity
taskforce

The 10 drivers for success

Trust and Productivity proposes 10 drivers for success that should underpin any project.



Form effective partnerships



Benchmark objectives



Adopt portfolio and longer-term contracting



Allocate risk fairly and appropriately



Adopt an outcome-based approach



Pay fairly



Embed digital information flows and technologies



Assess the economic and financial standing of suppliers



Involve the supply chain early



Promote innovation and continuous improvement

**“The definition of insanity is
doing the same thing over and
over again, but expecting different
results”**

Albert Einstein