

Constructing Excellence Midlands Construction Summit

**Tuesday 15th October 2024
Villa Park, Birmingham
#CEMSummit24**

Agenda

- Welcome – Uma Shanker, Chair CE Midlands
- Keynote Address – Richard Parker, Mayor of the West Midlands
- The economy 100 days after the election – Max Wilkes, Atkins Realis
- Carbon Accounting:
 - Nigel Tonks, Arup
 - Rebecca Clayton, PwC
- Building Safety – Julie Bell-Barker, City of Wolverhampton Council
- A word from our sponsor – Kevin Blunden, Acivico
- Panel Session:
 - Adrian Speller, Speller Metcalfe
 - Ian Tipton, Stride Treglown
 - Andrew Shepherd, Istock Futures
 - Darren Bramley, Birmingham Airport
- Launch of CE Midlands Social Value Theme Group – Sue Woollett & Natasha Heritage, Stepnell
- Trevor Steven in Conversation with Andrew Carpenter

Chairman's Welcome

Uma Shanker

Keynote Address
Richard Parker
Mayor of the West Midlands

Max Wilkes

Atkins Realis

CONSULTING EXCELLENCE

ECONOMIC BRIEFING

MAX WILKES
CONSTRUCTION & COST INTELLIGENCE LEAD

SEPTEMBER 2024

Scan Me



4Q2024 AtkinsRealis Construction
Intelligence Report



Topics

Manifesto Promises

Economic Situation

Construction Outlook

Cost Drivers & Forecast

Look at West Midlands

Manifesto Promises

Long term plans

Drive growth in manufacturing and services sectors,

Unlock investment

Break down barriers to regional growth

Drive forward net zero and clean power by 2030



Manifesto Promises

Headline - 1.5m New Houses

Planning Reforms

National Wealth Fund

Government Intervention – wind farms



Economic Considerations

Consumer Price Inflation

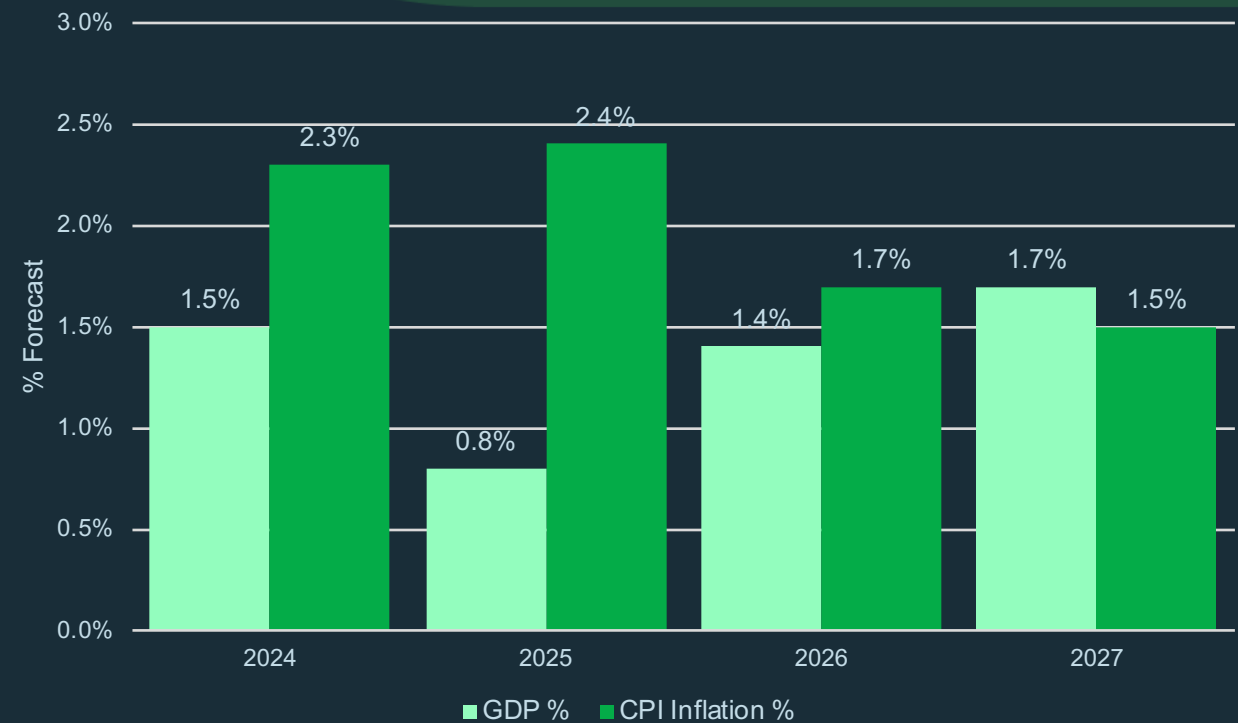
BofE focus on deflationary measures

Start of interest rate cuts

Don't expect 2008-21 level

GDP

Bank of England Forecasts for CPI & GDP (Aug 24)



Economic Considerations

Recovery private investment led
Housing sector importance
Infrastructure Strategy
Government spending limits



Government Investment Changing?

Office for
**Budget
Responsibility**

Discussion paper No.5
Public investment and potential output

Neetha Suresh
Rachel Ghaw, Ronnie Obeng-Osei and Tom Wickstead
August 2024

Construction Outlook

Reflect on ISG failure

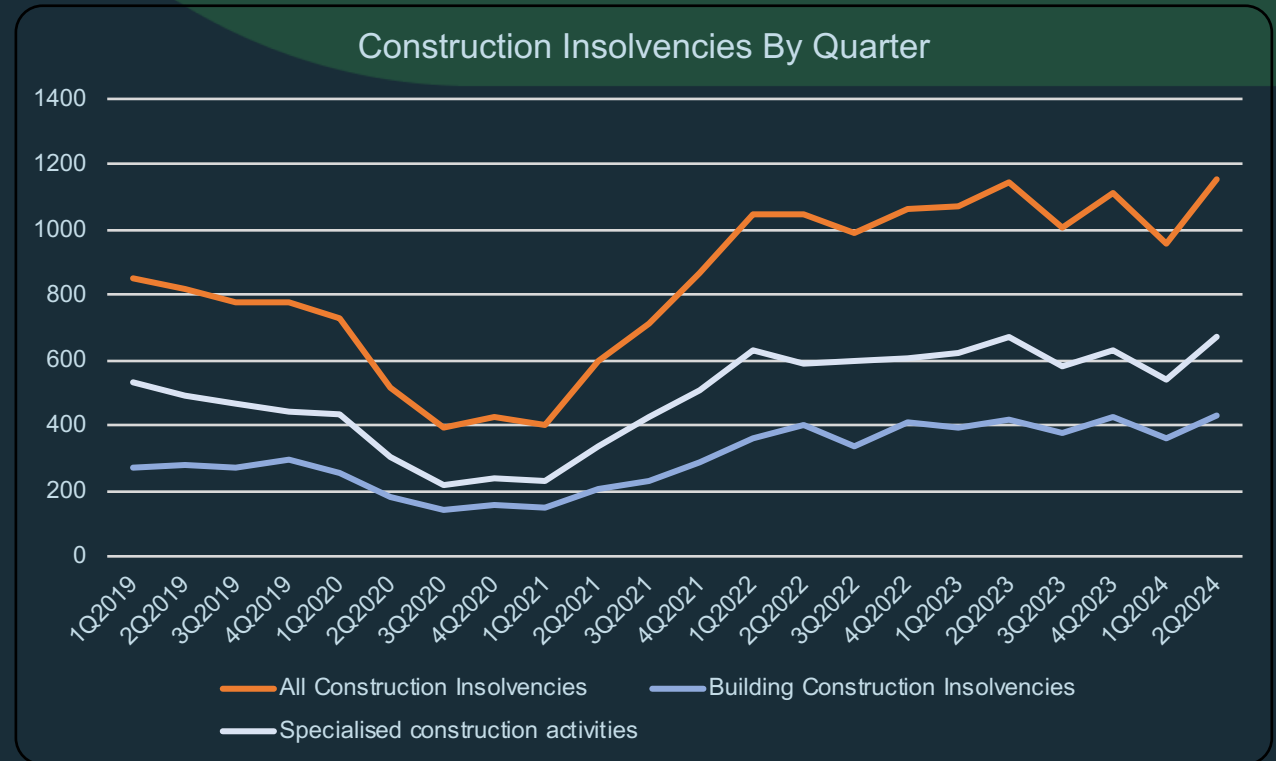
Risks remain

Insolvencies

Insurances

Incomplete design

Labour shortages



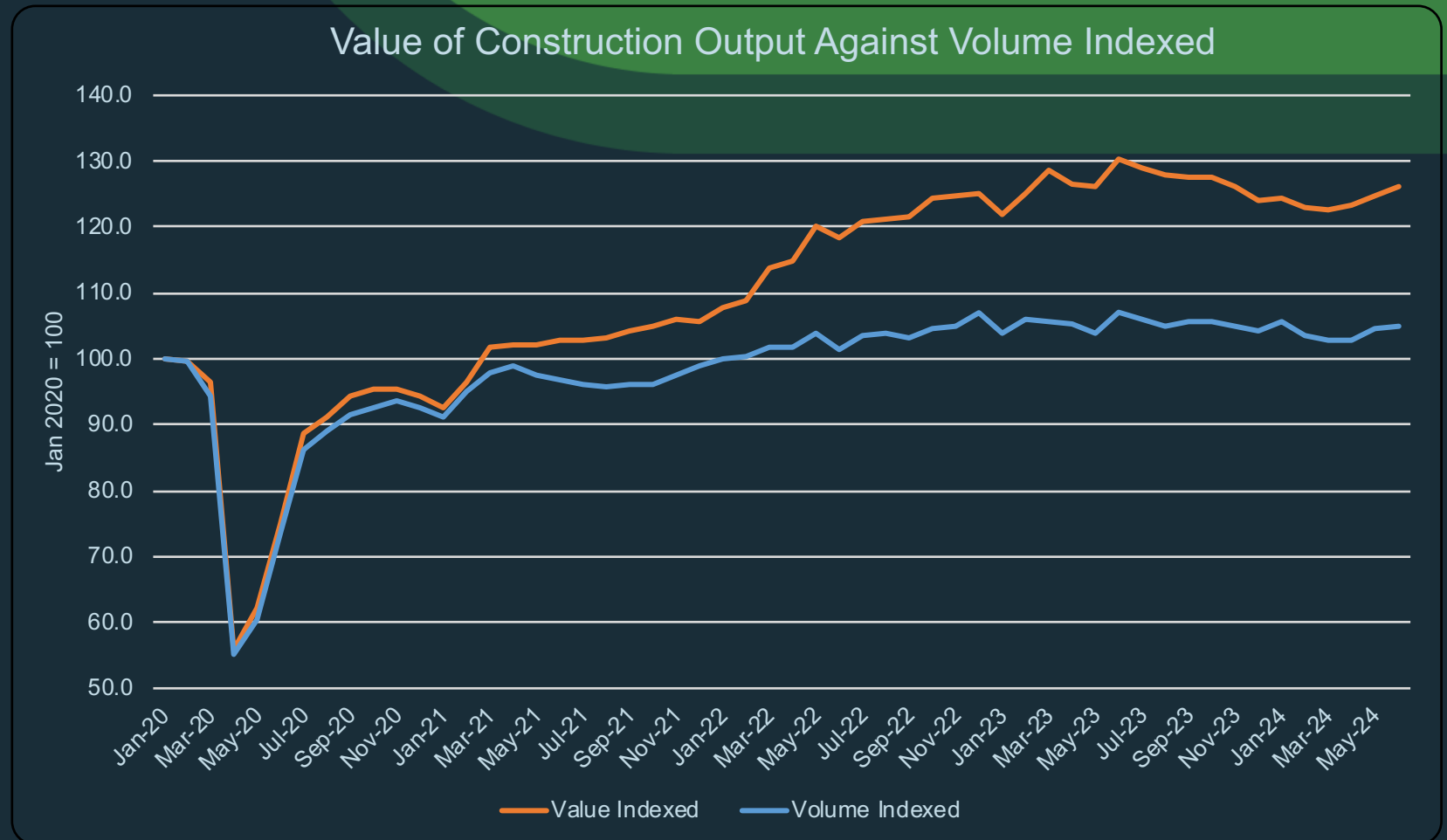
Construction Outlook

New orders rose in 1H24

Output expected to rise on average

3% in 2025

4% in 2026



Cost Drivers

ONS Output Index (OPI)

Materials

Labour

Allowance for OH&P

Materials

Peaked in 2022

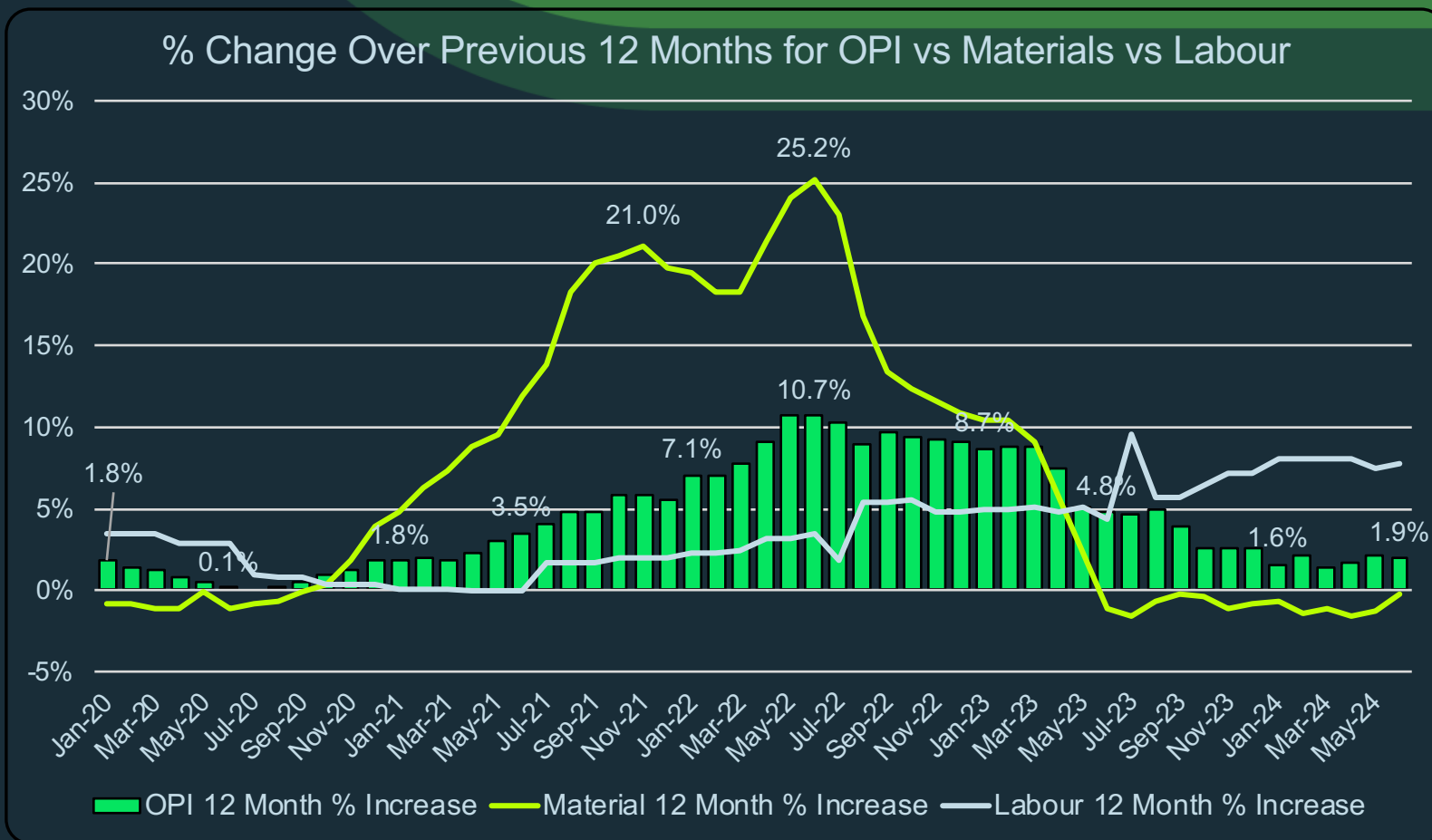
Availability

New Orders > cost increases

Labour

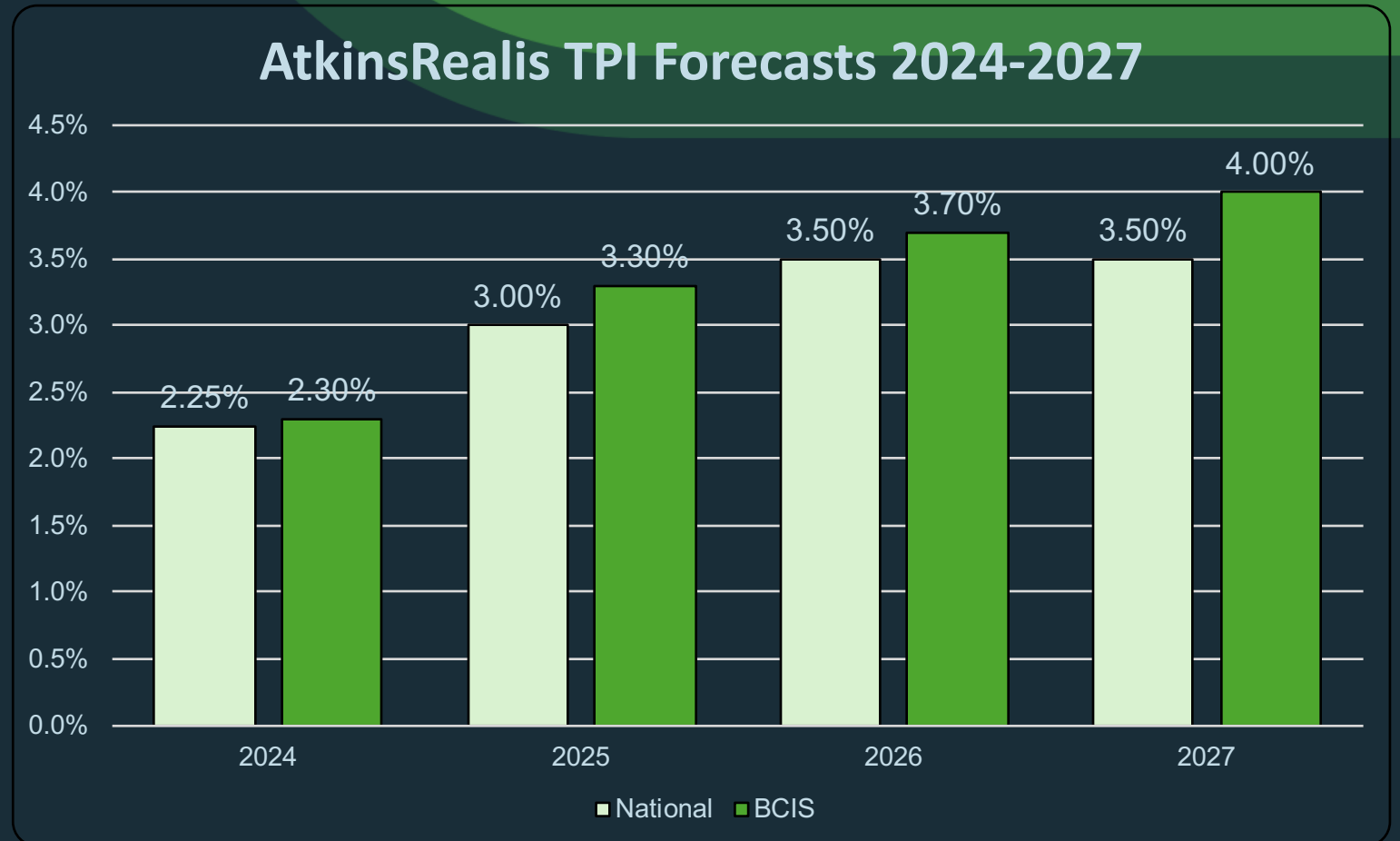
Driven by CPI

Skills Shortages



Construction Forecast

BCIS generally higher than consultants' forecasts



Focus on West Midlands

Hot Spot

HS2

Benefitting from Local Authority levelling up

Rapid planning - Peddimore

Office Development

Build to Rent

Moving out to commuter towns

Pulling resources from adjacent areas



Focus on East Midlands

More local control

Mini Nuclear reactors at Rolls Royce Derby

Radcliffe Power Station

Office Development

Build to Rent



thank you

Nigel Tonks

Arup

Integrating Carbon and Cost

Counting Carbon



Nigel Tonks



UNOPS
Infrastructure
for climate
action

UNIVERSITY OF OXFORD | UN environment programme | 50 1972-2022

75%

The infographic features a green background with a white line-art tree structure. Various icons are placed along the branches, including a hospital, a person on a bicycle, a leaf, a solar panel, a water drop, a recycling symbol, and a factory. A large white box at the bottom left contains the text '75%'.

UN environment programme

Beyond foundations
Mainstreaming sustainable solutions to cut emissions from the buildings sector

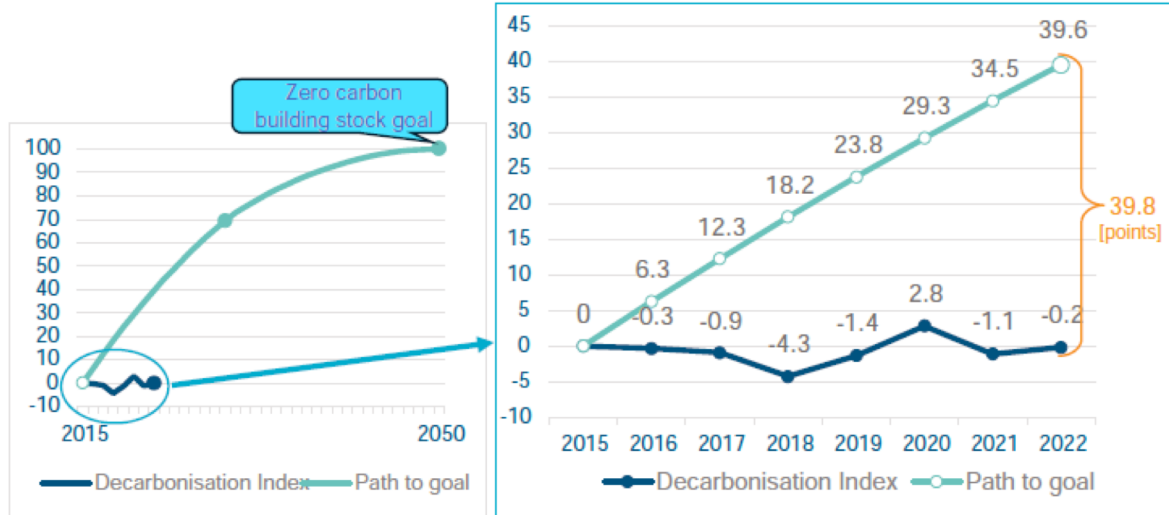
21%

Global Alliance for Buildings and Construction
Global Status Report for Buildings and Construction

The cover features a blue background with a white line-art illustration of a construction site. A hand is shown holding a green smartphone in the foreground. A large white box at the bottom left contains the text '21%'. The UN Environment Programme logo is in the top right corner, and the Global Alliance for Buildings and Construction logo and title are at the bottom.

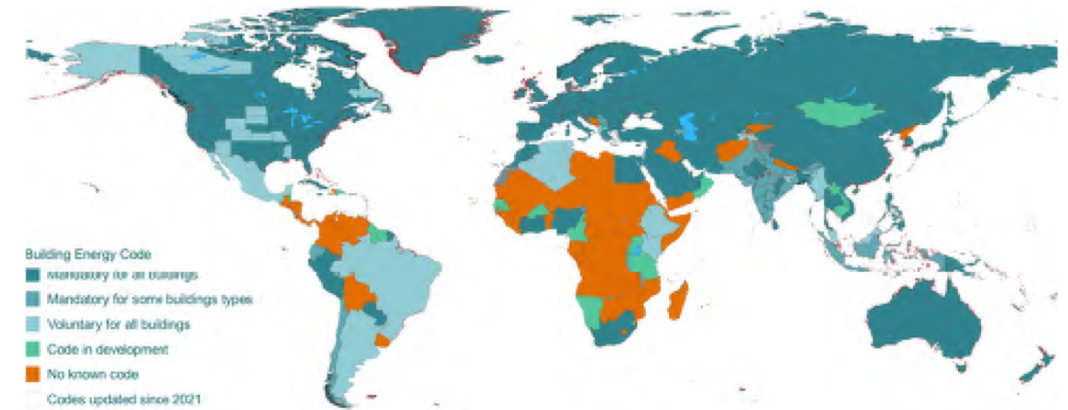
Progress of Buildings

BPIE Global Building Status Report 2023



(Source: BPIE)

Figure 2 Global building energy codes by type and status



(Source: IEA 2023)

Note: Countries with dark 'red' outline have adopted updated building energy codes since 2021. Investment and financing for sustainable buildings



2030 BREAKTHROUGHS

Halving sector emissions by 2030



BUILT ENVIRONMENT BREAKTHROUGH



For a zero-emission, efficient, and resilient built environment for everyone, everywhere



100% of projects completed in 2030 or after are net zero carbon in operation (with >40% reduction in embodied carbon)

High Impact Reduction Strategies


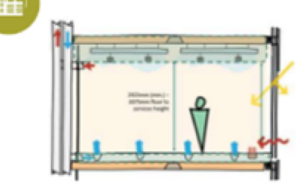
MINIMISED BASEMENT EXCAVATION

- 20% embodied carbon*
- +2,070m² ground to sky
- Cost and programme savings
- Reduced construction complexity
- Increased soft landscaping depth
- Minimising clashes with utilities


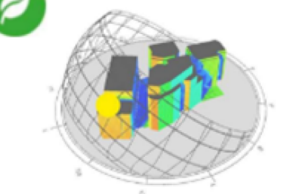
TIMBER-CONCRETE COMPOSITE FLOOR

- Innovative, low embodied carbon
- Further concrete eCO₂ via cement replacement
- Enables sequestration
- Lightweight structure
- Lightweight foundations
- Low piece-count for p...


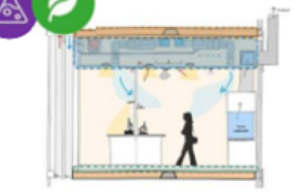
A LEAN SLIVER FLOOR SANDWICH

- ...



THE SKIN IS THE FIRST SYSTEM

- ... embodied carbon*
- ... targets: 35W/m²
- ... with solar gain
- ... position optimised
- ... minimising embodied



UPGRADABLE BUILDINGS ATTRACTING LAB TENANTS

- 24% embodied carbon*
- Minimised base build Day 1 provisions
- Space proofed for future lab tenant installations
- Enabling wide spectrum of upgrade lab typologies, including non-recirculating lab



BUILDING TRANSFORM AND REUSE

- Reuse of Becket House structure for Plot E
- 50% embodied carbon*
- 8000m³ waste
- Cost and programme savings


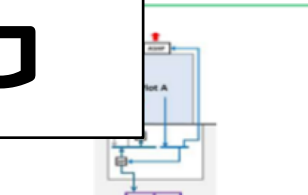
CONSOLIDATED LOGISTICS PLAN

- 200t embodied carbon*
- 442 vehicle movements / day (-60% compared to unconsolidated)
- 100% deliveries from Consolidation Centre via EVs

PROMOTING ACTIVE TRAVEL

- Zero car parking provision
- Improvement of on-site footpaths
- >2700 long- and short-term (142) cycle spaces planned
- ~13% of all trips on cycle
- Planting located to buffer traffic

NO ON-SITE COMBUSTION

- Zero on-site NO_x and PM emissions associated with heating and domestic hot water
- Back-up generators to use hydrotreated vegetable oil (HVO) fuel and active emissions control technologies to minimise PM and NO_x emissions




BEYOND BEST-PRACTICE VENTILATION DESIGN

- 40% increase in ventilation rates compared to CIBSE
- Best practice fresh-air intake design as per BREEAM Hea 02 criteria
- Enabling Demand Controlled Ventilation in 100% commercial base build

**~20%
SAVING**

*Total sitewide carbon savings



2021 -Assess WLC across all our Buildings

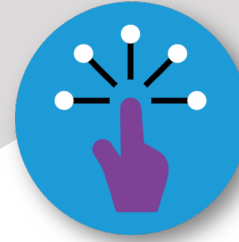
An urgently needed unified approach for systemic change



>50 countries



**Scale:
>7000 engineers
>1000 projects**

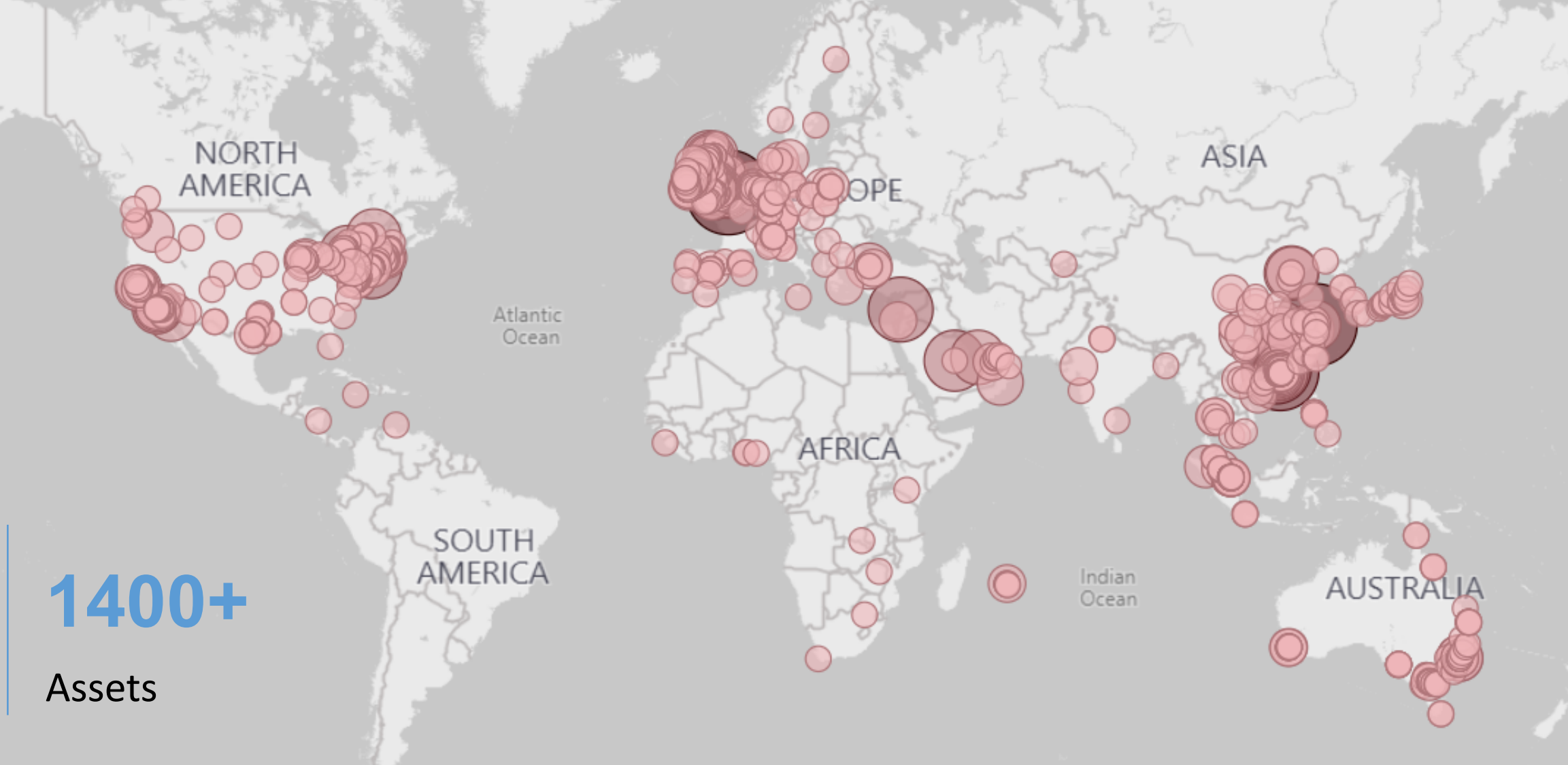


**>20 different
typologies**



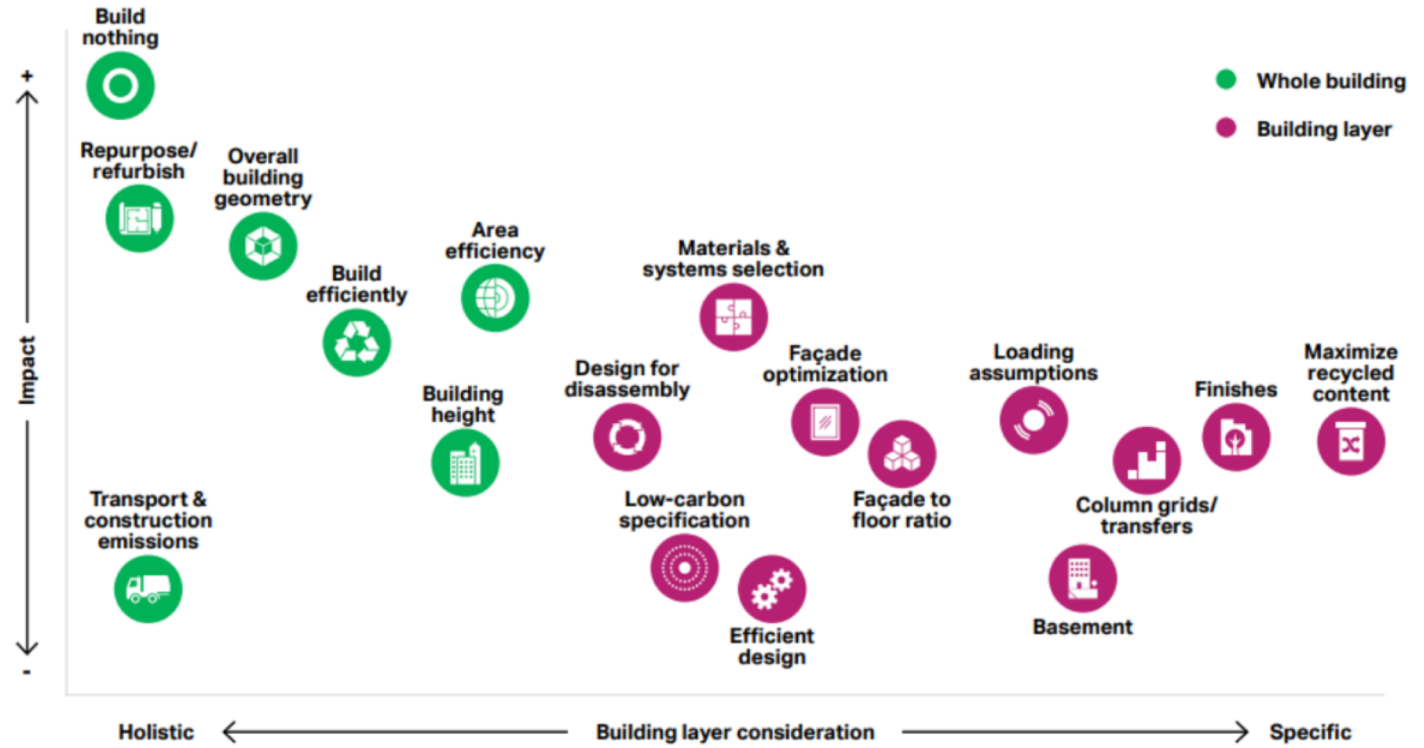
**A whole building
approach
>20 subsystems**

Zero Global Data Set



1400+

Assets



High Impact Reduction Strategies

Department for Levelling Up, Housing and Communities, "Measurement and Reduction of Embodied Carbon in New Buildings", research 2023 by eunomia Alinea ARUP

Arup Carbon Tracking Platform



Harmonisation & Capture

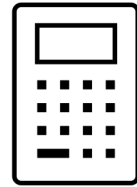
Project Information

Typology
Bill of Materials
Systems
Location
Fuel Supply
Refrigerants
Water Use
Renewables



Reference Data

Material Carbon
Factors
Grid Energy Intensity
Water Carbon
Intensity

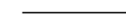


LCA
Assessments



Deep Storage Carbon Emissions

Carbon emissions for
each life cycle stage and
all assessment levels per
asset

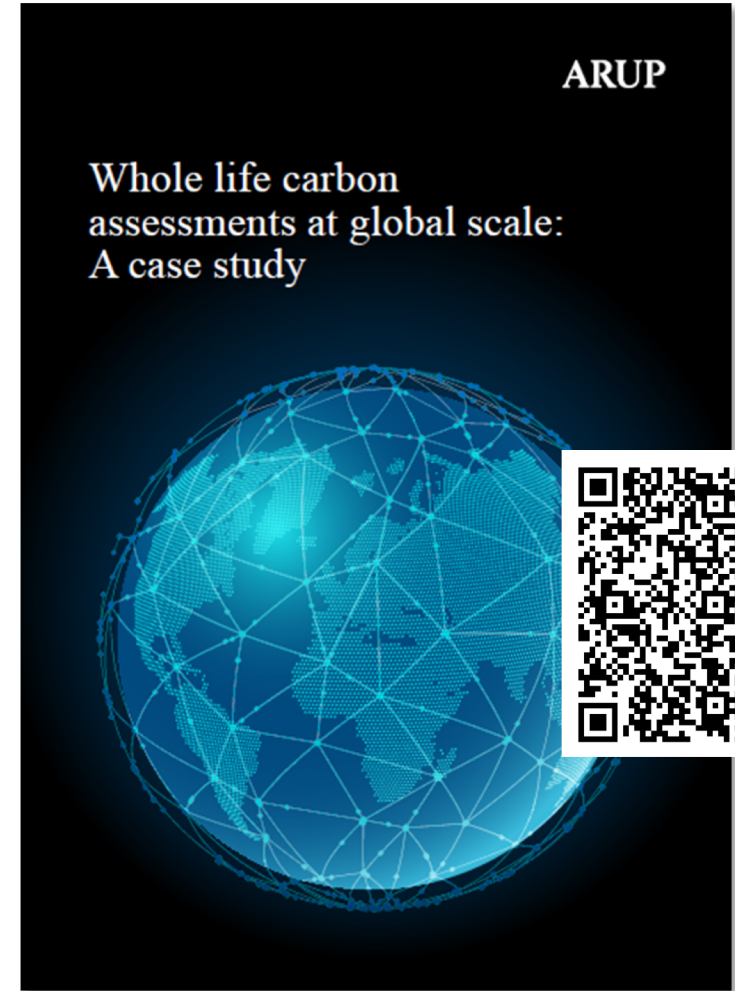


Analytics

UI Analytics dashboard to extract
insights from data collected

Life Cycle Carbon Guidance

Sharing Insights



<https://www.arup.com/insights/whole-life-carbon-assessments-at-global-scale-a-case-study/>



Agreeing Standards



UK Net Zero Carbon Buildings Standard



Multi-national Cooperation

CATALYSING CHANGE FOR NEAR-ZERO AND RESILIENT BUILDINGS BY 2030

Moderator



Diane Holdorf

EXECUTIVE VICE PRESIDENT

WBCSD



H.E. Jiang
Wanrong

VICE-MINISTER OF
HOUSING,
URBAN AND RURAL
DEVELOPMENT

PEOPLE'S REPUBLIC
OF CHINA



Stefan Wenzel

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ASSISTANT MINISTER
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AFFAIRS, MINISTRY
OF HOUSING,
UTILITIES, AND URBAN
COMMUNITIES

EGYPT



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ASSISTANT TO THE
PRESIDENT AND
NATIONAL
CLIMATE ADVISOR

UNITED STATES
OF AMERICA



Benoît Bazin

CEO

SAINT-GOBAIN



Dame Jo da Silva

GLOBAL SUSTAINABLE
DEVELOPMENT DIRECTOR

ARUP



Jamie Fergusson

GLOBAL HEAD OF
CLIMATE BUSINESS

IFC,
WORLD BANK GROUP



- Standards
- Demand Creation
- Finance & Investments
- Research & Innovation
- Knowledge & Skills

Market Transformation Levers

Adopt life-cycle carbon thinking and assessment

Integrate carbon cost and reflect the price of products and services

Transform supply & demand dynamics to incentivise low carbon solutions

ARUP

Rebecca Clayton

PwC

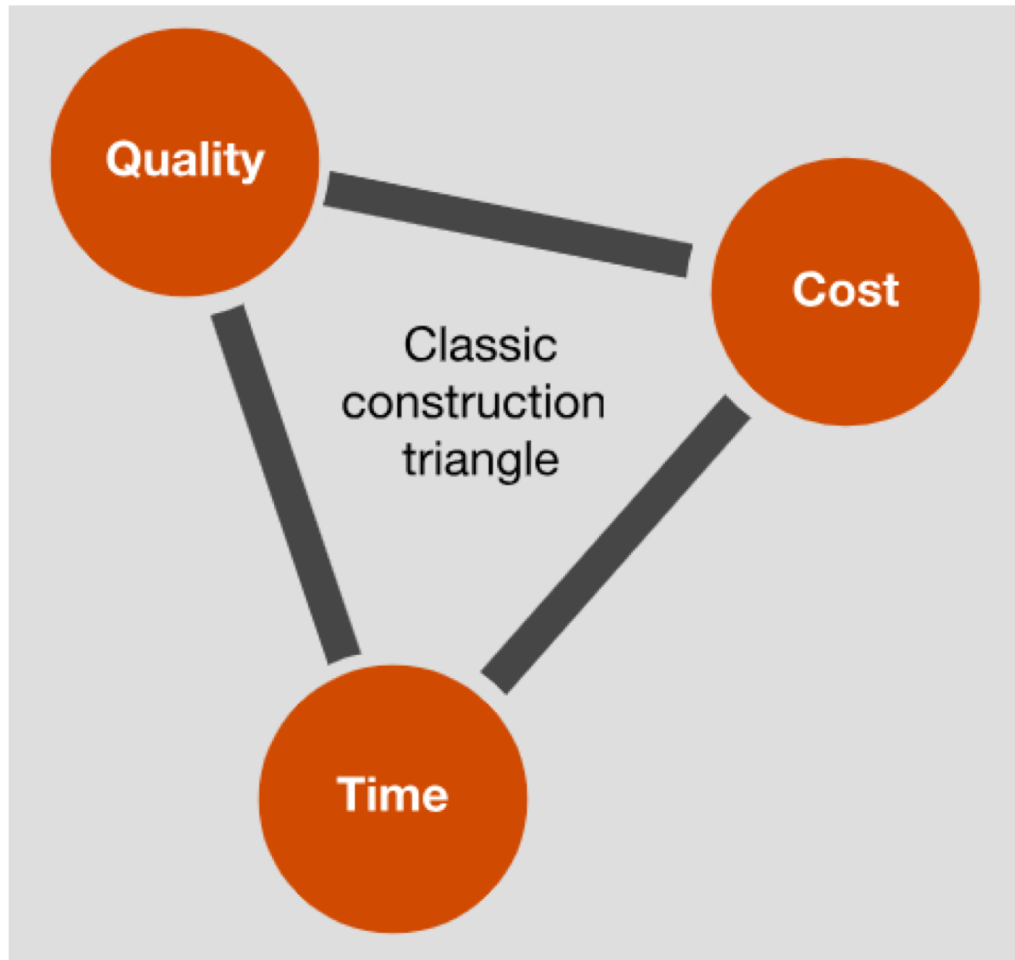
Currency of Carbon

Rebecca Clayton

July 2024



The calculus for construction is becoming more complex



Despite the level of emissions, investment in decarbonising technologies for construction is significantly lagging

Much has been done to reduce the built environment's operational carbon, but there's been relatively little done to tackle the embodied carbon in construction

Investment in decarbonising technologies for construction is significantly **lagging behind other sectors** such as mobility and energy

The **complexity** and **scale** of technological advancement that is required is huge

Investors and businesses do not currently have the **certainty** in the future path to commit to these **investments**

The Currency of Carbon...a complex landscape

Carbon prices need to rise if the world is to reach net zero.. But how do we measure the cost and price of carbon to give businesses and investors the certainty they need?

Carbon market

- Trading of carbon credits/allowances
- Self-perpetuating emissions reduction tool
- Market currently fragmented

EU Emissions Trading System (ETS)

- Trading of government issued emissions permits
- Vulnerable to changing government policies

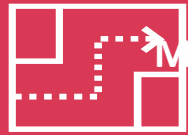
Carbon Border Adjustment Mechanism (CBAM)

- Tax on carbon intensive imports
- Protects local, lower-carbon goods
- Vulnerable to changing government policies

Green grants and incentives

- Range from tax credits to green grants & incentives
- Available at national and regional levels
- Vulnerable to changing government priorities

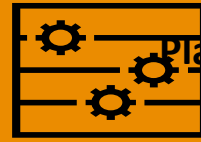
Acknowledging carbon prices will continue to rise, here are 4 steps companies can take to manage their carbon costs...



Map your emissions
and carbon price
exposure



Turn exposure
into
opportunity



Plan ahead to avoid
price
shocks



Engage
Investors

Collect useful, actionable emissions data (c.80% of supply chain emissions often come from c.20% of purchases)

Determine how carbon prices apply to different types of emissions

Consider green incentives available to fund clean-energy investments.

Think about helping suppliers reduce their carbon costs.

Examine your company's carbon costs under future price scenarios

Integrate rising carbon prices in your enterprise risk management and capital investment assessment processes

Engage with investors to understand how they incorporate carbon-related risks into their analyses and valuations

Other useful resources...

Science Based Targets initiative (or SBTI) guidance for the buildings sector

Alongside the SBTI, PwC have developed guidance on emissions accounting, target-setting and reporting to help companies in the buildings sector set ambitious near and long-term emissions reductions targets.

Circularity in Construction

Practical thought leadership on on how circular business models are being used in the construction industry to tackle embodied emissions

Wrap-up

“We need to work together now to build a more productive and sustainable value chain
- we can't let the perfect be the enemy of the good.”

Julie Bell-Barker
City of Wolverhampton Council

CEM Building
Safety &
Compliance
Forum Group

The Building Safety Act
Best Practice Guides



**CONSTRUCTING
EXCELLENCE**
Midlands

The Building Safety Act: Best Practice Guides

1. Building Safety Forum Group – Aims, Objects and Outputs

2. The Building Safety Act 2022

3. Best Practice Briefing Notes

- Client Key Duties
- Seeking Building Control Approval
- Implications of the Building Safety Act During Early Stages of Land Development
- Principal Contractor Meeting Building Safety Act Requirements
- Designers Key Duties (Architects, Engineers etc)
- Quality Management in Construction

4. Summary

The Building Safety Act: Best Practice Guides

Building Safety Forum Group

Through the Construction Excellence Midlands Group umbrella, the CEM Building Safety forum group meets quarterly to **debate, collaborate, share knowledge and produce best practice guidance** on building safety and compliance in the construction industry.

The group's experience and knowledge is diverse across all professional sectors of the industry, from academics, clients, contractors, through to designers and Building Control inspectors.

By the end of 2024 we aim to publish **six separate best practice guidance notes on the Building Safety Act Secondary Legislation**. The focus is on the key duty holders together with quality management to ensure compliance with the Building Safety Act, but more importantly ensuring we design and construct safe buildings.



The Building Safety Act: Best Practice Guides

Latham Report 1994 – Constructing the Team, described industry as *‘ineffective, adversarial, fragmented and incapable of delivering for its customers’*.

Egan Report 1998 – Rethinking Construction, *‘the industry as a whole is under achieving’*

Professor John Cole Report 2017 –Independent Inquiry into the Construction of Edinburgh Schools. The report was damning and had over 40 recommendations.

Hackitt Report May 2018 – *the current system of building regulations and fire safety is not fit for purpose’*

Building Safety Act 2022 –Laying out the pillars of the biggest reform of building safety regulation since the introduction of the 1984 Building Act.

Building Safety Act 2022

The overriding objective of the Building Safety Act 2022 is to promote competence and accountability within the construction industry.

While the implications for the construction industry are wide ranging the best practice guidance notes produced by the CEM Building Safety Forum Group focus on duty holders together with key quality management drivers.

The Building Safety Act: Best Practice Guides



Six Best Practice Guidance Papers

1. Client Key Duties (*published*)

This guidance note focuses on 4 key areas.

- Client responsibilities & failure not to comply (ignorance is no defence for non-compliance)
- Client appointments and Project team competencies. Some clients still regard the Building Regulations PD duties (BRPD) as an extension of the already established CDM PD duties, when they are not.
- Construction project & building life cycle record information (Golden Thread, comprehensive, accurate information).
- Building Occupation (quality sign off assurance, defects, warranties, compliance and services)

2. Seeking Building Control Approval (*published*)

This guidance note focuses on four key areas.

- Duty holder declarations.
- Registered Building Control Approvers
- Registered Building Inspectors
- New regime for Higher-Risk Buildings (HRB's)



The Building Safety Act: Best Practice Guides

3. Implications of the Building Safety Act During Early Stages of Land Development

This guidance note focuses on 4 key areas.

- a. Key Provisions of the Building Safety Act
- b. Implications for Land Development
- c. Procurement Strategy
- d. The Project Team



4. Principal Contractor Meeting Building Safety Act Requirements

This guidance note focuses on 4 key areas.

- a. Evidencing competency and training
- b. Early engagement at project-specific level
- c. The Golden Thread, digital systems to capture and evidence installation quality as the build progresses
- d. Managing building quality



5. Designers Key Duties (Architect/Engineers) -TBC

6. Quality Management in Construction -TBC

The Building Safety Act: Best Practice Guides

Summary

- Emphasis on building quality, compliance and safety.
- Drive cultural change, collaboration is key.
- Increase competence, accountability & responsibility across the project.
- Information Management - The 'Golden Thread' (building records & evidenced based compliance).

Kevin Blunden

Acivico Group



Building Safety Advisory & Fire Safety Consultancy



Where are we now?



- The Grenfell Tower Fire
- ↓
- Dame Judith Hackitt Report
- ↓
- Building Safety Act 2022
- ↓
- Changes to Building Regulations
- ↓
- Grenfell Inquiry Report

Our Expertise

- Those working in Building Control are one of the first professions to be regulated as a consequence of changes to the Building Regulations
- To work on tall, high-risk or complex buildings building control staff have to be registered at the highest level as Specialist Building Inspectors
- Neither Local Authority or private sector Building Control Bodies are able to offer specific design advice as part of the Building Control process



How can we help

- Large team of expert staff, registered as Specialist Building Inspectors
- Advisory service developed to assist Designers and Contractors working on complex and high-risk buildings
- We're able to assist in the selection and use of appropriate guidance and to provide options to demonstrate compliance at every stage of the process

What can the Building Safety Advisory service offer ?

- Unparalleled expertise
- Demonstrated competence
- A trusted service with experience in developing in Birmingham
- Professionals committed to high levels of customer service and working to codes of professional conduct
- Options
- Support
- Reassurance



Fire Safety Consultancy

Acivico – Route To Compliance Case Study



Next Steps

- Contact us at New.Business@acivigroup.co.uk

Or speak to one of our team:



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Toni Rawlinson

Associate Director FM Consultancy
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Al Robinson

Business Development Director
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Panel Session

Adrian Speller (Speller Metcalfe)

Ian Tipton (Stride Treglown)

Andrew Shepherd (Ibstock Futures)

Darren Bramley (Birmingham Airport)



**Launch of CE Midlands Social Value
Theme Group
Sue Woollett & Natasha Heritage
Stepnell**

Trevor Steven in conversation with Andrew Carpenter