

# WHEN POLICY MEETS PRACTICE

DELIVERING LOW CARBON BUILDINGS

October 2025



**Coleg  
Gwent**

REIACH AND HALL ARCHITECTS **AECOM**  **AtkinsRéalis**

# Introduction



**Neil Cutting**

Project Director  
WEPCo

Panel Chair



**Alex Anderson**

Associate Director  
(Estate Development)  
Coleg Gwent



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Global ScopeX Carbon  
Practice Lead  
AECOM



**Ross Smith**

Associate Director  
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(Structures)  
Technical Authority – Alternative  
Materials  
Structures Sector Lead (UK) -  
Education



**Mark Dawson**

Director of Sustainable Design  
Reiach and Hall Architects

# Agenda

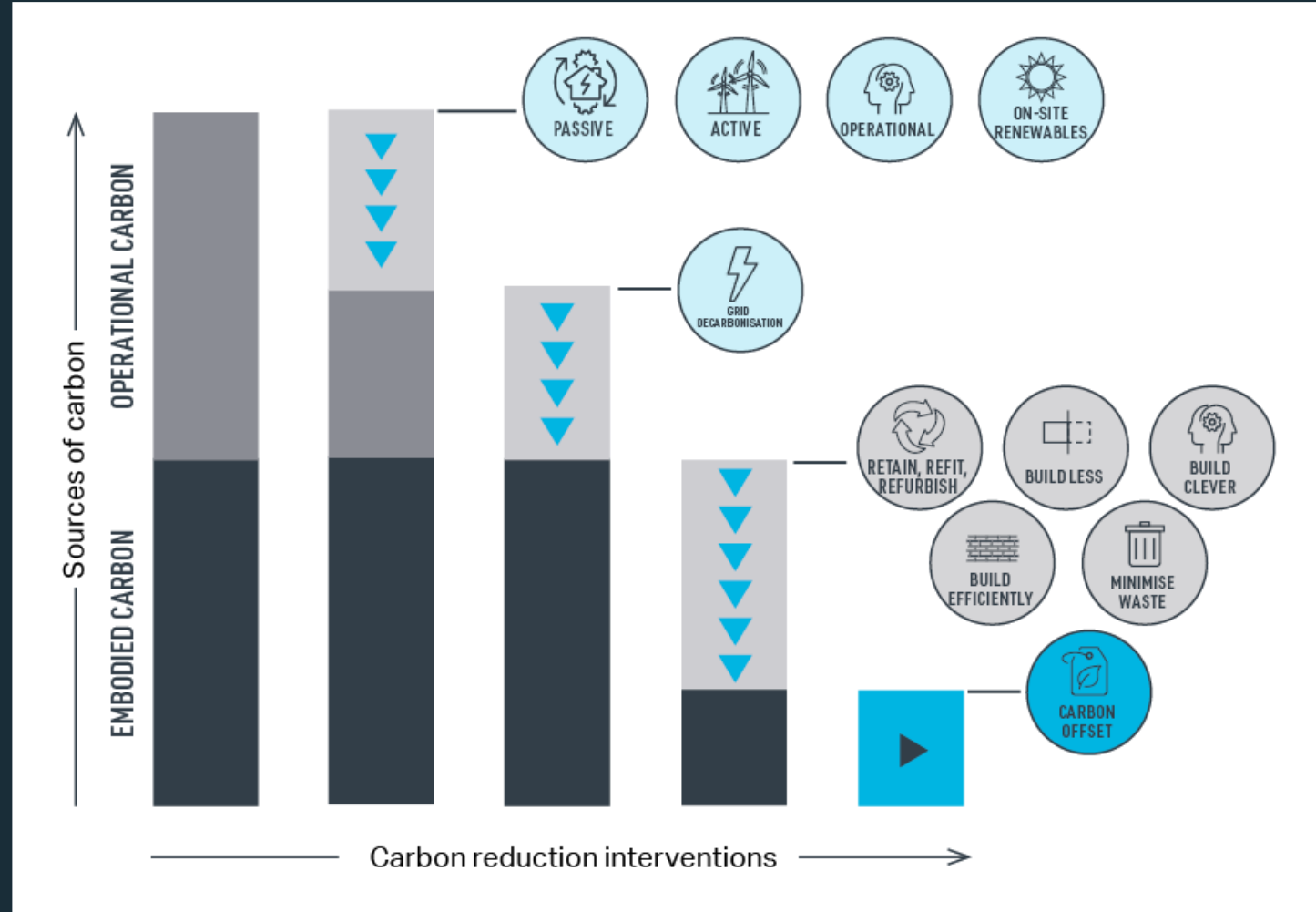
- Chair's Welcome
- Introductions and Opening Remarks
- Overview of Regional Policy & Regulation
- Panel Discussion
- Questions from the Floor
- Close

# What do we mean by a net zero building?

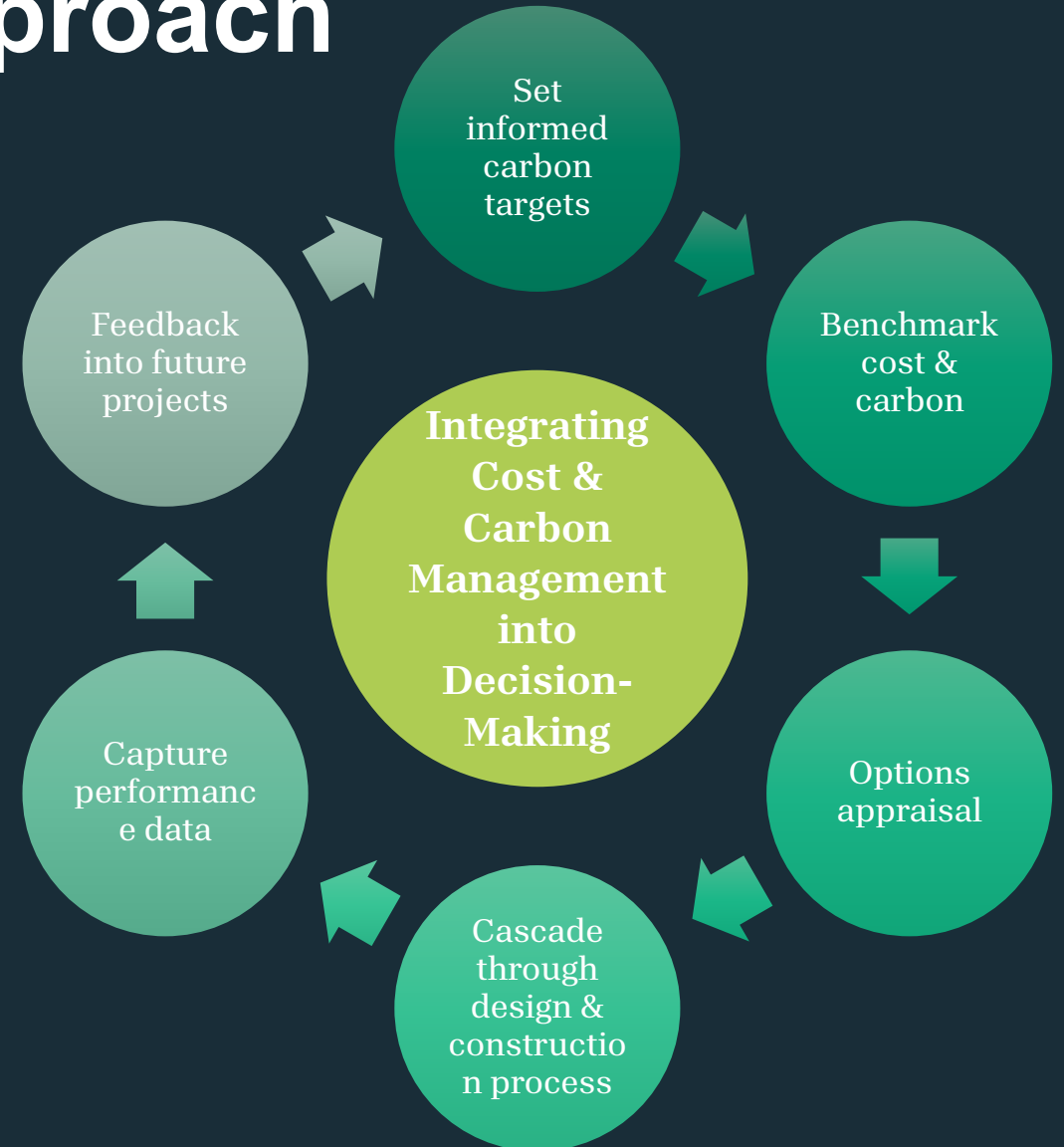
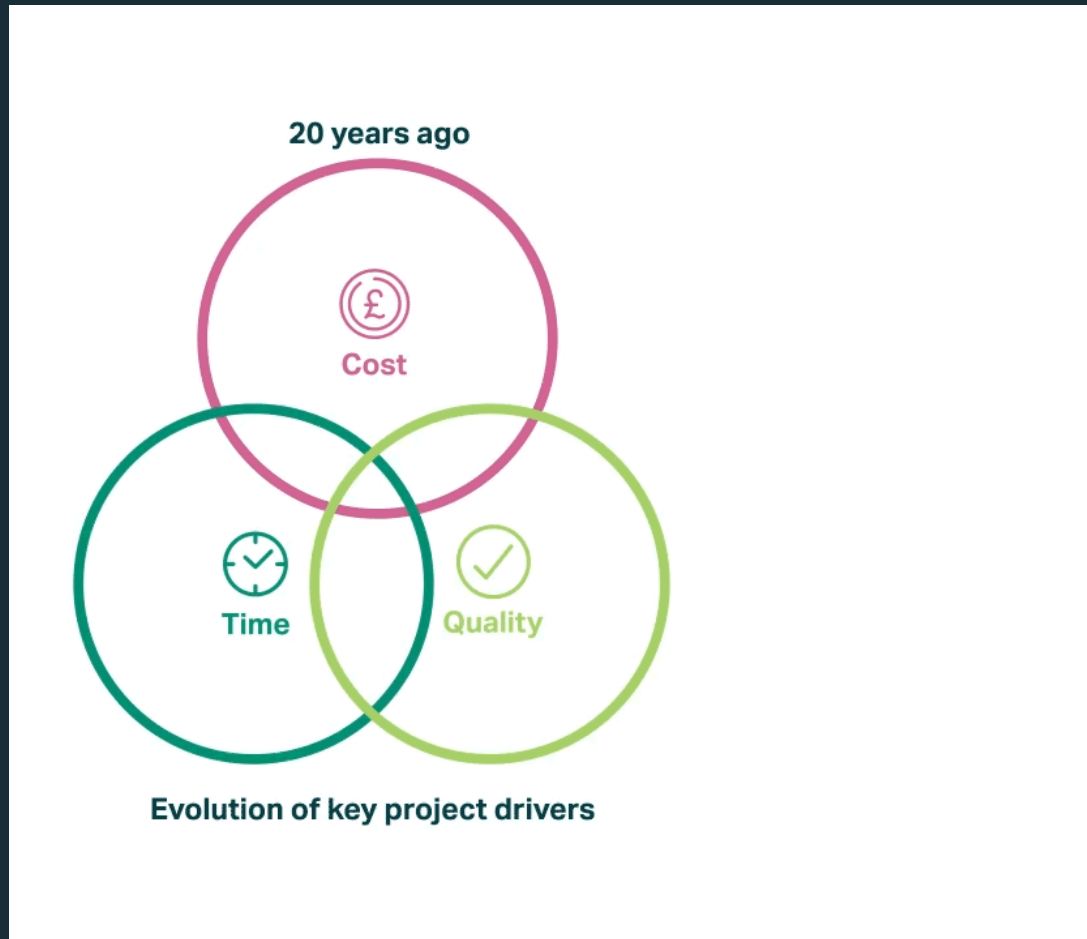
## NET ZERO CARBON WHOLE LIFE

Net Zero Carbon  
in Operation

Net Zero Carbon  
Construction



# A Holistic Whole Life Approach



# Targets in Wales



Current Welsh Gov Education Targets are based on Upfront Carbon Limits & Efficiency in Use

This reflects carbon up to practical completion of the building & beyond into operation



Reductions in embodied carbon emissions should be reported via the Welsh Government NZC Reporting Spreadsheet.

Net Zero Carbon in operation is mandated for all new education building.



Limits decrease over time, in line with NZC Pathways

- **2022 to 2024:**  
**Below 800 kgCO<sub>2</sub>e/m<sup>2</sup>**
- **2025 to 2029:**  
**Below 600 kgCO<sub>2</sub>e/m<sup>2</sup>**
- **2030 onwards:**  
**Below 350 kgCO<sub>2</sub>e/m<sup>2</sup>**

# Targets in Scotland



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# Targets in England



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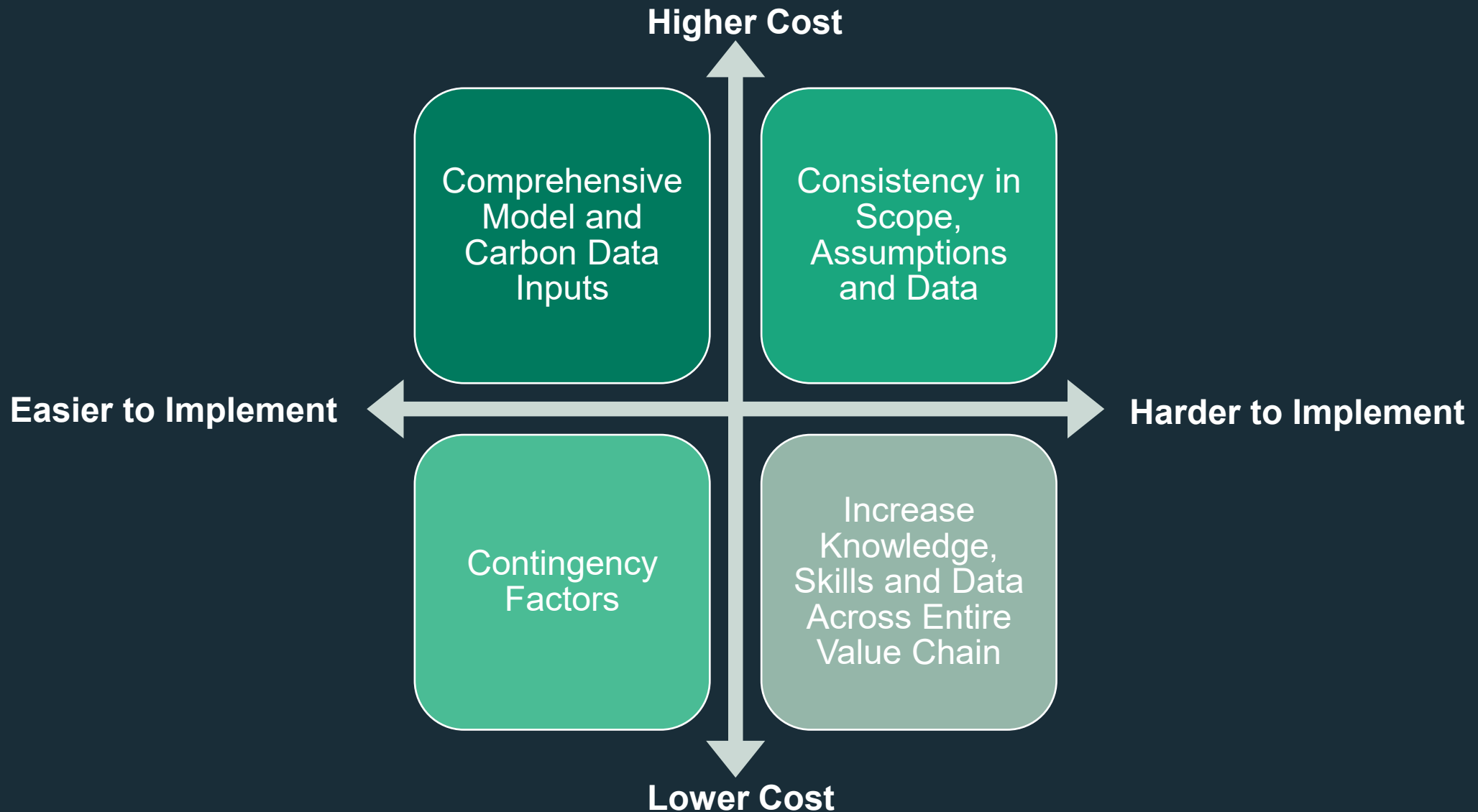
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# Addressing Uncertainty



# Rethinking Roles & Responsibilities

## Regulators

Informed regulators would help to generate ambitious decarbonisation trajectories. Potential to drive greater consistency across industry.

## Government & Local Authorities

Sector embodied carbon limits help to enforce carbon consideration throughout a development. Incentivisation of low carbon solutions.

## Sponsors/Lenders and Insurers

Upskilling sponsors and insurers can demonstrate successful low carbon solutions, reassuring them in funding and insurance decisions.

## Driving Decarbonisation Across the Value Chain

## Product/Material Suppliers

Educating manufacturers/suppliers helps to increase investment in decarbonisation measures and evidence like EPDs.

## Designers

Designers can inform developers about decarbonisation measures for designs.

## Constructors

Informed constructors can inform future construction of successful decarbonisation measures.

## Asset Owners

Asset owners can set carbon targets for projects, encouraging suppliers and constructors to reduce WLC.

# Value chain members' role in reducing carbon across the asset lifecycle in alignment with PAS2080:2023



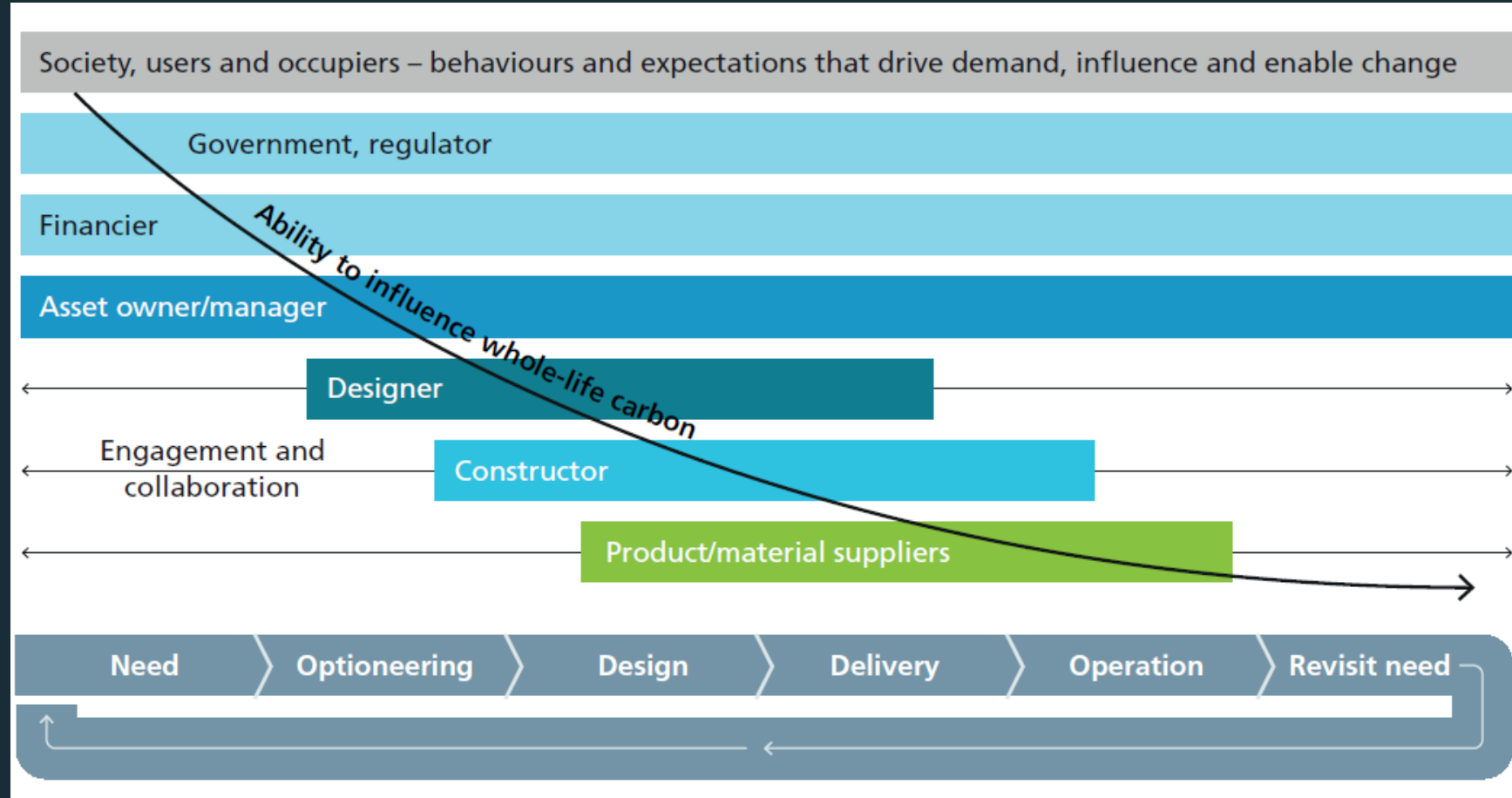
## Site Selection

- Options for reuse
- Position on site



## Feasibility & Concept Design

- Form Factor
- Structural
- Optioneering
- Passive Design



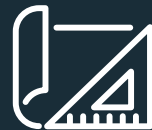
## Construction Stage

- Track site emissions & material use
- Carbon change management



## Operation

- As-Built carbon assessment
- Post-Occupancy Evaluation (POE)
- Drive continual improvement

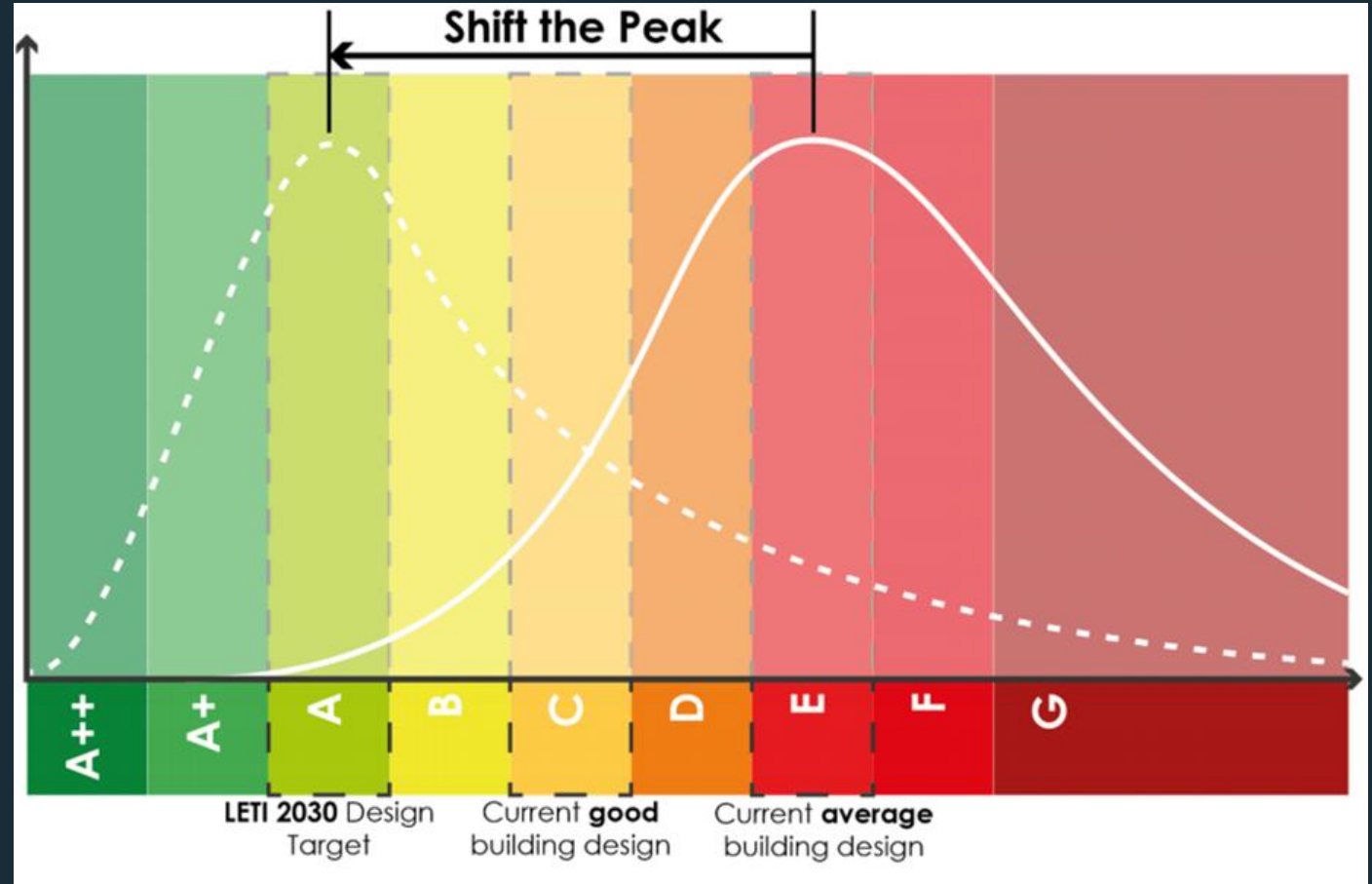


## Design Stage

- Optimise product selection
- Decarbonisation through specification
- Identify & address carbon risks

# The UK Picture – The Importance of Embodied Carbon

- The Built Environment is responsible for **25% of the total UK greenhouse gas emissions**.
- Embodied Carbon emissions are currently estimated to be 20% of total built environment emissions.
- **As operational emissions decrease, embodied carbon impact is anticipated to comprise over half of built environment emissions by 2035.**



# Realising Embodied Carbon Savings

Request EPDs for products (or CIBSE TM65 data for building services products)

Ensuring that embodied carbon impact is factored in as part of the change management process



Early engagement with supply chain on product availability and communicating specific requirements

Ensure that carbon requirements are conveyed to general contractor and sub-contractors – potentially as contractual obligations

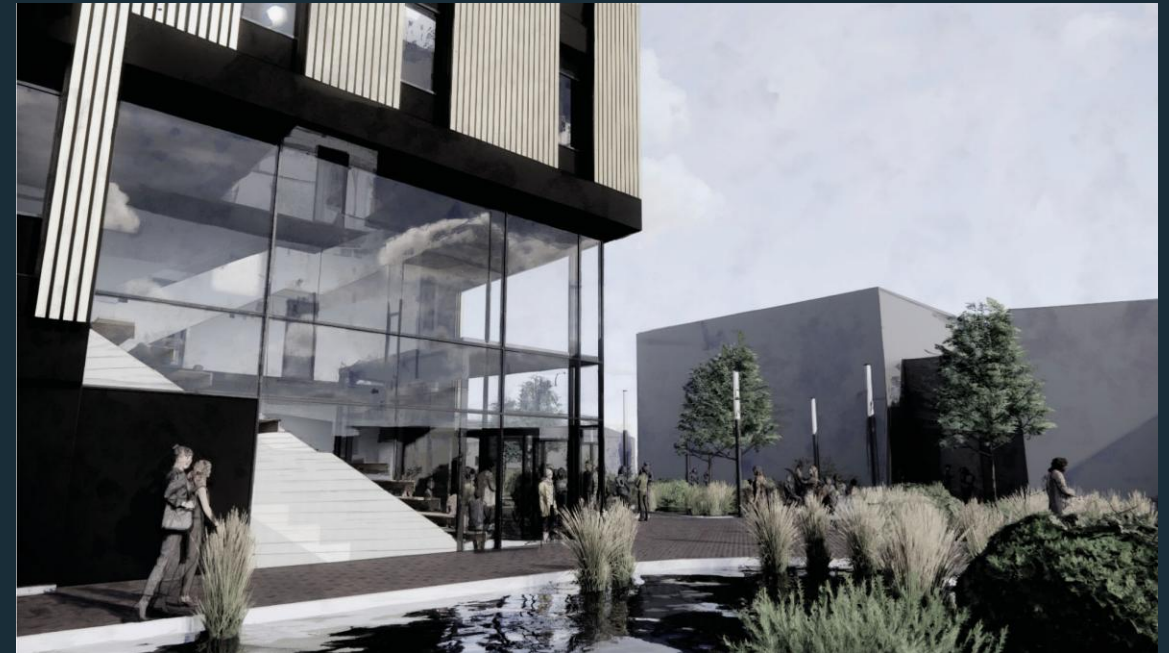
Manage site emissions, track materials and waste to/from site, and undertake as-built carbon assessment



# Reference Projects - Coleg Gwent Crosskeys Campus

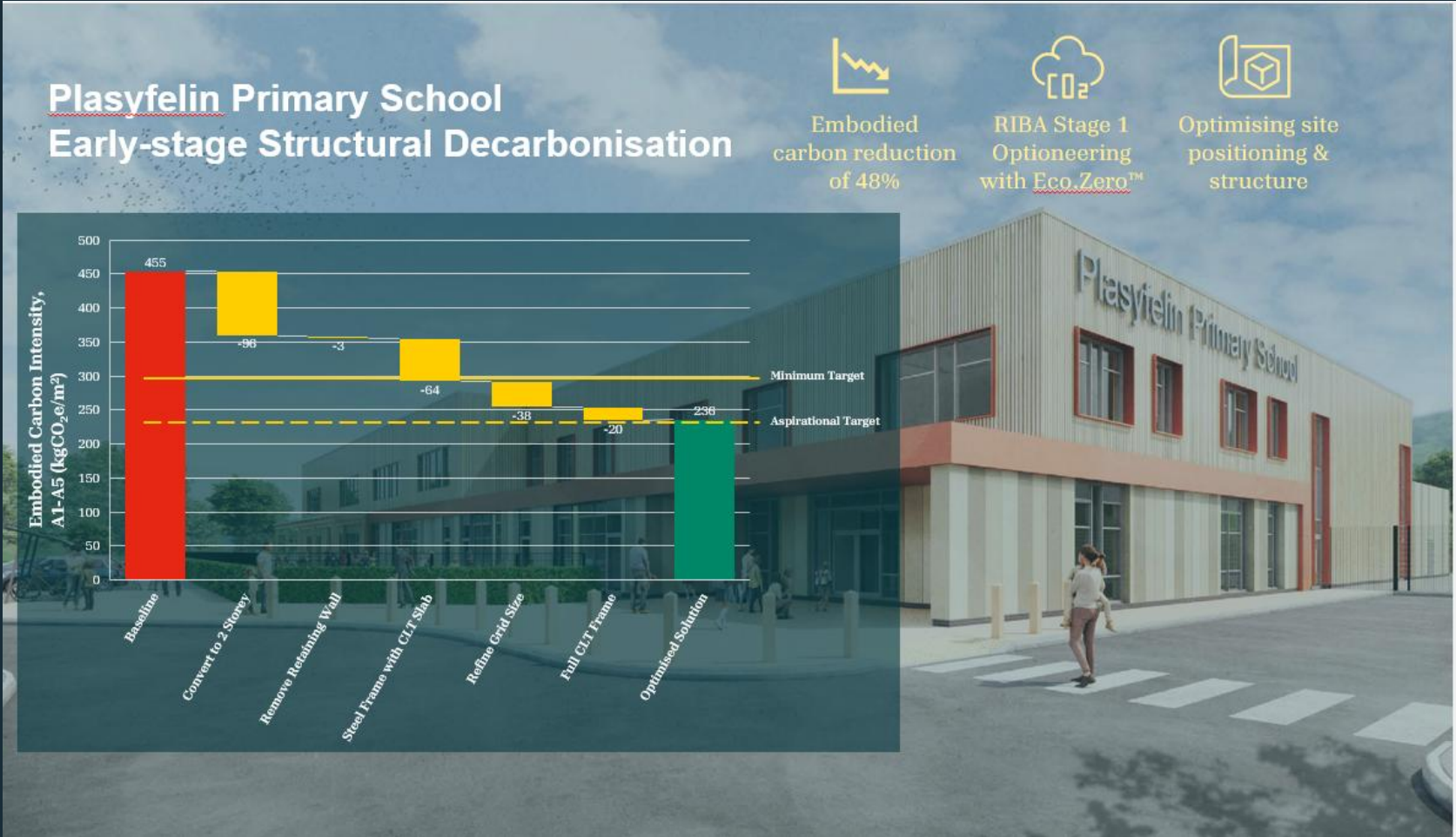


# Reference Projects - Coleg Gwent Crosskeys Campus





# Reference Projects – Plasyielin Primary School



# thank you



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