

CLIMATE
EMERGENCY
COLLABORATION
PROJECT

Jamie Brogan

Climate Partnerships Lead
Edinburgh Climate Change Institute

16th June 2021

SSN: Public Sector Estate Decarbonisation

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Phase 1: Building Capacity for Better Building Performance

Phase 2: Developing Post-Construction Emission Reduction Tools



Building efficiency can and should be better optimised in the context of a climate emergency.

The **building performance** delivered at the end of a project often **doesn't match the original ambition** or intent.

The performance gap **doesn't arise because technologies and materials to deliver better performance don't exist.**

It primarily arises from **decisions** made at various stages in the project lifecycle, **without the right skills and knowledge** at the right time to support them.

Better collaboration between client and contractor will be critical for success.

AGREEING
THE REAL
CHALLENGE



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**Project Workshops
& Interviews**

Client: to test our assumptions on how current processes and priorities affect project outcomes.

Contractor: to confirm construction sector capability and commitment to deliver building performance.

Shared Commitment: to propose new approaches to future projects and open these for discussion.

**DEVELOPING
SHARED
COMMITMENT**





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DEVELOPING
SHARED
COMMITMENT

Client: how current processes and priorities affect project outcomes.

Shared Commitment: new approaches to future projects.

Contractor: capability and commitment to deliver building performance.

Client must take the lead in enabling a more collaborative approach to delivering zero carbon outcomes



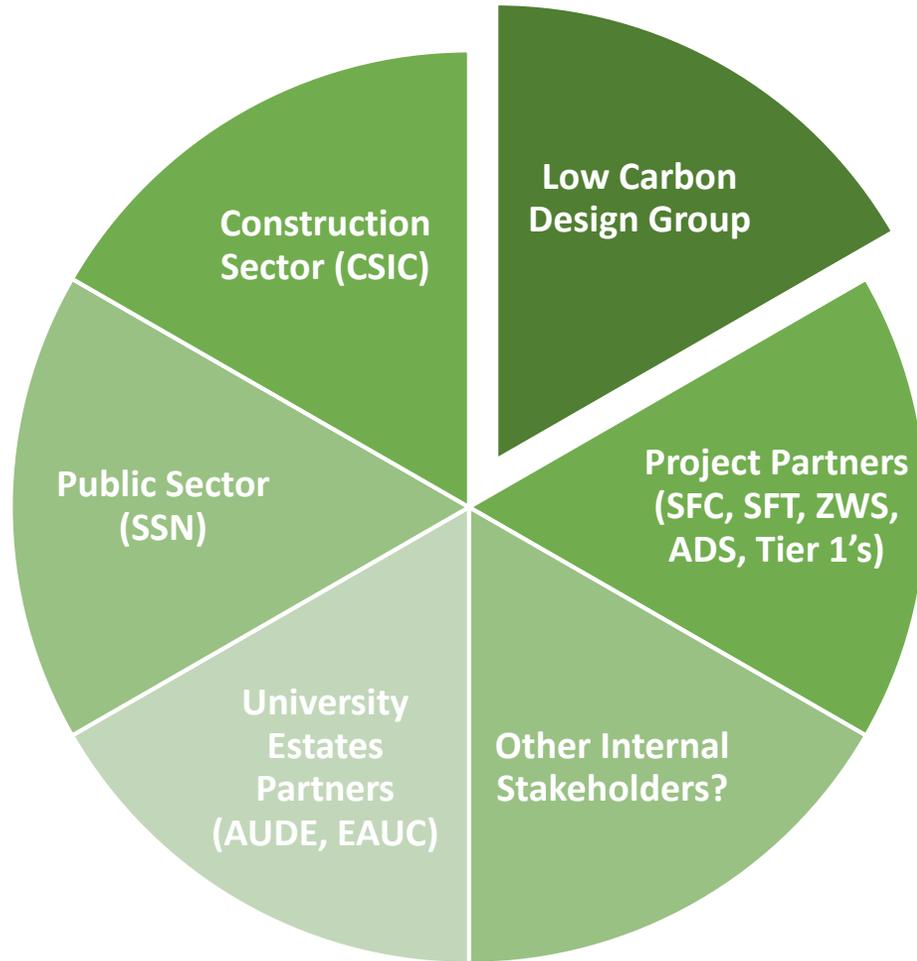


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**Project
Dissemination**



**DEVELOPING
SHARED
COMMITMENT**



- **Sustainability expertise introduced early enough** to influence project design and outcomes.
- **Prioritise and articulate zero carbon and sustainability outcomes** from the outset.
- **Incentivise these outcomes** into project performance for staff, client and contractor.
- **Programme governance** must embed and retain zero carbon outcomes throughout the project lifecycle.
- **Build knowledge, skills and capacity at all levels** to ensure climate impact is embedded in decision making, through concept, design and delivery to occupancy.

FINDINGS AND RECOMMENDATIONS

What that means in practice

- Adopt net zero carbon targets ahead of building standards
- Adapt our business cases to focus zero carbon outcomes
- Presumption of retrofit over new build
- Embed circular design and materials
- Prioritise climate outcomes in a 1-page brief
- Use whole life costing
- Enhance procurement processes to support collaboration
- Establish baselines, emissions estimates and targets
- Appoint zero carbon champions throughout organisation
- Capability and knowledge for decision making at all levels
- Align contract reviews to zero carbon outcomes
- Incorporate before and after performance modelling
- Requirement for post occupancy monitoring
- Adapt our processes and share lessons learnt

FINDINGS AND RECOMMENDATIONS

Collaborative Approach

Construction partners:

- Innovation risks need to be shared
- Need to enable earlier contractor input into projects
- Co-design of sustainability outcomes
- Skills and knowledge more readily shared and accessible
- Commissioning and contract management to be enabling
- Continuous improvement

Funders and other partners:

- Adopt public sector net zero building standards now
- Funding should be conditional on zero carbon outcomes
- Public reporting of progress and impact
- Share all of our lessons learnt

FINDINGS AND RECOMMENDATIONS

University of Edinburgh client response:

- We accept the implications and significance of **reduced life cycle costs and carbon reduction as key priorities over capital outlay.**
- Our **current delivery processes, procedures and procurement routes are changing** to reflect emerging knowledge and innovation.
- Updating **business case process to prioritise building performance outcomes and climate impact** of construction and operation.
- Changing our **procurement process to facilitate earlier engagement** of partner expertise earlier into collaborative design process.
- We will **incorporate performance modelling into future projects** to help us better understand and cover any performance gaps.
- A **'sign off' point must be incorporated in the design process to mitigate late change.**

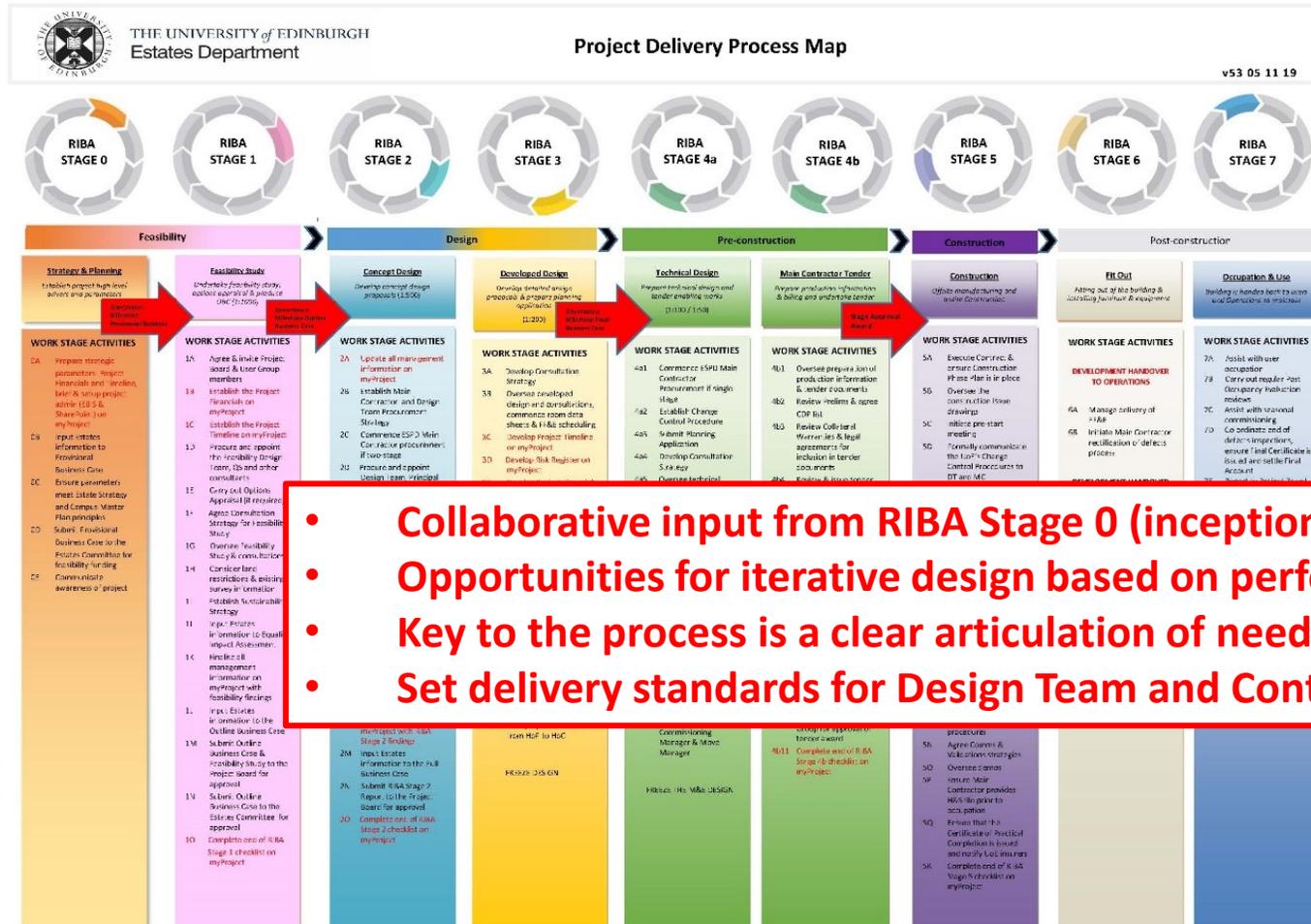
PRIORITISING ZERO CARBON OUTCOMES



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ENABLING
COLLABORATIVE
INPUT

- Collaborative input from RIBA Stage 0 (inception) through to Stage 7 – in-life use
- Opportunities for iterative design based on performance modelling
- Key to the process is a clear articulation of needs, principles and required outcomes by the client
- Set delivery standards for Design Team and Contractor to collectively design for and buy-in to



Early challenges with new working practices:

- Needs a **mind-set shift in project parameters**, from starting with capital outlay to reduction of lifecycle costs and carbon emissions.
- Cost assumptions for **early-stage budgeting and costing**, based on building type and size, **are no longer fit for purpose**.
- This will mean more uncertainty around budget and pricing, a **need to share risks** and for **governance and decision making throughout the project lifecycle** to retain climate outcomes as a priority.
- Early estimates and budget advice will have little precedent, particularly for **bespoke construction projects** such as research laboratories and testing facilities.
- Commissioning design input separately means there is **no guarantee of supplier continuity** from design into delivery.

SOME IMMEDIATE CHALLENGES

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