



Enabling the delivery of net zero carbon

14 June 2021 The SPACES Conference

Professor Alan Jones, President, Royal Institute of British Architects

President@riba.org @AlanJonesPRIBA



Speaking from Northern Ireland, UK
Home of The Titanic, Game of Thrones
Landscape, towns and cities, industry and history
and strong accents....

I see my role this morning as provocateur, to challenge and hopefully inspire and motivate you, for the conference and when you go back into your workplace and engage with your projects and colleagues.

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***SPACES** is a collaborative organisation for those in the building professions working in and for the public sector and is committed to assisting its members in achieving the highest possible standards in the development, design, construction and management of the public sector estate for the mutual benefit of their employers.*

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Who are we developing, designing, constructing & managing for,
to benefit who?**your employers.**

And

**Your children, grandchildren, your communities and country, for society, for the
world – and our collective future?**

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37.1 Billion Tonnes
CO₂ Emissions in
2018

1/3 from Buildings
and Construction
Then add transport to and from
home and workplace...

Earth can absorb
1/2 total CO₂ at best

**We know
“the problem”**





Global
deforestation
size of UK
every year

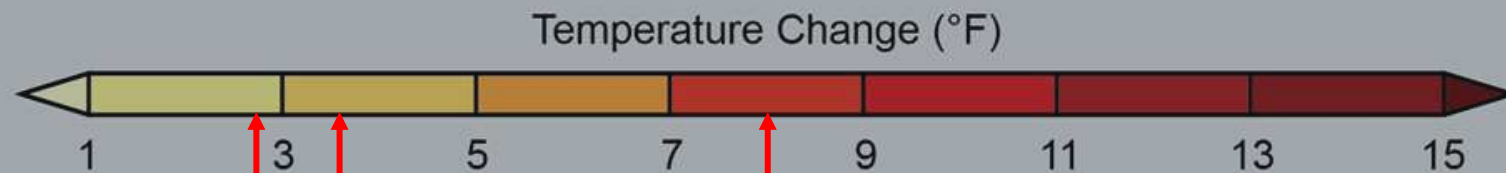
**We know
“the problem”**

Projected Change in Average Annual Temperature

Rapid Emissions Reductions (RCP 2.6)



Continued Emissions Increases (RCP 8.5)



7.6%
reduction
in CO₂

2%
Reduction
in CO₂

Source: Intergovernmental Panel
on Climate Change
(United Nations)

Just do it.

**We know
“the problem”**

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**We know many
of the
“answers” too.**

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We know many of the “answers” too....

Low embodied carbon

Low operational energy

Low water use

Localism

Low carbon travel

Maximising nature

Collaborative team effort

and.....many more

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**What was the focus
of a project?**

**In our new world
What is the focus
of a project?**

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Transforming Public Procurement

Green Paper December 2020

The huge power of some £290 billion of public money spent through public procurement every year in the UK must support Government priorities: to boost growth and productivity, help our communities recover from the COVID-19 pandemic, and tackle climate change. There should be a clear 'golden thread' from these priorities to the development of strategies and business cases for programmes and projects and through to procurement specifications and the assessment of quality when awarding contracts.

**What is the focus
of a project?**

Initial cost

Realising Gov priorities

Climate change

Business case

Quality

Enabling the delivery of net zero carbon Connected 'wicked' problems

Professor Alan Jones, RIBA President, The SPACES Conference 2021

Transforming Public Procurement

Green Paper December 2020

A more sophisticated understanding of different types of value

The new Construction Playbook...

including policies to support innovation in construction

such as setting clear and appropriate

outcome-based specifications

More sophisticated evaluations of quality,

wider public policy delivery

and whole-life value

**What is the focus
of a project?**

Outcomes

Public policy delivery

Whole-life value

Enabling the delivery of net zero carbon Connected 'wicked' problems

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Transforming Public Procurement

Green Paper December 2020

*The Government wants to send a clear message that commercial teams do not have to select the cheapest bid and that they can design evaluation criteria to include **wider economic, social or environmental benefits.***

What is the focus of a project?

Not the cheapest

Wider economic

Social

Environmental

Benefits

Enabling the delivery of net zero carbon Connected 'wicked' problems

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Thousands of young people gather in Parliament Square in central London to protest against the government's lack of action on climate change on February 15, 2019.

Why isn't it happening ?

The world cannot wait

Who is leading who?

Is it top down?

Or bottom up?

Does society follow?

Or does society begin to dictate?

Enabling the delivery of net zero carbon **Priorities are changing**

Professor Alan Jones, RIBA President, The SPACES Conference 2021



Thousands of young people gather in Parliament Square in central London to protest against the government's lack of action on climate change on February 15, 2019.

The world cannot wait

Who is leading who?

Is it top down?

Or bottom up?

Does society follow?

Or does society begin to dictate?

Is it employees or employers?

Students or universities and schools.

Is it capitalism or ethical business?

Who chooses what for which reasons?

Enabling the delivery of net zero carbon – do the right thing, right.

Professor Alan Jones, RIBA President, The SPACES Conference 2021

**Why isn't happening ?
<faster> ?**

**How can we enable
the delivery?**

Enabling the delivery of net zero carbon – do the right thing, right.

Professor Alan Jones, RIBA President, The SPACES Conference 2021

In praise of loose fit - long life

*There is nothing wrong with getting a brief right.
Just do not expect it to stay right for long.....
brief for it to be easy to do new things in,
or easy to dismantle”.*

Pierre Wassenaar
Stride Treglown Architects
2019

Early decisions are the most strategic
and have the most impact

What are the choices?

User consultation?

Dreams, sums - and setting performance

RIBA Client Advisors

RIBA Competitions

Invest time and effort in the early stages of a project

Each project is an enormous investment of
effort, time and energy

Linger longer

At the beginning of a project

Enabling the delivery of net zero carbon **Suggested strategies**

Professor Alan Jones, RIBA President, The SPACES Conference 2021

In a conversation with Chris Pincher, Housing Minister

No – fabric isn't first – form is.

Form – Fabric – Technology – in that order.

Alan Jones

2021

Form first

Fabric second

Technology third

Form first

Volume, surface area, orientation, spaces between
Connections to with surroundings, entrances

Fabric second

Location of openings, material, extent of insulation

Technology third

Essentials and gizmos

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Form First
Fabric Second
Technology Third

2019 Stirling Prize

Mikhail Riches Architects with Cathy Hawley | Goldsmith Street, Norwich – for Norwich City Council

What is BPE?

Prof Fionn Stevenson, University of Sheffield

BPE is the systematic evaluation of all aspects of building performance, providing feedback during all stages of the RIBA Plan of Work (0-7). This includes the essential consideration of post-occupancy evaluation, of performance after occupation, as an integral part of the process.

Building Performance Evaluation

Set performance goals
Monitor performance is maintained through -
Design
Procurement
Construction
Occupation / use

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Reorientation of the construction industry + professions

A new relationship with society and users
Towards outcome driven brief
Focus on gains, benefits, outcomes
Realising public policy through the project
Evidence, research and data driven design
Towards performance specification
Long(er) term value

**Not
What it is
but
What it does**

**Projects not as a thing or an object
but what it allows to happen
What it facilitates...
How it improves lives....
How it performs...
What outcomes come from the project
“New” isn’t always the answer
Retrofit first option?**

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A new order?



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Victoria Street, London
Lynch Architects
For Land Securities
involving a Canadian Teachers
Pension Fund

A different approach

Taller ie more floors, more floor area
beyond design guidance
because it was designed
to have high quality ground floor public realm
and be robust and long life,
exposed high thermal mass,
Reducing the cooling air conditioning load
Attractive not just in terms of running costs
– but because blue chip tenants
wish to be seen by their investors
and employees to be doing the right thing.
Being globally aware, ethical, considerate
and at the same time delivering a more robust
long life low energy building.



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The client wins -
a bigger, longer live building
no rental breaks due to reconstruction
And highly attractive easily rentable asset
That tenants were outbidding each other
to secure for 20 years

The planning authority and city wins -
with high quality public realm
and a robust determined
high quality accommodation above

The user - tenant wins -
Being located in a project
that reflects their ethics
attractive to their
investors, board and employees.



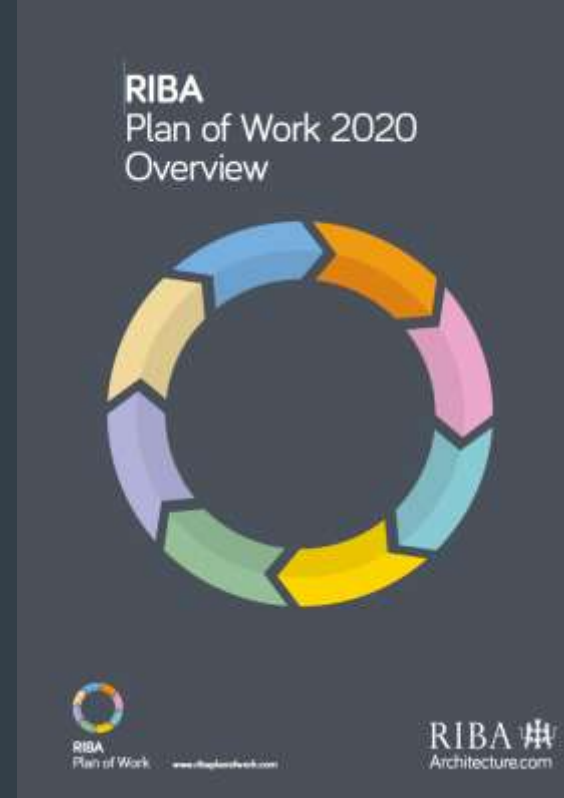
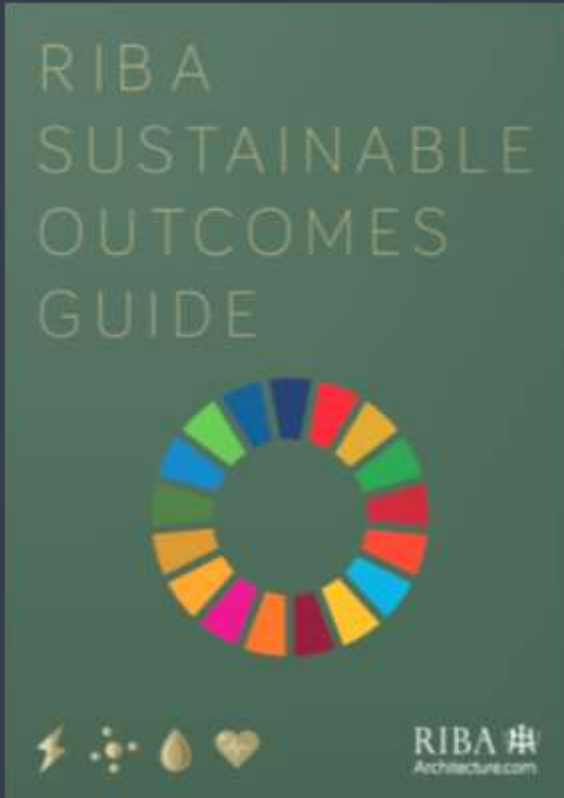
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RIBA Climate Change Guidance

Free to download



UN Sustainable Development Goals



UN Sustainable Development Goals



UN Sustainable Development Goals

RIBA Sustainable Outcomes



Good Health and Well-being



Sustainable Water Cycle



New Zero Carbon Emissions



Sustainable Life Cycle Cost



Sustainable Connectivity and Transport



Sustainable Communities and Social Value



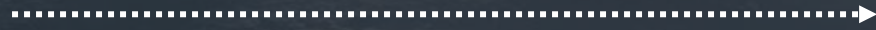
Net Zero Embodied Carbon Emissions



Whole Life Carbon Emissions



Sustainable Water Cycle



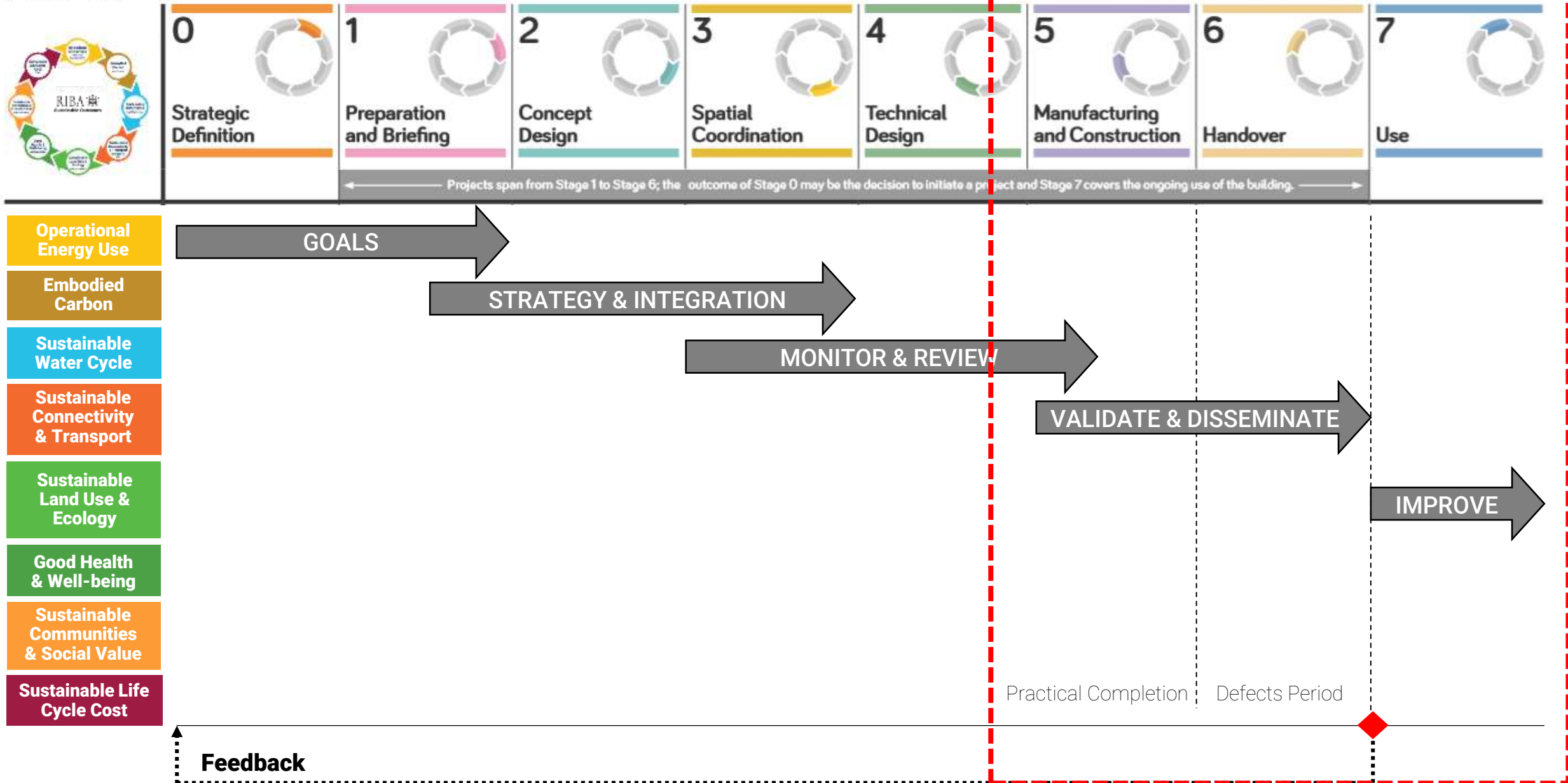
Sustainable Land-use and ecology



How do we deliver?

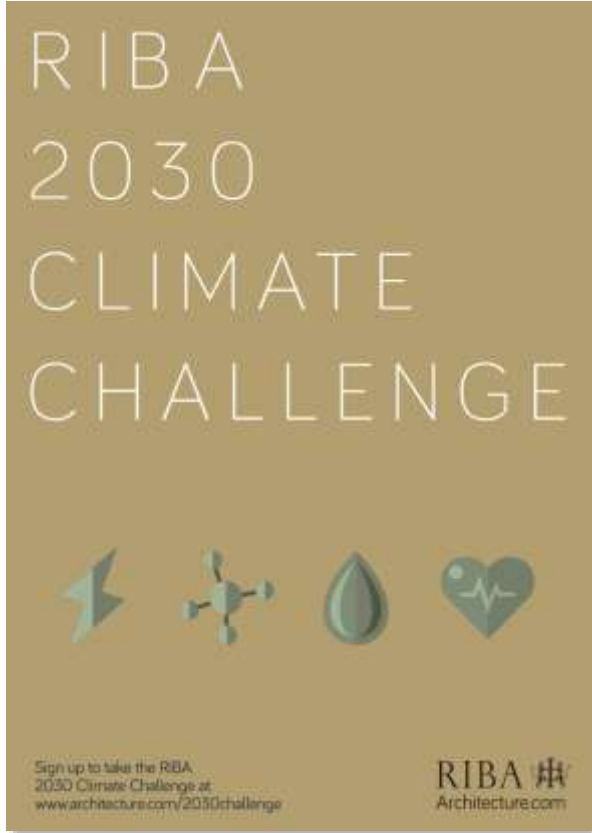


RIBA Plan of Work Sustainable Overlay



Zero Carbon - Energy Intensity Targets.

Industry guidance for new development



RIBA, 2019



UKGBC, 2020



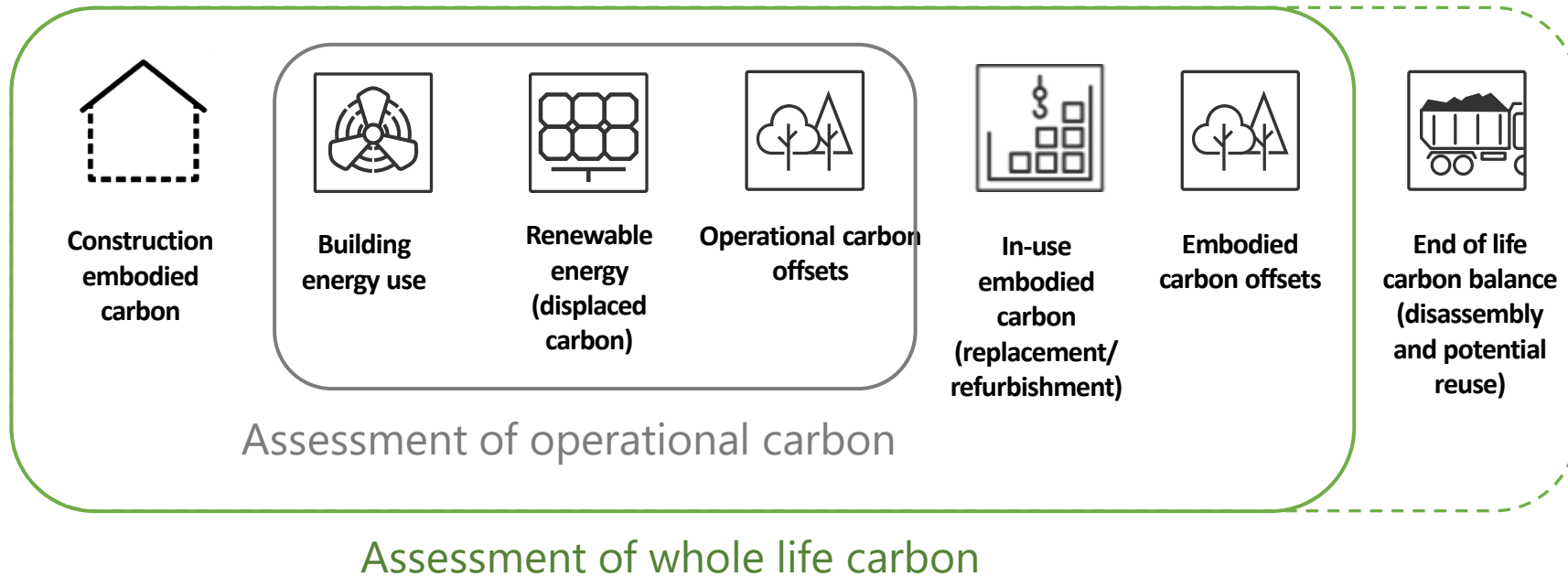
LETI, 2020

Summary – enabling delivering net zero carbon 2021

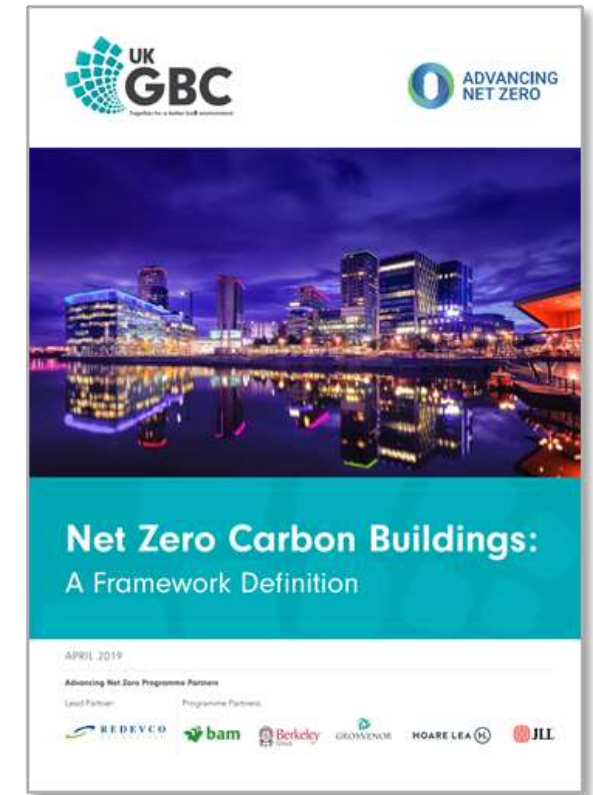
- 1. Agree sustainable outcomes-** UNSDGs and Metrics with client at outset
- 2. Circular Economy-** Retrofit, Recycle and design for disassembly
- 3. Design for Net Zero Performance-** Measurement and verification
- 4. Increase Bio-diversity-** Aim for 20% net bio-diversity gain
- 5. Low embodied and healthy materials-** local, long life, robust, and recycled
- 6. Well building principles-** daylight, air quality, acoustics, contact to nature
- 7. Passive Design-** form then fabric first + passivhaus level of envelope performance
- 8. Regenerative Engineering-** working with natural systems
- 9. Non fossil fuels-** All electric PV, Heat pumps, etc
- 10. Plan for Use-** Design for closing the loop and POE aftercare

What is zero carbon development?

Defining the scope.



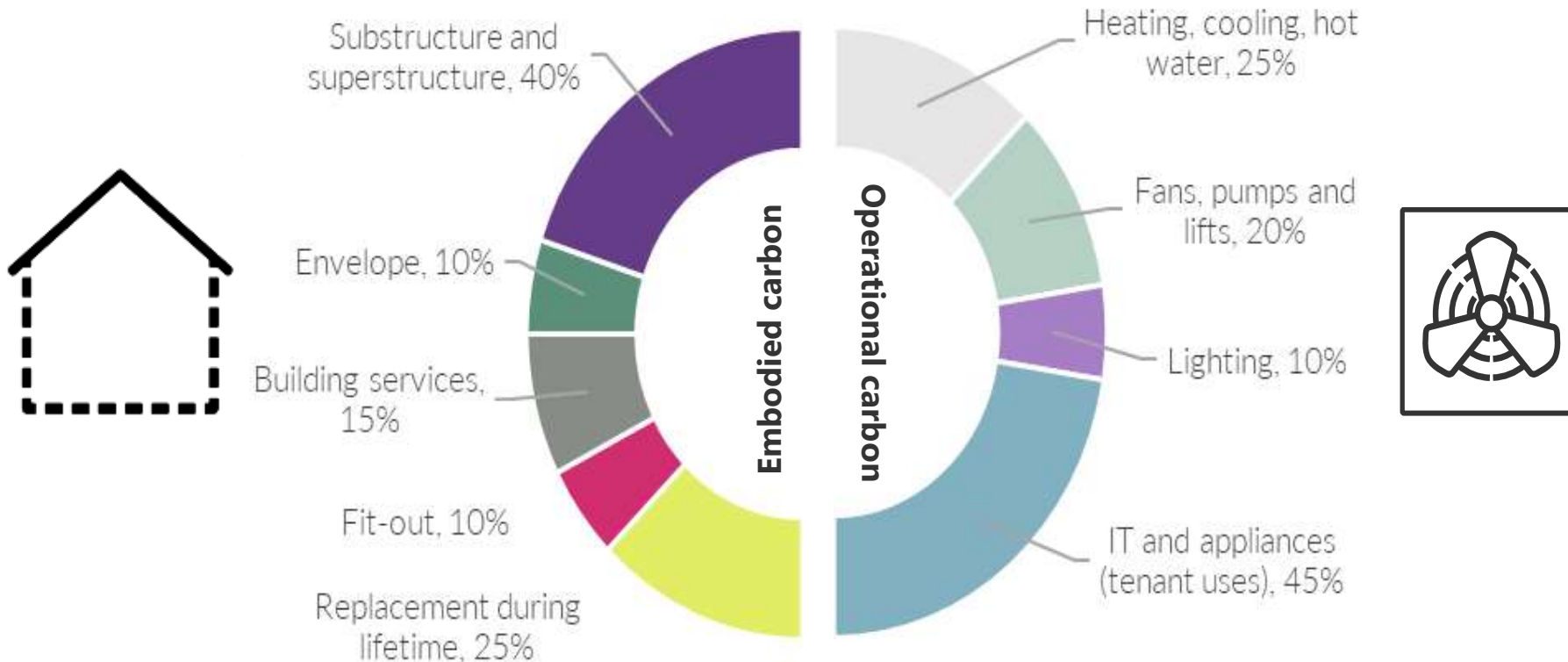
Reference: UKGBC: Net zero carbon buildings – a framework definition, 2019



Understanding whole life carbon.

Embodied and operational carbon.

**Whole life carbon assessment
(60 year assessment of modern office)**



Assessing operational energy.

Poor accuracy

Good accuracy



Benchmarking
CIBSE Guide F



Building
Regulation
Assessment



EPC



Passivhaus
Planning
Package (PHPP)



Dynamic
modelling
CIBSE TM54



Design for
Performance (BBP
framework)



Please lead.....

private sector normally follows public sector

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Thank you
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