Sustainable Placemaking

How to Get to Net Zero

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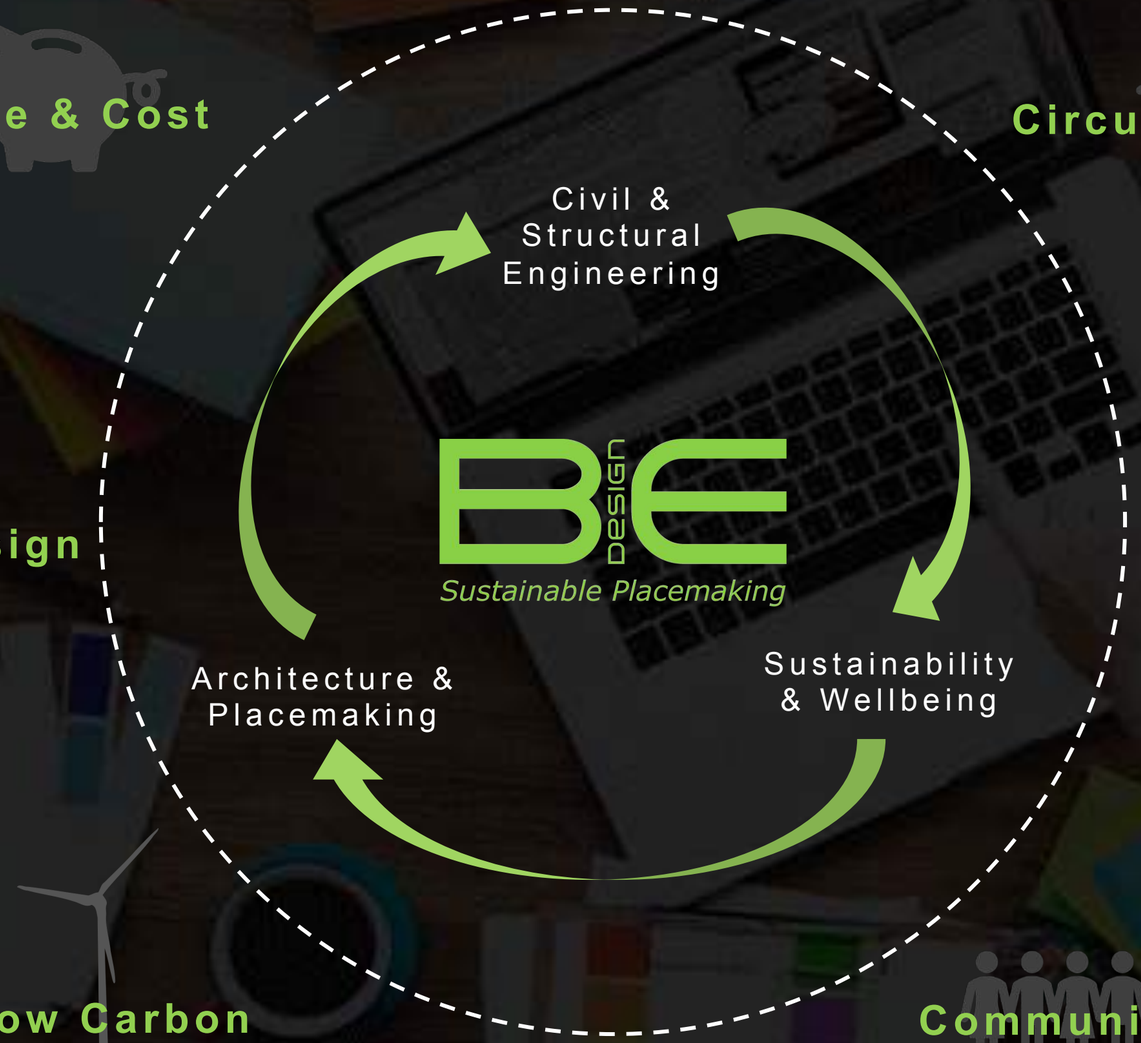
Our Holistic Approach

The BE Design Holistic Approach embeds these seven core principles on all our projects in a pragmatic and deliverable way.



Climate Resilience

Value & Cost

Circular Economy

Biophilic Design

Wellbeing

Low Carbon

Community

‘Designing responsibly for the future’

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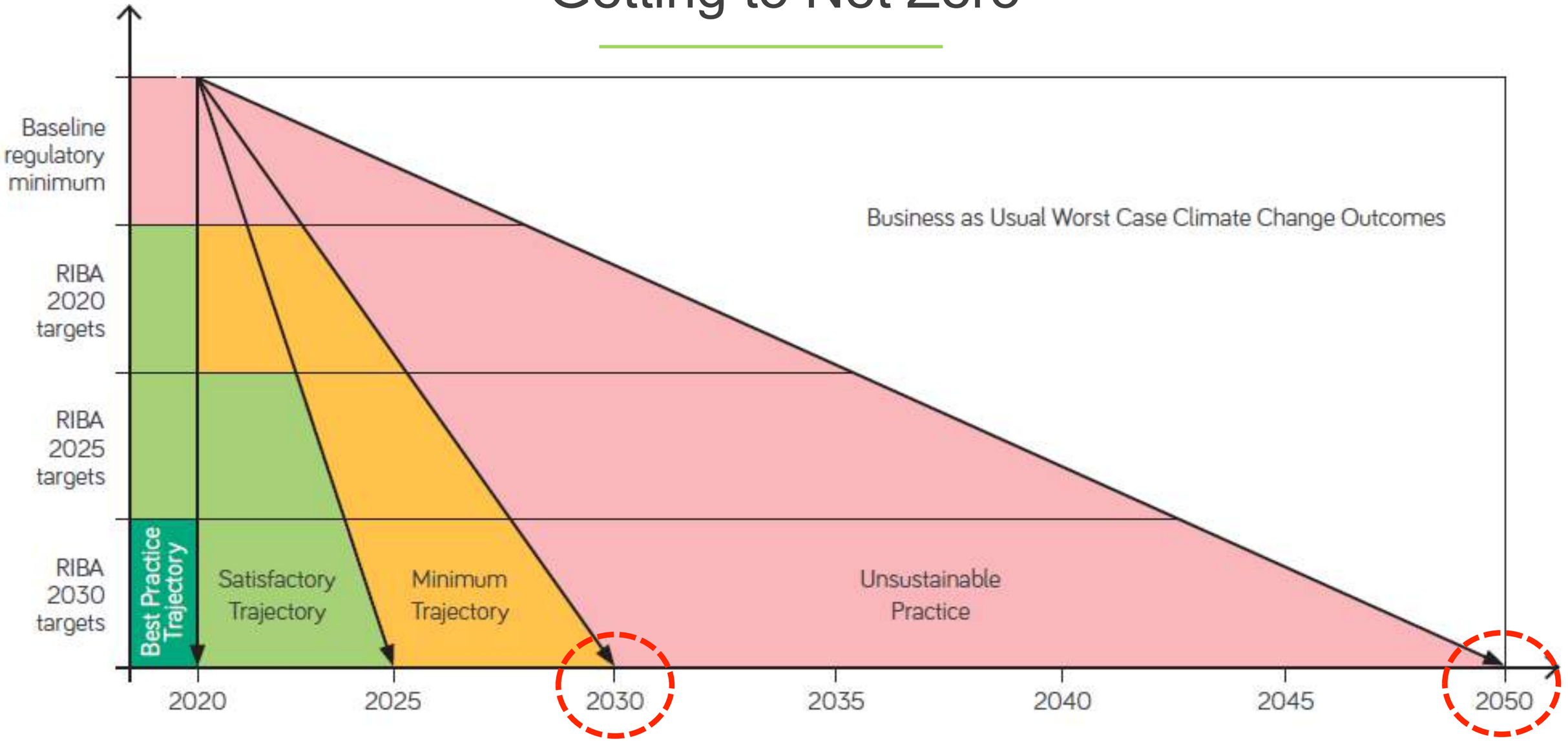
Getting to Net Zero



Source: RIBA 2030 Climate Challenge

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ok like?

Embedding sustainability in the design process –'Sustainability Champi and strategy required at

10 / 15% fabric energy effi Circular Economy Statem 100% EV provision.

New of Wo

London Plan Adopted

Early 2020

The funders will soon be driving change at pace.

BoE stress-testing financial institutions for climatic risk

New requirements likely.

UK Government 4th carbon budget - new construction legislation likely

23

UK Government 5th carbon budget - new construction legislation likely

We must be EV ready now.

No new petrol/ diesel vehicles

2035

Drop in carbon emissions related to electricity = heat pumps most favorable. Increased focus on fabric, thermal bridging and overheating.

2020

New Building Regulations Part L

Passivhaus fabric standards, heat pumps, no new gas boilers, batteries. Can't simply offset with PV.

2025

Significant retrofit measures – e.g. internal insulation, glazing upgrades, boiler replacement etc.

2030

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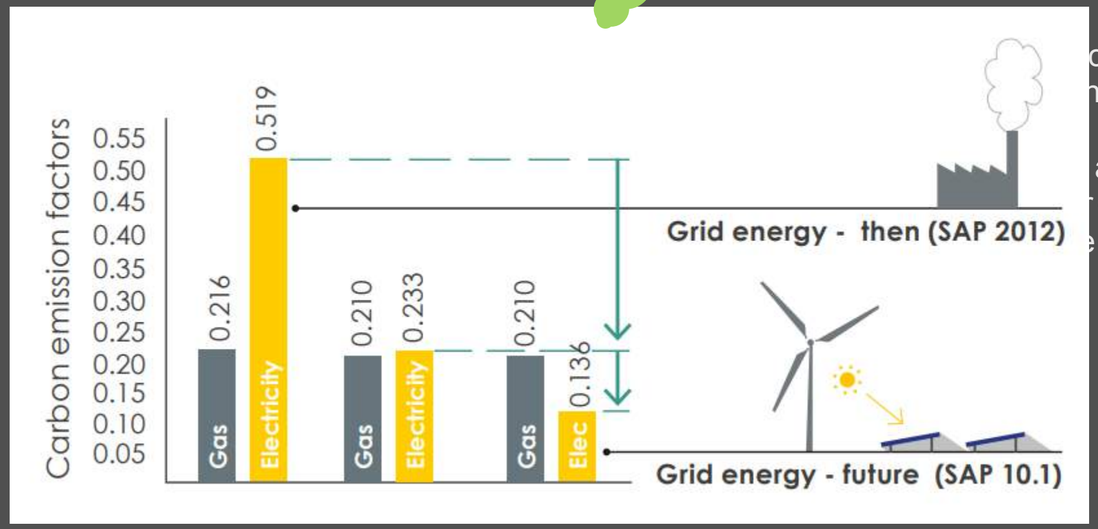
2050

UK legislated to be Carbon Neutral



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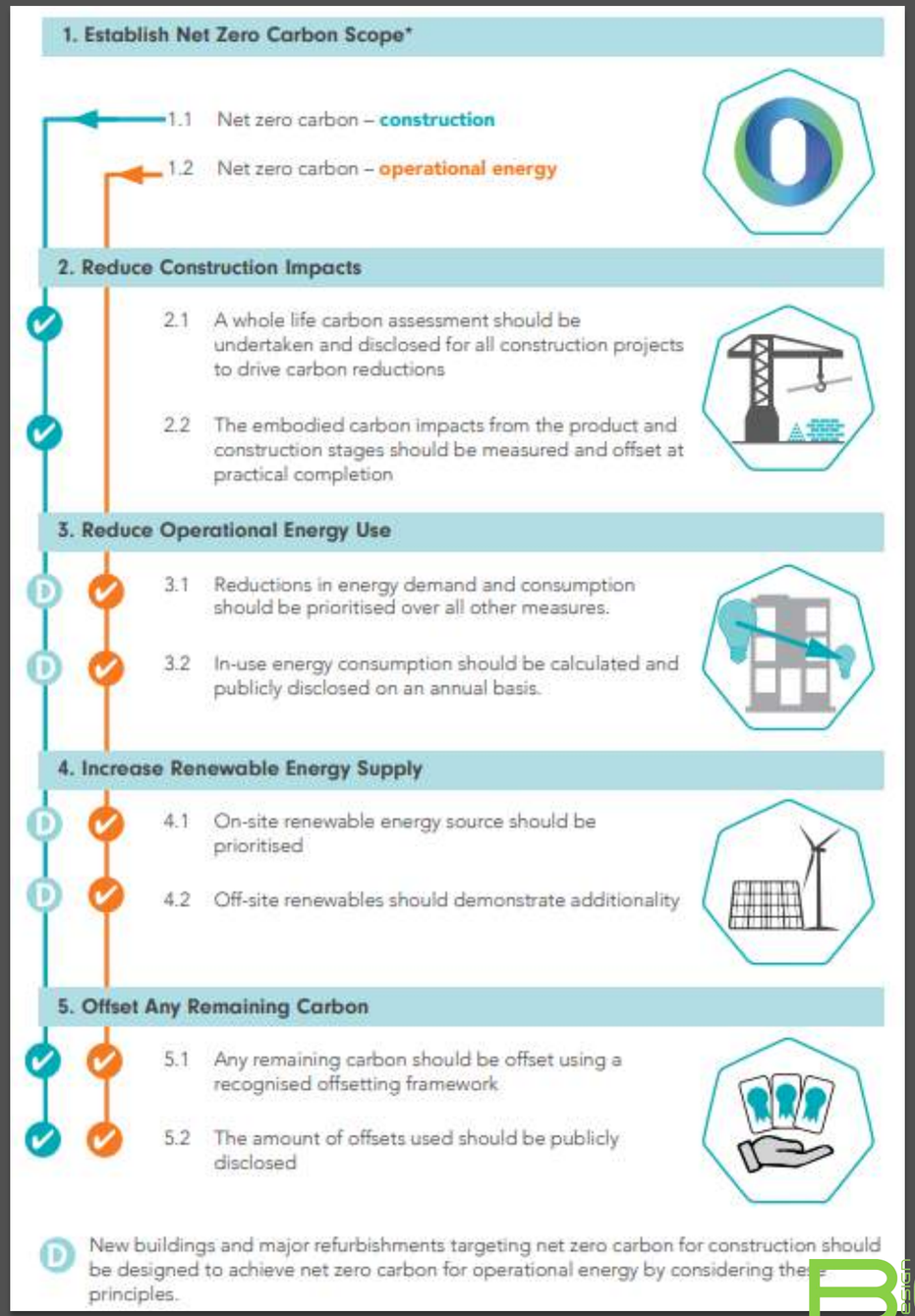
UKGBC Net Zero Carbon Definition

In April 2019 the UK Green Building Council set out it's definition of Net Zero Carbon.

The framework refers to two definitions:

- For in-use operational energy;
- For emissions from the construction process (Whole-life embodied carbon);



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RIBA
Plan of Work
2020

RIBA 2030 Climate Challenge

RIBA 2030 Climate Challenge target metrics for domestic buildings

RIBA Sustainable Outcome Metrics	Current Benchmarks	2020 Targets	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m²/y	146 kWh/m² /y (Ofgem benchmark)	< 105 kWh/m²/y	< 70 kWh/m²/y	< 0 to 35 kWh/m²/y	UKGBC Net Zero Framework 1. Fabric First 2. Efficient services, and low-carbon heat 3. Maximise onsite renewables 4. Minimum offsetting using UK schemes (CCC)
Embodied Carbon $kgCO_2e/m^2$	1000 $kgCO_2e/m^2$ (M4i benchmark)	< 600 $kgCO_2e/m^2$	< 450 $kgCO_2e/m^2$	< 300 $kgCO_2e/m^2$	RICS Whole Life Carbon (A-C) 1. Whole Life Carbon Analysis 2. Using circular economy Strategies 3. Minimum offsetting using UK schemes (CCC)
Potable Water Use Litres/person/day	125 l/p/day (Building Regulations England and Wales)	< 110 l/p/day	< 95 l/p/day	< 75 l/p/day	CIBSE Guide G

RIBA 2030 Climate Challenge target metrics for non-domestic buildings

RIBA Sustainable Outcome Metrics	Current Benchmarks	2020 Targets	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m²/y	225 kWh/m²/y DEC D rated (CIBSE TM46 benchmark)	< 170 kWh/m²/y DEC C rating	< 110 kWh/m²/y DEC B rating	< 0 to 55 kWh/m²/y DEC A rating	UKGBC Net Zero Framework 1. Fabric First 2. Efficient services, and low-carbon heat 3. Maximise onsite renewables 4. Minimum offsetting using UK schemes (CCC)
Embodied Carbon $kgCO_2e/m^2$	1100 $kgCO_2e/m^2$ (M4i benchmark)	< 800 $kgCO_2e/m^2$	< 650 $kgCO_2e/m^2$	< 500 $kgCO_2e/m^2$	RICS Whole Life Carbon (A-C) 1. Whole Life Carbon Analysis 2. Using circular economy Strategies 3. Minimum offsetting using UK schemes (CCC)
Potable Water Use Litres/person/day	>16 l/p/day (CIRA W11 benchmark)	< 16 l/p/day	< 13 l/p/day	< 10 l/p/day	CIBSE Guide G

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LETI: Elements of Net Zero Carbon

Low energy use

1. Total Energy Use Intensity (EUI) - Energy use measured at the meter should be equal to or less than:
   - **35 kWh/m²/yr** (GIA) for residential[1]

   For non-domestic buildings a minimum DEC B (40) rating should be achieved and/or an EUI equal or less than:
   - **65 kWh/m²/yr** (GIA) for schools[1]
   - **70 kWh/m²/yr** (NLA) or **55 kWh/m²/yr** (GIA) for commercial offices[2]

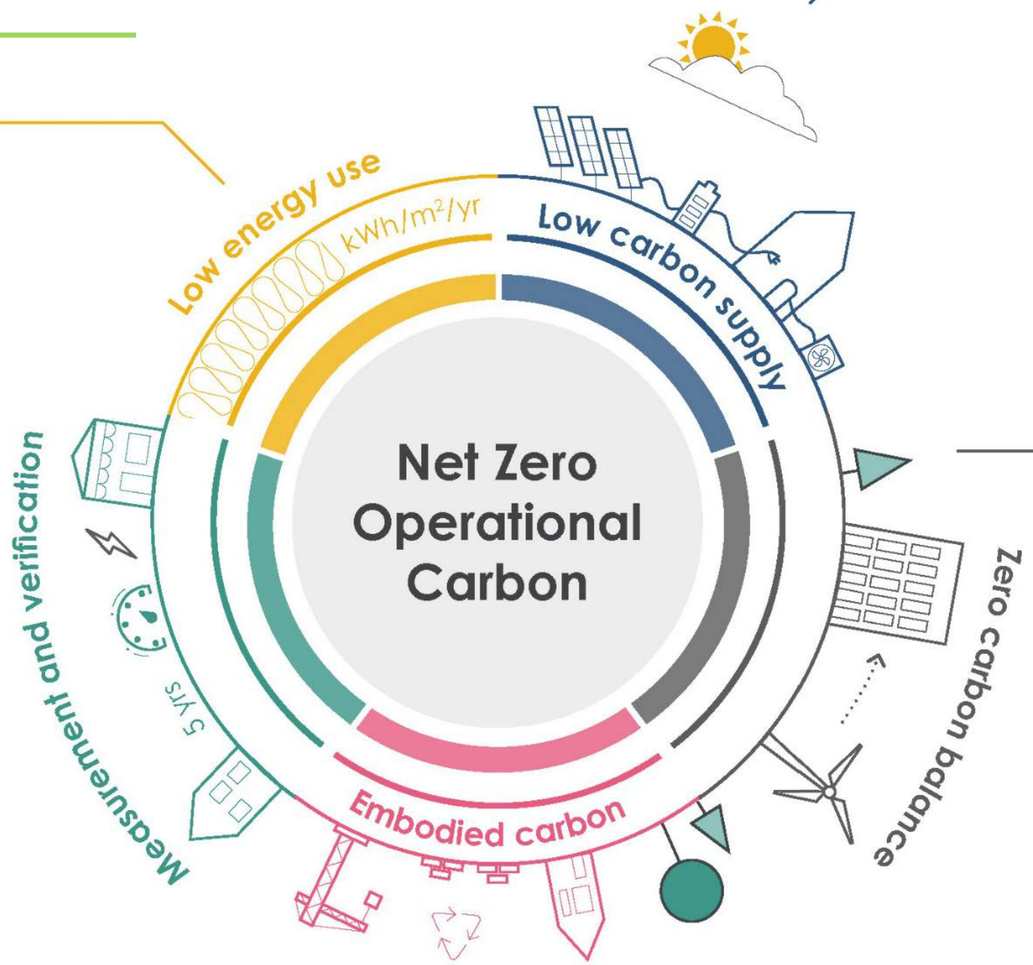
2. Building fabric is very important therefore space heating demand should be less than **15 kWh/m²/yr** for all building types.

Measurement and verification

3. Annual energy use and renewable energy generation on-site must be reported and independently verified in-use each year for the first 5 years. This can be done on an aggregated and anonymised basis for residential buildings.

Reducing construction impacts

4. Embodied carbon should be assessed, reduced and verified post-construction.[3]



Low carbon energy supply

5. **Heating and hot water should not be generated using fossil fuels.**
6. The average annual carbon content of the heat supplied (gCO_2/kWh) should be reported.
7. On-site renewable electricity should be maximised.
8. Energy demand response and storage measures should be incorporated and the building annual peak energy demand should be reported.

Zero carbon balance

9. A carbon balance calculation (on an annual basis) should be undertaken and it should be demonstrated that the building achieves a net zero carbon balance.
10. Any energy use not met by on-site renewables should be met by an investment into additional renewable energy capacity off-site OR a minimum 15 year renewable energy power purchase agreement (PPA). A green tariff is not robust enough and does not provide 'additional' renewables.

LETI
Climate Emergency Design Guide

www.leti.london

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Collaboration

For the first time ever, all these industry bodies are in agreement with the definition, metrics and targets.

Developed in collaboration with:

LONDON ENERGY TRANSFORMATION INITIATIVE

UK GBC

BBP | BETTER BUILDINGS PARTNERSHIP

Developed with the support of:

Good Homes Alliance

RIBA Architecture.com

CIBSE

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It couldn’t be done without the **100+** volunteers!

1. Adam Moshavish
2. Alex Prosper
3. Alex Johnstone
4. Alexia Laird
5. Alina Congreve
6. Amber Pahey
7. Amber James
8. Andy Stanton
9. Anna Woodeson
10. Anthony Thornton
11. Ben Hopkins
12. Bertie Dixon
13. Carolina Carreira
14. Charlotte Booth
15. Charlotte Millbank
16. Chris Tetton
17. Ciara B George
18. Clare Murray
19. Colin Beattie
20. Dan Wright
21. Daniel Raymond
22. Debby Ray
23. Deborah Elliott
24. Duncan Cox
25. Durgesh Chadee
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30. Erica Russell
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34. Georgios Asiountis
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58. Louise Parrot
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60. Martha Bauicombe
61. Martin Bull
62. Megan Van Dessel
63. Michelle Sanchez
64. Miles Attenborough
65. Mirko Pramstaller
66. Monica Donaldson-Balan
67. Nathan Millar
68. Neal Dabbidan
69. Nuno Correia
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71. Peter Courtenay
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83. Seb Lomas
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86. Sydney Charles
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88. Tim Hume
89. Tim Mitchell
90. Tim Pryce
91. Tim Straede
92. Tom Gwilliam
93. Wei Wen Low
94. Will South
95. Wyn Gilley
96. Zoe Watson

Alan Morton
Bill Bordass
Colette Connolly
Dewrim Celal
Eric Bakken
Georgie Rose
Jatinder Padda
Judit Kimpian
Sally Godber
Sam Bottrell
Simon Mitchell
Zack Gill

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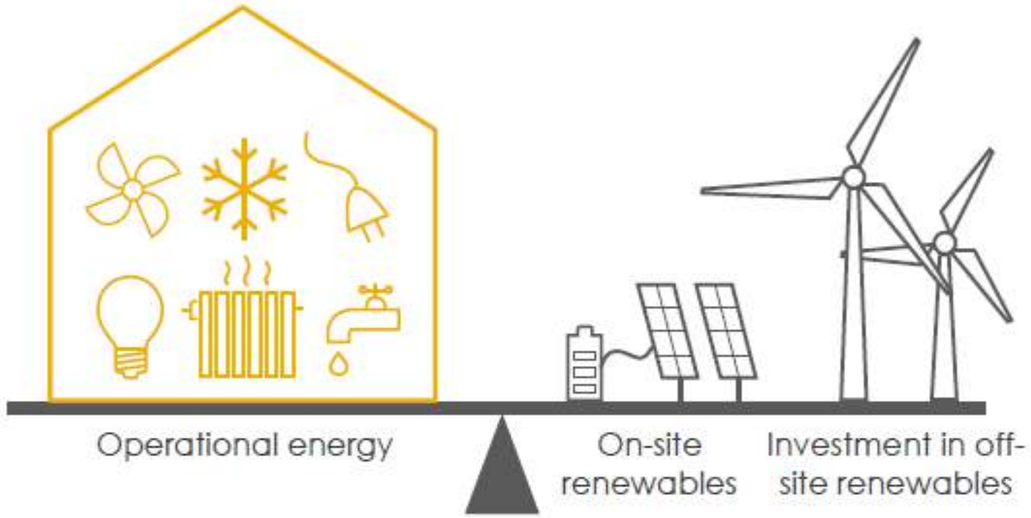

Net zero operational balance

- Operational energy
- Embodied carbon
- Future of heat
- Demand response
- Data disclosure

Elements of Net Zero Carbon

Importantly, a Net Zero Carbon Building must:

- Include unregulated energy
- Perform in-use

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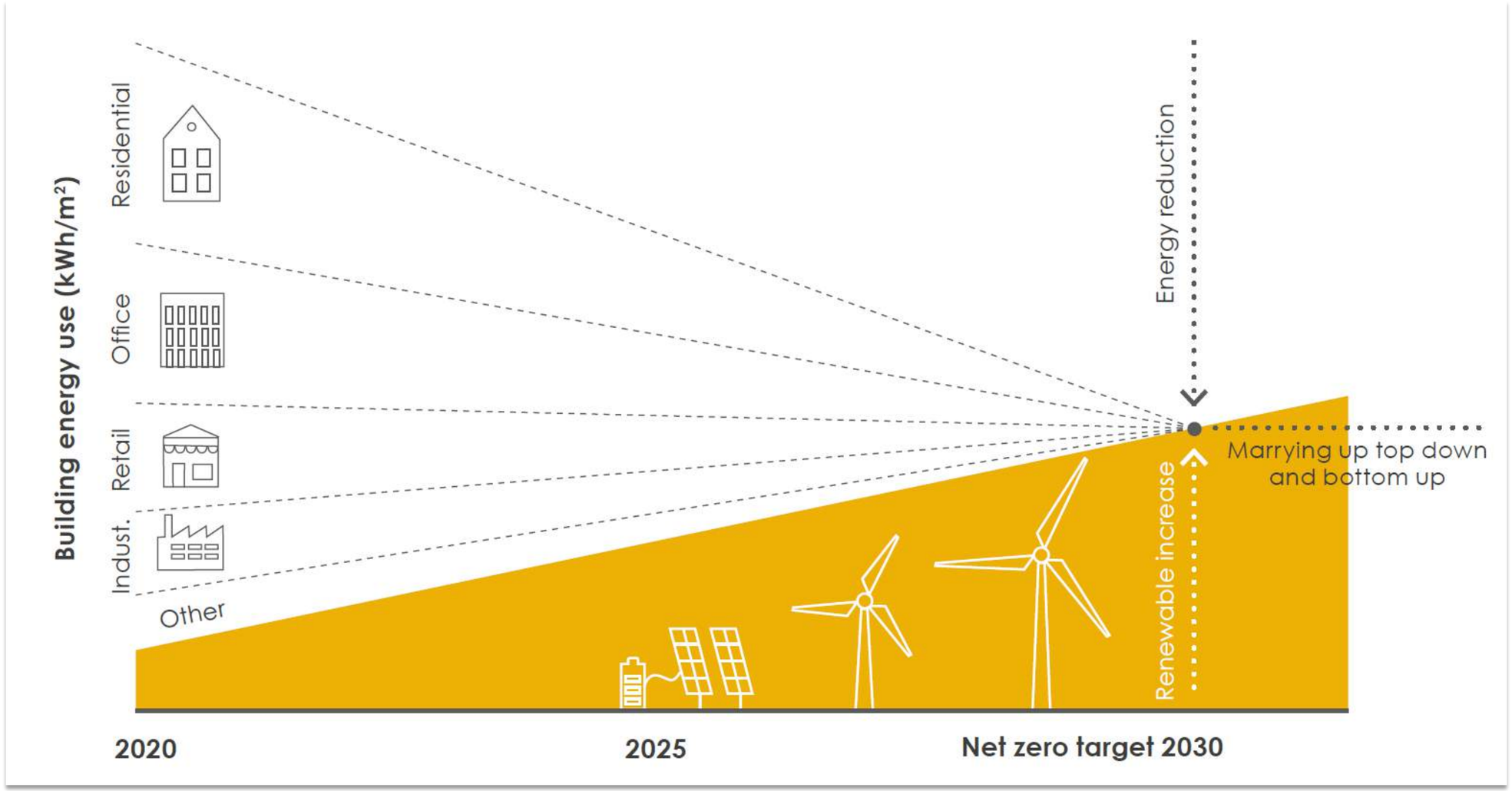
Top-down meets bottom-up approach to energy



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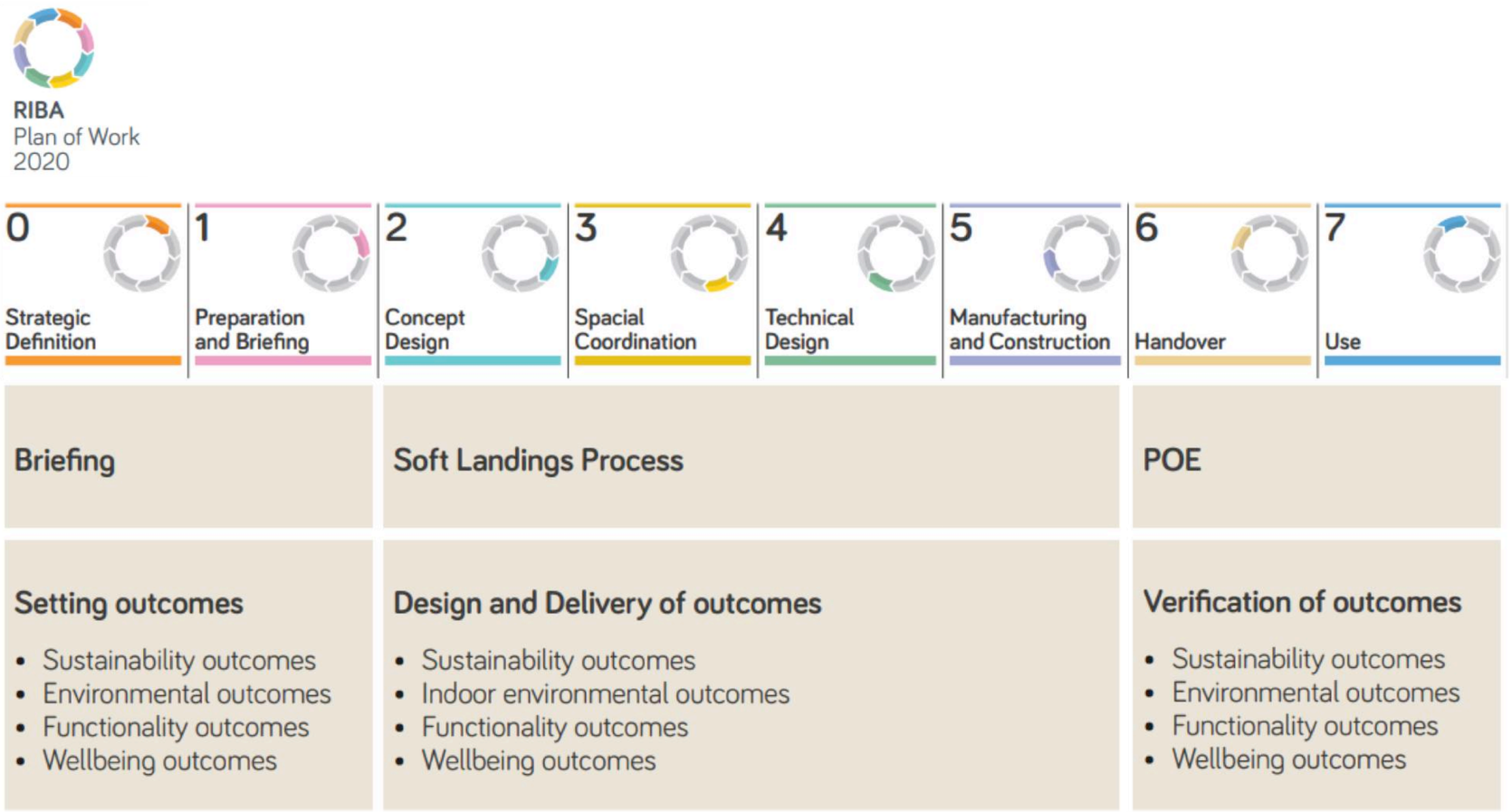
RIBA New Plan of Works

A ‘Sustainability Champion’ is required under the new RIBA Plan of Works 2020 to create a context focused sustainability strategy that address the RIBA Sustainable Outcomes.



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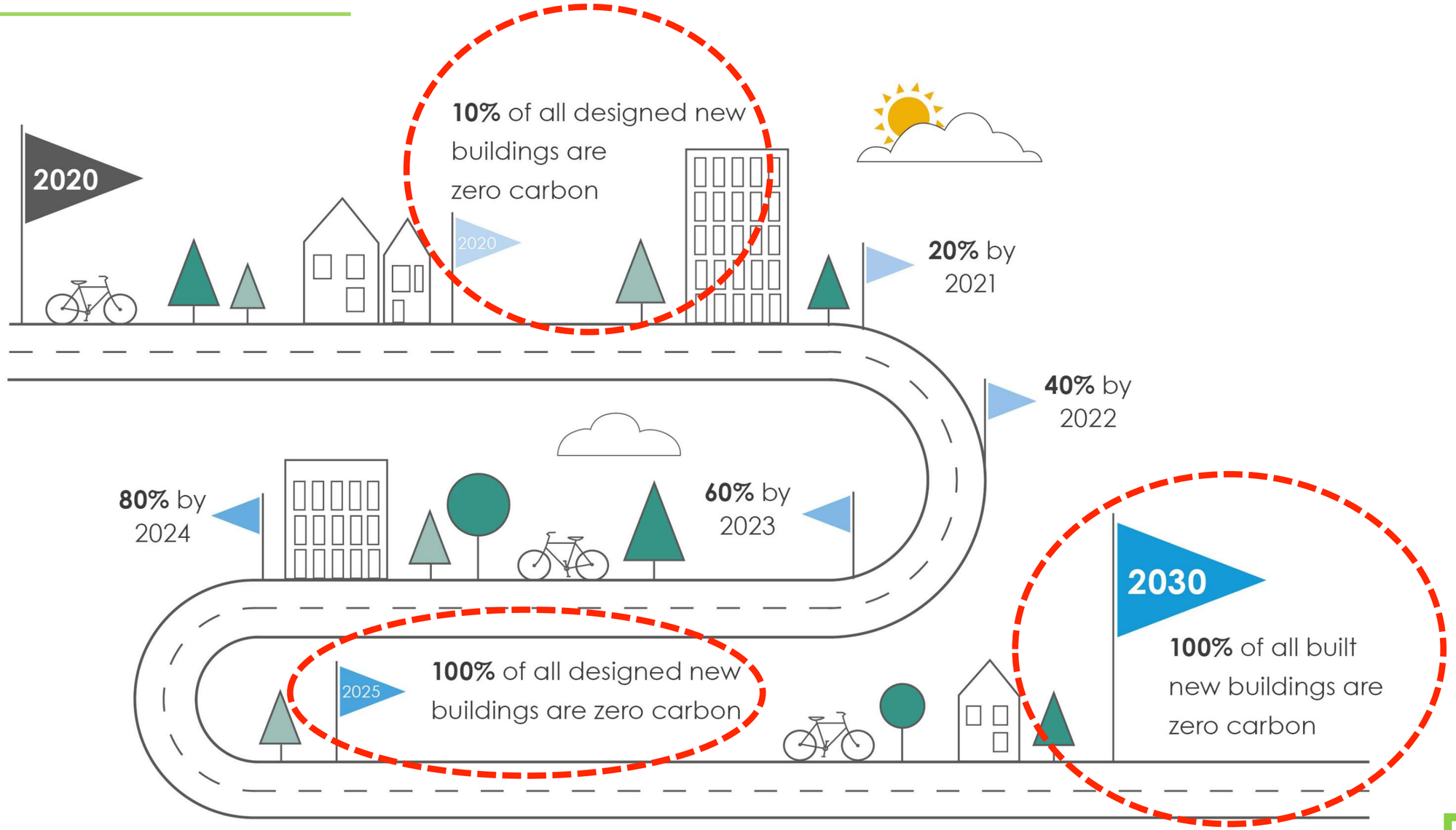
The Roadmap to Zero Carbon



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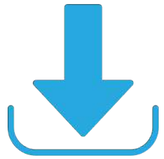
How to Engage

Appoint a **Sustainability Champion**

Register for a **CPD** for your organisation



Download industry guides

Commit to a LETI Pioneer project

Share experience and feedback

Donate time or money to LETI -help them spread the message

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Key Takeaway Points

- **Act** now
- Commit to a **Net Zero vision**, set targets and disclose
- Appoint a **Sustainability Champion** at day one
- **Collaborate** with each other to #BuildNetZero

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Thank You

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