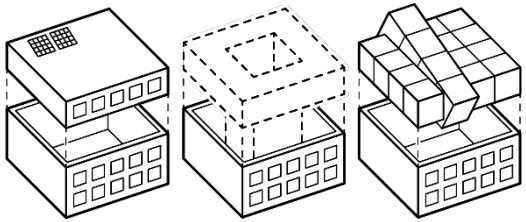
Delivering NZC buildings Industry Perspective

Oliver Hall
29th January 2025

make

Certified B Corporation


make



Refresh | Repurpose | Reimagine

Case study project experience

Big Data Institute | 80 Charlotte Street | Eden

Carbon efficiency | Biodiversity

Facades | Sustainable luxury | Retrofit/circularity | Materials

Sustainability research

Business commitment

Certified B Corporation | World Green Building Council | UK GBC | Sustainable City Charter | Race to Zero

Sustainability champions

Make Neutral Day

Studio

Net-zero Studio testbed

Make 110% offset Scope 1, 2, 3

Data

Ideas

make Neutral

Client brief + Site analysis

Instructions

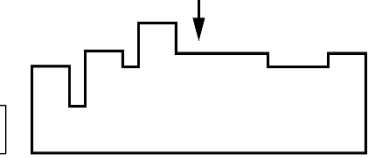
Lessons

KPI

Summary

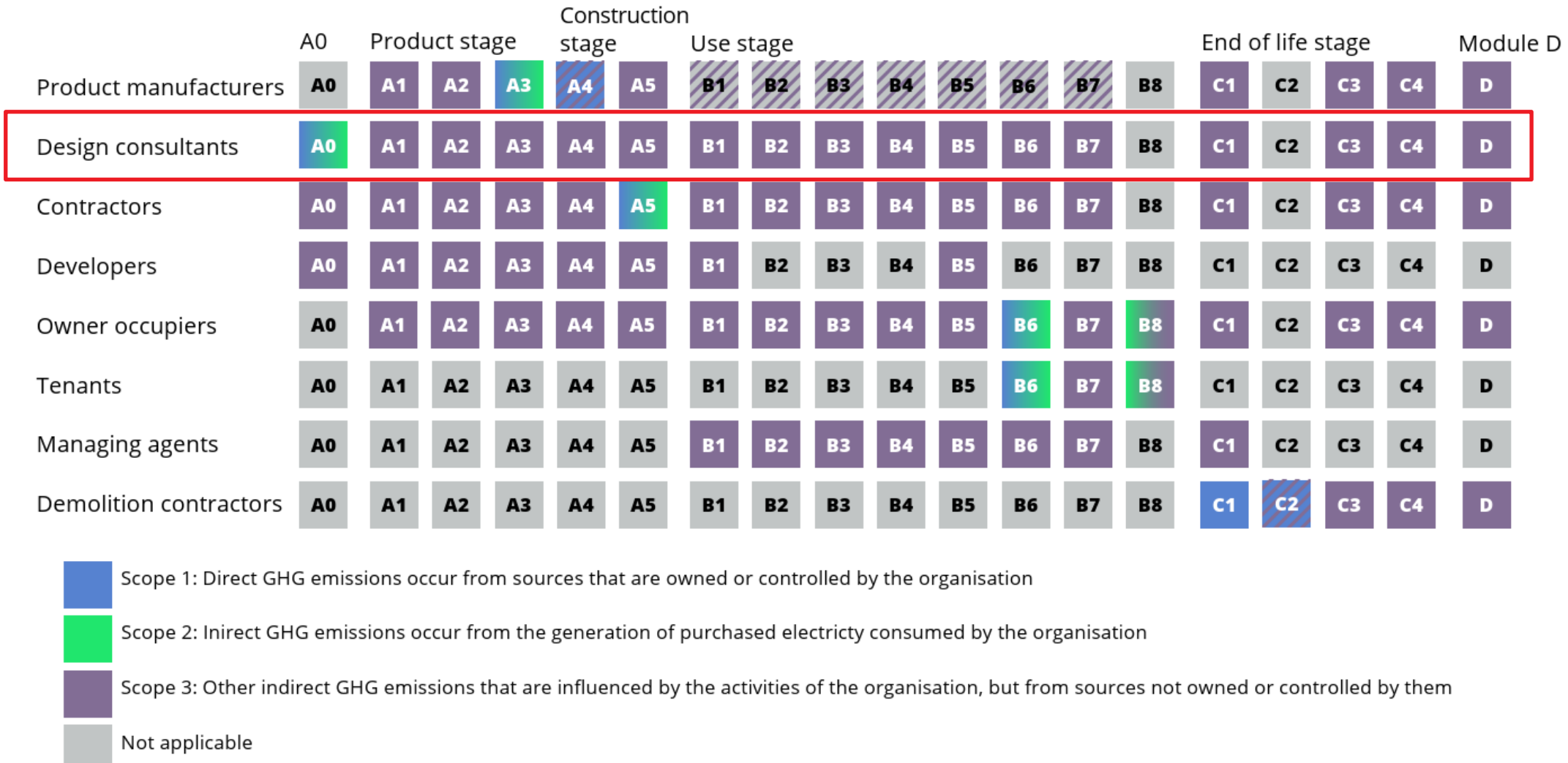
Connectivity | Green economy | Carbon | Wellbeing | Community | Environment

Neutral six principles



Long life | Loose fit | Low waste | Flexible | Healthy | Energy efficient

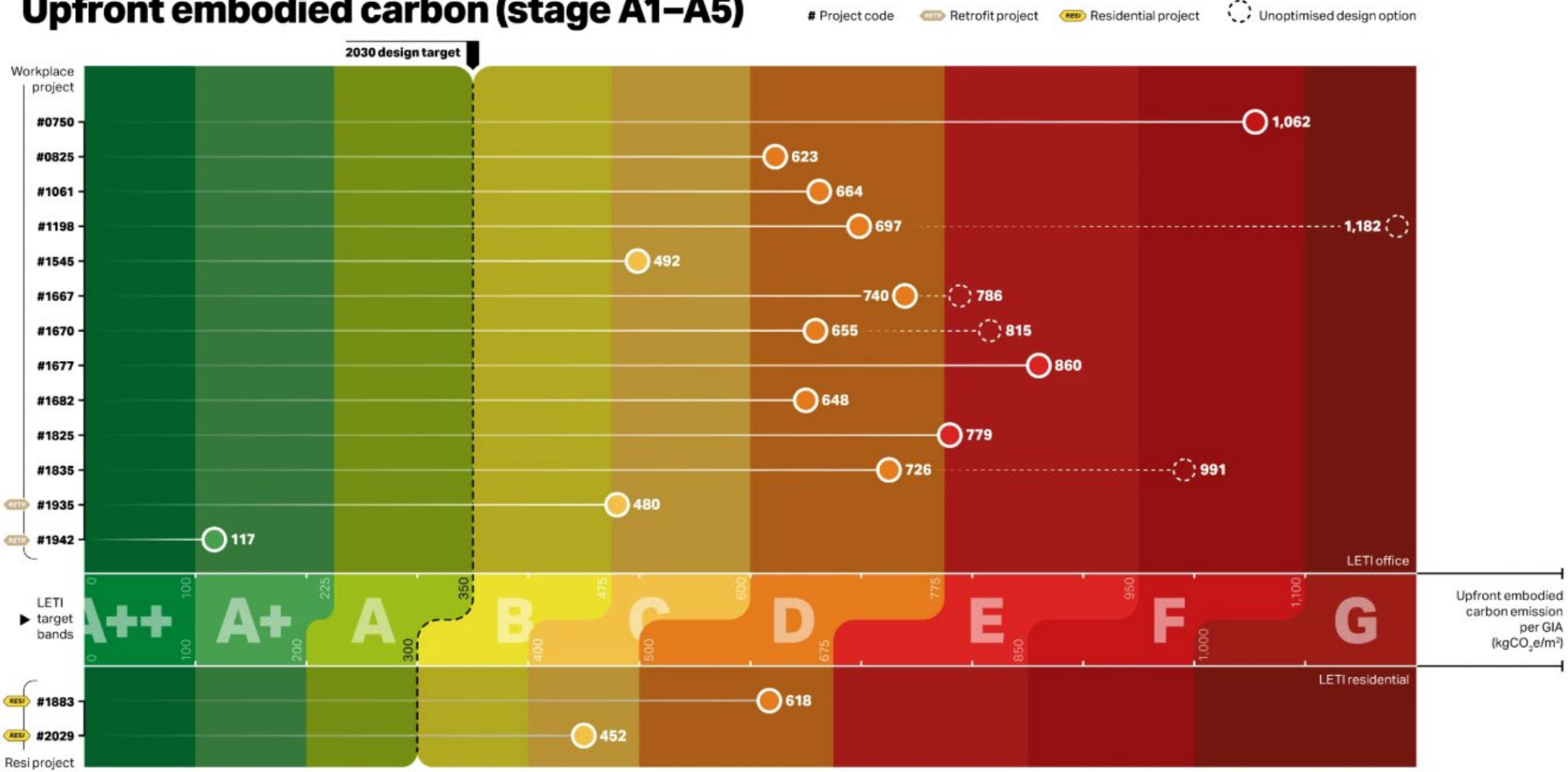
Low-carbon projects

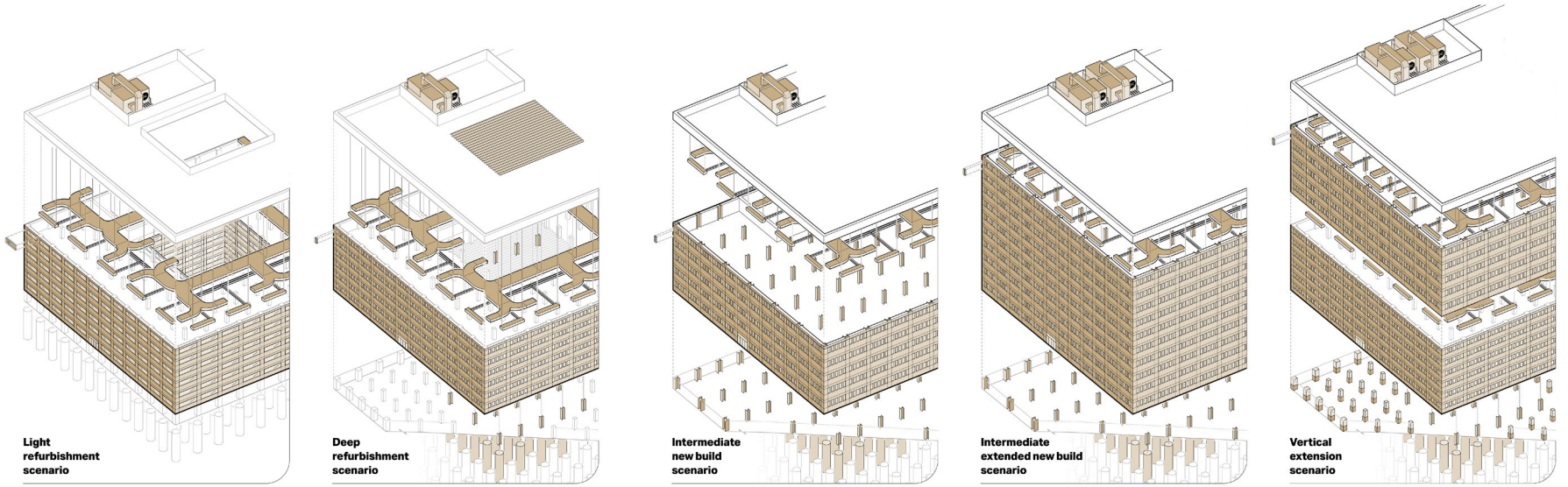


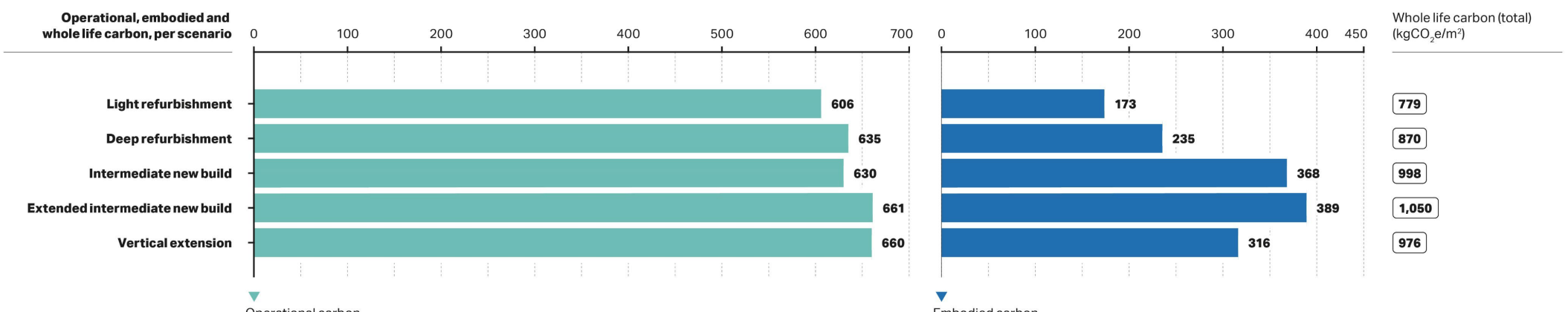
Source – Appendix A RICS WLCA V2

Make project benchmarks

Upfront embodied carbon (stage A1–A5)




Light refurbishment scenario
Deep refurbishment scenario
Intermediate new build scenario
Intermediate extended new build scenario
Vertical extension scenario
Refresh
Repurpose
New build
Reimagine
New build

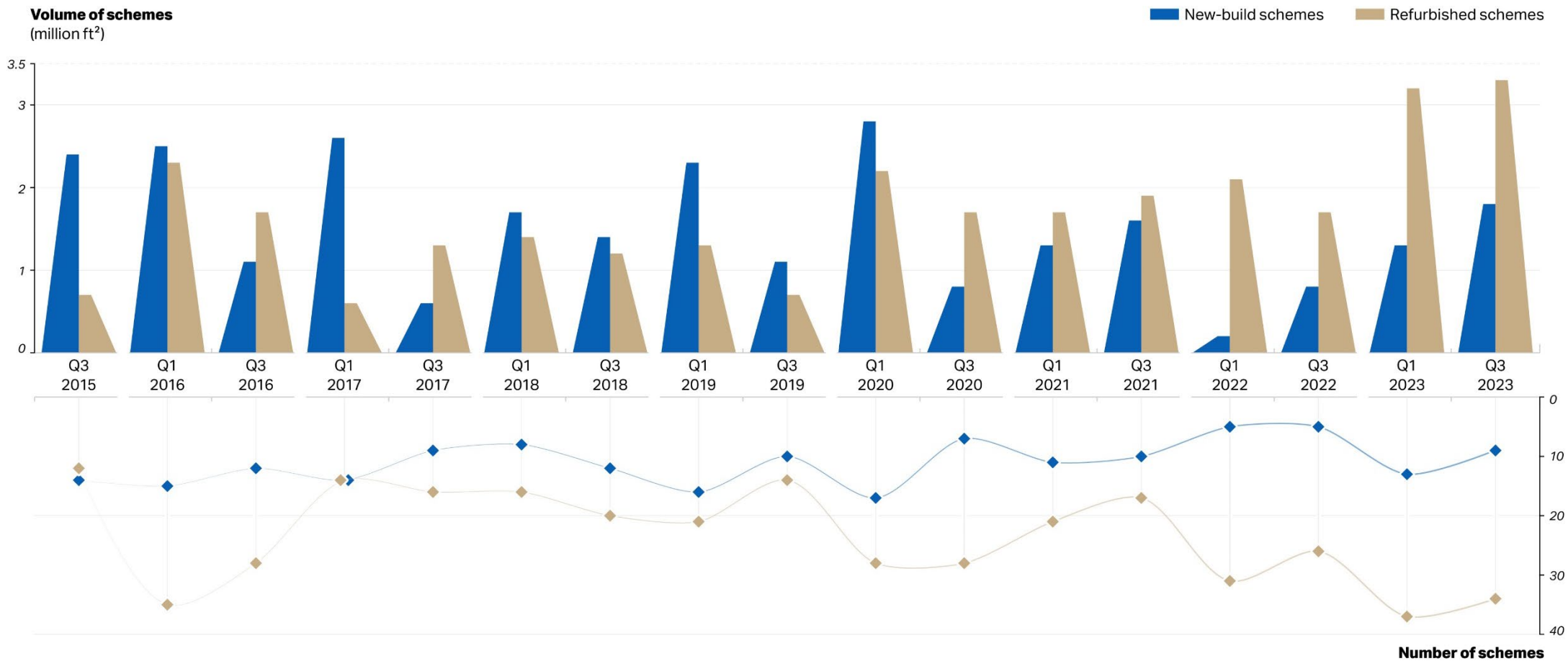

Operational, embodied and whole life carbon, per scenario
0
100
200
300
400
500
600
700
0
100
200
300
400
450
Whole life carbon (total) (kgCO2e/m2)
Light refurbishment
606
173
779
Deep refurbishment
635
235
870
Intermediate new build
630
368
998
Extended intermediate new build
661
389
1,050
Vertical extension
660
316
976
Operational carbon
Embodied carbon

Challenge 1 – What do you want us to build?

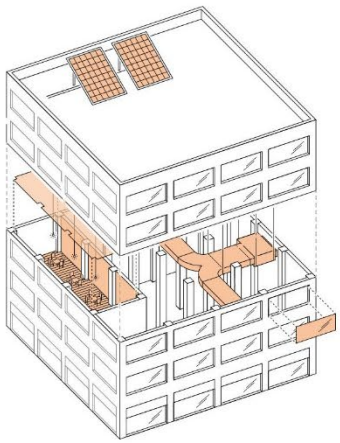
MEES means 80% of London office stock will need to be upgraded by 2030.

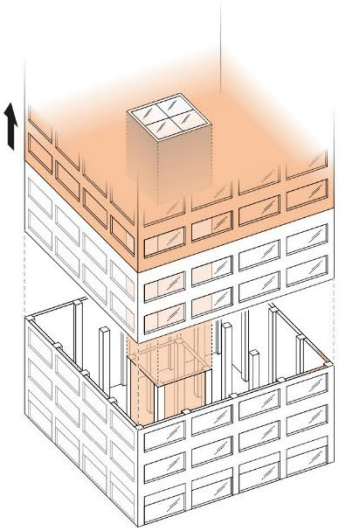
This is equivalent to around 15,000,000ft^2 per annum.

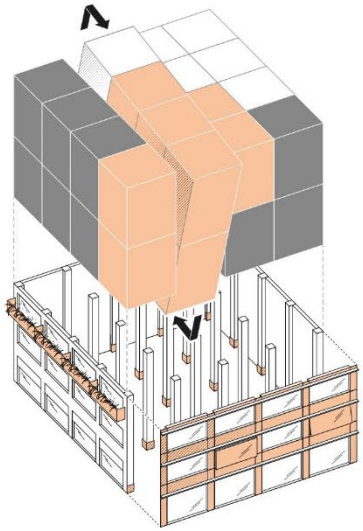
Refurbishment vs. new build
Central London

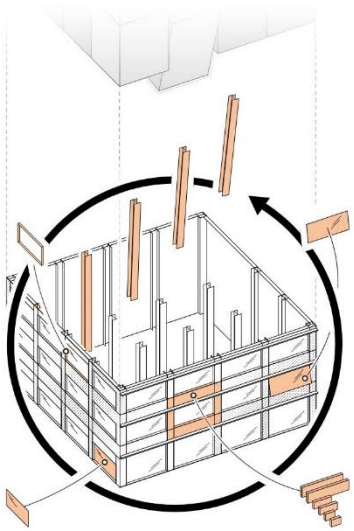


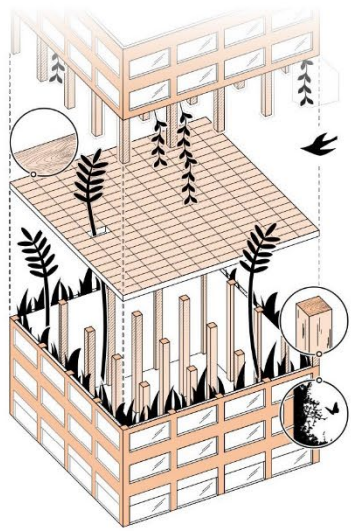
Source: Deloitte, updated by Apr 2024











Refresh **Repurpose** **Reimagine** **Circular** **Regenerative**

Creatively reusing what already exists **Scale of intervention** **New and highly sustainable**

Make Studio (London)

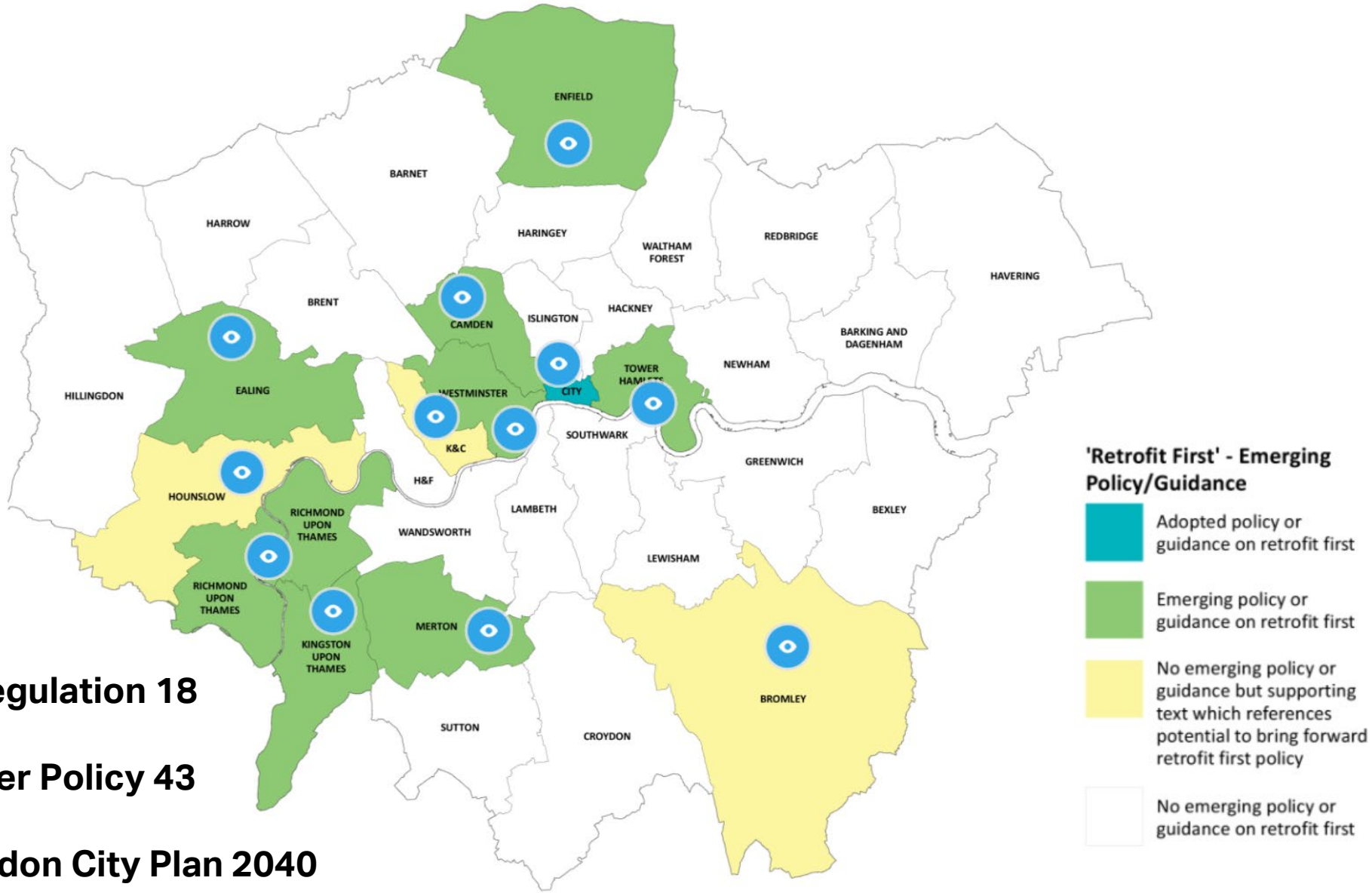
55 Baker Street

Hornsey Town Hall

180 Piccadilly

48 Chiswell

Eden



Camden Regulation 18

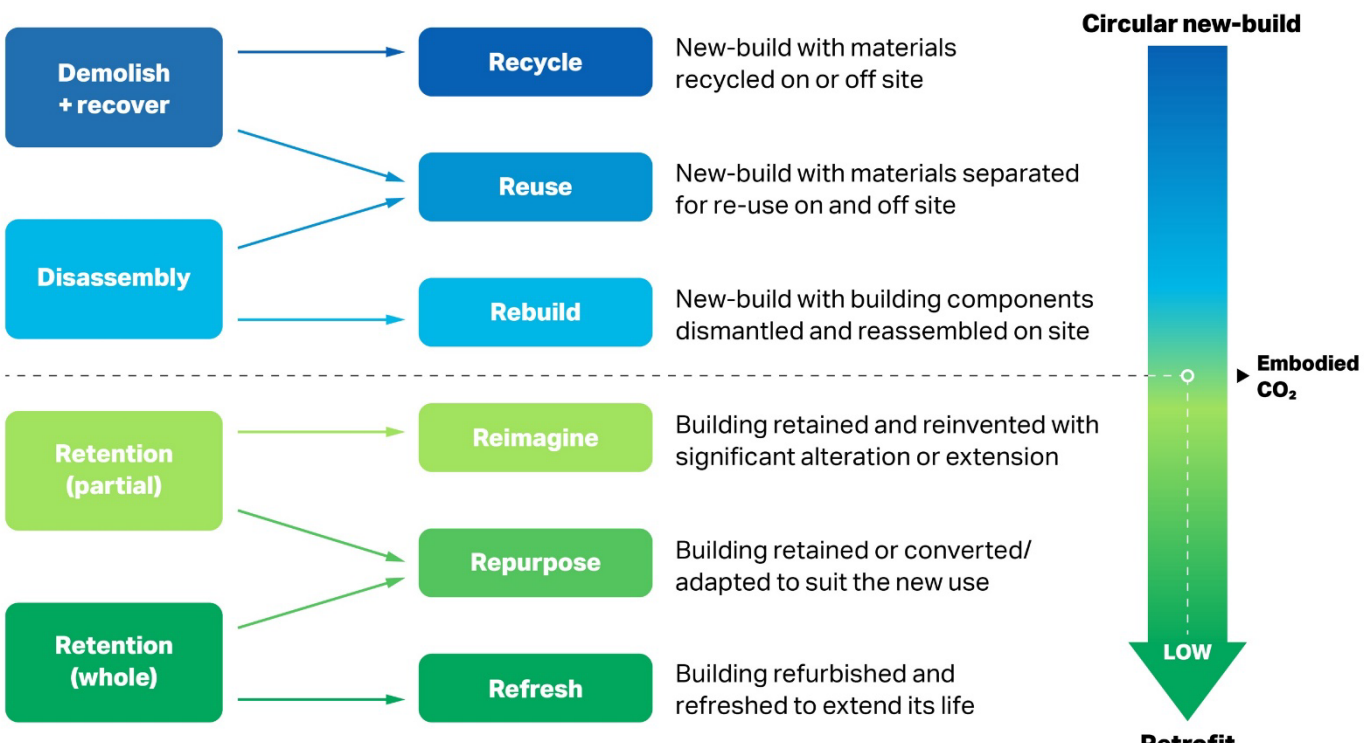
Westminster Policy 43

City of London City Plan 2040

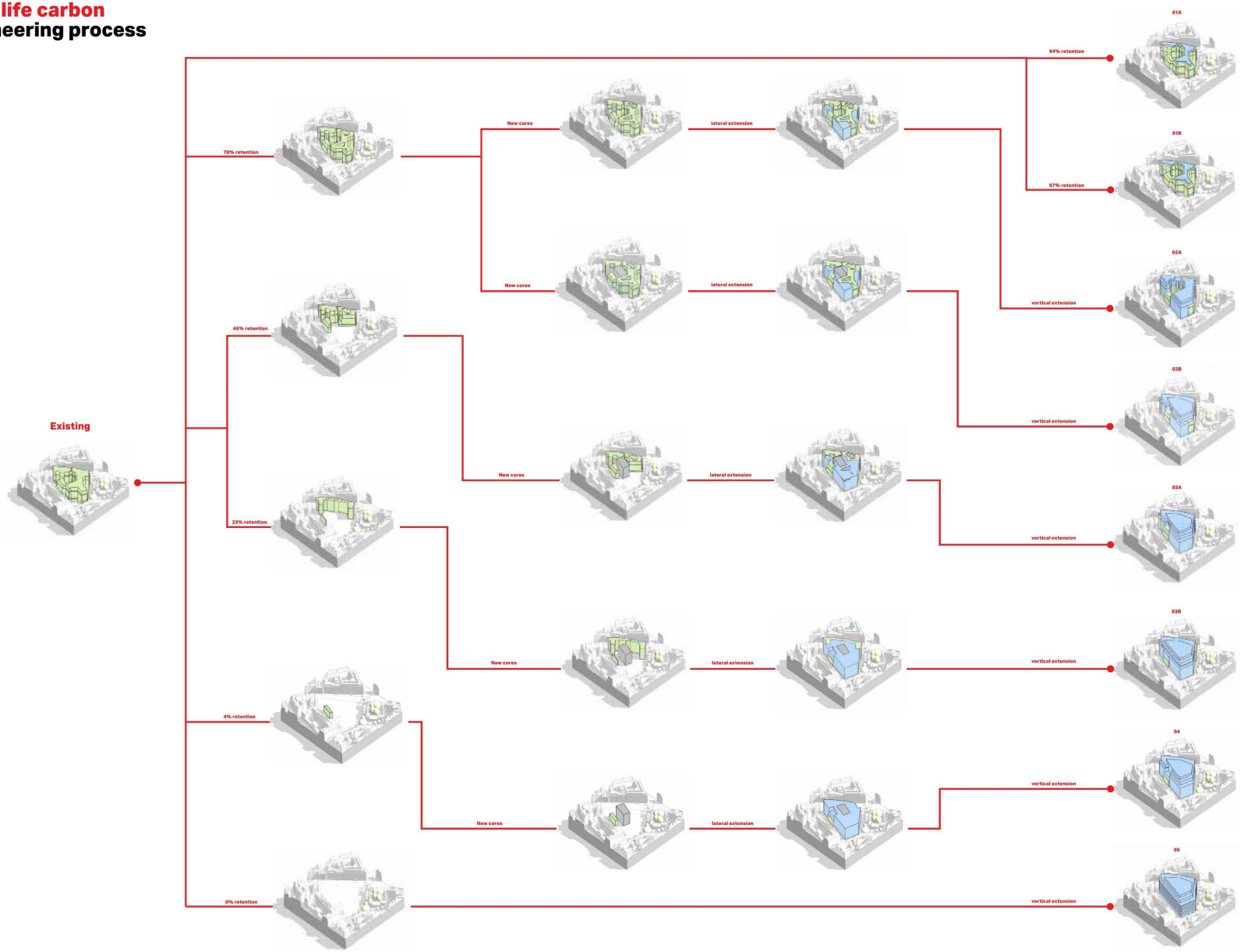
CO_2 Carbon

55 Baker Street, London

Long life, loose fit. Keep it simple and build lightweight.



Whole life carbon
Optioneering process



Chiswell Street
London

Reimagining a 1980s block into a 140,000ft²
21st Century workplace
-
70% Structural steel reuse + 75% structural steels retained
-
536 $KgCO_2/m^2$ A1-A5
953 $KgCO_2/m^2$ A-C

4.21. The existing building at 48 Chiswell Street is 31.82m, making it a tall building according to the definition set out in local policy. Through the proposed extension works, the building height would increase to 37.95 metres – an increase in height of 6.13 metres, or 19%. As illustrated in Image 3 below, this increase in height represents an increase of around 1.5 storeys, inclusive of the roof level plant storey.

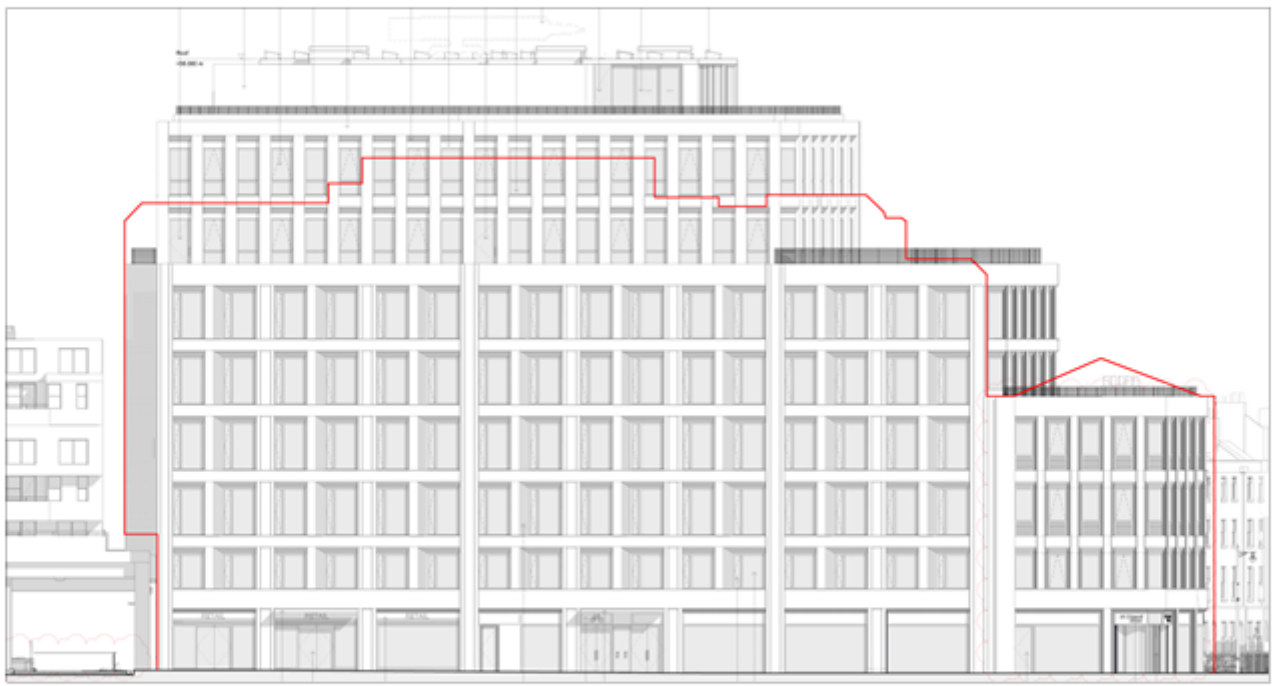


Image 3: Proposed development, with existing building line shown in red

4.22. Despite the height of the existing building at 48 Chiswell Street, the site is not identified as being suitable for the development of a tall building in accordance with Local Plan Policy DH3. As such, this development is considered to represent a departure from the development plan and has therefore been advertised as such from the outset.

1. Should carbon come before policy?
2. Should we do what's best for the planet or what will secure our clients planning?

Challenge 2 – Circularity in a finite supply

30 Duke Street
London

8 storey circularity focused commercial development of 105,000ft²

-

Design minimised whole life carbon and embraces circular economy principles with significant steel re-use (75%) and basement retention

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New façade reusing existing Portland stone

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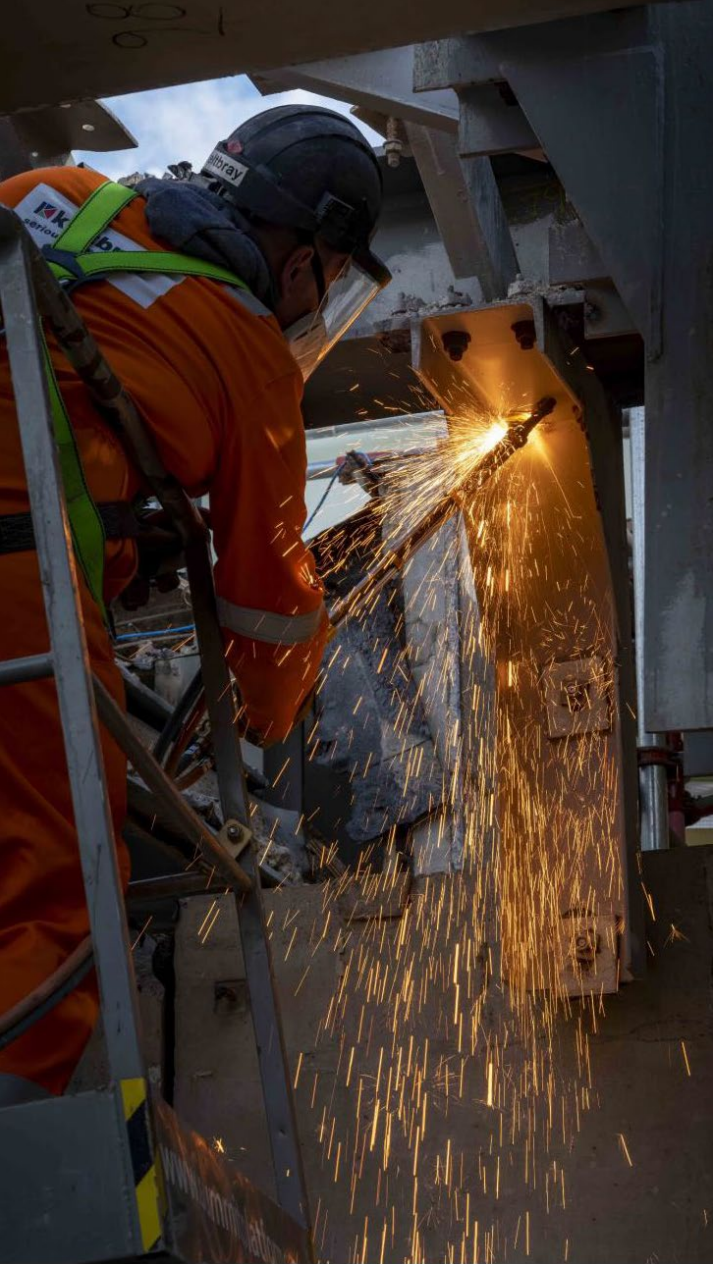
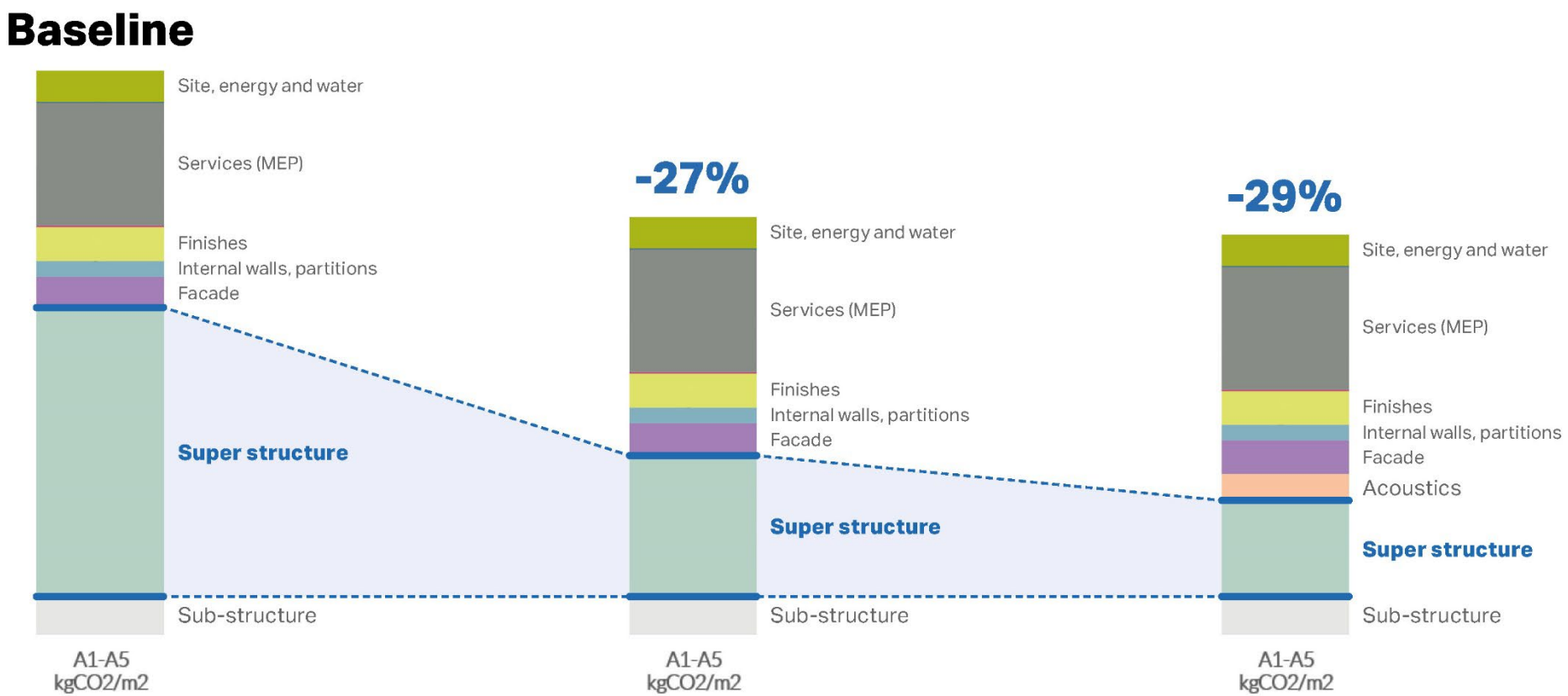
540 KgCO$_2$/m² A1-A5
1125 KgCO$_2$/m² A-C



Significantly reduce embodied carbon



New steel frame, with concrete deck

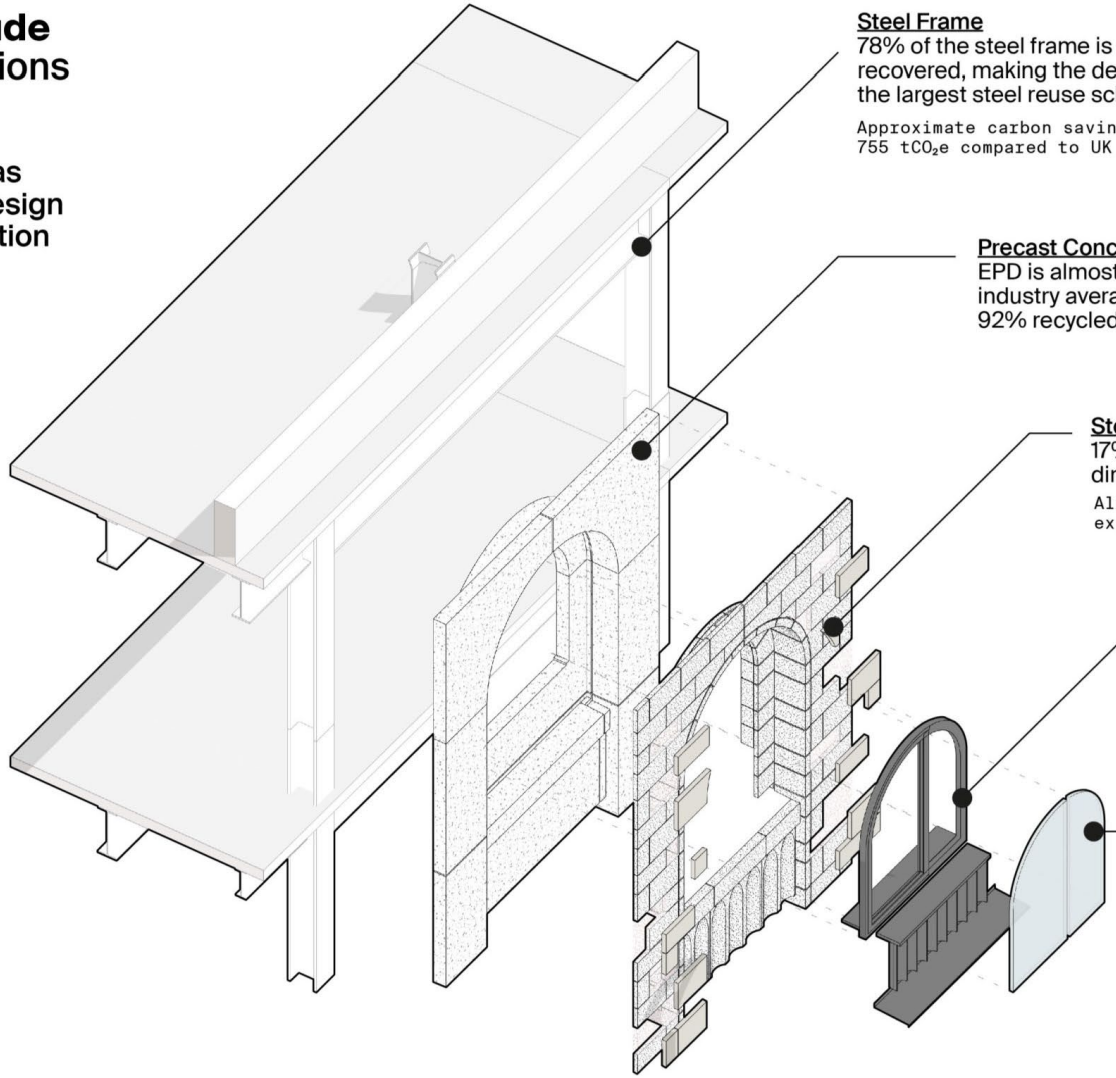
Reused steel frame, with composite deck

Reused steel frame, with CLT deck

30 Duke Street Facade
● Circularity Applications & Carbon Savings

Approximately 194 tCO_2e has been saved as a result of design development and collaboration since RIBA Stage 3.

GPE.
Elliott Wood
make
FM DC Façade+ Materials Design Consultants
mace
OAG
HARE
GRANTS



Steel Frame
78% of the steel frame is reclaimed or recovered, making the development the largest steel reuse scheme in the UK.

Approximate carbon saving of 755 tCO_2e compared to UK average.

Precast Concrete Panels
EPD is almost 30% lower carbon than industry average & includes re-bars with 92% recycled content and 50% GGBS.

Stone
17% of Portland Stone is reclaimed directly from the existing building.

Almost 62,000 kg of new stone excavation avoided.

Aluminium Frame
100% recycled aluminium window frames. First commercial development in the UK delivering the circal 100 product.

Approximate carbon saving of 82 tCO_2e compared to UK average.

Glazing
100% glazing above ground is from recycled orae glass, with 30 t sourced directly from the now demolished French Railways House/Jermyn Street buildings.

Approximate carbon saving of 30 tCO_2e compared to UK average.

Information correct as of 19/12/24

1. Have we focused on Embodied carbon to much?
2. Is large scale steel reuse viable?
3. Is it an easy carbon win that only certain clients can afford?

Challenge 3 – Cost vs carbon

Eden
Salford

450,000 plants to remove air pollutants, maximise biodiversity, reduce urban temperatures, and improve well-being.

-

The first certified NABERS Design for Performance 5.5 Stars.

-

The Employers Requirements included embodied and operation energy targets that needed to be achieved as a minimum or Bettered

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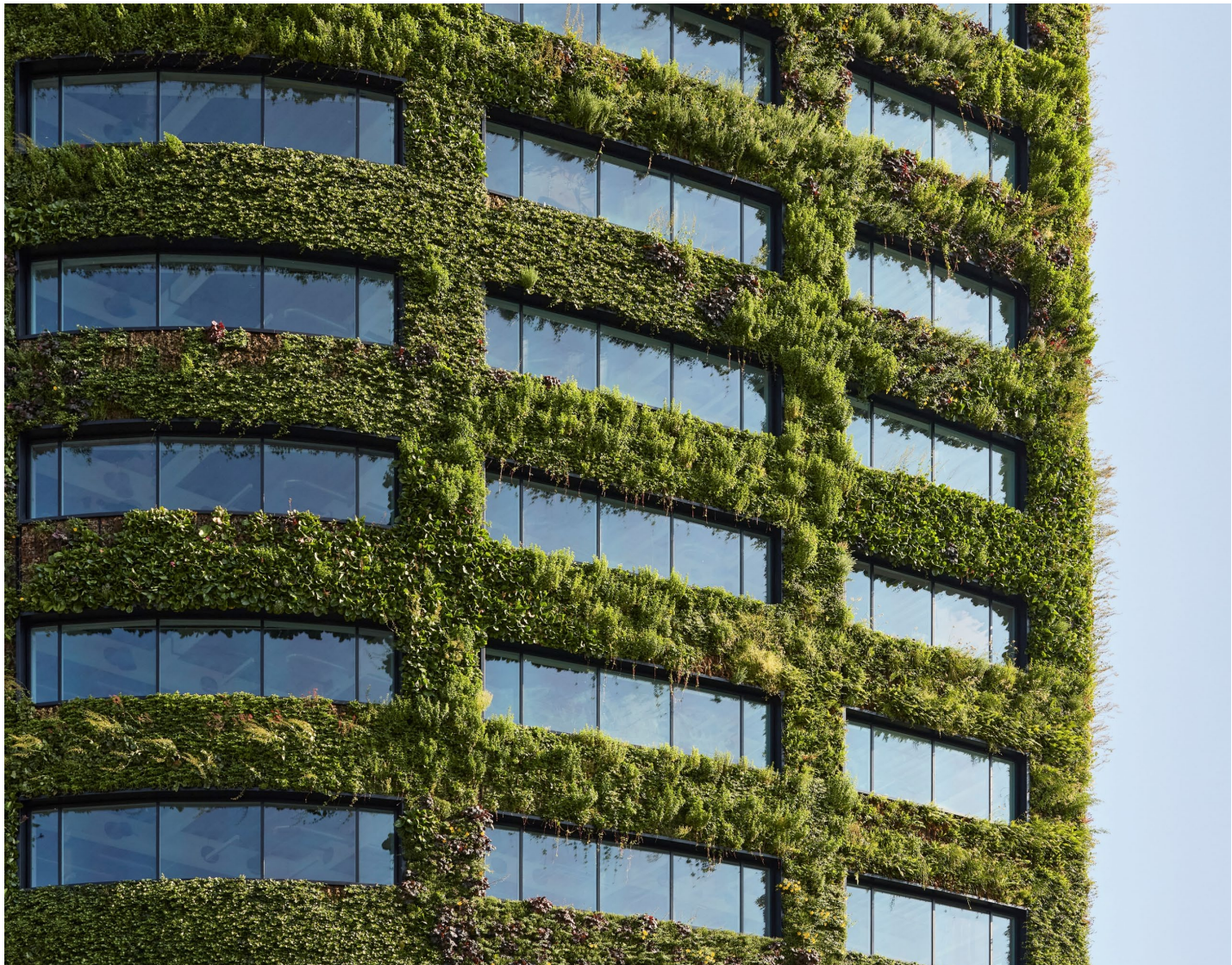
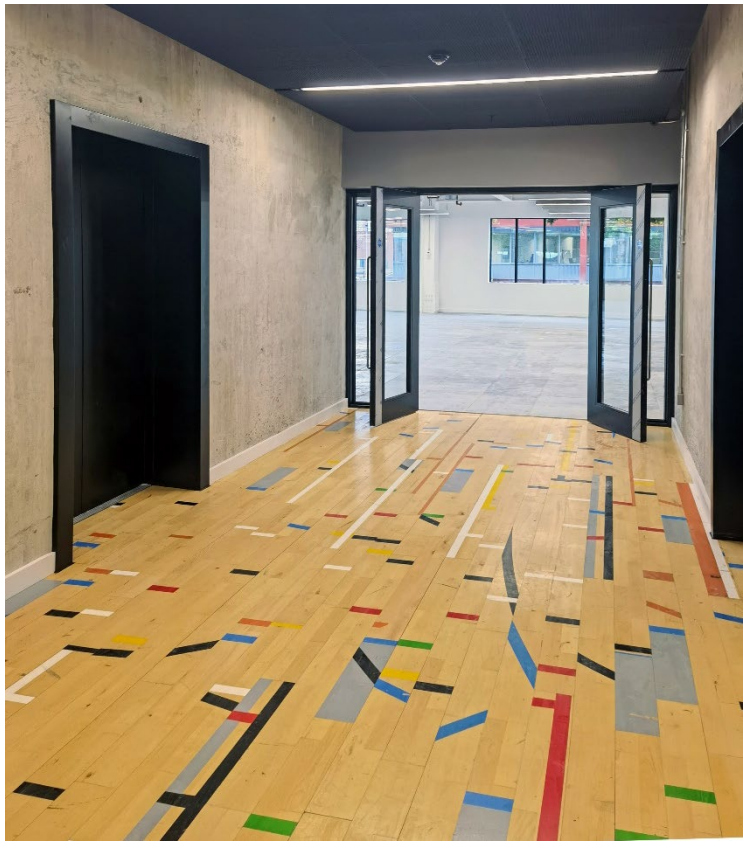
615 $KgCO_2/m^2$ A1-A5
1198 $KgCO_2/m^2$ A-C





But it attracts tenants.

1. How do we make NZCB's less complicated?
2. Is it okay to put a premium on NZCB to drive change?

make