ElliottWood

Material Impact Report

2026

Contents

Introduction 1
Summary in Numbers 2
Material Stewardship 3
— Demolition vs retention
— Stewardship
Material Use 4
—Concrete
—Steel
—Timber
—Other
Embodied Carbon 5
Embodied Ecological Impacts 6
7 Generations Targets 7
Next Steps 8


Introduct



“”

Nearly 50% of the materials we extract from the planet are used by the built environment.

United Nations Environment Platform

Why does it matter?

Materials sit at the heart of the built environment's biggest challenges and opportunities. Every kg of material we extract, manufacture, transport, construct or demolish leaves a lasting impact on our planet.

But these impacts do not have to be negative.

By challenging our existing relationship with materials, we can shift the status quo from "do less harm" to "restore and regenerate".

Our second material impact report is part of Elliott Wood's ongoing effort to turn insight into action, helping us design more resource-efficient, circular and regenerative projects.

In this report, we take a closer look at the materials we specify, share the outcomes of our regenerative design initiatives and expand our assessment beyond carbon to better understand the wider impacts of the choices we make.

Question 01

Where do the materials we use come from?

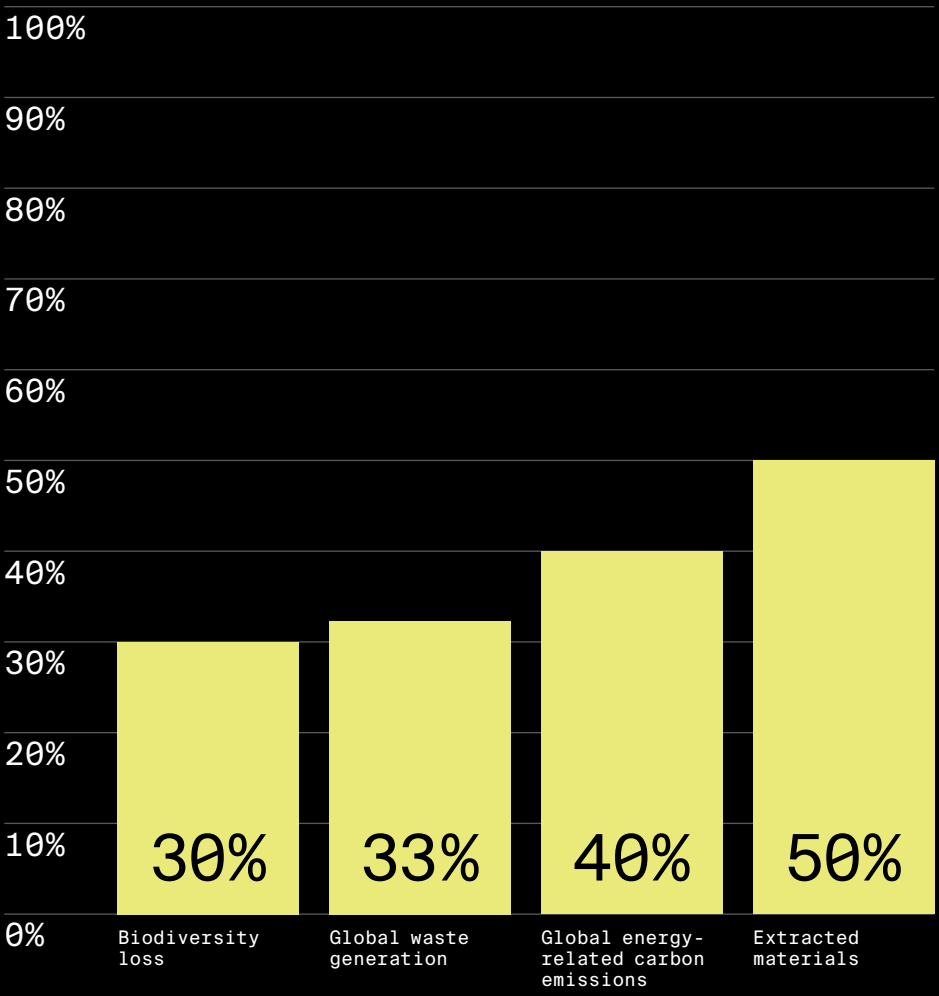
Question 02

How much harm do we cause?

Question 03

How could we create positive impacts?

The global built environment is responsible for:



How can we change?

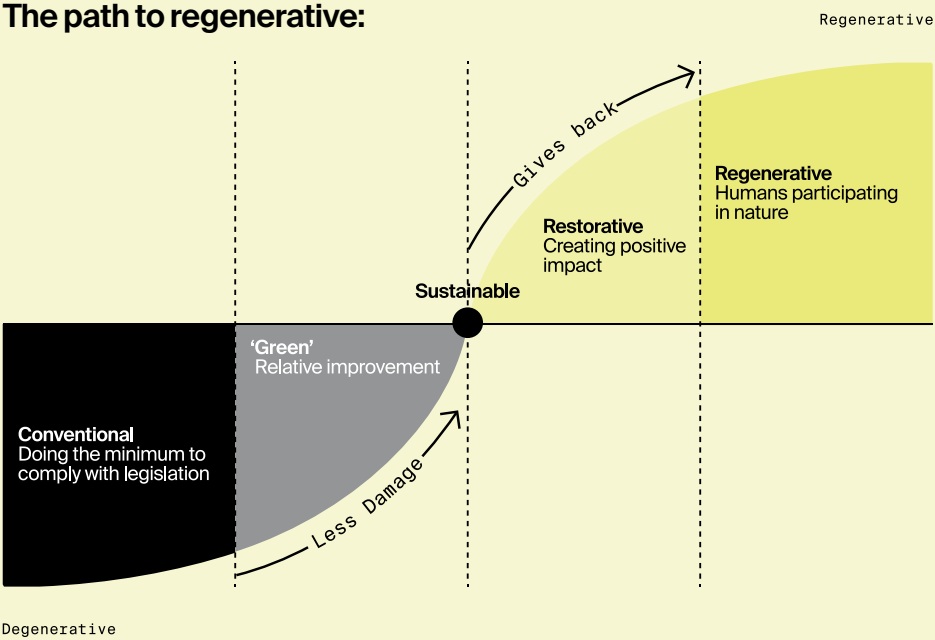
The way we design and build must evolve.

Not only to reduce environmental impact, but to create buildings that deliver long-term value for people, places and the planet.

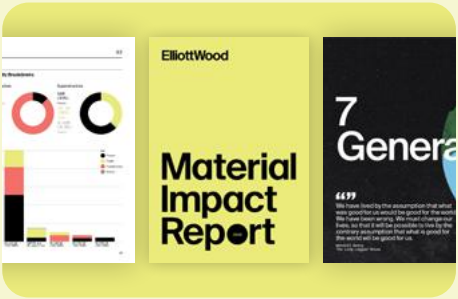
This means looking beyond conventional material choices. By exploring biogenic and low-carbon alternatives, viewing existing buildings as valuable material resources and considering impacts across the whole lifecycle, we can help clients make more informed decisions and open up new possibilities for design.

What could our material palette look like if we designed with what we have, rather than what we want?

The path to regenerative:



What have we done?



01
Material Impact Report

The second edition of our Material Impact Report tracks the materials we specify, measures progress and turns insight into action.



02
Impact Report

Our annual B Corp Impact Report shares the progress we've made, the challenges we've faced, and the actions we're taking to create positive environmental and social impact.



03
Regenerative Design Handbook and Competition

In June 2025, we launched an internal competition to explore regenerative design and challenge conventional thinking. The ideas and conversations it created led to the publication of our Regenerative Design Handbook, an accessible guide to the principles shaping our approach.



04
Industry Leadership

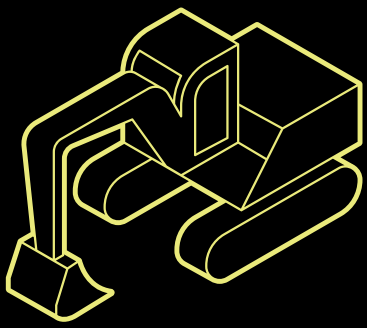
Driving industry change through research, advocacy and collaboration, including ACAN, The Engineers Reuse Collective, Circular Steel, Don't Waste Buildings and Footprint+.

Summary in numbers

Demolition as a proportion of floor area developed and demolished

20%
2024

13%
2025



Change in material quantities per m^2 of new floor area

% Change



New concrete
+18%



New steel
-40%



New timber
-33%



New other
-50%

The sample includes projects with a meaningful start on site in 2025 and a construction value exceeding £5 million.

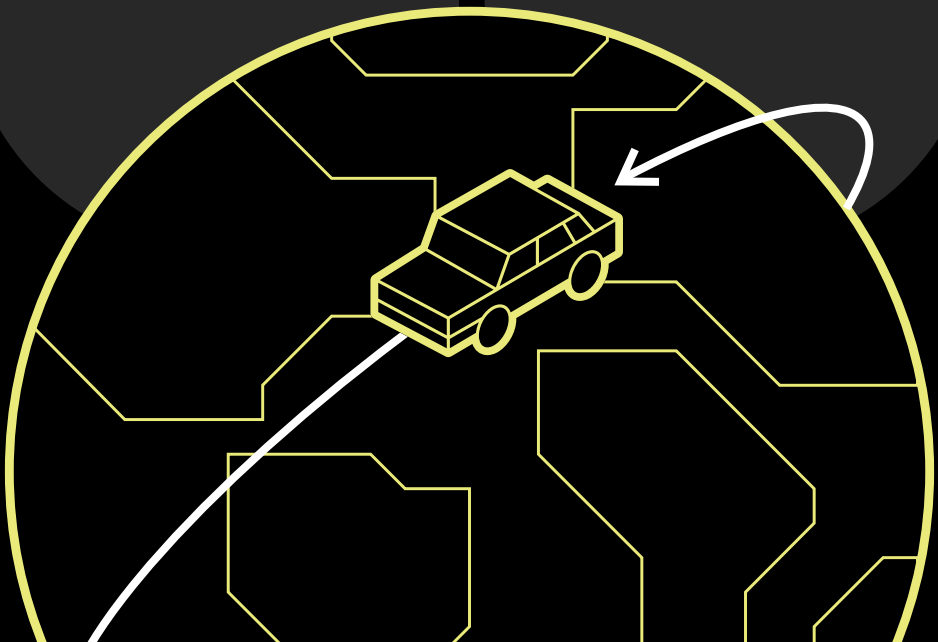
The total upfront carbon associated with our structural works projects in 2025 was approximately:

36,300

Tonnes CO_2

That's equivalent to the emissions of driving an average car for approximately 110 million miles — roughly the same as circling the Earth 13,900 times.

13,900x



“”

You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make.

Jane Goodall
The Book of Hope:
A Survival Guide for Trying Times



Mat
Ste


terial
wardship

Demolition & Retention

Reducing material impact means demolishing less and retaining more.

For every square metre of floor area we demolish, we create about one tonne of waste. A similar amount of material is required to recreate the lost area, effectively doubling the material used compared with a retention scenario.

When framed like this, the solution becomes clear: design and policy must align around how we can maximise retention.

How different would our developments look if they started with the question 'how can this building be retained'?

Year	2024	2025	% Change
Floor area developed	88,000 m^2	172,000 m^2	+95%
Floor area demolished	23,000 m^2	25,000 m^2	+8%

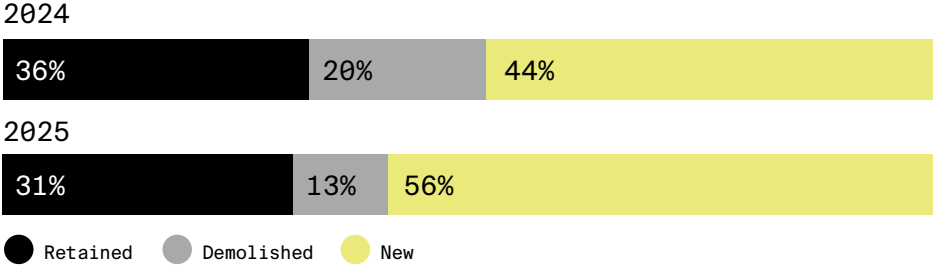
Compared to last year, we developed almost twice as much floor area. Total retained floor area increased, but as a proportion of overall development activity both retention and demolition decreased. This reflects the types of projects we worked on: large new-build developments on previously undeveloped sites.

Whilst new buildings will always be a part of our work, we would like to see the results trending in the opposite direction.

This raises an important question: what needs to change to unlock more opportunities for retention and reuse?

How can developers, designers and policymakers work together to make retrofit and retention a more viable, attractive and commercially compelling option?

Demolished vs Retained vs New Floor Area (m^2)



Retrofit in Local Government Policy

UK planning policy is increasingly prioritising the retention of existing buildings, with local authorities requiring developers to justify demolition rather than treating it as the default option.

This top-down approach encourages clients and the wider design team to engage with retention from the outset, rather than relying on individual champions to drive it.

In this evolving policy landscape, creativity, innovation and a willingness to challenge the brief will be essential. London boroughs are leading the way, with many already implementing retrofit-first policies or introducing similar guidance.

Westminster
'Retrofit First' will require developers to prove retrofit is not viable before approving substantial demolition.

City of London
Adopted a retrofit first approach as part of its 2040 net zero carbon strategy.

Camden
Local Plan now prioritises retrofitting existing buildings over demolition.

Kensington & Chelsea
Introduced a presumption against redevelopment of social housing estates.

Ealing, Enfield, Merton, Kingston, Richmond & Tower Hamlets
Developing similar retrofit-first policy or guidance

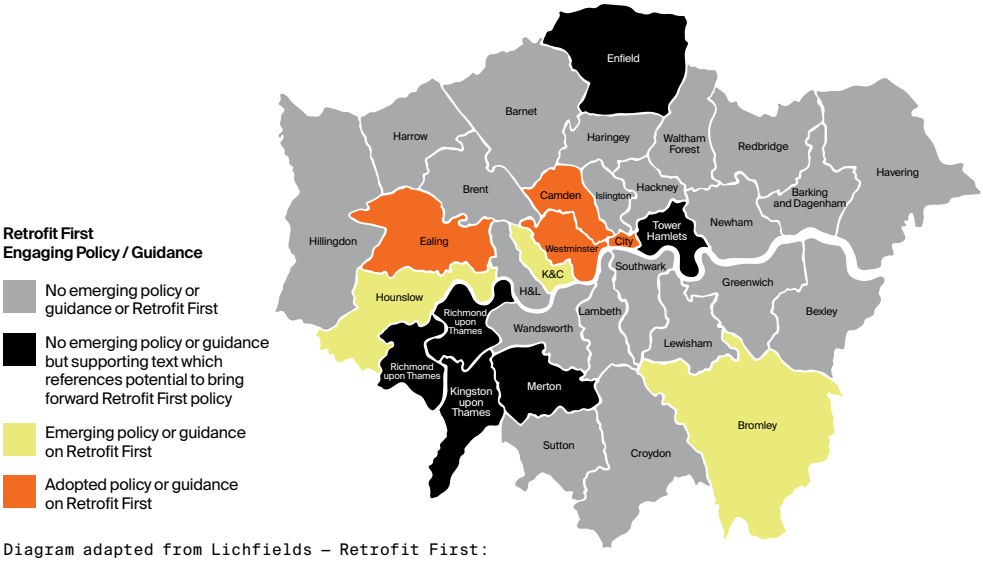


Diagram adapted from Lichfields – Retrofit First: The City of London, Camden, now Westminster – who will be next? 03/04/2024

Material



“”

Each year we produce enough concrete around the world to cover the entire land-mass of England.

Ed Conway, Material World:
The six raw materials that shape
modern civilization, 2023


Use

New Materials

An overview of all new materials used on projects where structural works commenced in 2025.

Material use increased significantly this year, particularly for concrete and steel, driven by a 95% rise in developed floor area and several large new-build concrete frame projects.

To better understand where these materials are being specified, we have introduced a more detailed breakdown of material use.

This will help us identify the areas with the greatest impact and focus our efforts where they can deliver the most meaningful reductions.

The aim for future reports is still to collect as-built data. We know that there are discrepancies between what is designed and what is delivered to site. By working towards capturing more detailed information, we can improve our confidence in these numbers.

Total materials specified by weight

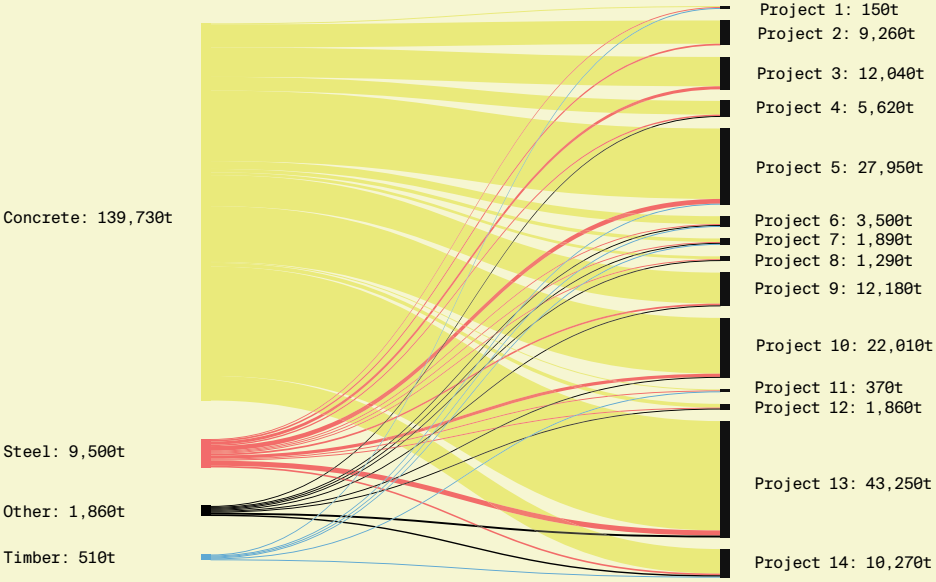
Material	2024	2025	% Change
Concrete	51,190t	139,730t	+173%
Steel	5,016t	9,500t	+89%
Timber	474t	510t	+8%
Other	1,511t	1,860t	+23%

How much material did we use?

As was seen last year, concrete still dominates our material use. It's the go-to material for substructure and slabs — where the majority of our impact lies.

Whilst it dominates our landscape, how can we make a change for the better?

Optimising our concrete use, and reducing the carbon in our concrete mixes has a big potential to make a short term impact.



Material Metrics

2024		Normalised by floor area	
	Total used tns	Per m² developed kg/m²	Per m² added kg/m²
New concrete	51,200	550	1,060
New steel	5,000	55	140
New timber	500	5	15
New other*	1,500	15	40

* This includes masonry and other novel materials.

2025		Normalised by floor area		
	Total used tns	Per m² developed kg/m²	Per m² added kg/m²	% Change from 2024
New concrete	139,730	810	1,260	+18%
New steel	8,990	55	85	-40%
New timber	510	10	10	-33%
New other*	1,860	20	20	-50%

* This includes masonry and other novel materials.

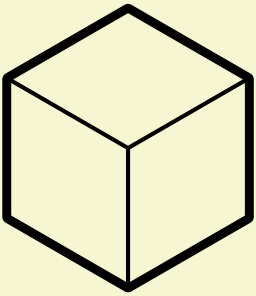
Although overall material use increased in absolute terms, this is because we built far more. When measured against new floor area, intensity fell for all materials except concrete.

Given that this analysis is based on a sample of 15 projects each year, these fluctuations are influenced by the nature of each individual project, rather than intentional changes in design.

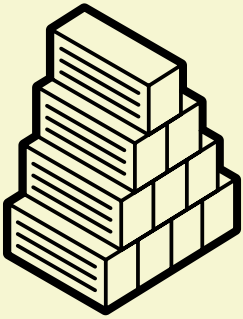
As different projects progress into construction each year, we expect these metrics to fluctuate. The more important measure will be the longer-term trends. We are continuing to work with our teams to understand what good looks like over time and how the insights from this report can inform future projects, engineering decisions and material choices.

A full-time engineer uses 1,900 tonnes of concrete per year.

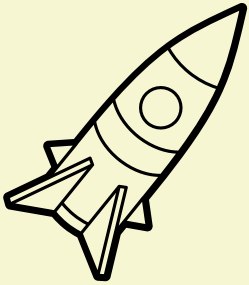
That equates to:



A cube measuring 9.2 x 9.2 x 9.2m



10 40-ft shipping containers



A fully fuelled space rocket

Summary

152,000	tn of material used overall
140,000	tn of concrete used
1.26	tn of concrete for every m^2 of new floor area

Concrete

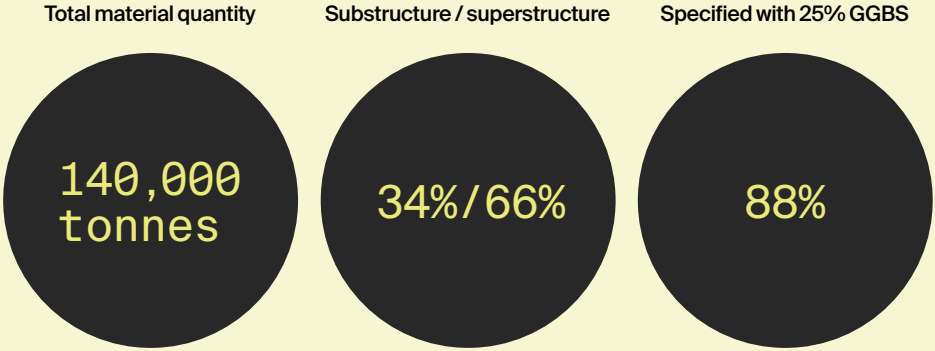
Concrete accounts for around 80% of the embodied carbon associated with the materials we specify.

As expected, slabs account for the majority of the concrete we specify, with C32/40 continuing to be the most common strength grade.

However, we should note that our carbon accounting often does not reflect the exact concrete mixes used on site. Therefore, in future years, we commit to examining our most used concrete mixes.

Over the past year, we have:

- Up-skilled our teams to improve knowledge of concrete specifications and embodied carbon impacts
- Worked with suppliers to understand market developments and the availability of lower-carbon cement solutions
- Contributed to industry-wide progress through the Accelerating Concrete Decarbonisation Group (ACDG)
- Developed lightweight floor systems with industry partner VaultedAG, significantly reducing concrete volumes in slab construction
- Began writing new concrete specifications to be aligned to the latest in sustainability and low carbon concrete mixes



Quantity Breakdowns

Substructure

41.6M (86%)
Foundations

6.6M (14%)
Floors



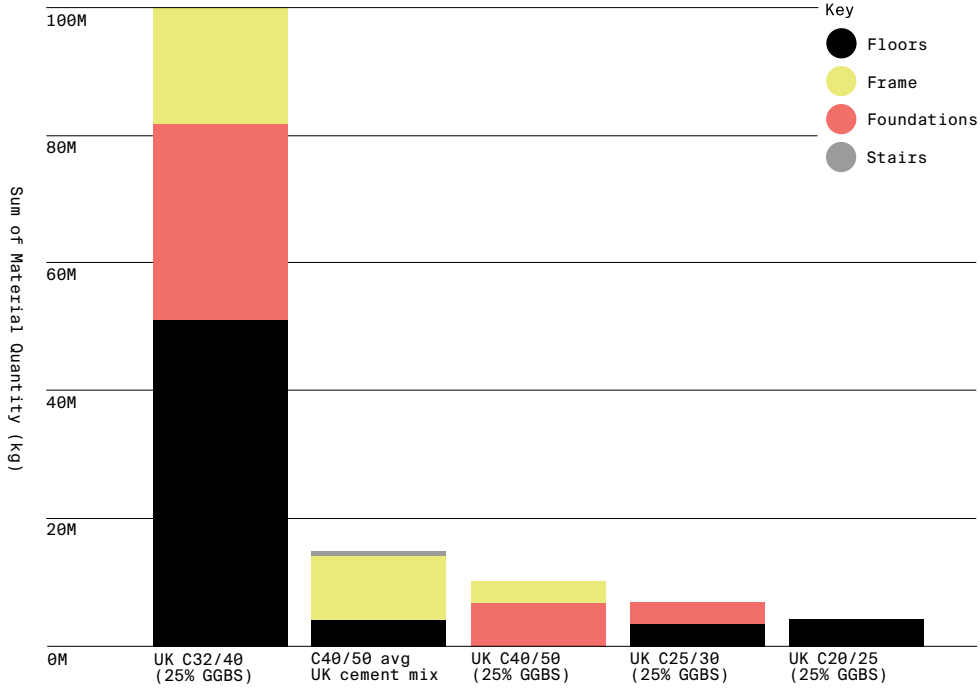
Superstructure

58M (63%)
Floors

33.1M (36%)
Frame

0.43M (0.5%)
Stairs





Concrete

Bushra Rahman explores how Elliott Wood is building the evidence for lower-carbon concrete



Bushra Rahman
Structural Engineer
Elliott Wood

Elliott Wood is exploring emerging lower-carbon concrete technologies through its involvement in the Accelerating Concrete Decarbonisation Group (ACDG). Founded by Derwent London, the industry-wide initiative brings together stakeholders across the design and delivery chain to accelerate the testing, specification and adoption of lower-carbon concrete.

Bringing developers, engineers, contractors and concrete suppliers into the same conversation is critical. New materials need not only technical validation, but also client demand, confident specification, practical construction knowledge, and a supply chain capable of delivering them at scale.

Earlier this year, Bryony Benn and I visited the built prototypes of the concrete mixes being tested and saw firsthand the use of calcined clay produced from recycled brick dust alongside Ecocem ACT. We then brought these learnings and insights back to the wider team, sharing findings and helping build greater understanding and confidence around where emerging materials could be used in practice.

What I've particularly enjoyed is the investigative and collaborative nature of the work. Bringing together engineers, developers and concrete suppliers means we're not only generating the evidence needed to understand these mixes, but also creating the confidence and demand needed for them to be used more widely.

An important part of our work is building familiarity with BSI Flex 350, which provides a route for assessing lower-carbon concretes that sit beyond existing standards. That knowledge strengthens our ability to evaluate emerging technologies and give clients informed, practical advice on reducing embodied carbon.




KILNBRIDGE

Steel

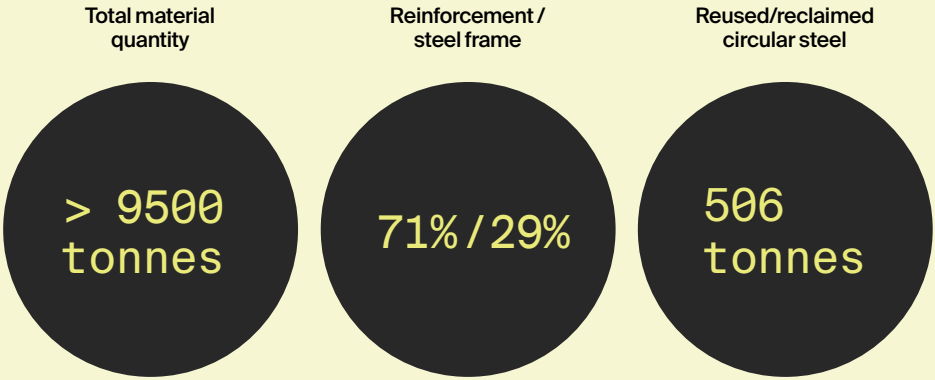
This year, our steel material quantity increased dramatically.

Given that reinforcement makes up 71% of our steel material use, the increase in floor area developed and subsequent concrete use has contributed to this sharp rise.

Understanding our material use trends is critical in guiding our decision-making on where to focus our efforts. This is why we are now providing a more detailed breakdown of our material use.

There are also positives in where our steel came from. Although reinforcement is a high percentage of the steel we specify, UK reinforcement is predominantly produced in electric arc furnaces from approximately 97% scrap, which significantly reduces its environmental impact. Within steel frames, 18% of the steel we specified came from the reuse market and donor buildings.

Understanding these trends is critical to deciding where we focus our efforts. That is why we are now providing a more detailed breakdown of our material use, so we can track where reductions are being made and where the greatest opportunities remain.



Quantity Breakdowns

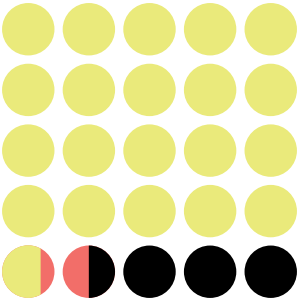
Steel frame (reinforcement excluded)

Element

83%
Frame

14%
Floors

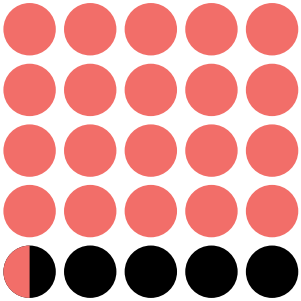
3%
Foundations

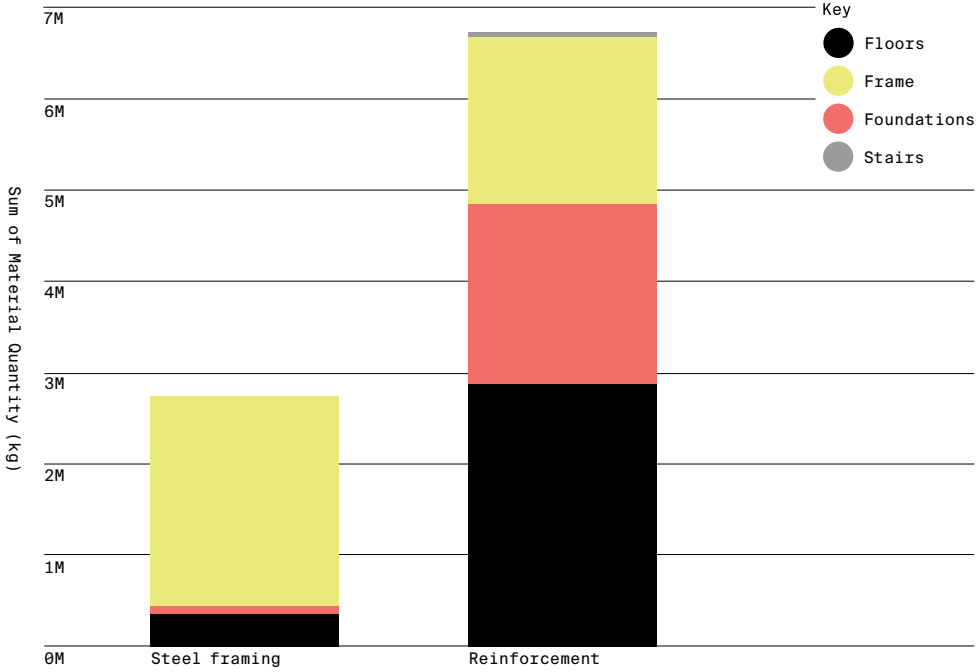


Steel Provenance

82%
New

18%
Reused





Steel

Reusing steel to make the biggest impact



Gemima Walker
Associate Director
Elliott Wood

Reuse is where steel's embodied carbon can fall furthest, and GPE's 30 Duke Street has been at the centre of that shift for Elliott Wood. This year, Gemima Walker and her team topped out London's largest commercial reuse project, saving 744 tCO_2e of embodied carbon.

Delivering the project meant working through every stage of the reuse process: identifying suitable steel during demolition, assisting in the recovery, stock-matching to the new development and supporting refabrication and material passporting. Compared with virgin steel, the embodied carbon of reclaimed steel is 10 to 50 times lower, depending on the production route.

"The biggest challenge on this project was the sheer quantity of material we were aiming to reuse. It was around 440 tonnes," says Gemima. "So all of that material had to be tested, categorised, checked for damage and then incorporated into our design.

But we had an excellent team on board with the right expertise to solve all the technical challenges along the way."

At the same time, wider market pressures are making reuse an increasingly practical option. Imported steel faces tariffs, quotas and carbon border adjustment mechanisms (CBAM) and UK electric arc furnace production of rolled structural sections is still years away. Until then, low-carbon steel frames continue to rely heavily on imports, bringing price and programme risk.

Reuse is already part of the answer. The BCSA's decarbonisation roadmap shows that 13% of UK steel is reused, with an aim to raise that figure.

"Reclaimed steel is already here," says Megan Greig. "It's domestic, it isn't subject to import duties or CBAM, and it's less exposed to swings in the global market. For clients, reuse protects programme and cost certainty as well as cutting carbon. To raise that 13%, we need to ask the reuse question at the start of a project, build stock-matching into early design, and make working with reclaimed steel routine for contractors and fabricators."



67%
● Reclaimed Steel - Donor building
375 tonnes

6%
● Reclaimed EMR - 32 tonnes

4%
● Reclaimed Cleveland Steel -
23 tonnes

1%
● Recovered Cleveland Steel -
6 tonnes

0.5%
● Reclaimed FRH demo - 3 tonnes

10%
● New - Sections - 56 tonnes

New
● Connections

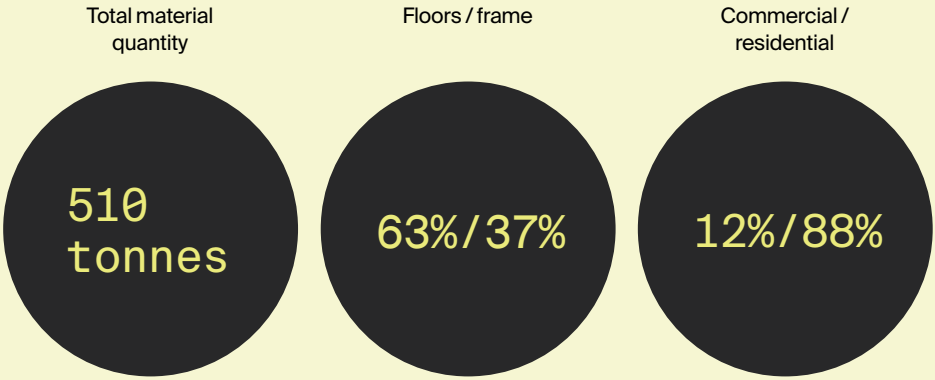


Timber

Our timber use remained broadly stable this year, at 510 tonnes, while timber per m^2 of floor area added fell by 33%. The majority of the timber we specified was softwood joists in residential projects.

These joists are typically specified as C24 and sourced from mainland Europe. This presents a clear opportunity for us as engineers. Although C24 is a higher strength class, C16 is perfectly suitable for many typical applications, and UK-grown softwood is far more likely to achieve a C16 grade. Specifying C16 where it is appropriate would allow us to support British forestry and local jobs, while reducing transport emissions.

Next year, we commit to raising awareness of timber specifications across the business and to identifying how we can track it within our reporting.



Quantity Breakdowns

Element

63% Floors

37% Frame

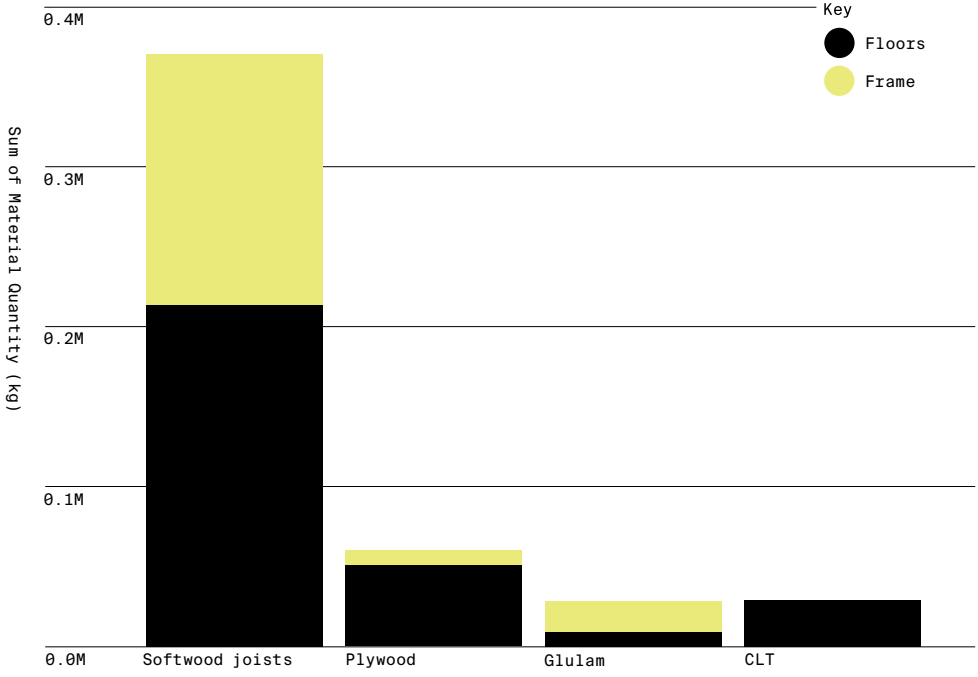


Typology

88% Residential

12% Commercial





Timber

Reclaiming structural materials to reduce construction waste

On one project, recently installed CLT slabs were identified for removal to make way for a new staircase. Rather than allowing high-quality timber to become waste, a visitor to the site asked whether there was another option.

By making the right connections on site, the slabs were diverted from landfill and given a new life at Tipping Point East.

It was not driven by policy or process, but by a simple belief that it was the right thing to do.

The project demonstrates how individuals can create meaningful change by questioning assumptions and looking for opportunities to keep materials in use, even on projects that are not our own.

In this case, the materials have found their home at a circular construction hub, a live testing ground for new models of reclamation and circular construction.



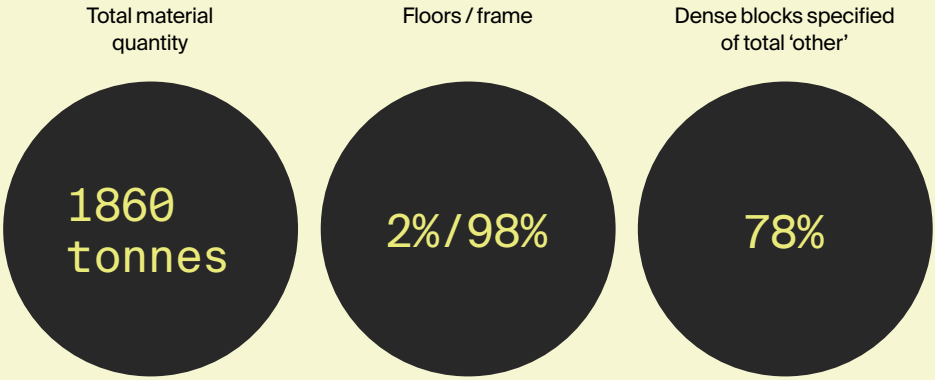
Image credit: Henry Woide

Brick and Other Materials

Our use of other materials, mainly blockwork and brickwork, rose from 1,500 to 1,860 tonnes this year. However, the quantity per m^2 of floor area added halved, from 40 to 20 kg/m^2. Use was fairly evenly spread across sectors, and mostly within walls.

The breakdown shows that much of this is dense concrete blockwork. Dense blocks are heavy and cement-intensive, so they represent a meaningful share of our embodied carbon that is rarely scrutinised in the way frames are.

Next year, we will explore and encourage alternatives to dense blockwork with better environmental outcomes, such as lightweight or aerated blocks, low-cement or recycled-content products, reclaimed brick, and lightweight partition systems where they are suitable.

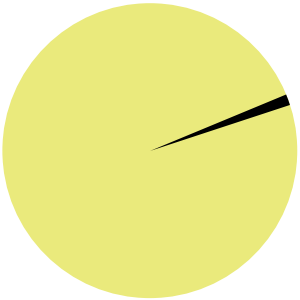


Quantity Breakdowns

Element

98%
Frame

2%
Floors



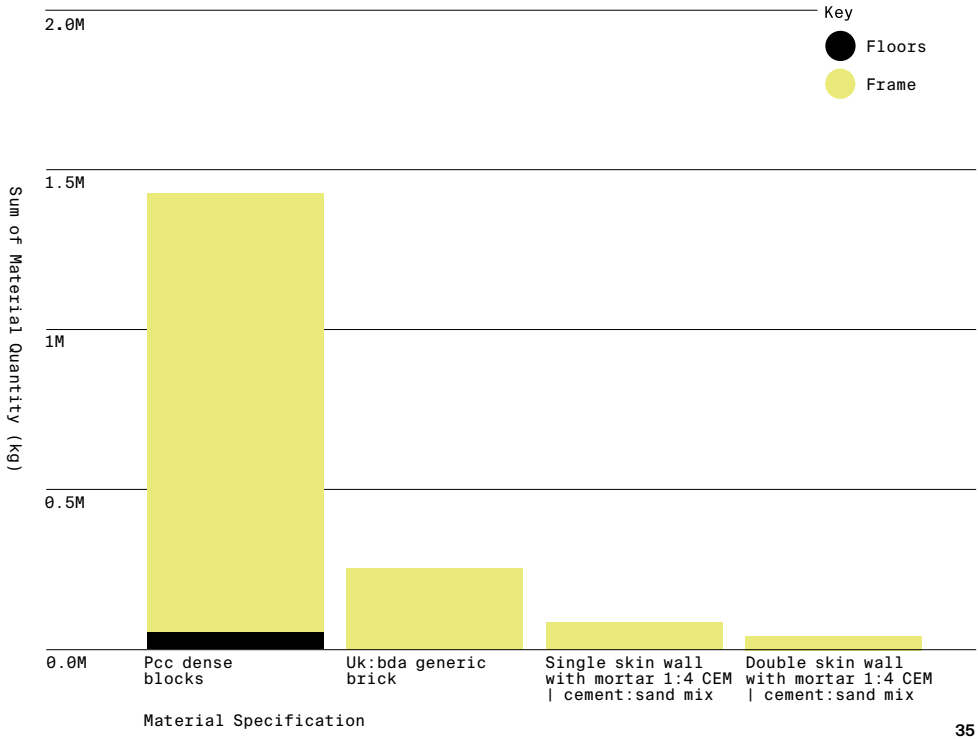
Typology

41%
Commercial

39%
other

21%
Residential





Brick

Reducing the impact of bricks



Abe Farquharson
Structural Engineer
Elliott Wood

Charlotte Hitchens and I visited H.G. Matthews to see how bricks are made and what a manufacturer can do to reduce their impact.

That starts with clay extraction. It must protect local ecosystems and preserve reserves. H.G. Matthews extracts most of its clay on site, helping it continue production while other small and medium-sized manufacturers have closed after exhausting theirs.

Firing is another challenge. Bricks need temperatures of up to 1,100°C and a stable heat curve to vitrify and reach the required strength. Moving away from fossil fuels is difficult while infrastructure for alternatives is still developing.

I was struck by what H.G. Matthews does within its existing process. Unfired cracked bricks return to the clay mix; fired rejects become graded fill. Rainwater collected from the roofs and moisture recovered from drying are reused in production.

Its drying ovens run on wood chips rather than gas or oil, using wood from dead and diseased trees on its land. Solar panels generate energy on site too. Even the machinery tells a story of reuse: some of the equipment processing and forming the clay is more than a century old, and some came from factories that have since closed.

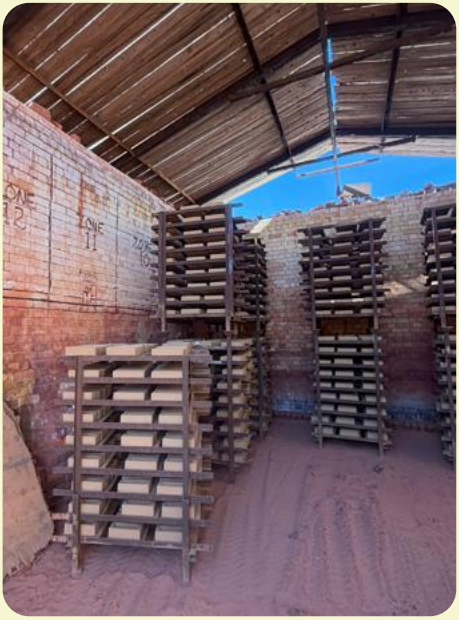
Newer approaches offer other possibilities. H.G. Matthews has developed unfired clay-and-straw STROCKS for internal partitions and basement lining walls. Removing firing substantially reduces embodied carbon. Hydrogen and electric kilns could reduce reliance on fossil fuels. Cementitious bricks made with historic steelmaking waste can absorb carbon as they cure, though steelmaking by-products are a constrained global resource.

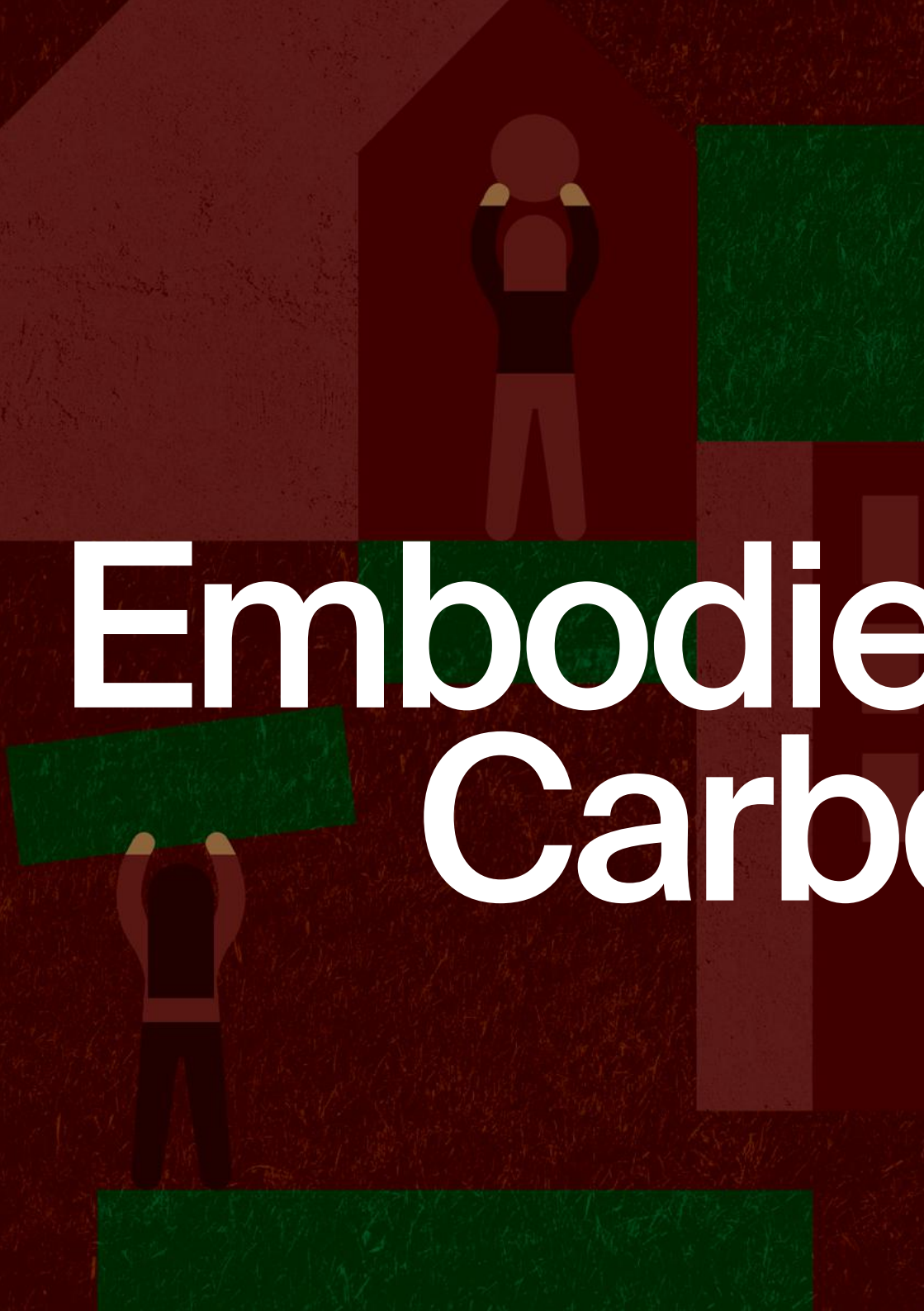
I came away with a clearer sense of what steps are required to produce bricks with lower carbon. The source of the clay, the energy used, transport and what happens to waste all affect the outcome. Looking at those factors together helps us judge where a different product or process could make a meaningful difference, while still meeting the demands of a project.

Above all, we should increase the use of reclaimed bricks from development sites across the country.








Embodie
Carb

“”

We must abandon the conceit that individual, isolated, private actions are the answer. They can and do help. But they will not take us far enough without collective action.

Al Gore



ed

on



The Carbon Impact Of Engineering

Last year, the material impact was calculated for 14 projects, with a meaningful start on site and a value over £5 million.

The total upfront carbon associated with these schemes was approximately 36,300 tCO_2e.

This translates to approximately 500 tCO_2e per full-time structural engineer. More carbon than each engineer is likely to be responsible for over the rest of their personal life.*

All schemes achieving less than the structural embodied carbon budget target for 2025 were refurbishments. None of our new builds achieved the allotted budget.

Refurbishment and reuse are necessary to stay within planetary boundaries and embodied carbon budgets. We cannot solely rely on new-build.

*www.carbonindependent.org

	Average Upfront Carbon		
Year	All floor area developed	All new floor area developed	Total Carbon
2024	260 $kgCO_2e/m^2$	475 $kgCO_2e/m^2$	23,100 tCO_2e
2025	211 $kgCO_2e/m^2$	327 $kgCO_2e/m^2$	36,300 tCO_2e
% Change	-16%	-31%	+57%

Upfront Carbon Emissions

Scors Estimated 2025 Structural Embodied Carbon Budget

235 $kgCO_2e/m^2$

Average $kgCO_2e/m^2$ All Floor Area 2025

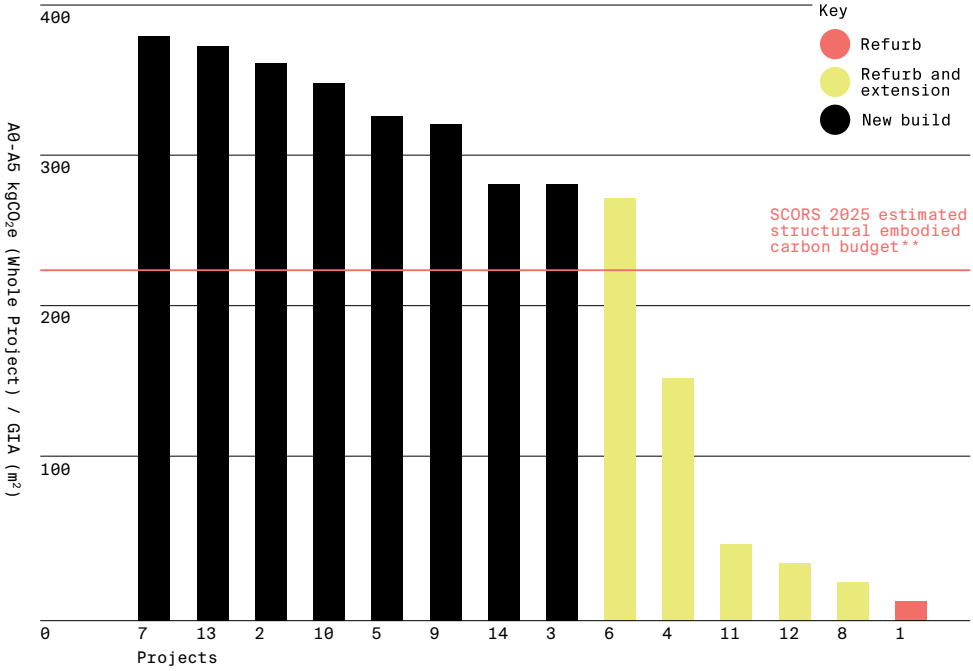
211 $kgCO_2e/m^2$

Average kgCO2e/m2 New Floor Area* 2025

327 $kgCO_2e/m^2$

*Excluding retained area

Upfront carbon emissions for qualifying projects



*2020: Arnold W., Cook M., Cox D., Gibbons O. and Orr J. (2020) 'Setting carbon targets: an introduction to the proposed SCORS rating scheme', The Structural Engineer, 98 (10), pp. 8–12; https://doi.org/10.56330/SQDI8782

The Difference in Design vs As-Built

Why as-built quantities matter

Reporting embodied carbon is only as reliable as the quantities behind it. Design-stage assessments depend on assumed rates, and where those assumptions drift from what is actually installed, the reported carbon drifts with them.

Reinforcement is the clearest example. On one project, the as-built reinforcement tonnage was over 40% above the quantity in our carbon tool.

Our carbon tool uses generic industry reinforcement rates. These are broad benchmarks rather than project-specific figures, and in practice they are often too low, so the resulting carbon can be understated.

We commit to doing this better; calibrating our assumed rates against as-built data and closing the loop between design assessments and what is really built.



A second example: aluminium facade

On one of our sustainability projects, we compared design-stage assumptions with the quantities later provided by the aluminium subcontractor. The uplift was significant, and unpicking it showed how hard quantities are to pin down once design meets the physical reality of fabrication.

Design stage applies percentage wastage factors in line with industry guidance. In practice, extrusions come in fixed stock lengths, so a shorter cut piece can leave offcuts approaching 40% waste.

The lesson is as designers; a stronger connection to the supply chains means we can learn how to specify materials in a way to reduce wastage during fabrication.

Project: Reinforcement

415 tns	Carbon Tool Quantity
585 tns	As-Built Quantity
+41%	% Difference
146 tns	Carbon missed
146	Flights to London from New York

Embodie

E

Research suggests that we are in the sixth mass extinction event.

(Ceballos et al., 2015)



Impacts

ed
cological



Embodied Ecological Impacts

Whilst much attention has been given to the built environment's contribution to the climate crisis, comparatively less focus has been placed on its wider ecological impacts.

Measuring ecological impact, however, is challenging. Unlike carbon emissions, there is no single metric that is easily quantifiable and comparable across projects. Ecological impacts extend well beyond a project's boundary and can occur throughout complex global supply chains.

This raises some key questions:

Question 01

What metrics should be focused on: freshwater use; habitat loss; population decline; ocean acidification?

Question 02

How do you consider the loss of one ecosystem in comparison to another?

Question 03

Do we know where all our materials were sourced?

Question 04

Can you put a value on an ecosystem?

To raise awareness of this topic,
The UKGBC is developing a methodology
which looks at the holistic impacts of
5 key construction materials against
6 nature-based categories.

UKGBC Impact Rating

	Aggregate	Aluminium	Cement	Iron Ore	Timber
Biodiversity	4	1	1	1	1
GWP	1	2	2	4	0
Land Use Change	1	1	2	2	4
Freshwater	1	1	1	4	4
Ocean	4	1	1	1	1
Human	3	4	4	4	4

Each material is given a score from 0-4 (0 = no impact; 4 = very high impact) regarding their detrimental effect.

Using these metrics, we have undertaken a study to assess the embodied ecological impact of one of our projects. We have quantified the total mass of material for each of the 5 materials from the framework and applied the impact score for each of the six categories.

The results show that aggregates have by far the largest impact across all categories, predominantly due to the large quantity of raw material associated with the development (10,000 + tonnes). Cement and iron ore (used to produce steel) are the next two most impactful materials, with iron ore more impactful on GWP and freshwater only.

[2] This assessment is intended as an initial, high-level indication of EEI rather than a definitive measure of ecological harm. It does not include measures specific to the extraction material sites for this project. It is a first step for us towards understanding and thinking more widely about how we can assess impacts outside of carbon emissions.

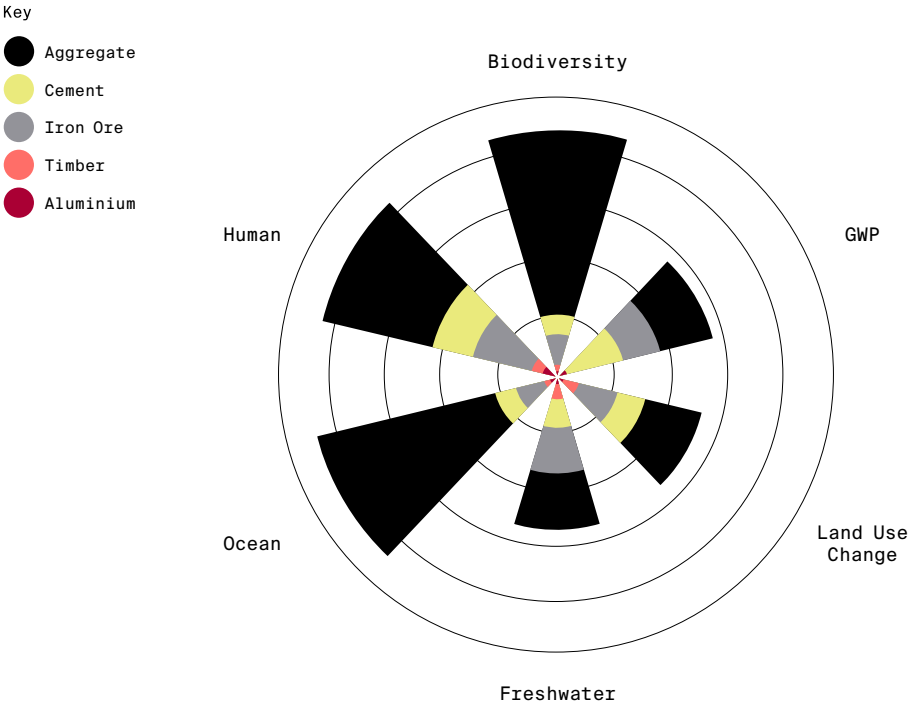
Embodied Ecological Impacts

What if we aren't even measuring, or aware of, the worst impacts of our decisions? Our study indicates that within our chosen project, biodiversity, human and oceanic impacts were far greater than global warming potential (i.e. carbon emissions).

Yet we're obsessed with measuring carbon.

Our results show that aggregates have the by far the largest impact across all categories, reflecting the substantial volumes of raw material required for construction, often exceeding 10,000 tonnes per development.

Cement and Iron ore (used to produce steel) are the next two most impactful materials, with iron ore more impactful on GWP and freshwater only.



Information taken from UKGBC Embodied Ecological Impacts - Materials Impact Scorecards

Aluminium

Aluminium ore (bauxite) used to produce aluminium products such as cladding and window frames

Sourced	Australia, China, Guinea, Brazil
Extraction	•Open pit mining
Key Impacts	•Habitat destruction and fragmentation •Water Stress •Soil and water pollution

Timber

Renewable material which has a variety of structural and architectural uses

Sourced	UK imports most of its timber from Europe
Extraction	•Logging (forests and plantations) •Not always sustainable
Key Impacts	•Soil erosion •Habitat destruction and fragmentation •Flooding and drought •Distruption to indigenous and local communities

Iron Ore

Metal ore used to create steel

Sourced	Australia, Brazil, China, India, Russia, South Africa
Extraction	•Open pit mining
Key Impacts	•Habitat destruction and fragmentation •Water stress •Soil and water pollution

Cement

Fine powder material commonly combined with aggregates to make concrete

Sourced	UK
Extraction	•Quarrying of limestone and clay
Key Impacts	•Habitat destruction (land and aquatic) •Erosion and sedimentation

Aggregate

Crushed natural materials (e.g. stone, gravel, sand) used to create concrete and cement

Sourced	>95% UK
Extraction	•Quarrying •Dredging (rivers and seabed) •Recycled aggregate
Key Impacts	•Habitat destruction (land and aquatic) •Water quality reduction •Erosion and sedimentation

7 Generati



“”

We have lived by the assumption that what was good for us would be good for the world. We have been wrong. We must change our lives, so that it will be possible to live by the contrary assumption that what is good for the world will be good for us.

Wendell Berry
The Long-Legged House


ons
Targets

Making decisions with future in mind

Seven Generation Thinking is the practice of making decisions today with the wellbeing of people seven generations into the future in mind, leaving future generations with greater opportunities and fewer burdens than we inherited ourselves

Workshops

Last year, we reflected on what a more sustainable future for materials at Elliott Wood could look like. This year, we brought together colleagues from across the practice to explore how a Seven Generations lens could shape our internal policies, material targets and decision-making.

Over two workshops, we examined the principles and application of Seven Generation Thinking, identifying long-term aspirations and practical actions that could help Elliott Wood deliver regenerative, nature-positive and socially responsible outcomes, with decisions guided by the needs of the next seven generations

We focused on themes of circularity, material use, biodiversity, supply chains, innovation and social responsibility.

We identified what we need to measure, policy shifts required and our vision for success in 5 years.

Internal Changes	External Changes
Introduce a hierarchy of preferred materials.	Advocate for stronger planning policy requirements around engagement.
Increase staff education regarding materials and environmental impacts.	Increase contractor willingness to work with reclaimed materials.
Build sustainability considerations into fee proposals.	
Establish formal review and approval of material sources	

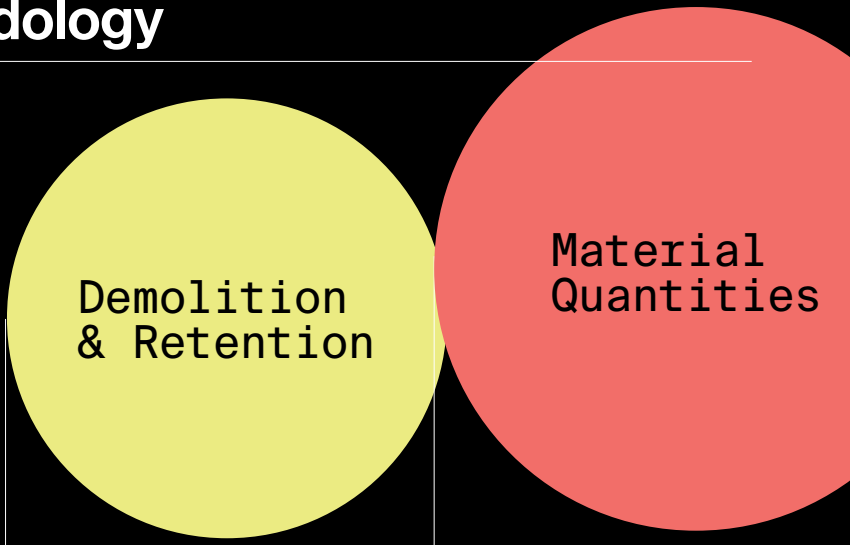
Theme	Potential Metrics
Community Engagement	Number of projects involving public engagement; participation rates.
Materials	Percentage of reused materials; urban mining rate; material bank utilisation.
Embodied Carbon	Embodied carbon reductions and material efficiency.
Supply Chains	Material source mapping; percentage of materials with known provenance.
R&D	Investment in research; published papers; innovation outputs. Attendance at workshops, training and academy programmes.
Biodiversity	Material and project impacts on nature and biodiversity outcomes.

Visions of Success

- Significant reductions in virgin material extraction.
- Material sourcing routinely mapped and understood.
- Reuse of steel, concrete and brick becoming standard practice.
- Projects delivering regenerative outcomes.
- Increasing levels of community engagement.
- A recognised programme of research and published work.
- Sustainable supply chains embedded in project delivery.
- Winning projects because of Elliott Wood's sustainability expertise.
- Clients recognising and valuing long-term environmental and social outcomes.

Our plan in the next year is to continue this work to develop real, actionable targets for the business which we will include into next year's report.

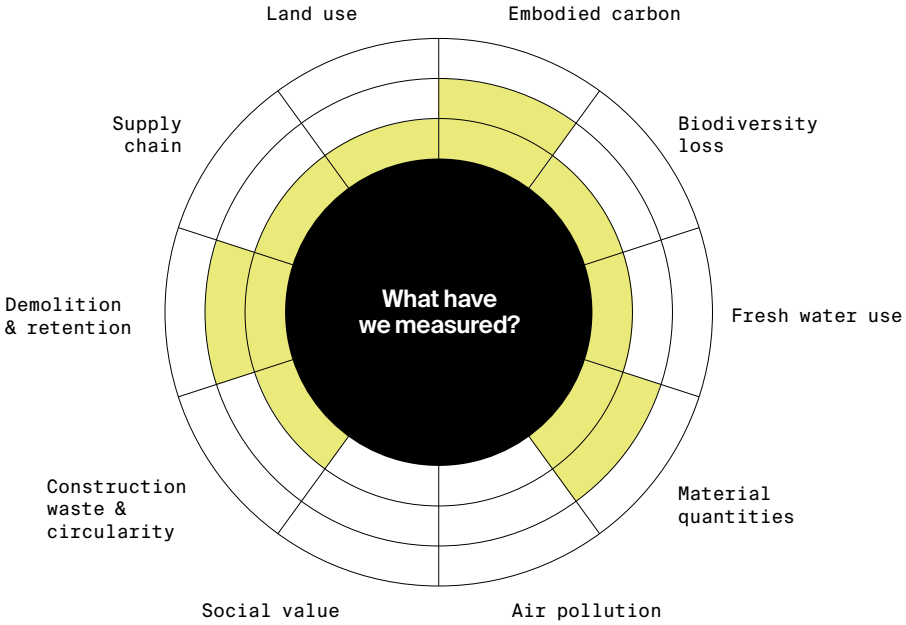
Methodology



	Demolition & Retention	Material Quantities
Qualification	●Floor area demolished, retained and new has been estimated using BIM models	●Material estimated based on engineering calculations and BIM model outputs
Coverage	●Calculations undertaken for projects with a construction value over £5 million and a meaningful start on site in 2025	
Quality Assurance	●All areas checked with design teams and modellers	●All calculations checked against requirements of RICS v2 by sustainability team
Materials Included	N/A	●Structural materials such as concrete, steel, reinforcement, masonry, blockwork and timber.
Carbon Factors		
Human		

	Carbon Impacts	Embodied Ecological Impacts
	●Material uncertainty factor of 15% applied as all information collected is based on design information	●Material estimated based on engineering calculations and BIM model outputs ●Material uncertainty factor of 15% applied as all information collected is based on design information
		●A new-build development in central London with a construction value over £5 million and a meaningful start on site in 2025
	●Any additional materials required to meet structure performance such as screeds.	●Aggregate, aluminium, cement, iron-ore, timber
	●Average carbon factors have been used for all projects unless EPDs have been provided. Average factors have been used for transport, site waste and construction emissions as recommended in RICS v2 and IStructE guidance.	
		●Impact ratings taken from UKGBC Embodied Ecological Impacts - Material Impact Scorecards ●Total impact taken as a factor of material quantity x impact rating for each impact category

Next Steps



Compared to last year we have:

1. Provided a more detailed breakdown of material use to help understand areas to target for reduction or change.
2. Studied the importance of as-built data vs design for understanding true material use.
3. Engaged with industry on low-carbon concrete, circular steel, timber and brick.
4. Undertaken a study on how our material use affects wider ecological impacts outside of carbon.
5. Explored with all staff, our long term targets for material use and what themes they should be based around.

01

What we commit to:

Continuing our investment into structural innovation, low carbon materials and circular economy.

Quantify the retained materials, where possible on projects.

Improve the accuracy of our reinforcement estimations in our carbon tool.

Continue the work into embodied ecological impacts.

Set out long term 7 Generations targets for material use.

02

How we will achieve it:

Continue collecting data for projects, as done previously, building and improving on our methodology to help us draw better insights.

Continue our work into ecological impacts, collaborating with external partners to further our understanding.

Engage with the staff through workshops, collaborating on setting out the future direction for Elliott Wood.

We'd love to hear from you — and together we can Engineer a Better Society by rethinking material use and its wider impact.

If you'd like to join Elliott Wood, Society Building or contribute to The Building Archives, please get in touch.

• Elliott Wood
Society Building
55 Whitfield Street
London W1T 4AH

info@elliottwood.co.uk
+44(0)20-7499-5888
• elliottwood.co.uk
• thesocietybuilding.co.uk
• thebuildingarchives.co.uk

ElliottWood

Certified B Corporation