

ESBEM Seminar: Accelerating adoption of UK low environmental impact construction materials

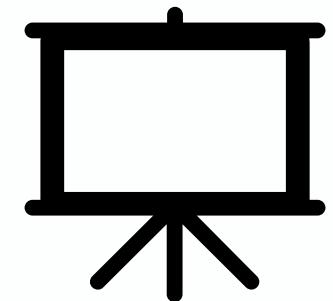
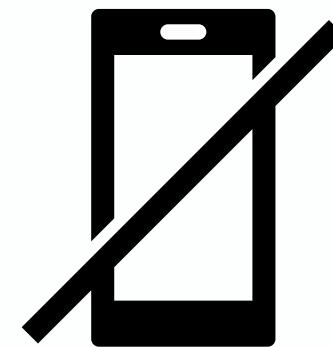
09:30 - 16:30, 22 January 2026
Birmingham



**Innovate
UK**

**Business
Connect**

Housekeeping



Event Welcome



Neil Appleton

Knowledge Transfer Manager
Innovate UK Business Connect



About Us

Innovate UK Business Connect exists to connect innovators with new partners and new opportunities beyond their existing thinking – accelerating ambitious ideas into real-world solutions.



Innovate
UK

Business
Connect



Our Purpose & Vision

We are part of Innovate UK, the UK's innovation agency.

We create diverse connections to drive positive change.

To establish a network of innovators so powerful its ideas will change the world.



Innovate
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Emergent Sustainable Built Environment Materials – INNOVATION NETWORK

Ambition

- ✓ Drive adoption of UK low environmental impact construction materials

Technologies

- ✓ Bio-based
- ✓ Valorised Waste
- ✓ Reused and repurposed materials & products

Tools

- ✓ Knowledge sharing
- ✓ Network building
- ✓ Enabling Collaboration
- ✓ Collaborative problem solving
- ✓ Support
- ✓ Online connection finder



Understanding barriers and blockers



Testing, Certification and Acceptance

- ✓ 50 Support calls
- ✓ 100 B2B Collaborations brokered
- ✓ 8 competitions / opportunities socialised

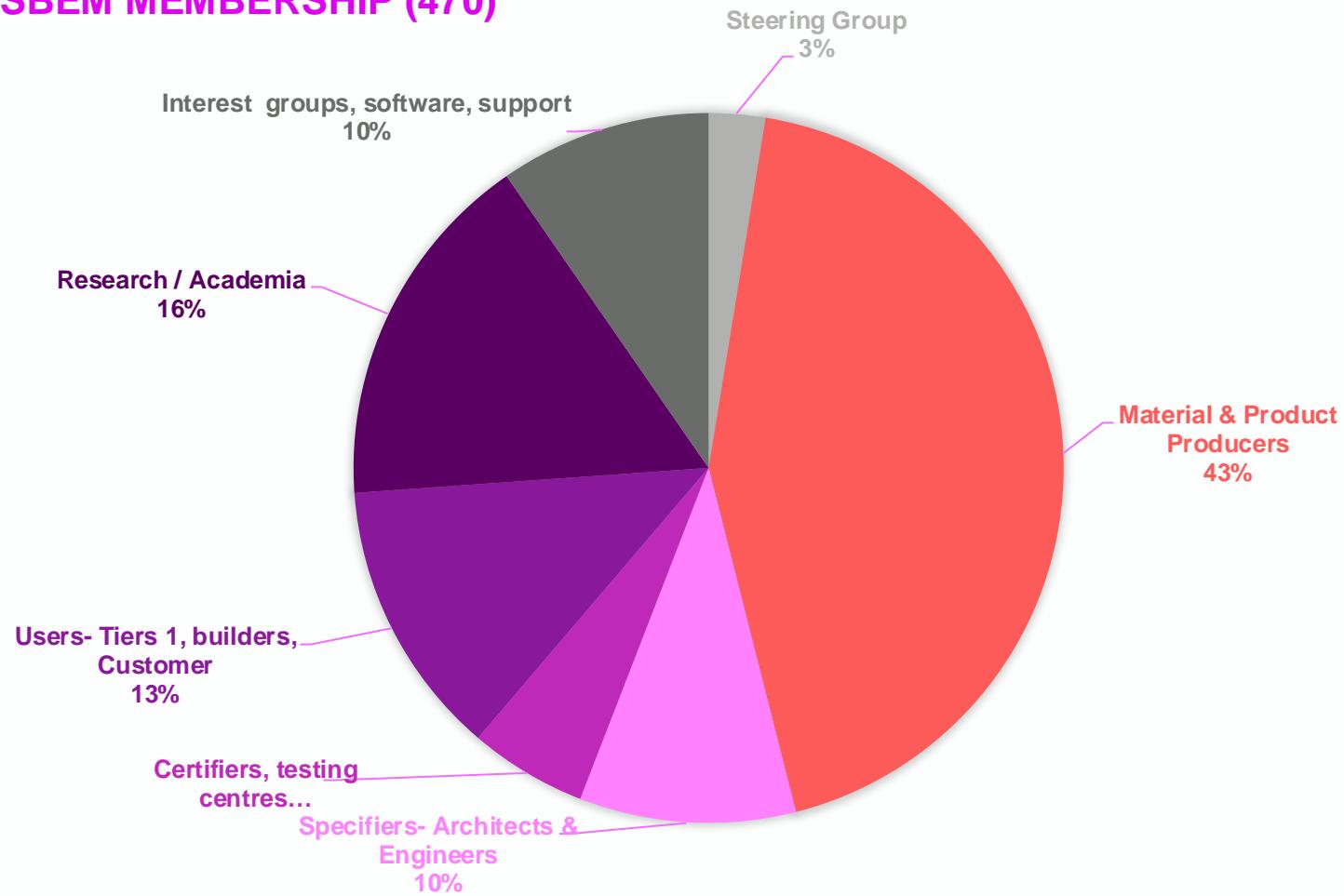


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Emergent Sustainable Built Environment Materials – INNOVATION NETWORK

ESBEM MEMBERSHIP (470)



Innovate
UK

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Connect

Your day at a glance



Tabletop
Exhibitors



Networking
Breaks



I want to
meet sheet



Lean on us
to connect

Session	Featuring
Keynote – Net Zero Buildings Standard	Will Arnold
Panel Session- Customer Pull	Reef & Partners, Sustainable Ventures, ASBP, ARUP, Barefoot Architects
Elevator Pitches	
Networking Lunch	
Elevator Pitches	
Panel Session- Accelerating Adoption	Cullinan Studio, Useful Simple Trust, Architype, UKGBC
Tea Break	
Unlocking Technology Innovation	HVMC, CPC, Innovate UK Business Growth, Bangor University



Missed a key contact?

neil.appleton@iukbc.org.uk

Keynote: Landscape for Change



Will Arnold
Head of Sustainable Materials
Useful Simple Trust



UK Net Zero Carbon Buildings Standard

Demanding a difference

22 January 2026



The Institution of
StructuralEngineers



RIBA



Will Arnold FIStructE HonFCABE CEnv CEng

NZCBS Technical Steering Group Member

- Embodied Carbon Lead
- Version 1 Technical Author

UST Head of Sustainable Materials

(+ Part Z, Bath University, ex-IStructE etc.)

Theory...



...into practice

Useful Simple
Trust



What is the Standard?



UK Net Zero Carbon
Buildings Standard



I wonder what's
for dinner...

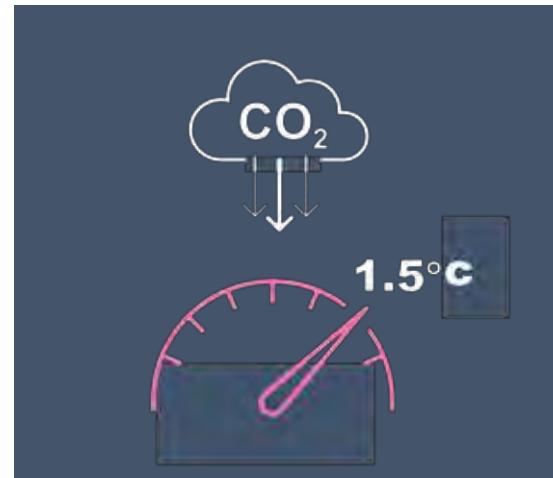
UK Net Zero Carbon Buildings Standard



Rule book



Carbon & energy



Science-led



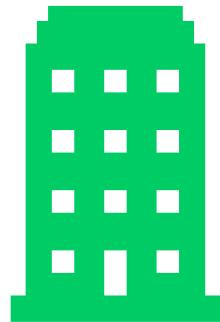
Industry-driven



The Institution of
StructuralEngineers



Scope



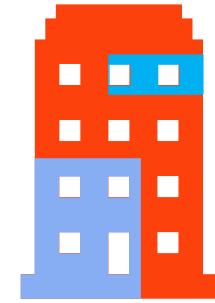
New buildings



Existing buildings,
retrofits, refits



Extensions



Mixed-use
buildings

Commercial
Residential

Culture and
Entertainment

Data Centres

Healthcare

Higher Education

Homes

Hotels

Offices

Retail

Schools

Science and
Technology

Sport and Leisure

Storage and
Distribution

Requirements



Limits:



Upfront carbon



Operational energy



Fossil fuel free



District heating and cooling networks



Refrigerants



Heating delivered

Targets:



On-site renewable electricity generation

Optional:



Offsetting & renewable electricity procurement

Reporting:



Life cycle embodied carbon



Operational water use



Electricity demand



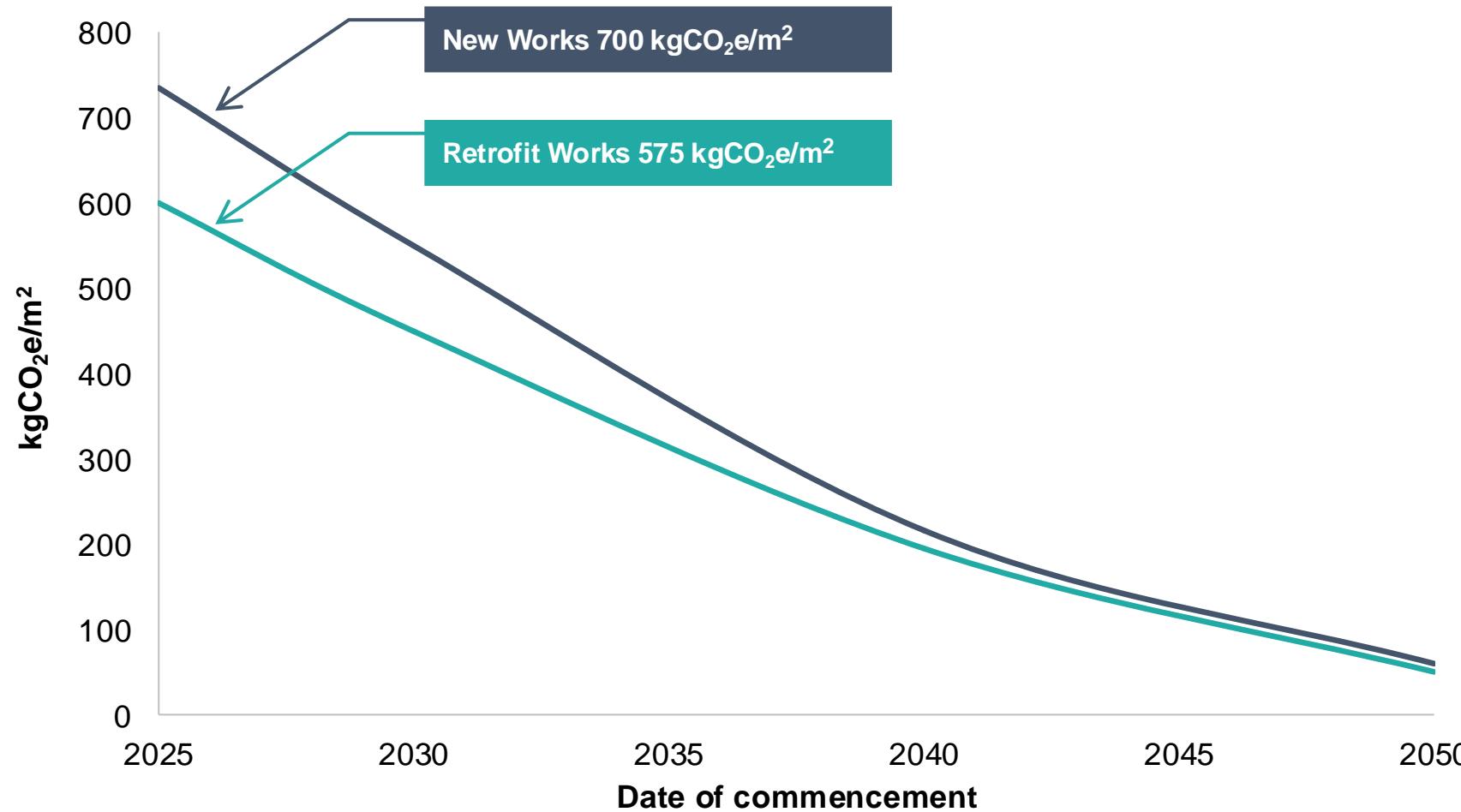
Heating and cooling delivered

A materials revolution



UK Net Zero Carbon
Buildings Standard

Upfront carbon limits (offices)



(Limits taken from Pilot rev2 and subject to change for Version 1)

Industry decarbonisation plans



Ideas so far...

- Production efficiency
- Hydrogen
- Carbon capture
- Electrification
- Transport decarb



Evolving the ‘big five’



concrete.org.uk/fingertips/dd51-calcined-clay/



istructe.org/resources/guidance/the-role-of-scrap-in-steel-decarbonisation/

Reclaimed materials



Tan House footbridge ©Glen Crouch



Castlefield Viaduct



Lower Thames Crossing, Useful Studio and Expedition Engineering.



Tan House footbridge ©Glen Crouch



Duncan Creek Bridge, Kansas, USA. ©Robert Elder



Relocated Bridge ©Acrow

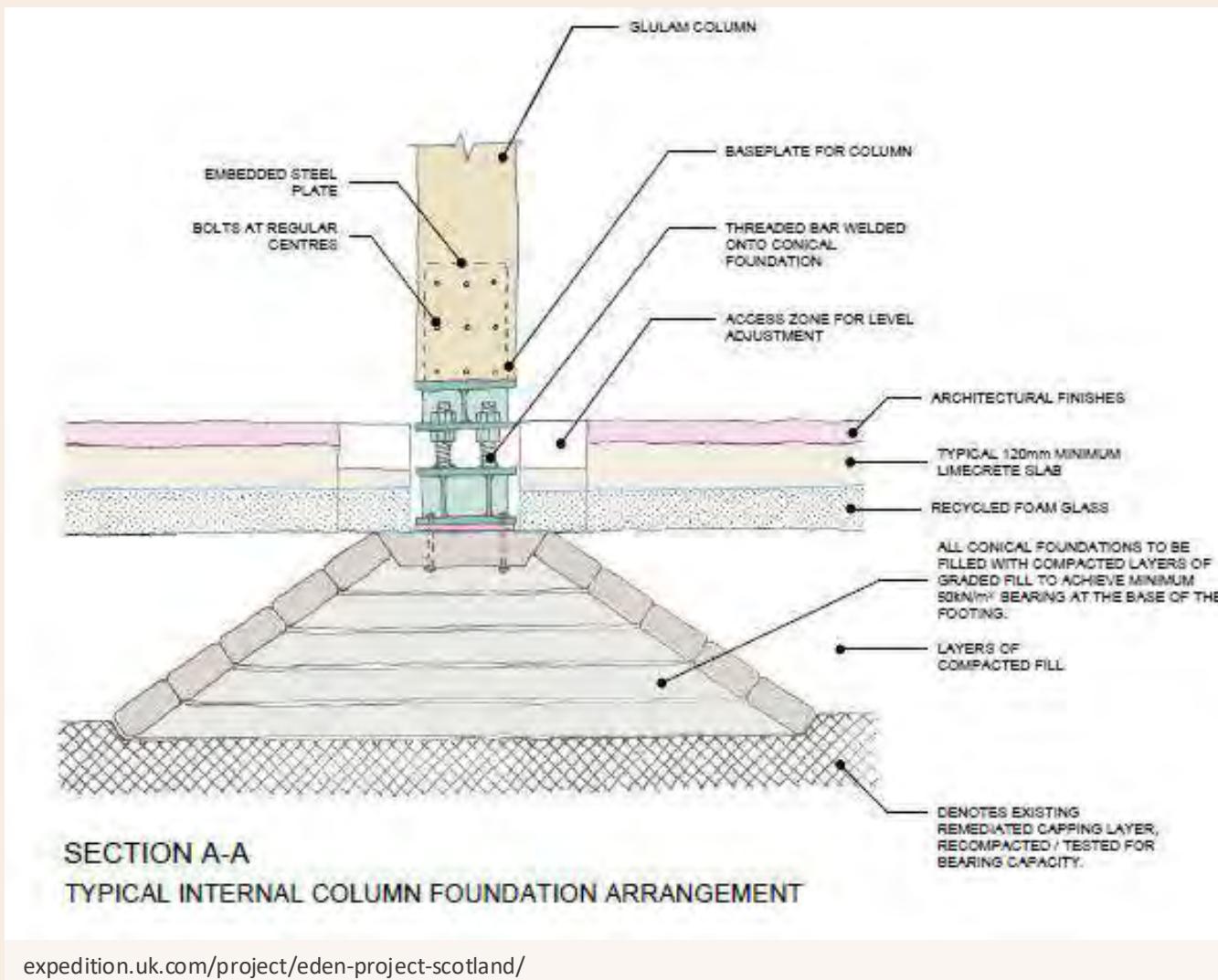
Alternative materials



globalgeneration.org.uk/our-gardens/triangle-site



New building elements



Net Zero Carbon Housing



easthemel.co.uk/westwick-row



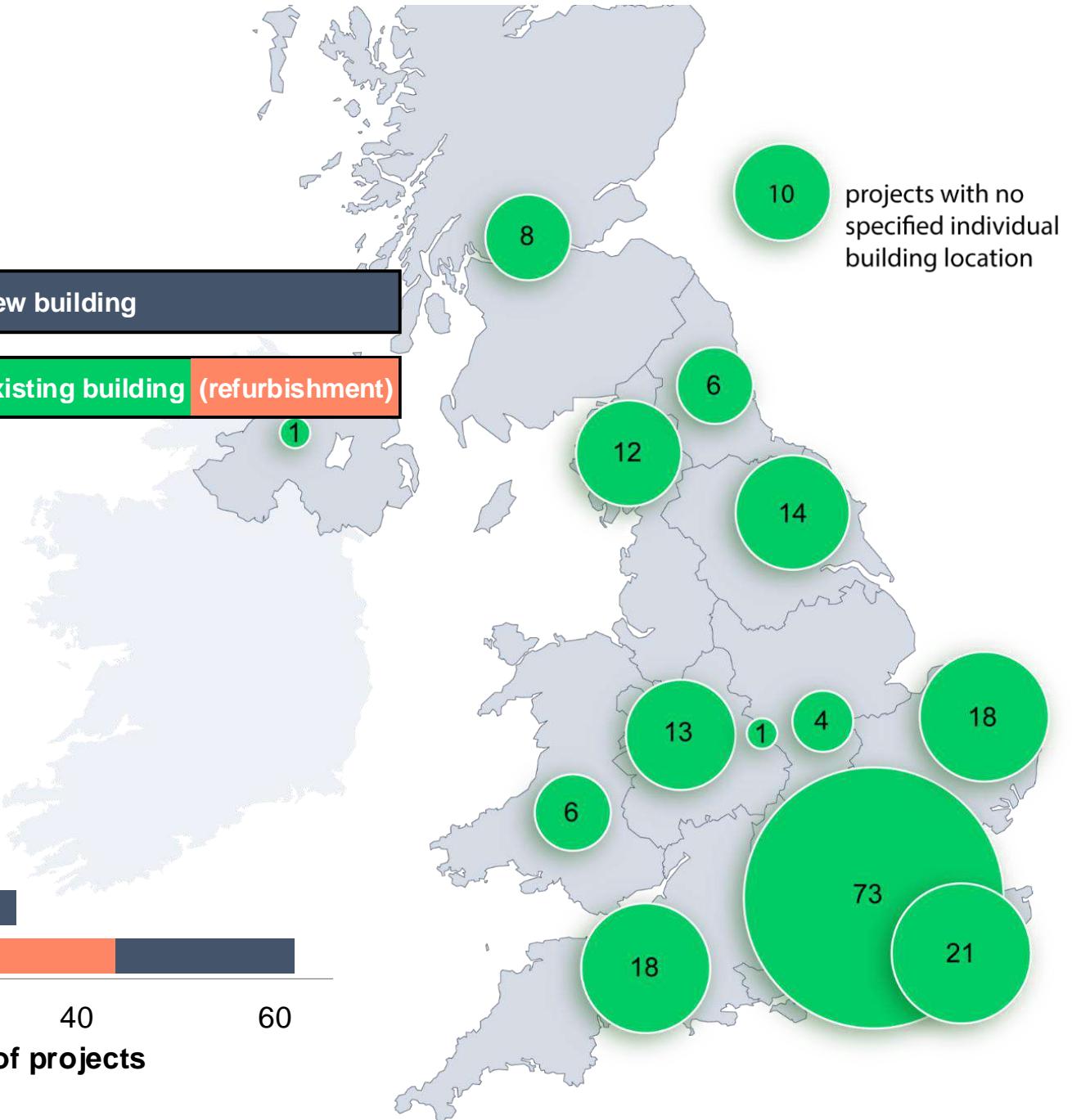
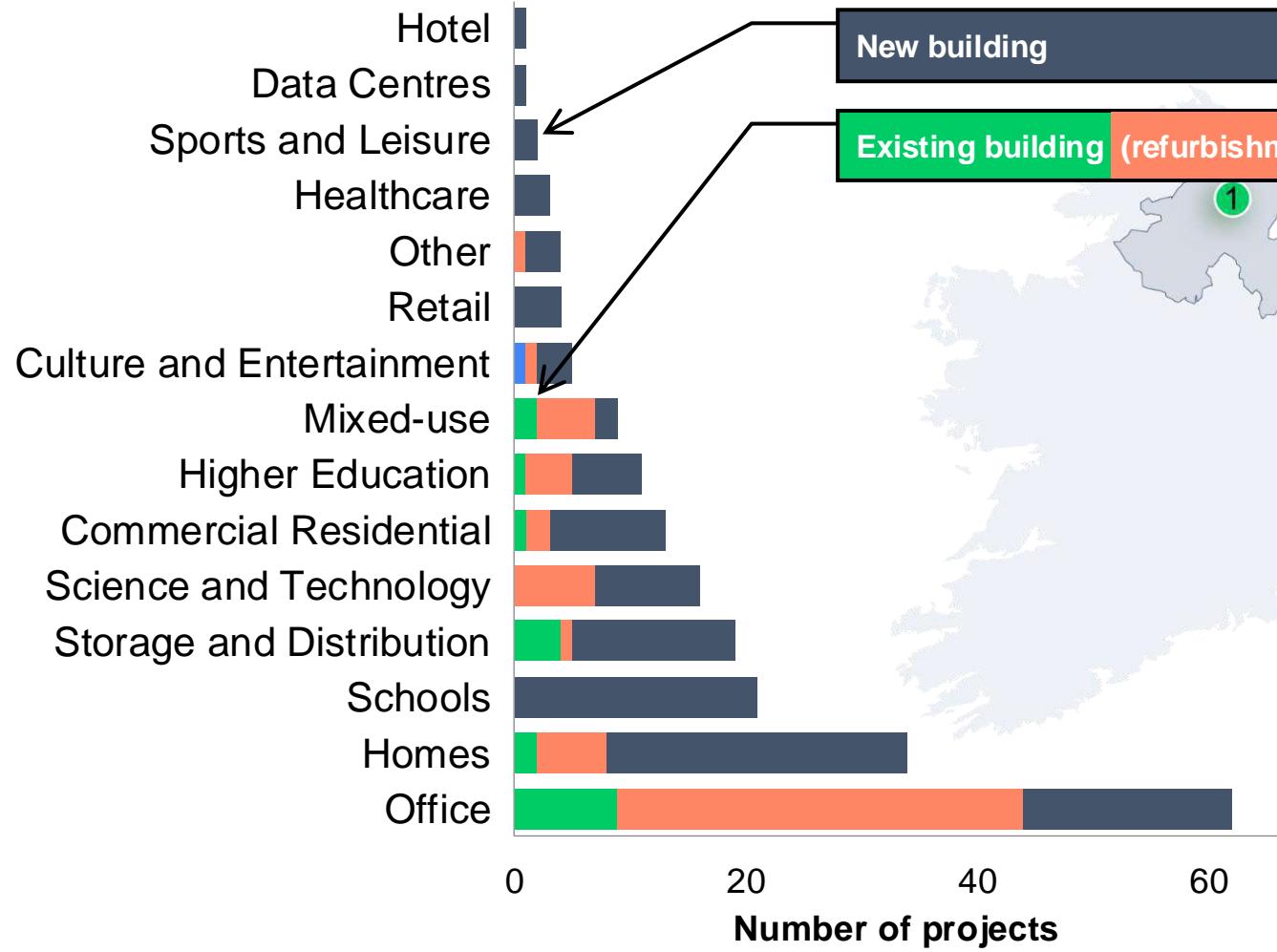
wearetown.co.uk/projects/westwickrow/

What next?



UK Net Zero Carbon
Buildings Standard

Pilot Testing 2025



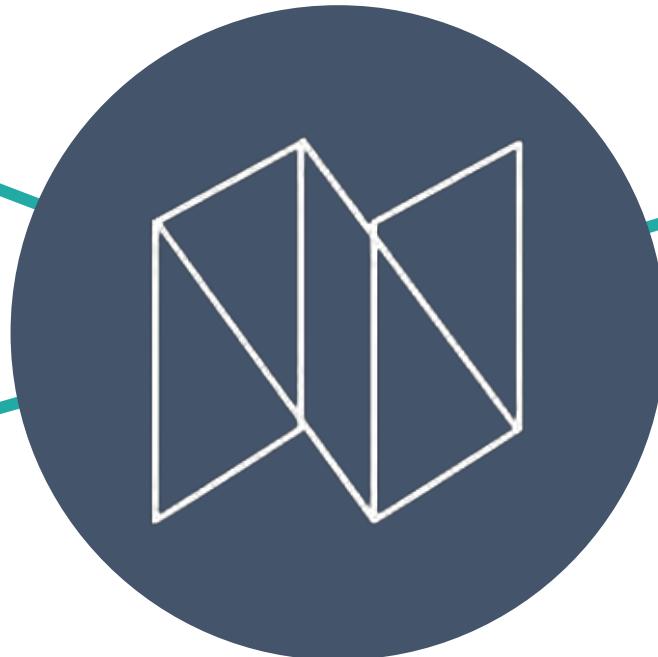
Coming soon



Videos, tools, guides



Evidence report



Version 1
launch



Verification
requirements



Could we do this
differently?

Thank you

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The Institution of
Structural Engineers



RIBA



Panel Session: Customer Pull



**Sebastian
Maher**

Development & Design Manager
Reef + Partners



**James
Byrne**

Partner
Sustainable Ventures



**Debbie
Ward**

Director Reuse & Circular
Economy
ASBP



**Emily
Walport**

Associate
ARUP

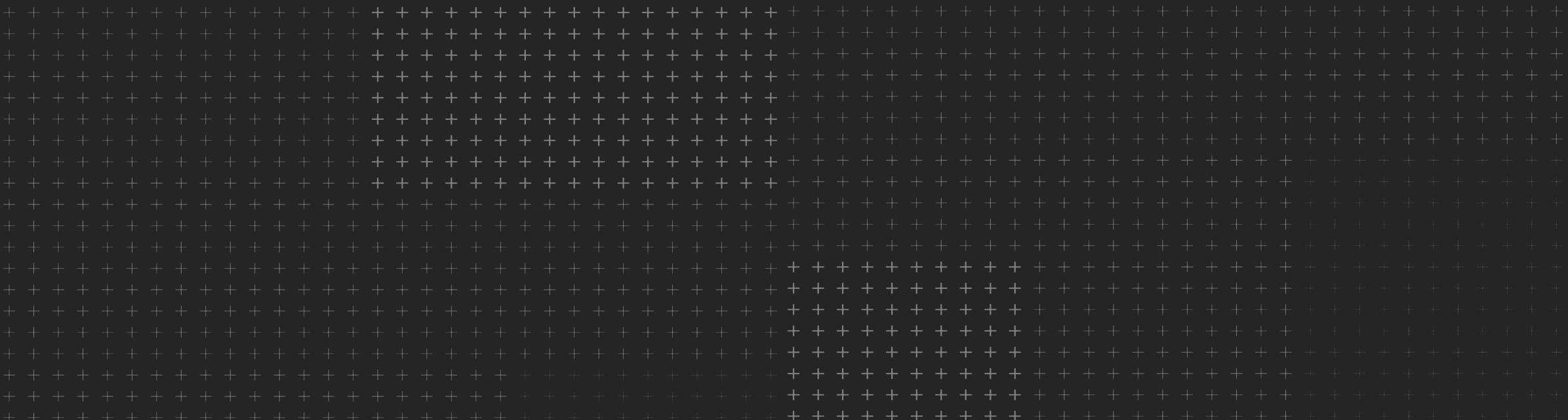


**Rob
Hankey**

Technical Director
Barefoot Architects

The Tribeca Block

A Case Study for Low Environmental Impact Material Innovation





Reef + Partners

We build vibrant places where science, healthcare, and innovation thrive.

Tribeca, London



reef+partners

The Macro Strategic Shift

From Mitigation to Leadership in
Sustainable Development

The Flight to Quality

Radical Circularity

Ethical Value Creation



Protecting Asset Value

The Commercial Imperative for ESG-
Driven Development

The Green Premium

Lender Demand

Risk Mitigation



The Opportunity

How a Shared Vision with the Architects Ignited the Project

The Architect's Challenge

Taking a Calculated Risk

A Strong Relationship



Our Innovation

The Tribeca Block

84% Reduction in
Embodied Carbon

when compared to traditional fired
clay masonry.

3,650m² of
Earth Block Walls

Used across the development to line
basement walls in lieu of non-circular
materials.

100% Recyclable



So, what do clients need to accelerate more
innovations like the Tribeca Block?

The Return on Innovation

Moving from "Saving the Planet" to
"Enhancing the Value Proposition"

Beyond Compliance

A Strong Way to Win New Work

The Reputation Multiplier



Compliance & Trust

A lot of Paperwork

1. Close The Insurance Gap

2. Overcome The Certification Hurdle

3. Address Fire & Safety Challenges

4.1 Classification

The product "Sonic" presented (in this version) is liable to be classified as dangerous (class 1).

(1) additional classification in order to avoid reclassification:

(2) additional classification in respect to flammability / combustibility:

(3) hazard if the product is incompatible with compatible components, resulting from any form of thermal reaction:

Fire Retardance	Flame Propagation	Flashing Point
0	0	0
Ex B - st - d0		

Reaction to fire classification: B - st, d0

4.2 Field of application

The classification is valid for the following field of application:

- (1) Resin-modified application:
- (2) Construction application (coated with a mixture, which does not contain organic solvents, density equal to or greater than 1.02, fugacity, having a maximum thickness of 1 mm and a dry performance of 0.2 kg/m² to 0.5 kg/m² including seal-coated gypsum drywall).

This classification is also valid for the following conditions:

Product thickness: 0.5 mm and greater	Thickness of 0.5 mm to 1.0 mm
Product colour: white	White or off-white
Product thickness: 1 mm and greater	Thickness of 1 mm to 2.0 mm
Product colour: black	Black or dark grey
Product composition: resin-modified	Resin-modified
Product composition: resin-modified gypsum	Resin-modified gypsum

01.01.2018, 01.01.2018 (version 1, 1.0.0.0)

01.01.2018, 01.01.2018 (version 1, 1.0.0.0)

01.01.2018, 01.01.2018 (version 1, 1.0.0.0)

Engineering & Logistics

Navigating the Regulatory "No-Man's Land"

4. Provide Structural Certainty

5. Verify Supply Chain Quality



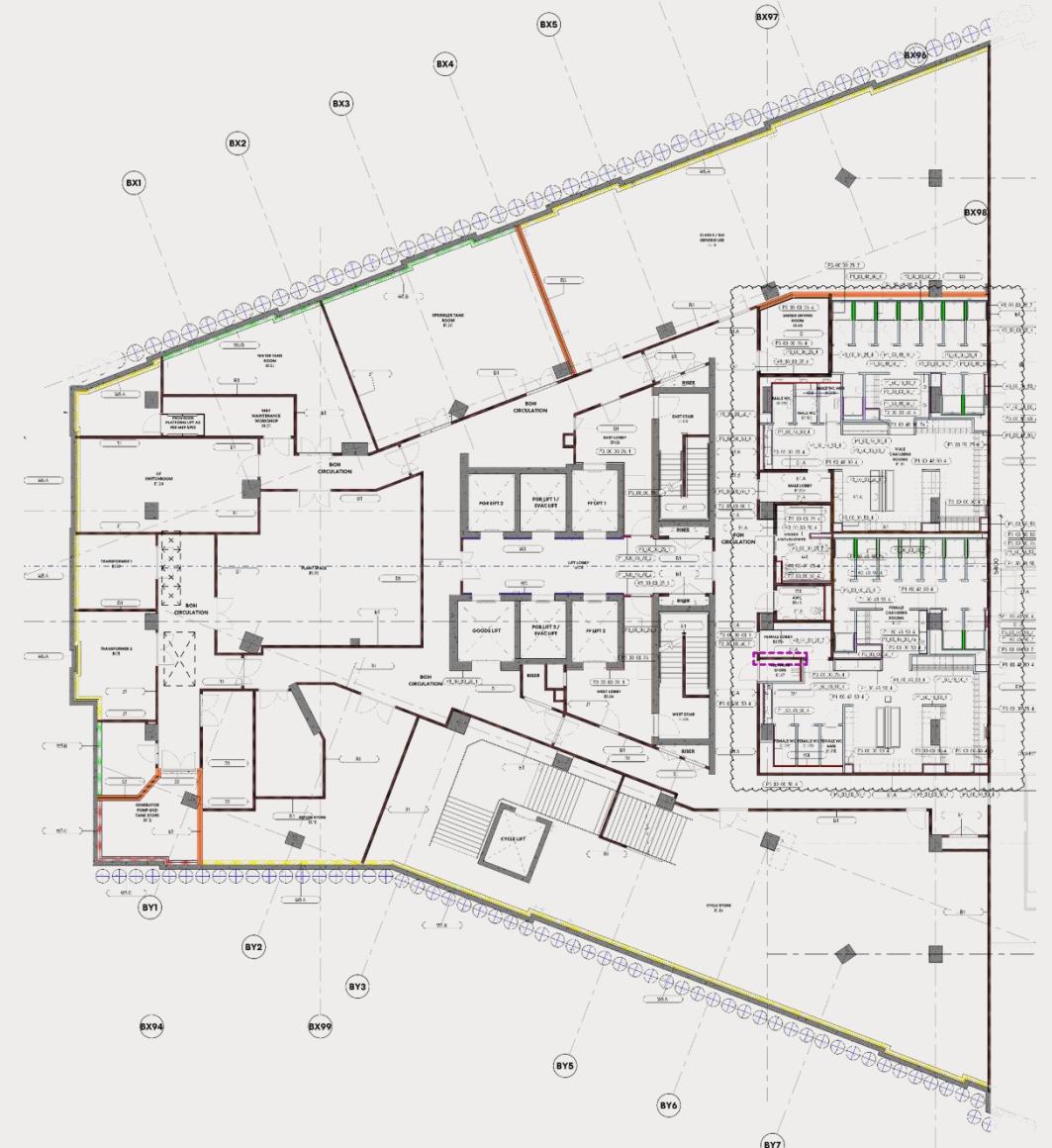
Scaling Innovation

Moving from Bespoke to Repeatable

Supply Chain Industrialisation

The Data Requirement

Insurance Parity



Client's Brief

What is Required for Widespread Adoption?

1. Certainty is Currency

Clients need the testing data and certification that allow lenders and insurers to say "Yes" without a risk premium.

2. Sell the "Total Value"

Don't just sell "Carbon"; sell the air quality, the thermal comfort, and the future-proofed liquidity of the asset.

3. Collaboration

Widespread adoption requires an architect with the passion to push boundaries and a developer willing to provide the site to prove the concept.



Thank you





Sustainable Workspaces
Design Guide

Overview of Sustainable Ventures.

A unique, integrated Ecosystem

We've always said we're on the side of the entrepreneur - they're at the heart of everything we do.

Since 2011, we've created Europe's largest cluster of climate tech and cleantech startups through venture support, workspaces, investment and commercialisation services.

6 of our last 10 investments have been with female founders.

40+

Acceleration
Programmes

95%

Diversity
Index

>1,000

Startups in
Ecosystem

59

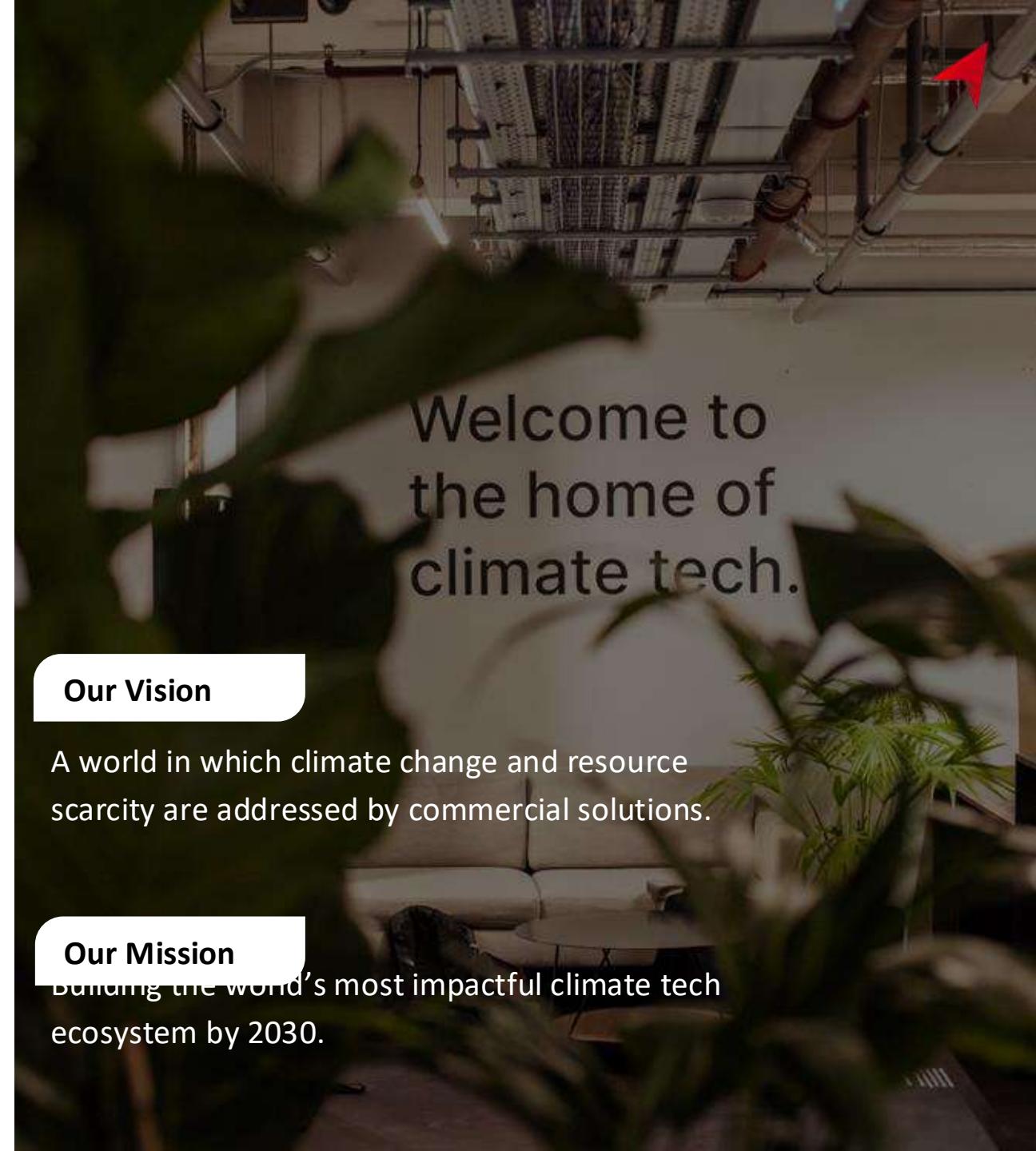
Investments

£16M

Invested

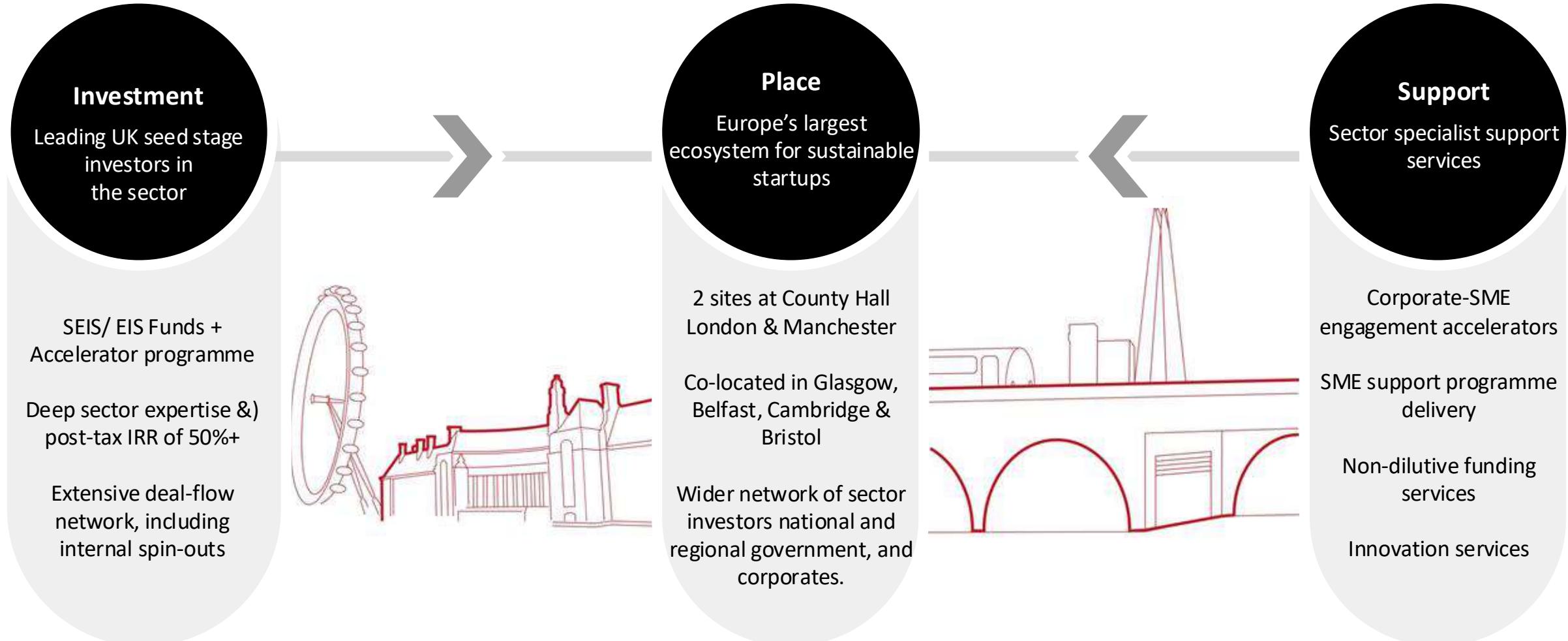
>£1.2bn

Funds raised by
members



The growth partner for Climate Technology.

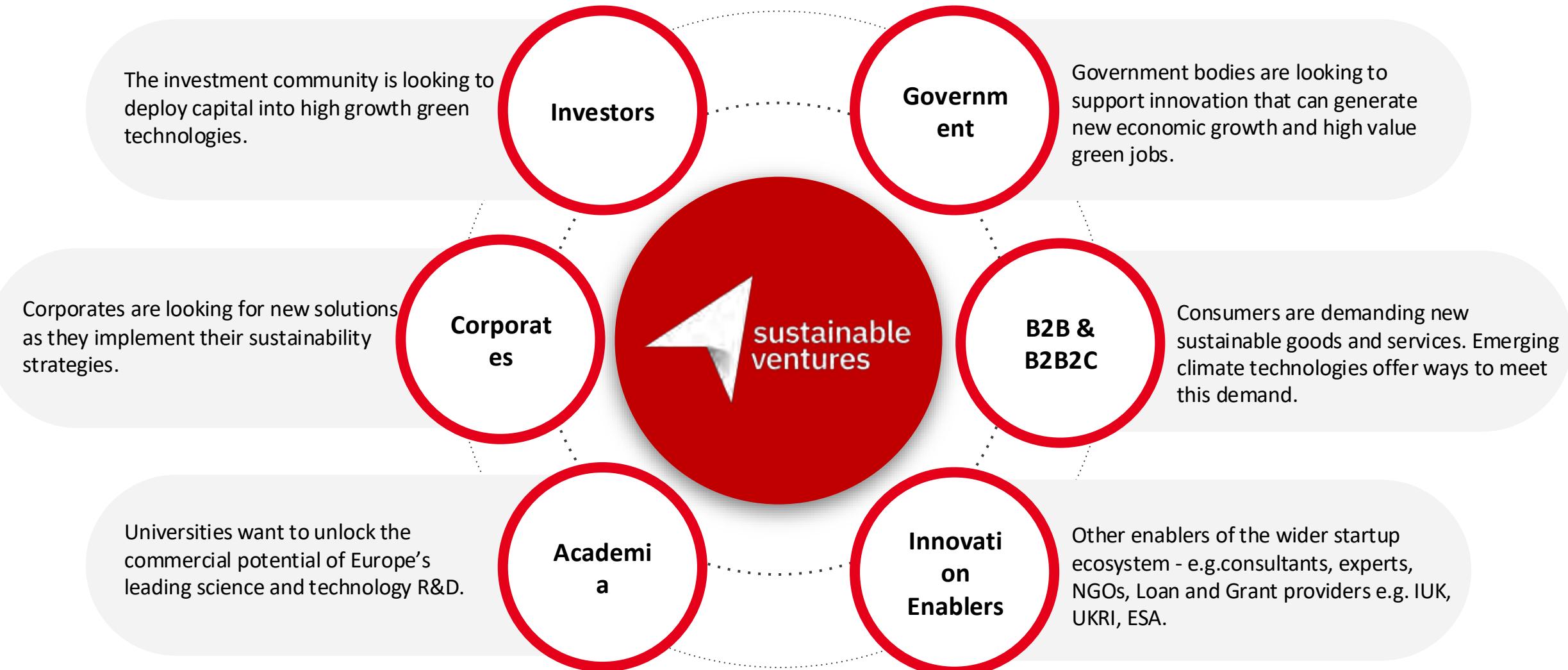
We have over a decade of experience engaging, supporting and accelerating climate tech startups.



Orchestrating the Innovation Ecosystem.

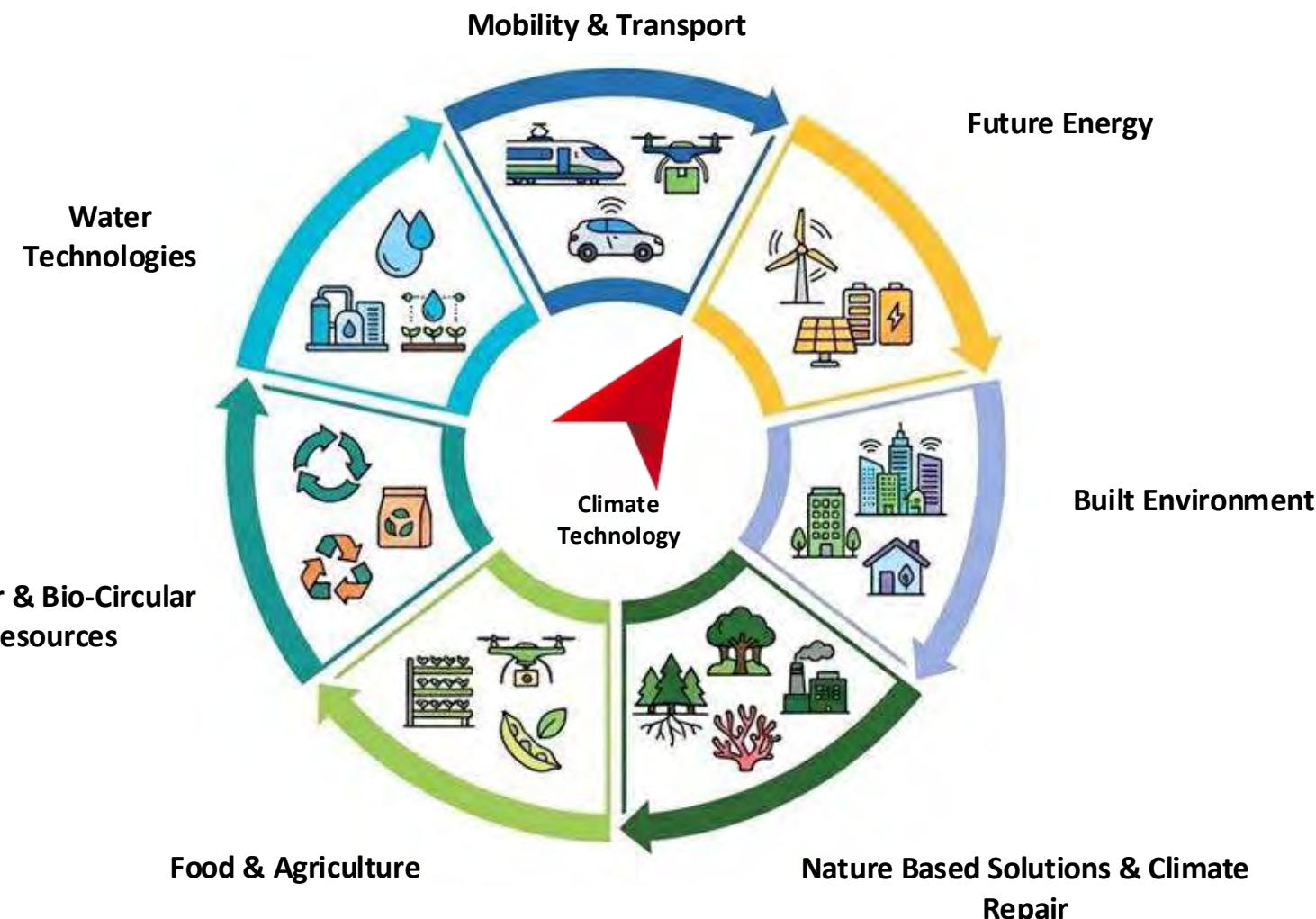


Sustainable Ventures brings together and connects key stakeholders in the sustainability transition.



We have supported >1000 Climate Tech startup/scale up businesses to date.

A few examples:



Expanding our community and workspace solutions across the UK to accelerate startup growth.



LONDON



MANCHESTER



GLASGOW*



BRISTOL

UK flagship climate tech hub in a showcase retrofit, iconic County Hall building. Currently occupies 5th floor with 3rd floor to open in Q4 2025 (tbc)

Brand new climate tech hub opened in retrofitted, iconic Renold building. Part of major regeneration creating the innovation district in central Manchester.

BELFAST

01 / RETROFIT STRATEGY

SV Workspace Objectives

Community:

The most important principle for SV is bringing people together to address climate change and resource scarcity. All decisions are focussed on creating the most frequent and meaningful interactions to drive the curation of an authentic community.

Design:

Visible demonstration of pragmatic commercial sustainability, which provides an aesthetic/functional environment that embodies the authentic purpose of our ecosystem.

Platform:

Each element of the workspace must tell a narrative that supports ecosystem members to demonstrate to their guests and expose their innovation to other guests.

Usage:

Layout, utility, operations, membership is structured specifically for high growth, young, innovative organisations, that work in highly flexible organisational models.

Resources:

To accelerate solutions to climate change, the workspace design and operations act to draw in expertise and capital from external parties and members.



01 / RETROFIT STRATEGY



REUSE/ADAPTATION

Existing buildings are the largest depositories of embodied energy - demolition and re-construction should only ever be considered as a last resort. Instead, emphasis needs to be placed on the careful and creative adaptation of existing buildings to ensure longevity.

How can the existing features be utilised in a way that means using as little additional resource as possible?



DEMOUNTABLE

A key aspect of sustainability is flexibility. The design strategy should enable disassembly so that future adaptations and different space layouts are possible.

Walls, joinery and furniture should be designed to be disassembled and reconstructed elsewhere. This will ensure longer lifespan of all materials and flexibility for future uses.



MEANWHILE USE

Utilising space which would otherwise sit empty enables businesses to adapt and occupy without needing to create new space or carry out a fit-out which will be demolished within a short time-frame.

A low-impact philosophy will ensure less waste and improve flexibility of each space.



FOCUSED COSTS

Expenditure should be considered and applied to the right areas which bring most impact.

For example, background repairs can be reduced to essential works to allow expenditure to focus on moments of peak interaction.

02 / LOOK and FEEL



03 / SPACE TYPES

THE HUB

The welcome space should showcase tenant products whilst demonstrating Sustainable Workspaces' values and ethos.

The most important function of the space is to concentrate members into a single key space which reflects the values of SV - functional design which ensures real community and engaging atmosphere from the moment guests enter the space. Curated F&B should be physically central and critical to this space. A range of seating should be provided which encourages different types of collaborative working to drive people to work together in this area. The Hub should be situated to ensure maximum interaction and efficiency of space. Spaces should be flexible in layout, with allowance for fixed modular booth seating.

Technical requirements:

Seating (fixed and loose), tables, planting, turnstiles for security, lighting, storage, bins, acoustic treatments, white goods (coffee machine, drinks fridge, sinks for food prep and hand washing, ice machine) with associated power and services



04 / MATERIALS

The design strategy should prioritise these design principles in the following order:

1. CELEBRATE THE EXISTING



2. RECLAIMED



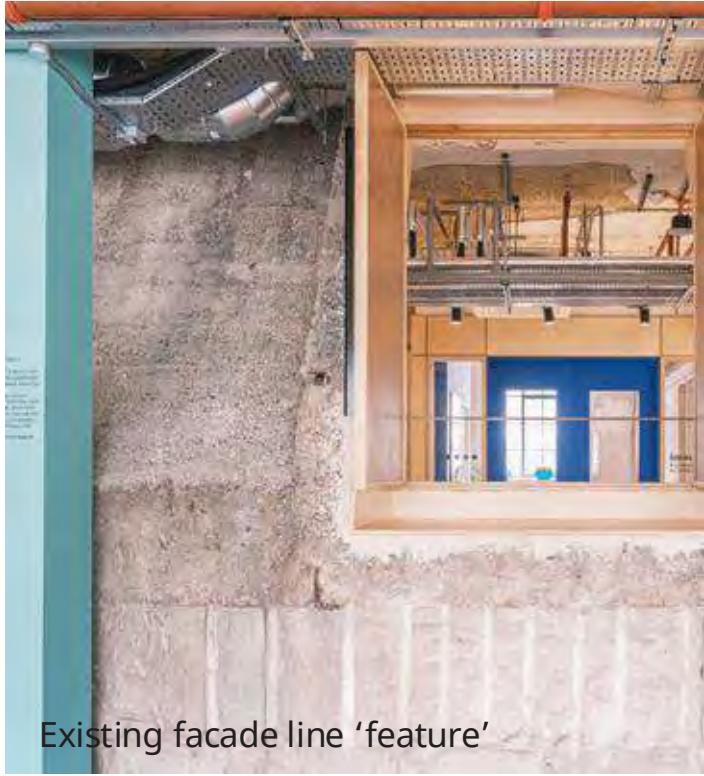
3. NATURAL MATERIALS



4. RECYCLED



04 / MATERIALS



1. CELEBRATE THE EXISTING

Existing treatments and finishes should be left in place where possible with little additional finish and celebrated. This can be done with directional lighting and framing with surrounding finishes which compliment the existing condition.



04 / MATERIALS



Existing Condition

The Renold Building has several features that should be preserved. Repairs should be limited only where required e.g. holes from demolition.



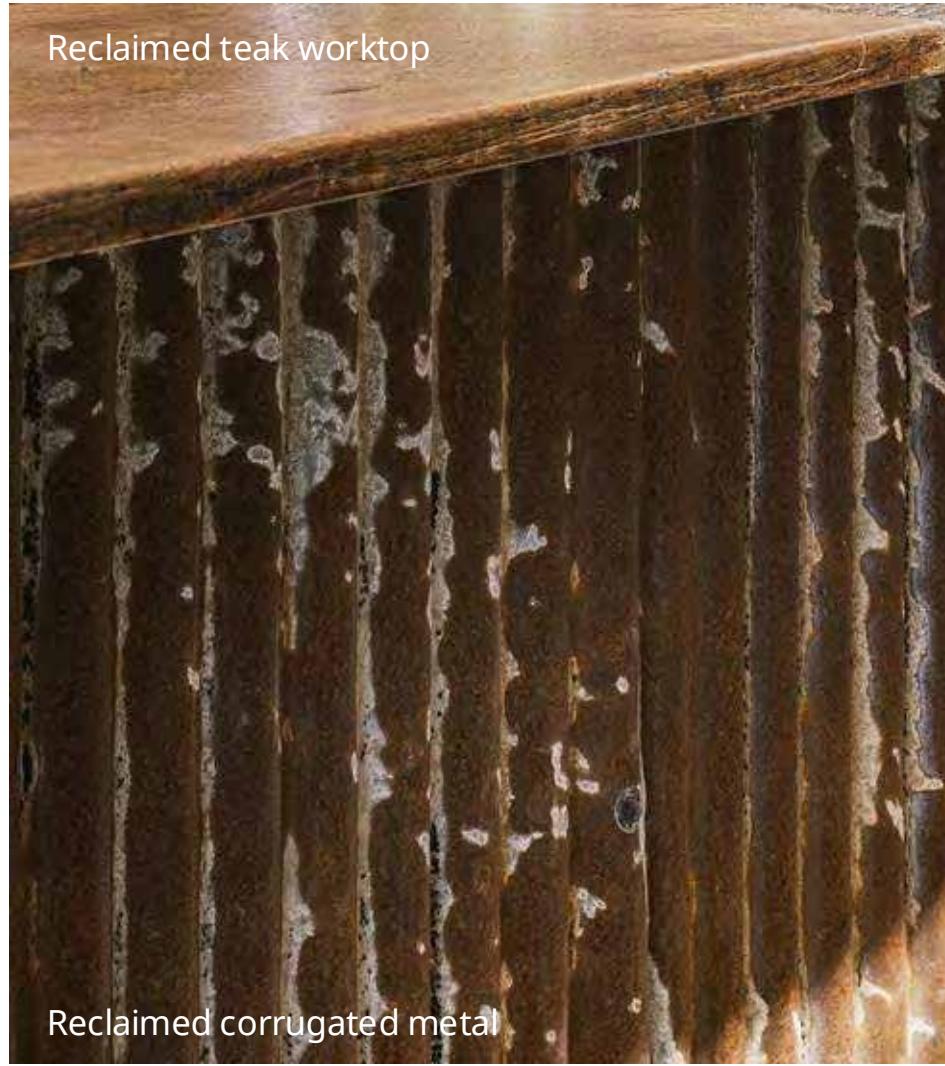
04 / MATERIALS



Reclaimed gym
flooring



Reclaimed teak
worktop

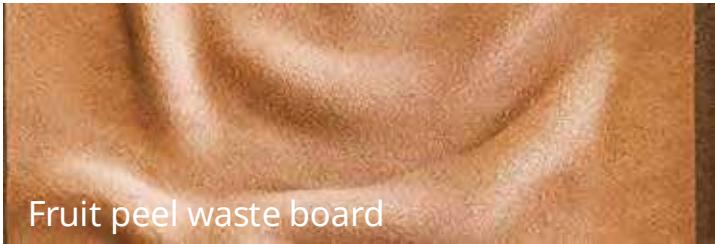


Reclaimed corrugated metal

2. RECLAIMED

Where new materials are required, the first port of call should be reclaimed materials. What can be salvaged from the existing site? Are there any local salvage yards which collate construction waste? What materials can be re-purposed for a new use? An example of this is the kitchen island at County Hall - which has a worktop from an old school science lab.

04 / MATERIALS



3. NATURAL MATERIALS

Recyclable and/or natural materials mean less waste at the end of a material's lifespan. Timber is a carbon negative material that can be re-purposed at the end of its life.

Mycelium has high thermal properties and could replace synthetic materials commonly used for acoustics. Waste such as fruit peel, coffee chaff and cocoa husks can be made into solid boards and are naturally carbon negative.



04 / MATERIALS



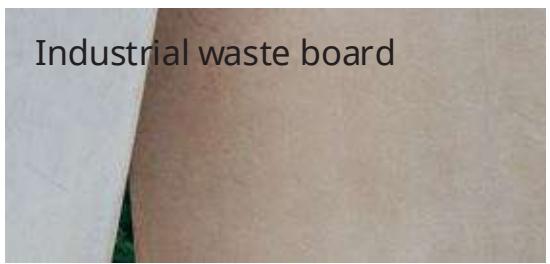
Natural materials such as cork are carbon sequestering. Sheep's wool insulation is a more natural alternative to synthetic materials which may be used within walls as insulation. Ecoboard is agricultural waste made into a carbon negative board which has similar structural properties to MDF or OSB.



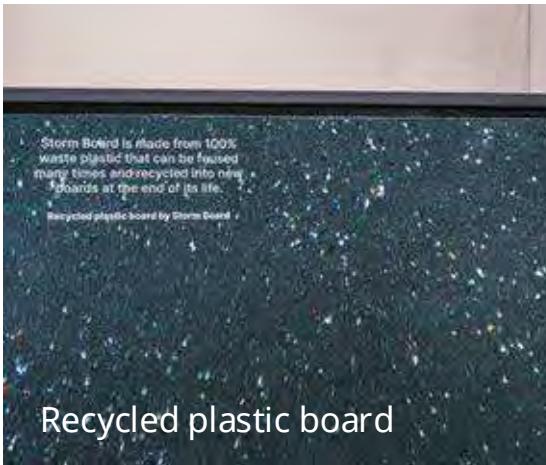
04 / MATERIALS



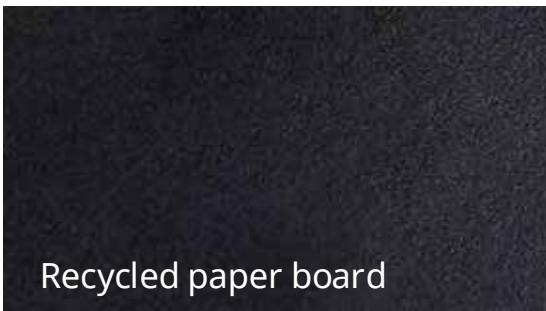
Construction waste terrazzo



Industrial waste board



Recycled plastic board



Recycled paper board



Recycled fabric



Recycled fabric



Recycled textile felt

Boards

Waste plastic and paper offer an alternative substitute for MDF which is more harmful for the environment.

Materials should be chosen for their sustainability credentials and suitability for the application. Materials which have been taken from waste instead of raw materials sometimes contain less embodied carbon.

Examples include Granby Rock (a terrazzo made from construction waste) and i-Did's recycled textile felt.

Waste can be used to create materials such as textiles and plastic from the ocean which have high performance, aligning commercial applications with sustainability interests.

04 / MATERIALS



Silicastone - recycled glass and porcelain



Newspaper wood - recycled newspaper board



Ceramic tiles made from sea shells



Recycled coffee cup light fittings - Blast Studio



Ceramic tiles made into bricks

Material suppliers are using all kinds of waste streams to create materials, such as single use coffee cups from the streets of London (above), discarded shellfish turned into ceramic tiles and recycled glass bottles turned into terrazzo.

Ideally these waste streams should be sourced as locally as possible to minimise carbon consumption from transportation.

04 / DESIGN RULES



Epoxy resin with high VOC content



No/Low VOCs

Materials with a high Volatile Organic Compounds such as epoxy resins or certain paints contain highly toxic chemicals and can impact indoor air quality as well as emit toxic fumes during installation. The use of PVC within services and pipework should also be avoided.



No new plastics

Any sort of additional finish which contains plastics and is therefore difficult to recycle or reuse safely should be avoided at all costs. Laminate finishes are not necessary and waste additional resource. Only use recycled plastics where appropriate eg. for worktops which can be easily recycled.



Low carbon processes

MDF and gypsum board should not be used because of their high carbon consumption through production. Specifically gypsum board is unable to be recycled or used again once demolished. Wood-fibre board, eco-board and hemp board are all viable alternatives.

Gypsum
plasterboard is
highly wasteful

05 / FURNITURE



RECLAIMED/REFURBISHED

Sourcing second hand furniture has significant benefits in terms of cost and embodied carbon. Sites such as Vinterior offer pre-loved furniture which is in good condition, but recovering armchairs and sofas can give a new lease of life to items in poor condition.

05 / FURNITURE

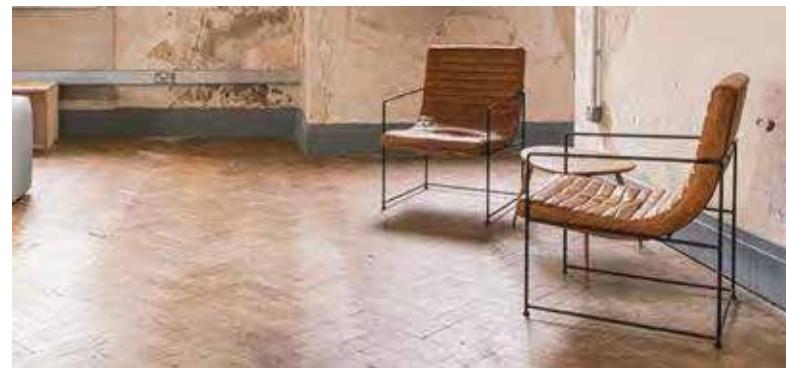


RESPONSIBLE SOURCES/SIMPLE DESIGN

If reclaimed is not suitable or possible, suppliers can offer sustainable furniture using sustainably sourced materials such as FSC certified wood or recycled textile coverings.

Materials should be robust and come with sustainable certification such as *EU EcoLabel* or *Greenguard*.

Suppliers such as Nkuku make simple furniture from ethical, sustainable sources which can be taken apart and re-purposed easily.



06 / JOINERY



DEMOUNTABLE/MOVABLE

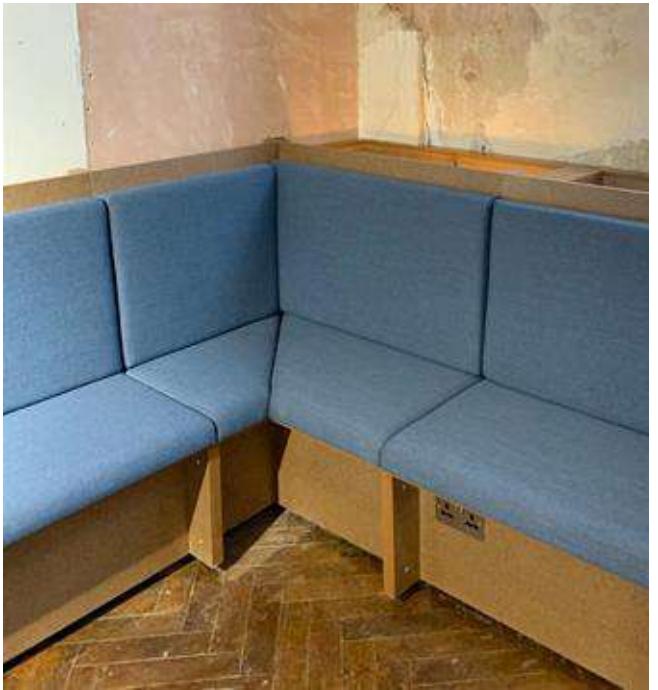
Scaffold desks are quickly assembled/disassembled and adapted to differing sizes based on desk requirements.

Mechanical fixings enable joinery and walls to be de-constructed and used again or reverted to base materials at end of use.

Castors offer additional layout flexibility and can be locked in place.



06 / JOINERY



MODULAR

Modular units of joinery can provide seating or enable future flexibility and relocation.

Fixings should be simple to undo and take apart.



06 / JOINERY - WALLS

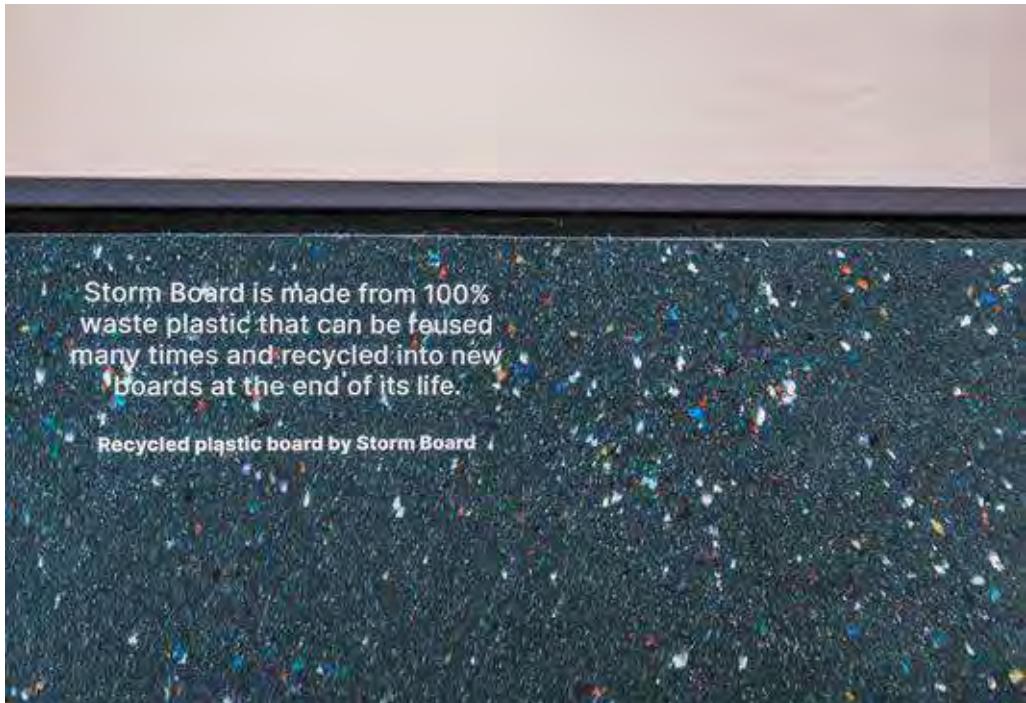


MODULAR PARTITION WALLS

Modular partitions and space dividers enable further flexibility within the space. U-Build have created a modular plywood wall system which can be de-constructed as boxes or disassembled for the raw material to be used for another purpose. FAAY's agricultural waste modular system comes in set sizes up to a height of 3.5m.

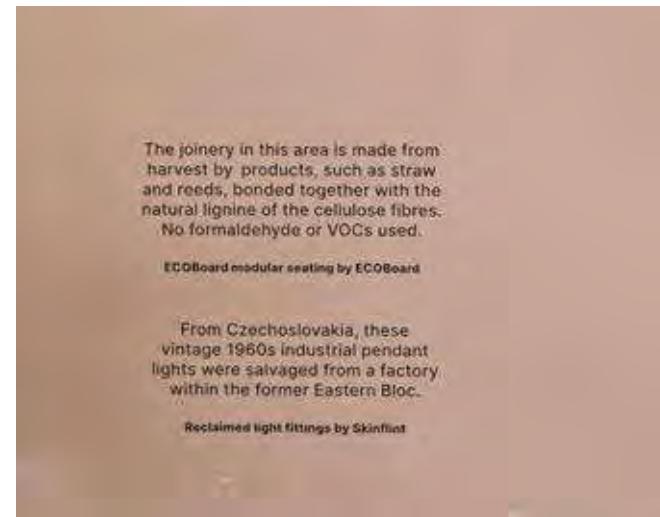
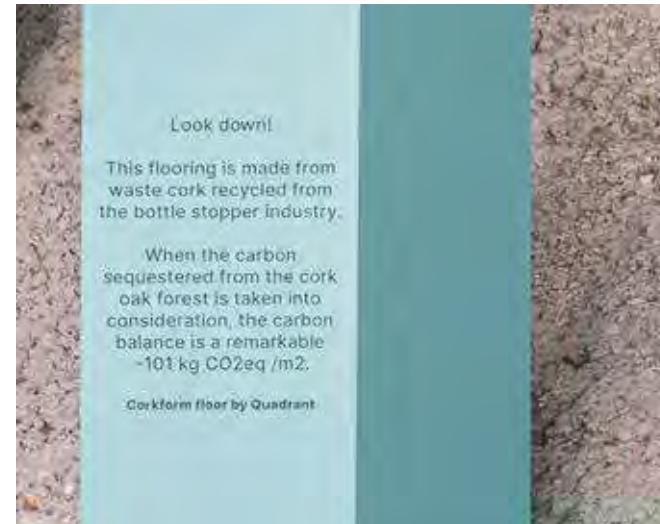
Walls should perform acoustically between offices to maintain privacy.

07 / BRANDING - NARRATIVE



STORYTELLING

Info-graphics throughout the space illuminate material choices to users - detailing waste stream sources, carbon performance data and material possibilities. This information contextualises the scheme and celebrates the client's commitment to sustainability, helping to inform everyday users about each material's history.



From Czechoslovakia, these vintage 1960s industrial pendant lights were salvaged from a factory within the former Eastern Bloc.

Reclaimed light fittings by Skinflint

07 / BRANDING - MEMBERS/ECOSYSTEM



MEMBERS

SV's ecosystem is an important part of the space and members benefit from a network of climate tech businesses and start-ups to socialise with.



ESBEM Seminar: Accelerating adoption of UK low environmental impact construction materials



The Alliance
for Sustainable
Building Products

Circular Buildings and Products

Debbie Ward
Director - Circular Economy & Reuse, ASBP

Who we are



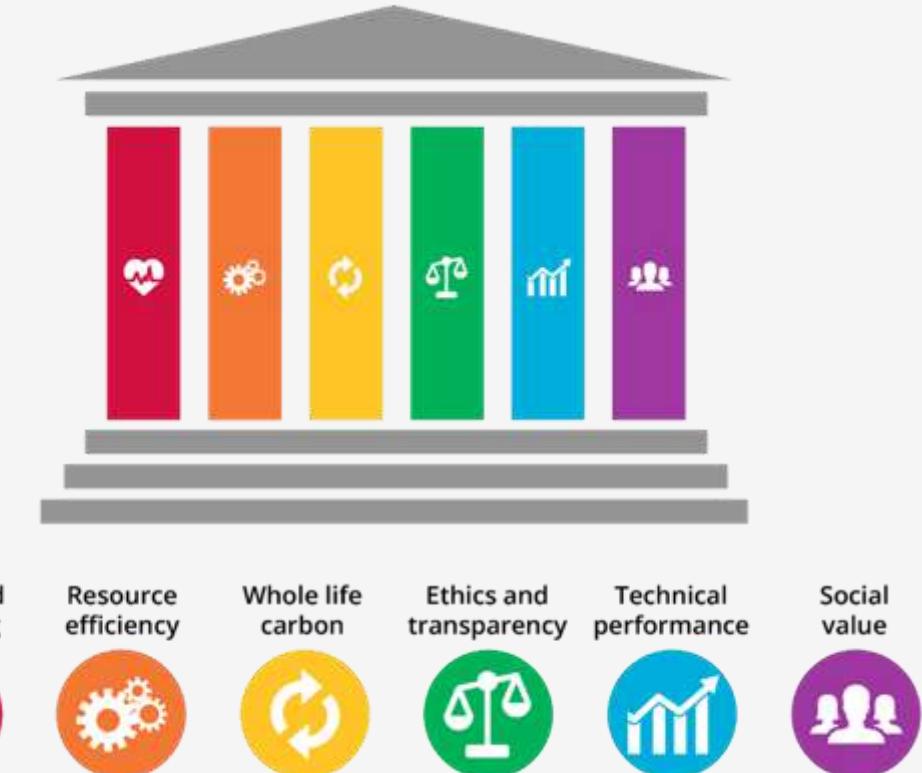
The Alliance
for Sustainable
Building Products

**Not-for-profit, mission
led, sustainability
organisation**

**“To accelerate the transformation
to a healthy, low carbon built
environment by championing the
use of demonstrably sustainable
building products”**

What we do

Share learning through events, lead on research projects, create best practice guidance, foster collaboration, influence policy and more.



Participate in our research projects



Steel reuse, timber & biodiversity, natural materials & retrofit

Join one of our specialist working groups



Reducing plastics, healthy paints & finishes, natural fibre insulation

Join our network of over 160 members and partners

Download guidance and toolkits on our website



Register for an event



Get involved with the ASBP!

Enter our awards



About Reuse Now



ASBP's Reuse Now campaign aims to encourage greater reuse of building materials within the construction industry and accelerate the transition to a more resource efficient, low carbon, circular economy as well encourage growth of low/zero carbon industries and supply chain models.

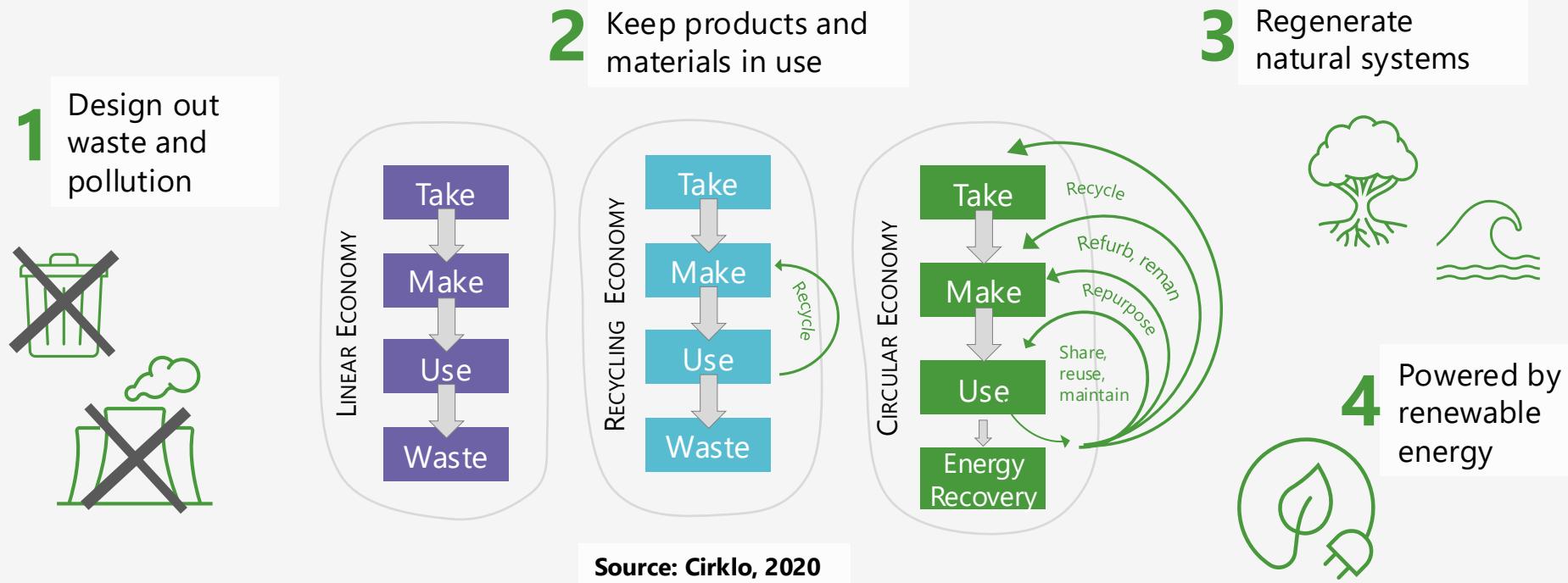
We are doing this through:

- Deep dives
- Events and social media
- Stakeholder mapping
- Online resources including blogs, case studies, and documents



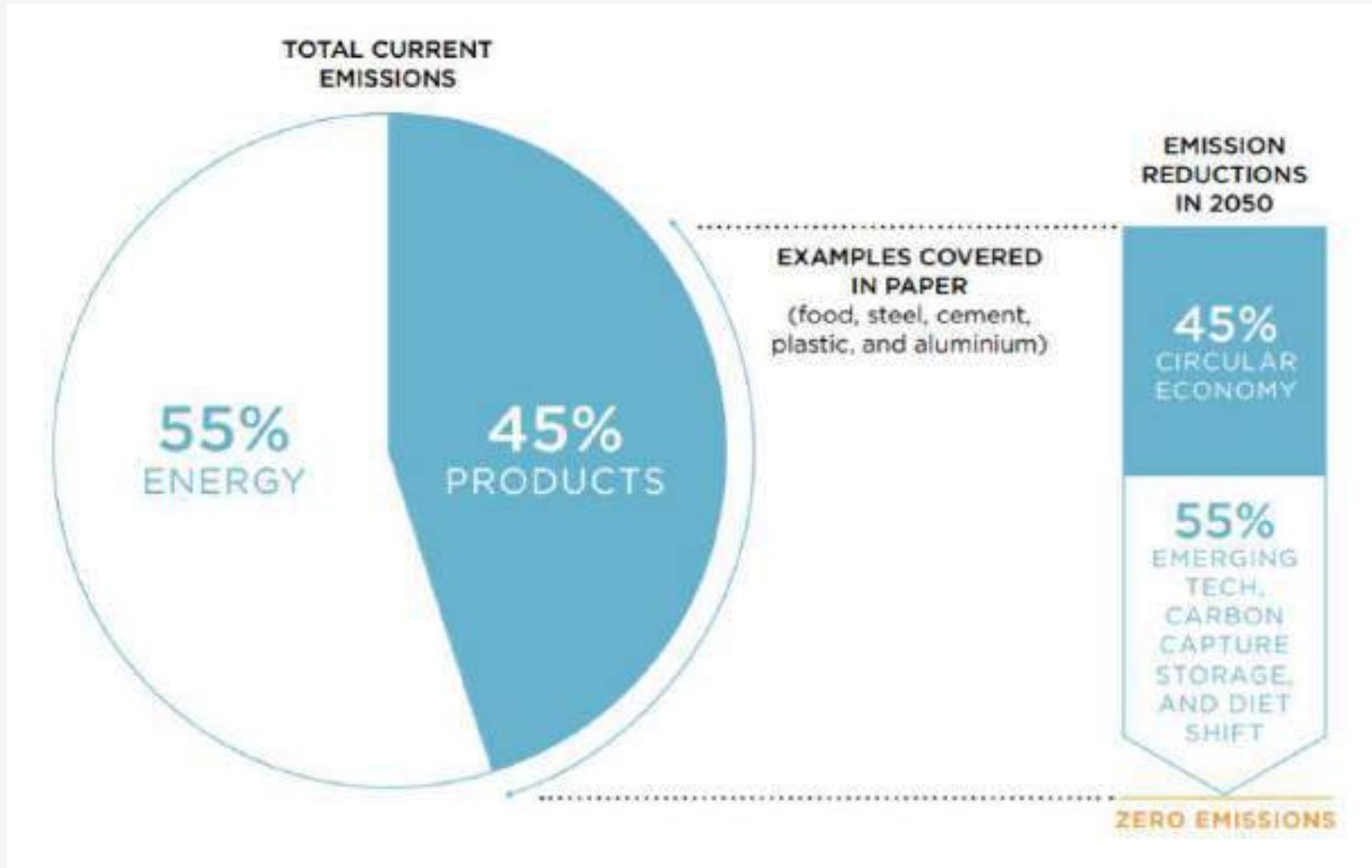
Sponsored by: Cleveland Steet & Tubes, Optima & Reusefully

What is the circular economy?



A circular economy is restorative and regenerative by design, and aims to keep products, components, and materials looping at their highest utility and value at all times.

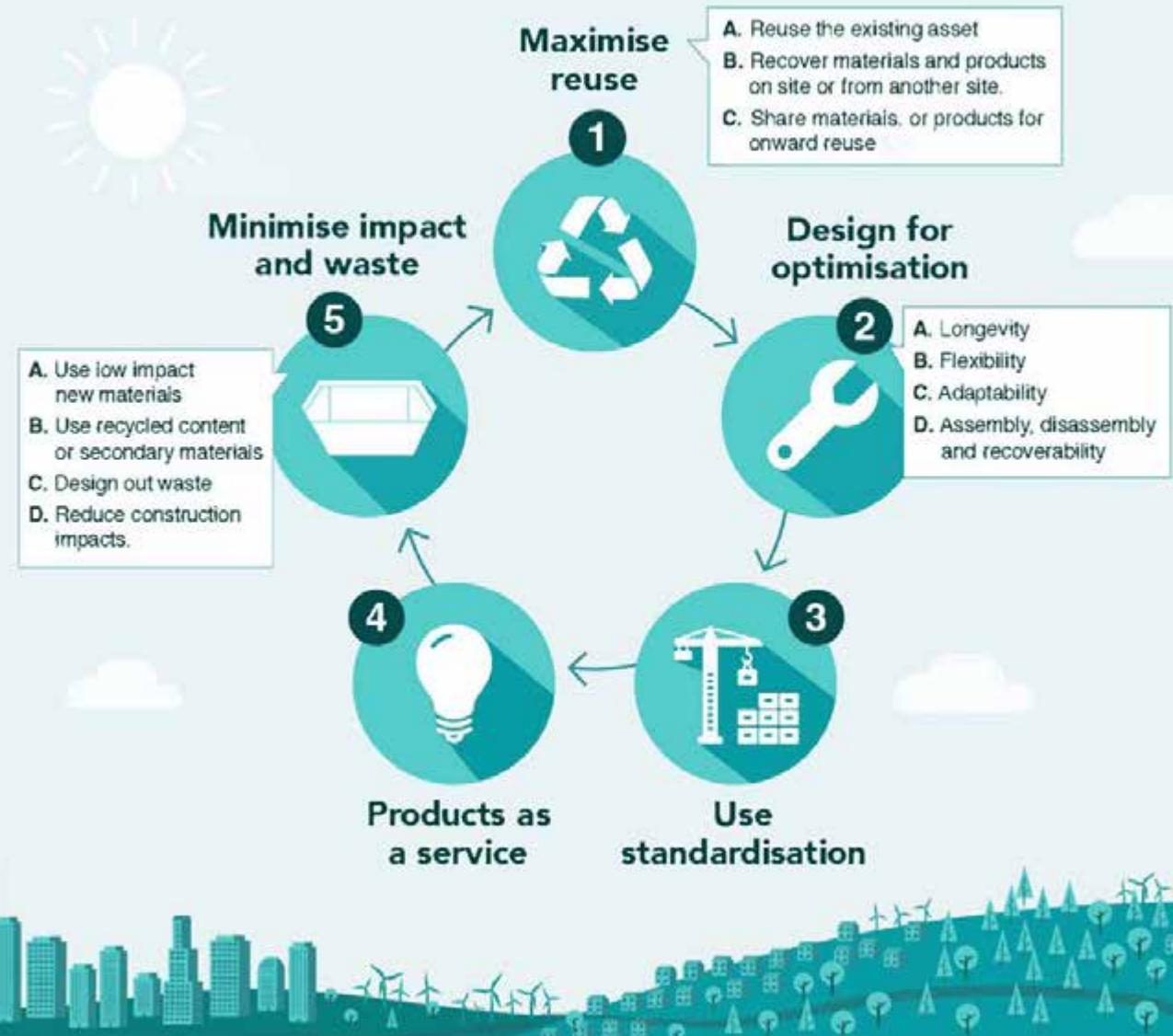
Why do we need to be more circular?



Switching to renewable energy plays a vital role in addressing climate change, but this alone will not be enough. **In order to achieve targets on climate, it is critical that we transform how we design, make, and use products and food.**

- Dame Ellen MacArthur -
Founder, Ellen MacArthur
Foundation

Circular economy principles for construction

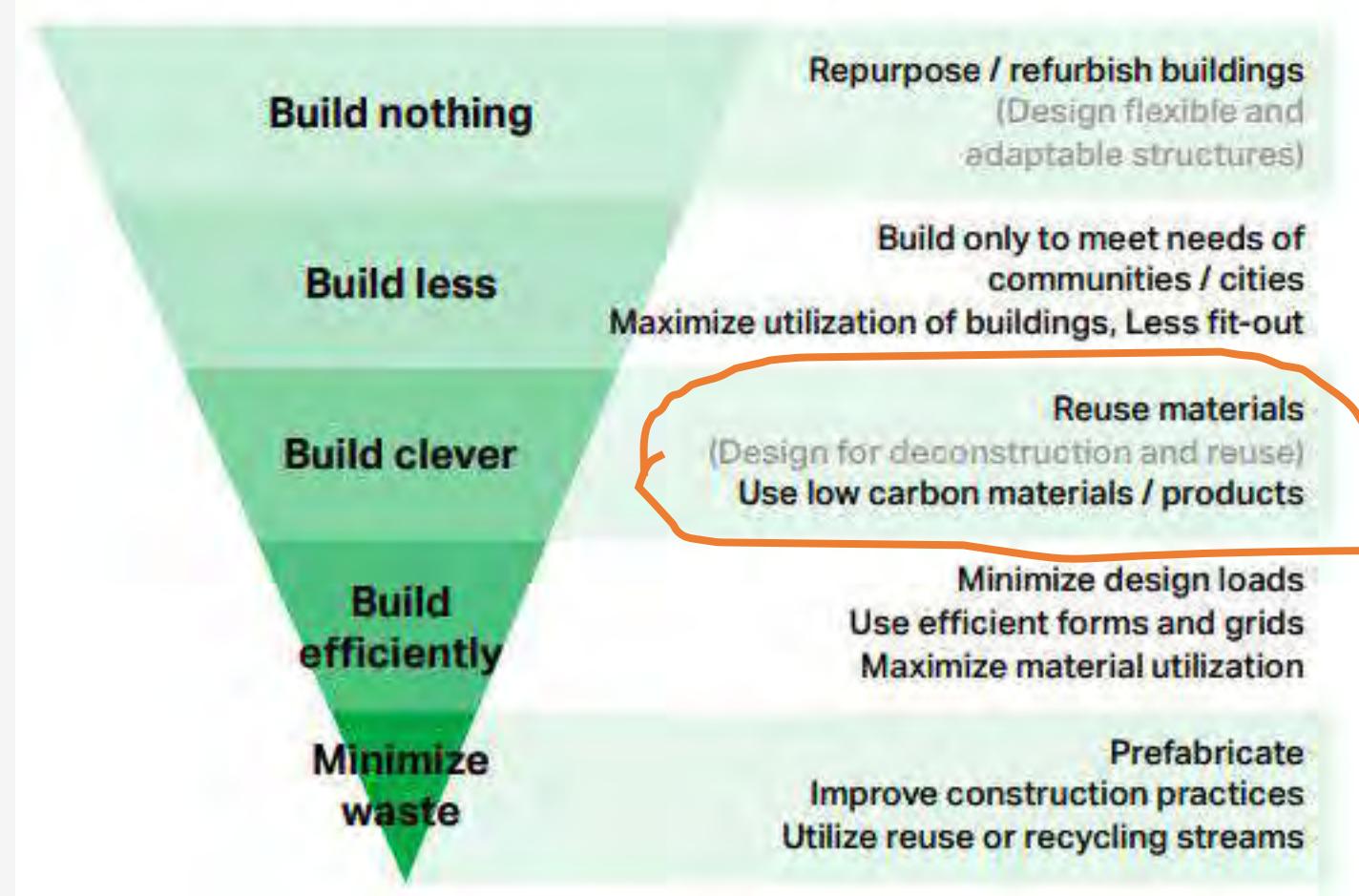


Circular Economy principles for construction:

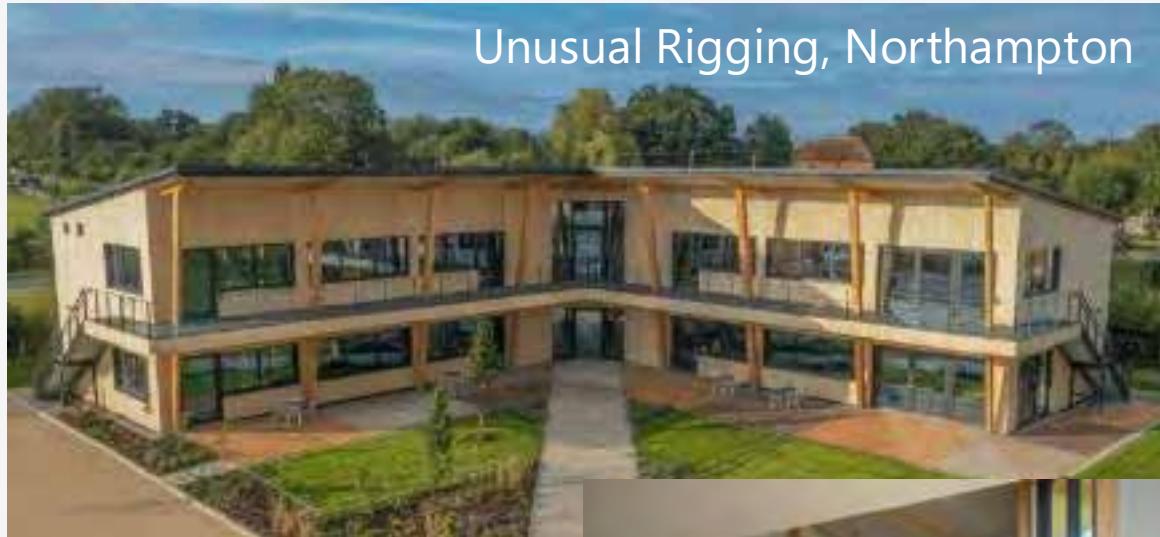
1. Maximise reuse
2. Design for optimisation
3. Use standardisation
4. Products As A Service
5. Minimise impact and waste

Carbon Reduction & Circular Economy

Figure 9: Embodied carbon reduction strategy



Circular - by design



Unusual Rigging, Northampton



Triodos Bank, The Netherlands



The Hithe, London



Circular - by design

Design for longevity, adaptability, flexibility, repair & maintenance, and disassembly – and subsequent reuse, repurpose, remanufacturing and recycling (keeping products at their highest value for as long as possible).

Design with intention – human centred design

Design considerations

- Screw not glue – enabling disassembly
- Non-toxic materials – to support remanufacture and recycling
- Robust materials – maximum life extension
- Mono materials – to facilitate closed loop recycling at very end of life
- Low carbon materials
- Bio based/ renewable materials – regenerative opportunities
- Standardised components (less waste and easier to reuse)
- Modularisation – enabling elements to be easily upgraded and/or customised whilst maintaining majority of same components
- Servitisation – access not ownership
- Doing more with less – reducing volume of materials used

Adaptavate Breathaboard

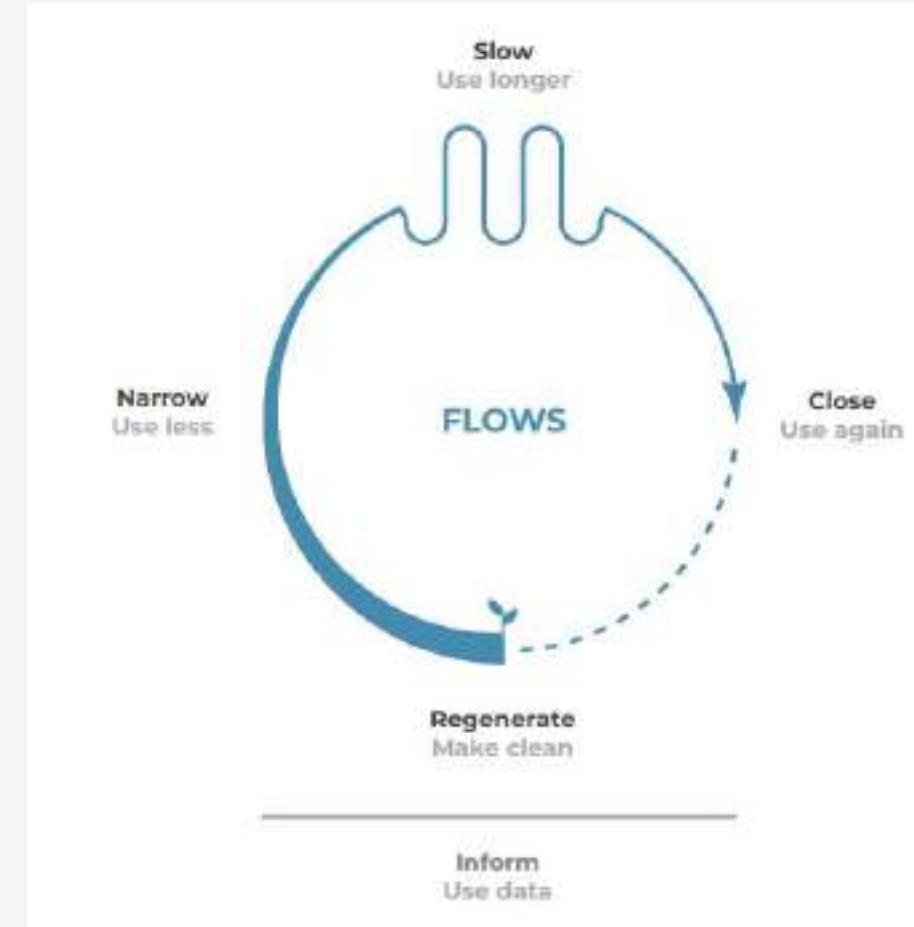


IOBAC MagTabs



What circular strategies and practices could be applied to product and business model innovation?

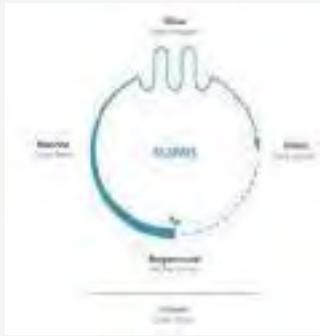
- Use less
- Use longer
- Use again
- Keep/make clean



<https://www.circularitydeck.com/about>

Circularity Deck
Created by Jan Konietzko during his PhD Research at TU Delft

Circular - by design



Slow – Use longer

Design for physical durability
Design for ease of maintenance & repair
Design for standardisation and compatibility
Provide this product as a service

Close – Use again

Design with recycled inputs
Design components, where appropriate with one material
Reuse and sell components and materials from discarded products
Enable and incentivise product returns

Regenerate – Make clean

Design with renewable materials
Design with non-toxic materials
Produce and process with renewable energy

Narrow – Use less

Design products with low impact inputs
Design light weight products
Enable and incentivise consumers to use less
Maximise capacity use of products

Inform – Use data

Virtualise
Use product-in-use data to design more circular products and services
Track the condition, location and/or availability of the product
Market, buy/sell circular products, components and materials through online platforms

Creating circularity



Steel



Timber



Concrete

Creating circularity



Bricks & Pavers



Raised access flooring



Partitions



Lighting



The Alliance
for Sustainable
Building Products



Debbie Ward
Director - Circular Economy & Reuse, ASBP
Director – The Rebuild Site
debbie.ward@asbp.org.uk
[linkedin.com/in/debbie-ward-b61580](https://www.linkedin.com/in/debbie-ward-b61580)

What do clients need and why?



ESBEM

22nd January 2026

Emily Walport

Associate | Materials consulting | Arup

Our purpose

To shape
a better
world

Through our work we create safe, resilient, and regenerative places that enable current and future generations to thrive.



Camp Adventure Tower, Denmark

We guide, plan and design the future of the built environment. We are a global consultancy with advisory and technical expertise across more than 150 disciplines.

1946

Founded by Sir Ove Arup

£2.2bn

Turnover (2024/25)

17,000+

People

140

Disciplines

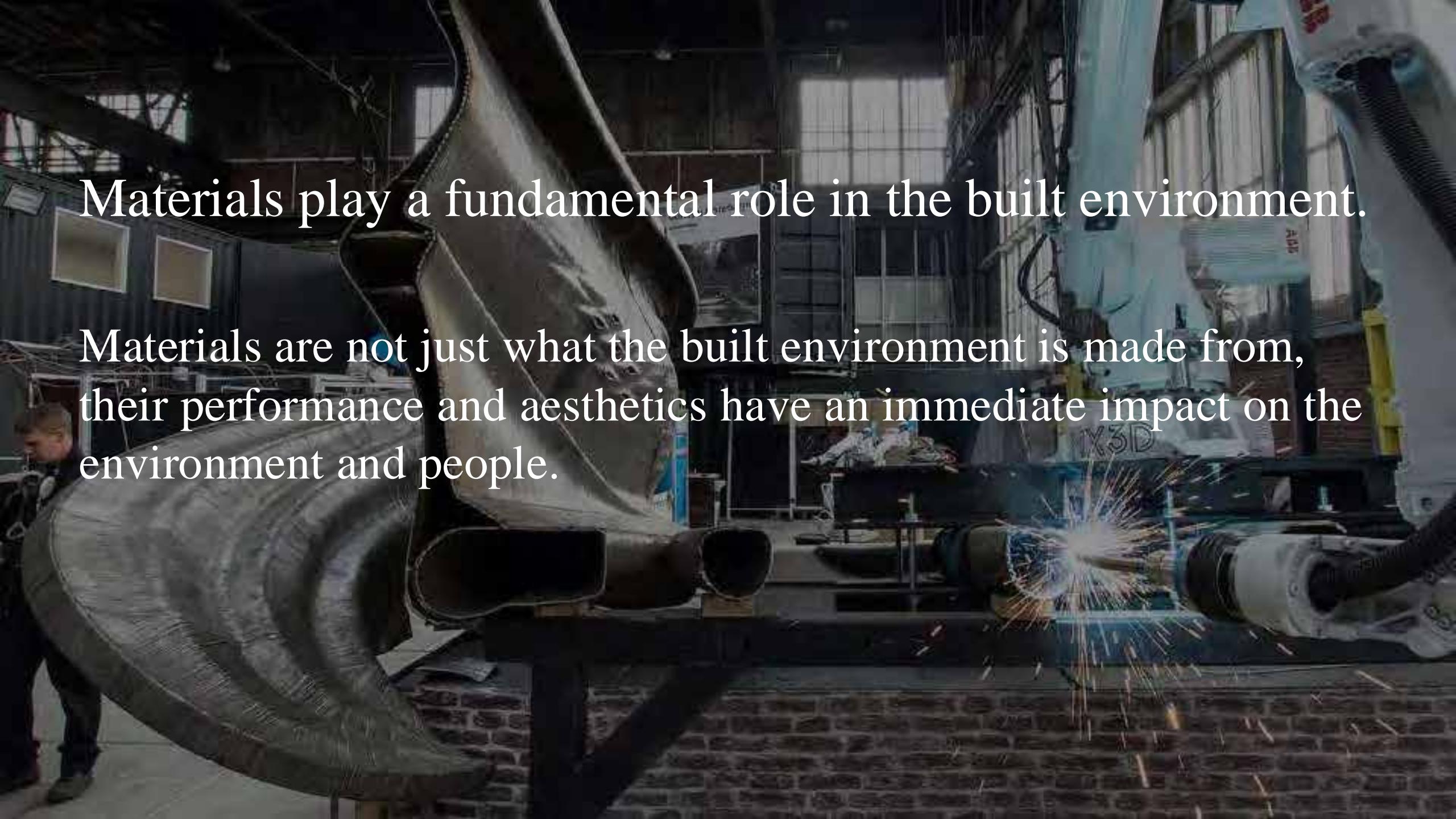
100

Offices

34

Countries



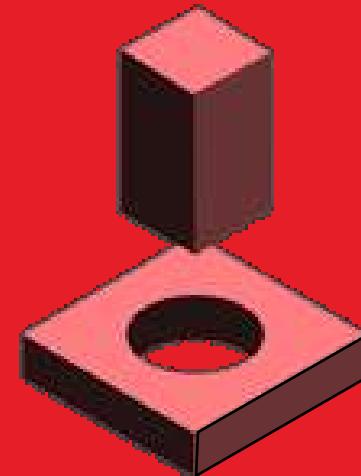


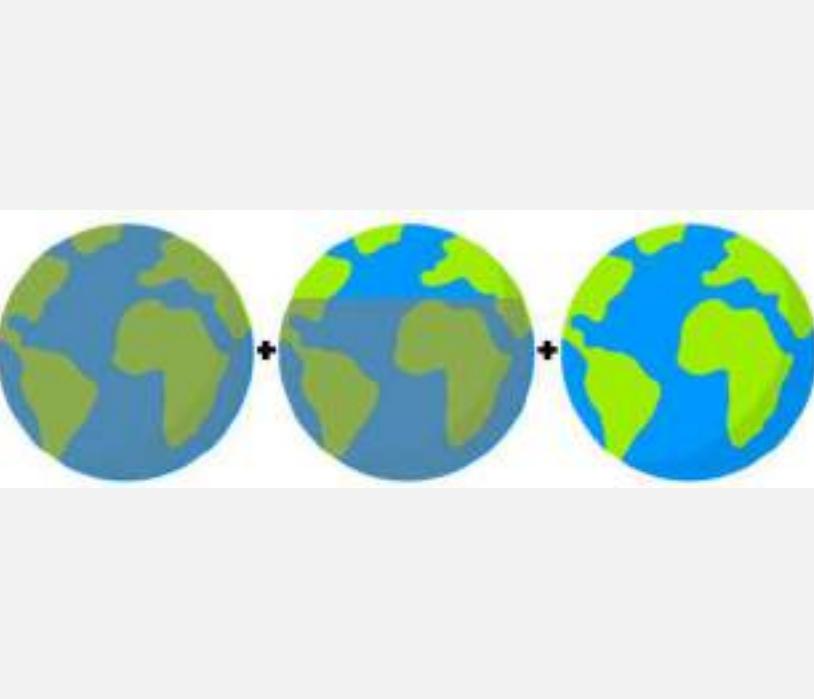
Materials play a fundamental role in the built environment.

Materials are not just what the built environment is made from, their performance and aesthetics have an immediate impact on the environment and people.

Innovation will often have the most impact when it is a targeted response to a specific need or problem

“I have a solution, but I’m not quite sure what the problem is”...







What do clients need?

Solution to an identified problem / opportunity, *but can I use this on my project?*

Technical performance (proven and demonstrable)

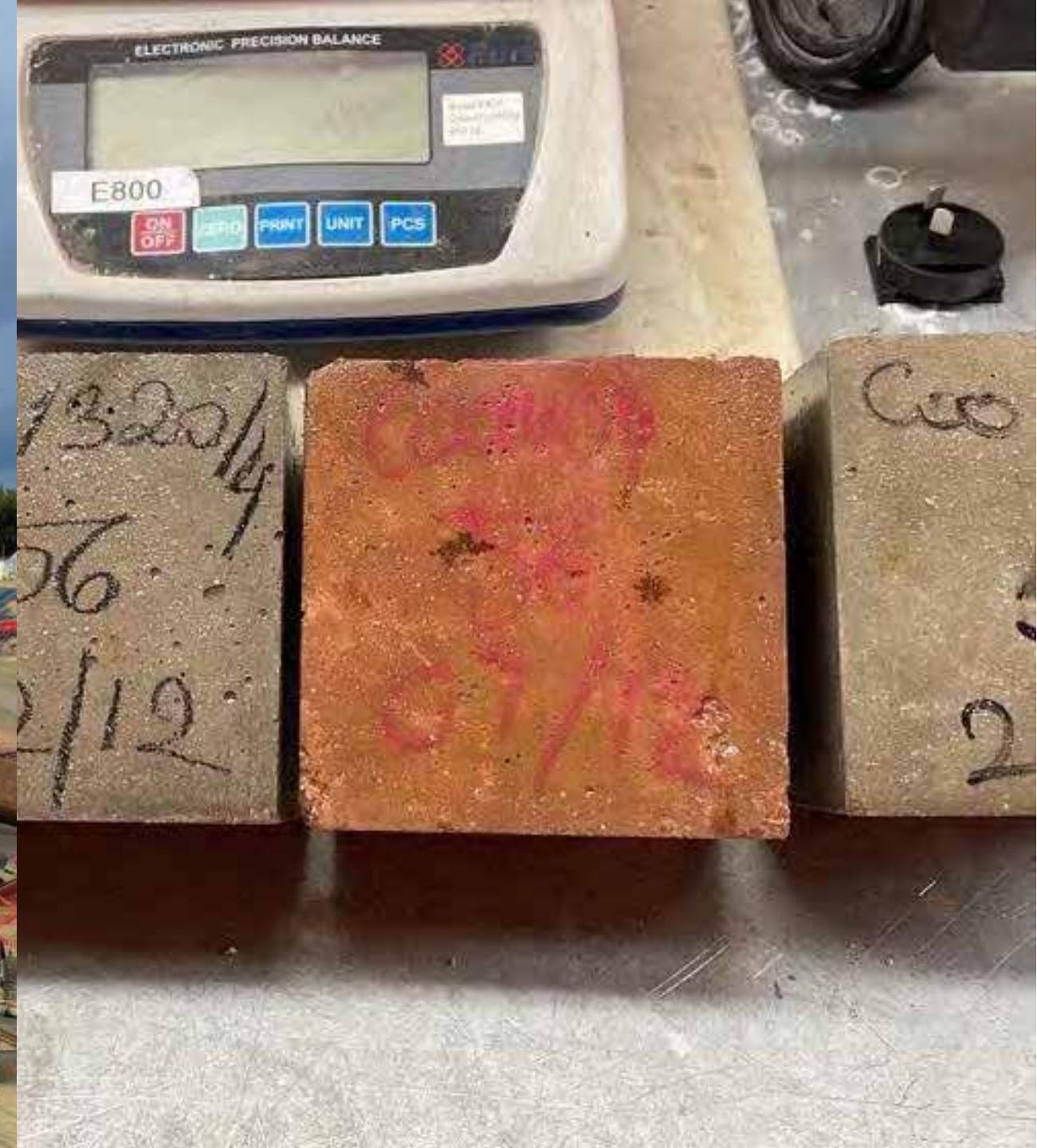
Durability (proven and demonstrable)

Cost (& value)

Standardisation (long-term essential for scale)

Constructability

...







Joining forces to accelerate innovation

We combine Arup's technical expertise, industry reach and influence with TEP's searching, convening and storytelling power to support breakthrough solutions that aim to accelerate the transition of construction materials towards an equitable net zero and nature positive future. Together, we will surface the solutions that have most potential for impact from around the globe to deliver against the five Earthshots.

ARUP X



ARUP



RIBA
Chartered Practice

barefoot architects

low-carbon
design

rob hankey
director

transforming the way people live through
co-design, collaboration and community

Bristol | Totnes | tel. 0117 907 0971 | www.barefootarchitects.co.uk

barefoot

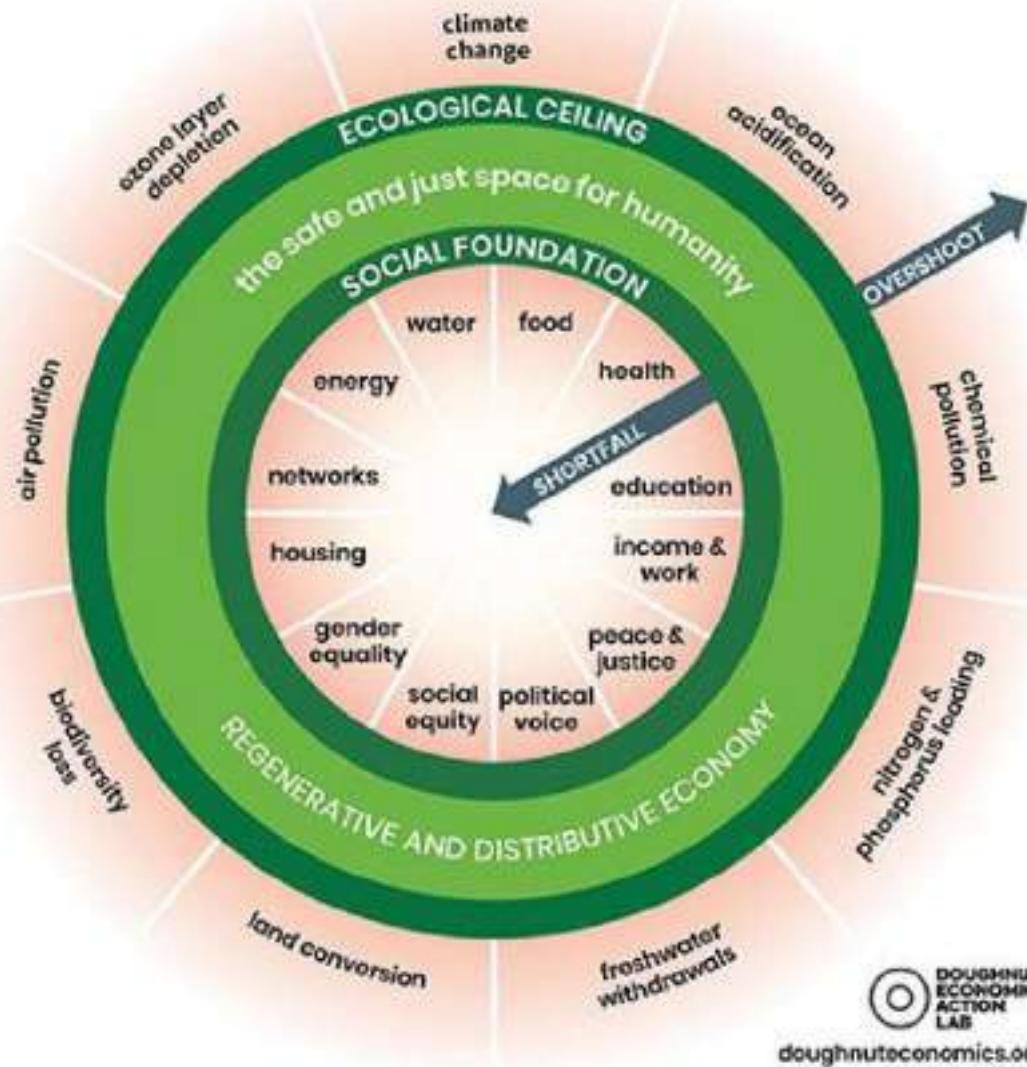
barefoot means minimising our environmental footprint, fostering community, and being connected to place



12 strong with offices in Bristol and Totnes



regenerative - more than sustainable



philosophy, process, product.

An aerial photograph of a residential neighborhood. The houses are mostly single-story with brown roofs. Some houses have solar panels installed on their roofs. The yards are landscaped with green lawns and some small trees. A paved road runs through the neighborhood, with a few cars parked along the sides. The surrounding area is a mix of green fields and more trees.

ecological imperative

naturally low-carbon

The next pages are here to help explain each of the different RIBA work stages, or 'steps' that we can undertake for your project and gives examples* of the type of drawings, reports, and information we provide. There are 6 steps in total, and we can fulfil just one, or all of them to suit YOU.

step 0-1



IDC & feasibility

step 2



concept design

step 3



coordination

lots of options
concepts
develop
detail
build
live

step 4



technical design

step 5



construction

step 6



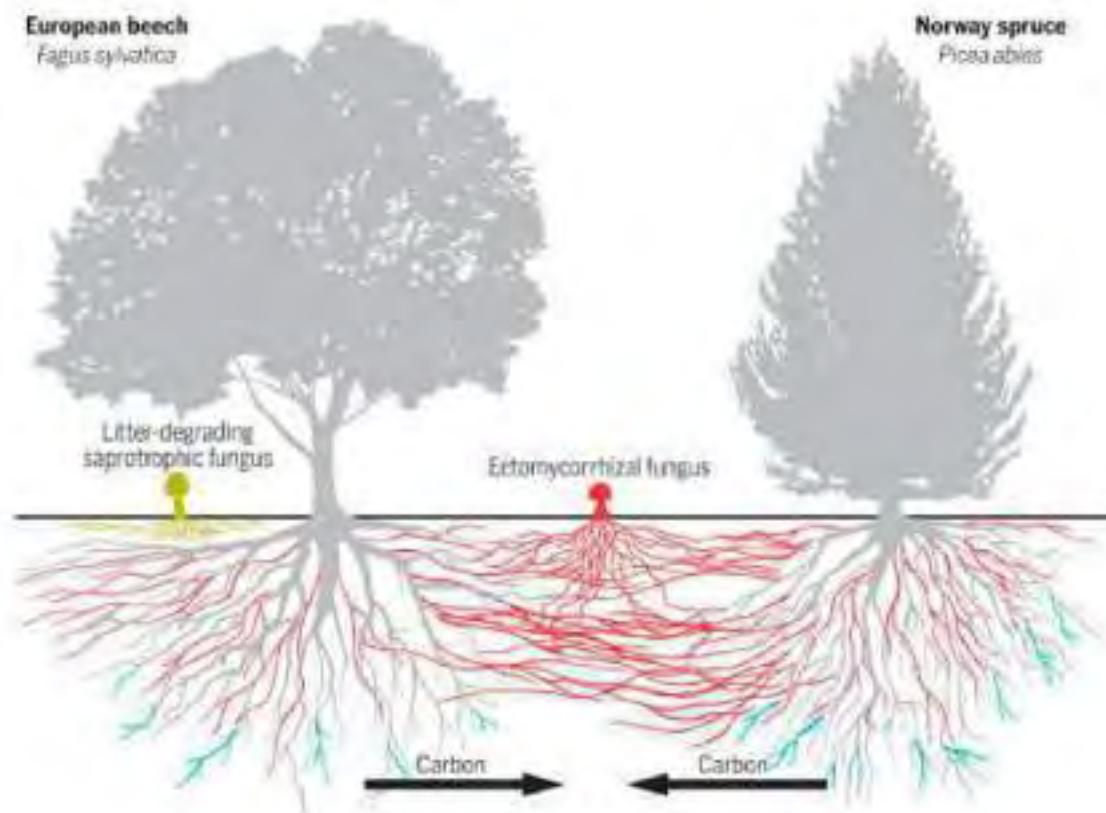
in-use

foot steps

*The images shown on the following pages are an indication of a process for a new build house. Some variation by project scale, type and service package should be expected.

better briefs

Could the project be used as a catalyst to improve the woodland site and ecology, using a regenerative strategy based on landscape character appraisal?



Could the project embody the clients philosophy, redefining our connection with nature and natural cycles - coming from and returning to the earth?



feasibility: background

We began work on the project by commissioning surveys for the sites ecology and trees – so that we could understand more about the habitat quality of the land before considering any siting or design.

Badger surveys were undertaken and it was found that they were present on site but at the time there were no active badger setts noted on site.

Dormouse presence absence surveys were not specially undertaken in 2022 but in lieu of this Dormouse nest checks were carried out, as well as informal checks of several nest tubes that were on site. Dormice were likely to not be present on the site, although LERC search indicates that they are likely in the area and mitigation suggestions were recommended such as only carrying out clearance works in suitable habitat outside of the hibernation period.

Roman Snail day and night searches were undertaken but no live snails were noted, only shells. It was concluded at the time that it is unlikely there is a population on site.

Bat surveys in the form of transects and static placement were carried out over 2022. A number of species were found to be using the site and certain areas of the site were highlighted as key commuting and foraging routes. Bats will need to be considered in any proposed plans. Further surveys are needed once the site positioning is confirmed.

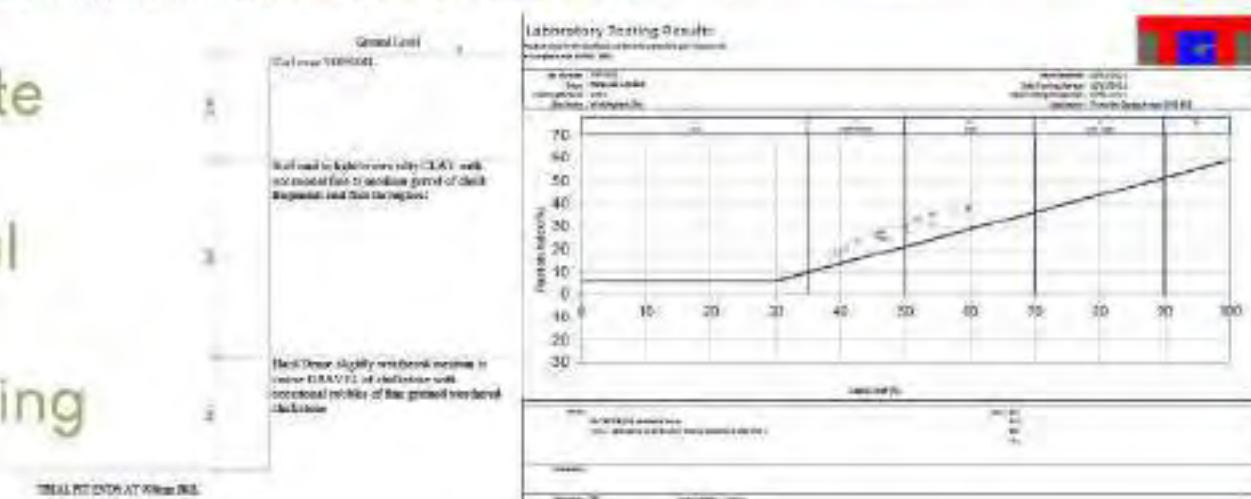


specialist advice surveys

feasibility: in-depth research



on/in site
local
regional
testing
measuring

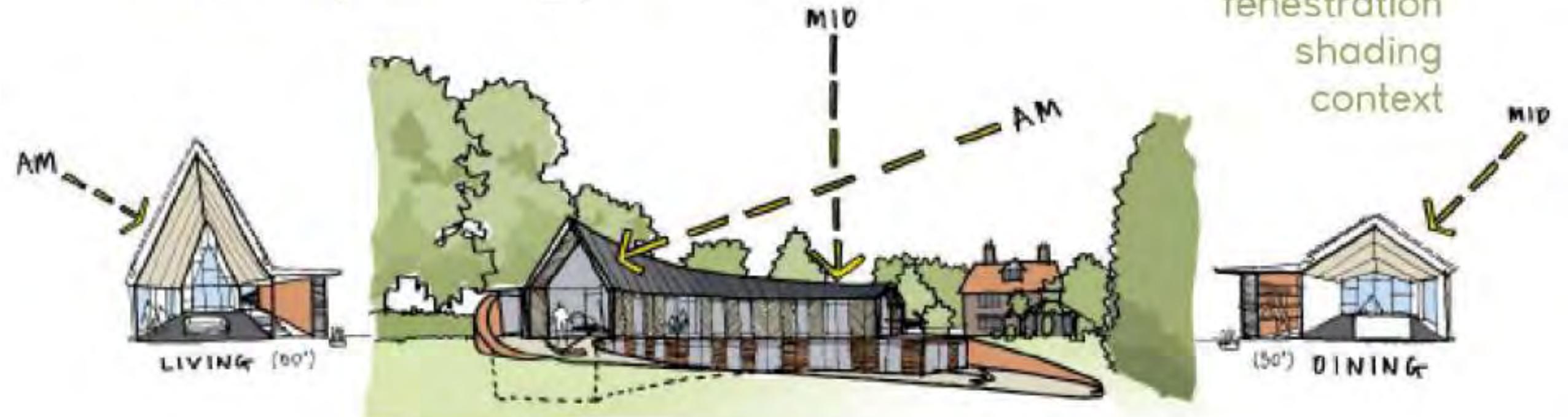


concept: site optimisation



access
orientation
services
drainage
landscape

concept: energy



form factor
fenestration
shading
context





concept: context is
everything

joined up thinking
story telling
visualisation

leadership + team work

concept: site materials



what's on site - is it useful
reclaim or reuse
ground conditions
circular strategies

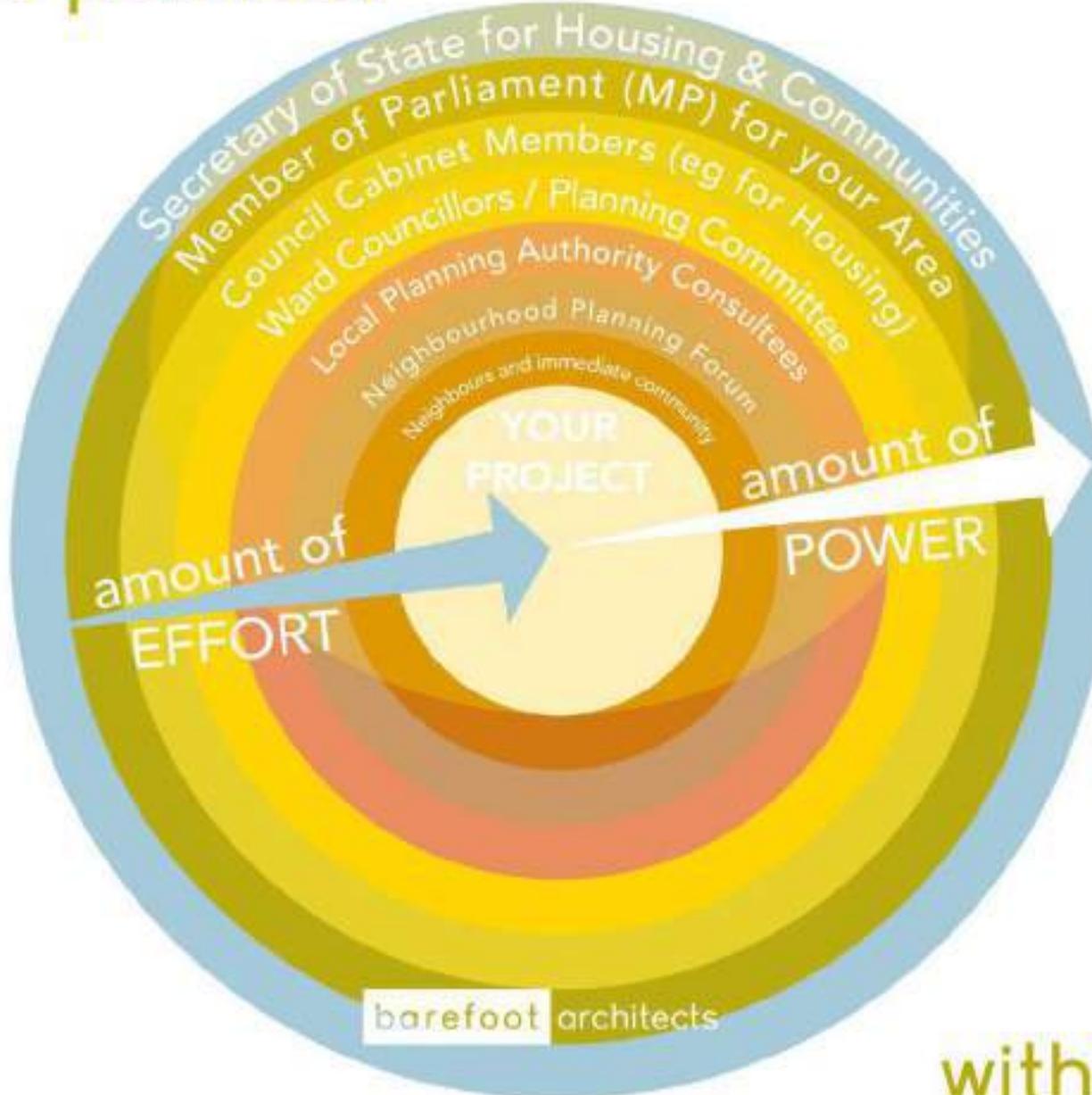
planning developments: depth + detail

measure
prove
construction
principal/detail



increasingly technical

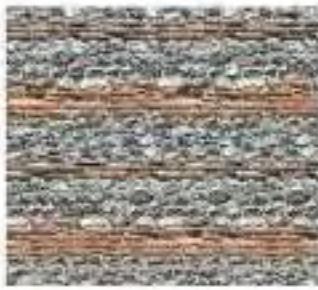
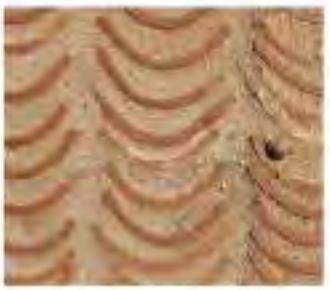
plan to be political



reach out
share
listen
sell

with a 'p' and 'P'

technical tender: keep attention



Wagon Presson Images

on your intentions

on-site: care



avoid the design gap

project examples



small



medium

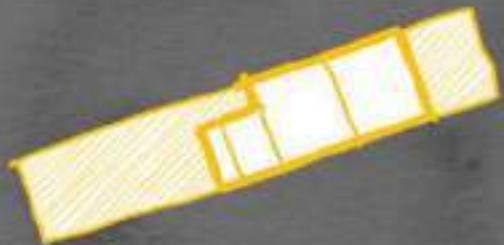
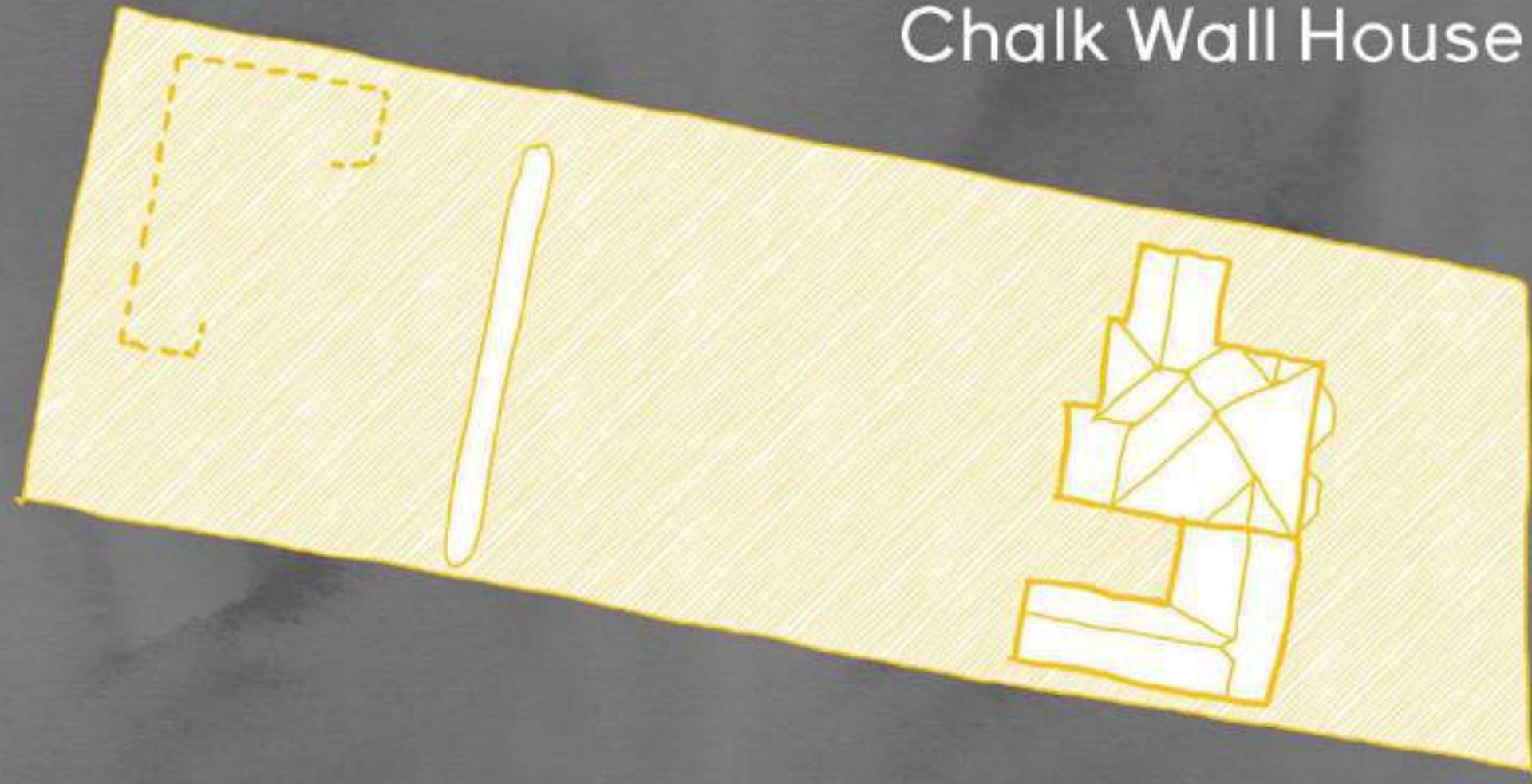


large

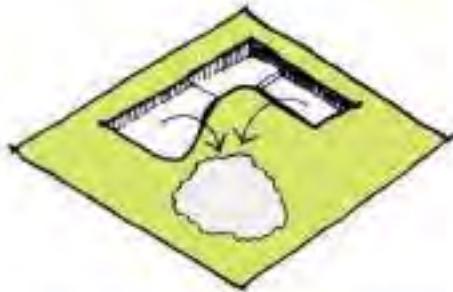
small

low-carbon; naturally
clever build system

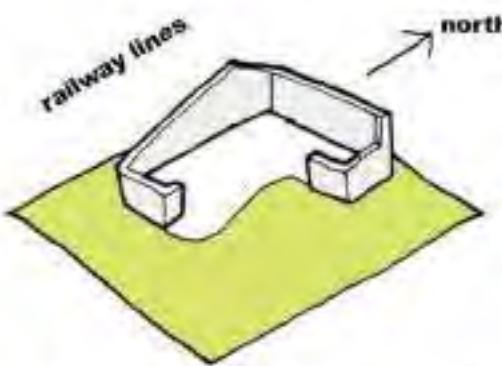
Chalk Wall House



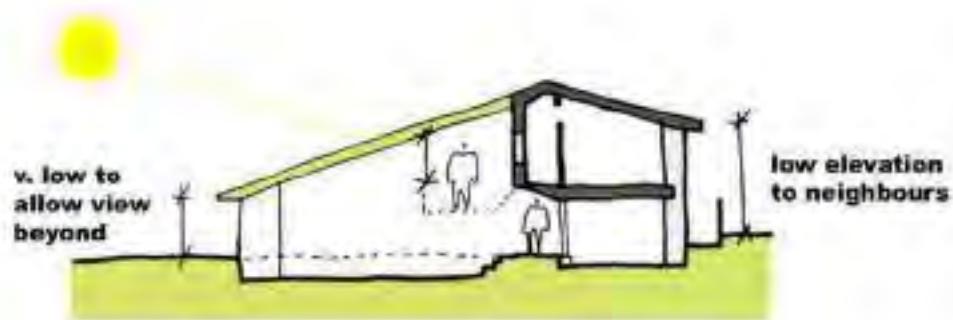
Built out of site/sight



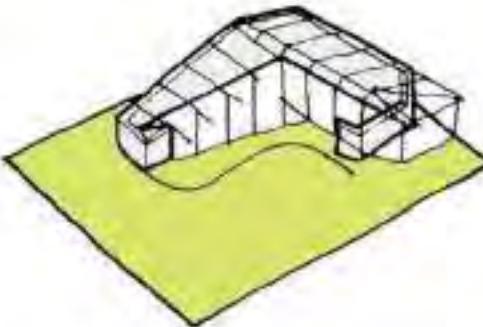
1. sink building into the ground, removing earth and chalk for building with



2. use chalk to construct heavy wall to protect against cold and noise from the adjacent railway



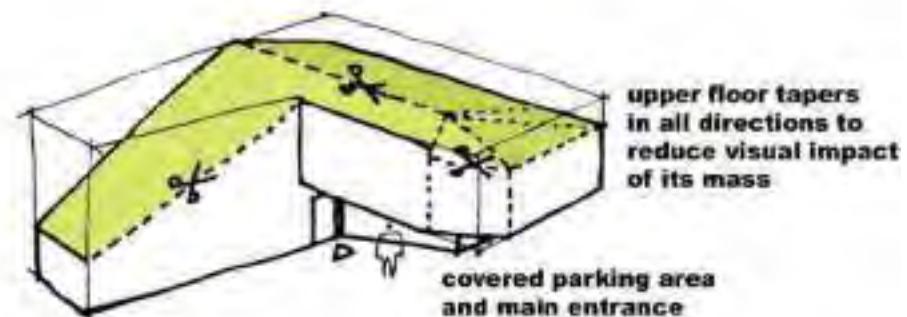
living spaces sunk to reduce overall height



3. erect modular timber frame supported by chalk creating covered entrance and parking



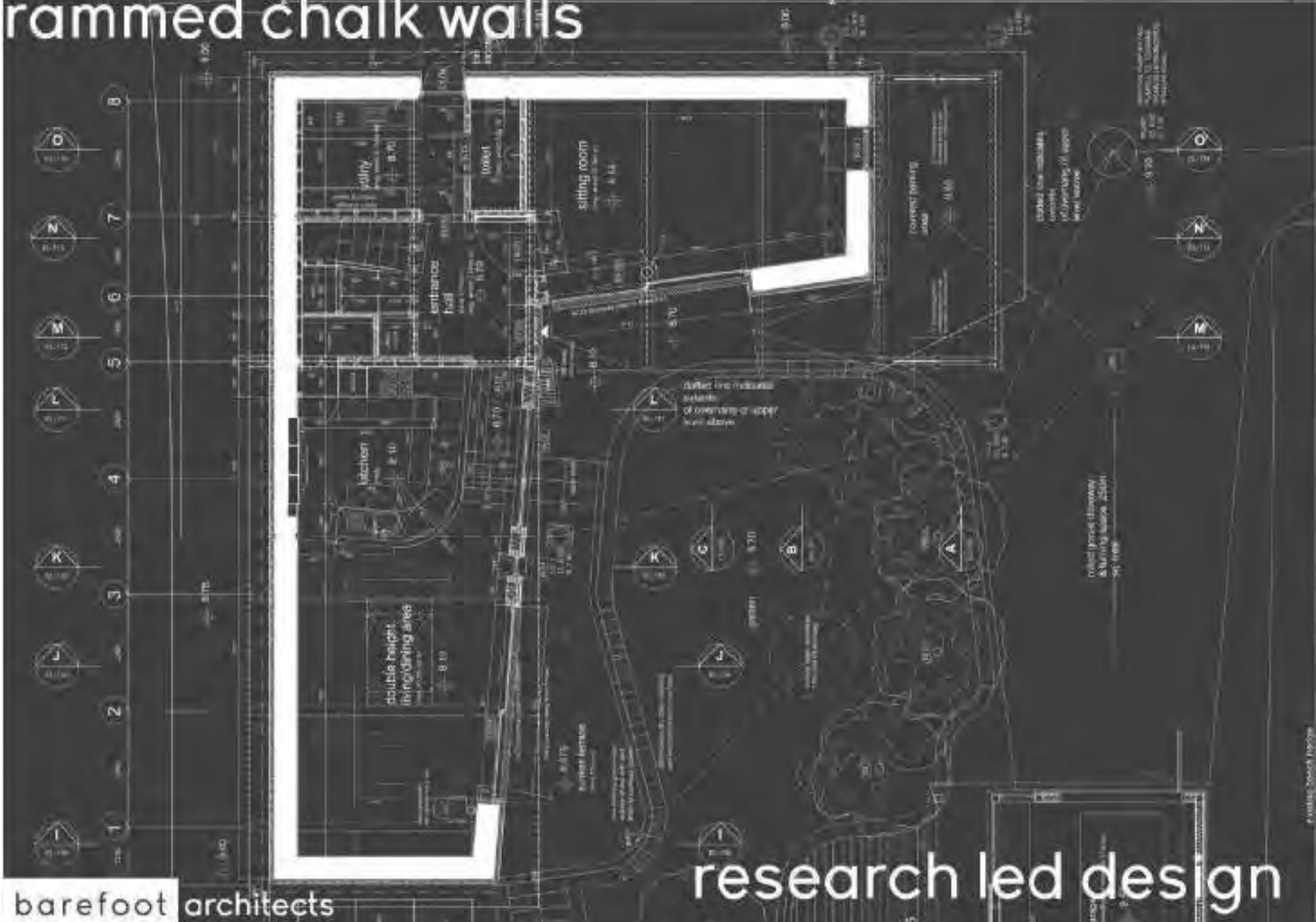
4. place topsoil onto the roof to grow sedums and clad with cedar shingles (black) to minimise visual impact



upper floor tapers in all directions to reduce visual impact of its mass

covered parking area and main entrance

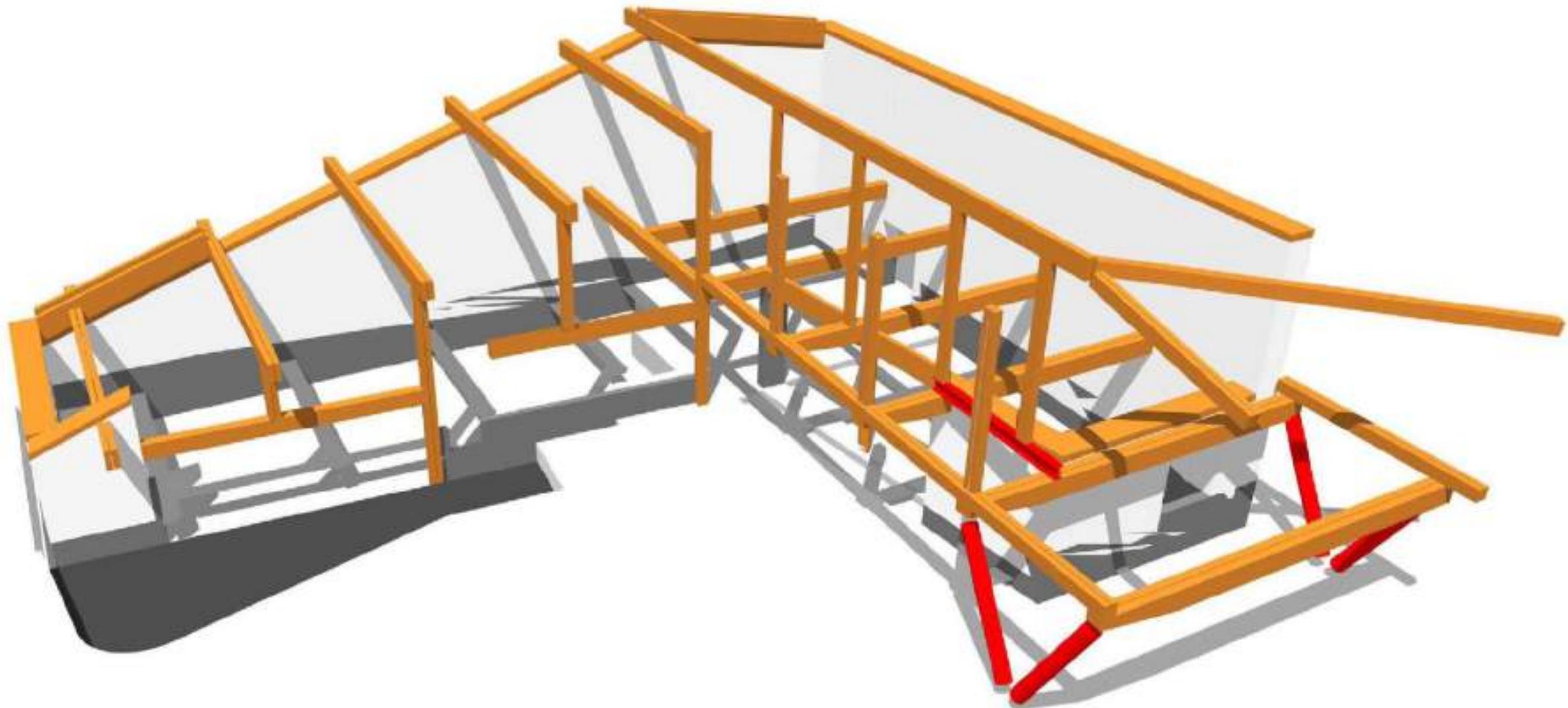
rammed chalk walls



barefoot architects

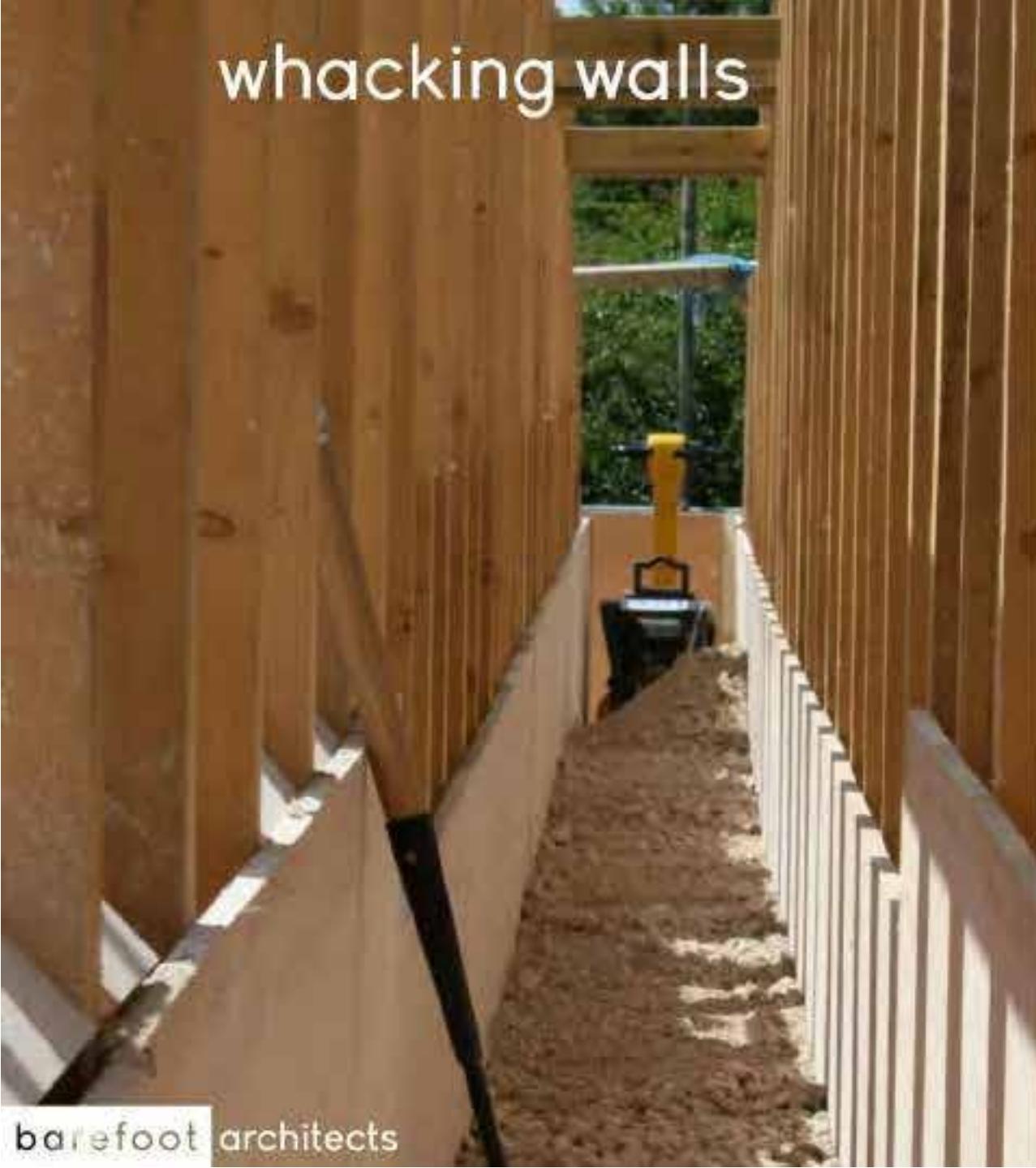
research led design

design for disassembly



minimising site waste

whacking walls



barefoot architects



simple, safe

formwork for superstructure



primary glulam frame



recycled secondary structure



natural finishes



exposed chalk



"slick & hairy"



in + of the earth

medium

low-carbon renovation
innovation

Wapan Houses



two hidden homes



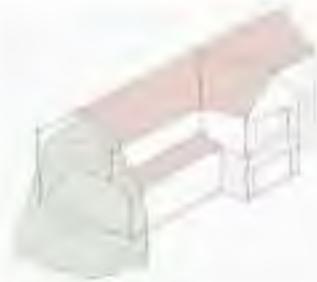
+ renewed farm house

one shared courtyard...



and design language

Walls & Wells



STAGE 1
Existing Pavement



STAGE 2
Layers of the Lembiya (cassava) impoed back to C19th C18th walls and re-use had started. Any modern features discovered to be retained. All original materials retained for next stage.

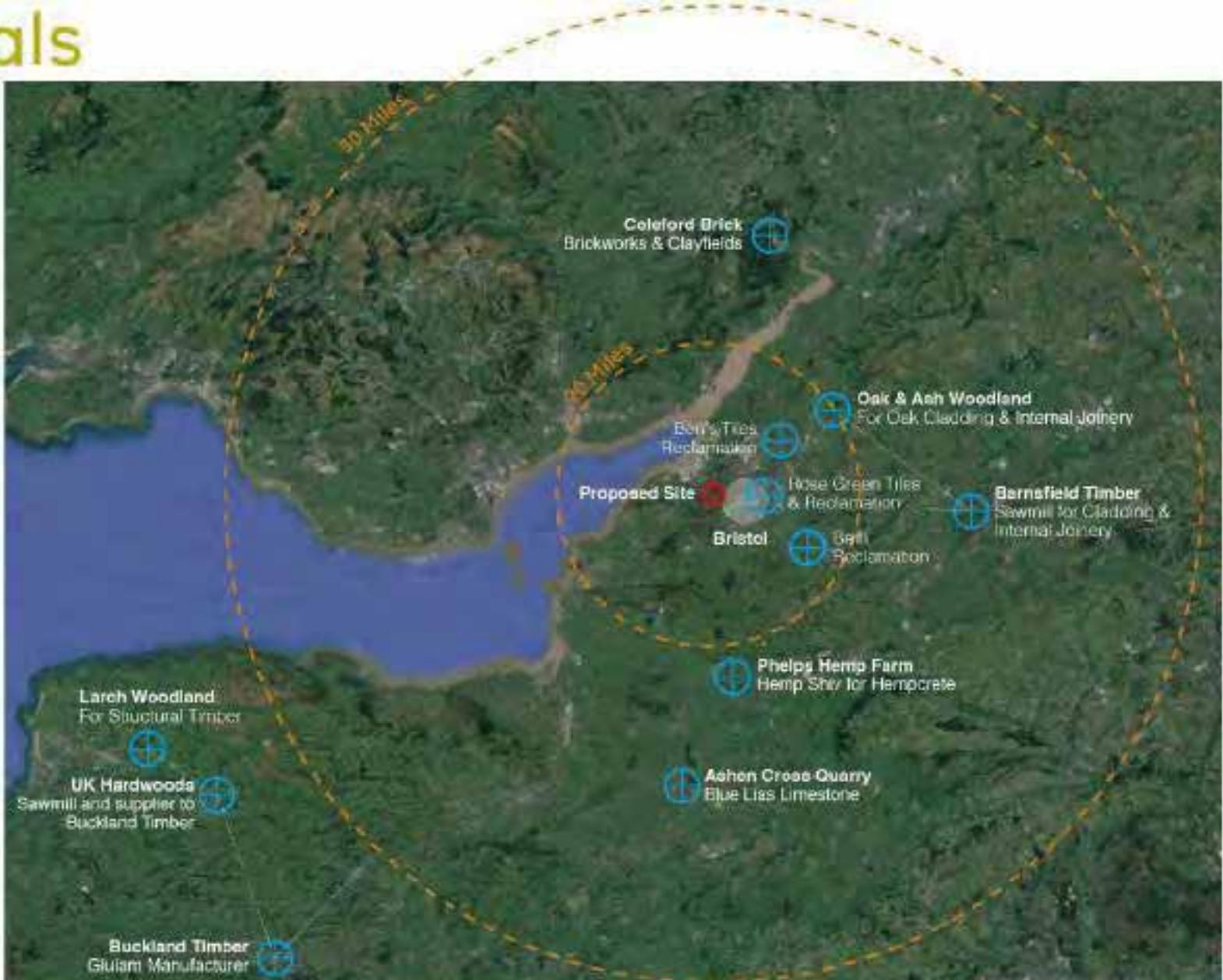


STAGE 3
New walls constructed from old and trade-sourcing walls and not flayig old ones and less labour used instead more focus.



from reused materials

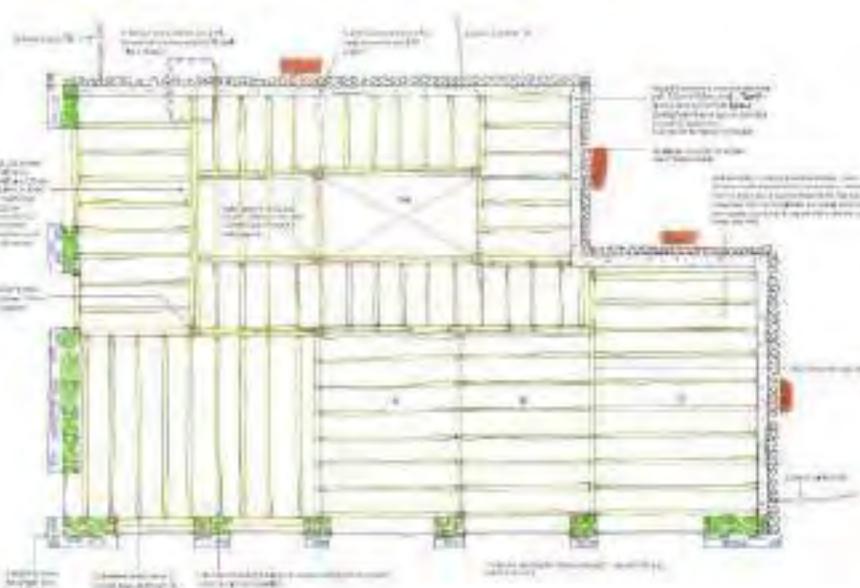
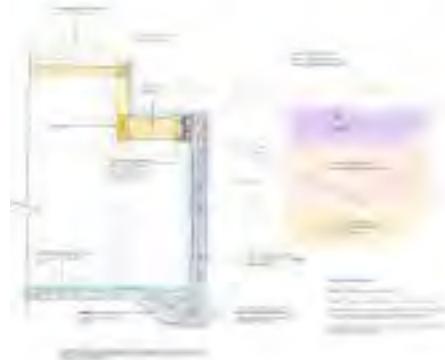
natural materials



locally sourced

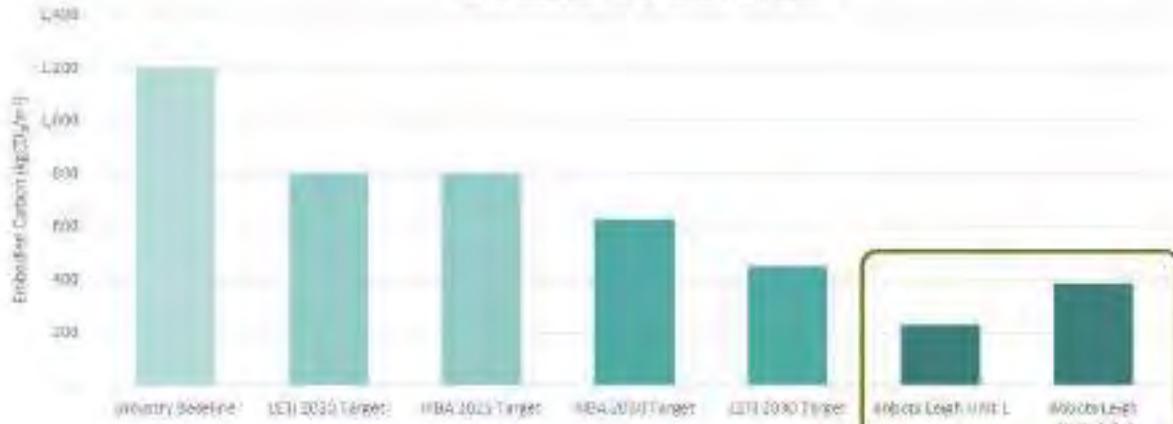
low-carbon construction

- To demonstrate the viability of the described design approach taken to the subterranean iconic. We have worked with structural engineers and a specialist in investigation methodology
- It is anticipated that the resulting walls could use cement in order to mitigate cement and reduce the embodied carbon required to create the structure
- A timber frame for the roof and wall structures will be used, to support the stone wall walls. The walls will be insulated with hempcrete



CORBETT + TASHER
Architects + Engineers

(a) Embodied Carbon Benchmark Comparison



TECHNICAL DESIGN NOTE

Hydrock

WALL TYPE W02: This is an alternative wall type for Level 1

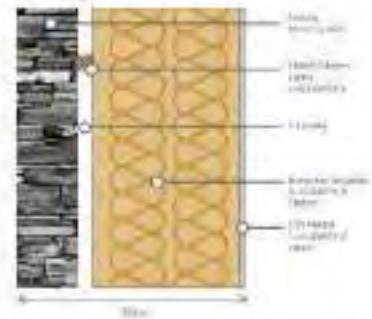
Estimated Carbon Values:

- Build Level 10 (deep) does not use the existing walls, and instead uses a Cross Laminated Timber (CLT) frame with clay tile cladding
- Build Clever: Hempcrete insulation used
- Build Clever: Timber frame and brick/ply internal finish used. Timber can be considered carbon negative if sustainably sourced.

WALL TYPE W03: This wall type is proposed for Levels 2 & 3

Estimated Carbon Values:

- Build Clever: Timber frame & Hempcrete insulation
- Design Considerations:
 - Thickness of insulation may reduce the floors areas.



WALL TYPE W04: This wall type is proposed for the earth-sheltered walls in Levels 2 & 3

Estimated Carbon Values:

- Build (200) - Cement for the earth-sheltered walls will be taken from the earth already onsite
- Build Clever: Hempcrete insulation used instead of concrete. Hempcrete has been proven to sequester up to 80% of the CO2 emitted using concrete.
- Build Clever: Hempcrete insulation used



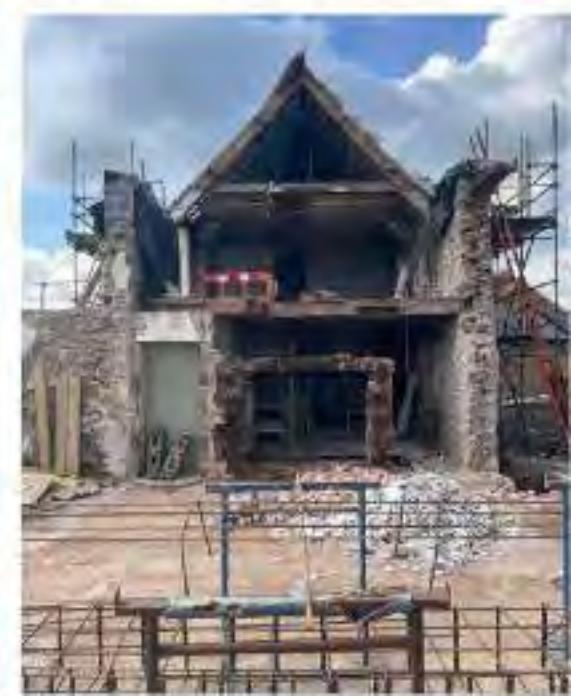
quantified and compared











large

low-carbon community
+ landscape

bridport cohousing



100% affordable
in perpetuity.

Connected by bus,
bike, and foot-
paths.

Adjoins green
spaces.

Next to the Com-
munity Hospital.

Provides 6 homes
for NHS staff.

Crowd-funded
land purchase.

Space to grow the
town and parish.

Partnerships with
local stakeholders
key to success

An area of
outstanding
natural beauty
and incredible
place to live.

people powered



Community led by a group of pioneer residents.

More sustainable, more affordable, more neighbourly. More ambitious!

Grant and crowd-funded project.

Mixed tenure, S/O & Social rent units.

Widespread support, but recommended for refusal.

Planning consent by unanimous committee decision.

Largest cohousing project in the UK - 53 homes.

An exceptional approach to gain an exceptional planning outcome.

cohousing principles



Danish approach from 1970's.

Cohousing is co-designed with intentional communities.

Provision of private and common facilities for a balance between privacy and community.

the top of the site is retained for wild space & food production

car parking kept to the perimeter of the site

car-free level roadways parallel to the contours with emergency access

south-facing homes to capture the sun and views

a shared common house at the heart of the site

58 homes in a mix of terraces and flats which all face the sun.

terraces with a mix of 2, 3, and 4 bed houses

food growing spaces to the rear of every home

swales, rain gardens, and pond basin for rainwater attenuation

apartments closest to parking entrance and common house ease of accessibility with sprinkler protection

shared toolshed, workshop and communal recycling stores

Car parking is at the perimeter, and a common house at the heart.

Cohousing embeds collective resident control and stewardship into its legal form and decision making.

Sociocracy empowers ALL voices.

Cohousing communities are inclusive and part of the wider community.

common typologies



Mix of house/flat types that share a similar visual language.

53 No. 1,2,3,4 bed terraced houses and flats.

Open plan flexible and adaptable living arrangements.

Lifetime Homes features included.

Sociable front gardens, private rear gardens.

Shared facilities – including guest rooms, laundry and workspace.

Self-build straw bale common house in the centre.

Terrace typology is inherently efficient and cost effective.

Quality, cost effective construction typology – MMC timber frame.

social streets & spaces



community microgrid



South facing roofscape covered with PV panels.

All electric homes and PV Microgrid addressing fuel poverty

On-site battery storage, and a dedicated ESCO supply reduced cost electricity to homes.

Free energy (for 2 years) and 25% cost reduction guaranteed in perpetuity

Air-source heat pumps and direct electric heating

Total site generation = total site use.

lessons of hazelmead



Hazelmead is a community in which people grow and thrive.

Cohousing supports overall well-being and is fundamentally a healthier approach to housing.

It addresses loneliness and the affordability gap.

It is multi-generational and mutually supportive.

There is massive social value in a caring community.

Community led groups are more ambitious.

Entrust & enable communities and designers to take risks.

Although a protected landscape, this is now a flagship for the LPA.

Be as brave and bold as these local residents to make change happen.



the community are in control of the management and maintenance of the site. the CLT retain responsibilities, and residents sign up to contribute around 2 hours a week.



private homes and rear gardens balance living in an intentional cohousing neighbourhood. residents can have their cake and eat it. privacy and community.



net zero carbon,
car free, all electric,
mutually supportive,
multi-generational
affordable cohousing
formed by a CLT.
so why doesn't every
village, town and city
have one?



extra large / extra small

low-carbon cabins
architectural product



barefoot cabins

recap

build naturally
+ reduce waste

renovate + innovate,
+ holistic thinking

create community/landscape
+ reverse design gap

repeat and refine
+ seek innovation

rob@barefootarchitects.co.uk
www.barefootarchitects.co.uk
01803 44 60 40
1 High Street, Totnes, TQ9 5NN

building
community

get in touch

Panel Session: Customer Pull



**Sebastian
Maher**

Development & Design Manager
Reef + Partners



**James
Byrne**

Partner
Sustainable Ventures



**Debbie
Ward**

Director Reuse & Circular
Economy
ASBP



**Emily
Walport**

Associate
ARUP



**Rob
Hankey**

Technical Director
Barefoot Architects

Elevator Pitches

Valentina	Dipietro	Mykor
Dougal	Driver	Grown in Britain
Rob	Smith	Material Index
Justin	Murray	Bio-SIP (Qube Buildings Ltd)



Innovate
UK

Business
Connect



We grow buildings



THE
EARTHSHOT
PRIZE



UWE
Bristol
SCHOOL OF
DESIGN



Horizon 2020
European Union Funding
For Research & Innovation



2030



CORE
PARTNERS

Moonstone

RUMBO
VENTURES



GREEN ANGEL
VENTURES



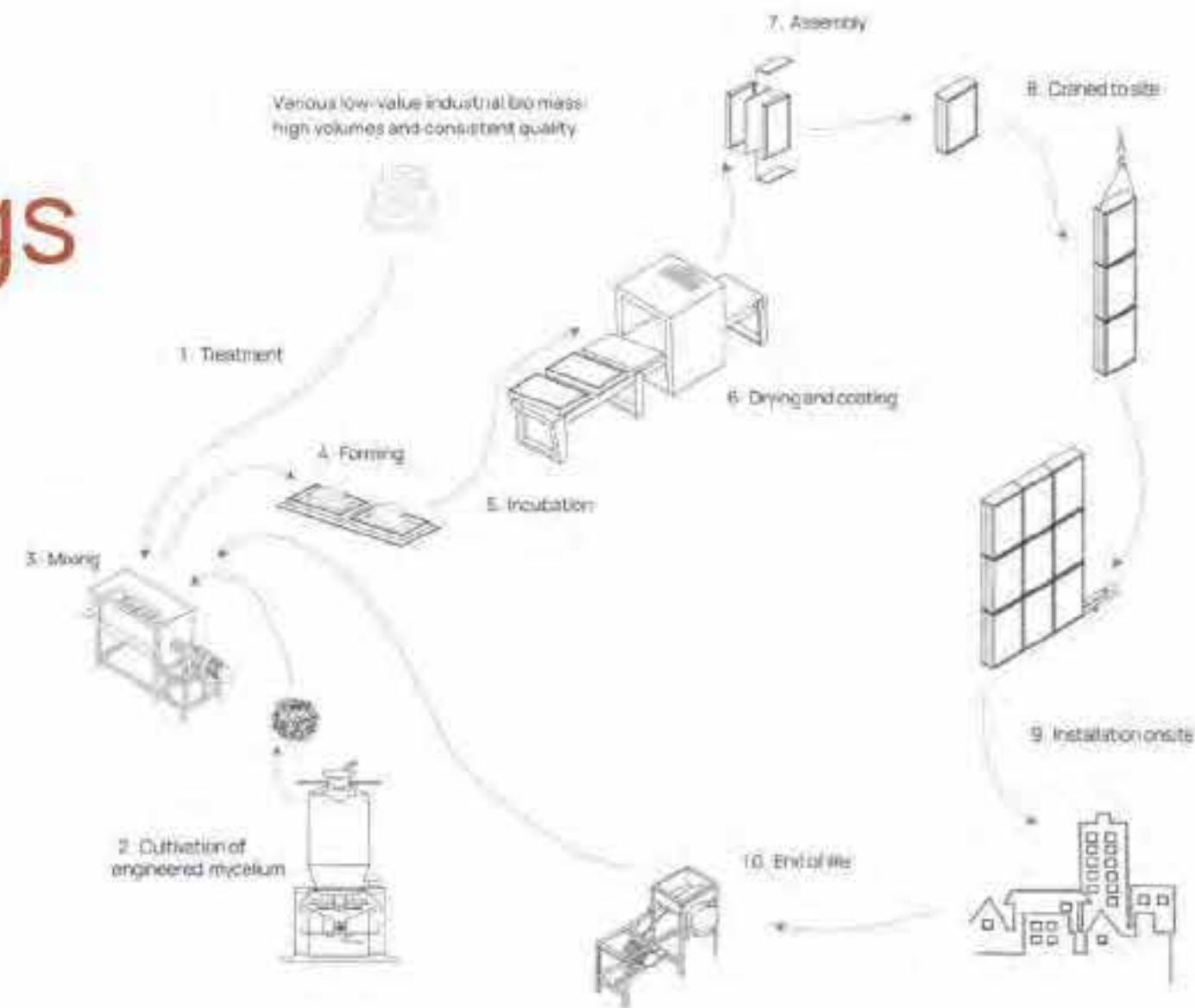
ISOMERASE

+SIMMONS
SIMMONS



valentina@mykor.co.uk

www.mykor.co.uk



MYKOSIP® INTERNAL

Our flagship product is an all-in-one 100% bio-based partition wall



Bio-based & Circular:

100% bio-based

100% dis-mountable and recyclable at end of life

Outstanding LCA values:

115% less CO₂e embodied per m²

90% lower water footprint

Strong performance qualities:

Fire Resistant: Euroclass B

2x improved sound insulation

Anti mould properties promoting healthy internal air quality

No VOC's or toxic particles

66% reduction in onsite manual labour

20% less structural framing

Price parity to end contractor



Conventional internal partition wall
45dB acoustic reduction

MykoSIP® Internal
45dB acoustic reduction



Grown in Britain Certification

- Recognised mark of assurance on British timber.
- Tailored for UK woodlands and regulations: Category A UK Timber Procurement Policy.
- Benefits to the economy and the natural environment.
- R&D to replace unnecessary imports with high quality UK timber products.



TRUSTED
CERTIFICATION,





Grown in Britain

Biogenic Stored Carbon Quotient



Major industry coalition to provide verified biogenic carbon claims.

Drives investment in UK built environment & domestic supply chains.

Support developers, architects, housing associations and LAs in demonstrating the climate and social value of their construction projects.



PRIYSGOL
BANGOR
UNIVERSITY





“

This certification scheme is a game-changer.

It enables the construction sector to move beyond emissions reduction and embrace carbon storage as a strategic climate solution.

Timber buildings are not just low-carbon - they store carbon in the long term.

- Matthew Riddiford, Carbon Plantations Ltd

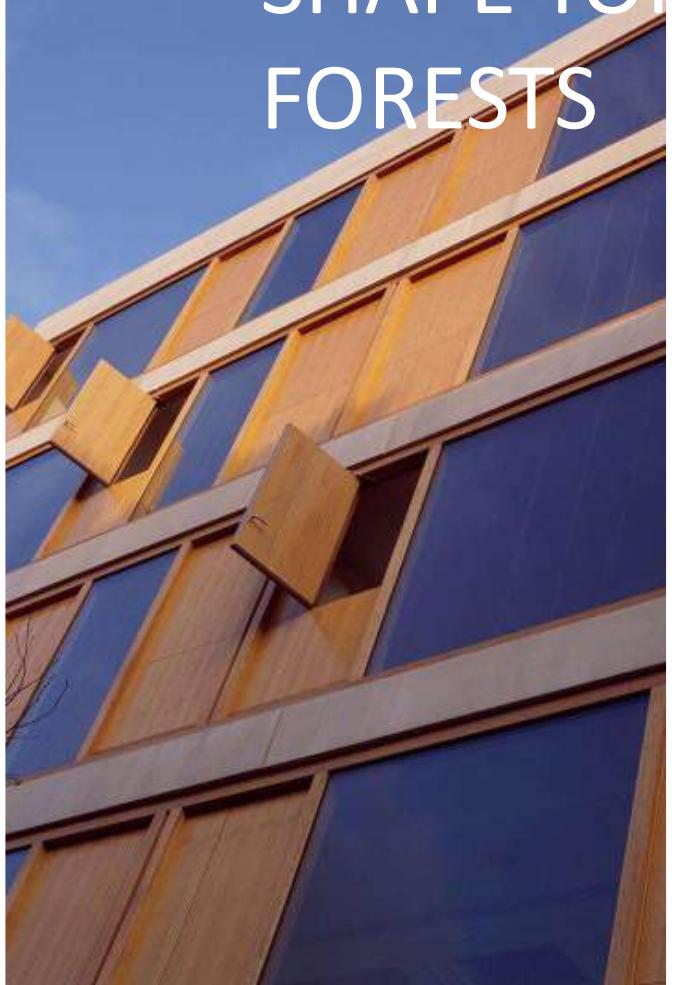
”



YOUR TIMBER CHOICES
TODAY

SHARE TODAY'S

FORESTS



MAKE SURE IT'S
GROWN IN



N.ORG

Material Index

Making material reuse viable



www.material-index.co.uk





Reuse shouldn't be a risk

MI connects together the supply chain so viable end-of-life decisions can be made

A platform for cataloguing and managing materials, connected to a marketplace for exchange

The image displays two screenshots of the Material Index platform. The top screenshot shows a 'Sites' list on the left and a map of London on the right, with numerous blue dots representing active sites. The bottom screenshot shows the Material Index website homepage, featuring a banner for 'The construction marketplace for reclaimed materials', a 'Leaving Soon' section with various items, and a large image of a truck at a construction site.

Sites

- POSTCODE: Search
- 29 Mincing Lane
- 100 Mincing Lane, London EC3R 8AF
- 100 Shoreditch High St
- Shoreditch High Street, London EC2A 2AF
- 10 George St
- George Street, London W1A 1EE
- Custom House
- Lower Thames Street, London EC3R 8AF
- 100 Shoreditch

ROWS PER PAGE: 20 1-20 OF 222

Material Index

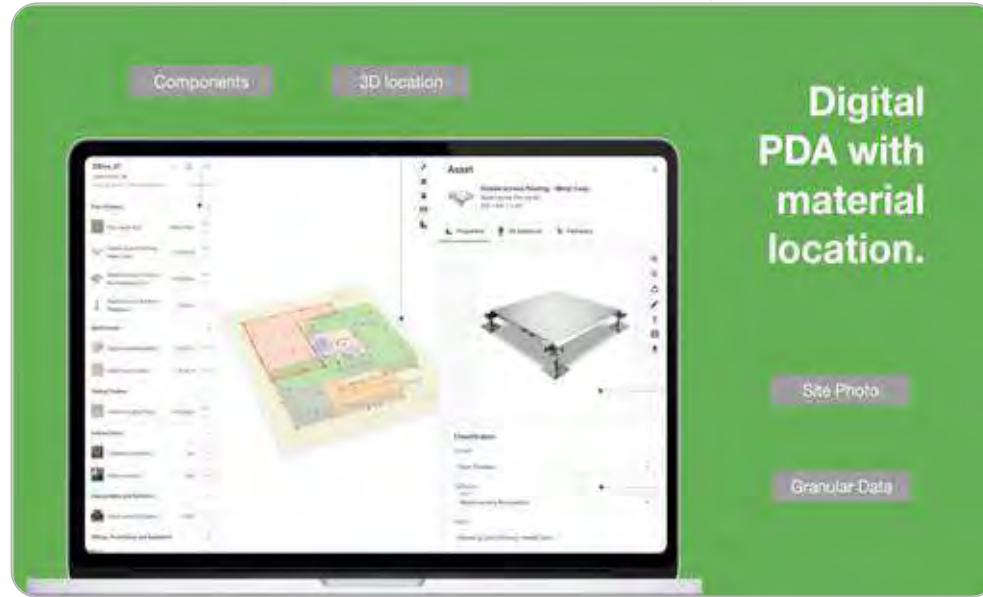
The construction marketplace for reclaimed materials

Leaving Soon

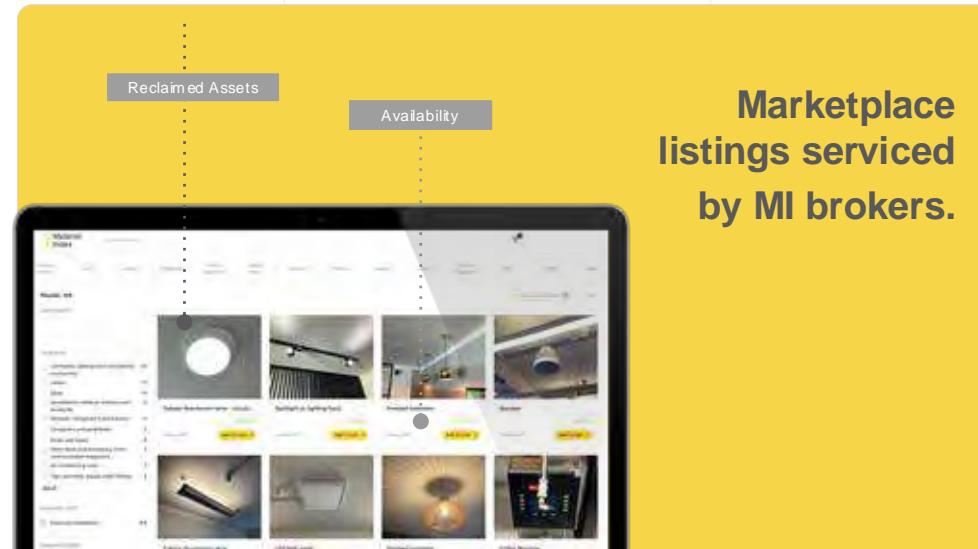
- False ceiling panels
- False ceiling
- Reclaimed Glass Panels
- Reclaimed Ceramic Tiles
- Kitchen sink
- Light Blue Pattern Lounge Chair
- Plaster tiles
- Wooden Sliding Units
- Gold Mirror Double Front Set
- Timber staff surfaces

Above: Platform screenshot

Below: www.material-index.exchange



Digital
PDA with
material
location.



Marketplace
listings serviced
by MI brokers.

Best-in-class audits

Waste, Carbon, Product data
GLA, Westminster, CoL compliant
BREEAM Credits

Marketplace

300 Reclamation businesses
Personalised brokering
Commission only

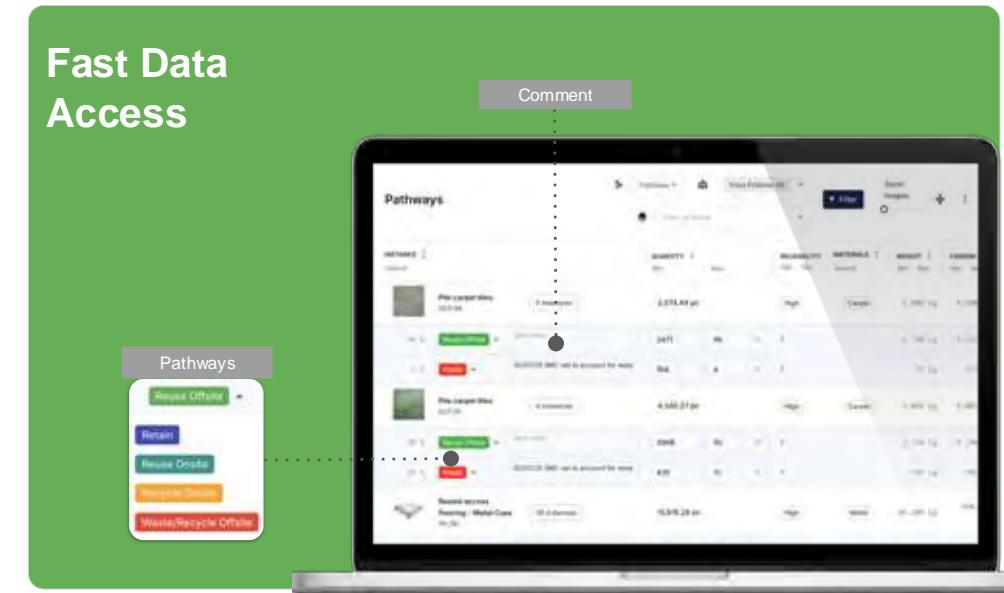
Material passports

Data Cleaning

One-off cost

Enabling future re-use

Fast Data Access



Portfolio Tools + Recycling Analytics

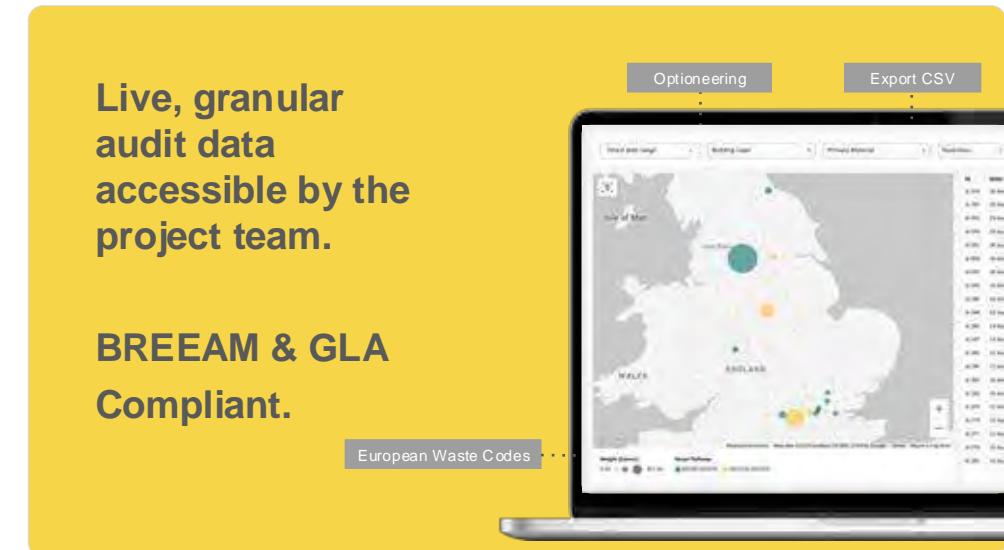
Recycling analytics

Internal Marketplace

Storage functionality

Live, granular
audit data
accessible by the
project team.

BREEAM & GLA
Compliant.



The circular economy cannot be built alone

We're always interested in being a collaborative and proactive partner

Please get in touch at
hello@material-index.co.uk



www.material-index.exchange

Clients

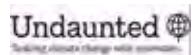
DERWENT
LONDON



Charlie Luxton Design

Design and Industry Partners

Hassell



Introducing Bio-SIP™

Bio-SIP™ (biological-based Structural Insulated Panels) are eco-friendly building system that use post-consumer waste (recycled plastic bottles - PET) for the insulating core, and natural fibre skins for the structural facings.

They provide an environmentally friendly and energy-efficient alternative to traditional SIP panels and can be used in various construction applications for a minimum of 60 years.

OWMG
THE UNIVERSITY OF WARWICK



2000

bottles per panel



Plastic Bottle Recycling

88%

Of Bio-SIP™ is made from waste material



Natural Fibre Materials



87%

reduction in CO₂ vs traditional panels

1000's of Applications for Diverse Locations

Temporary structures

Vacant lots and unused spaces in urban areas can be transformed into applications like housing solutions for those in need, classrooms and storage facilities.

Rural Development

Bio-SIP targets rural developers seeking eco-friendly, energy-efficient solutions for garden offices, forest lodges, and sustainable rural accommodation.

Disaster Relief

Bio-SIP units can be quickly deployed to provide emergency shelter in the aftermath of natural disasters or humanitarian crises.



Warranty



Easy Assembly



Sustainable



Made in the UK



Quick Assembly



FREE Survey

A solution to build millions of Net Zero, Affordable and Sustainable homes.

We are privately funded, and we are looking to make a difference. We hope you are too...

Our partners who also think so are:

Innovate UK

STOPDIGGING!
THE ECONOMIC CASE FOR SAVING OUR HOMES

UK GBC
Member

UKRI
Innovate UK
EDGE



Bio-SIP™



Networking Lunch

Return at 13:30



Innovate
UK

Business
Connect

Elevator Pitches

Clare	Whitney	Consultant Earth Blocks
Steve	Barbour	Composite Braiding Ltd
Jamie	Bartley	Unyte Group
Dan	Macey	SoilDri Ltd



Innovate
UK

Business
Connect

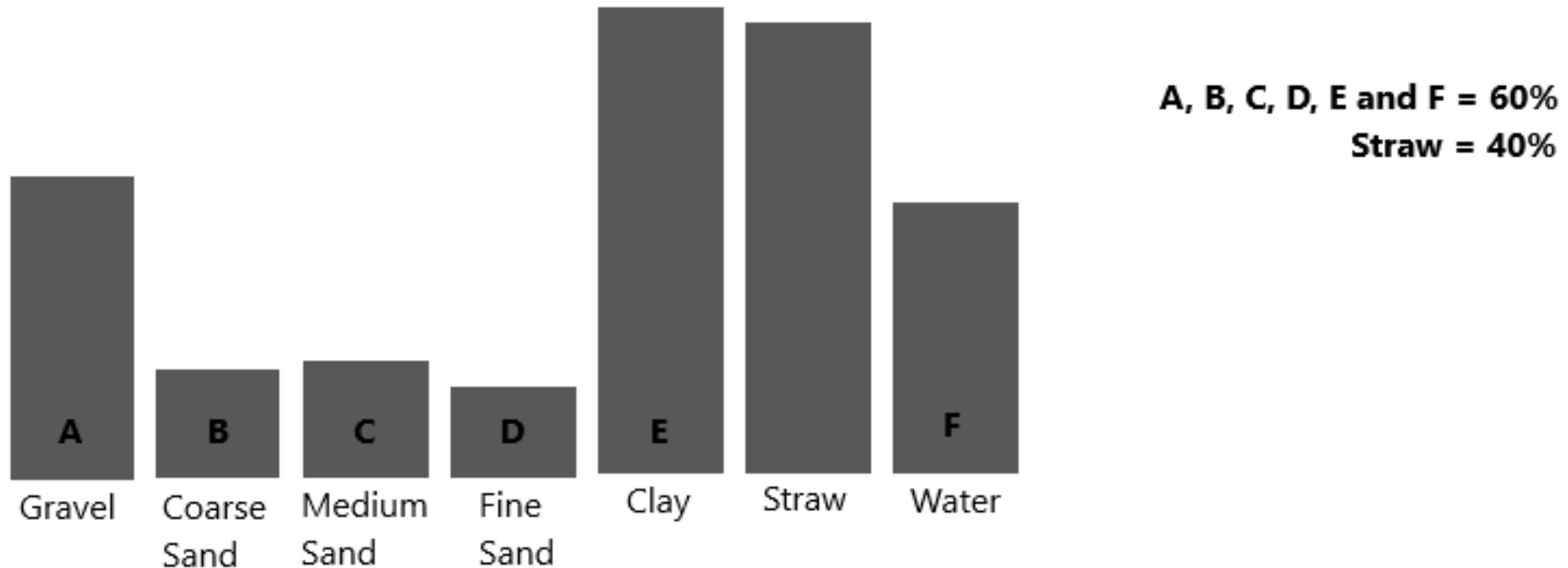


EARTH BLOCKS

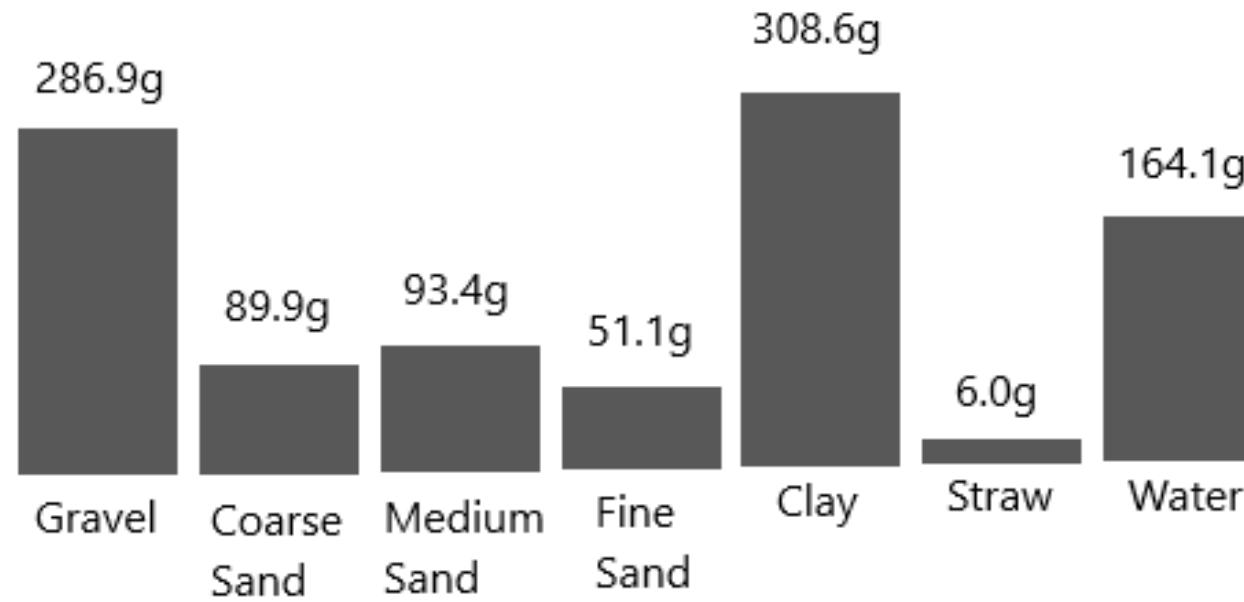


natural building





Soils are analyzed for their contents by volume



Soils are analysed for their contents by weight



Cob blocks are naturally dried outside....



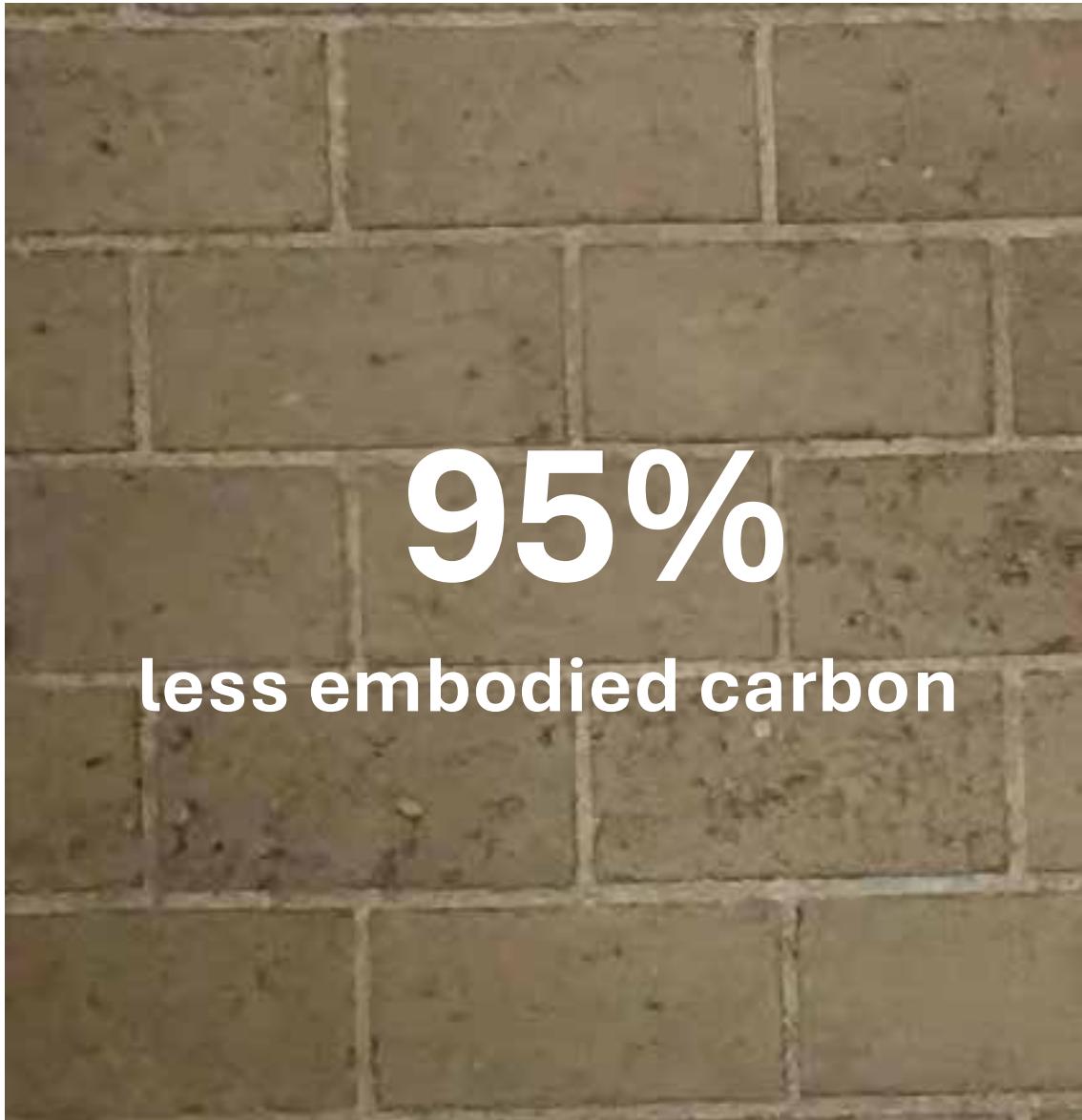
Construction, Demolition and Excavation (CD&E)

- 58% of landfill tonnage is soil waste
- 68% of landfill waste is soil and mineral waste
- Soil waste heading for landfill.....can make enough CEBs....
....to construct approx. 5000 homes per year!
- No Cement
- No Gypsum
- No lime or binders
- No firing or hydraulic change of state
- No PFAs or synthetics, microplastics
- No plastics, pigments
- No landfill costs
- No end-of-life costs
- No VOCs, no Formaldehydes – no toxins
- Compostable, Reuseable, Recyclable
- ...95% less embodied carbon....

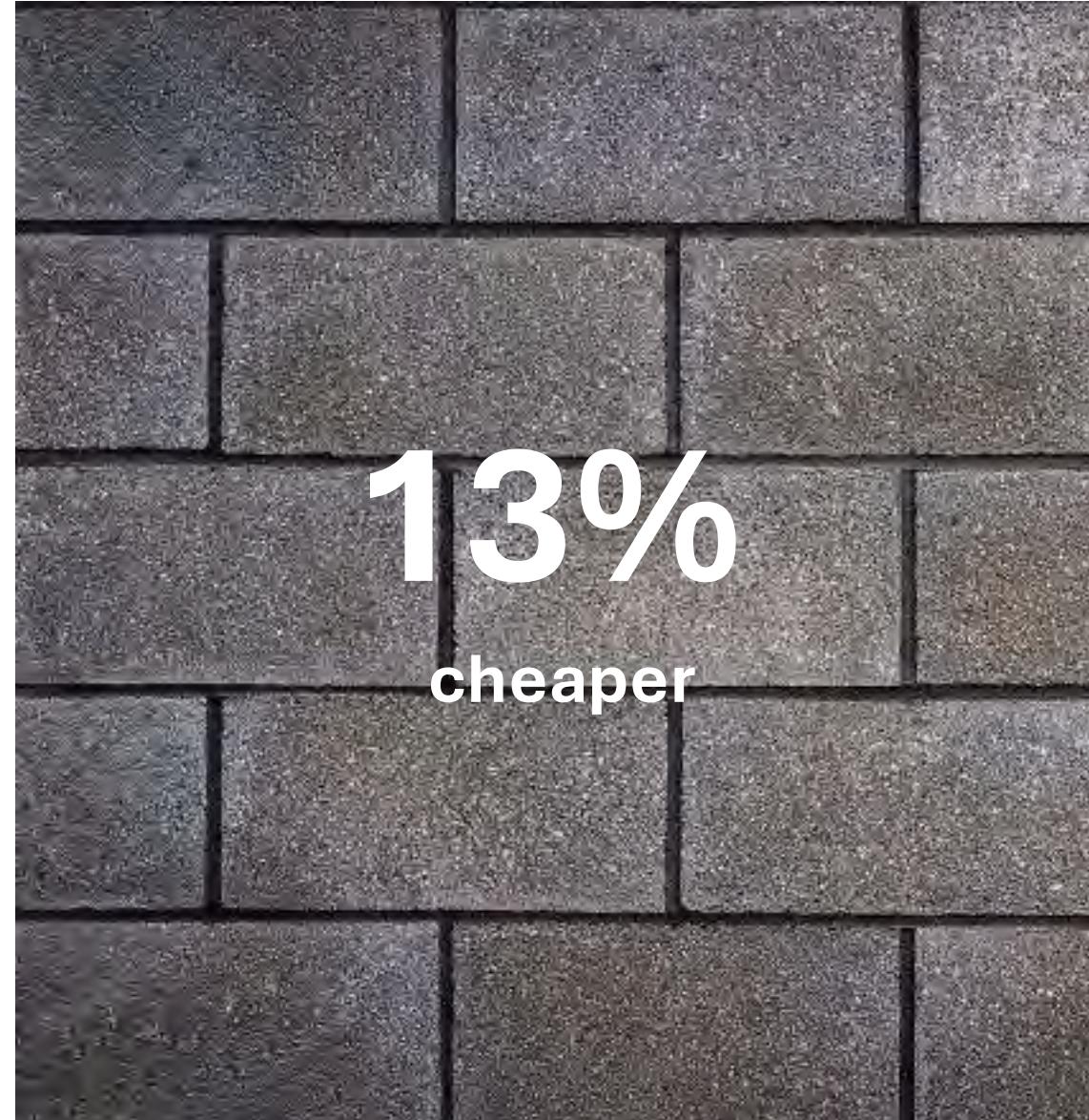
125mm CEB Walling

verses

Concrete Block Walling

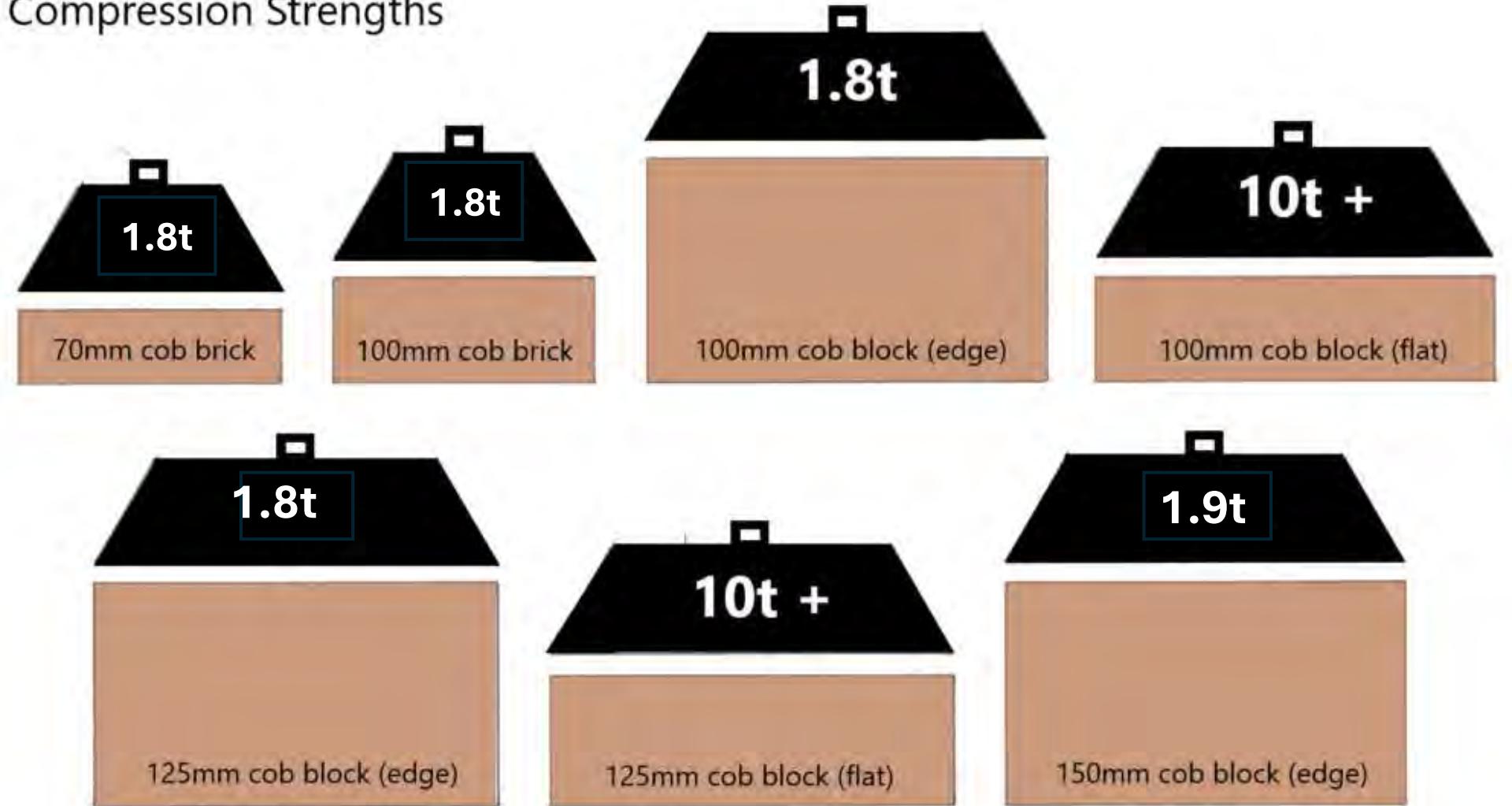


95%
less embodied carbon



13%
cheaper

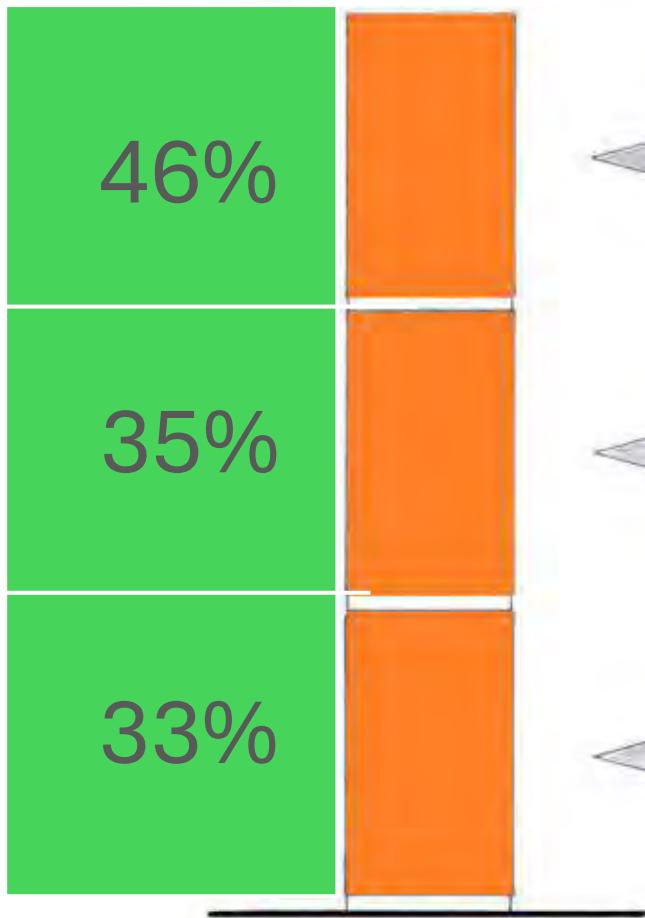
Compression Strengths



* These calculations were achieved by spread-load testing to fully cured products.

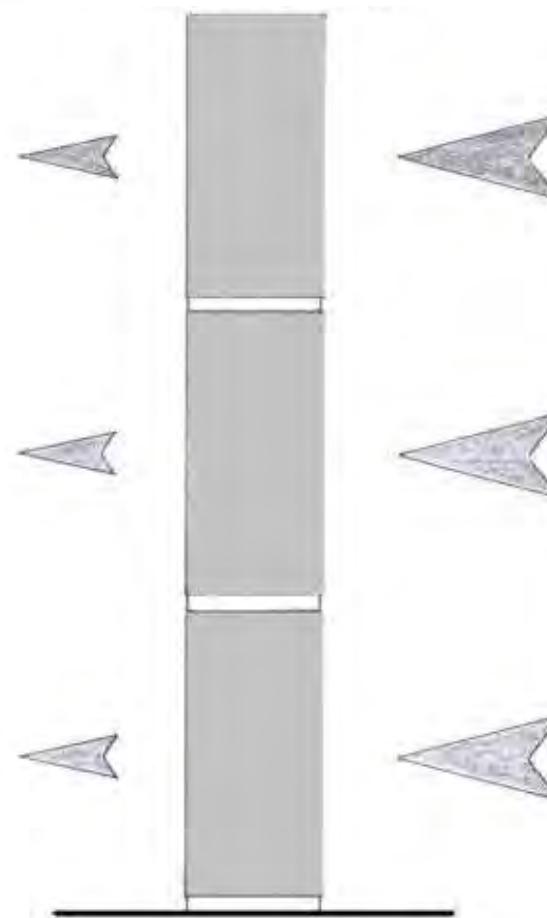
THERMAL CONDUCTIVITY

125mm CEB



U-Value 1.20 W/M2K
K-Value 133.950 KJ/M2K
R-Value 3.03 m2K/W

100mm Concrete Block



U-Value

K-Value

R-Value

TYPICAL INSULATIVE VALUES for a CONCRETE BLOCK

U – VALUE	Measurement of heat transfer from inside to outside	1.76 W/m2K
K – VALUE	Thermal conductivity. Heat transfer	181.800 KJ/m2K
R – VALUE	Resistance to heat-flow	2.27 m2K/W

TYPICAL INSULATIVE VALUES for our CEB

U – VALUE	Measurement of heat transfer from inside to outside	1.20 W/m2K
K – VALUE	Thermal conductivity. Heat transfer	133.950 KJ/m2K
R – VALUE	Resistance to heat-flow	3.03 m2K/W

One of our cob bricks
having been exposed to
extreme fire and heat



HANDLING & STORAGE

- Handling & moving the blocks requires a little more care
- Keep pallets covered until ready for use
- Prevent the blocks from becoming saturated
- Wait for persistent & heavy rain to pass before laying



Research & Development

- Suitable soil exploration
- Product testing
- Regional soil analysis





London clays from varying depths



LONDON CLAYS

Made with soil from approx. 2m below surface

Made with soil from approx. 1.2m below surface

Made with soil from approx. 0.5m below surface



Earth mortar used as a common binder for CEBs or earth bricks

Hybridisation

- CEB's laid on edge
- Natural lime mortar
- Normal building techniques
- Conventional wall-base
- Conventional methodology
- Meets with:
 - Building Regulation C
 - Section 5.5
 - Parts a), b) and c)



Hybridisation

- Standard cavity closers
- 3-coat lime render
- Sand/cement plinth render
- Mineral paint above stop-bead
- Waterproof paint to plinth
- Complies with:
Building Regulation C
Section 5.2
Parts a), b), c), d), e) and f)

CEB Manufacturing Machines

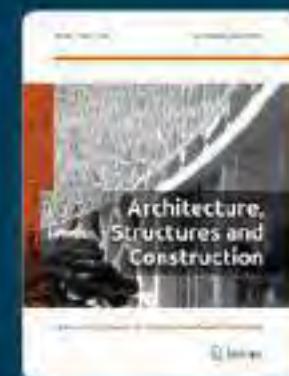


- Machine Hire
- No electricity required
- Relatively lightweight
- Portable
- Power options

The zero-emissions resource pool: construction materials compatible with a realistic view of delivering zero-emissions in the UK by 2050

Review | [Open access](#) | Published: 04 September 2025

Volume 5, article number 55, (2025) [Cite this article](#)



[Architecture, Structures and Construction](#)

[Download PDF](#)

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Charlotte Taylor , Julian M. Allwood, Takuma Watari & Will Hawkins

NEW PAPER

Springer Nature: Architecture, Structures and Construction

The zero-emissions resource pool: construction materials compatible with a realistic view of delivering zero-emissions in the UK by 2050



High Volume, Affordable, Sustainable Composites



COMPOSITE
BRAIDING

TTC Example:

- 1711kg steel to 277kg TP composite
- Concrete reduction
- >80% reduction in CO₂
- 8m vertical mast = 3 mins

Consolidation:

- Heat & pressure
- Hours → minutes
- 95%+ less energy used



Braiding:

- Thermoplastic composite braiding
- Mile/day/shift

Materials:

- Fibre: carbon, glass, basalt, natural
- Matrix: PP, nylon, bio-nylon, PET, +
- Virgin vs recycled

End of 1st Life:

- Fibre and matrix recovery
- Re-use, repurpose
- Prod waste<1%

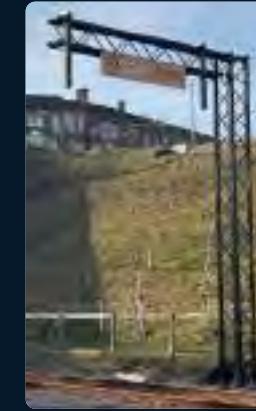
Thank you...any questions?

Contact:

07876 356518

enquiries@compositebraiding.com

www.compositebraiding.com



CompositesUK
Trade Association

Industry Awards 2024

WINNER

Sustainability Award: Circularity

CompositesUK
Trade Association

Industry Awards 2022

WINNER

Sustainability Award: Net-Zero Initiative

CompositesUK
Trade Association

Industry Awards 2021

WINNER

Innovation in Composite Materials



COMPOSITE BRAIDING

UnyteTM GROUP



Knowledge



Solutions



Hemp

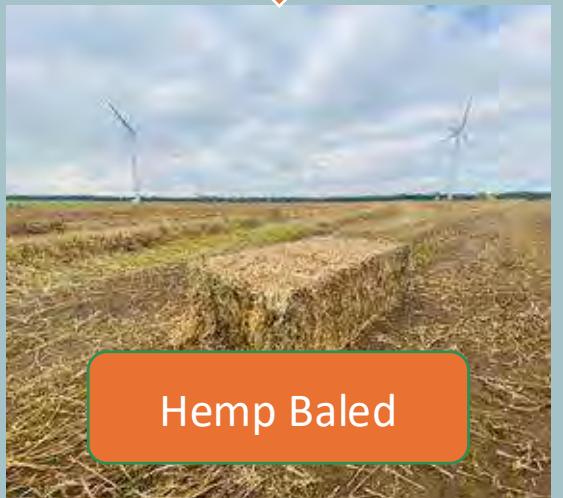


THE PROCESS

Unyte™
GROUP



Hemp Harvested



Hemp Baled



Fibre Separated



Primary
Processing



Shiv Separated



Hempcrete Blocks
Manufactured



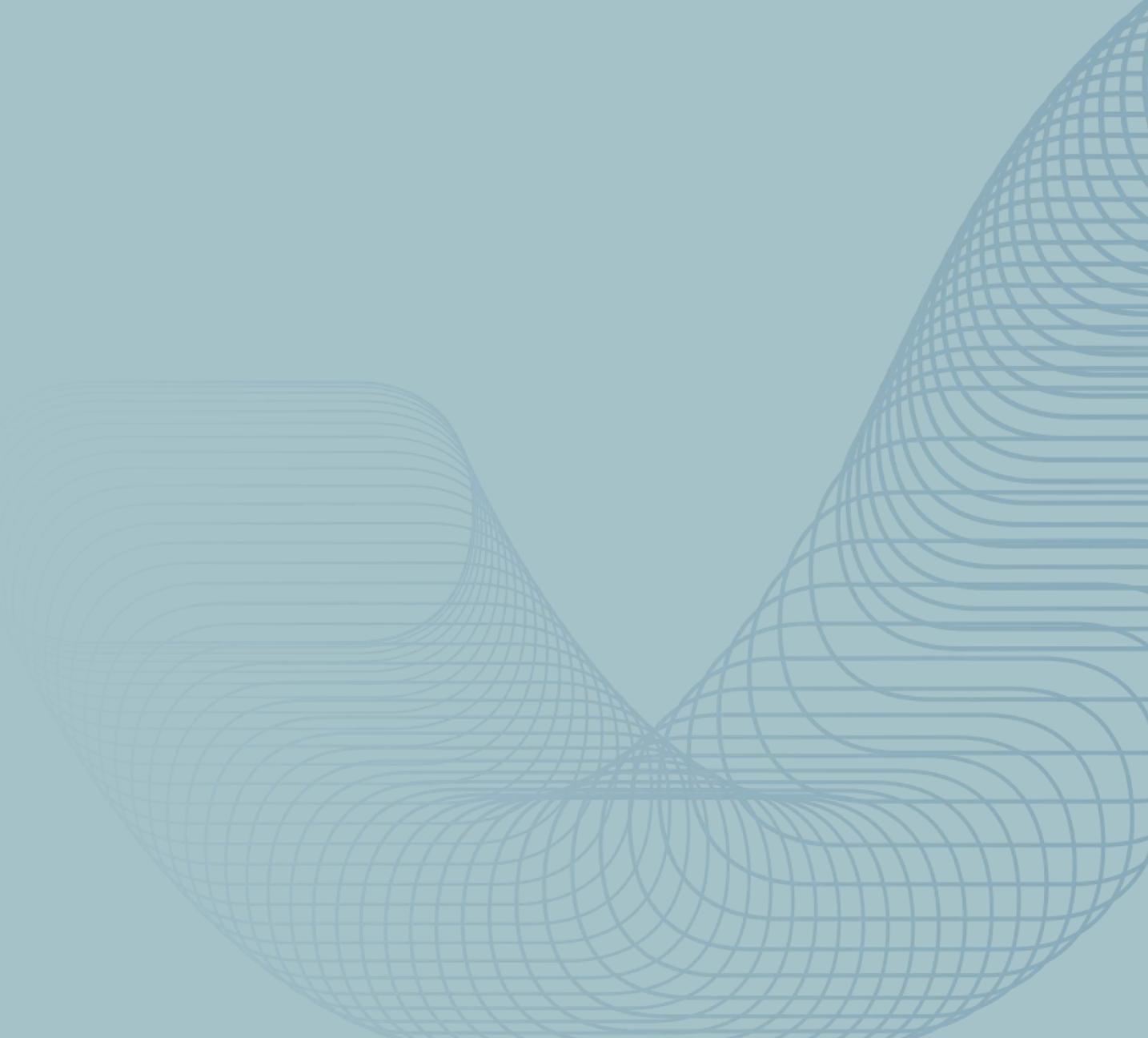
Contact Details:

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CEO & Founder

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Jamie@unyte.co.uk

<https://Unyte.co.uk>

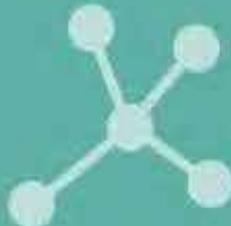




Sustainable Soil Technology

Sustainable Soil Technology

Revolutionising Construction With Pioneering Drying Solutions For Wet Soils.



www.soildri.com



SoilDri is a cutting edge, low-carbon soil drying technology that has been carefully developed over time to address the diverse needs of multiple sectors within the construction industry



SoilDri Method Vs Traditional Method

Lorry Movements: Environmental Impact



Residential Scheme
East London
4,500m³

Factor	SoilDri Method	Traditional Method	Savings	Savings %	Further Savings
Clays & Subsoils Destined For Tip (tonnes)	0	9,000	9,000	100%	26,206 Road Miles
Trench Backfill Underside Of Type 1 (tonnes)	0	10,350	10,350	100%	12,551 Litres Of Fuel
Lorry Movements	7	2,215	2,208	0.60%	437 Driving Hours
Carbon Emissions (lorry movements - tonnes)	1.9	39.9	38.0	95.29%	
Nitrogen Dioxide (lorry movements - kg)	3.5	74.6	71.1	95.29%	
PM10 (lorry movements - grams)	39.9	841.7	801.8	95.29%	

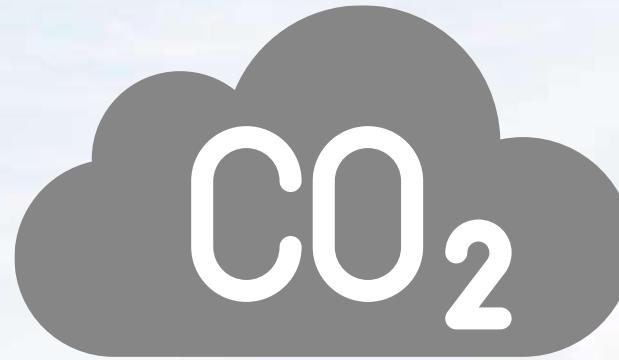
Based on 20km distance to tip | 20km distance from aggregate source | 500km from SoilDri Factory. Using a HGV Euro V which emits the following, CO₂ = 900g/km | NO_x = 1.684g/km | PM10 = 0.019g/km during motorway travel. Above based on the assumption of zero back-loading. Based on 2% SoilDri addition rate.

Some figures have been rounded for display purposes. Calculations may vary slightly. Lorry emissions data source = Department of Energy and Climate Change (2016) NI185 Emissions Tool.

Embodied Carbon



Quick Lime or Cement



Alternative Reinstatement Materials
(Generic NFSMRs, FSMRs / TMFs)



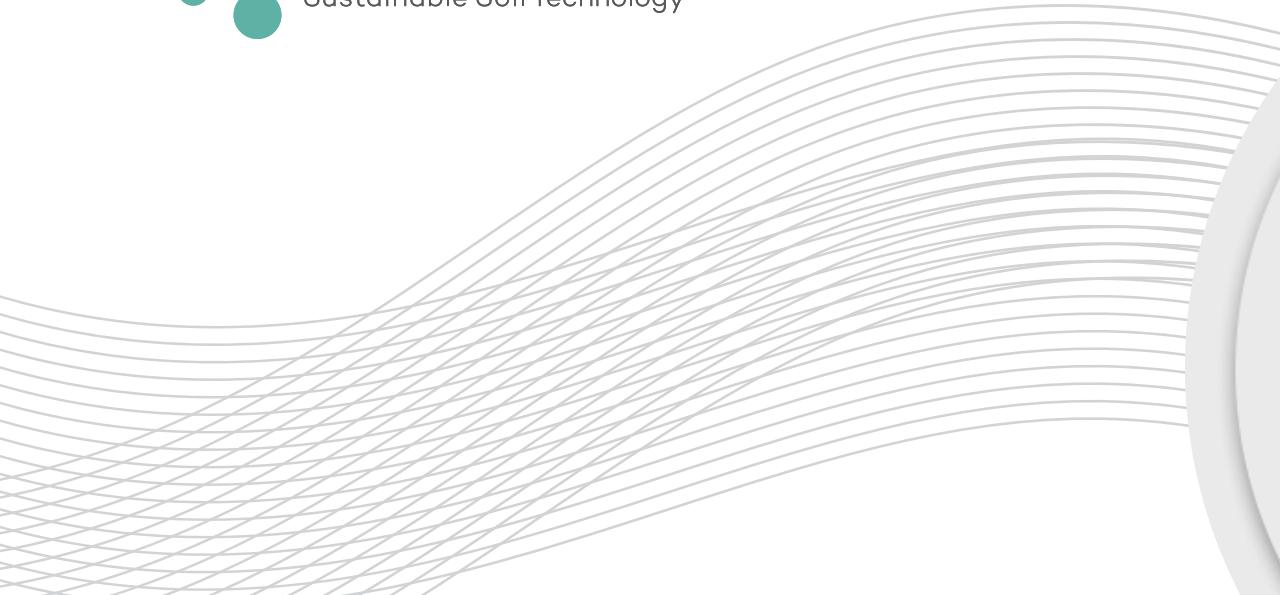
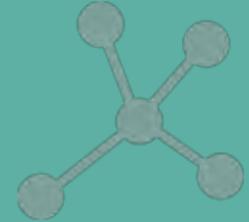
Soil Export /
Aggregate Import



SoilDri

>95% less
embodied
carbon

AECOM



Dan Macey

Director of Strategic Growth

T: 07824 873987

E: dan.macey@soildri.com



Panel Session: Accelerating Adoption



**Carol
Costello**

Architect & Director
Cullinan Studio



**Hayley
Cormick**

Associate Director
Useful Simple Trust



**Seb
Laan Lomas**

Associate
Architype Architects



**Emily Rose
Garnett**

Senior Advisor
UK Green Council
Building



**Panel Session:
ACCELERATING ADOPTION**

**ESBEM Seminar:
Accelerating adoption of UK
low environmental impact
construction materials**

**22nd January 2025, The Studio,
Central Birmingham**

**Carol Costello RIBA,
Director at Cullinan Studio**



**CULLINAN
STUDIO**



Homes & Communities



Education: from primary to university



Cultural Buildings

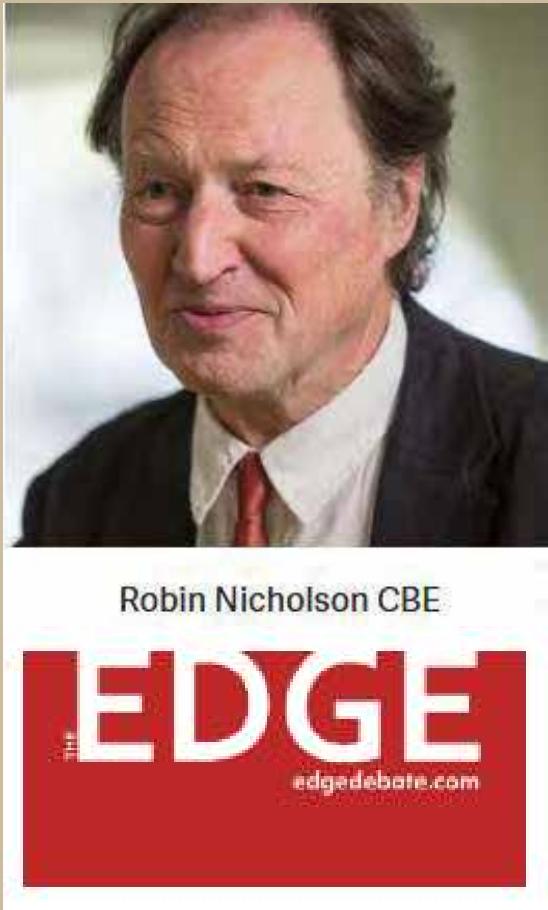


Low Carbon Energy



Mental Health Care

Research and campaigning



Robin has been an industry leader for change in the profession for decades and led Cullinan Studio to pursue more collaborative and ethical procurement. He continues his work through the Edge Debate.

This has led to Cullinan Studio being selected for Integrated Project Insurance teams.



Our membership in ASBP has connected us to research and networks that has increased our skills in circular economy approach to materials selection. Promoting timber and natural materials construction and mitigating plastic waste have been two areas of focus.

Cullinan Studio experience

- Research and campaigning
- **Integrated Project Insurance (IPI)**
- Circular Economy mindset

- Form of combined appointment AND building contract.
- Designed to:
 - Improve certainty of outcome
 - reduce waste
 - improve collaboration
- Form of **Insurance Backed Alliancing**
 - (i.e. not Traditional, or Design & Build, or Management forms.)
- Only 5 projects in the UK done this way to date.
 - This is unusual and a different approach...

- Promoted by Government as a model for a new way of working on public buildings.
- In the tradition of Alliancing to remove waste by fostering collaboration (Latham, Egan etc.)
- Radical aspect is in addressing the role of **insurance** in driving a wasteful claims culture.

What is Integrated Project Insurance (IPI)?



“A 2016 McKinsey analysis found that construction projects typically take 20 percent longer to finish than scheduled and are up to 80 percent over budget, frequently resulting in litigation. That often leaves customers dissatisfied, resulting in complex and time-consuming claims processes”



“One of the most effective ways to deliver outcomes is to create contracting environments that promote collaboration and reduce waste. Contracts should create positive relationships and processes designed to integrate and align multiple parties’ commercial objectives and incentives.”

Why IPI now?



Black Country & the
Marches IoT, Dudley

2021



Animal Studies Centre,
Dudley – IPI Lite

2025



Health Innovation Dudley
Currently on site

2026

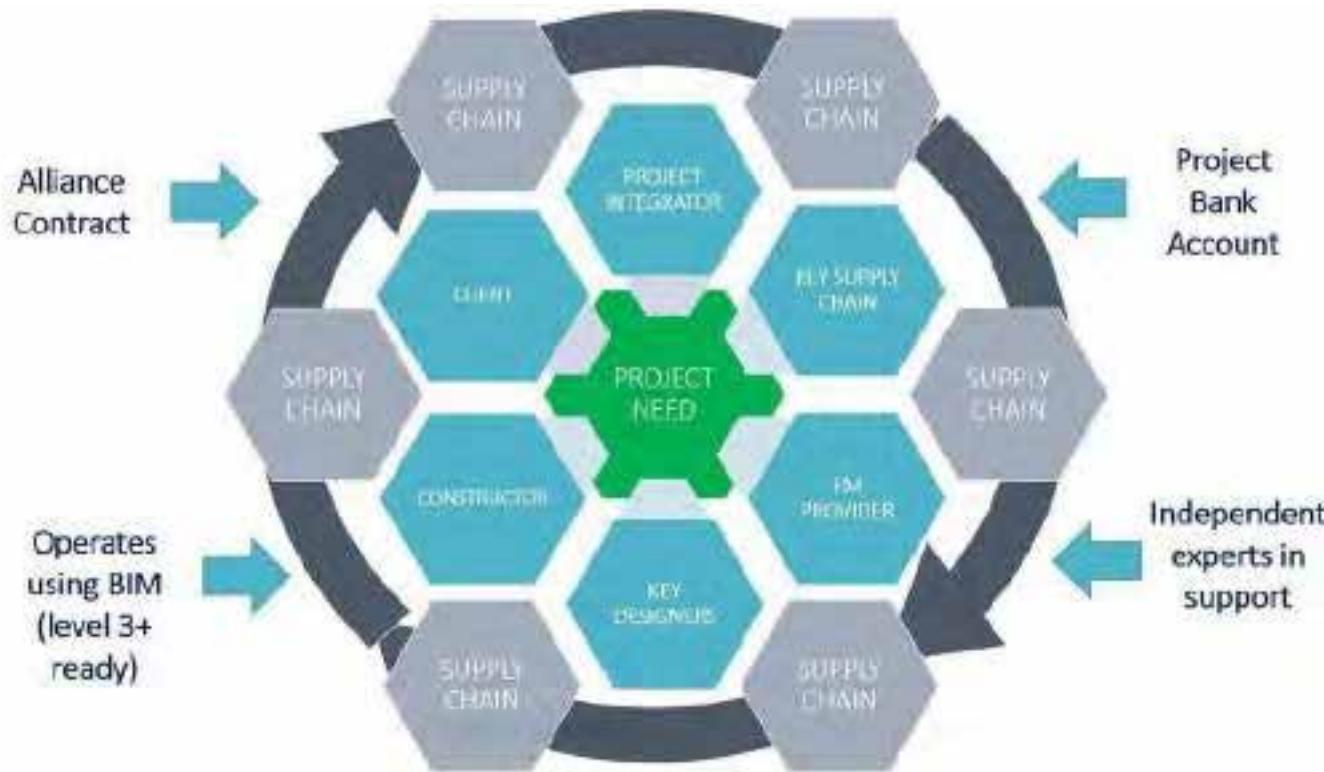
Cullinan Studio & IPI



Interview process: design team chosen by behaviors demonstrated



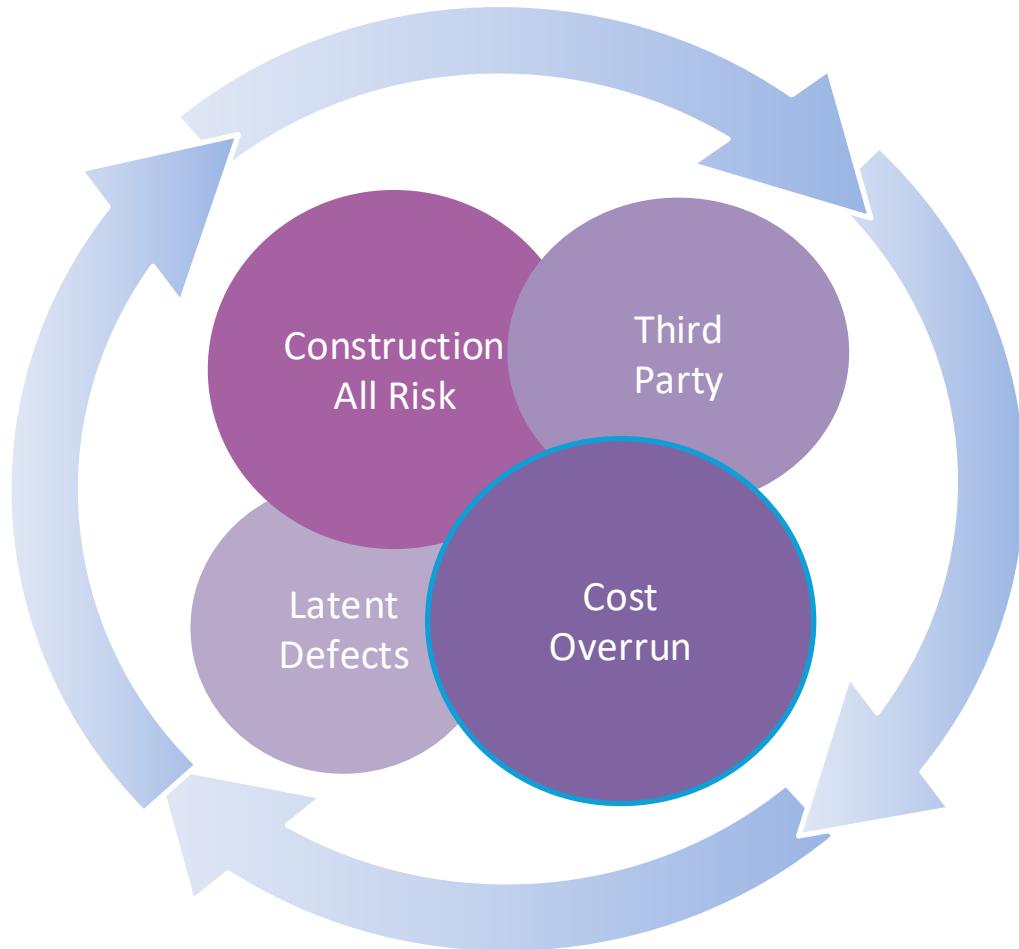
Optioneering Workshop: Client, Contractor, Designers from inception



No right of subrogation clause - no party can sue another party - **PII becomes irrelevant.**

Outputs covered by single insurance – which party is to **blame is irrelevant.**

IPI – Focus on need, not blame



- **Cost over-run insurance** covers the building being over-budget or late.
- Policy excess 5% of insured value carried by Alliance as a whole – regardless of fault.
- PAIN-SHARE potential keeps TEAM focus on budget and programme throughout.
- There is no PII in the mix.
- Attractive proposition for insurers. Insurers have independent risk assessors throughout.

Integrated Insurance Policy

PAIN SHARE

- Building is late.
- Building is over-budget.
- Building does not meet client's quality needs (success criteria)
- Up to 5% of contract value

GAIN SHARE

- Building is on time.
- Building is under-budget.
- Building meets client's quality needs (success criteria)
- Up to 7.5% of contract value

Apportionment is agreed among Alliance Members at the outset

Cost-overrun & Pain / Gain – risk shared



ANIMAL STUDIES CENTRE - IPI LITE



Client's original brief:
demolition and new build , in part to avoid VAT.



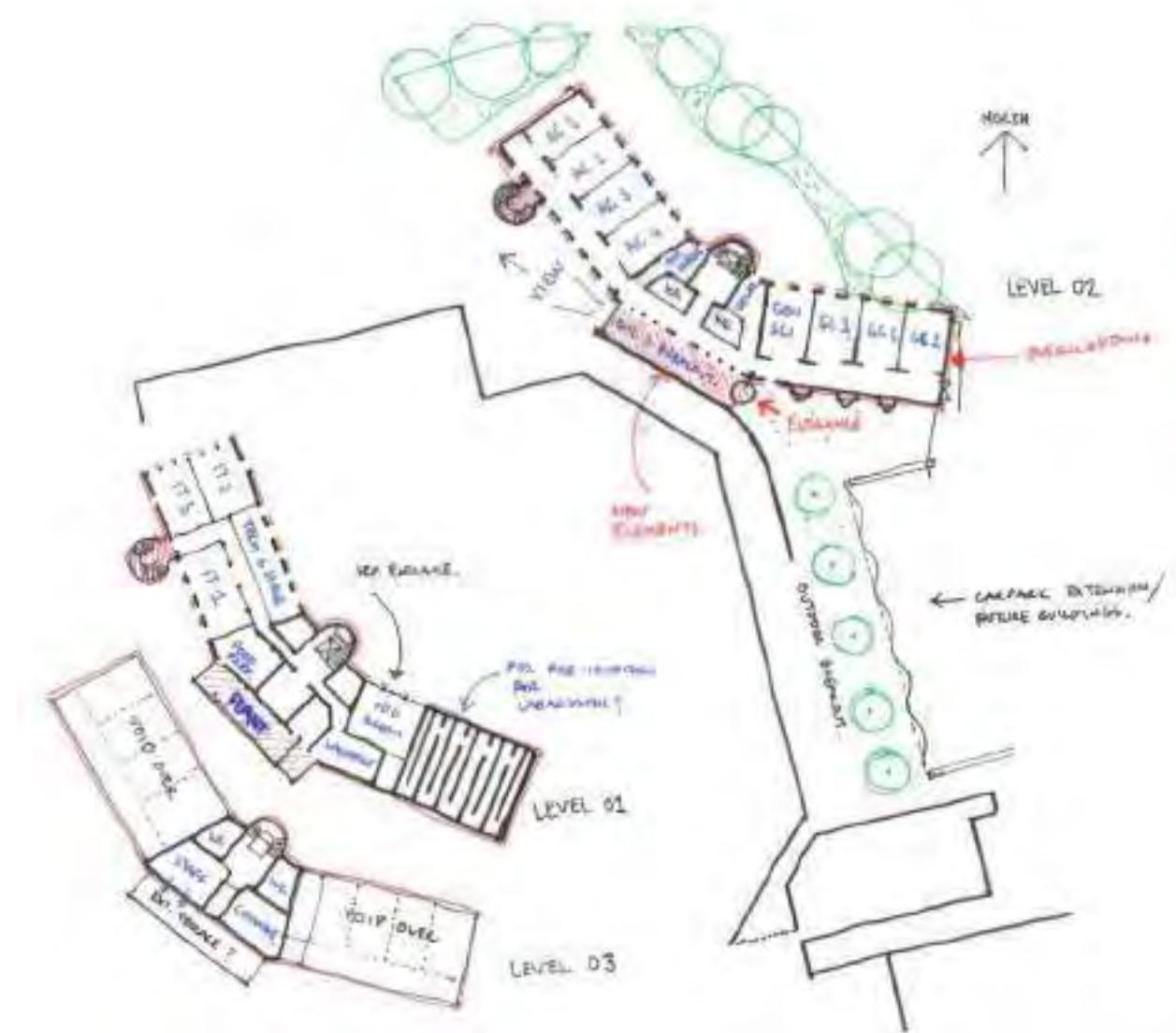
Previous Site Massing
• Significant demolition, New Car park, New building



Our challenge:
Consider a low carbon approach of re-use.



Current Site Massing
• Limited demolition, Retrofit, Small new building additions



New Build vs Retrofit



- Strong relationships established at project commencement encouraged challenging each other and the brief. **Don't demolish, retrofit instead!**
- Streamlined team allowed for quick analysis of options by contractor and designers to prove a retrofit was possible and within budget.
- Early physical investigations with contractor and designers including load testing informed design decisions
- Close collaboration between cladding suppliers and Cullinans reduced 'business as usual' material waste by 15%
- Access to discussions with the insurers about specific project risks.

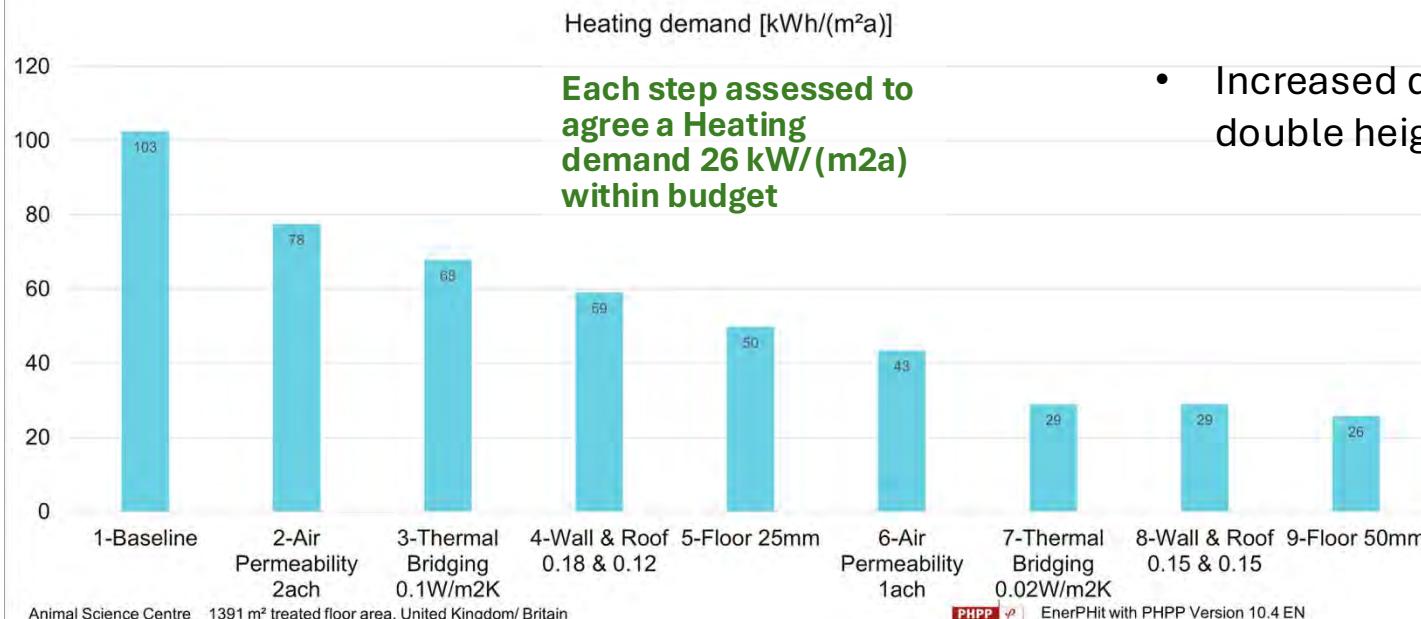
IPI liberates the team



Air tightness focus - $0.91 \text{ m}^3/\text{m}^2/\text{hr}$



- **Using the cost plan as a positive design tool.** Delivered within same budget for new-build, in spite of 20% VAT applicable on retrofit
- Focus on airtightness prevented over-specifying on insulation thickness, saving on cost and material use
- High-performance glazing and liquid applied Passive Purple membrane – helped to achieve $0.91\text{m}^3/\text{h m}^2$ airtightness (Below EnerPhit)
- Structure achieved SCORS A+ rating and embodied carbon of **51kgCO2e/m²** compared to LETI target of **276CO2e/m²** for a new-build school. Overall building achieving EPC-A rating



- Increased quality of spaces compared to new build, utilising existing double height volumes and original features

IPI process improved performance



Set for demolition



Retrofit Completed



- Project delivered on time, under budget, with full delivery of the client's success criteria
- Design, cost and programme, controlled and co-authored in the open, enhancing ownership and understanding
- Collective management of opportunities and risk, with specific strategies to achieve / address each one
- Breadth of project awareness and empathy built, strong relationships created
- Supportive and enjoyable project environment, project team and suppliers consistently report mental health benefits
- Greater feeling that contribution is seen as part of the collective effort and value recognised

Tangible benefits

Cullinan Studio experience

- **Research and campaigning**
- **Integrated Project Insurance (IPI)**
- **Circular Economy mindset**

BANKSIDE
OPEN SPACES
TRUST

MARLBOROUGH
SPORTS GARDEN



Bristow turkington martin ENGENIUTI CUNDALL

BANKSIDE OPEN SPACES TRUST

Bankside Open Spaces Trust (BOST) is an environmental and volunteering charity working to provide outstanding green spaces and outdoor activities that enhance the health and wellbeing of urban communities.

We care for open spaces and share our love of gardening and the environment. We support local people gardening on their estates, run horticultural training and host a range of youth and sports activities throughout the year.



OUR SPACES





THE LOCAL COMMUNITY FACE COMPLEX BARRIERS TO AN ACTIVE & HEALTHY LIFESTYLE

URBANISATION¹

Residents face other challenges of inner-city living including high air pollution and a proliferation of fast-food encouraging a poor diet and inactivity. Recent statistics for Borough and Southwark streets indicate that **71% of dwellings are without private or shared garden**. The Southwark Open Space Strategy recorded that Borough and Bankside are below the borough standard for park provision.

OBESITY²

Southwark has the highest rate of childhood obesity at year 6 of any local authority in England. Half of all adults in Southwark are overweight or obese. **52.8% adults (16+)** in Southwark do no physical activity or sport at all.

66

Half of all adults in Southwark are **overweight or obese**

¹ Urban Health Index (2017) for Lambeth and Southwark

² Everybody's Business - Southwark Healthy Weight Strategy 2016-2021
Southwark Health and Wellbeing Board



CULLINAN
STUDIO

PROPOSAL OVERVIEW



Adding a building to the open sports ground creates new opportunities for broader community use and year-round access. The new building creates a welcoming entrance to the garden from Union Street.

**CULLINAN
STUDIO**





CULLINAN
STUDIO

RECLAIMING MATERIALS



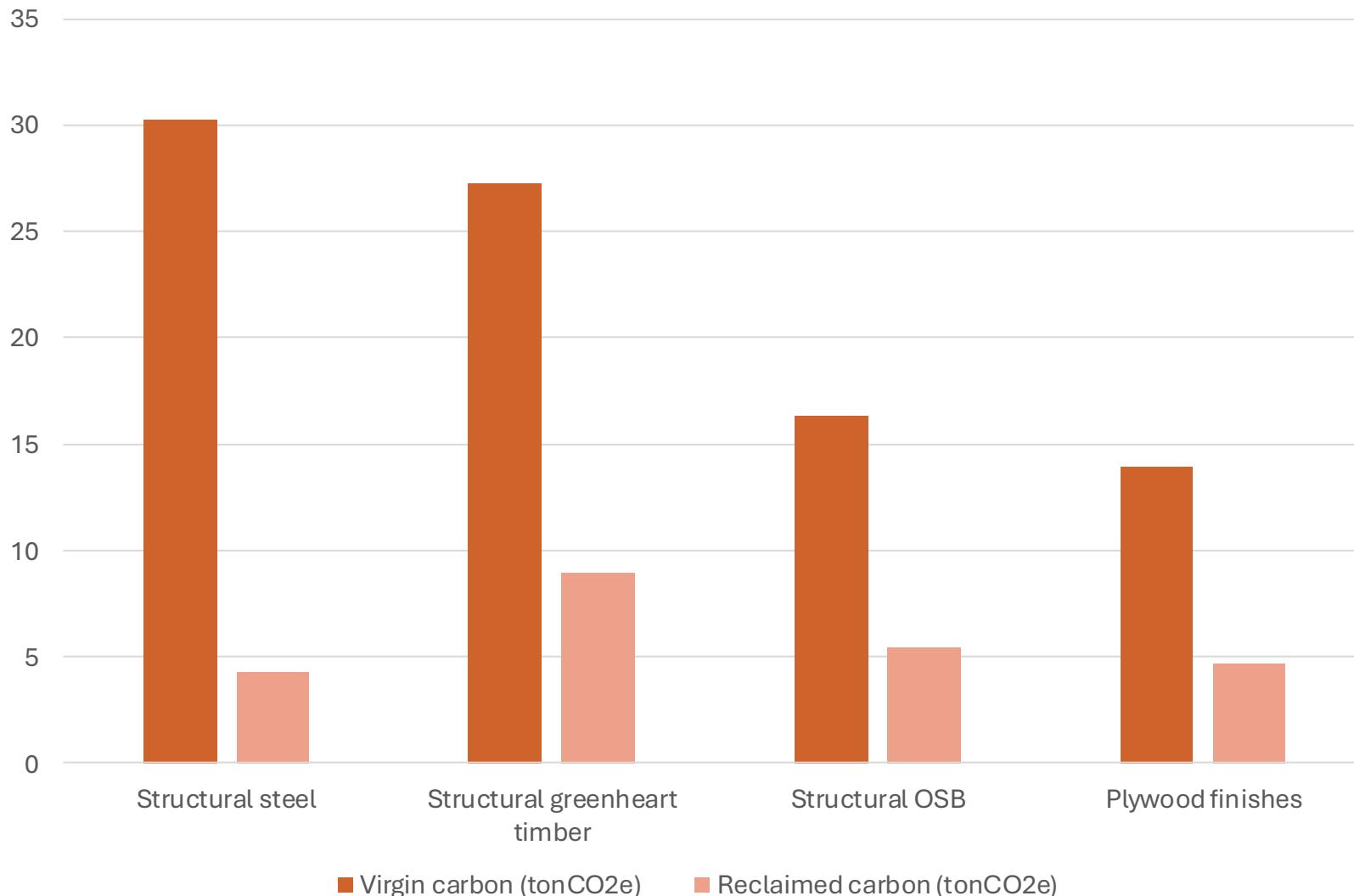
Visited Ashwell Timber Reclaim Yard to begin exploring reclaimed timber possibilities for integration into the construction project's material strategy.

CULLINAN
STUDIO



Cleveland Steel and Tubes, Thirsk, North Yorkshire

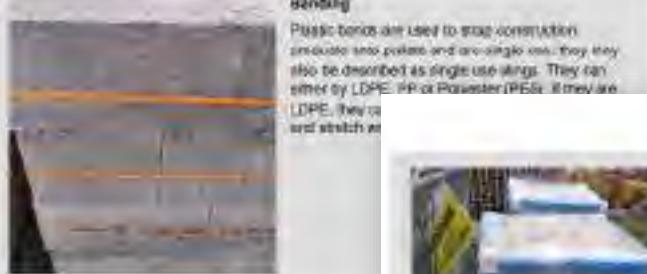
RECLAIMED VERSUS VIRGIN MATERIAL CARBON



Some of the largest material contributors to the [Marlborough Sports Garden](#) building's carbon expenditure and reduced significantly by obtaining them from reclaimed sources.

Zero Avoidable Packaging waste in construction

Banding
Plastic bands are used to strap construction materials onto pallets and are single use, they may also be described as single use straps. They can either be LDPE, PP or Polyester (PEs). If they are LDPE, they're re-usable and stretch as



Shrink and stretch wrap
The main purpose of using shrink and stretch wrap on construction products is to keep the products together on a pallet. During transportation, these stretch and shrink products are also used to protect products and as a result of construction products, a high demand amongst machine or hand pre-assembly is packaging by cut.



Hoods
Plastic hoods protective cover onto a pallet. Hoods are used



Other
Other types of packaging which could include be used on site and are not recyclable. It is used for non-polymerized clamps or clamping on PET



The plastic packaging types are now described.

Buckets
Plastic buckets made from Polypropylene (PP) are used for storing paints and products containing liquids. Before plastic buckets can be used for recycling they need to be cleaned of any residues. As a result it is more difficult to process and divert this plastic packaging type from energy from waste and landfill.



Bags
LDPE bags are used for packaging for word and garden products. Lined hessian bags, items such as screws and nails are put in LDPE bags. Since the type of plastic used for this packaging format is LDPE, it can be segregated with the other film packaging materials.



Waste polystyrene bags
These bags are commonly used to transport solid to construction sites. These bags are for one-use only and are not recyclable for reuse by the manufacturer for health and safety reasons. Since the bag is used to lift and move heavy materials these bags can be only used once i.e. getting the material from the manufacturer or builder, merchant to a point of use. This packaging type is recyclable. One of the main UK building recyclers offered the basic haul collection of woven PP bags from their customers sites. The bags are stored at their premises, where they are sorted and sent to a plastic reprocessor.



Research on packaging



ZAP

**ZERO
AVOIDABLE
PACKAGING
waste
in construction**

ASBP The Alliance
for Sustainable
Building Products

BANNSIDE
OPEN SPACES
TRUST

CULLINAN
STUDIO

mace

**MORGAN
SINDALL**
CONSTRUCTION



Re-processed plastic flakes

‘Statistics for the UK show that around a third of construction plastics are **recycled**, while a third go to **landfill**, and a third are **incinerated**’.

Here's What Those Plastic Recycling Numbers Mean



The Specifier should be an informed consumer demanding change. Retail knowledge ahead of construction.

Plastic types, their use in construction and recyclability

8 types of plastic account for 90% of plastics used by the construction sector ¹⁰

symbol	Abbreviation ¹¹	Full name	Recyclable ¹²	Ease of recycling ¹³ (in pure form)	Typical Construction ¹⁴ Uses (many construction products are made from a composite of several types of plastic making recycling difficult)
	PETE (PET)	Polyethylene Terephthalate	Yes	Easy	Recycled PET carpet. Packaging such as banding. Water bottles.
	PE - HD/PE-MD	Medium/high density polyethylene	Yes	Easy	Tubing, piping, ducting, and guttering, waterproofing and linings, shrink wrap
	PVC	Polyvinyl chloride	Yes	Difficult	Single ply membranes, Flooring, Tubing, piping, ducting, and guttering, door and window frames and other external profiling such as cladding, soffits and fascia boards, flooring and cabling, waterproofing and linings
	PE-LD/PE-LD	Low density polyethylene	Yes	Manageable	Packaging such as bags, bandings, stretch wrap, shrink wrap, hoods. LDPE packaging film is a very common waste product on construction sites and worth focussing efforts on reducing.
	PP	Polypropylene	Yes / No	Easy	Carpets, Tubing, piping, ducting, and guttering. Packaging such as shrink wrap, plastic banding, plastic buckets, woven PP bags
	PS	Polystyrene	Yes / No	Difficult / Not collected	Thermal and acoustic insulation, packaging
	EPS	Expanded polystyrene	Yes	Difficult / Not collected	Thermal and acoustic insulation, packaging
	PA	Polyamides	Yes	Manageable	Paints, adhesives, textiles
	PC	Polycarbonate	Yes	Easy	Transparent roofing sheets, interior linings, light fittings
	PMMA	Poly methyl methacrylate	Yes	Difficult	Transparent sheet, windows, smart screens
	PUR	Polyurethane	Yes	Manageable	Thermal and acoustic insulation
	PEE	Unsaturated polyester	Yes	Easy	Fibre reinforced plastics, sanitary-ware, tanks, pipes, gratings
	S	Silicone	Yes	Manageable	Sealants, adhesives, lubricants, paints
	OTP	Other thermoplastics	Yes / No	Various	
	ABS	Acrylonitrile Butadiene Styrene	Yes	Easy	Light, rigid, moulded products such as pipe, enclosures, and hard hats and helmets, LEGO
	OTS	Other Thermoset	No	Difficult	Powder coatings
					<i>'Paint appears as the largest source of microplastic leakage into the Ocean & Waterways (1.9 Mt/year), outweighing all other sources of microplastic leakage (e.g. textiles fibres and tyre dust)'.</i>

ZAP
ZERO
AVOIDABLE
PACKAGING
waste
in construction



Production of recycled PET emits
5 times less carbon emissions
compared to virgin PET.

Source: Based on Alpla Group Data, 2017

© 2020 Prevented Ocean Plastic



Using recycled content products can reduce CO₂ emissions and keep plastic out of landfill and incineration flows. PET is one of the easiest to recycle.



Tipping Point East (TPE) is a circular construction hub founded in 2025 and based in Newham, East London. From 2026, TPE will operate from a 20,000 sqm industrial site in the Royal Docks, bringing together material reuse, low-carbon construction, training and cultural activity to support a just transition in the built environment.



Co-developed by and housing the practices of **Yes Make, RESOLVE Collective and Material Cultures**, Tipping Point East is advising on supply of building elements.

Find our more

<https://www.cullinanstudio.com/>

<https://www.ipinitiatives.co.uk/>

<https://asbp.org.uk/group/plastics-in-construction>

<https://www.tippingpointeast.com/>

Or contact me

carol.costello@cullinanstudio.com

The practical realities of getting novel materials on major developments

Why some make it and some (many) don't

Useful Simple
Trust

*Purpose driven
consultancy for our
changing environment*



Hayley Cormick

Associate Director

*Sustainability advisor, carbon
assessor, circular economy
strategist, materials specialist,
winter enthusiast, mum*

Accelerating bio-based architecture

Introduction



Seb Laan Lomas

Lead, Perform+
Associate, Architype

Architype
powered by
Perform+

Perform+
powered by
Architype

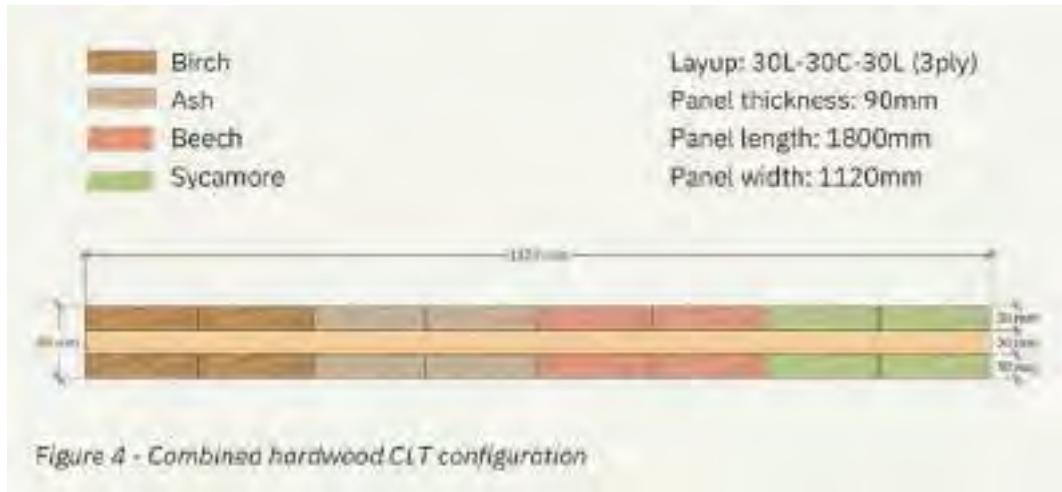
UK Opportunities

- Structural timber
- Bio-based insulation
- Retrofit
- Circularity
- Bio-economy
- Just transition



Building from England's Woodlands

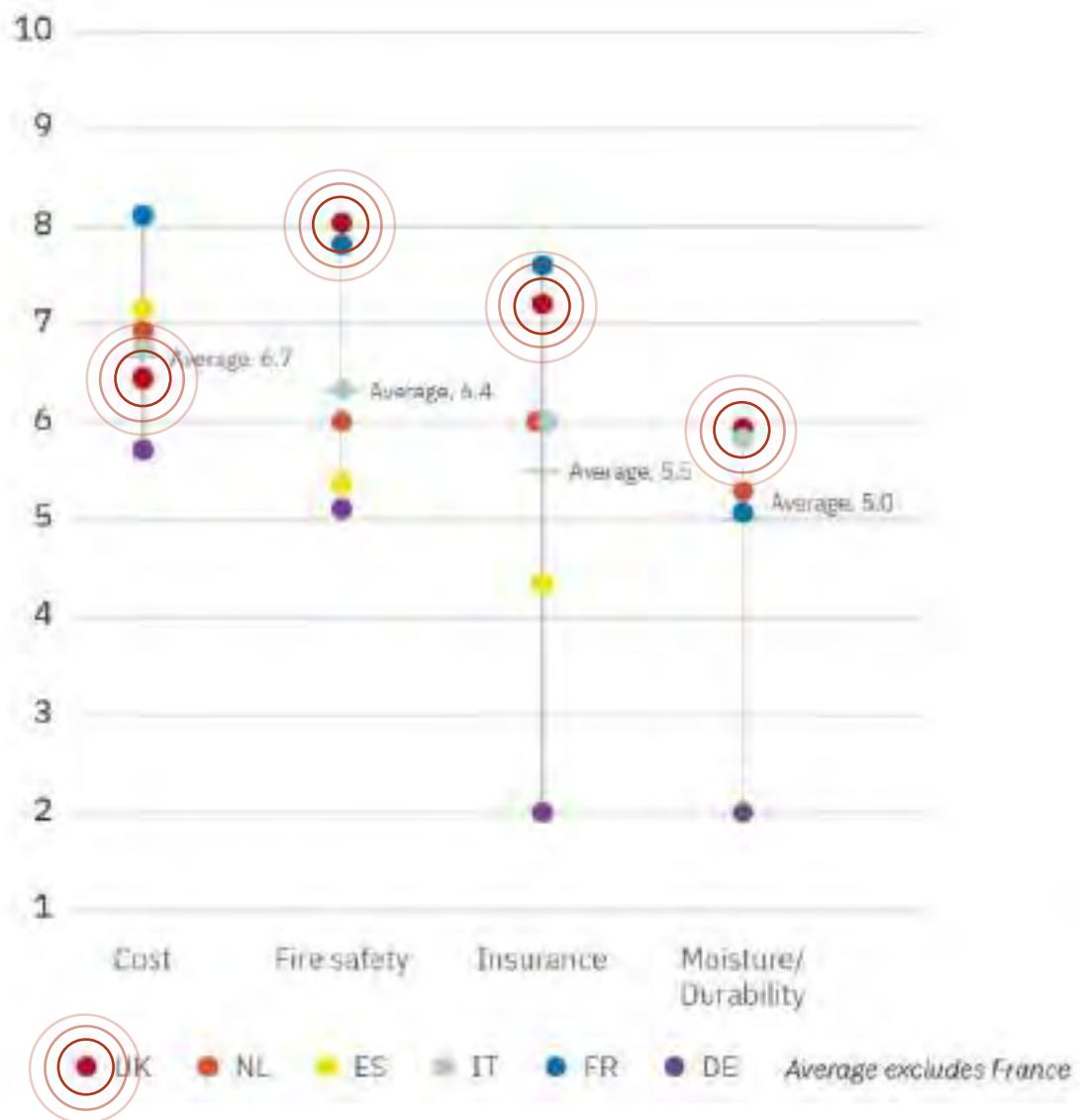
- Rekindling woodland management
- Climate adaptation
- Resource efficiency
- Material displacement



State of the Nation

- Lowest confidence across Europe for adopting timber
- Unique priorities
- Exempt from Energy Performance of Buildings Directive

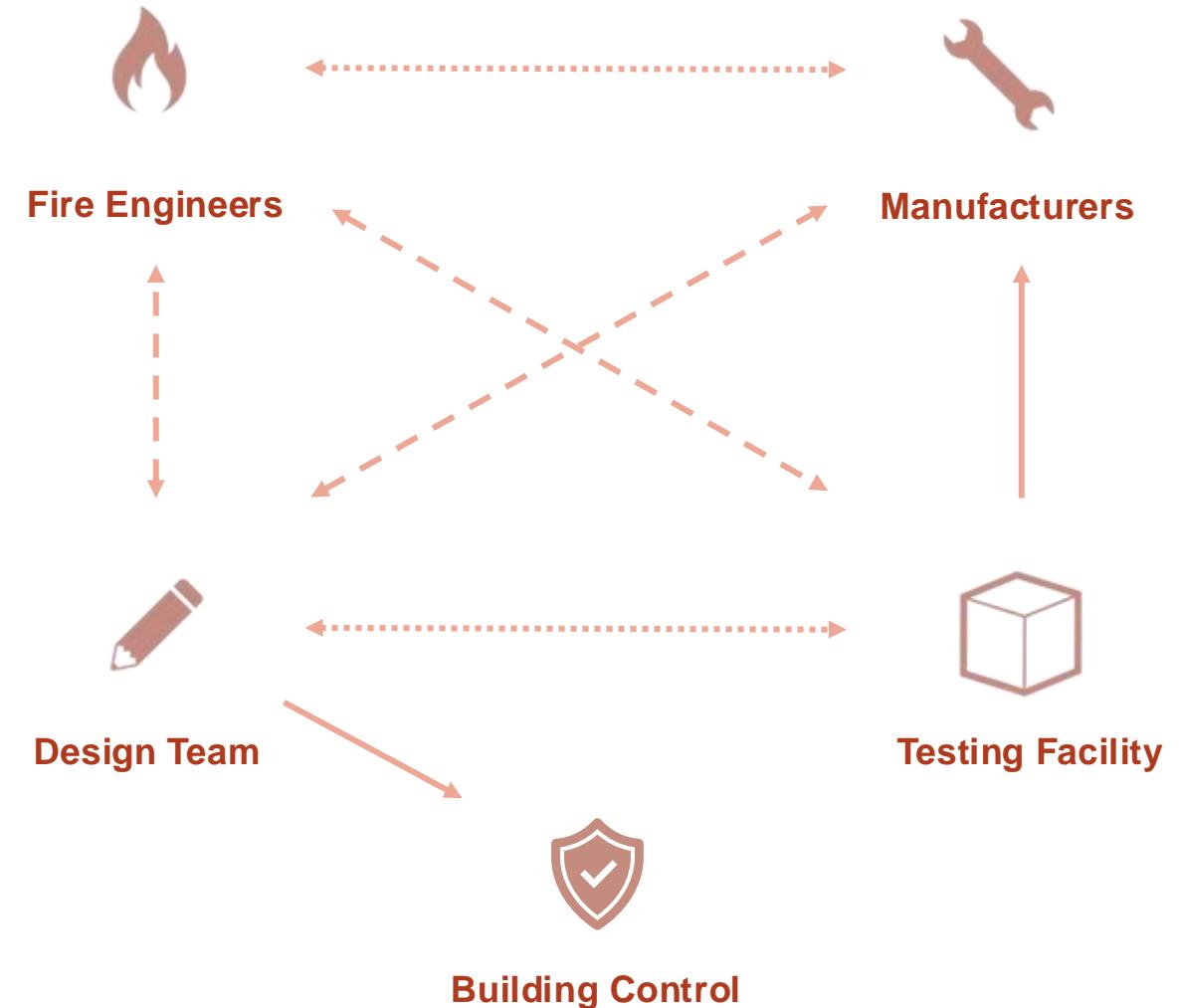
Rating the impact of challenges to adopt timber



Fire Resistance

Current limitations

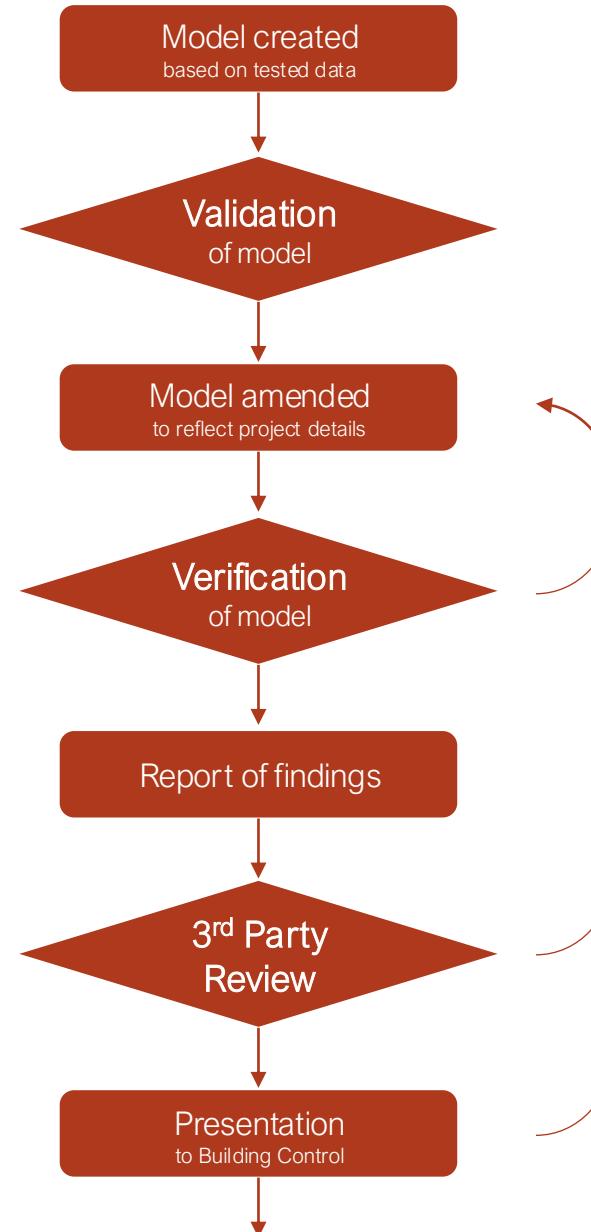
- Height
- Loading
- Arrangement
- Dimensions
- Product-specific
- 5-year limit of use
- Expired references
- Non-disclosure agreements
- Materially agnostic issues



Eurocode 5

A new solution

- Established on Continent
- Materially agnostic
- UK adoption
- Capacity and competency
- Expense and time



Built examples

Maybury Primary School

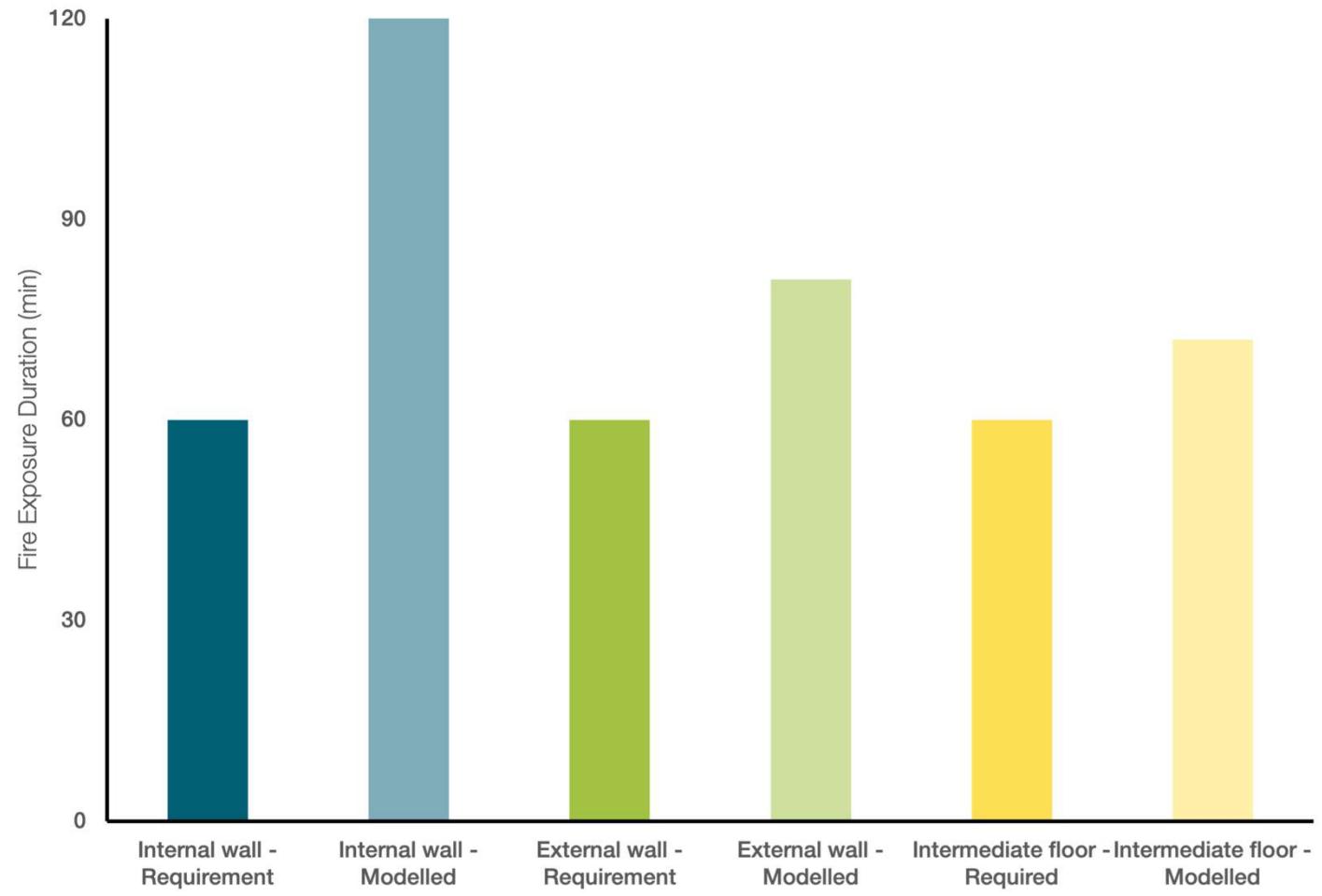
- Scottish school programme
- Performance-linked funding
- Passivhaus certified
- Timber frame & insulation
- Building control journey
- Versus concrete and steel market dominance



Quantifying Conservatism

- Iterative
- Transparent
- Optimisation

Conservatism = Carbon + Cost



Safe Schools for the Future

Download the guidance from www.SafeSchoolsForTheFuture.com

A holistic approach beginning with a robust fabric, with efficient systems, delivered via a quality assured construction process. Informed by learning from the previous project. This publication shares in-use and design insights from 17 built timber-framed primary schools with consistent outcomes.



Cost

- 1 Construction costs have been as much as 19% below industry average construction costs, benefiting from optimised supply chain from successive projects.
- 2 Using this approach, a school could save £50,000 a year in energy bills due to the highly efficient building fabric and very lean services strategy.
- 3 Safe Schools for the Future can be built from UK-grown structural timber, supporting the growth of our forests and our rural economies.

Timber

- 1 Structural timber can effectively be saturated and structurally unaffected by internal fire through the use of encapsulation. New research demonstrates that there is significant conservatism in how the industry designs for fire resistance.
- 2 The bio-based materials store around 300 tonnes of carbon, removed and prevented from contributing to global warming. This is the equivalent of offsetting 4 million cups of tea being enjoyed.
- 3 This approach utilises low-tech, readily-scalable construction methods that also can be prefabricated and pre-panelised for on-site programme efficiencies.



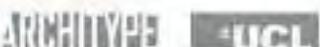
Health

- 1 Healthy classrooms require a holistic approach, with all elements working in unison. Together, health air is efficiently and consistently provided to all learning spaces.
- 2 Combining bio-based materials with efficient ventilation, harmful volatile organic compounds in the classroom can be 60% lower than in other schools.
- 3 Visual connection to bio-based materials has been demonstrated to have a calming effect on school children, with lower heart rates, improving overnight sleep and recovery.

Performance

- 1 Learning from previous projects and closing the design loop is vital for continued learning. CO2 levels were halved between first generations of case study schools.
- 2 Operational energy use in the average England school is almost 3 times that of the case study schools. This performance level is achieved through a holistic approach, underpinned by Passivhaus certification.
- 3 Embodied carbon emissions are up to 80% below the current UK Net Zero Carbon Building Standard limit, due to bio-based materials and lean material use.

Project Team



Funded by

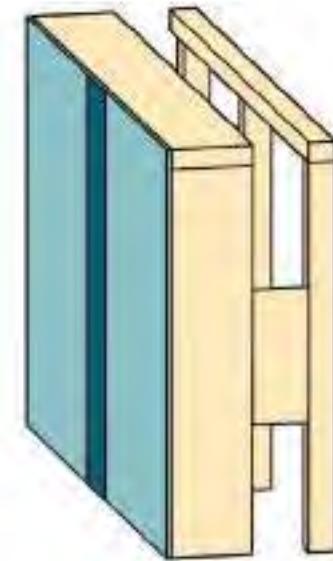
Presented by



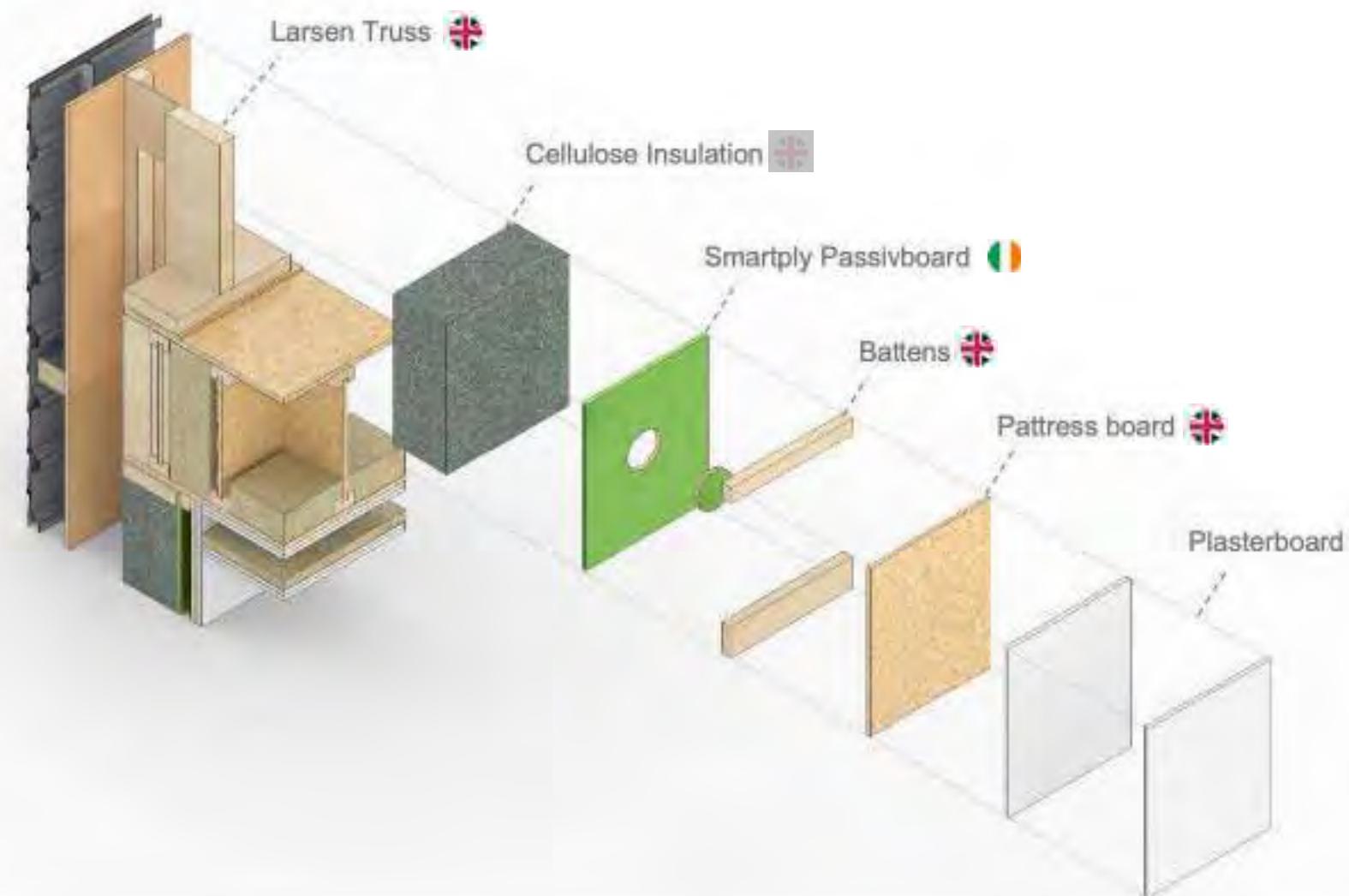
Contact the team at SafeSchoolsForTheFuture.com

Larsen Truss System

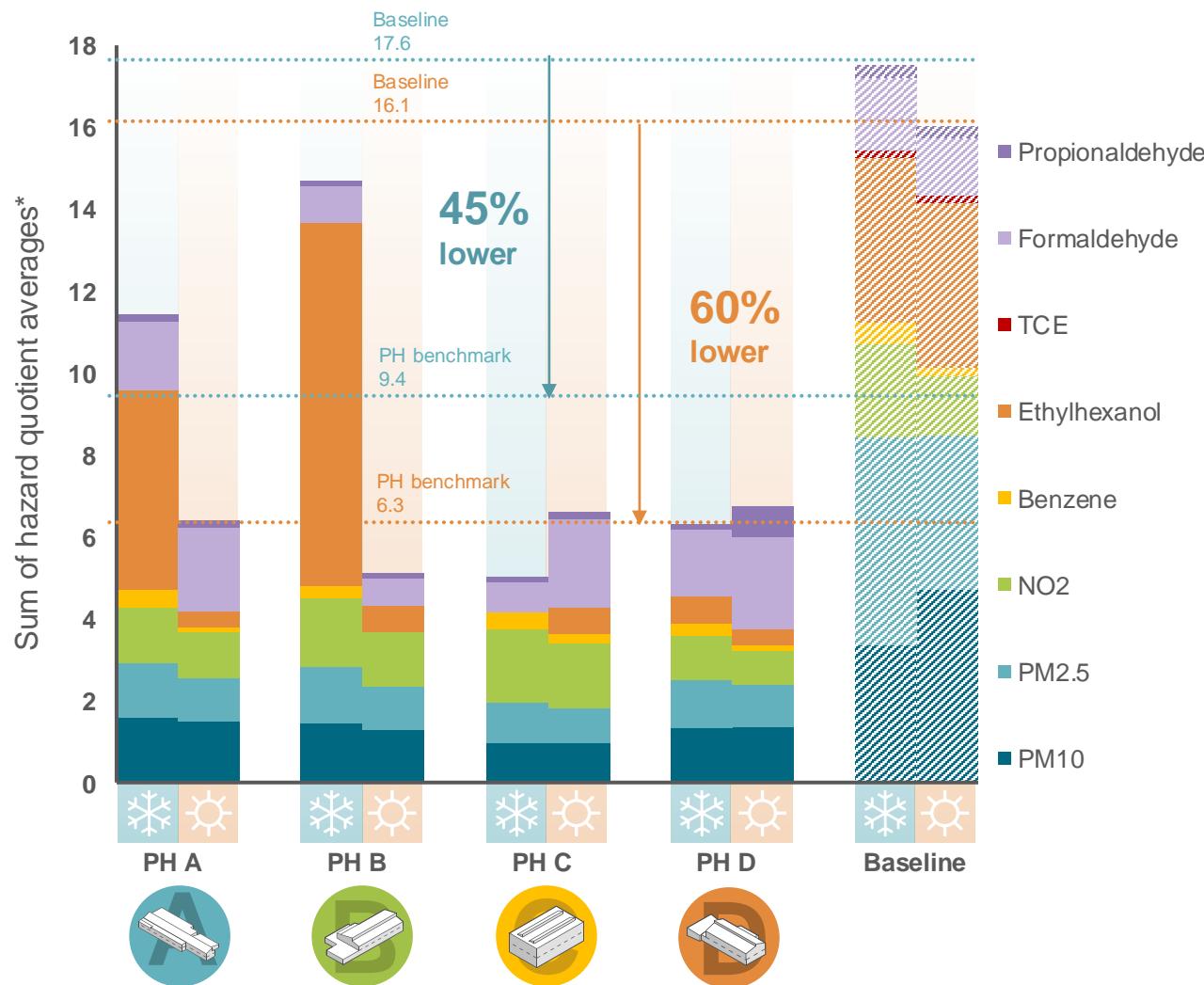
1. Level 2 MMC
2. UK-grown C16
3. Materially efficient
4. Good thermal performance
5. Significant carbon store
6. Deployable at scale
7. Low fabrication set-up costs
8. Fire tested build-ups



Home grown timber products



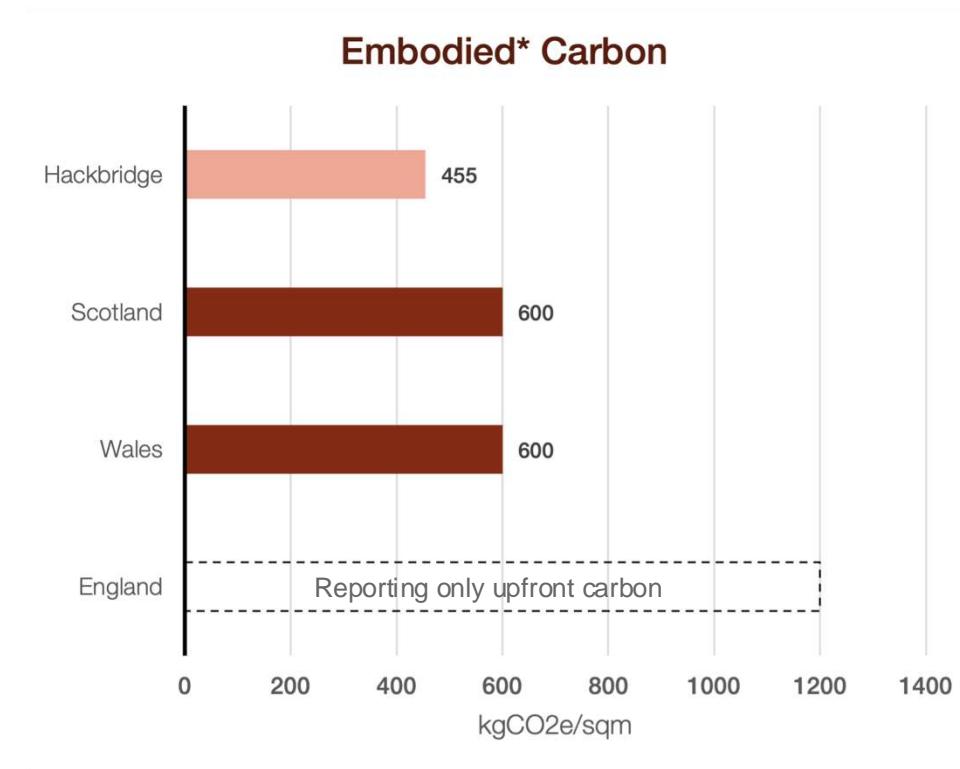
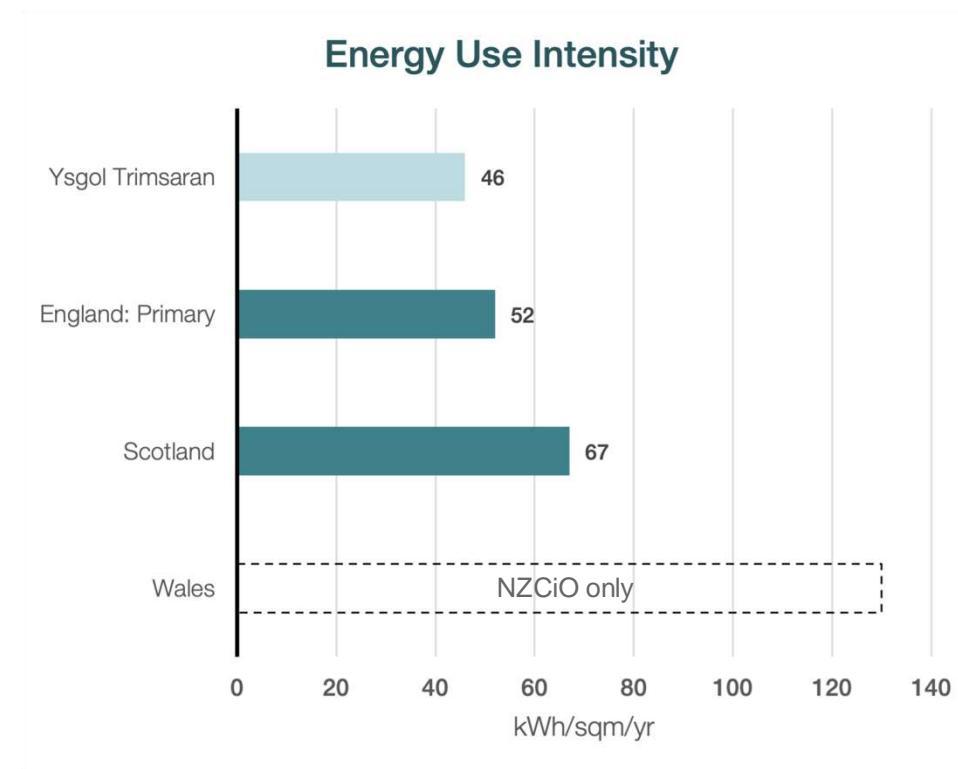
Healthier classrooms



*Total indoor air quality health related index (HI) - sum of hazard quotient averages (selected VOCs, NO₂, PM_{2.5} and PM₁₀)

Chryssa Thoua and UCL 2025

Bettering the targets



Data from Department for Education, Scottish Futures Trust and Wales' Sustainable Communities for Learning Programme

Guidance for Project Teams



www.SafeSchoolsForTheFuture.com



1



2



3

How to accelerate faster?

1. Government policies must drive e.g. regulating embodied carbon
2. State-funded data platforms
3. State-funded testing programmes
4. Taller test furnaces

dataholz.eu

Reviewed/approval documents > External wall > external wall

Cross section: Structure: external wall example01

external wall to allowed constructions, simplified, with by-passing ventilation

Register of building intentions used for this application, DIBt-SECTION (recommendation)

Building part	Building material	Typical thickness	Thickness
A - 210	external thermal lining	0,031 - 0,03	0,03
B - 0,03	inner thermal lining	0,031 - 0,03	0,03
C - 0,03	insulation	0,030 - 0,11	0,03
D - 0,03	outer thermal lining (inner thermal lining, insulation, outer thermal lining)	0,030 - 0,09	0,03
E	inner thermal lining	0,031 - 0,03	0,03
F	inner thermal lining (inner thermal lining, insulation, outer thermal lining)	0,031 - 0,03	0,03
G	insulation	0,030 - 0,11	0,03
H	outer thermal lining	0,031 - 0,03	0,03
I - 0,03	external thermal lining	0,031 - 0,03	0,03
J - 0,03	inner thermal lining	0,031 - 0,03	0,03

Notes:

Abbildung 01/01/01 (Vierkantwand) dient dem leichteren 2D-Druck und ist kein Bauteil des Gebäudes.

Validations of building components

Building part	Building material	Typical thickness	Thickness	Validation status	Validation date	Test thickness	Test date
external wall-01	0 - 0,031	0,030 - 0,031	0,03	Approved	01.01.01	0,03	01.01.01
external wall-04	0 - 0,031	0,030 - 0,031	0,03	Approved	01.01.01	0,03	01.01.01
external wall-05	0 - 0,031	0,030 - 0,031	0,03	Approved	01.01.01	0,03	01.01.01

Thank you

Seb Laan Lomas

Seb.laan-lomas@architype.co.uk





SCALING SUSTAINABLE SOLUTIONS – SUMMARY OF BARRIERS & ENABLERS

Emily-Rose Garnett, UK Green Building Council



The voice of our sustainable
built environment

UK Green Building
Council ukgbc.org

TO RADICALLY IMPROVE
THE SUSTAINABILITY OF
THE BUILT ENVIRONMENT,
BY TRANSFORMING THE
WAY IT IS PLANNED,
DESIGNED, CONSTRUCTED,
MAINTAINED AND
OPERATED.



KENNEDY WILSON

ARGENT

BENTALL GREENOAK

hines
bruntwood

CANARY WHARF GROUP PLC



Berkeley
Group

ALDI

THE CROWN
ESTATE

British
Land

CLARION
INVESTMENT

CBRE

SEGRO

DEVELOPERS, OWNERS & OCCUPIERS

SUPPLIERS

MITSUBISHI
ELECTRIC

TATA STEEL

AkzoNobel

AIREX

Heidelberg
Materials

ROCKWOOL

KNAUF INSULATION

Interface

Tarkett

MAPEI

Wienerberger

UK
GBC

LOTHBURY

NatWest
Group

LLOYDS
ASSURANCE

BNP
PARIBAS

Federated
Hermes

BANK OF SCOTLAND

Legal &
General

octopus

Deloitte

ROYAL
LONDON

FINANCIAL BODIES AND INVESTORS

620+ MEMBERS
AND GROWING

Stantec

ADVISORS

AtkinsRéalis

ARUP

JLL

HOARE LEA

EUBRO HAPPOLD

atelier

BENNETTS
ASSOCIATES

RAMBOLL

savills

The
Chancery Lane
Project

Knight
Frank

CUNDALL

AECOM

WSP

Wates

SESK

bam
nuffield

mace

ESB

TROUP
BYWATERS
+ ANDERS

winvic

MORGAN
SINDALL

WILLMOTT DIXON

MULTIPLEX

GMI

Turner & Townsend

MCLAREN

LAND & GOURIE

CONTRACTORS

GOVERNMENT, AGENCIES & ACADEMIA

Office
of
Government
Property

Department
for Environment,
Food & Rural Affairs

Homes
England

Home Office

Ministry
of Justice

CITY
LONDON

London
TOWER

MANCHESTER
CITY COUNCIL

City of Westminster

GLASGOW
CITY COUNCIL

Essex County Council

Harrow
England

Kings
COLLEGE
LONDON

UCL

Imperial College
London

UNIVERSITY OF
CAMBRIDGE

The voice of our sustainable
built environment

KEY AREAS



Climate
Change
Mitigation



Nature



Climate
Adaptation



Health,
Wellbeing &
Social Value



Resource Use



UKGBC SOLUTIONS & INNOVATION

AIM: UKGBC's Solutions & Innovation work seeks to drive innovation by identifying, showcasing and supporting the scaling of practical and impactful solutions, and reinforcing the wider innovation ecosystem.

SHOWCASING SUSTAINABLE SOLUTIONS

AIM: Raise awareness of innovative sustainability solutions being developed and deployed across the industry, to showcase best practice and knowledge share

TRENDS REPORT

SHOWCASE WEBINARS

SOLUTIONS LIBRARY

CASE STUDY LIBRARY

SCALING SUSTAINABLE SOLUTIONS

AIM: Increase the implementation of innovative solutions in the built environment resulting in positive sustainability impacts

IDENTIFICATION OF BARRIERS AND ENABLERS TO SOLUTIONS SCALING (INCLUDING ANALYSIS OF EXAMPLES AND CASE STUDIES)

MATCHMAKING SERVICE & LIVE PROJECT ENGAGEMENT

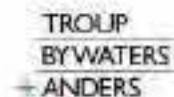
KTP - RECOMMENDED ACTIONS AROUND KEY ENABLERS

INNOVATION INITIATIVE - BREAKTHROUGH ENERGY & FORE PARTNERSHIP

INNOVATION MAP

REFERENCE DESIGN

SOLUTIONS & INNOVATION ADVISORY SCHEME



CUNDALL



noa

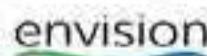


AECOM

firstplant.



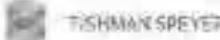
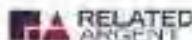
ARUP



CBRE



mace



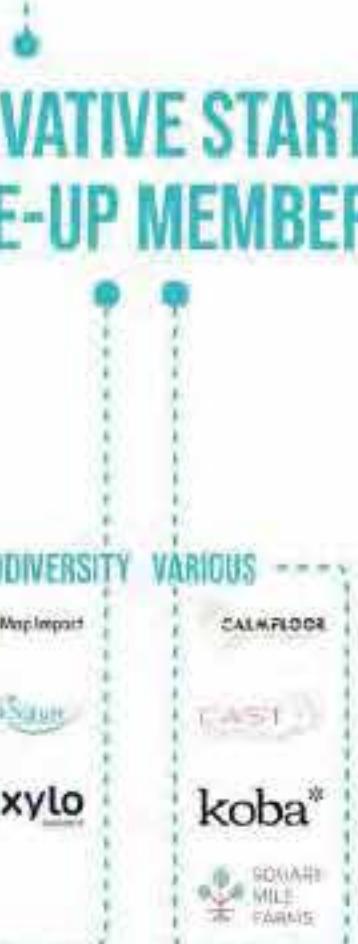
[PT1]



MAPP



make



UKGBC INNOVATIVE START-UP AND SCALE-UP MEMBERS

Search Company Logos

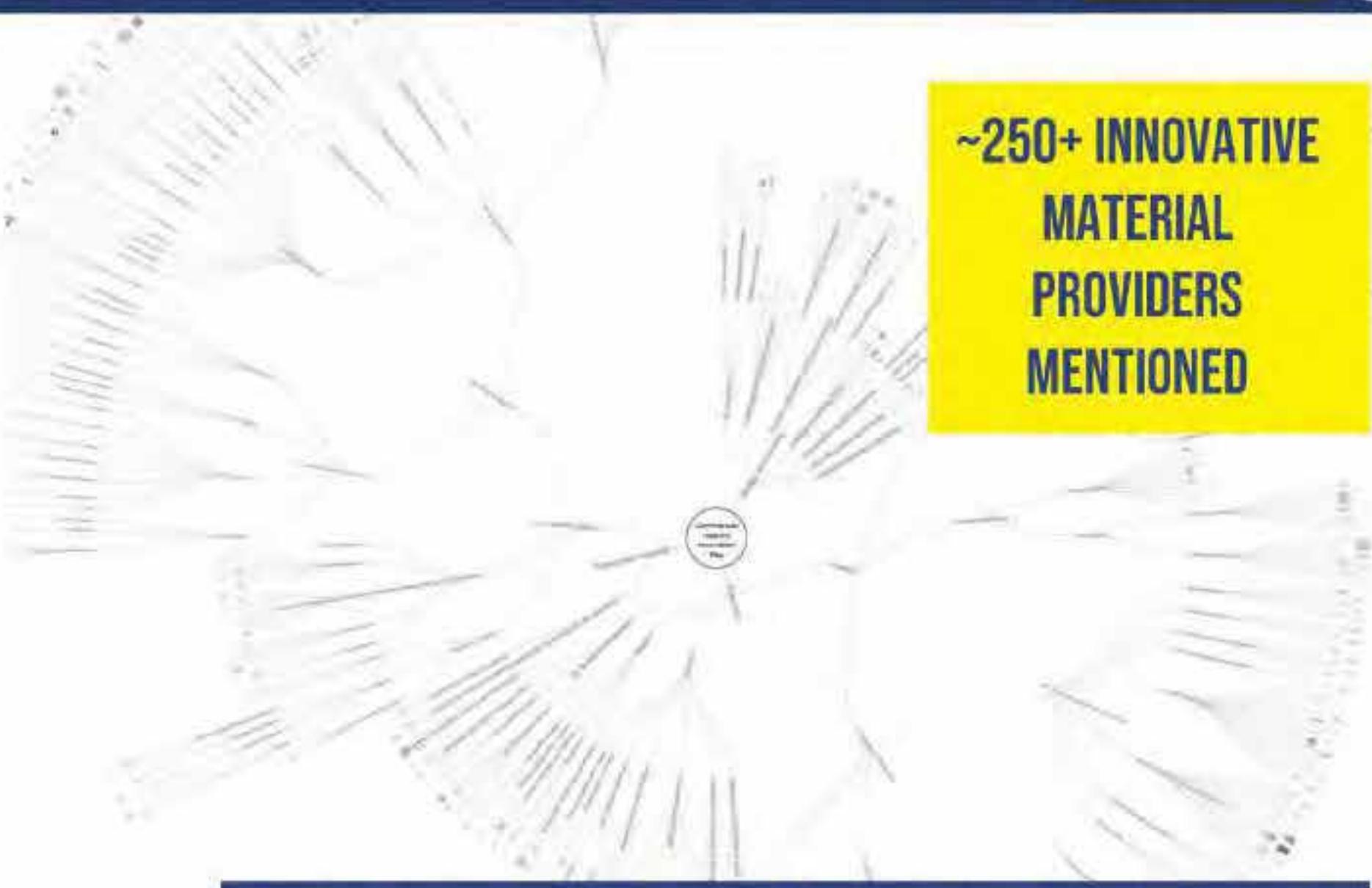
Showing results for:

Whole graphic

Search company logos...

Tag filter

- Air quality
- Concrete
- Bio-based materials
- Modern methods of construction
- Embodied carbon
- Renewable energy and storage
- Operational energy
- Reuse
- Smart buildings
- Steel
- Water efficiency
- Products as service



**~250+ INNOVATIVE
MATERIAL
PROVIDERS
MENTIONED**

UKGBC.ORG/RESOURCES/COMMERCIAL-RETROFIT-INNOVATION-MAP/

SCALING SUSTAINABLE SOLUTIONS: Y1



Matchmaking service and engagement on live projects

To leverage UKGBC's network to make targeted connections between solution providers and adopters, to increase the number of sustainable solutions implemented in the built environment.

Barriers, enablers and case studies

To understand barriers and enablers to solutions scaling in the built environment and identify examples.

PARTNERS:

BURO HAPPOLD

One Click The logo for One Click LCA features the words 'One Click' in a black sans-serif font next to a green circular icon containing the letters 'LCA' in white.

HOARE LEA The logo for Hoare Lea features the company name in a black sans-serif font next to a small circular icon containing a stylized letter 'H'.

The logo for Landsec features a black silhouette of a building with a distinctive angular roofline.

LLOYDS The logo for Lloyds features the company name in a black sans-serif font next to a white square containing a black silhouette of a horse.

RAMBOLL

The logo for TFT features a stylized purple and blue graphic element to the left of the letters 'TFT' in a bold, black sans-serif font.

TERMINOLOGY

'SCALING'

Moving innovative sustainable solutions in the built environment from one-off pilots to more **widespread, repeatable** adoption.

Embedding innovative solutions into **standard practice** so they are specified, procured, financed and delivered at scale.

'SUSTAINABLE SOLUTIONS'

Don't necessarily need to be new, but need to be scalable and possible to pilot or implement now.

For the first year of the project, solutions considered include: **materials, construction systems, hardware / physical technologies, operating / financial models, processes or software / digital technologies.**



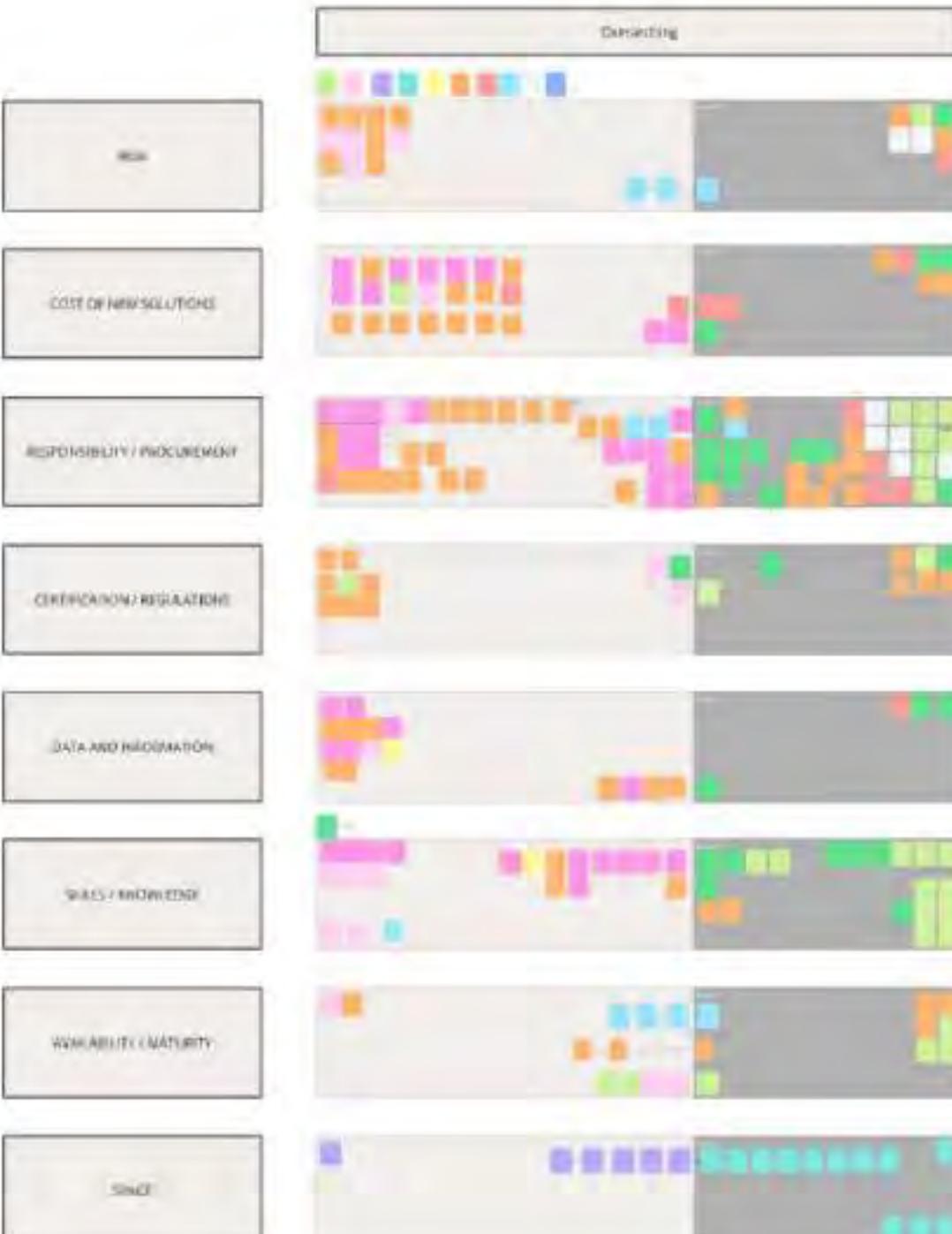
SCALING INITIATIVE RESEARCH

Research to date:

- Carried out interviews with innovators
- Conducted 4x Innovation Forum workshops on:
 - Collaboration models
 - Organisational strategy
 - Financing innovation
 - Risk, insurance and warranties
- Conducted literature review and desktop research

Research next steps:

- Testing enablers with stakeholders
- Applying enablers to specific solution categories



ORGANISATIONAL READINESS

EMERGING INSIGHTS

BARRIERS

- Lack of organisation-level **innovation strategies** or governance within solution adopters
- Lack of decision-maker **capacity** to allocate to reviewing solutions
- Lack of **incentives** for prioritising innovation
- Organisations have poor **change management processes** and expertise

ENABLERS

- Sustainable innovation **incentivisation**
- Establish project **risk thresholds** at an early stage
- Solutions adopters to define **strategic approach** to innovation and identify **innovation challenges**



PROBLEM-SOLUTION FIT

EMERGING INSIGHTS

BARRIERS

Solution adopters have challenges in identifying and comparing most appropriate solutions

Many stakeholders to convince on built environment projects

Opaque adopter needs so hard for solution providers to prioritise engagement

Limited information and data available for early-stage innovations to properly assess

ENABLERS

Compilation of industry challenges across multiple projects and organisations

Solution providers offering modular and integrated packages so they can easily embed into workflows.

Platforms that enable better comparison of data (e.g. OneClickLCA, Firstplanit, 2050 Materials)



BARRIERS

Start-ups have an **economies of scale** disadvantage

Difficulty making the business case for long-term **ROI**

Scale-up funding gap with support often for earlier stage solutions (**Valley of Death**)

Expectation of **free or low-cost** pilots

Sometimes misaligned **time horizons** with investors and innovators wanting a faster pace than industry is able to provide

ENABLERS

Whole life carbon consideration in investment and procurement decisions

Consideration of **alternative business models** that reduce upfront costs

Collective **demand signals** from industry to give confidence to investors

Collective **funding models** to invest in scaling

Direct and/or aggregated **purchase agreements / market commitments**



CERTIFICATION

EMERGING INSIGHTS

BARRIERS

Certification **cost** which is a challenge for smaller solution providers

Some certifications can also take a long **time**, further increasing risk and uncertainty for solution providers

Certification requirements and process can be **complex**

ENABLERS

Funding for certification

Better **sharing of data** between certification schemes

Better guidance on what certification is needed for different solution providers

Fast-tracking of sustainable materials through certification



BARRIERS

Innovative solutions can be perceived as **high-risk** because of limited evidence

Industry culture of risk aversion

Data burden of third-party risk assessments

Individual PI insurance can create a **blame culture** on projects

ENABLERS

Shared risk assessment tool for different solution types

Collaborative insurance models (e.g. Integrated Project Insurance)

Public-private blended insurance schemes to reduce risk to private sector

Early engagement with **insurers** so they can feed into decision making early

More **testbeds** with higher risk tolerances



BARRIERS

- Supply chain unfamiliarity and lack of installers
- Availability and continuity concerns
- Procurement can be complex and slow
- Wrap-around support services are required
- Complex projects with many stakeholders

ENABLERS

- Transparency around delivery capabilities
- Twin tracking with innovative material while keeping a proven, conventional solution as a fallback to manage risk
- Knowledge hubs for innovative solutions
- Early design-in of innovative solutions
- Standardised pilot agreements to reduce legal, contractual, and administrative friction



OUTCOMES AND KNOWLEDGE SHARING

EMERGING INSIGHTS

BARRIERS

Poor cross-industry knowledge exchange on pilots

Difficulty creating comparable case evidence

Lack of benchmarks

Pilots not linked to clear routes to portfolio roll-out

ENABLERS

Sharing of results from pilots and implementation examples

More collaborative pilots with open-source outcomes

Clear route maps from pilot to mainstream for specific solution categories

Relationships between organisations with different risk appetites



NEXT STEPS

NEXT Testing enablers with key stakeholders, focusing on priority solution categories



PARTNERSHIP

Express your interest in partnering with us to help support, enable and shape the next phase of our work



FEEDBACK

Provide feedback or any case studies on the enablers discussed today



MEETING

Set up a meeting to discuss anything you have heard today



Panel Session: Accelerating Adoption



**Carol
Costello**

Architect & Director
Cullinan Studio



**Hayley
Cormick**

Associate Director
Useful Simple Trust



**Seb
Laan Lomas**

Associate
Architype Architects



**Emily Rose
Garnett**

Senior Advisor
UK Green Council
Building



Networking Break

Return at 15:30



Innovate
UK

Business
Connect

Innovator Support Session: Unlocking Technology Innovation



**Sally
Coultas-Paul**

Lead Advisor
The MTC



**Sunny
Claire**

Senior Innovation &
Growth Specialist
Innovate UK Business
Growth



**Graham
Ormondroyd**

Professor
Bangor University



**Richard
Wigley**

Head of Enterprise
Innovation Networks
Connected Places
Catapult



**Tom
Warren**

Knowledge Transfer Manager
Innovate UK Business Connect

High Value Manufacturing Catapult

22 January 2026

Sally Coulas-Paul (MTC)

High Value Manufacturing Catapult

(HVM Catapult)



- A strategic research and innovation hub for industry, commercialising the UK's most advanced manufacturing ideas
- Consists of 6 HVM Catapult Centres, each with a different theme
- HVM Catapult centres help businesses to transform the products they sell, the way they make them and the skills of their workforce to remain competitive in a global marketplace

Transforming UK industry through innovation



High Value Manufacturing Catapult

Six Catapults



- **AMRC:** The University of Sheffield's Advanced Manufacturing Research Centre (AMRC) is a network of world-leading research and innovation centres working with manufacturing companies of any size from around the globe
- **CPI:** At CPI, we help to transform groundbreaking ideas into real-world innovations that shape the future
- **MTC:** The Manufacturing Technology Centre was established to prove innovative manufacturing processes and technologies in an agile environment in partnership with industry, academia and other institutions
- **NMIS:** A place where industry, academia and the public sector collaborate on ground-breaking manufacturing research to transform productivity, make companies more competitive and boost workforce skills
- **NCC:** Innovating for industry. Transforming today's industries and creating tomorrow's
- **WMG:** An academic department of the University of Warwick, WMG is a world-leading industrial research and education group.



High Value Manufacturing Catapult

Where the are Catapults located



- Six main locations plus satellite centres
- Choose by location or Catapult's specialism?
- Dependent on level of expertise needed
 - Early engagement may be suited to local Catapult
 - Complex projects are best suited to the right expertise



High Value Manufacturing Catapult

How we help UK Industry

CATAPULT
High Value Manufacturing

Our Impact

3,700+

of the UK's best engineers, scientists and technicians

3,000+

SME businesses transformed each year

30,000+

manufacturing business supported since 2011

- Employs some of the best brains in the country
- Breadth and Depth of Expertise
- From conception to start up
- From start up to scale up
- Ideas to Prototypes
- Supporting and growing UK Industry



High Value Manufacturing Catapult

Collaborative Research & Development

CATAPULT
High Value Manufacturing



Stand shoulder to shoulder with our clients, work with them to help them achieve their aim



High Value Manufacturing Catapult

HVM Catapult current focus areas



Net zero: industrial sustainability

Investing in systems change; including design, materials, digital and AI.

[More about Net zero: industrial sustainability →](#)



Healthy living

Driving engineering biology, agtech and health tech development and scale up.

[More about Healthy living →](#)



Net zero: clean energy transition

Creating UK clean energy supply chains: electrification, wind, hydrogen and nuclear

[More about Net zero: clean energy transition →](#)



National security capability

Advancing defence and security product design, engineering and manufacturing.

[More about National security capability →](#)



Landscape transformation

Access to finance, skills and workforce, supply chain, SME support and place.

[More about Landscape transformation →](#)

High Value Manufacturing Catapult

Funding Opportunities Supported by Innovate UK



- Reach – Match Funding
- Innovate UK Business Growth (IUKBG)
- Horizon Europe

[Innovate UK – UKRI](#)

[Apply for funding – UKRI](#)

<https://iuk-business-connect.org.uk/how-we-help/innovation-funding-and-support/innovate-uk-grants-how-to-apply/>



Carapace

Waste Slate Turned into Roof Tiles



CATAPULT
High Value Manufacturing

- Waste from slate mines and slate processes turned into composite roof tiles



Carapace

Waste Slate Turned into Roof Tiles



- Waste from slate mines and slate processes turned into roof tiles



[Home - Carapace Slate](#)

[carapaceslate.com/FileHub/Carapace animated explainer VS2 Release.mp4](http://carapaceslate.com/FileHub/Carapace%20animated%20explainer%20VS2%20Release.mp4)



Interchangeable
moulds provide a
wide range of
product designs



Carapace

Waste Slate Turned into Roof Tiles



- Quick and easy to install and provides a realistic slate roof finish



[Home - Carapace Slate](#)

[carapaceslate.com/FileHub/Carapace animated explainer VS2 Release.mp4](http://carapaceslate.com/FileHub/Carapace%20animated%20explainer%20VS2%20Release.mp4)



HYB-ISS

Safer, Lightweight Insulation Methods for Offsite Light-Gauge Steel Structures

- Hybrid Insulation Steel System



Hybrid Insulated Steel System (Hyb-ISS) combines the proven structural efficiency of Light Gauge Steel (LGS) with a patented, low density, injectable mineral foam called Airium. It overcomes the challenge of achieving high fire protection to multi-storey buildings at scale. It is strong and very structurally efficient, and at the same time is super-lightweight and solid. And because it can be manufactured, built and tested entirely offsite, it vastly improves the time it takes to construct, insulate and fire-proof structures up to 10 levels high. Initial tests have shown Hyb-ISS is twice as fire resistance as current alternatives which will lead to a greater number of safe, quality and sustainable multi-storey constructions

<https://tc-catalogue.strongerstories.org/stories/hyb-iss/>

Genzero

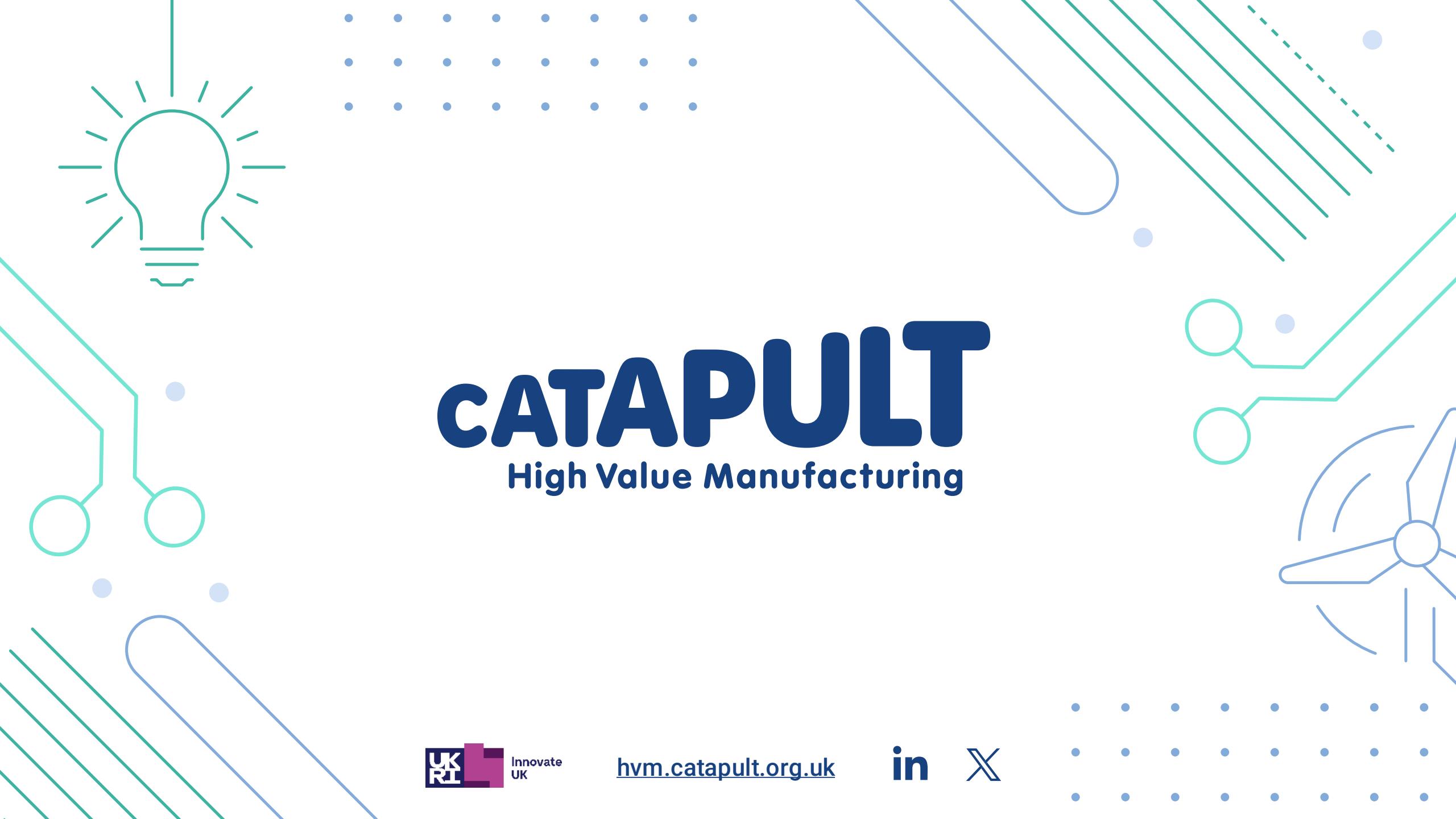
The Next Generation of Net Zero UK School Designs

- For Our Children and Grandchildren



Department of Education (DfE) builds up to 200 new schools each year to satisfy demand for student places and maintain stock. In a pioneering move, DfE has partnered with construction innovators to collectively invest £4m in GenZero - a project to create new, improved design standards for school buildings. The collaboration have developed advanced concepts that will create a new design guide for all DfE procured schools and set the standard for new school buildings in England with the aim of making them net zero. The prototypes will enable more efficient manufacturing processes to be used to enable faster construction, increased productivity and lower carbon emissions.

<https://tc-catalogue.strongerstories.org/stories/genzero/>



CATAPULT

High Value Manufacturing



hvm.catapult.org.uk





Introduction to
**Innovate UK Business
Growth**



Innovate
UK

Business
Growth

Presenter introduction

Sunny Claire
Senior Innovation & Growth Specialist
[LinkedIn](#)

Sunny Claire has over 15 years of experience in supporting businesses in the region, ranging from start-ups all the way through established businesses seeking Innovation, R&D and commercial opportunities internationally.



Innovate
UK

Business
Growth

A photograph of three people working late at a table with laptops. One person is in the foreground, and two others are in the background. The scene is dimly lit, with the screens of the laptops being the primary light source. A vertical pink bar is on the right side of the image.

Innovate UK Business Growth

The indispensable partner for ambitious innovators

We equip innovation-focused businesses to **make the best strategic choices** and **harness the right resources** to accelerate their growth.

Over 6,000 innovators benefit from our **intensive and tailored advisory support** to achieve their ambitious goals every year.

We are in their corner – do you want us in yours? Visit iukbg.ukri.org to learn more.

“Innovate UK Business Growth gave us the tools to grow with confidence”

Natali Georgieva, Co-founder at ALIANAz

97% of clients would recommend us

94% report that our service has had a positive impact on their growth

Innovate UK Business Growth

Innovate UK provides high-quality strategic advisory support as a partner to its clients. The Innovate UK Business Growth service uniquely combines:



A comprehensive spectrum of innovation and commercial expertise



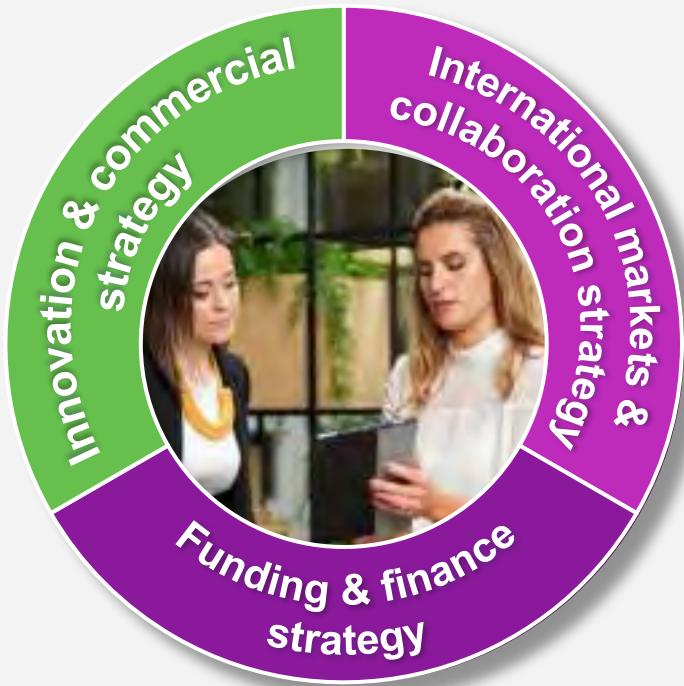
A single access point to the most significant regional, national and international innovation resources



1:1 support that is flexible and tailored in focus and timescale to the individual needs of innovative businesses



Specialists with comprehensive expertise to help you hone your strategy



Over 450 innovation and growth specialists nationwide, including 43 scaleup directors, who are also plugged into technical experts across Innovate UK and beyond.

With the commercial acumen and innovation experience to help clients hone their growth strategies and accelerate their progress in three broad areas.

“Our specialist’s knowledge and experience...has been incredibly helpful and comforting. The...ups and downs can be tough but having that consistent sounding board has made a huge difference.”

Jason Mashinchi, Managing Director at Cambridge Kinetics

Innovate UK Business Growth support initiatives



Our advisory support is complemented by a range of impactful initiatives available to specialist-supported Innovate UK Business Growth clients nationally, depending on business need.

Intellectual Property Audit (IPO)

Design for Growth

Standards & Compliance (BSI)

RTO/Catapult grant

Peer Networks (SUI)

Secure Innovation Security Review (NPSA)



Invest-Ability investment readiness support

Enterprise Europe Network

Global Partnerships & Brokerage

Global Business Innovation Programme (GBIP)

Global Incubator Programme (GIP)

Global Explorers

Horizon Europe Pump Priming

Support initiatives for Scaleup Programme clients

NED scheme

Scaleup Peer Networks

Scaleup Alumni

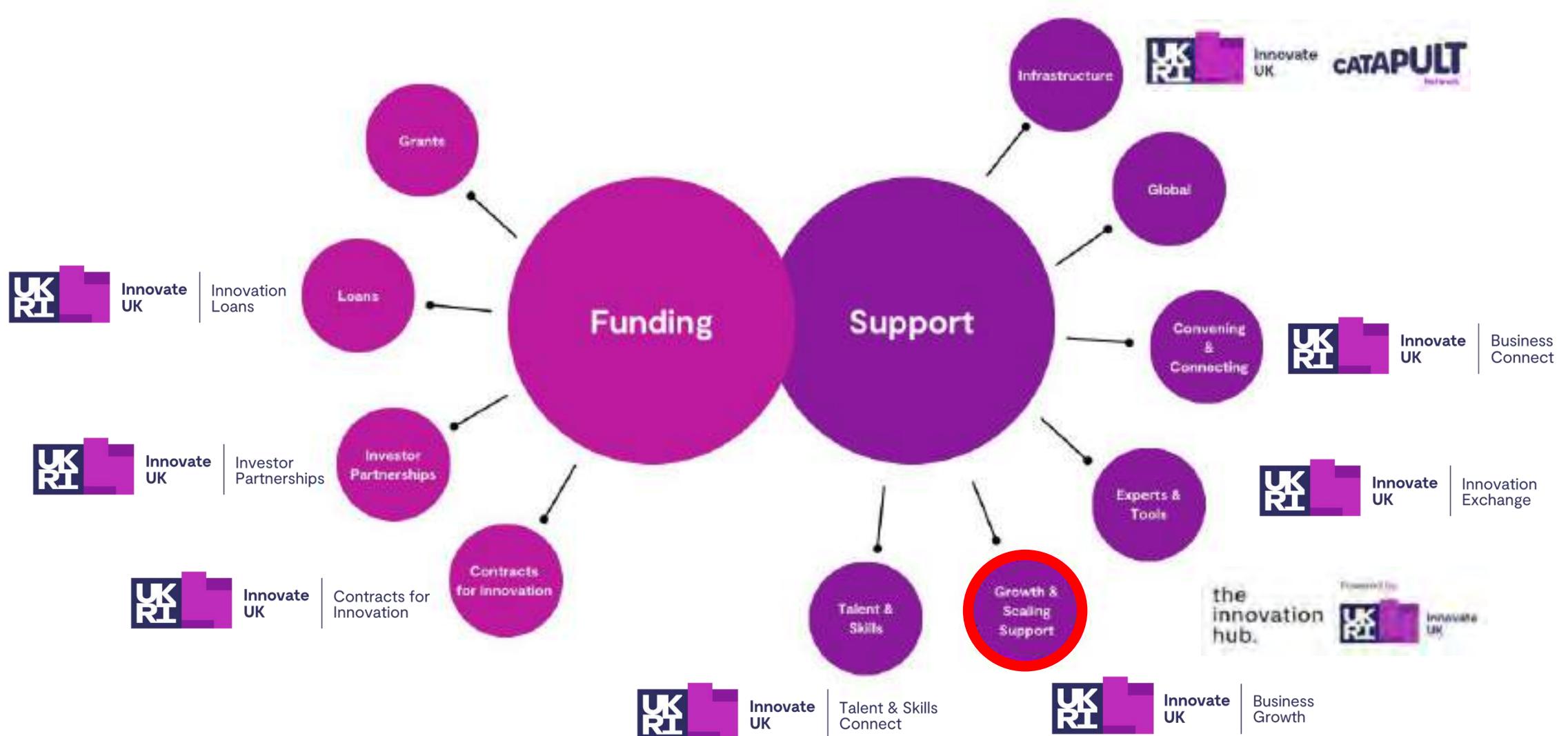
Scaleup Growth Fund



Innovate
UK

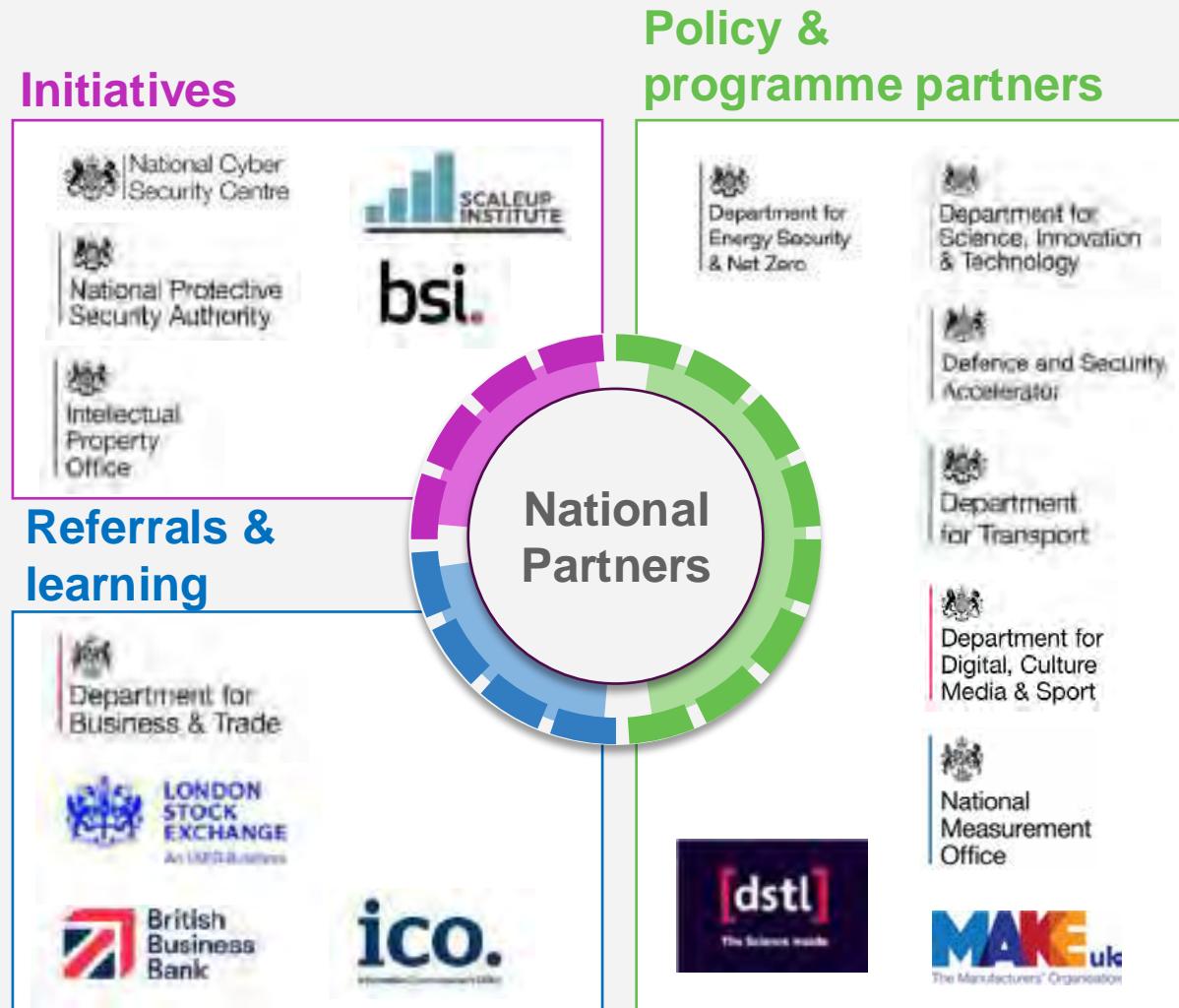
Business
Growth

Innovate UK System: Product & Service Examples



Innovate UK Strategic Partnerships

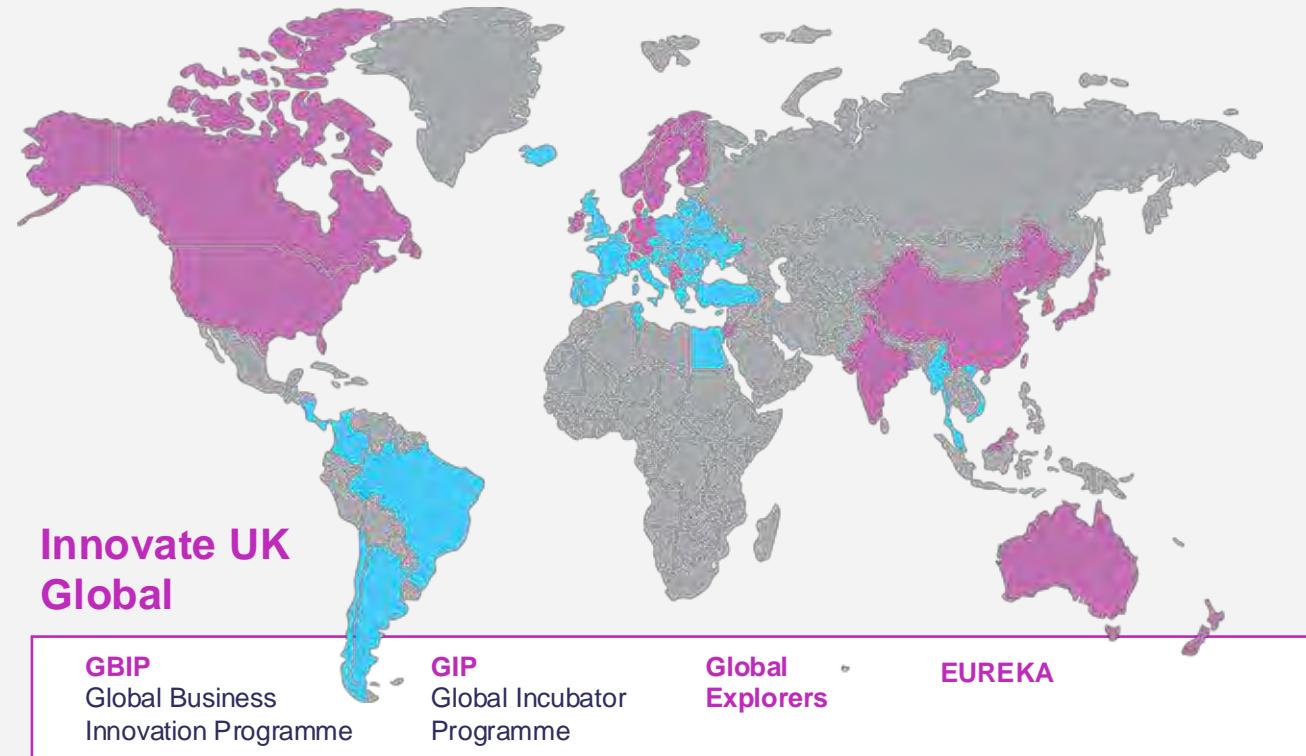
Examples of
partnerships across
the private and public
sectors.



International opportunities



Our initiatives and partnerships extend our reach to the following countries for innovation internationalisation, whilst we link seamlessly to DBT for export support:



Enterprise Europe Network

Partner Opportunities Database	Sector Group	Thematic Group	Brokerage Events	International funding (HEu)
--	------------------------------	--------------------------------	----------------------------------	---

Note: Colour scheme does not correspond to initiative type: opportunities in many countries flow from multiple initiative types



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Contact Us

Client enquiries: call our National Enquiry Gateway on:
0300 123 3066

or visit our website:
www.iukbg.ukri.org



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BANGOR UNIVERSITY
WORKING WITH **TY GWYRDDFAI**



BC origins

- Established 1989
- Original focus on wood based panels, pulp and paper, and novel products from agricultural residues
- Pilot plant for particleboard and MDF production
- Long natural fibres in non-woven mats for composites and insulation
- Resins from plant oils and extracts
- Bio-derived products in a wide range of applications
- New Technology Transfer Centre at Mona on Anglesey opened in 2006



VISION FOR TY GWYRDDFAI

To use Ty Gwyrddfai as a central location to grow North Wales's circular economy, by blending innovation and skills which directly impact the supply chain in North Wales.

Blending FE/ HE directly improves vocational skills and has a knock-on effect in the economy in our communities.



ACTIVITIES



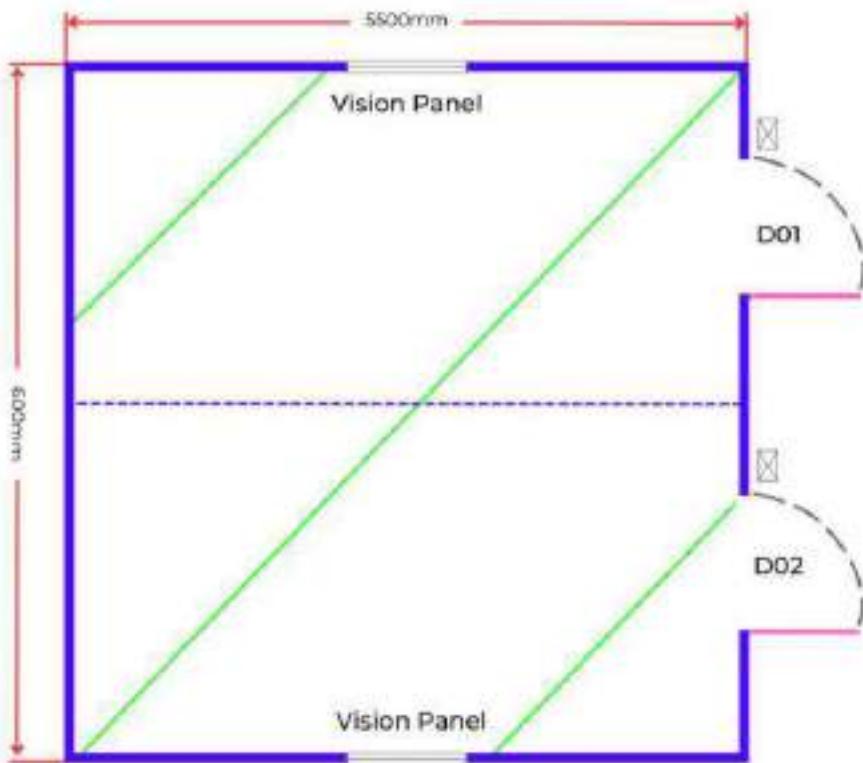
The Hub will provide a base for a wide range of activities including:

- In conjunction with regional FE/HE and industry partners, the retraining and upskilling of the local contractor and worker base so that they are well placed to take advantage of the business opportunities that will arise from the installation and maintenance of low carbon technology, helping to ensure that the socio-economic benefits of the transition to low carbon are retained within local communities.
- A local presence for major global suppliers of materials and equipment in the low carbon and retro-fit market enabling them to collaborate with regional contractors and access innovative technologies through the formal relationship between the Hub and Bangor University
- A basis for joint prototyping, scale up and field testing of technologies arising from the research activity of Bangor University in an authentic “living lab” environment.

LIVING LAB 'CUBE'

Phase 1 of this living lab capability is the construction of a large-scale research laboratory with the capability to test both indoor and external products. Replicating real-life environments.

These could be technologies emerging from the joint development programmes carried out by Adra and the University but could also be tests of equipment developed by external partners on a commercial consultancy agreement.



- 100mm QuadCore Walls - White Foodsafe Both Faces - 2000mm high
- 100mm QuadCore Ceilings - White Foodsafe to Internal
- 125mm Insulated Modular Floor (c/w Treadplate Finish)
- Doors (D01 & D02) - 2 no. Insulated Hinged Chiller Specification Doors
- Environment Control Unit

CONNECTED PLACES CATAPULT

SERVICES & SUPPORT FOR SMES

Richard Wigley – Head of Enterprise Innovation Networks



BIG CHALLENGES WE ADDRESS



1



2



3



4



5



6

Reduce transport
emissions

Make journeys
safer and
inclusive

Build sustainable
infrastructure

Design smarter
urban realms

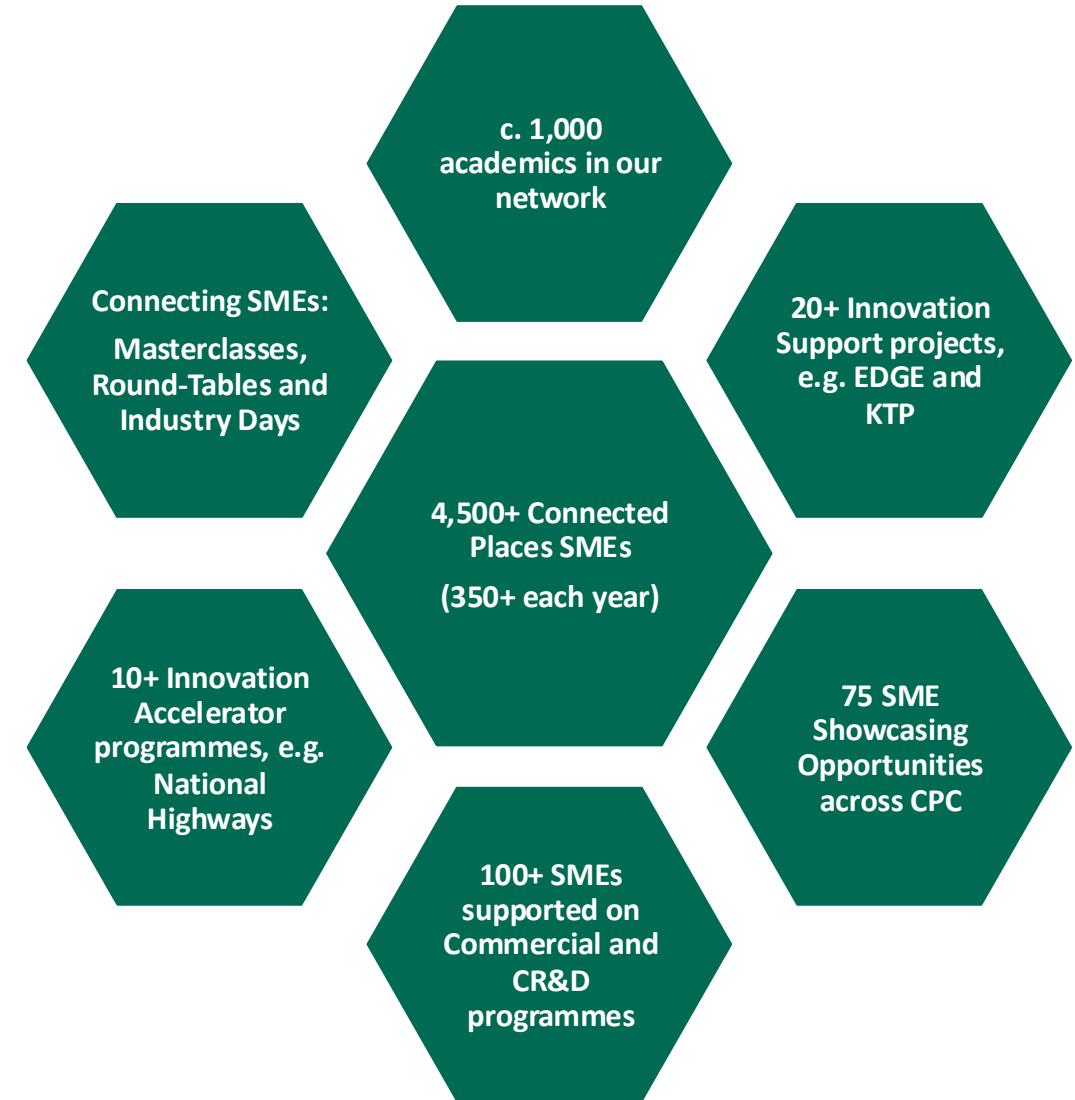
Power local
innovation
economies

Unlock data
for growth

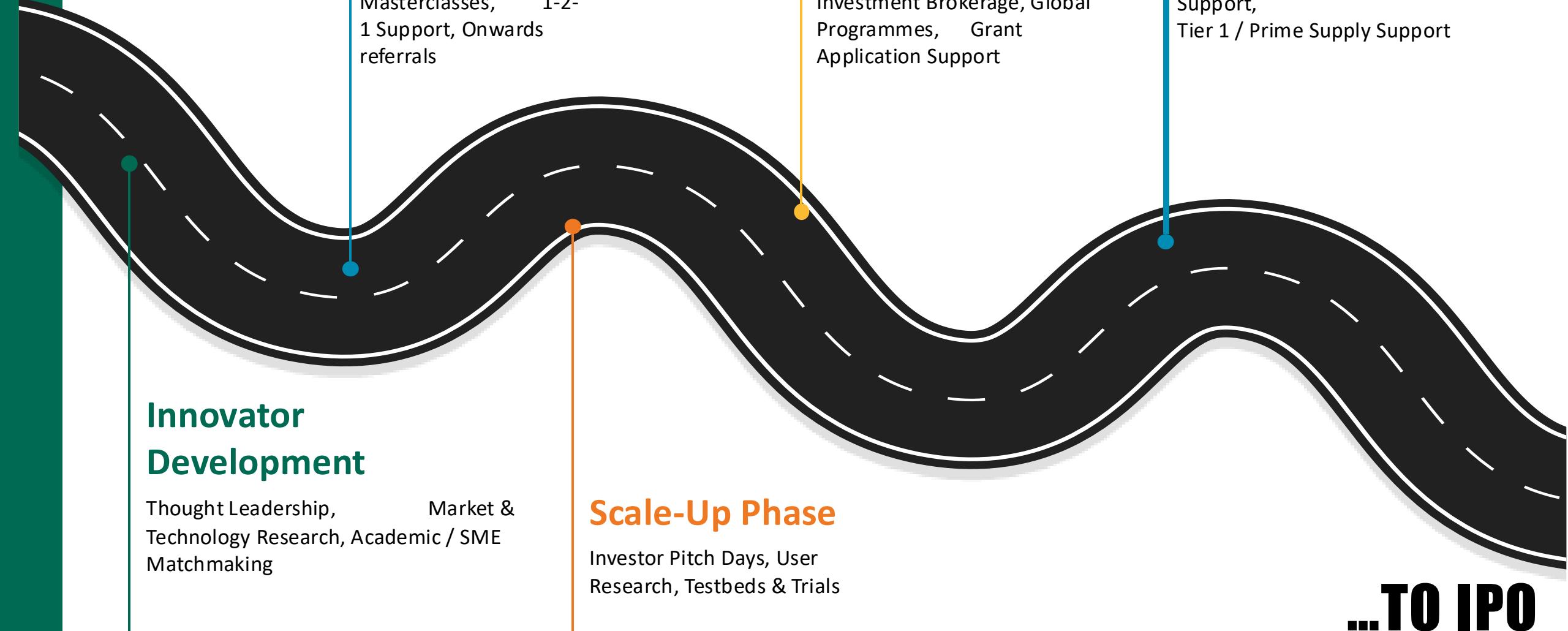


CONNECTED PLACES CATAPULT SME NETWORK

The Enterprise Innovation Team helps entrepreneurs, start-ups and SMEs connect with the surrounding **Market** and **Innovation Ecosystem**.



SUPPORTING SMES FROM IDEA...





SME INNOVATION

Across all our ecosystems



SME Network

Monthly newsletters highlighting opportunities for funding, collaboration and events.

Network scouting facilitates individual introductions for programmes and opportunities that could help SMEs progress.



Engagement Programme

A series of events, workshops and publications throughout the year.

Designed to meet the needs of SMEs, entrepreneurs and innovators in an ever-evolving environment.



Innovation Support Programmes

Funding opportunities from early to late stage. Accelerator programmes offering access of industry and valuable demonstrator opportunities.

Opportunities to explore new global markets and partnerships.

THANK YOU

Richard Wigley

Richard.Wigley@cp.catapult.org.uk



Innovate UK Business Connect

About Us

iuk-business-connect.org.uk



Innovate
UK

Business
Connect



Tom Warren

tom.warren@iukbc.org.uk

Knowledge Transfer Manager
Clean Energy & Built Environment



Our Purpose & Vision

We are part of Innovate UK, the UK's innovation agency.

We create diverse connections to drive positive change.

To establish a network of innovators so powerful its ideas will change the world.



Innovate
UK

Business
Connect

Our Network



46,229
Unique
Organisations



72%
Small

15%
Medium

13%
Large



335,478
innovators



**Every university
in the UK**



Innovate
UK

Business
Connect

We
connect

Diverse communities | Innovate UK Innovation Networks

Regional, national and global | Innovate UK Global Alliance

Research and business | Innovate UK Knowledge Transfer Partnerships

Innovators, funders & collaborators | Innovate UK Innovation Exchange

...for positive change



Innovate
UK

Business
Connect



We connect **innovators, funders and collaborators** to transform ideas into solutions

Innovate UK's **Innovation Exchange** programme connects companies with specific challenges to innovators who are already working on the solutions. Our unique cross-sector approach connects businesses with opportunities beyond their existing thinking.



Business
Connect

The Innovation Exchange (iX) Programme

- A cross-sector programme that introduces organisations with pressing challenges, which cannot be solved through existing supply chains, to innovators across all sectors who are working on solutions to your challenge.
- Utilising an extensive and diverse network, our sector experts act as a matchmaker, facilitating the transfer of innovative solutions
- iX has proven highly successful in the Energy, Defence, Health and Transport sectors and is now expanding into other sectors such as Offshore Wind, Infrastructure, Security and Agri-Tech



The Innovation Exchange (iX) Programme: Benefits and Impacts

Benefits to Challenge Holders

- Access to an untapped network of solution providers to solve current technical challenges
- Ability to deliver projects faster and more efficiently
- An independent, transparent, bespoke and fully-funded filtering service that delivers results

Benefits to Solution Providers

- Access to new markets and specialised expertise
- Faster market entry / new collaboration enhancing the visibility of new innovations
- Strengthening brand reputation and increasing revenue streams

Impact *

- 258 challenges launched to date
- 3000+ applications
- 1000+ pitches
- 150+ contracts awarded
- £18.5m contract value
- £39m+ estimated business value of solutions for their business

Challenge Holders



Innovation Exchange challenge: Enhanced thermally conductive backfill for underground HV cables

This challenge aims to discover more effective solutions to imported thermally conductive sand for backfilling high-voltage cable installations.

Registration Details

Opens: 05/01/2026 Closes: 02/03/2026 11:59

<https://iuk-business-connect.org.uk/opportunities/innovation-exchange-challenge-enhanced-thermally-conductive-backfill-for-underground-hv-cables/>

Opportunity Type

Commercial challenges

Award

Successful applicants will be given the opportunity to pitch to Omexom Taylor Woodrow. Selected solutions can benefit from collaborative support from Omexom Taylor Woodrow to develop their solution through expert input, characterisation testing and physical trials in a safe environment.

Opportunities

Positive change is driven through new ideas and innovation. But innovation is complex. Sometimes projects need to be connected with new opportunities or looked at from new perspectives to make the difference. This is where Innovate UK Business Connect comes in.

If you're looking for experienced input into your idea, product, service, research or challenge, then invite us to get involved. We will not only work with you in understanding your market or challenge but will also direct you to the latest opportunities available, and how you can apply.

Find out how [Innovate UK Business Connect can support](#) your application or help you find partners.

[Opportunities Archive →](#)

Keyword Search...

Sectors:

Filter by



- Energy
- Geospatial
- Global
- Health
- Industrial Maths
- Infrastructure
- Investment
- Knowledge Transfer
- Business growth

Horizon Europe 2026-27: New European Bauhaus Facility

Various closing dates from Sep 2026 to Dec 2027

Funding available from Horizon Europe for NEB projects in 2026-27, with up to €10m for the largest projects

[More Information →](#)

Horizon Europe 2026-27: Digital, Industry and Space (Cluster 4)

Various closing dates from Mar 2026 to Sep 2027

Topics available under Horizon Europe's Cluster 4 programme for 2026-27, with a total budget of €1.5bn

[More Information →](#)

Innovate UK Innovation Loans Round 25

Opens 08/01/2026 Closes: 04/03/2026

UK registered businesses can apply for loans for close to market innovative projects with strong commercial potential. They must significantly improve the UK...

[More Information →](#)

<https://iuk-business-connect.org.uk/net-zero-supplier-directory/>

Net Zero supplier directory

Innovate UK Business Connect has launched the Net Zero Supplier Directory to support local authorities and the wider public sector in accessing comprehensive listings of net zero suppliers across the UK. This directory provides a streamlined way to identify businesses offering solutions across various industries and regions, ensuring the public sector can easily find suppliers to meet their net zero goals.

DIRECTORY • [NET ZERO SUPPLIER DIRECTORY](#) • [NET ZERO DIRECTORY OF SUPPLIERS](#)

Company	Business Region	Industry Focus	Business Region	Full Details
AlphaGenesis Consultancy Limited	Clean energy consultant company operating in the construction and renewable energy industries	Renewable Energy, Green Building and Construction, Green Technology and IT, Energy Efficiency, Community Engagement	Greater London	More Info
Altass Limited	Energy & Net Zero Consultancy	Renewable Energy, Green Building and Construction, Sustainable Transportation, Green Technology and IT, Energy Efficiency, Environmental Consultancy, Hydrogen	North West	More Info
Altro	Altro specialises in innovative flooring and wall solutions, emphasising sustainability, safety, and cutting-edge design for diverse spaces.	Green Building and Construction, Eco-friendly Products	East of England	More Info

Events

Innovate UK Business Connect hosts hundreds of events throughout the year, ranging from competition briefing events to networking and showcase events.

Each event is designed to make new connections and drive new opportunities.

[You can find recordings and reports from past events here →](#)

Search events eg. "Manchester" Submit Materials



20/01/2026 | 09.00 - 17.00 Online

GRIPS 2026 – Global Research & Innovation in Plastics Sustainability



22/01/2026 | 09.30 - 16.30 Birmingham

ESBEM Seminar: Accelerating adoption of UK low environmental impact construction materials



28/01/2026 | 10.00 - 16.00 London

Battery Innovation Programme Showcase



Final event: London, 10 Feb 2026, London
12:00-4:00pm

The Human Futures event series

**THE UK'S TWO BIGGEST
CONSTRUCTION EVENTS
COME TOGETHER**

futurebuild
+
UK Construction Week

12-14 May 2026 | Excel, London

THE UK BUILT ENVIRONMENT SUPER EVENT

Massive THANK YOU to all our speakers

To get involved follow the QR → or this link:

<https://iuk-business-connect.org.uk/programme/emergent-sustainable-built-environment-materials-innovation-network/>

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